

The top-selling

ATARI ST USER

Vol. 5 No. 3 May 1990 £2.95

How to
boot up
the best
football
action!



REVIEWS

DG Base, Easytext,
Paintpot, Arty Junior,
Elvira, Ultima V, Risk,
PC Speed, Typing Tutor

ATARI
ST
USER

May 1990

Switch on with the disc in
drive A. Then double click
on MENU.PRG.

Full instructions are in the May issue of *Atari ST User*.
Disc format by Rob Northern Computing

- Battle through the multi-level Domain
- Learn to touch type with our tutor
- Experiment with the ST's sound chip
- Play Startrek – the game of the series
- Design your own fractal snowflakes

DIY Midi Thru port

Shoot-'em-up guide

Music on a budget

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SIM CITY

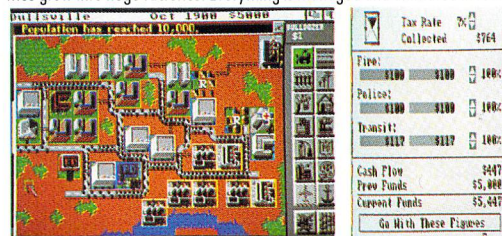


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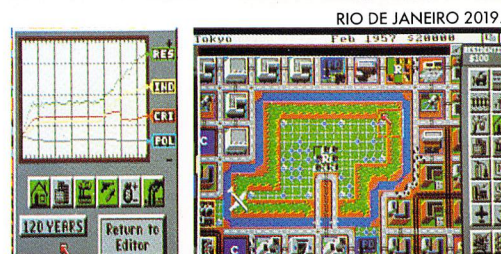
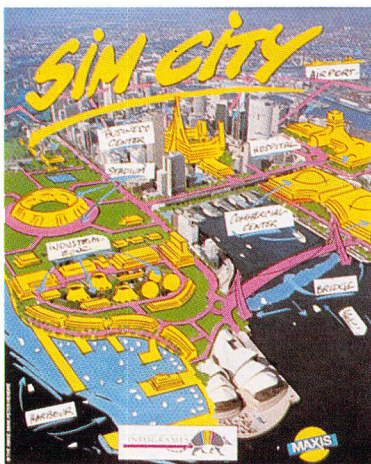
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SIM CITY

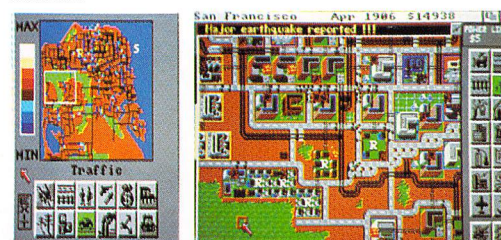
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INFOWORLD Volume II Issue 20 : "People playing Sim City are completely plugged into the world they create, disappearing for hours."
NEW YORK TIMES : "The model is very sophisticated, yet understandable. And just as important, it's fun, too."



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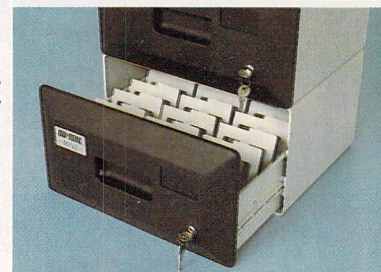
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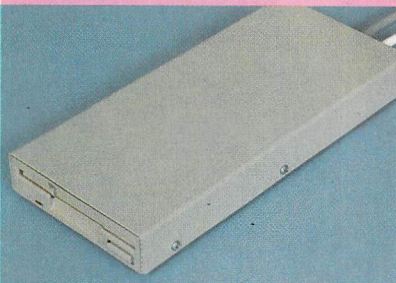
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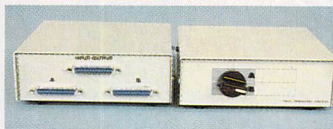
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Published by:
Interactive Publishing Ltd,
Europa House, Adlington Park,
Adlington, Macclesfield SK10 4NP

Tel: 0625 878888 (All depts)
0625 859555 (Advertising)
051-357 2961 (Subs)

Telex: 94081191 DATAB

MicroLink: MAG001

Prestel Mailbox: 614568383

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publishing**

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ABC

35,714 January-June 1989
ISSN 0952-3006

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. Unsolicited 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. Atari Corp (UK) is not responsible for any of the articles in this issue or for any of the opinions expressed.

News trade distributors: Europress Sales & Distribution Limited, Unit 1, Burgess Road, Ivyhouse Lane, Hastings, East Sussex TN35 4NR. Tel: 0424 430422.

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The dropping of the Atari ST User cover disc caused a massive outcry among our readers. So by popular demand it's back – and it's better than ever, with more games, utilities and tutors.

● Turn to Page 104 to find out how to make the most of Domain, ST Sound Lab, Startrek and Typing Tutor.

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No More 'Out Of Memory' Headaches

With Frontier Software's XTRA-RAM, you can do away with those nasty 'Out Of Memory' messages which seem to come up just when you are in a hurry to finish your latest creation - whether it's a page of desktop published brilliance, a piece of superb artwork or a spreadsheet which contains all of the information which your bank manager has been demanding since last week.

• No Need To Send Your ST Away

Upgrading the RAM memory of your Atari ST (whether it's a 520ST, 520STM, 520STFM, 1040STF, 1040STFM, Mega 1ST or Mega 2ST) usually means sending your ST away or doing a large amount of delicate nerve-racking soldering yourself. Frontier's XTRA-RAM is installed by you, in your own home or office *without* the need for any soldering whatsoever (The XTRA-RAM even fits STs with surface-mounted MMU^{oo} or RAM chips)

• Easy To Install - No Soldering

The installation process takes around an hour (the XTRA-RAM simply plugs into two places inside your ST) and is carefully explained in a detailed 32 page manual which is written with the non-technical ST user in mind. If you have any problems during the installation process, Frontier's technical staff are always available on the phone to offer assistance.

• No Need To Stop At 1MB

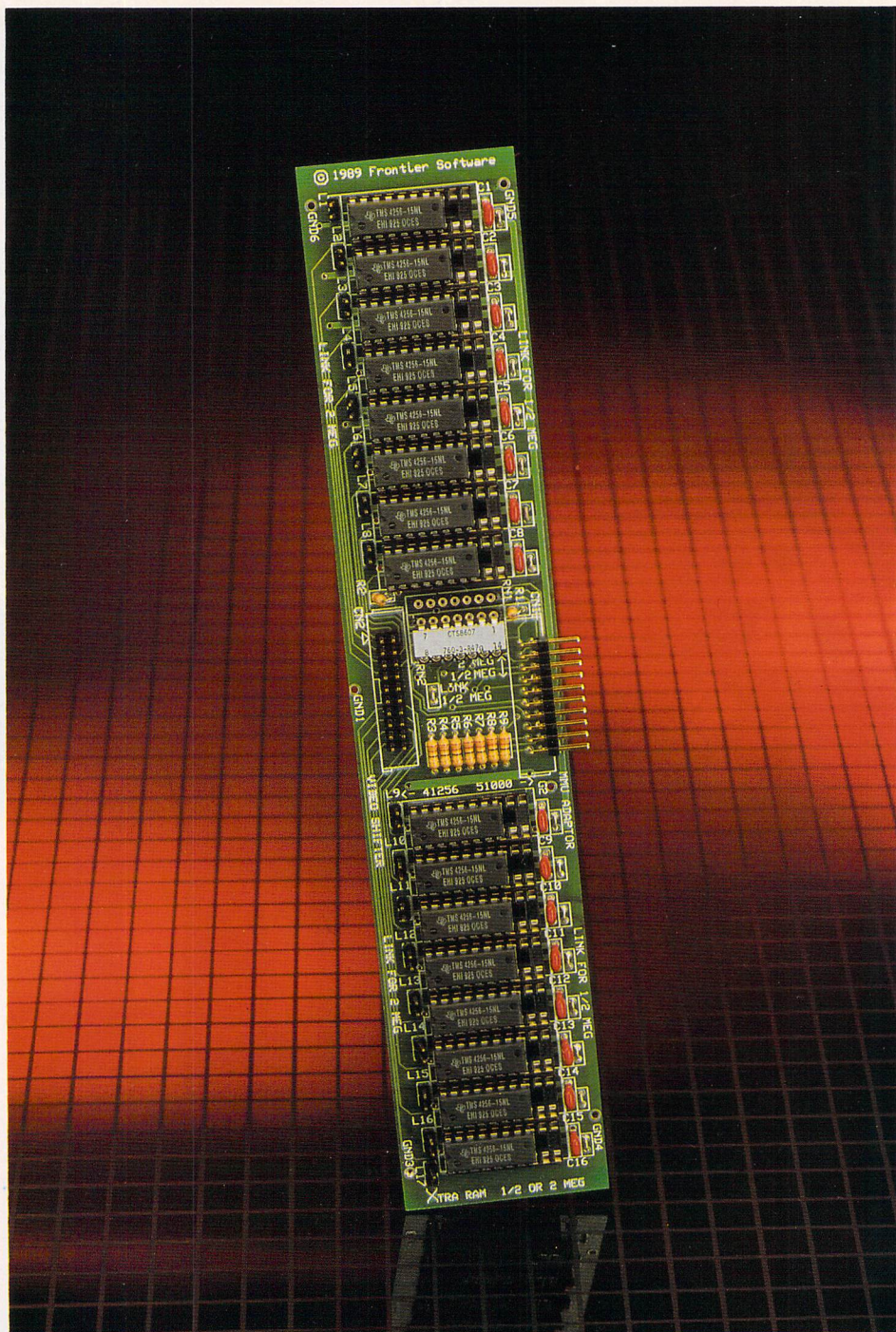
Most RAM upgrades leave you with your 1/2 MB ST upgraded to 1MB and that's it! If you need any extra memory at a later date you are expected to go out and buy a Mega ST - Not so with the XTRA-RAM. The XTRA-RAM has been designed to take two sizes of industry-standard RAM memory chips. With sixteen 256Kbit RAM chips the XTRA-RAM will upgrade your 1/2 MB Atari ST to 1MB, making it totally memory compatible with the 1040ST and Mega 1ST. When you decide that you need more memory you can change those sixteen RAM chips for sixteen 1Megabit chips (again with no soldering whatsoever) in around ten minutes and your ST will be expanded to 2 1/2 MB (520ST, 520STM, 520STFM, 1040STF, 1040STFM and Mega 1ST will be expanded to 2 1/2 MB, Mega 2ST will be expanded to 4MB).

• Totally Compatible

The extra RAM memory that the XTRA-RAM gives you is totally compatible with all of your Atari ST programs. The ST's memory controller chip 'logs' in the extra memory and makes it available for your programs. You will automatically get more memory for DTP, word processing, MIDI, running the Atari Laser printer and everything else that you use your ST for.

• Software Included

Every XTRA-RAM upgrade is supplied with a free



RAM testing program (so that you know *with certainty* that your installation has worked), RAM disk and printer spooler software.

• Satisfaction Guaranteed

The XTRA-RAM is supplied under Frontier's ten day money back guarantee, which means that if you don't like the XTRA-RAM, for any reason, you can return it for a full refund within ten days of purchase. The XTRA-RAM also carries a full twelve months' guarantee.

• Available With Or Without RAM Chips

Frontier supply the XTRA-RAM in three ways:

- (1) Unpopulated (with no RAM memory chips, so that you can purchase your own),
- (2) Populated with 16 256Kbit RAM chips (taking any 1/2 MB ST to 1MB. This, of course, can take your ST to 2 1/2 MB whenever you wish simply by changing to 1Megabit RAM chips)
- (3) Populated with 16 1Megabit RAM chips (to take any keyboard ST or Mega 1ST to 2 1/2 MB or any Mega 2ST to 4MB).

• Prices

XTRA-RAM Unpopulated	£69.99
XTRA-RAM Populated to upgrade a 1/2 MB ST to 1MB (can later upgrade to 2 1/2 MB simply by changing RAM chips)	£99.99
XTRA-RAM Populated with 16 1Megabit RAM chips to upgrade keyboard STs and Mega 1STs to 2 1/2 MB and Mega 2STs to 4MB	£299.99

All prices include VAT. Please add £2.30 postage and packing to all orders under £120.00. Frontier accepts payment by Visa or Access.

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^{oo}The XTRA-RAM must be fitted to STs with surface-mounted MMU chips by Frontier Software. You can fit the XTRA-RAM to STs with surface mounted RAM chips with no soldering as long as the MMU and Video Shifter chips are in sockets. Call Frontier for more details.

Microprose drops two labels

FOLLOWING a decision to concentrate on the older end of the games playing market, Microprose (0666 504326) has opted to drop two of its labels – Firebird and Microstatus.

This leaves the Cotswold-based firm with its original Microprose label catering for the niche market of simulations, Rainbird aimed at adventure strategy for players 26 years and over and Microstyle which will concentrate on action games for buyers of 17 upwards.

Just months after it was launched, Microstatus has been eclipsed by the Rainbird label bought from Telecomsoft last year. The two were hitting at the same market and Microprose realised Rainbird had a stronger position.

More of a shock to games players is the decision to drop the well-known Firebird label which has many top sellers under its belt.

"Firebird was aimed at arcade style games for younger players", said Julia Coombes of Microprose. "What we wanted to create was a label aimed at the mid-teens with a mean age of 17. We wanted to concentrate on quality action games and did not think Firebird had that reputation. We have decided to continue with Microstyle and run down Firebird.

"Purchasers are getting older and we have decided to position our games accordingly".

There will be just one more release on Firebird before it is axed but Microprose will continue to supply from the label's back catalogue which still contains a number of popular titles".

Mouse wash

ROMULUS Data Systems is offering an ST mouse cleaning and renovation service for £5.95. This includes replacement of defective parts and for £8.50, the company will also fit a replacement lead. Repairs are under 28 day warranty. Romulus are at 44 Ayletts, Basildon, Essex, SS14 1UL.

Book in a box helps first time STers



A SPECIAL 64 page magazine produced by publishers of *Atari ST User*, Interactive Publishing, features in a new bundle about to be launched by Atari.

Called Discovery Pack, the bundle is aimed at first time users and is designed to consolidate the ST's position as a home market computer. It will contain a 520STFM with 0.5Mb memory and 3.5in disc drive plus ST games creation package STOS from Mandarin Software, tutorial software and four top games which were still under wraps when *Atari ST User* went to press.

Costing £299.99, Discovery Pack is £100 cheaper than the existing and successful Powerpack.

"Atari sees the new bundle as a major promotional initiative aimed at massively expanding the user base in the UK", said an Atari spokesman.

The "book in a box" publication is seen as a major promotional coup for Interactive publishing, formed earlier this year as a joint venture between Database Publications and Gollner Publishing.

With a print run of 60,000 copies, the full-colour publication features a wide range of articles designed to help new users during the first weeks of using their new machine.

It includes a buyer's guide covering all the latest software and hardware

available for the ST, advice on how to make the most of its Midi ports, a glimpse of classic games, articles on peripherals and productivity software and a look at how public domain works.

"We strongly believe that new users need help and advice that an in-box magazine can provide and Interactive Publishing has the ability to provide the ideal publication", said an Atari spokesman.

It will also be available to buyers of 1040 machines for whom Atari is bundling a 1040STE with a range of productivity software for £499.99.

Art on the STE

AS rumblings continue about software incompatibility problems with Atari's STE, the company is soon to launch its first STE specific product.

It is version 2.0 of HyperPaint, an upgrade to the popular art package which is designed to make full use of the STE's capabilities, including a 4,096 colour palette and improved scrolling.

HyperPaint will cost £24.99.

ST fully under control

GFA Data Media UK (0734 794941) has launched Mission Control, a shell environment for the Atari ST aimed at solving problems for software developers and those who use productivity tools.

Learning has never
been such fun!

fun school

Fun School 2 for Over-8s contains:

- **Build a Bridge:** Shape-fitting challenge
- **Passage of Guardians:** Enjoy anagrams
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- **Logic Doors:** Mapping made easy
- **Souvenirs:** An introduction to travel
- **Code Boxes:** Discover binary arithmetic
- **Mystery machine:** Have fun breaking codes
- **Escape:** A final check on progress



Fun School 2 for 6 to 8 year olds contains:

- **Number train:** Calculations made enjoyable
- **Shopping:** Which shops for which products?
- **Maths Maze:** Fun improving arithmetical skills
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- **Packing:** Discover tessellating shapes
- **Caterpillar:** Word building challenge
- **Number jump:** Have fun practising tables

Now children can really have fun while learning. Fun School 2, designed by a team of education-
alists, is available for three age groups: Under-
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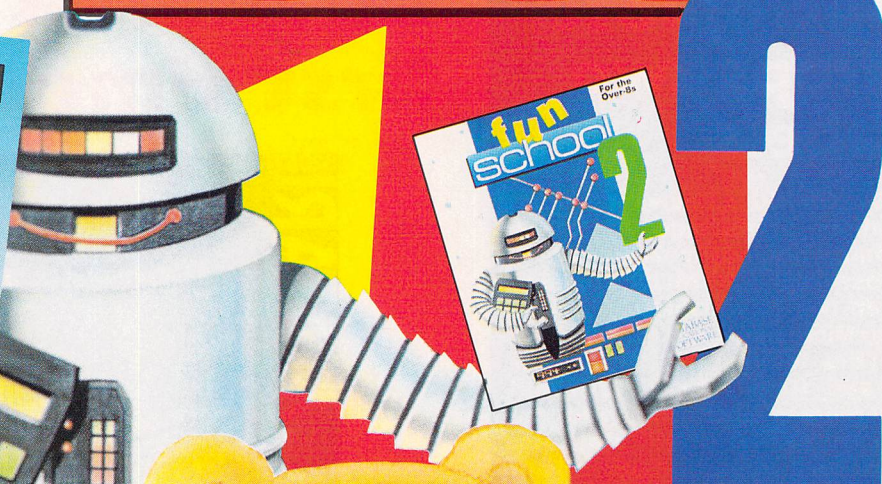
Now children can enjoy using their parents'
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Amstrad CPC	6179	6180	6181	6182	6183	6184
BBC Micro/Electron	2239		2242		2245	
BBC B+/Master 40T		2240		2243		2249
BBC B+/Master 80T		2241		2244		2250
Atari ST		9192		9193		9194
Amiga		9842		9843		9844
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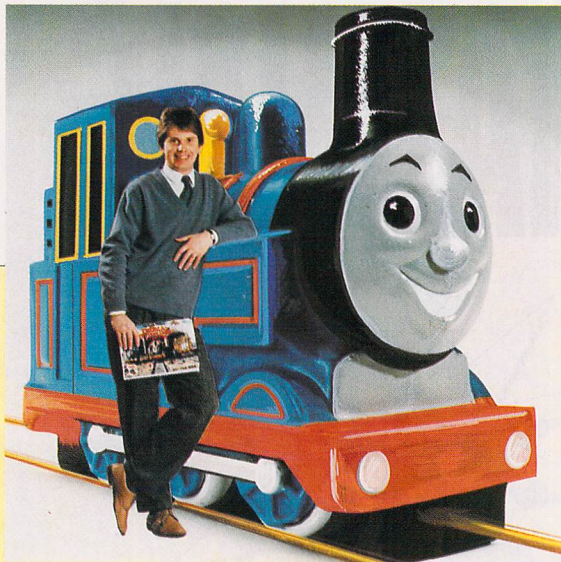
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Taught on the right lines

THE game now leaving Alternative Software (0977 795544) is that children's favourite Thomas the Tank Engine.

Along with his friends Percy, James, Henry, Terence and Edward plus the Fat Controller, Thomas is the latest licensing deal for Alternative following hot on the heels of Postman Pat. Players have a time

limit to guide Thomas through eight tasks including taking children to the seaside, delivering coal and oil while avoiding problems and without coming off the rails.

A special facility has been built in for the very young who can just drive Thomas around the tracks to different locations accompanied by his theme tune. Cost, £9.99.

Packing in better music

FOR the beginner, music making with computers is a world full of complex equipment and confusing terms. Roland UK (01-568 4578) aims to solve these problems through its new package designed with the amateur in mind. The Desktop Music Pack contains everything the newcomer needs to make beautiful sounds with an Atari ST.

"The pack has been put together because we believe there is a whole new market for people with Atari STs who don't think they are musicians but wonder what that little socket (the Midi port) on the back of their machine is for", said marketing manager for Roland, Alan Townsend. "The Desktop Music Pack is designed for players who would like to add more professional sounds to their games and for computer owners who would like to create music with their machine and a sequencer. These peo-

ple may not know anything about musical instruments so the package has been made very very simple for them to use".

Desktop Music Pack includes a CM32L module which makes the sound, a new and easy to use sequencer called Tiger Cub from American firm Dr T, and scorewriter Copyist Apprentice, also from Dr T.

The Tiger Cub software package allows multi-timbraling with users sequencing and recording data for playback using rhythm and eight different instruments playing at the same time out of one box.

Copyist Apprentice is compatible with Tiger Cub and runs simultaneously through Dr T's MPE switch system. It is an improved version of the Quick-score score writer.

Also included in the pack is a utility desktop accessory disc which helps set the module's reverb and tuning, three Midi leads and two audio leads for connecting the system to hi-fi.

The whole package costs £469 which is claimed to be a saving of £80 on the price of the equipment bought individually.

Line to Frontline

THE number given for software house CCS in last month's news story on strategy wargame Frontline has now changed. The new number is 01-985 7232.

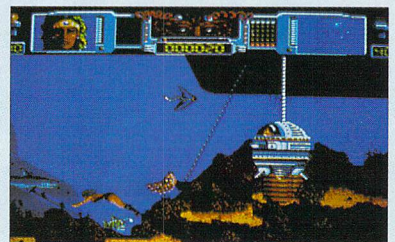
SOFTWARE HOTLINE

LATEST release from Activision (0734 311666) is coin-op conversion Ninja Spirit featuring parallax scrolling on seven levels.

Armed with deathstar, dynamite and lasso razor blade, the player has to catch energy-giving crystals to fight nasty Ninjas, wolves and the Last Warlock. Price, £24.99.

For imminent release on the company's Vivid Image label is Hammerfist, aimed at arcade adventure specialists who enjoy skilled and varied fighting.

It is set in a futuristic society desolated by Metro Holo-



Hammerfist

graphix, a corporate body which operates holograms so powerful that they have taken over the two main cities of the planet. The weapons of cybernetic Hammerfist must be used to beat the enemy forces. Price, £24.99.

Warhead completes the new trio of games from Activision. A space simulator, it combines both strategy and arcade action and is set in the middle of the 21st century when Earth has been attacked by an insect-like alien nation. The population form a Fist of Earth World government to retaliate with Foe '57 fighter vessels. Warhead has 39 missions and more than 30 hours of solid play. Price, £24.99.

★ ★ ★

HEWSON (0235 832939) has launched Premier Collection 3, the latest in its line-up of games bundles.

Premier Collection 3 includes space shoot-'em-ups Quadralien and Cybernoid II; a computer version of the pencil and paper game Battleships and Archipelagos, the 3D game with 9,999 landscapes. Price, £29.99.

MUSIC TRAINING COURSE £39.95

Previously
£113.85

The amazing MusiCAL software from Evenlode Education is a powerful new Interactive Computer Aided Learning software package suitable for anyone wanting to improve their understanding of the rudiments of sound and music. The software, which runs on a 520ST, employs the very latest techniques teaching you how to compose music utilising the basic constituents of Sound, Notes and Rhythm.

Within mere hours you could be making Music!!

What the Press say....

Ian Waugh. Music Technology - "The dedication and effort which went into the creation of the package is enormous....."

Paul Burrell. Times Educational Supplement. - "This is not the first programme for the Atari aimed at education but it is certainly an important step forward."

Can be used as stand alone or with any MIDI instrument
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STU

It's the Powerpack plus deal

BUYERS who opt for the Atari 520STE Powerpack are being offered the chance to "add-a-pack" by Merlin Express (0602 424444).

If they pay £25 on top of the price of £354, they can choose from one of five Sorcerer's packs to go with it.

Biggest saving is on a software pack worth £135. It includes HyperPaint, HyperDraw, Borodino, a £50 Atari Mindgames discount voucher and ST Basic with a 240 page manual.

Atari ST User features in the second offer which includes a free 12 month subscription, binder and quality mouse mat worth a total of £40.

Worth £50, the third choice includes

a mouse mat, dust cover, disc storage box, 10 blank discs and a games joystick.

Atari's VCS2600 games console, a Centipede games cartridge and joystick worth a total of £39.95 feature in the fourth pack and the fifth offer is hoped to include an Atari branded pack, likely to be a calculator.

"We're trying to provide our customers with something different", said Merlin's Gary Anderson. "If customers take advantage of the new Sorcerers Packs, they'll be able to buy their new ST plus a pack for less than the recommended retail price of the machine alone".

A date for designers

BY manipulating vector graphics, an art package under development in Canada promises to give Atari ST users mouth-watering scope for producing special effects combining text and images.

Called Outline Art, it is to be launched by ISD Marketing, the firm responsible for Calamus and Dynacadd.

Utilities included in the program allow images to be produced in variable grey scales from white to black and the package gives users extensive design capabilities thanks to its full text flow features.

The UK debut of Outline Art and its price are not yet fixed. ISD in Ontario can be contacted on 0101 416 479 1880.

Centre offers C courses

WESTWIND Computer Centre (0952 56573) is offering programmers training courses in the C language.

"The courses will be ideal for any person who wishes to program seriously", said Peter Wright, director of the training centre. "For people who may live some distance from our headquarters in Wellington, Shropshire, we will be happy to run courses at weekends as well as working days and arrange guest house accommodation if there is sufficient interest".

Peter is an experienced scientific programmer who has worked with giant databases of weather data at universities and institutes in several countries. He founded Westwind Centre in 1988 offering courses in a range of computer packages as well as programming and meteorological services. The centre is based at 13B Church Street, Wellington, Telford, Shropshire.

Ocean cops it

OCEAN Software (061-832 6633) has secured the licence to produce the computer game of Robocop II despite speculation that rival firms were poised to outbid it.

The Manchester-based company has confirmed its successful negotia-

tions with Orion Pictures and is now starting development of the new game which is destined for a Christmas release. Ocean produced the first Robocop game which took the charts by storm and is working to repeat that success with the follow-up.

Software men meet

SOFTWARE developers from America, the Far East, Europe and the UK were due to attend a conference held by Atari on March 27 and 28.

A spokesman reported keen support for the event at the conference suite attached to the Williams racing car premises at Didcot, Oxfordshire.

"This is a major international initiative by Atari UK and will be aimed primarily at software developers working for the STE and Lynx", he added.

SOFTWARE HOTLINE

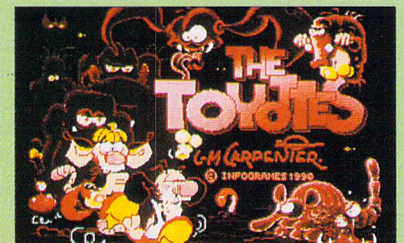
FOUR comic super-heroes Flash Gordon, Mandrake the Magician, Lothar and The Phantom join forces in Defenders of the Earth, the latest games offering from Enigma Variations (0423 501595).

Based on popular BBC 1 programme The Defenders, the



Defenders of the Earth

arcade action game sees the four heroes trying to outwit Ming the Merciless in his bid to become master of the world. Flash enters Ming's fortress to fight the Men of Frost. Lothar and Phantom break down the steel doors and Mandrake uses his mystical occult powers. Price, £19.95.



A RACE of small purple rats are the heroes of Toyottes, the new game from Infogrames (01-376 8799).

An arcade action game based on a comic series by Belgians Raoul Cauvin and Louis-Michel Carpentier, it follows the fortunes of the Toyottes - rats which have been forced to live underground after the apocalypse has wiped out the human race.

The player must guide soldier rat Cyprian through a 3D maze of rooms in his quest to rescue the king's son Barnaby. Cyprian must collect objects which will help him fight the Gnaps, the Mercenaries, the Cyclops and the magic Snarkbull. Ladders, pipes, stairs and doors connect the rooms and action happens against the clock. The price has not yet been fixed.



NEWS

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CMV is proud to present its new Central London ATARI Centre. It has been created with the purpose of assisting any ATARI ST user in the use of any product he may not be familiar with. You may make use of our service either through a personal visit, or by calling us whenever you need help or advice.

As of next month, all registered users of our service will receive our free catalogue, which resumes the whole range of products available for the ST computer, as well as our periodic newsletter, in which we shall inform about all the new products coming up, about changes in price or specifications of existing products, and about our many monthly offers in hard- and software.

Also, in the next issue of this magazine you will find a selection of our products and some of our special offers.

Finally, we should like to thank this magazine and the many of our suppliers for their friendly cooperation.

COMPUTERS

We stock all models of the ST series and all its peripherals: monitors, disk drives, harddisk, printers.

Any product we sell will be ready for use: computers include a special startup-disk, printers include printer-drivers for the programmes you are going to use, hard-disks are installed for automatic boot-up, etc.

NEW PRODUCTS

will be made available quickly. You can already come to see the portable STACY and the STE, and the TT series will be here within short.

We do not pretend to compete with discount stores. However, we shall try to equal any reasonable price without cutting down on the service.

ACCESORIES

We supply all kind of material, directly importing it from other ST countries whenever there is no comparable national product: sound digitizers, video digitizers, scanners, genlocks, graphic tablets, real time clocks, emulators, stereo sound amplifiers (STE series), memory upgrades, EPROM burners, modems, all kinds of leads and plugs, printer ribbons, disks, dustcovers, mousemats, joysticks, paper, toner, and many other products.

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- mouse mat, dustcover, disks and cleaning disk

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Lots of colour – especially green

AS well as launching into full-colour, *Atari ST User* is going green. Future issues will be printed on paper manufactured in a way which is kinder to the environment.

Publisher, Interactive Publishing, is to use paper made in Europe under the tight ecology rules imposed on mills there.

To reduce tree felling, it comes from the waste off-cuts of other wood processes such as furniture making also employing a new chemithermo-mechanical process which makes more economical use of wood than older methods.

Coating of the paper further improves the environment by using slurry from the Cornish china clay industry. Strict water purification plays an important part in its manufacture and the potentially damaging effects of chlorine bleaching have been eliminated. The paper comes from wood grown in the forests of Finland and Sweden where meticulous records are kept and trees are grown to maturity faster than they are felled.

"When we decided to move over to paper made by more ecologically sound methods, our problem was to find a quality product which would support Interactive's improved production technology", said the company's commercial director David Hirst.

"We believe we have now found the right answer. This paper cuts down the use of natural resources, eliminates potentially harmful processes but will allow us to retain the high standards of print and colour reproduction which readers of *Atari ST User* have come to expect".

Name the game

PROGRAMMERS who want help with creating their own games can now get it from a new book published by John Wiley & Sons. Author of the STOS manual Stephen Hill has produced *The Games Maker's Manual* covering STOS Basic. The 296 page manual costs £11.95 from John Wiley at Baffins Lane, Chichester, West Sussex, PO19 1UD.

Bloodstone adventure up and running

HERALDING the birth of a whole new concept for multi-users games, Bloodstone is now up and running exclusively on electronic communications service MicroLink (0527 67585).

Already drawing a large following, it has notched up a number of firsts in the world of multi-roleplaying adventures. Bloodstone is the first 24-hour, none reset game of its kind and the first to offer total freedom of movement in three dimensions.

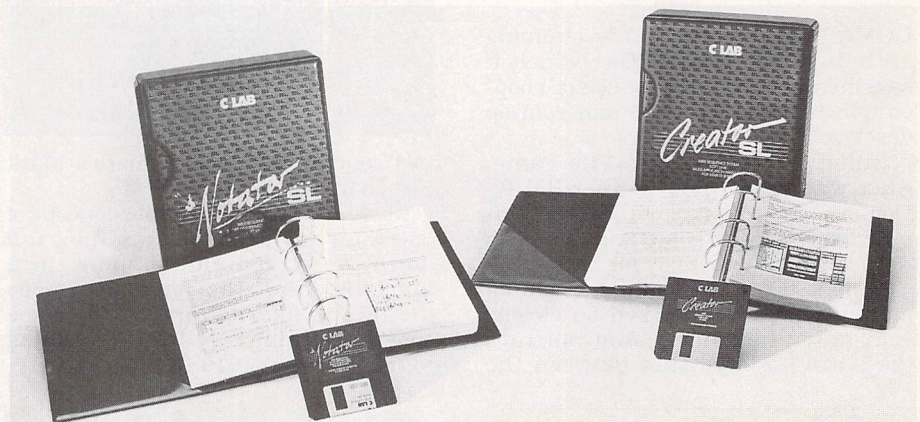
Up to 256 players can take part combining loving, killing, buying and selling in an environment which can be constantly changed.

Realistic combat routines rise above the fighting in other games not relying solely on strength. Dexterity, help from other characters, weapon and armour strength are taken into account to give battle a whole new dimension. Other new features

include buying and selling, a "peer" facility allowing players to see great distances, a "think" command so players can communicate telepathically, use of spells, the ability to teleport yourself to other levels and "polymorph" allowing the player to change from a human into an insect, monster or other life forms.

"It is an escapist's paradise", said project co-ordinator for Bloodstone Ltd, Tony Cox. "If you wanted to you could practically live your life within the game, escaping from the real world, meeting other people and taking on a completely new character".

Devised by author Rob Muir, Bloodstone covers 14 levels with players aiming to rise to the rank of Lord. There is no surcharge for MicroLink subscribers who play during the day but a charge of 3p a minute is levied after 6pm.



Musical update

SOUND Technology (0462 480000) has announced Version 2.2 of its top selling music software Notator and Creator. Version 2.2 includes SoftLink, C-Lab's new multitasking environment for the Atari Mega 2 and Mega 4 which lets users to run up to eight additional programs interactively with both Notator and Creator. Other new features

include P-User commands to automatically load a song from disc and the ability to name a pattern window while automatically naming its corresponding entry in the arrange list and user defined dynamic groove.

Upgrade charge from Version 2.1 is £10. For new users, Creator costs £299 and Notator £499.

New mouse is real smoothie

KEMPSTON Data (0234 855666) has announced the Kempston Daatamouse, a high resolution mouse for the Atari ST.

It features a new ergonomic design, 250dpi resolution plus two high-quality microswitch buttons to give positive, tactile feedback.

Five teflon glides are included to give a smooth movement and a silicon rubber coated ball can be removed for cleaning. A special feature of the Daatamouse is a distinctive profile on the left-hand button to help users locate it without taking their eyes from the screen.

Available with an anti-static mouse pad, Daatamouse costs £34.99.

ST fully under control

GFA Data Media UK (0734 794941) has launched Mission Control, a shell environment for the Atari ST aimed at solving problems for software developers and those who use productivity tools.

Saving search time for users with a large number of programs on their hard disc is the prime function of Mission Control. It can initiate up to 10 programs located anywhere on the disc and for repetitive processes such as editing, compiling, linking debug and testing, it can call up a series of programs in the right order. It costs £29.95.

Also now available is GFA's Gem

utility package or GUP, another of the successful range of supporting products for the GFA Basic Interpreters which recently topped the 150,000 sales mark.

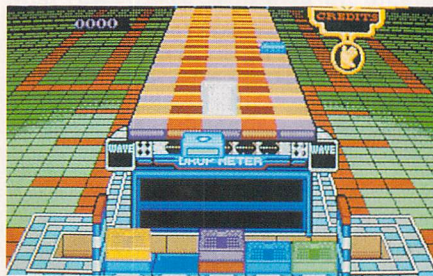
Designed for programmers who have neither the time nor experience to fully understand all that is needed to use Gem functions, the utility package is a framework of Gem procedures which the programmer can merge into his own program. It will take on the responsibility of managing the intricate Gem interface leaving the programmer to concentrate on the main program. Supplied with a 60 page manual, GUP costs £29.95.

The coin op connection

DOMARK (01-780 2222) is claiming an industry first with Klax which it says heralds the dawn of closer cooperation between software and coin-op developers.

Billed as the Tic-Tac-Tile game, Klax was developed in parallel by Domark and Tengen both as a computer and coin-op game and has been released simultaneously for both.

"This is the first time that a coin-op manufacturer has worked so closely with a software house and portrays the strong relationship between the



two companies", said Domark's Mark Strachan.

Klax is based on a simple concept of catching coloured tiles as they roll down the screen and slipping them into bins below. The aim is to arrange the tiles in lines of three of the same colour with different features adding to the fun. Price, £19.99.

Keeping an eye on the weather

VIOLENT changes in our weather patterns over recent weeks have altered the public's views on forecasting.

Now, the advice of Michael Fish and his colleagues is often a matter of personal safety rather than a warning to put on an extra sweater or take out an umbrella.

ST owners who want to know when the next hurricane winds or torrential rain are coming can now be forewarned without leaving their keyboards.

ICS Electronics (0903 731101) has claimed a breakthrough in low cost home computer weather systems with its MET-2 geostationary satellite receiving package.

It allows the ST to receive weather signals from the European Meteosat 4 satellite situated over the equator and the Greenwich Meridian. Detailed cloud-cover pictures of Europe in full colour are updated every half hour.

While the idea is not new, ICS claims its price of £689.95 is cheaper than many similar systems already on the market.

The basic set-up includes a receiver and pre-amplifier, a three metre long Yagi antenna, a mains power supply, 20 metres of antenna cable and the necessary software. In the UK, the antenna must be facing south with an elevation of approximately 30 degrees.

Goodbye to line noise

LAUNCHED this month is a new modem designed to make online communications easier for the non-expert.

The EuroLink modem is the latest of the new generation of modems operating at speeds up to 2400 baud. It also incorporates MNP error correction, which puts an end to what has been the biggest bugbear for many comms enthusiasts - line noise.

The modem is ideal for use with MicroLink, which also uses MNP error correction at its telephone access points throughout Britain.

Price is £259.95 (VAT included), and this includes the Mini Office Professional Communications package, which normally sells for £24.95

● Details of the offer are given on Page 117.

Classical touch for Midi music

FROM his home in Hastings, a talented classical musician has shown budding composers just what can be achieved with Midi equipment.

Atari fan Nicholas Hassall recently launched his first compact disc of light classical music entirely made with the latest electronic computer technology.

Heard for the first time at a launch in the Cinderella Bar of The London Palladium, the CD is called "Nicholas Hassall Introduces the Birth of the Classical Synthesiser" and includes 16 original compositions.

It was played entirely on a piano-weighted Midi keyboard and was recorded as a Midi digital performance on a Yamaha QX3 sequencer.

Nicholas read from full score, line by line, layering each line of music one above the other into the sequencer. The final performance, stored in ram and on floppy disc was then edited to remove wrong notes and correct timing errors.

"Some errors were left to retain a human feel to the performance and to avoid the criticism of the musical fraternity that the composer is attempting to usurp the pre-eminent position of the live professional musician", said Malcolm Pereira of London Music International (01-486 2636) which is marketing the CD.

As well as composing the music, Nicholas also took part, playing his flute into a digital sampler then reproducing the sound over the entire range of the keyboard.

From a family with a strong but more traditional music background, Nicholas wanted to compose from the age of seven.

"Digital Midi technology made my ambition to compose more accessible by providing scope for individual creativity not always possible when working with an orchestra or performers", he said.

He is now working on his next classical synthesiser collection.

COLORADO

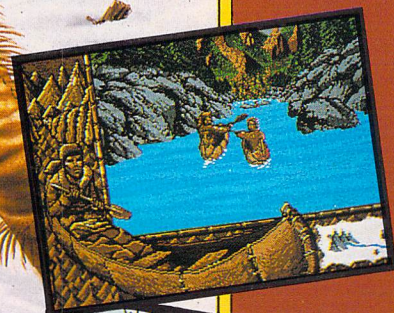
100 SCREENS OF BEAUTIFULLY ILLUSTRATED 3D ARCADE ACTION.
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Colorado 1880. David O'Brian, a penniless trapper, canoes up the South Platte river in search of adventure and riches.

Deep in the wilderness, he meets a dying Cheyenne Indian. Vowing to bury him in the style of a Warrior, O'Brian is rewarded with an ancient map showing the way to the legendary Lost Gold Mine of Pocahontas.

The route will lead him through Pawnee territory, the most fearsome of Indian tribes, across hostile wolf-infested land... and means he must shoot the terrifying white-water rapids of the Colorado in a flimsy Buffalo-hide canoe. But there is no going back now for O'Brian is haunted by the scent of Gold.



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Do you ever have to print names and addresses at awkward places on envelopes, or do you ever need to fill in tricky forms or invoices where the text has to be in exactly the right place? Usually you have to do it by hand, or get your trusty old typewriter out of the cupboard and dust it off. Well not anymore. The Emulated TYPEwriter transforms your computer and printer into a fully fledged typewriter, supporting bold, underline, italic and other type-styles. Because it can display and print text INSTANTLY you can line up your form, press Return and Space a few times to move to the correct place, and then start typing. Alternatively you can switch to line-by-line mode, which offers word-wrap, justification and proportional spacing, so that you can edit each line before it's printed.

£39.95

PERSONAL TAX PLANNER

Are you absolutely sure your taxman is doing his job correctly? Plan your own tax with ease, this menu-driven program will calculate your income tax liability (4 tax years included) and provide pertinent facts about your tax position. You can perform "what-if" calculation to discover ways to minimise your tax liability. In fact, the program will advise you on things such as, if you are a married man, whether it would be advantageous to have your wife's income taxed separately or not. At this price who knows, you will probably find that PTP will pay for itself in tax savings the first time you use it!

STOP PRESS

July 89 – PTP user receives tax refund of over £2,000!!

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If you ever need to send out mailings or print labels, you know how fiddly and time-consuming it can be making sure all the labels are printed correctly. Well now all that's a thing of the past. Because Mailshot actually shows you the labels on screen, you can type names and addresses in exactly the correct place. But more than that, the labels are animated on screen as a continuous sheet, allowing you to scroll backwards and forwards, to search for particular keywords or to edit entries with the minimum of fuss. Facilities include searching, detection of duplicate labels, sorting (even surname!) 9 labels across, 999 copies of any label. This has to be the simplest and most effective method of creating a mailshot available.

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Advanced version of Mailshot for the business user with the following extra facilities:

- * integration with other software (using ASCII files)
- * column/tabulated summary (ideal for telephone lists, etc)
- * 4 extra memo lines per label (with defaults)
- * system for coding, dating and adding messages to each label
- * different layouts available for horizontal and vertical justification.

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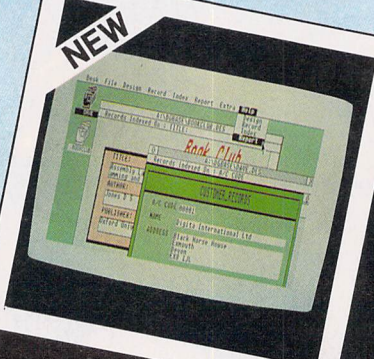
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NEW



DGBASE

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Simplicity itself, DGBase comes on one disc which includes on-line help and limited only by the capacity of your ST and your imagination!

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NEW



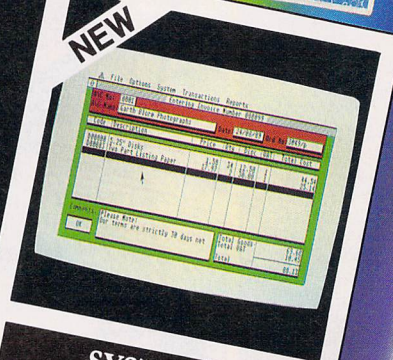
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- * 199 nominal account titles, most of which are user definable.
- * Observes accounting procedures and meets legal requirements, assuring correct approach to book keeping.
- * Full audit trail and integrates with Final Accounts.

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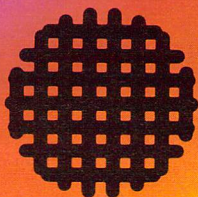


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GALLUP

software chart

This month	Last month	Title (Software House)	Price	Month reviewed in Atari ST User	Comments	Marks from 10
1	2	CHAOS STRIKES BACK <i>Mirrorsoft</i>	24.99	April 1990	So you thought you had mastered the dungeon? Well FTL has a few surprises in store for you. Well worth the sleepless nights.	9
2	NEW	OPERATION THUNDERBOLT <i>Ocean</i>	19.99	May 1990	Arcade conversion time again with the sequel to Operation Wolf. Rescue hostages while dodging jets, tanks, helicopters.	8
3	1	BOMBER <i>Activision</i>	29.99	Oct 1989	Vektor Grafix's much vaunted multiple polygon simulator. The zoom and alternative views of your aircraft make it special.	9
4	9	ADVANCED SKI SIMULATOR <i>Code Masters</i>	4.99	*	Yes they're here and at a budget price too. Missed out on the snow this year? Then this is your chance to catch up on the piste.	●
5	3	CHASE HQ <i>Ocean</i>	19.99	March 1990	Out Run in a new suit, but far better. Similar in graphics and style, your Porsche chases the villains across America.	9
6	5	BATMAN: THE MOVIE <i>Ocean</i>	19.99	Feb 1990	Beautiful graphics and superb use of linking screens. Certainly one of the best film conversions ever. Atmospheric, but difficult.	8
7	NEW	PLAYER MANAGER <i>Anco</i>	19.99	May 1990	The latest from Anco's superb football stable. Up against some stiff opposition with a lot of new releases in World Cup year.	8
8	NEW	RAINBOW ISLANDS <i>Ocean</i>	24.99	*	Bubble Bobble heroes return to a New Zealand Story-type setting. Chase rainbows and kill your enemies with them.	●
9	7	GHOULS AND GHOSTS <i>US Gold</i>	19.99	Feb 1990	Manages to capture the balance of addictive, unusual and extremely tough gameplay found in the original coin-op. One to look out for.	9
10	6	HARD DRIVIN' <i>Domark</i>	19.99	Jan 1990	Will meld itself to your abilities. The harder you drive, the greater the thrill, and the simulator makes for exciting driving.	9
11	NEW	CAPTAIN BLOOD <i>Smash 16</i>	4.99	April 1988	French styling, effects and graphics at their best. Jean-Michel Jarre's music and a plot line which is different, an absolute must.	10
12	12	EXTRA TIME <i>Anco</i>	9.95	May 1990	If you've already bought Kick Off you might now need a new challenge. So go into extra time with some new playing surfaces.	8
13	NEW	FUTURE WARS <i>Palace</i>	29.99	March 1990	A puzzling graphic adventure. But if you enjoy a challenge this Tilt d'Or award winner is one to add to your collection.	8
14	8	GAZZA'S SUPER SOCCER <i>Empire</i>	24.95	May 1990	Peter Beardsley move over, as a new superstar adds his name to one of the many new football games playing on an ST near you.	8
15	4	GHOSTBUSTERS 2 <i>Activision</i>	24.99	Feb 1990	Well who are you going to call? You can't fault the graphics, and as a conversion it's true to the original film. Recommended.	9
16	16	KICK OFF <i>Anco</i>	19.99	July 1989	One of the fastest and best simulations so far. With realism, thrills and unrelenting action, it will take some beating.	9
17	18	TV SPORTS FOOTBALL <i>Mirrorsoft</i>	24.99	Sept 1989	Never have so many been so addicted in so short a time to any sports simulation. All power to their padding and visors.	10
18	19	ROBOCOP <i>Ocean</i>	19.99	Sept 1989	Stylish but a little sluggish. However, there is some good digitised speech and the gameplay of this conversion holds up well.	9
19	NEW	DRAKKHEN <i>Infogrames</i>	29.99	April 1990	With all the required elements to make it a classic, plus an easy to use icon interface. But it verges on the frustratingly difficult at times.	7
20	13	TREASURE ISLAND DIZZY <i>Code Masters</i>	4.99	*	Remember Dizzy? If so and you would like to renew your acquaintance, here's your chance. He's had a face-lift too.	●

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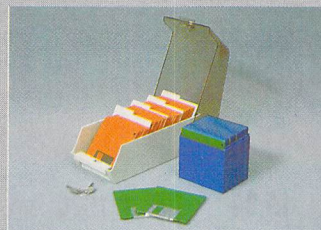
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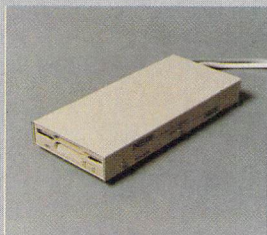
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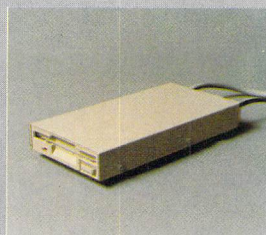


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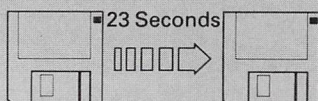
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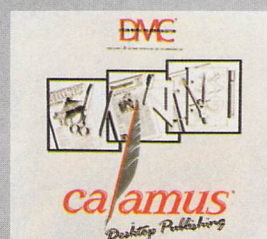
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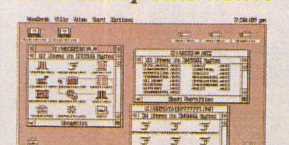
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Away the lads!



Paul Rigby blows the whistle on 12 contenders for soccer stardom

HERE we go, here we go... The FA Cup final is now only weeks away and already tension and excitement is beginning to mount. But even that pinnacle of footballing prowess is about to be overshadowed by a more global event early this summer – the World Cup.

There will be football on BBC 1, football on BBC 2, football on ITV and yet more football on Channel 4. And as if that isn't enough to satiate the most ardent football fanatic's appetite for this national sport, to cap it all there will be a dozen or so football simulations, arcade games and adventures running on your ST's monitor, too.

There's just no getting away from it!

There have been a few soccer simulations over the past couple of years, but this month everyone appears to have gone football crazy. Here we present a roundup of the best on offer, though this is by no means a complete list – that would fill half the magazine!

Football games are an enigma. Thousands of com-

puter users, across all formats, constantly criticise this game for poor graphics, that game for terrible sound and yet are perfectly willing to sit in front of a computer screen, staring at reams of figures relating to league tables, players' form or the gate for last week's match at Rochdale – all in pure silence.

Most of the more action-oriented football games are not much better, graphically and aurally. So what's the hook? Probably the fact that football is our national sport. How many lads – and lasses – have visualised scoring the winner at the local Derby? When gamers play football manager or action games they subconsciously pull on that number seven shirt or sit, biting their nails, in the dugout – or stand in the dugout if you're Kenny Dalglish.

The ST has, fortunately, been blessed with a positive gamut of football games, both of the action and strategy type. One of the first to appear was Microprose's own Soccer game. This set the trend for the overhead viewpoint which was first

seen in the arcades. Unfortunately, the poor horizontal scrolling slowed the game to a pedestrian pace and the method of shooting on goal proved too cumbersome.

On the other hand, probably the best action game is Anco's Kick Off. While not perfect, it contains a rich blend of features and pure excitement. In an effort to capitalise on Kick Off's success Anco produced its Extra Time add-on which includes a variety of playing surfaces such as soggy and artificial, as well as crosswinds, four new tactics, nine types of goal kicks, new referees, new player attributes and so on.

The trouble with this disc is that while many of the features are well intentioned, they do not quite work. The different pitches don't really have much affect and the variable power on your shot slows the game down tremendously.

However, before you make any decisions about what game you would like to buy, check out the other reviews – you know it makes sense.

Ain't that right Brian?

GOOD grief! Talk about feature packed! **Football Crazy** from ESP is a development of a tremendously successful PD game called Football '88. Anyone who has played that game or who is thinking about whether to get it – don't. Upgrade and buy Football Crazy instead.

This is a pure strategy tussle which introduces the revolutionary concept of allowing up to four players to participate at once. A first in a strategy game of this kind. I've played a few football strategy games in my time, but my eyes lit up when I saw the specification list for this one.

Some of the highlights include the introduction of all internal and European cups – seven in all including the Zenith Data Systems Cup and the Leyland DAF Cup – the possibility of being approached by a big club to be their manager, promotion from the GM Conference, in-depth

PREVIEW

Manchester United

Krisalis (0709 372290)

ANOTHER superb offering from Krisalis wearing the official Manchester United strip. Divided between management and match this scores very highly on graphics. Digitised and retouched pictures of the current United team greet you, and you can indulge in a little day dreaming by adding your own name to the team.

The players can be trained, transferred for better players, suspended or injured.

The manager, too, can be altered and you can place your own name in this lofty position.

Difficulty levels can be altered for goal, mid-field, defence and attack positions. Full league tables are accessible with fixtures past and present. A judicious piece of editing can place your local team in the league too.

The arcade/match section gives you a side-on view and you can play this in three modes. View is for those who want to concentrate on the management section, which offers the edited highlights. The two-player option will allow you to play the opposition, Manchester United or both. With full eight-directional movement, sliding tackles (watch out for fouls), headers, lobs, long and short shots there is everything for even the most ardent supporter.

Yet this is not just for those with the red and white scarves, it is a fine game in its own right.

PREVIEW

Italia 1990**CodeMasters (0926) 814132**

GRAPHICS are definitely the hot property of this one, but with five graphic artists working on it, so it should be. The game is in two parts: Training and matches. You can't become a great footballer without training, so you must endure the rigours of press ups, 100m sprints, dribbling, sit ups, squat thrusts and weights. You

can skip this and go directly to the match. Not a lot of skill needed to move your players around, and tackling is accomplished by crossing in front of your opponent. There are three kick options – low ball, chipped and high ball – all accessible by joystick or keyboard.

Ask three friends around and you can all play – two players control each as you attempt to qualify for the cup final. Quite a good game with nice movement and scrolling and though the sprites are small they are clear.

Microprose (0666 504326)

STILL under development but due out soon is a Red Rat programmed down-on-the-pitch view of football on the international scene. Aimed to time for the World Cup, Microprose is planning for a longer shelf-life as it is applicable to other international matches.

A 3D polygon field with sprite players promises excellent use of the ST's graphic capabilities.

There is no management aspect to this game, but player control has two options. You can

Microstyle International Soccer

control the player nearest to the ball or if you prefer you can stay with one player all the time, passing to your computer-controlled team mates and moving into position.

A touch on the fire button will signal for your colleague to pass, but you must be in the correct position.

Emlyn Hughes International Soccer/Super League Manager**Audiogenic (01-861 1166)**

THERE are two approaches to creating a best-selling football game either write something which is fun and playable or write one which has a famous player on the box. Audiogenic, however, has combined both approaches in Emlin Hughes International Soccer (EHIS).

The game features artificial intelligence, and how a player reacts to where the ball is and what is happening on the pitch depends on a number of AI rules.

Overlaying the cunning AI is smooth sideways scrolling, sampled sound effects and good graphics. There are 112 sprites which means smooth running players who can head and slide. Shadows on the ground and the ball's realistic bounce add to the feel.

A split palette allows more than the standard 16 colours on screen and in the sound depart-

ment, David Whittaker's music is a lampoon of every naff football tune you ever heard. The crowd's chants are quite realistic, too.

Each game requires you to plan your strategy before the match and options allow you to alter the playing time from two to 90 minutes. There are one and two-player games which includes two humans against the machine, who's skill can be set.

As you improve you'll want more control of the ball, so there is a choice between three and five directions of kick.

Competing in the league is tough, and you'll want to keep an eye on who is doing what. The computer can list teams, players, fixtures and results in a number of ways.

Super League Manager, available in about a month, is a game in its own right but will also allow you to wear the manager's hat. Watch this space for further developments.



transfer system, deteriorating skills of ageing players, a printer facility, and a record of the statistics from the last six years, which means that you can draw up a comparison with your next opponents from past meetings.

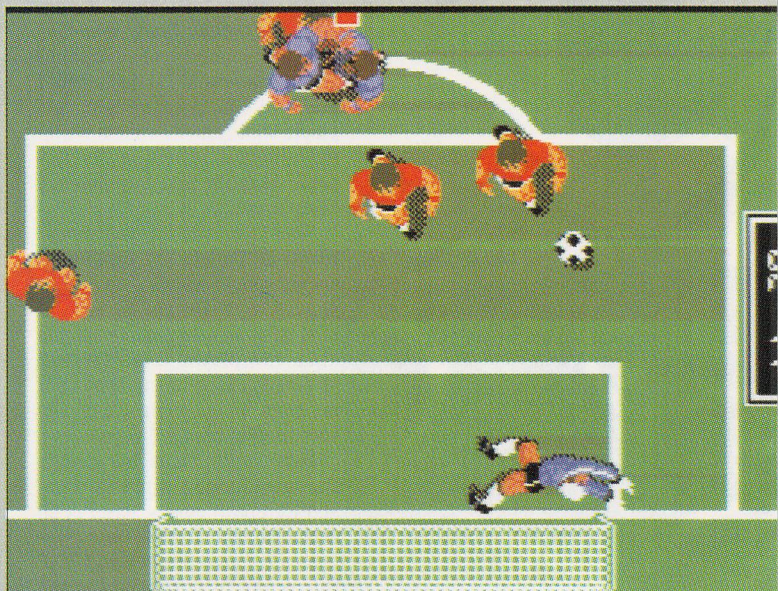
It also keeps a record of the seven cup finals and teams as well as the top two teams of all four divisions. Again this is handy for comparative purposes. The list goes on.

The only feature I missed was

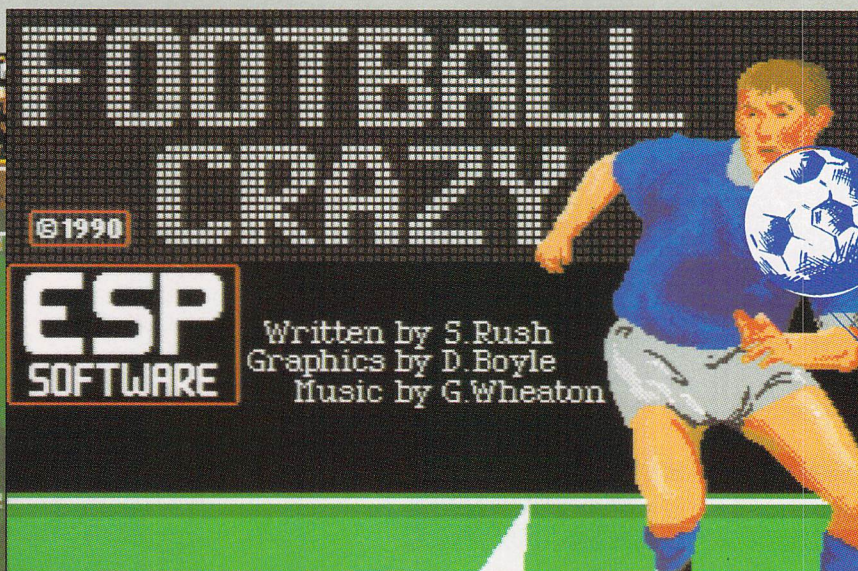
the lack of any highlight routine during match time, whether it be the Football Manager or Player Manager live action type or the Tracksuit Manager text type. Football Crazy just displays a result, which is a bit of an anticlimax. Also I would have liked to have seen players' morale affected by defeats, not just mass transfers.

Apart from these omissions, Football Crazy is a cracking strategy game.

Like the arcade versions of the



Fighting Soccer's chunky graphics



Real action
with Gazza

football action games, Activision's **Fighting Soccer** is viewed from above, with the action scrolling to keep the ball in the centre of the screen. You have a five-player team and the nearest man controls the ball. Your aim is to win the Olympic Gold Medal.

All of the normal football skills, such as dribbling, shooting and heading are included, and you can also foul a player. Graphically, the game is very good, with some excellent animation. To supplement this, good use of perspective is made with the ball and player increasing in size as they leave the ground - to head the ball, for example.

There is little sound, but when it makes an appearance it is quite good but not outstanding. The

referee makes comments - although you won't understand a word he says - and it is a pity there is no crowd noise.

While the majority of play is well designed, the fouling and heading manoeuvres are poorly implemented. In addition, I hated the mutated pitch which was far too small. Overall I was disappointed with **Fighting Soccer** which, apart from the other negative aspects, was just too difficult to control, producing frustration all round. An early bath for **Fighting Soccer**.

If there is one thing that gets on my nerves it's Elton 'I'm one of the lads' Welsby interviewing people like Paul Gascoigne and saying "Well, Gazza...". Anyway, you've seen the footy boots and the footy kit, now here's the action footy game from Empire, **Gazza's Super Soccer**.

The graphics are fairly good with a few wimpish sounds to accompany the action. The play is for one or two players who can play in a league and cup competi-

tion - custom-built leagues are an option.

In the usual manner, player control is seen via a small flashing marker above his head, and you can also control the goalkeeper. The strength of shots is controlled by the time you keep the fire button pressed. A Boot-o-Meter is provided for you to keep track of the required strength needed. Tackling is possible, but you'll need to get in close.

On the whole, control, shooting and passing is implemented quite well. The main oddity is that once you run into the last third of the field, the view changes from a side-on to a view looking directly towards the goalmouth. This is very disorienting, as you lose track of where your player is.

Also if you have your joystick hard left as your player runs up the field the change in view makes him run towards the touchline, so before you know it you've given away a throw. And if you pause to find your bearings



Product: Football Crazy
Price: £19.95
Supplier: ESP Software,
32a Southchurch Road,
Southend-on-Sea, Essex
SS1 2ND
Tel: 0702 600557

Sound.....4
Graphics.....4
Playability.....8
Value for Money.....9
Overall.....8

Product: Fighting Soccer
Price: £19.99
Supplier: Activision, Blake
House, Manor Farm Rd.,
Reading, Berkshire RG 2
0JN.
Tel: 0734 311666

Sound.....6
Graphics.....8
Playability.....4
Value for Money.....5
Overall.....6

Product: Gazza's Super
Soccer
Price: £24.95
Supplier: Empire, 4 The
Stannetts, Laindon,
North Trade Centre,
Basildon, Essex SS15
6DJ.
Tel: 0268 541126

Sound.....0
Graphics.....4
Playability.....4
Value for Money.....2
Overall.....4

PREVIEW

The Official Liverpool FC Soccer Game

A MANAGEMENT/arcade split which will be a must for any Anfield regular. The design and graphics are good (as you would expect from Ocean) and you can play your way though whole seasons in one session. Alternatively, you can forget the administration and management angle and concentrate on your dribbling.

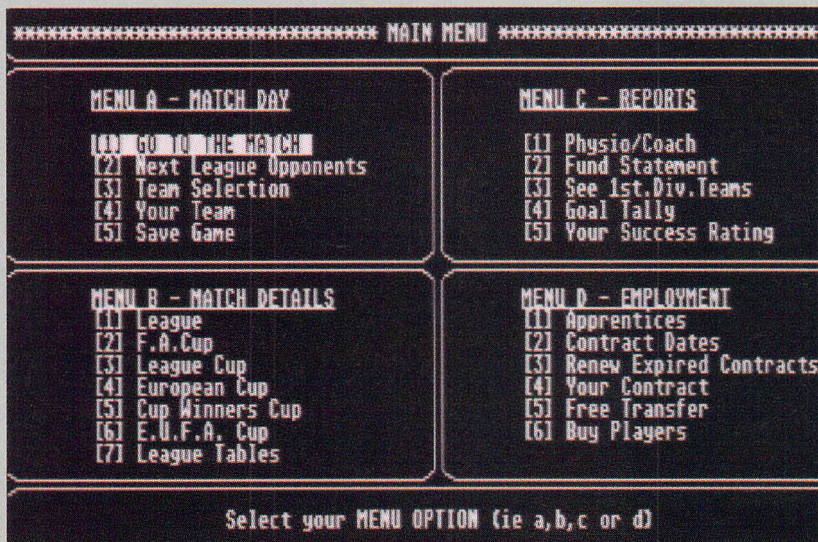
Managing LFC involves both

Ocean (061-832 6633)

the office and the ground. Starting with the business and financial side you design strategies and training sessions. As a manager you must keep an eye on your in-tray, which tells you what

is happening in the world outside, from talent scouts to gossip columnists.

In the arcade section you control the player on the ball, the rest of the team reacting accordingly. Any skill or fitness attribute can be improved by training and the team strategy is down to the captain where varying the tactics brings maximum success.



Soccer Glory is text only

you just might lose the ball. This feature ruined the whole game for me.

Anco's **Player Manager** is the long-awaited strategy version of the ultra-successful Kick Off, the action game which reigns supreme. In Player Manager you get six minutes of Kick Off action per match. You can control a player (the player-manager himself) or you can watch all six minutes from the sidelines. Gripping stuff it is too. Fast, frenetic and very exciting.

All the usual features are available in the strategy side. The finance includes sponsorship, loans, overdrafts and so on. However, you can become bankrupt,

after which a hypermarket may be built on the site of the ground. So being sacked isn't the only threat to your job.

The board plays a big part in the game, even influencing transfers, which are subject to a certain amount of haggling. There is a very large database of players, all with their own statistics including ratings for pace, injury, disciplinary and transfer reports.

A major part of Player Manager is the tactics. You can change and create new tactics and save them to disc. There are a range of icons and screens which help here.

My gripes are that the instructions are very poor, some of the icons in the tactics screens are

still a mystery, and other features are only briefly mentioned. There is also a bug in the tactics area. When I tried to change the name of one of the tactics a warning saying I couldn't change it came up, upon which the game froze. In addition, on one occasion the game crashed at the end of a match.

It's a pity you can only take part in a League Championship. While Player Manager does not have the depth of Football Crazy, for example, I found that the interactive match highlights made up for any strategic deficiencies. Even so, the loose ends spoil what is otherwise an excellent game.

Soccer Glory, from Tanglewood, is another strategy game which - noticeably - has been created using STOS. The game caters for the League, the two big internal cup competitions plus the three European cups. All of the normal features are available, such as transfers, contracts and so on. The most unusual aspect is the pie chart presentation of player statistics - a good feature which breaks the monotony of endless figures.

I'm pleased that morale has



Product: Player Manager
Price: £19.95
Supplier: Anco, Unit 10,
Burnham Trading
Estate, Lawson Rd.,
Dartford Kent DA1 5BH.
Tel: 0322 92513

Sound.....6
Graphics.....8
Playability.....8
Value for Money.....8
Overall7

Product: Soccer Glory
Price: £19.95
Supplier: Tanglewood
Software, 157 Warwick
Rd., Rayleigh, Essex SS6
8SG.

Sound.....0
Graphics.....6
Playability.....7
Value for Money.....8
Overall7

PREVIEW

European Superleague

CDS (0302 321134)

PROMOTED as a simulation rather than a management or arcade game, you must deal with a series of crisis situations in constant succession.

Similar to Ocean's LFC you must balance training with tactics. Also to be taken into account are morale and confidence, a stubborn chairman or temperamental star, a fickle press with cliché-ridden headlines, and don't forget seven other computer-driven ambitious managers.

You can choose between eight teams: Liverpool, Arsenal, Rangers, AC Milan, Real Madrid, Bayern Munich, PSV Eindhoven or Marseilles and your aim is to be on the winning side at the European finals. Remember that you

can transfer too. Your working environs encompass your office with filing cabinets full of information on rivals and team finances, an intercom, telephone, diary and charts - all of which are vital. Outside the secretary makes every effort to keep you and the chairman apart and reminds you of appointments.

The team tactics and statistics are important and will change after each game. Your week's work is shown by a series of 70 football cards. These display match highlights and overlay one another as time passes.

Easy to play, but difficult to master, ELS doesn't stop at the end of the season. You may be awarded a bonus and many factors will decide if your contract will be renewed.

PREVIEW

Adidas Soccer

Ocean (061-832 6633)

AFTER warming up on the side for almost a year now, this Ocean France game has still not been released. I've been given a sneak preview of the graphics which are

superb, detailed and large, with players having the characteristic hair quiff of the hero in Ivanhoe. If the game-play matches the time and effort put into the graphics, this should be a game to remember.

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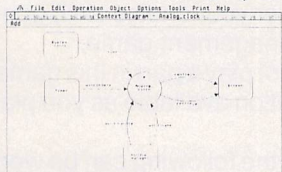
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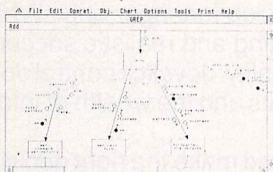
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In depth research and attention to detail gives Soccer Glory its reality. Joystick control does not play a part in this game. Instead you must evaluate players, team strengths, playing formats and the wealth of information available as you play the game.

Success will be hard to achieve but if you build a strong squad and make the right decisions the following can be won:

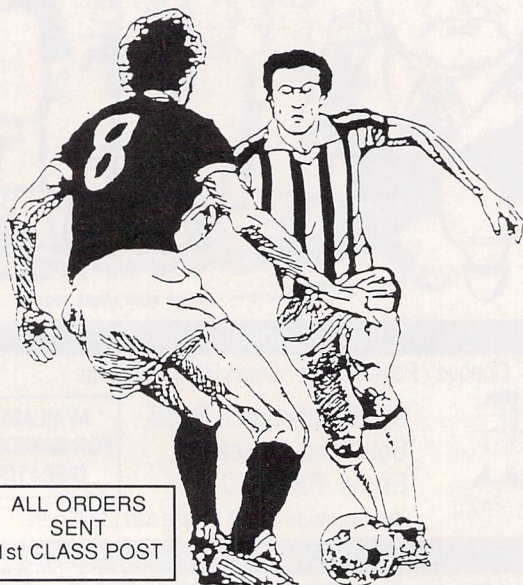
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RICHARD CHARLSTON OF LEEDS – *"I am very impressed with the depth and accuracy of soccer glory"*

Here are some of the features of Soccer Glory.

20 1st Division teams – over 1,200 named players – individual players skills reflecting BALL WINNING, GOALMAKING and GOALSCORING abilities – physio and coach reports – pie charts of players skills etc. – team selection – playing format – named goal scorers – goal tally – substitutions – injuries – penalties – corners – free kicks – negotiate players contracts – free transfers – suspensions – success rating – apprentices – P.W.L.D.F.A.Pts League tables – relegation – promotion – save game – and so much more.

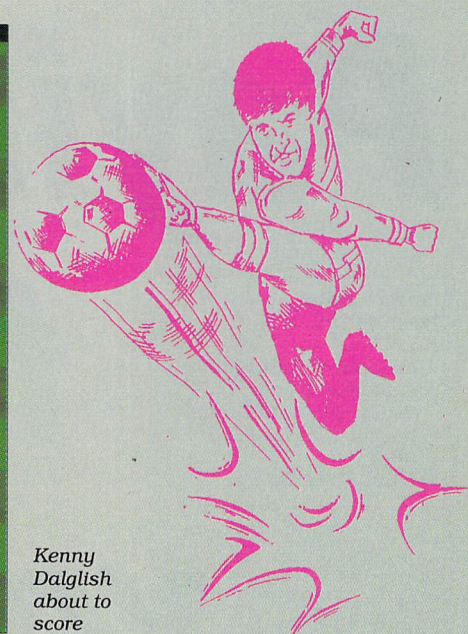
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Proprietor: J. Moss

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**TANGLEWOOD SOFTWARE, Dept AA
157 Warwick Road, Rayleigh, Essex, SS6 8SG**



Kenny Dalglish about to score

► been considered, but I would have liked to have seen it extended from just team changes, as there are other aspects which affects a player's morale.

One feature I didn't like was that the only way to select a team formation is to vary the number of attackers and defenders. For example, replace a midfielder with a defender and your 4-4-2 becomes 5-3-2. I feel this system prevents any possibility of having an attacking defender. I would like to see this option changed, and also the ability of players to play out of position.

Soccer Glory, while having a nice match highlights feature, doesn't approach Football Crazy for depth of play, however it is still recommended – especially for the price.

Kenny Dalglish Soccer Match is one of a trilogy of Dalglish games being produced by Impressions – Soccer Manager being another, while Soccer Player will be the third release available mid-

year. Soccer Match is the action release, played in a psuedo side-view. The game can be played by one to four players, using two joysticks for the multi-player scenario.

When four players are introduced the game lets you play in a league which is updated after every game is played.

An arrow appears over the player you control and the direction of the joystick regulates how far the ball will travel once the fire button is pressed. For example, with the joystick positioned up and left you flick the ball to the players on the left, while pushing the joystick down drives a medium pass along the ground.

I found the gameplay very frustrating due to poor control. It is too easy to lose the ball, even when running in a straight line. The game is very slow and command response sluggish. Shooting and passing are also awkward to initiate. Overall, Soccer Match is a bit of a flop.

Impressions' **Superleague**

Soccer looks as if it could be a very good strategy/manager-type game. The innovative aspect, however, is its principle downfall. You can have an immediate result to matches or you can see the action and control it as well. You are able to control all your players.

The problem is that this section has been poorly implemented, and as a result you'll probably be beaten at least 10-0 every time.

Order your player to head for the ball and he'll saunter up to the designated spot. And by the time he gets there the opposing player is at the other side of the pitch. In the meantime, your other 10 players stand still offering no resistance. Aaaarrghh!

As player control is such a big part of this game Superleague Soccer has to be very poor value for money because if you just decide to have instant results you will lose a major portion of the game. My recommendation? Stay well clear of this game.

Product: Kenny Dalglish Soccer Match

Price: £19.99

Supplier: Impressions/Active Sales, Studio Centre, Ranelagh Gardens, London SW6 3PA.

Tel: 01-834 2701

Sound.....5
Graphics.....8
Playability.....3
Value for Money.....5
Overall4

Product: Superleague Soccer

Price: £19.99

Supplier: Impressions/Active Sales, Studio Centre, Ranelagh Gardens, London SW6 3PA.

Tel: 01-834 2701

Sound.....5
Graphics.....8
Playability.....3
Value for Money.....5
Overall4



Superleague's action could be better

PREVIEW

Virgin (01-727 8070)

EAST meets West with Hungarian Andromeda Software's arcade conversion. Featuring teams which have made it through the qualifying rounds the game doesn't just stick to the aerial views most common in this genre.

Close up views of the goals are from a choice of two perspectives: The goalie or the striker, giving a larger and more realistic TV view-

World Cup Soccer '90

point. The usual free kicks, goal kicks, corners and throw ins are included, and as you progress the skill level increases.

Two players can play at once or you can stick to the solo option. Carried off on a stretcher, an injured man is soon replaced by an eager sub from the bench.

Paying for your fun

Product: *Space Ace*

Price: £44.95

Supplier:

Readysoft/Empire, Unit
4, Stannetts Lane, Lain-
den North Trade Centre,
Basildon, Essex SS15
6DG.

Tel: 0268 541126

It is not very often that a software company expects you to splash out almost £45 on a computer game, but when it does you are entitled to believe that the product is nothing short of excellent.

One of the first companies who expected the public to buy their products at these prices was Readysoft, who in the spring of 1989 released *Dragon's Lair*, a graphically exhilarating conversion of the

first ever laser disc coin-op.

One year later Readysoft is attempting to repeat the same formula, but this time the costly conversion is *Space Ace*,

the futuristic coin-op which took the arcades by storm.

The aim of the game is simple. Earth is under attack from Borf, a blubbery blue skinned alien, who intends to revert all of its population to childhood with his Infantoray, thereby dominating them in the process.

Only two people stand in his way, *Space Ace* and his sweetheart Kimberly. The game starts with both characters attempting to infiltrate Borf's HQ, but things immediately go wrong as *Space Ace* is hit by a blast of Infantoray and Kimberly falls into Borf's evil hands.

Being hit by the Infantoray means that at certain times throughout the adventure *Space Ace* turns from a beefy, broad shouldered hero into a seven stone weakling called Dexter. It is your task - as *Space Ace* - to ensure that both the Earth and Kimberly are saved.

When you begin playing the game you are immediately overwhelmed by the graphics, as they are simply the best ever seen. The colour is crystal clear, the animation is equivalent to the quality of a cartoon and the action sequences are stunning.

The sampled sounds are also



Press Fire Button to Start

I hope this creature is a vegetarian



Space Ace is zapped by Borf



Space Ace and Kimberley attempt to infiltrate Borf's HQ

of an extremely high quality and fit neatly in with the action and adventure sequences. However, they tend to come and go quite quickly as well as blending in certain places to create an unholy cacophany of laser blasts, trumpets and ear-battering noises.

It is natural to assume that Readysoft has come up with a massive success that will take the software charts by storm, but this is unlikely to be the case. Space Ace has a flaw, and that's the gameplay system.

Your control is limited to five actions – jump left, right, up, down and fire – and each action has to be executed with

split second precision. With the game apparently running like a cartoon without any interaction on your part, there is very little indication as to when or how you should make your move.

To make matters worse, if you get through a few screens and think you have the timing right, you then have to guess what actions to perform next. Logical thinking is not always an advantage, as making Space Ace do what seems the obvious thing will kill you more often than not.

If you do manage to get through some of the 40 screens you are in for a tremendous visual experience, as Space Ace meets a wonderful variety of creatures and objects, all of them hostile.

After only a short period, it becomes apparent that Space Ace has the same failings as its predecessor, Dragon's Lair – a lack of playability, coupled with a seemingly impossible quest. It is clear that the designers have recognised the problem, as they have had the forethought to introduce a save game facility.

It is also apparent that Space Ace's loading time has been dramatically cut down – the periods of waiting in Dragon's Lair were awful. However, Space Ace is disheartening and frustrating to play on a regular basis.

It is clear that Readysoft is leading the way in computer graphics, however, this is not enough to make the majority of the games buying public want to pay £45 for a piece of entertainment software.

Wayne

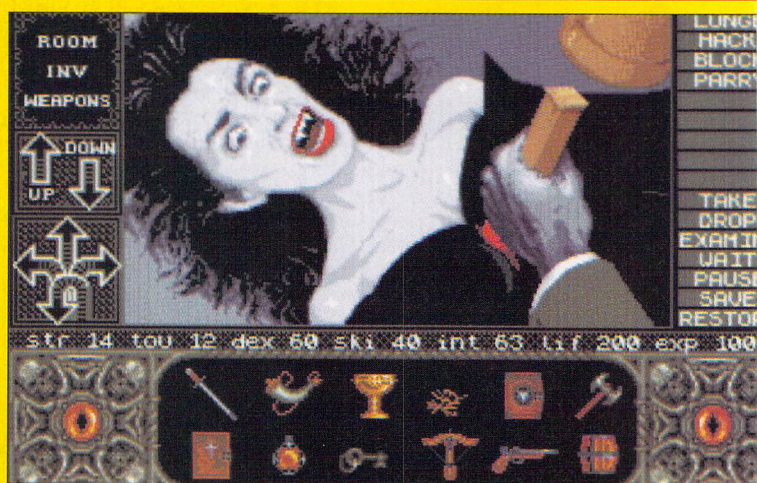
Graphics	10
Sound	10
Playability	5
Value for money	4
Overall	6

SECOND Sight

Space Ace is absolutely stunning in its visual and aural presentation – streets ahead of any other software currently on the market. However, I didn't feel fully in control of the game and felt frustrated by the compulsory trial and error method of making progress. No skill is required.

Julie Boswell

PREVIEW



There's a lot at stake in this adventure

Elvira, Mistress of the Dark, has been long-awaited by ST adventure buffs.

It comes on six single-sided discs packaged with a copy of Emelda's Spellbook, an audio cassette carrying a personal message from Elvira, an instruction manual and other goodies.

Unlike its predecessor, Personal Nightmare, Elvira is a totally iconised adventure with scant regard to text, and probably the best graphics I have seen since Chronoquest. However, true to Horrorsoft tradition, the game is steeped in gothic fantasy, and sprinkled liberally with pastiche of Hammer, Mel Brooks and Denis Wheatley.

This scroll will in turn give Emelda the power to control the hordes of Hades in her bid to rule the world. However, first Emelda must return from the dead, through the processes of a satanic ceremony conducted by a blood descendant.

A fearful Elvira has now contacted you, as the game's hero,

Elvira, Mistress of the Dark

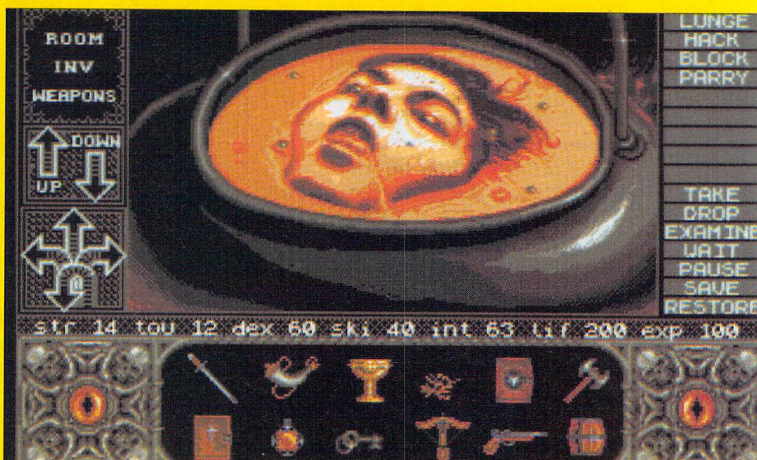
Horrorsoft (091-414 4611)

to put things right. And it is an uphill battle with some nasty surprises around each corner.

You control your quest via a series of direction, object and system control icons.

Beneath the main graphic activity window, which takes up most of the screen, are displayed statistics relating to your current strength, toughness, dexterity, skill, intelligence, life force and experience.

However, with the strength of graphics, sound and gameplay, this has to be the standard by which all other adventures in 1990 are to be judged. Try it and see, but leave the lights on.



Oh no. Not soup for tea again!

Product: *Ultima V*
 Price: £29.99
 Supplier:
 Origin/Mindscape, PO
 Box 1019, Lewes, West
 Sussex BN8 4DW.
 Tel: 0444 86545

WHEN preview copies of Mindscape's *Ultima V* were first made available reviewers fell over each other in an excess of hyperbole. Now that it has finally landed on my desk, over two years in the making, what is it really like?

The sound and graphics are feeble compared with the digital delights of *Dungeon Master* or *Bloodwych*, but it scores highly in gameplay. It is a great plot and once you start to make progress there is little chance of getting to bed at a reasonable time for the foreseeable future.

A journal provided in the sumptuous packaging relates the exploits of Lord British, benevolent ruler of the realm of Britannia, who has vanished on an expedition to the newly discovered underworld.

Lord Blackthorn has seized

control of Britannia and, corrupted by power, has become an oppressive tyrant. Your mission is to discover the fate of Lord British and overthrow Blackthorne.

You are transported to Britannia where, upon loading two of the three single-sided discs, you may review recent events, import characters saved from *Ultima IV*, or create a new character.

Ultima's method of carrying

Rule Britannia!

out this last option differs from the usual randomly generated attributes or die-throwing session to determine your characteristics. A series of moral dilemmas are presented which you will have to answer before saving your character to disc

and journeying forth.

If you wish to continue play after taking the not unreasonable precaution of saving before attempting something iffy, dodgy or downright dozy, you'll have to reboot the game if your action proves to have been an horrendous clanger – no restore facility has been provided within the program itself.

As insurance it's best to have at least a couple of different saved positions.

At the outset you'll find yourself in Iolo's hut accompanied by Iolo and Shamino. The major part of the screen display is taken up by your current whereabouts, the party being represented by a single static

sprite unless under attack, when all members can be seen and individually moved.

To the right of this is the text window, listing the status of the team, commands entered and any messages.

The initial objective is to

recruit more members for the team, buy supplies and weaponry, gather ingredients for spells, and collect information which will lead to the many and varied sub-plots within the game, before tackling the underworld.

An abundance of unfriendly and grotesque creatures make sure your progress is sufficiently impeded and you'll find yourself doing battle on a regular basis, the spoils of victory being survival and treasure.

Death's reward is resurrection inside Lord British's castle along with a heavy penalty of hit points.

Game control could not be simpler, thanks to a system of single key presses. The alphanumeric keyboard is used for movement in the four compass directions, the diagonal keys being reserved for aiming weapons or one of the 45 spells.

The main keyboard functions generally relate to the initial letter of the command, A, for instance, means attack, T stands for talk, and so on.

A lot of talking has to be done to garner clues, but beware, not everyone you'll

Product: *Austerlitz*
 Price: £24.99
 Supplier: PSS/Mirrorsoft,
 Irwin House, 118
 Southwark Street,
 London SE1 0SW.
 Tel: 01-928 1454

FIRST we had *Borodino*, then *Waterloo*, followed by a somewhat maverick *Armada*, and now we are treated to a re-creation of Napoleon's famous victory at *Austerlitz*. It is easy to see without looking too far, that the ST wargamer will soon be able to recreate the entire Napoleonic wars.

And gamers can be assured that each battle will be based on sound historical accuracy, even if they do change the course of succeeding events.

Austerlitz comes on two discs with a documented tutorial, historical notes, a players' key card guide, and a superb wipe clean re-usable map in sturdy and attractive packaging.

As with its predecessors, the game uses Turcan's impressive common wargame code which allows intricate flexibility between player and events.

Booting up the program disc produces a glorious view of the



Peter Turcan's wargame system is unsurpassed

battlefield. This is followed by an onscreen resumé of the events leading up to the battle. Then you must answer a series of prerequisite questions before war can commence.

These include such things as whether you want to view all

messages between generals and the commander and, most importantly, whether you wish to play Emperor Napoleon commanding the French Grand Armée, or Czar Alexander I, commanding the Austro-Russian forces.

The game begins by generating a series of static 3D scenes of the state of the battle as it progresses. Each scene is determined by the commands you enter and your enemy's responses to the ensuing movements.

SECOND Sight

As a fan of the Ultima series I have been eagerly awaiting this latest addition to the series. It was worth the wait as this is a cracking good adventure. The puzzles are difficult, so the game shouldn't be attempted by a novice adventurer, but for the expert it's a must.

Julie Boswell

Sound.....7
Graphics.....7
Playability.....10
Value for money.....9
Overall.....9

natter with can be trusted to tell the truth. You'll also have to become familiar with the runic alphabet, but anyone who has translated the cover of Tolkien's *The Hobbit* shouldn't

have too much trouble.

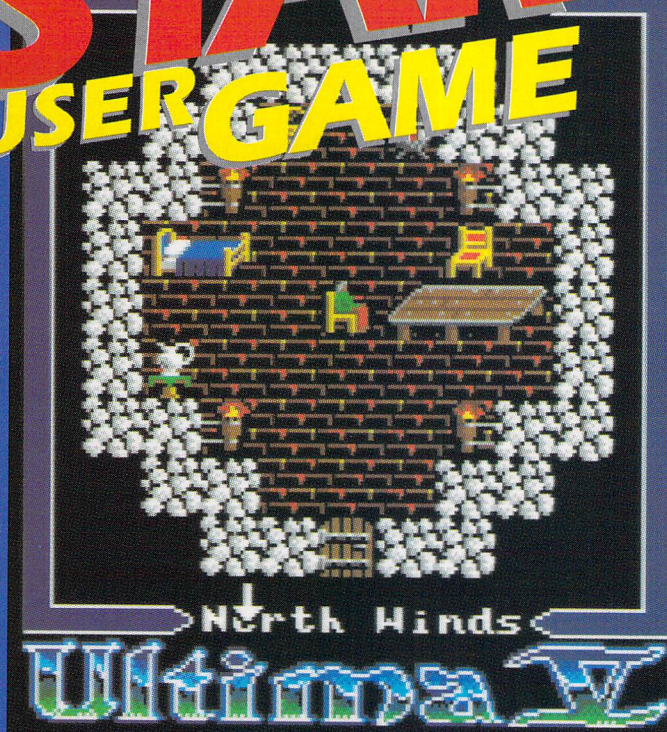
The package contains a cloth map of the realm of Britannia, a book of lore and an extremely

handy reference card listing all of the spells, weapons, armour and commands at your disposal. Difficult puzzles, mean

monsters and a mighty quest will keep you coming back for more. Highly recommended.

Phil Armstrong

ATARI STAR USER GAME

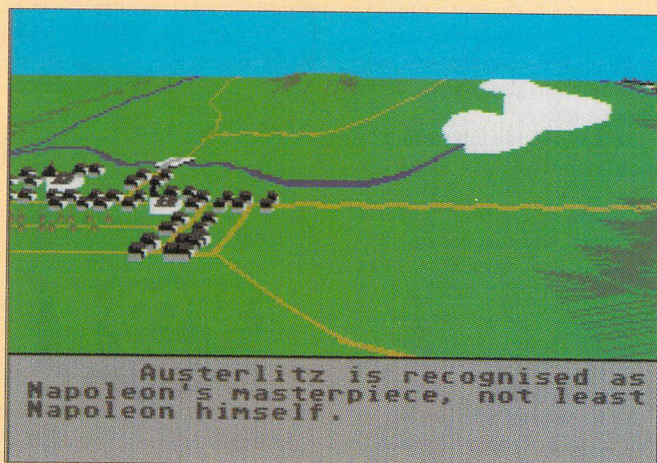


ORIGIN
Shamino
Iolo

F: 63

4-5-139

Universal soldier



Historically accurate, Austerlitz could be used for education

As with all of Peter Turcan's games, the background to the battle and the characters of the commanders and generals has been meticulously researched. Austerlitz is as historically accurate as you are ever likely to get in a computer wargame. Indeed, the game could be used for educational as well as leisure purposes.

The onscreen graphical representation is outstanding and gives a feeling of realism and depth, while maintaining the map/game quality of a table top wargame. Puffs of smoke appear as artillery is fired - a thoughtful touch.

My only criticism - and one I have voiced before about Turcan wargames - is that sound effects and animation would have undoubtedly added realism and commercial value to the program. This aside, the game is another joyous addition to my fast growing wargame library.

I whole-heartedly recom-

mend Austerlitz to all wargamers, students of modern history and any other ST user with a passing fascination in Napoleonic warfare or tactical gameplay.

Nic Outterside

Sound.....7
Graphics.....8
Playability.....19
Value for money.....7
Overall.....8

SECOND Sight

A high quality and well priced product with superb packaging and documentary support. Outstanding graphics and historically accurate. The game could have been improved with addition of sound effects and some animation.

Jayne West

You may move your position of command at any point during play and, using an onscreen telescope, may view the action as it unfolds.

Your officers interpret your orders according to their personality, and if you fail to

assert your authority or become too rash you may find them making decisions on their own initiative. Your generals send messages back to you posing questions or asking for particular support. Your responses can be crucial.

Car capers

Product: 5th Gear
Price: £19.99
Supplier: Hewson, 56b
Milton Park, Milton,
Abingdon, Oxon OX14
4RX.
Tel: 0235-832939

HEWSON has a long tradition of top quality releases, but 5th Gear isn't one of them. It's a two-way vertically scrolling race game portrayed from a bird's eye view, pitting you against the clock in a chase over hazardous terrain.

Along the way you can pick up more fuel and customise your car with weapons and equipment.

The race itself is illegal, so both you and your opponents are allowed to use every possible method to win. This includes shooting down enemy cars, boats, walls, bunkers and even bushes that get in the way. These actions, along with jumping a hill, score points.

You lose one of your five lives if you hit a dangerous

obstacle - there are many - drive into the water, run out of fuel or crash into another car. Fortunately your vehicle is fitted with forward and reverse gears, so you can always run away from a sticky situation.

You have \$10,000 at the

start and this can be boosted by simply finishing the race. For the amount of time left you can earn from \$5 dollars for every tenth of a second up to \$5,000 for every whole minute.

Money is vital to success as you can stop at a fuel station for petrol, a garage for repairs or at a shop for goodies.

Shops sell one of two kinds of item: Weapons, including a nifty missile launcher, and equipment, including helium tyres, turbo-boost and a propulsive motor to help the car in jumping, and a watertight chassis which enables you to drive through water).

This all sounds interesting in theory, but in fact 5th Gear plays poorly. The collision detection is far from perfect, the speed and manoeuvrability of the car aren't evenly matched with the small screen size and difficult course design, and the sound is limited to whining engine noises and weak spot effects.

There is even a slight bug: If you're parked on a forecourt, pressing fire takes you into the garage, but this is no use when a car is hurtling towards you and you want to fire bullets at it. A crash is the inevitable, and frustrating, result.

The graphics are detailed, reasonably animated and colourful, but the action is spoiled because the playing

area is too small. You spend a lot of time simply edging the car forward, trying to anticipate objects, most of which kill you if you crash into them.

Worse still, the control method is slow and unresponsive, so you can't turn away from an obstacle with the immediacy you would like. This is unfair when you often can't see an object until the last minute.

These kind of mistakes you would usually expect from a budget game, but 5th Gear isn't cheap.

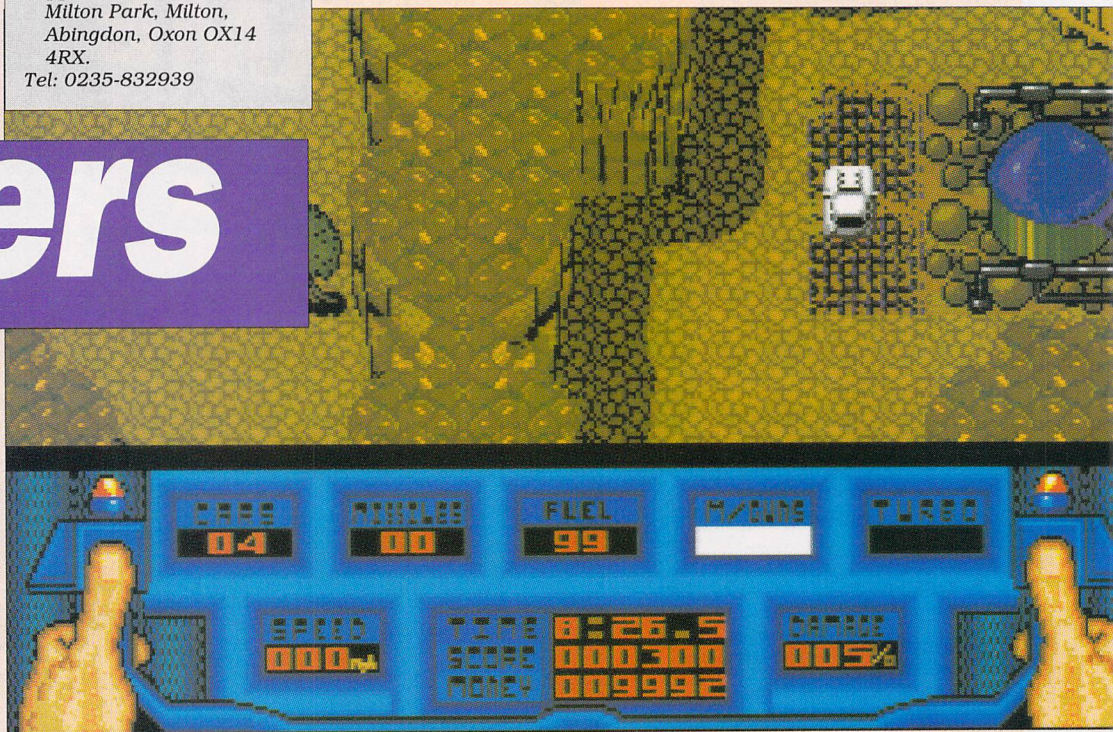
Gordon Houghton

Sound.....	3
Graphics.....	7
Playability.....	5
Value for money.....	4
Overall.....	5

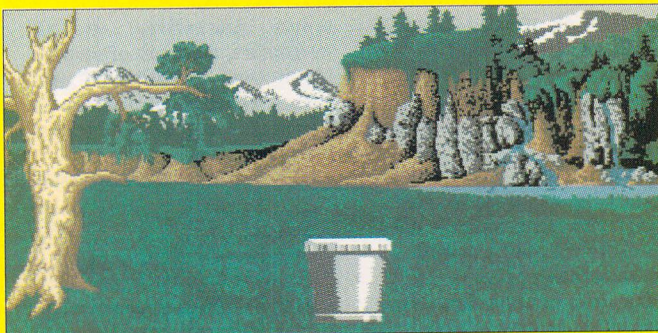
SECOND Sight

Hewson's 5th Gear reminded me of Domark's APB as the car control method is quite similar and I haven't mastered either game. At first, 5th gear is difficult and frustrating so be prepared to practise for quite some time before being able to play through to the end of a race

Julie Boswell



QUICK PEEK



Astate

Software Business
(0480 496497)

Astate is an adventure game - I think. I hesitate to classify it since this French product is one of the most unorthodox ones I have ever encountered.

The game consists of a number of full-screen drawings that are retrieved from disc when

required. Superimposed on the picture is a large movable icon - initially it is a pair of boots (for walking to the next picture), but it can be changed into a further five objects, all of which can be activated.

By manipulating the correct object at the right point, on the correct picture something will happen. I can only assume this, since I could get no reaction whatsoever from any operation that I performed! Oh well, c'est la vie.

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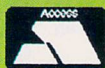
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Product: *Black Tiger*
Price: £19.95
Supplier: US Gold, Units
 2/3 Holford Way,
 Holford, Birmingham B6
 7AX.
Tel: 021-625 3388

In the coin-op conversion market US Gold has obtained great critical acclaim for such products as *Strider* and *Ghouls and Goblins*. The company's latest release is *Black Tiger*.

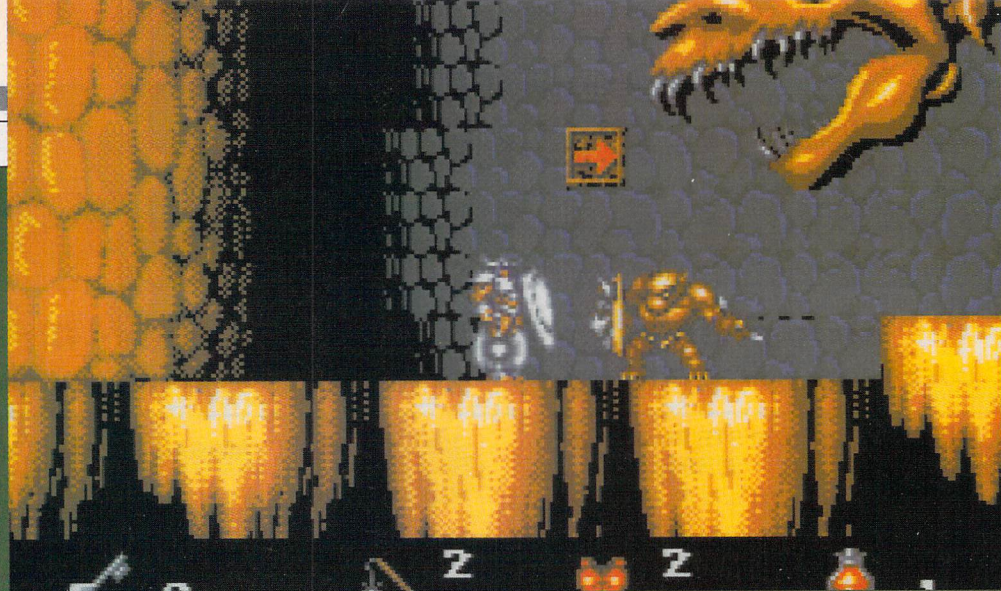
The story line is hauntingly familiar, as yet again you control the actions of a character – *Black Tiger* – whose aim is to set the world to rights by blasting almost every creature that crosses its path.

It would appear that Satan has sent three of his minions – dragons – to earth with the aim of plunging the planet into an age of devastation and misery. You must track them to their lair and destroy them.

You realise from the opening screen that the job is going to be tough, as it's obvious that the three dragons have many servants only too happy to attack you on sight. Initially beast-like humans attack with large hatchets. These despatched, you then run into a menagerie of nasties ranging from irritating little bats to powerful demons.

At first the monsters are obliterated with ease, because the weapons you carry – a large mace on a retractable chain for one – are lethal. As the monsters are killed they either drop gold coins, to be used later, or classy armour.

However, as you progress the monsters get tougher and it becomes increasingly obvious



Capable coin-op conversion

that more firepower is required. Help is on hand in the form of little white-bearded gentlemen who own small supply shops.

Here you can buy anything from strong armour to weapons close to nuclear strike capability. One little gizmo that caught my eye fired three rows of daggers and a long range lazer beam.

Oriental chaps also perform another service. Sometimes you will encounter them after they have been turned to stone, only released when the guarding demon is killed. Once free,

they reward you with gold which can be spent in their cousin's shop.

Another way to pick up equipment is by smashing the vases that litter the screen. Most of the time they're empty but if you are lucky you may collect keys which will unlock chests. It's worth pointing out that the vases can also contain painful fireballs.

Your journey takes you across many platforms and columns. Leaping, jumping, ducking, diving and blasting is all that this game asks of you.

The emphasis is on your trigger finger rather than your grey cells. Speed is essential and directional arrows help you finish each level within the allotted time.

Graphically *Black Tiger* is excellent. Your character moves across the screen smoothly and the background is virtually identical to the original coin-op version. The multi-directional scrolling isn't too bad, although it can be sluggish in places, spoiling the atmosphere of the game somewhat.

Black Tiger contains large sequences of non-stop, action packed, joystick wiggling action, which will test the trigger finger of even the most ardent arcade addict. The audio capabilities are good – again almost identical to the original.

It was nice to find that *Black Tiger* didn't come with an irritating sound track, and that the sound effects echo your actions. If you are looking for a way to spend many hours of mindless mayhem *Black Tiger* won't disappoint.

Wayne

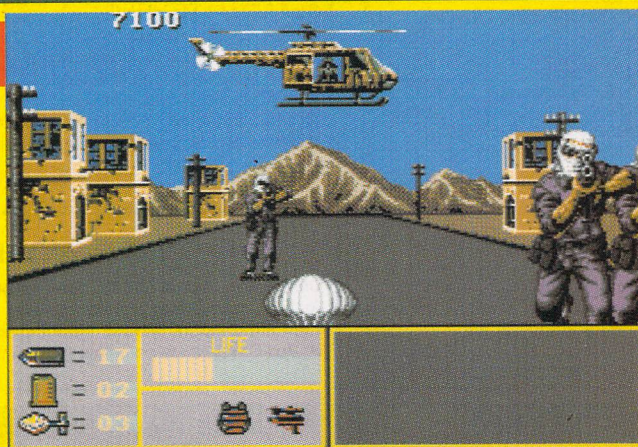
QUICK PEEK

Operation Thunderbolt

Ocean (061-832 6633)

THE arcade sequel to *Operation Wolf* has finally made the transition to the ST and it's a stunner. *Operation Adams* battles with international terrorism, but this time he's brought a friend.

Spraying bullets galore, one or two players can attempt to blast their way through eight challenging levels. The graphics are bril-



liant and sampled speech praises your efforts between levels.

Improvements such as better loading routines, a "Continue

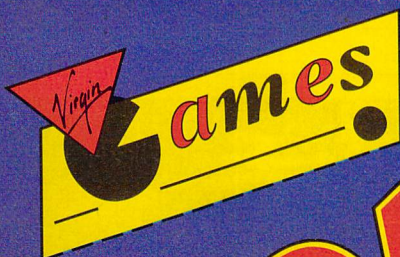
game?" option and much more action make *Operation Thunderbolt* even better than its illustrious predecessor.

Sound.....8
 Graphics.....8
 Playability.....8
 Value for money.....8
 Overall8

SECOND Sight

At first sight *Black Tiger* is another in a long line of arcade shoot-'em-ups. Not an original plot in sight either. But on closer inspection it's nice to look at, listen to, and above all shoot at.

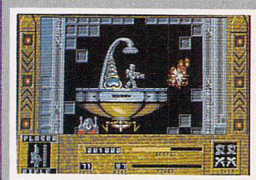
Julie Boswell



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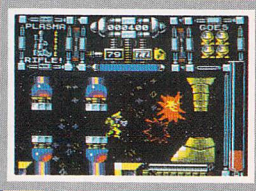
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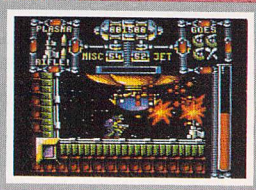
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Product: Kid Gloves
 Price: £24.99
 Supplier: Logotron,
 Chancery House, 107 St
 Paul's Road, London W1
 2NA
 Tel: 01 359 3594

P LATFORM games are enjoying a revival. Hot on the heels of successes like Rik Dangerous, Twin World and Switchblade comes Kid Gloves, every bit as frustrating, but not quite as sophisticated as the best of the bunch.

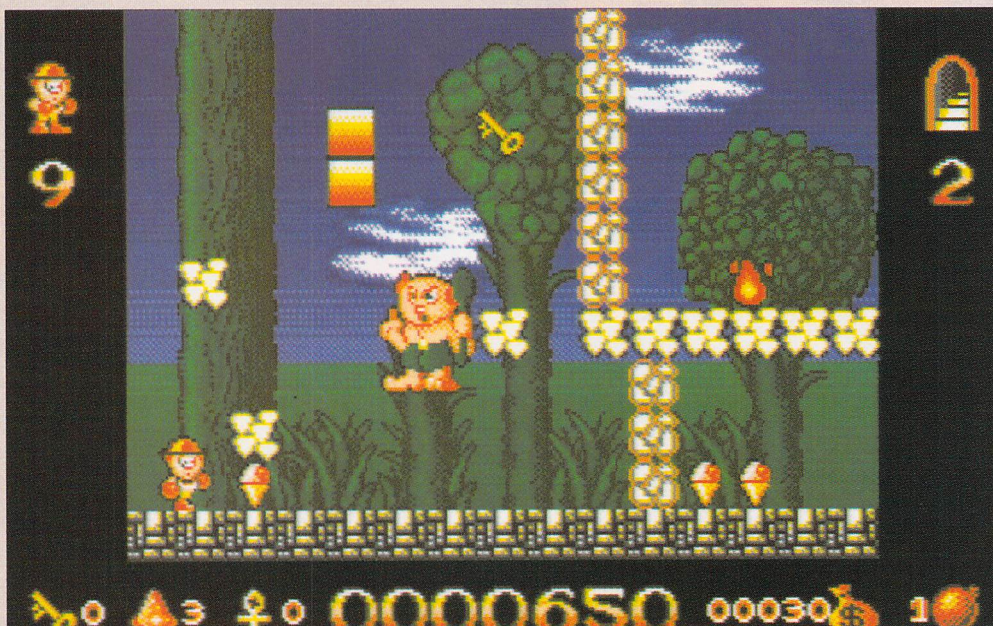
While rummaging through the contents of his great uncle's study Kid discovers a pair of glowing boxing gloves. Innocently he puts them on and is immediately transported into the depths of an Amazonian rainforest.

On the way home, there are platforms to jump across, ladders to climb, mysterious gates to open and disappearing floors to negotiate. Huge orange blocks fall to the ground when touched and certain obstacles disappear once you've survived 15 seconds onscreen.

For most monsters that's far too long for giant bouncing snakes, floating eyeballs, blood-thirsty natives and overweight ogres are single-minded in their pursuit of lost children. If you touch them, one of your nine lives fizzles out.

For anyone practically at death's door, four life tokens – found scattered about the environment or available at shops – add up to one extra man.

Other Amazonian goodies include point-boosting orange and ice cream snacks, smart bombs, keys and cash. Most can also be bought at friendly jungle shops along with improved weapons like death-stars and megalasers, and a variety of spells. Unfortunately,



Boxing clever

Sound.....	7
Graphics.....	6
Playability.....	7
Value for money.....	5
Overall.....	7

**SECOND
Sight**

Kid Gloves is an old fashioned ladders and levels type of game, packed with puzzles and frustration. The screens are devious, but with practice they can all be mastered and the problem is simply remembering the solution to each screen. Kid Gloves is far too expensive, so wait until it is released on a budget label in a year or two's time.

Julie Boswell

there is no way of knowing exactly which spell you have bought until after you have used it. The action's not so much tough as frustrating. Like Rik Dangerous, this is one of those games where you have to memorise enemy attack patterns and work out in advance how many keys you'll need.

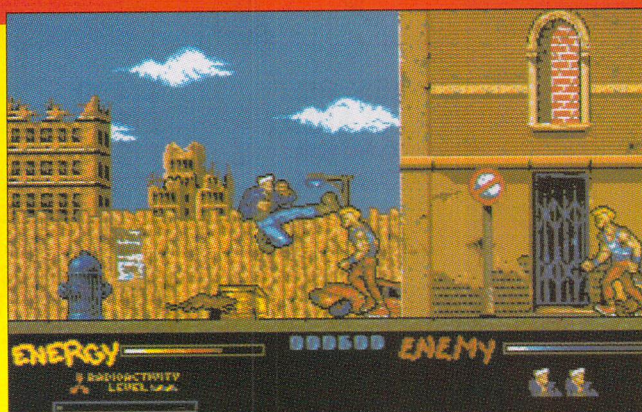
As it takes time to practise each level, lastability isn't a

problem, but the absence of polish and sophistication is.

Graphics and sound are relatively basic and the gameplay offers nothing new, though there is excellent sampled sound. As a basic but still fairly playable platformer, Kid Gloves would make an excellent budget game. However, £24.99 is just too hefty a price.

Kati Hamza

QUICK PEEK



After the War

Dinamic/Leisuresoft
 (0604 768711)

THIS game uses post-holocaust Manhattan as a backdrop. As you might expect, this partially demolished hell hole is not a nice place to live, that is unless you are one of the thugs, rabid dogs, or chain wielding heavies that have made it their home.

This is the best street fight-

ing games that I've seen on the ST. The detail incorporated into the graphics has to be seen to be believed. Similarly with the sound – I was so impressed I thought that I had booted up my Amiga by mistake.

Phase two is awesome. Blasting mutant rats, Michael Jackson lookalikes and roof-crawling creatures with one of the most realistically powerful machine guns that I have encountered. After the War is a real winner.

Magical monarchs

Program: Rings of Medusa
Price: £29.95
Supplier: Starbyte,
Nordring 71, 4630,
Bochum 1, Germany.
Tel: 010-49 234 680460

TIME was when an adventure was simply an adventure. Now it seems every conceivable variation has been tried, and Rings of Medusa incorporates traces of RPG, wargaming and trading, as well as definitive graphic/text adventuring.

In this new adventure from West German company Starbyte you play the role of disenfranchised Prince Cirion, whose kingdom is in ruins, and in the clutches of the evil Medusa and her army.

Your two best allies – your father and court magician Dalrin – both died at her hands, and the outlook is indeed bleak. Only you can save the world.

However, this world exists on a planet far from here, and Rings of Medusa has definite shades of Middle Earth and Tolkien fantasy. Your one chance of success is to find five long-hidden rings of power and with them defeat Medusa and her hordes.

The game comes on two discs with comprehensive and weighty documentation. The enclosed notes also give a full background story to the game, in which the prose is as poor as anything I have read since *Mindfighter*.

For instance, note this for failed atmosphere, after a heavy fight between your father's magician and a dragon: "The Prince got off his horse and recognised the figure as Dalrin, who fell to the ground covered in soot".

You start the game determined to stop Medusa and reunite your kingdom, but first you must find those five rings, each of which also aids you in your task. Unfortunately you begin with very few powers – magic is important in this game – and no money.

You have to earn money to pay an army to help you. Once this is done remember that they are mercenaries and they'll need paying on the first day of every month. This is



Riding from town to town

very important.

Shortage of cash is indeed a problem, which can be tackled by trade, attacking caravans, conquer and plunder, treasure hunting and gambling. You will probably find that in the initial stages of the game you spend nearly all your energy simply amassing collateral.

The game takes place on a standard graphic/text screen display below which is a ledge of selectable menu icons. From these you can carry out such diverse actions as write notes, open and close doors, attack foes, negotiate, search, gain information and find treasure.

The game plays on three levels across landscape, in towns and in battle. In landscape mode you can ride from town to town, building your army

and finding treasure, raw materials and other goodies.

However, you cannot pass over mountains and must avoid the swamp and the enchanted forest – unless you have enough magicians to protect you from their dangers.

You also have an opportunity to enlist scouts to find enemies and defeat them. As you acquire capital and treasure you may also open mines and begin the wealth building and trading side of the game. Watch out, as two of the rings are hidden in the treasure.

You can buy and sell goods in the towns, gamble in the casino, visit the bank, temple and palace, buy more soldiers and acquire ships for transporting cargo or armies. Elves, orcs, halflings, gnomes, trolls and

giants all have different skills and fighting strengths, and can be diverse and valuable additions to your army.

The fight sequences are detailed and quite cleverly thought out, but far too complex to detail here. Suffice it to say that allowance has been made for rudimentary land battles, artillery engagements, magic, sieges, warfare at sea between fleets of ships and even negotiation away from conflict. All gung-ho fun!

I am quite impressed, but somewhat saddened by the loss of atmosphere due to poor linguistic translations.

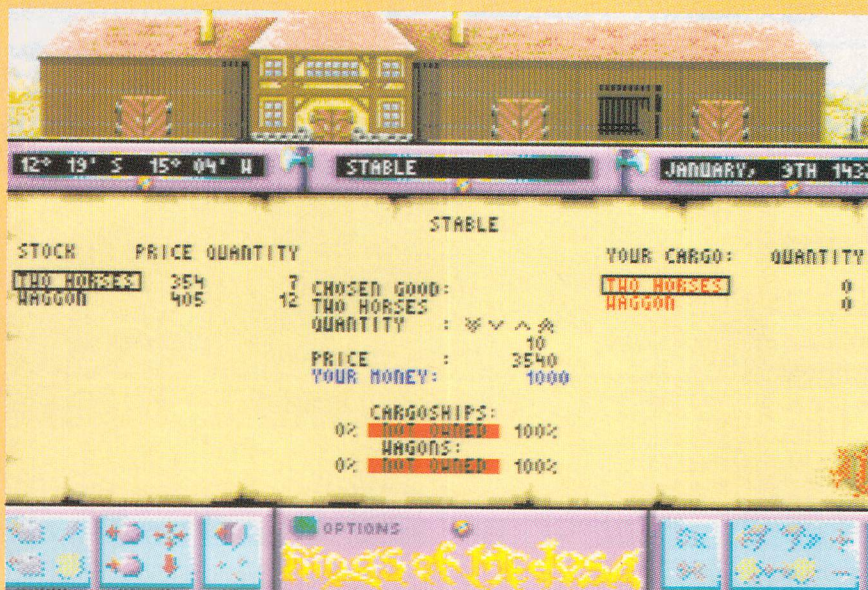
Pendragon

Sound.....	7
Graphics.....	8
Playability.....	9
Value for money.....	7
Overall.....	8

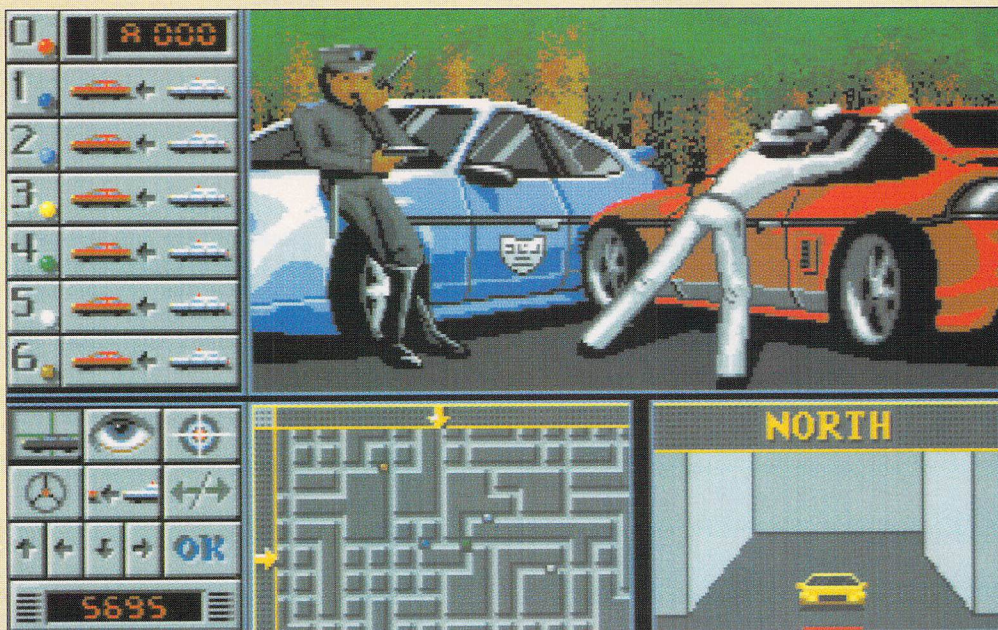
SECOND Sight

This is an interesting and stimulating RPG/adventure which tries to be all things to all people. It succeeds in the most part with some novel additions and a strong plot. However, it falls short with sloppy game development and translation problems.

Jayne West



On entering a town, there are many places to visit



Product: *Chicago 90*
 Price: £19.99
 Supplier: Infogrames, Mitre House, Abbey Road, Enfield, Middlesex EN1 2RQ.
 Tel: 01-364 0123

Cops and Robbers

HOT on the heels of popular coin-op conversions like APB and Chase HQ comes Infogrames' treatment of the classic gangster car chaser. This time the location is a network of streets in downtown Chicago, and whether you play the goodies or the baddies is up to you.

The main part of the action takes place in a scrolling 3D landscape of buildings, parks and streets.

As only a small section of city is visible at any one time there are two radars to help

you map the streets and locate the other cars involved. One gives a large-scale aerial view of Chicago, the other gives the first person perspective of what is going on directly in front of the car.

A set of icons lets you scroll around the larger map to check possible escape routes or make your getaway plan. The smaller

radar is a lot more useful than it sounds because civilian cars not directly involved in the chase don't show up on the aerial plan.

Not keeping an eye on what's coming up the street towards you is a guaranteed recipe for an early crash.

All vehicles are equipped with a gun and sufficient fuel

supply, and a speedometer keeps track of your speed. Go too fast and you may find yourself crashing into a kerb. Judge the speed just right and you'll bounce off anything you hit, giving you the opportunity to fly over oncoming cars.

If you're playing the bad guys all you have to worry about is keeping out of the way of the cops and trying not to crash. If you're a cop there are five other patrol cars at your disposal. Using the icons at the base of the screen you can switch leading cars and instruct the others to intercept the gangsters or set up a road block in another part of town.

To succeed, a game like this really needs to create a sense of tension and speed and *Chicago 90* lacks both. There's very little pleasure to be had from manoeuvring an awkward, slowly moving getaway car round an endless maze of city streets.

The control response is very slow, collision detection often inaccurate, and the difficulty level frustrating.

One false move can result in a massive pile-up of cars which leaves you trapped and unable to move in some dead-end city street.

The strategic element makes it marginally more rewarding to play the cops, but on the whole the gameplay is tedious whichever side you're on. There's nothing outstanding about the 3D graphics, which vary very little from level to level and the sound effects leave even more to be desired. The droning engine noise and repetitive sirens are more than likely to give you a headache.

Kati Hamza

Sound.....	3
Graphics.....	7
Playability.....	5
Value for money.....	4
Overall.....	5

SECOND SIGHT

Infogrames has built up an enviable reputation for producing original and high quality software, but *Chicago* is a bit of a disappointment. For anyone else it would have been considered good, but Infogrames can do better than this.

Julie Boswell



Plan your escape route carefully

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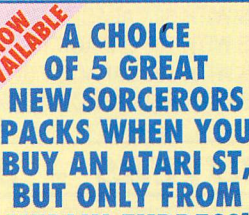
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WORLD domination has been a life long ambition of mine, but it wasn't until earlier this evening that I have ever come close to achieving my desire. Risk, the board game, has been enthralling lovers of strategy for many years but this was my first foray into the megalomania business.

A game for two to six players, you all begin with equal shares of the world's 42 territories. The objective is the elimination of all enemy forces from all territories. Not until every country bears your name can you go home to the wife and



Megalomaniac mission

kids and put your feet up.

Risk has survived the transition to computer screen remarkably well. The global map is reproduced on a grand scale with the screen providing a window of continental proportions. You can cross the globe in seconds using a smooth scrolling technique.

Each player is given a pre-determined number of armies to be placed strategically in any of their own territories. This stage can have a major bearing upon the final outcome.

Before starting his turn a player is awarded further armies. The exact number is determined by how many territories he occupies and whether or not he has complete control of any continents. The third way of obtaining additional forces is by cashing in sets of Risk cards - obtained at the end of each turn.

Once the newly-acquired troops have been placed in any of your occupied territories you are ready to attack. The roll of computerised dice determines the outcome of your assault on a selected adjacent country.

With the enemy armies in

ruins, you must decide upon the magnitude of the force you should transfer to that territory. Spread your forces too far too soon, and you could find yourself up the to armpits in Reds and suchlike before you can say Attila the Hun.

Risk performs the mundane tasks and adjudicates over all conflicts, leaving you to concentrate on your master plan for world conquest.

Nev Astley

Sound.....1
 Graphics.....7
 Playability.....9
 Value for money.....8
 Overall.....8

**SECOND
 Sight**

The computer's power has been used to enhance the game to the full. Pull-down menus provide a plethora of options through which you can tailor the game to your taste.

Steve Brook

QUICK PEEK



TACKLING such weighty topics as drugs, terrorism, organised crime, boat people and chemical warfare, Fire! is most unusual for a computer game of the arcade variety. However, one man and his helicopter can right the world's wrongs in the space of about half an hour when playing it.

Consisting of five horizontally scrolling game levels, Fire! is tedium itself. Sound is used very sparingly, the sprite graphics look as though they were produced in about 10 minutes

Fire!

Software Business (0480 496497)

flat and the gameplay is both difficult and brain numbingly boring.

To complete the package the game is supplied with a manual that appears to have been translated from French to English by a Russian.

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SHOOT-'EM-UPS are born out of aggression. Combative instincts and territorial claims are the driving force, and maybe that's why people enjoy playing them so much. Other game genres – puzzle games for example – appeal to logical and problem-solving activities but the shoot-'em-up is raw emotion.

Whether or not they encourage violence is another question and you could argue that they act as a release for pent-up feelings as much as they desensitise their participants to violence.

You could also argue that both opinions are irrelevant, and that people just play them for fun, to test their reflexes, to see just how good their hand-eye coordination is. The truth is probably a mixture of all these points.

So where did this most destructive of computer game forms begin? Early arcade shoot-'em-ups were very basic – Atari released two games called Tank Combat and Air Combat which are still addictive today. Shortly afterwards came Space Invaders and the space-based shoot-'em-up was born.

Eight bit games followed a rigid formula, being either clones of existing arcade games or innovative products which, though they often didn't sell as well as licences, were usually more compelling. Out of all these games specific groups of shoot-'em-up elements have emerged and continued on to the ST: Defender and Scramble variants, progressive blasters, four basic types of scrolling.

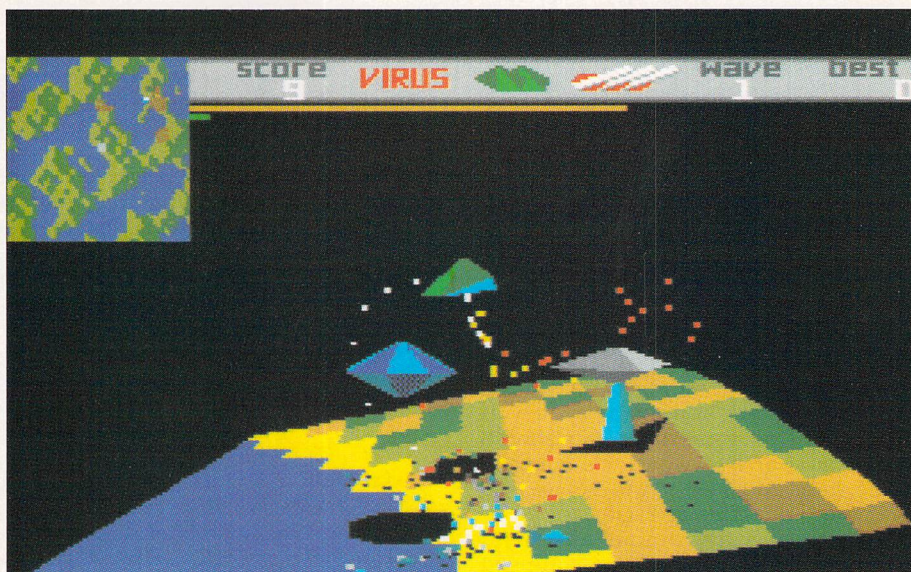
ST shoot-'em-ups have added one vital ingredient to the formula – 3D. The extra processing power offered by 16-bit has allowed the creation of such innovative products as Firebird's Virus, which is basically Defender given a third dimension.

So what makes a good shoot-'em-up? They don't have to rely on state of the art graphics and sound to be enjoyable – OIDS is just as compelling as Backlash. Good graphics and sound help, but they're not essential. However, visual and aural qualities are vital in recreating arcade games on the ST, as games like R-Type wouldn't have been as good with poor scrolling and fewer on-screen sprites.

The style of weaponry, both your own and that of the aliens, can make the difference between an average and a great shoot-'em-up. It doesn't matter too much who has what, as long as they're evenly matched. This forces you to rely on tactical skill and not weapon strength.

So in Oids the Biocrete defences are around in larger numbers, but most are easily destroyed which evens the game up. In Zynaps, the weaponry is slightly biased in your favour, but the cramped playing area again balances the odds.

Progressive weaponry makes the strategic side of blasters even more demanding and complex. Some games give you everything at the start (like R-Type), but others make you wait until



Virus is a 3D variation on Defender

Bang! Bang! You're dead

Gordon Houghton surveys the arcade market and presents his list of all-time favourite games



Xenon II is the apex of vertically scrolling shoot-'em-ups, featuring superb graphics and sound and imaginatively-designed aliens

► you can afford it (take Xenon II). Progressive weapons are a definite plus point for a game's addictive qualities – you're just as likely to want to know what the next mega-weapon is as you are the end-of-level alien.

Some games thrust you straight into the heat of the action and make you rely on your ability to adapt quickly. Virus does this, making sure you have very few aliens to face at first. The predictability of alien movement is vital in making a game addictive, as if you can't see it on your radar you should know more or less where it's going to come from and how it will behave, as in Forgotten Worlds or X-Out.

Shields are an almost essential bonus, whether your ship is equipped with them from the start or it picks them up as it goes along. Just when they're made available can turn a too-easy game into a tense one which requires split second timing to stay alive, as in OIDS.

Scrolling is always important, but particularly so in the case of blasters. Scrolling defines an area in which the player's ship can move and parallax scrolling gives that area depth for a more 3D feel. It is a matter of personal taste whether horizontal scrolling is favoured over vertical. However, because the ST screen is wider than it is high, vertically scrolling games have less area for the ship to manoeuvre and anticipate hazards (but is easier for programmers to achieve). Xenon II also allows a small amount of backward push-scroll so that players can retreat.

The last element that can make a great shoot-'em-up more enjoyable is a good ending. Some programmers just

Hotshots

Which is the best ST shoot-'em-up ever? It would be unfair to select a single game out of a genre that is so diverse, so here's an examination of a personal top five ST shoot-'em-ups, and the elements which make them so good.

OIDS: FTL'S multi-galactic spectacular involves rescuing cute stick men – the OIDS – from the clutches of their Biocrete masters. The gravity and inertia work beautifully, and it needs hours of practise to perfect. Each Galaxy is graded, so beginners can start with relative ease.

Backlash: This has little in the way of scenario, but it is very playable. You're at the controls of a spacecraft on an alien planet, armed only with bouncing missiles. The world is displayed in gloriously smooth wraparound 3D, with a radar showing enemy positions. There's only one objective – a high score.

Xenon II: The definitive vertically-scrolling shoot-'em-up, outstanding for its graphics and sound. It also features parallax scrolling, some of

the most imaginative aliens you'll find and awesome progressive weaponry.

R-Type: An excellent shoot-'em-up in which each of the eight levels provides a different and increasingly tough challenge. You are armed to the teeth early on, but the game's success relies just as much on your ability to dodge and select which aliens to kill first as it does on a trigger-happy finger.

Virus: David Braben's 3D version of Defender puts you in control of a hoverplane attempting to exterminate aliens polluting your territory with a poisonous red virus. One of the very few mouse-controlled shoot-'em-ups, it's hard to get to grips with at first, but the control system is flexible once mastered.

display a message like "Congratulations", but you feel much more like playing again when there's an animated closing sequence, like the one in OIDS. Games that wrap around infinitely or just go on until you get killed can be compelling, like Backlash, but they can also be frustrating.

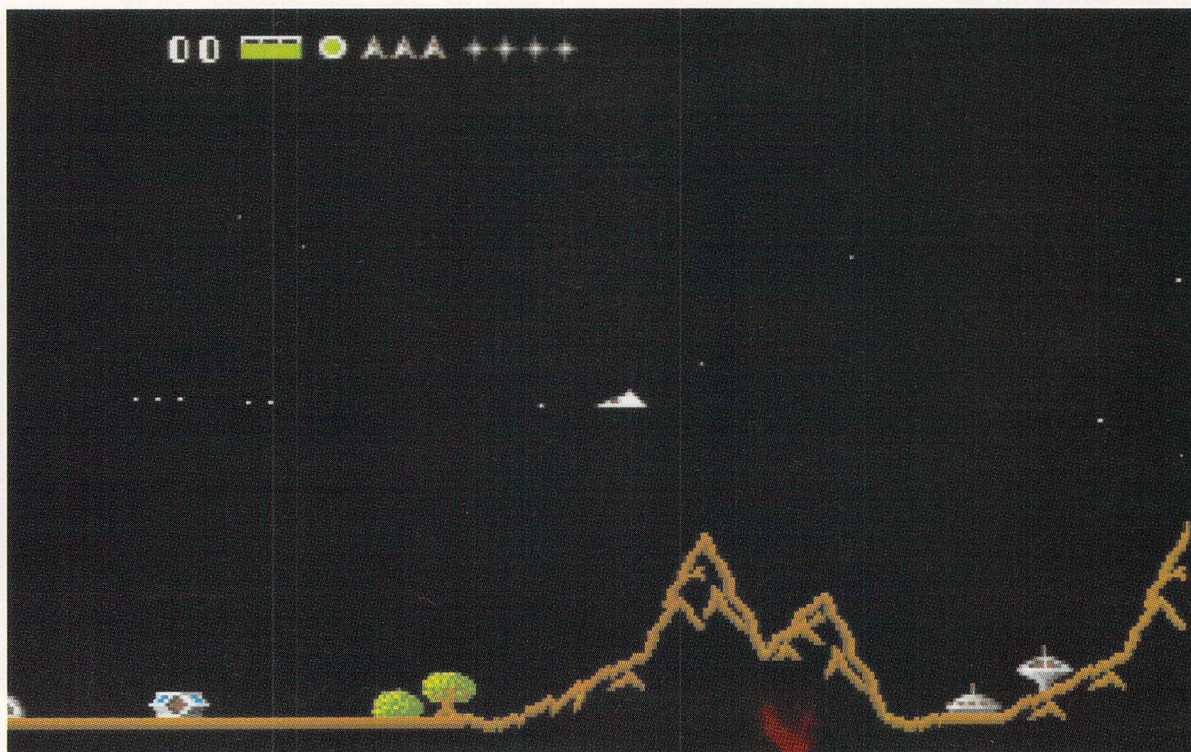
The future of ST shoot-'em-ups seems to be fairly limited – games can only get better graphically and sonically, and there can only be so many new weapons, ships and aliens.

Perhaps they could be merged with

other genres to produce shoot-'em-ups in which you had puzzle sequences.

No one has exploited fractal graphics to generate an impression of movement and speed, like Koronis Rift on the 64, and nothing has followed in the footsteps of Virus.

In the future, with even more powerful computers, virtual world simulators will be able to give games players the chance of experiencing artificial reality in glorious 3D – and who knows what kind of notorious popularity simulated violence might achieve then?



Oids uses a simple formula to create a very addictive game. Easy at first, it soon develops into a challenging shoot-'em-up



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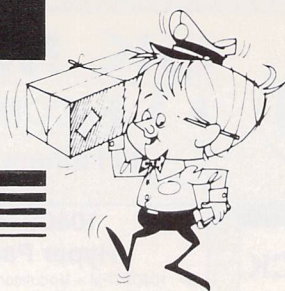
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How to enter

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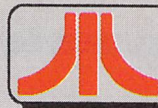
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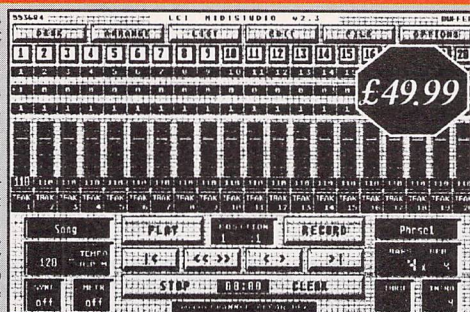
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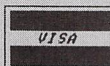
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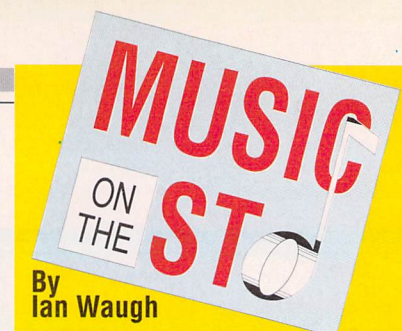
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Midi on a mini wallet

Ian Waugh surveys the budget end of the Midi software market

ALTHOUGH most professional Midi programs cost more than the ST itself, many companies are taking an increasing interest in the budget-priced Midi software market.

It's not a question of whether or not professional software is worth the money, but simply what the buyer can afford. The home user and semi-professional don't have the same budget as the professional, and need to stretch their money further.

Manufacturers have listened intently to the market and responded accordingly. Almost all professional software developers have released budget versions of their programs. Quite often the changes are minimal, sometimes being little more than a reduction in the number of tracks in a sequencer and the omission of some of the more esoteric Midi functions.

As Midi software continues to develop, budget programs become increasingly powerful and many rival the professional programs of a year or two ago.

There are well over 100 Midi programs for the ST, so here is a round-up of some of the more interesting budget-priced packages.

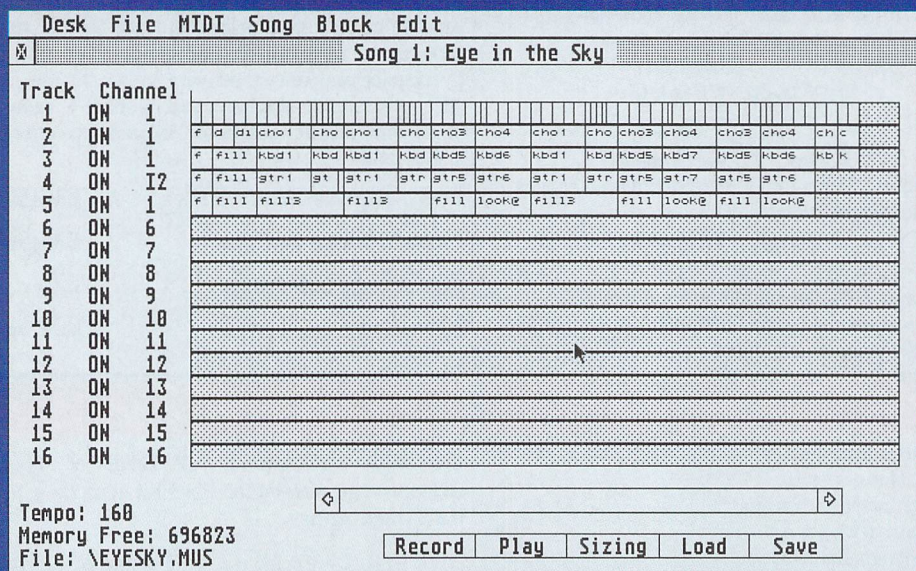
The mainstay of any Midi set-up is a sequencer, so that's where we'll start. The most expensive of the budget-priced packages are just under £130.

When looking at a sequencer, a few things are worth asking. Is it Gem-based? If it's not, will it work with desk accessories such as voice editors?

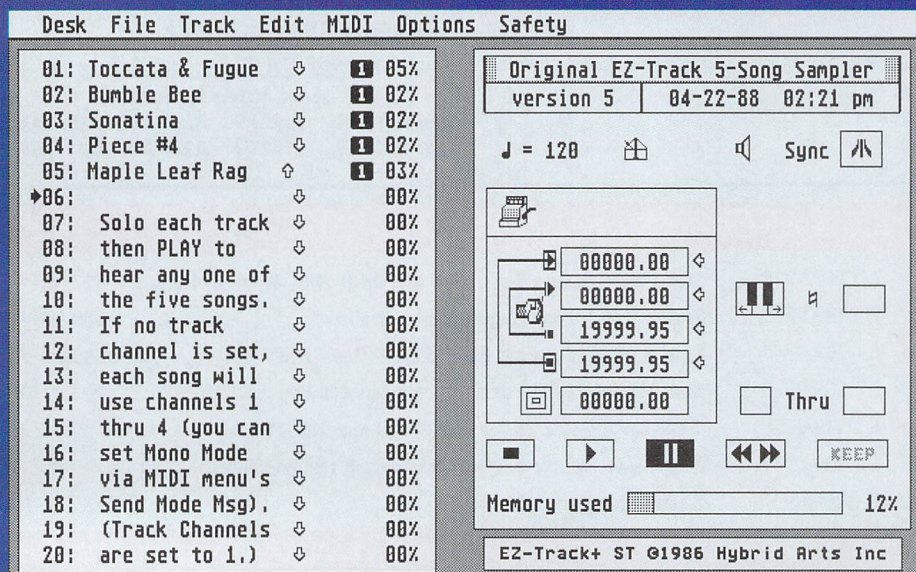
Does it support the Midi file format? This saves your music to a file which can be read by any other sequencer or scorewriter which supports the format. It allows you to take your music with you if you upgrade your sequencer and to load it into a scorewriting program.

Is it pattern or track-based? Pattern-based sequencers let you record and store a number of patterns then link them together in any order to produce a complete song. Track-based programs work along the lines of a multi-track tape recorder and offer a number of discrete tracks – typically 8, 16, 24 or 32 – on which a song is usually recorded in a linear fashion from start to end.

To a degree, most programs can be used either way, but if this is your first excursion into Midi sequencing you



Superconductor from Microdeal is one of the cheapest sequencers on the market



EZ-Track Plus was one of the first budget programs to appear

may find track-based programs initially easier to understand.

A few programs, such as Activision's Music Studio and Electronic Art's Music Construction Set, were designed to use the ST's internal sounds but which also have a degree of Midi compatibility.

None are a substitute for a dedicated Midi sequencer and are generally limited to three music parts, but if you're on a tight budget you may pick one up mail order for £10 to £20.

Super Conductor from Microdeal (£49.95) is one of the cheapest dedicated sequencers on the market. It is a pattern-based program, quite easy to use, and can hold 10 songs in memory at once. It also allows you to channel three voices to the ST's sound chip.

Editing is a rather numeric procedure, and pop up dialogue boxes require you to enter most parameters from the keyboard rather than with the mouse. An advanced feature for a budget sequencer is the ability to save system exclusive data, such as voice patches, to disc.

It is Gem-based although it doesn't support the Midi file format (which wasn't around when it was launched).

Super Conductor first appeared three years ago when it was generally considered to be vastly under-priced and a worthy rival to other contemporary sequencer programs. Now, however, time and other budget programs have caught up with it.

Dr.T's Midi Recording Studio (MRS) from MCM (£49.95) is a greatly cut-down version of Dr.T's professional KCS (Keyboard Controlled Sequencer). It has only eight tracks which is mean even by budget standards.

Editing takes place in an event editor which, while totally numeric, contains several advanced features such as velocity scaling (to produce crescendos and diminuendos). It also has the ability to transpose and invert not only pitch, but also velocity and duration. You can also reverse the note order of a track to effectively play it backwards – try this with some Bach.

MRS is not Gem-based, nor does it support the Midi file format. It's quite heavily numerically-based like most Dr.T programs, but the manual is very helpful.

MidiStudio from Ladbroke Computing (£49.99) was launched just over a year ago at £99.99. It's a pattern-based sequencer (the program calls them phrases) and operation is based on tape transport controls. Once recorded, a phrase can be inserted

into one of 20 tracks any number of times and at any position – rather like pasting a composition together.

The program can hold 100 phrases. You can also record in a linear fashion if you wish simply by recording long phrases.

There is a reasonably friendly event editor and comprehensive, if a bit numeric, editing facilities. A nice feature is the ability to insert scaled controller events in a phrase to produce effects such as accelerandos and rallentandos.

It includes an onscreen mixer and can handle system exclusive data. It is not Gem-based however, and it uses a dongle for protection.

The program attracted some criticism for the internal clock speed,

Melody Maker. This will include a desk accessory visual editor for FM Melody Maker.

Track 24 from Soundbits (£75) is a cut-down version of Studio 24 (which, at £155, almost qualifies as budget, too). Operation is with tape transport controls and the program is easy to learn.

The first 22 tracks can only record up to eight notes at a time (most sequencers don't impose a limit). Track 23 will analyse what you play and translate it into chords (only four per bar). Track 24 stores a one-note melody line.

The program is unique in the budget field by allowing you to display and edit music on the staff, although only one note of an eight-note track can be shown at once, which is a limitation. Editing is fair although block operations take place on a bar rather than note or event basis.

It is Gem-based, but not Midi file compatible. If you like working with the dots it's worth investigating.

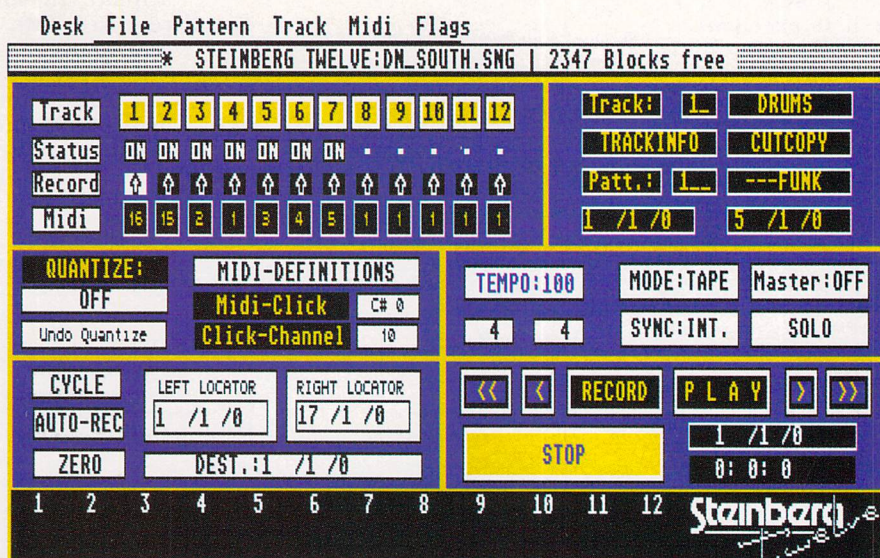
Steinberg 12 from Evenlode (£75) created something of a stir about a year ago when it was bundled free with 1040STs. Developers were concerned that it would kill the budget software market – which it hasn't done, as you can see from this list.

It was originally launched at £129 but now the price of Steinberg's Pro-24, the sequencer many regard as the professional industry standard, has been reduced to £150 and all eyes are on the new standard, Cubase, with a RRP of £500 and rumoured soon to rise. Steinberg 12's price has been cut accordingly.

The new price of Pro-24 may have more of an effect on the budget and professional market than any program. However, Pro-24 has many features and an inevitable degree of complexity so it is not necessarily a buyer's automatic choice.

Steinberg 12 is modelled on Pro-24 and has many of its features including a score edit facility, which, annoyingly, is loaded from disc each time it is used. It has 12 tracks, a song arrange page, Midi filters and comprehensive editing. It doesn't have Pro-24's drum edit page, nor does it support the Midi file format.

Sequencer One from Gajits (£89) is one of the latest sequencers to appear and from a new British company, too. Gajits has based Sequencer One on the best features of existing software.



Steinberg 12 created a stir when it was bundled free with 1040 STs

which is only 24 ppqn (pulses per quarter note) although this is unlikely to cause problems for home users. The manual could be better, but the program is quite powerful and relatively easy to use.

Into real-time

EZ-Track Plus from Hybrid Arts (£65.00) was one of the first budget programs to appear and EZ-Track Plus was an update released about two years ago. It's a cut-down version of Hybrid Arts' MidiTrack range and heavily biased towards real-time recording.

Operation is tape recorder based with 20 tracks. Editing includes cut, copy and paste. It contains the Genpatch injection point for the transfer of Midi data between outboard Midi devices and it is compatible with HybriSwitch, the Hybrid Arts memory-sharing utility.

It is Gem-based but not Midi file compatible. However, a separate program called Midi Mover is available for about £3 which converts all Hybrid Arts SNG files into Midi files and vice versa. An upgrade is due in to make EZ-Track Plus compatible with FM



As a result it has tape recorder style controls, 32 tracks, each of which can be given a 16 character name, and real-time Midi controller mapping such as map aftertouch to volume for Midi wind instruments.

A grid editor shows notes as bars on a grid, their position indicating their pitch and duration. Editing involves altering parameters in a dialogue box, whereas most other grid editors let you click and drag the notes.

There is a bar editor which looks very like the one in Passports' MasterTracks. It's an easy way to arrange a piece.

The software is Gem-based and supports the Midi file format. Its major omission is an event editor - which many users probably try to stay clear of anyway. Otherwise it is excellent value for money.

MasterTracks Junior from Passport (£99) is another cut-down program, this time from MasterTracks Pro (£275). It has a mammoth 64 tracks and operation is via tape transport controls.

One of its claims to fame is the song edit page which divides the tracks into bars, simplifying arranging, although editing doesn't go down to event or even note level.

It has separate windows for the sequencer, editor, conductor and transport controls, which can be resized and re-positioned like any Gem window. It features one of the better methods of step-time input and supports the Midi file format.

Dr.T's Tiger Cub from MCM (£99) is another recent release and is based on Dr.T's Tiger program. It has 12 tracks, tape recorder controls and 384 ppqn resolution. You can edit notes while the sequencer is running, instrument/drum maps can be saved to disc and the program lets you see and print up to 12 staves of music notation.

It also supports Dr.T's MPE (Multi Program Environment) which allows you to switch between other Dr.T program modules and share data with them. You'll need

Contacts

Microdeal, PO Box 68, St. Austell, Cornwall PL25 4YB. Tel: 0762 68020.

MCMXCIX, 9 Hutton Street, London NW8 9PR. Tel: 01 258 3454.

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

Hybrid Arts UK Ltd., 24/26, Avenue Mews, Muswell Hill, London, N10 3NP. Tel: 01 444 9126.

Soundbits Software, 48 Galton Towers, Civic Close, Birmingham B1 2NW. Tel: 021 233 3440/733 2063.

Evenlode Soundworks, The Studio, Church Street, Stonesfield, Oxford OX7 2PS. Tel: 099 389 8484.

Gajits, 28 Dennison Avenue, Withington, Manchester M20 8AF. Tel: 061 434 2768.

The Digital Muse, 44 Gloucester Avenue, London NW1 8JD. Tel: 01 586 3445.

1Mb of ram to run Cub. It's Gem-based and Midi file compatible.

Midistudio Master from Ladbroke Computing (£129.99) is the updated version of Midistudio.

It boasts more than 30 new features and the author says it has been completely re-written.

It has 100 tracks, although only 20 can play at once, 100 phrases, 240 ppqn input scan and 96 ppqn output, realtime mixdown using the mouse and screen update during play, multi-channel recording, lots of Midi filters and all sort of other goodies.

Although it is not Gem-based, it does support Gem accessories and the installation of software modules. It still doesn't support the Midi file format, although this option is expected to appear in module form. It also requires 1Mb of ram. Powerful, yet easy to use.

Prodigy from The Digital Muse (£129.95) is the baby version of Virtuoso (£299) and the cheapest multi-tasking sequencer on the market. Screen displays are neat and

professional and updates are almost instantaneous. It has 32 tracks and events can be edited in an event list or on a grid display.

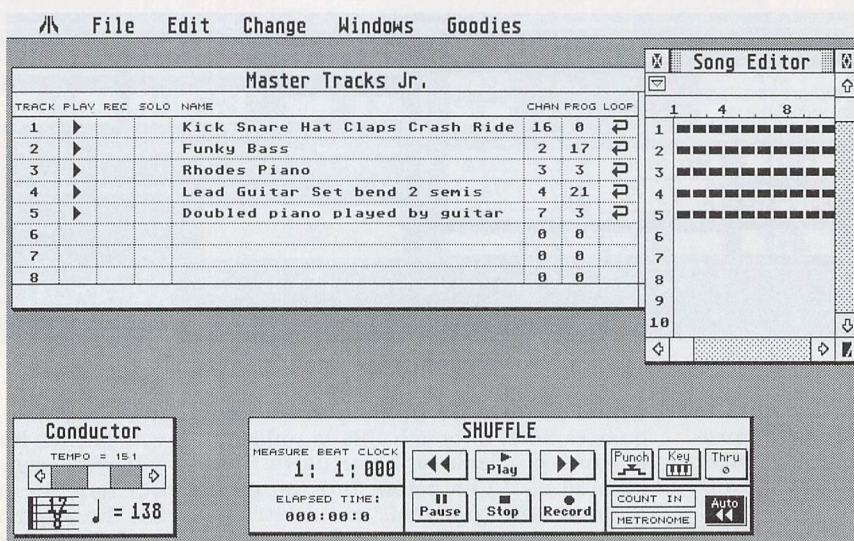
Like Virtuoso, Prodigy prefers to use its own multi-tasking operating system in favour of Gem and it doesn't support desk accessories, but it does use the Midi file format. It requires a dongle for copy protection.

TDM is planning a number of multi-tasking modules one of which should be a score editor.

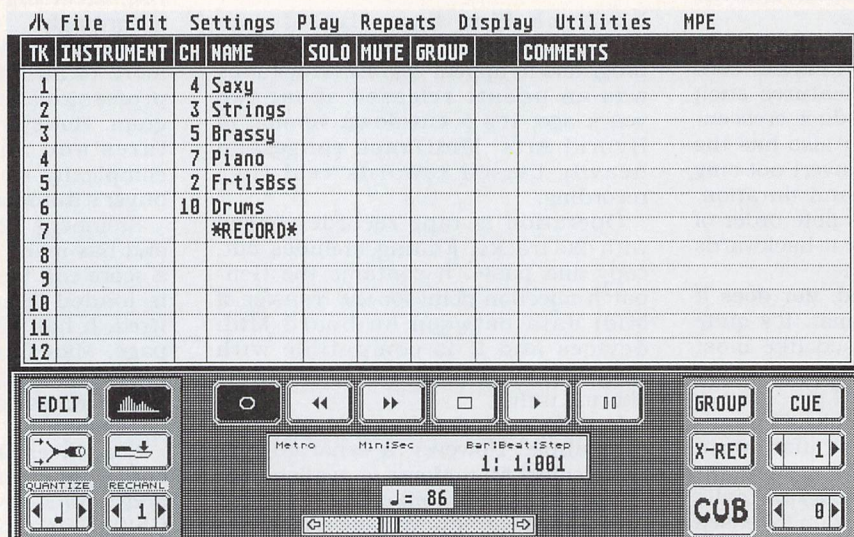
The program has many features and you are recommended to read the excellent manual carefully to discover them all.

Another one for your short-list. Before even one review appeared in print, TDM reckoned Prodigy was outselling Virtuoso five to one.

● Next month I'll look at voice editors, librarians, composition programs and other assorted programs which you might like to play with in your music studio - all on a tight budget.



Master Tracks Junior is another cut-down program



Tiger Cub is based on Dr. T's Tiger



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Painter's pot pourri

THE proliferation of paint packages for the ST continues with the arrival of Paintpot and Arty Junior.

Paintpot comes in heavy on the features side. However the package seems unfinished and haphazard, detracting from what could otherwise be an excellent product.

The manual is poor. The order in which it deals with the tools isn't logical and there is neither a contents page nor an index – just as well perhaps, as there are no page numbers.

The text is squeezed on to tiny pages to such an extent that there are no margins and they contain nothing more than an explanation of the tools and functions available, with no hints, tips or graphic visual assistance.

A new manual is apparently being printed – I hope the opportunity has been taken to substantially improve it.

Paintpot runs in all three of the ST's screen resolutions and features most of the tools and functions you would expect in an art package – and perhaps one or two unexpected ones.

Features include straight line draw, freehand, fill, cut/paste, clear screen, undo, set colours, brush, box, ellipse, text, spray, erase, simple bar graphs/pie charts, rotate, object, image brush, multispray, magnify (x5 or x10), mirror, shatter, skew and bend.

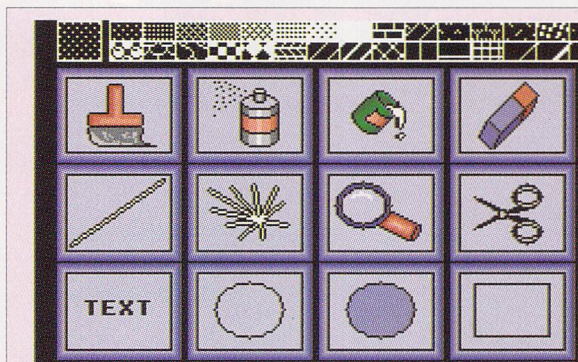
The line, box and ellipse functions have the usual choice of line weights or automatic colour/pattern fill.

Image brush grabs part of your picture and uses it as the current brush, though it is not held in memory and is subsequently lost when returning to the toolkit. Infuriating.

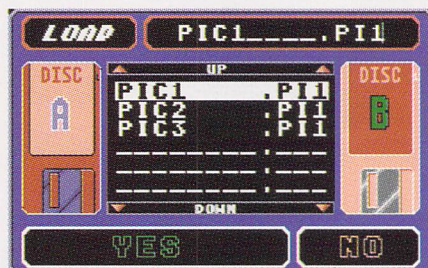
The object function allows you draw an object and then rotate, resize and move it anywhere on the screen. Drawings created under the object function can be saved individually and imported into existing pictures. I found it an enjoyable and useful feature.

Another very useful function on the desktop is that of being able to set up the system to your own preference and then save it. This covers such things as defining airbrush size and speed, coordinates on or off and graphics modes. It also allows you to set up your printer, the default being set for Epson.

I did not like Paintpot's toolkit system. Too many mouse button presses are needed to swap tools and to get in and out of the drawing screens. All this slowed down the work rate considerably.



Arty Junior's simple, bold icons make the package easy to use



Arty Junior's file selector

For example, Paintpot doesn't remember what tool you were last using, so it has to be reselected each time. In the case of the paint brush even the brush size has to be selected every time you want to use it – needlessly fiddly and very annoying.

Another irritation occurs when a non-standard palette is used. While drawing on screen there is no problem, but when returning to the toolkit the picture – which is partly visible behind the overlaid icons – takes on the colours used by the toolkit.

While perhaps only a relatively minor point, it adds to my feeling that Paintbox's authors have

not thought the package through as a whole.

I found a few problems with the fill function. The program locked up a number of times and had to be rebooted. Some patterns even ate their way out of totally enclosed shapes.

There can be no excuse for allowing software with such fundamental faults as this to be launched with such apparent lack of rigorous testing.

Despite Paintpot's idiosyn-

FACT FILE

Program: Paintpot
Price: £19.95
Supplier: Switchsoft, Hawthorn Farmhouse, Stowe-by-Chartlet, Staffordshire ST18 0LG.
Tel: 0325 482454

POINTS FOR:

Works in all three screen modes. Good range of tools.

AGAINST:

Poor manual needs improving. Problems filling shapes. Toolkit is cumbersome to use.

Niels Reynolds brushes up on his art techniques with two new releases

crasies and faults I think it has the makings of a worthwhile package, though as it stands I can't recommend it. I was testing version 1.0 when version 1.05 dropped through the letter box – with the promise that version 1.1 was to be offered as a free upgrade. It will support IMG images as well as the P11, P12, P13 and NEO files.

able to them, big, small or tiny.

Paintbrush is further enhanced by being able to grab part of the screen for brush use. The menu screen takes up the whole screen and shows a five by four grid of bold, simple icons each denoting a function.

I particularly enjoyed the graphics mode icon – a face for normal, solid colour and a skull for X-ray transparent colours. It is both amusing and self explanatory.

The menu is backed up by one of the most informative and well laid out manuals I have seen, taking users through each function step by step, using questions and answers. It is well written, logically laid out, properly indexed and uses screen images to illustrate the text.

The software is easy to use, does exactly what is expected of it and gives Degas P11-compatible pictures. It may not have the frills of some other art packages, but it isn't aiming for the top end of the market.

Pitched squarely at the young or inexperienced user, I can thoroughly recommend it, both as a simple art package in its own right and as a tool for building a child's confidence in using a computer.

At £15, Arty Junior is very well

The young at art

priced and deserves to do well. It is well designed and thoughtfully presented in every respect. Paintpot at almost £20 seems to have been launched in too much of a hurry, with too many niggles still in the software and an inadequate manual.

I know which one is going to generate more customer satisfaction and brand loyalty which is, after all, the only way any company hope to do well in the long term.

FACT FILE

Program: Arty Junior
Price: £15.00
Supplier: Zeal Software, 38 Abbey
Fields, Randlay, Telford, Shropshire
TF3 2AL.
Tel: 0952 593345

POINTS FOR:

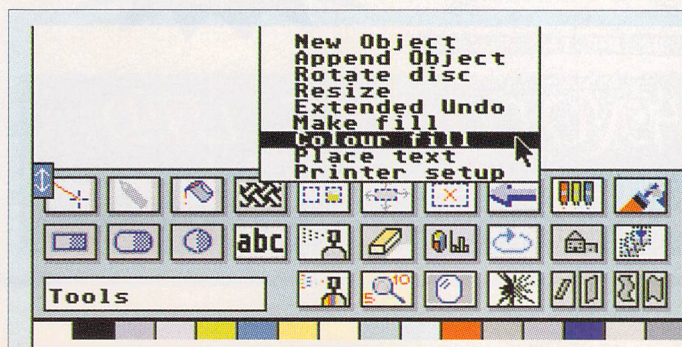
Easy to use, particularly for youngsters.
Good, easy to follow manual.

AGAINST:

No complaints at all.

Arty Junior is altogether different. Totally unpretentious, it sets out to deliver a quality art package, simple enough for younger children to use, yet of a high standard. It does just that.

Tools and functions available include fill, magnify, paint brush, airbrush, box, ellipse, rays, text, cut/paste, erase, clear and palette. Paintbrush, airbrush, text, eraser, lines – including box/ellipse borders and rays – all have three sizes avail-



Paintpot also uses icons, but drop down menus can be used to select most options

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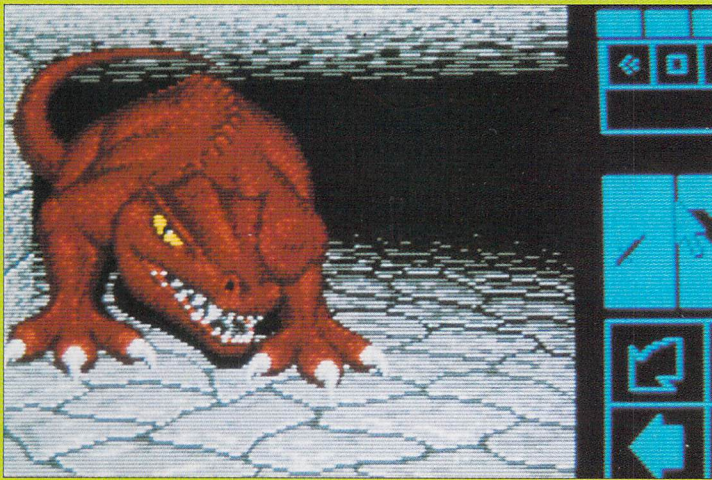
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Arcade CORNER

What big
teeth you've
got grandma



Striking back at Chaos

Phil Armstrong reveals
how to get to The Junction
of the Ways armed and
dangerous

TELEPORTATION was instantaneous. A moment ago the party had been in the Grey Lord's castle, now we were in Lord Chaos' foul dungeon, naked, unarmed and with no supplies. It was pitch black.

So starts *Chaos Strikes Back* – last month's *Atari ST User Star Game*. If you are struggling at the start of this mega-adventure then read on, as here is one traveller's diary revealing how he and his intrepid travelling companions succeeded in mastering the first level of this dungeon.

A familiar sound made me turn, two poisonous worms were left and right of us, with a third rapidly closing in. As one man the party went into action, Petal casting a light spell as we ran, desperately searching for an exit. There was none.

The floor of the square room was littered with objects which we managed to pick up while keeping on the move – a few torches, a dagger, a chest full of ragged clothing, a pair of boots and a couple of coins.

I noticed a slot in the wall beside a barrier, and fumbled one of the coins into it. The shimmering blue curtain disappeared and we tumbled into the entrance. Dead end.

Four flasks lay on the ground, two contained ven potion, the other pair fire bombs. Each of us took a flask. Now we had weapons and an advantage, for although our retreat was blocked, the worms could only approach one at a time.

I hurled the poisonous ven bomb at the first worm to keep it at bay as none of us could afford to be bitten at this stage for we did not possess an

empty flask in which to cast an antivenin potion.

Plague, Petal and Necro cast the strongest fireball spells they could muster at the worm. It seemed tougher than those I had previously encountered, but eventually could stand the barrage no longer. One down, two to go.

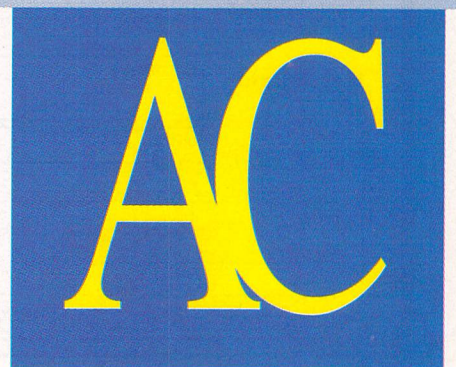
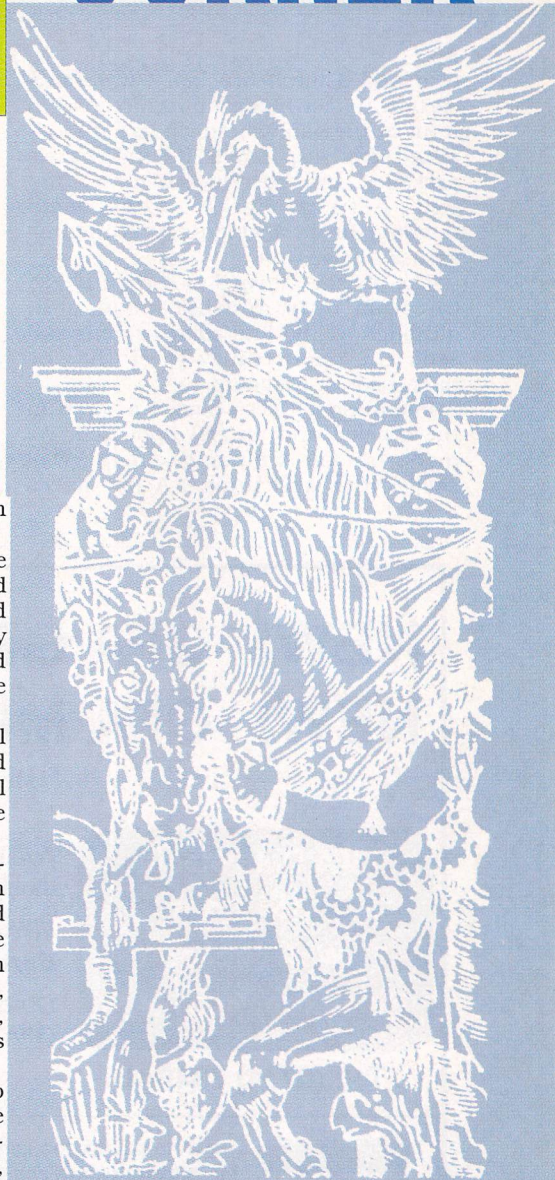
As this tactic had proved successful we waited for the second worm and when it, too, fell I prayed that we all had enough mana to deal with the third. We had, albeit at a price.

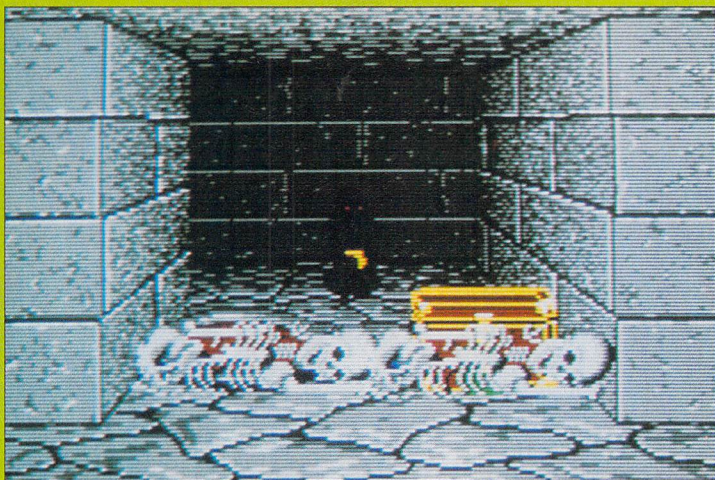
Plague had been bitten and was losing energy rapidly as the poison coursed through his veins. We needed an empty flask. It was fortunate indeed that we picked up the worm rounds as an emergency food source, the only remains of our adversaries, as we discovered a further two coins and an iron key.

Having bought enough time to search the room more thoroughly, we discovered three more of the blue barriers, each with a coin slot. However, one of the slots required two coins and we possessed only three. The price of admission was worth it, for we now had a powerful weapon – a sword named Storm which could hurl lightning bolts.

We had a choice. Behind the remaining barriers I could make out a compass and a rope, and three magical boxes which could freeze any opponent briefly. I opted for the latter. Time was running out for Plague as we combed the room again.

The only features we had missed were a gate with a keyhole to the left





*Make a map
or you could
be lost in the
dungeons
forever*

of it and a torch bracket. I was fairly certain that a hidden pressure pad in front of the gate where we had materialised was responsible for the worm's presence, and felt reluctant to try that exit. A final search of the room resulted in us accidentally stumbling across a false wall.

The passage turned at a right angle, but was only another dead end, although we did find some armour and took the opportunity to clothe the party as best we could.

Inspiration. Necro placed a torch in the bracket and an exit appeared. We made tracks. A message on the wall read, "Run and jump". A few paces

further down was a pit. We backed up and followed the instructions. Moving as quickly as possible we approached the pit, which vanished for a moment just as we reached it, then we were over just before it reappeared, standing now at a tight bend upon a pad which appeared to trigger the pit from this side.

We experimented with this pad and found that it did indeed close the pit briefly, so we hastily made for the passage beside it. Just ahead of us was another pad and beyond that I could make out an empty flask. Figuring that the pad opened another pit, the party moved quickly forward, scooping up the flask, then heading left. We

were right, a hole in the ground yawned suddenly, but we had been fast enough. Petal cast an antivenin potion into the flask and Plague consumed it noisily. Now we had some breathing space, but this passage proved to be a disappointment, leading only to a gate which I felt sure led back to our original starting point.

Retracing our steps we found a staircase that led to an impassable door, and a room which had to be negotiated quickly, as a pit appeared as soon as a step was taken. With careful planning we managed to search thoroughly and were rewarded with further weaponry and foodstuffs. At one stage we were attacked by creatures that I had not previously encountered, but a couple of well placed fireballs dealt with them.

Another gate prevented our exit but, remembering the iron key, was soon opened, seemingly opening the other gate simultaneously. Another staircase, leading downwards in the gloom, led to a small room with two pits, two pads and a water fountain.

Exploration led to the discovery of a chest full of food and two more iron keys. Stepping on one of the pads had triggered a blue teleportation curtain. Carved into the wall beside it were the words, "To the junction of the ways..."

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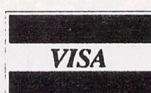
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Middleweight contender

DGBase from Digita, a contender for the middle of the range market of non-programmable databases, comes from a company which has a respectable record of producing many useful, if unambitious, utilities for small businesses.

More than with any other type of program, it is difficult to pass judgement on databases because users typically have so many different requirements. Even the most powerful and top selling programs will have flaws and weaknesses that make them hopeless or at least cumbersome for certain tasks.

In common with most databases in its price range, DGBase is therefore not unlike the curate's egg – it has excellent features and some irritating ones as well.

To decide whether it suits you or not the first step is to consider the statistics of what sort of information it can handle. Each individual record can have a maximum size of 32k, which in the standard DGBase window represents 16 screens of text.

However, there is also, confusingly, a limitation of 64 fields of 255 characters – which makes 16k by my maths – so I can only assume that the remainder is for storing generous amounts of explanatory text for data entry screens, layout details and so on.

There are a potentially unlimited number of records per file, depending on the room available on your disc. Therefore, although the program itself is ram resident and fairly quick, it reads in data piece by piece from the disc and you can expect some delay with very large files.

Up to four data files – only two on a 520ST – can be loaded at one time and you can move relatively easily between them.

One very welcome facility is that you don't have to go through the rigmarole of defining the database file structure in advance. The data in the fields can be any length up to the 255 character maximum, and fields can be added, deleted or edited at any time.

I find the traditional 255 character field limit a nuisance, and look forward to the time when programmers feel inspired to make an effort to break the restriction. The first step in using

Tony Kendle examines a new flexible database program with a wide range of features

a new data file in DGBase is the creation of a record card for the entry of data – a process often called forms creation in other programs. This process controls the way that the data is both entered and displayed on screen.

There is no choice of different display formats for different purposes, although it is possible to control the size and position of the display window so that only certain fields are in view.

The screen layout is built up using boxes, which can be any size, displayed in a chosen colour and fill pattern and with a chosen border. The boxes can easily be dragged into place and there is an auto-align feature for producing neat layouts.

Each field added to the data file must have a title to be used in searching and filtering data and in calculations. However, this title need not be

displayed on screen. Instead explanatory text can be added in a variety of sizes, colours, styles and so on. The field contents are displayed in their own boxes which can also be sized as required.

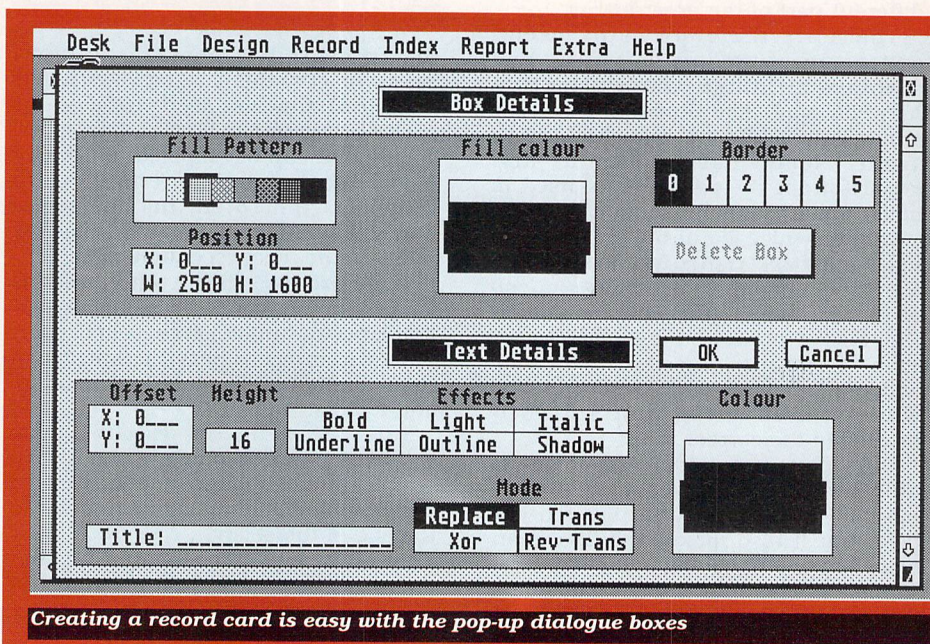
One unusual feature is that changes that are made to the record layout only affect new ones that are added – old records remain the same until they are next edited.

An impressive range of field types is available. The options include text, integer, decimal, financial (which displays numbers with commas separating the thousands and two decimal places), date and time.

Fields can also be classed as mandatory (for example, it cannot be left blank), validated (which sets particular limits on the permitted entries), enumerated (which is similar but gives up to 12 specific choices for you to select from) and default (which sets an entry to be inserted if you leave the field blank).

Link fields show calculated data based on the combined information from other fields, transformed using standard mathematical operators (plus, minus, times and so on).

Complex mathematical formulae can be built up using parentheses. Up to



Creating a record card is easy with the pop-up dialogue boxes



Adding fields to the new record card

► six variables can be defined for use in these calculations – extremely useful in making rapid changes, for example, to allow for a change in the VAT rate.

Two preset functions are also available – TD and CT for Today's Date and Current Time. These can be useful in conjunction with the Default option.

There must be at least one, and there can be up to four, indexed fields which control the order in which the records are seen. Sorting is controlled by the current key field, chosen from those which have been indexed.

The format of the fields can be set to be left or right justified or centred. Numbers can be displayed in integer form, in scientific notation, in decimal, octal or hex and with or without signs. The number of characters to be displayed can also be defined.

There is also a choice of seven date or clock formats, which for some reason are accessed from a completely different part of the program.

There are therefore many useful options for controlling data entry and display, although the distinction between what should be a data type and what should be a format option seems somewhat confusing and departs from the conventions used in many other programs.

One very nice feature is the ability to insert carriage return characters into a field without that signalling the end of the data entry (the Return and the Enter keys produce different effects). This allows structured data like an address to be stored within one field, while still ensuring that it will be printed in the correct way.

This can make creating address labels very easy, given that all you have to do is select and position one field, but it also makes the 255 character limit more galling.

Searching data can be done via a fast search which examines key fields only and looks for an exact data

match. More sophisticated, but slower, data filtering can be done using several fields combined with logical operators such as AND OR and NOT, greater than, equal to or less than and so on.

Searches can be case specific, can match with the beginning of the data only, or may match with a string contained somewhere within the field. Wildcards can be used when searching for text, numbers, dates and times.

Once a selection is made of match-

“A file reorganiser compacts the data and saves space”

ing records it is possible to view, delete or edit them, a facility that is excellent for fast updating or for spelling correction. For example, the Wages field can be changed to Wages * 1.15, Date can be changed to Date+366 and so on. In the case of horrendous mistakes an Undo facility reverses the most recent changes.

There are three basic report options for producing printouts of the data – list, label and mail merge. A list report differs from the others in that it can have a title at the start and headers and footers.

Text can be entered directly as you want it to appear on paper, or it can be formatted by placing it in inverted commas and adding format codes to the end of the string.

For example, “This would be displayed right justified with a width of 80 characters,R80”.

Fields can be formatted in the same

way, but are entered within angled brackets. The result is reasonably flexible but extremely cumbersome. The field contents will overwrite the format if the width is set too narrow.

A Quick List report option provides a default list of all fields that can be edited as a starting point for printing data.

Some basic printer control options exist, although the package is only compatible with Epson printer control codes to begin with, and you have to manually change the codes if you have a different machine. A range of printer drivers would have been welcome.

Importing data

Reports can output to screen, printer or disc, and this last option can be used for producing Ascii files for importing data into other programs. Data can also be more directly moved to and from other Digita programs – DGCcalc and Mailshot Plus.

Digita claims that DGBASE is a relational program, but strictly speaking it is just a flat file database. The relational option seems to have two uses. One is for creating a new file from selected existing fields and the other is for merging data into a field from matching fields in a different file.

Finally, some useful utilities are built in, notably a calculator, an automatic save facility that backs up files every 10 minutes, a file re-organiser that compacts the data and saves space, and a disc format option.

Files can be protected by passwords, but the only option seems to be based on restricting entry to a file – there is no read-only option, for example.

The program comes with a useful set of example files. However, the manual is no more than tolerable and is confusingly laid out, with snippets of information revealed almost randomly.

DGBase is a reasonably good buy for a first time database and has several features that many existing packages would envy. More development, especially of the reports, would make it very interesting indeed.

FACT FILE

Product: DGBase

Price: £49.95

Supplier: Digita International, Black Horse House, Exmouth EX8 1JL.

Tel: 0395 270273

POINTS FOR:

Some innovative features and a wide choice of field types give the program a unique flavour.

AGAINST:

A cumbersome report system, lack of printer drivers and one or two weak areas take the shine off of a promising program.

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ST5

ADVENTURES

Looking into



THE sun is shining at last on these grey walls, and as the warmth percolates to my inner sanctum I have the feeling that the season of renewal is surely with us.

The cold, wet nights of winter, when fires blazed and disc drives whirled, are a fading memory, and it is time to look at the fresh flush of new ST adventure scene.

From Fission-Chip man Mike Sutin comes the news that the final touches have now been applied to the long awaited ST version of *The Krystal*. It should be available by the time you read this.

The Amiga version, which was released last autumn, was a critically acclaimed smash, so check out the ST *Krystal* now.

Meanwhile, Electronic Arts launches the much vaunted *Starflight* and *Starflight II*. These fun-packed space age adventures carry all the quality and addictive quality that we have come to expect from the EA stable.

Also on the company's release schedule, though not due for release

Pendragon basks in the sunshine and welcomes a few software surprises

until later in the year, is *Dragon Wars*, a new role-playing game designed and written by Interplay.

The game allows you to choose the level of combat and power of your player, and to select tactics. Meanwhile, characters created from *Bard's Tale* can be transferred and used in the game.

Erstwhile contemporary Mindscape is on the brink of releasing *Star Trek 5 – the Adventure*, which in the wake of the latest *Trekky* film should be a blockbuster and is my tip for the number one position in the charts this summer.

The same company has also taken on board the famous Origin label – it didn't last long under the Microprose banner, did it? And the new release from Origin, is – you've guessed it – *Ultima V*.

Following the same unimaginatively titled *Ultima I, II, III, and IV*, the game follows in the tradition of gameplay and plot of its predecessors, and will undoubtedly appeal to the ever-growing *Ultima* cult.

Recently from France came the surprise release of Delphine's *Future Wars – Time Travellers*, produced by Paul Cuisset. The game combines a 3D system similar to that employed by Sierra, and boasts excellent graphics and gameplay. *Future Wars* is a must for all self-respecting questers.

Meanwhile Mirrorsoft has now released the long-awaited sequel to *Legend of the Sword: The Final Battle – Legend of the Sword II*. Some superb features of the game include a large range of character statistics, a system which controls the climate as the game unfolds, and 3D views of all

Problems solved

This is part four of my serialisation of solutions to three of the most popular and difficult adventures for the ST. If you wish to keep your dignity and not indulge in a bit of cheating, look away, otherwise read on.

Fish The Boss

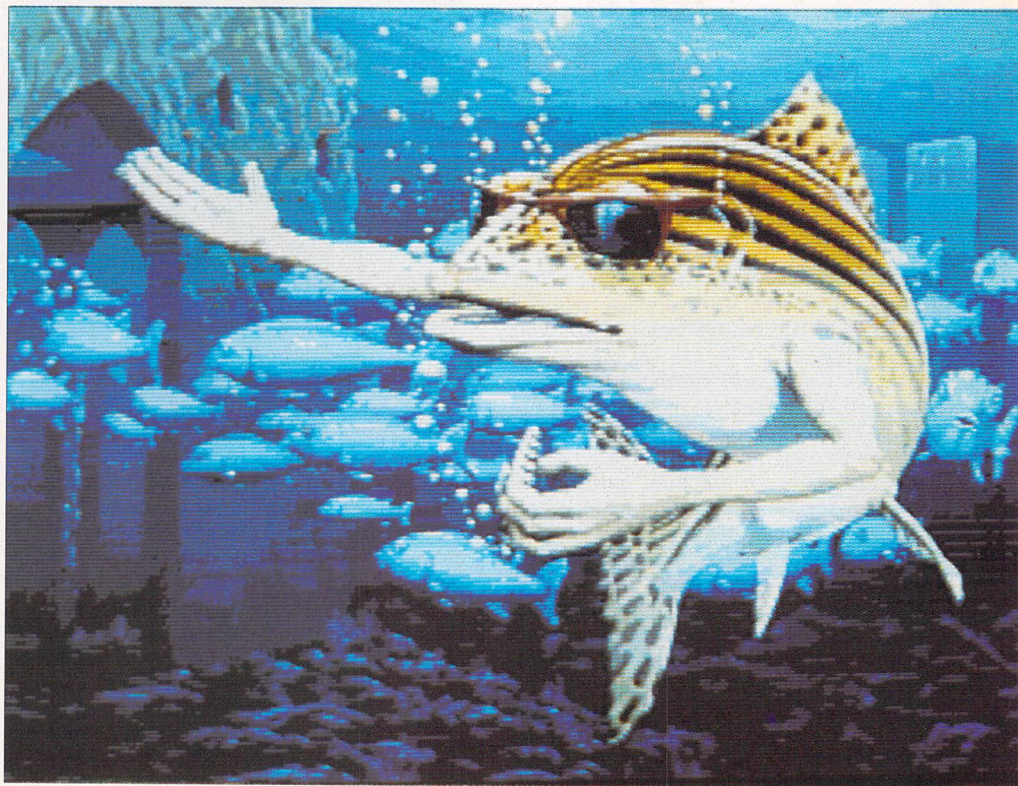
Travel West, South-East and Down to get on the train. Disembark at Opah University and go Up and South into the principal's office. Now go East and South, open the book and turn to page 158 where you will find a picture of a focus wheel. Tear the page, go East and put the tatty card in the slot.

Continue East and South-East. Put the torn page in the protocopier slot, and thereby get the focus wheel. Read the wallchart to find that you are currently out of stock of a filter, photon bridge, focus wheel, tuned crystal and a case.

Before leaving, turn off the protocopier. Leave the hyperdriver and the bag, go North-West and sit down at the terminal. Log-in and type Roach and the password – read the Fishofax. Access the project and equipment files to find that a stream regulator is what you are trying to construct. Now log-out and put the tatty card in the slot.

Travel West, West, West, West and South to the restaurant, and buy a take-out sachet. When you meet Simon Tench ask him to come to the disco – the bright lights and loud noise will dispel his alien host.

Go North, West, Down, and board a



Fish – an aquatic encounter of the scaley kind

train. Get off at the museum and open the sachet in the alarm room. Continue North, take the crystal, and go South, South, South, Down to the platform. Get on the train to Battersea. Go South, Up and North, pull the switch, and the door will swing open. Now go West, West, and unscrew the filter with the screwdriver.

Travel East, East, South and Down, and board the train to Paddington. Continue South, Up, West, South and Up, take the case and go North.

(Continued next month)

War in Middle Earth Steve Perris

Send all the dwarves and Dalemens to defend Thranduil's Palace – don't worry about Dale or Erebor. To defend Minas Tirith you should send the Rohirrim forces and wait for more support. Don't let Gandalf and the company join the defenders or the Ringbearer will be hampered by a large following army.

Now sneak the Ringbearer in through the thinnest stretch of moun-

locations you visit. Mirrorsoft is also touting its Theme Park Mystery as an arcade/adventure style game with four levels of action and lots of impressive graphics and animation.

Due for a late summer release is the more traditional Omnicron Conspiracy. It is an amalgam of quite a few adventuring styles with characters like Betty the Body and Fred the Clip.

Tynesoft's Horrorsoft label is steadily overcoming problems with its long-awaited, and much delayed, Elvira's Game. This exercise in textual horror should be at a software store near you very soon.

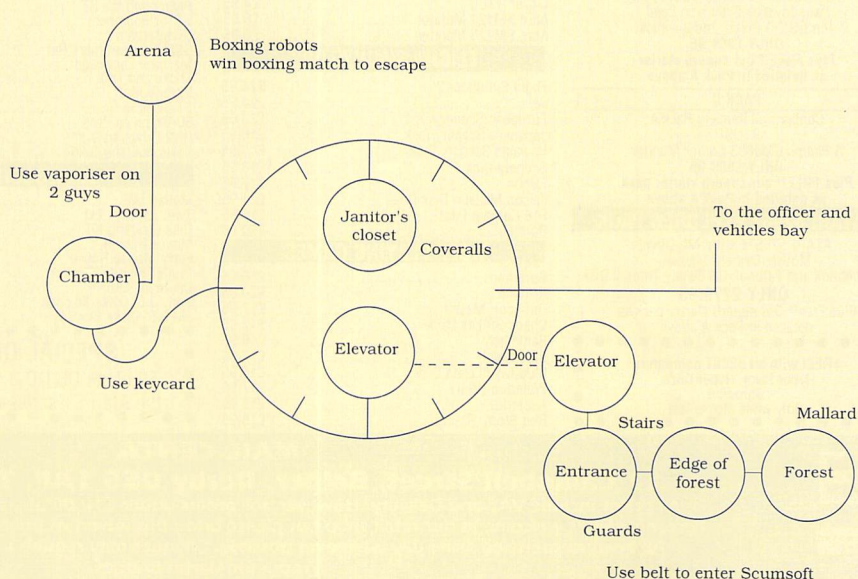
Also worth looking out for, but try before you buy, are Dragon's Breath from Palace Software and the over-hyped Pools of Radiance and Dragons of Flame from US Gold.

Finally, I am delighted to present the fourth and final map to Sierra On-Line's Space Quest III. Next month I will begin a serialisation of maps to Mindscape's classic, Déjà Vu II.

● *So until the shadows grow long, happy adventuring.*

Space Quest III Map 4

PESTULON



tains, or alternatively through Durthang, but watch out for spiders and Balrogs. Only approach Mount Doom when the coast is absolutely clear. Once on the final approach you must move at the Very Hasty speed option, as this reduces the likelihood of meeting bands of orcs.

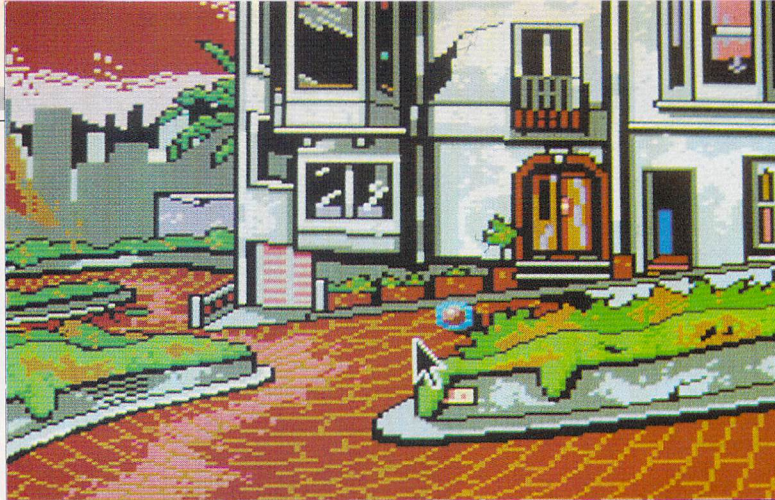
A few general tips to help you succeed: Don't let too many of your forces join together, or you will find you are unable to access half of your troops, due to only the leader being displayed onscreen.

Always try to outnumber the enemy in combat, and retire your better troops from battle when their health reduces to a critical level.

Don't bother trying long exhaustive searches for healing potions, as such expenditure of energy takes up time. On balance it is better to move quickly than to spend much time in fruitless searches. Send Eomer for the silver orb at the beginning of the game, and when he retrieves it send him off to Thranduil's Palace before the hobbits reach his destination in the two months of resting.

If attacked by a Balrog, leave your most expendable men and run. But in the final stage of assault on Mount Doom have no qualms about losing many members of your company, just get that ring to the mountain.

(Continued next month)



You'll need a strong stomach when playing the grisly Manhunter - New York

Manhunter - New York R.G.B. Marshall

You will now have found your second corpse. If you look carefully you will see that on the forehead of the cadaver is engraved the letter P. If you look closer you should find a letter about meeting Anna at 4.30, and a hanky bearing the name H. Osborne. From this information you can access Info on MAD, and type Harvey Osborne and Anna Osborne, to obtain their address.

Now go to their apartment and retrieve a key from the carrier bag. You will also discover Anna's body strung up behind the door. You will recognise her as the woman in the nightclub.

After this grisly discovery, make your way to the museum, go to the side entrance and use the key to enter.

Follow the suspect's route and get to the fourth floor using the 13 keycards. You will come across a wooden door locked by a wooden beam.

Use the medallion to open the door and inside you will see an explosion. Now grit your teeth as you meet your fourth corpse. He is wearing a hood with "Harry" monogrammed on.

Closer inspection will reveal a series of tatoos on his arm. The tatoos are arranged in three rows of five, with three of them blocked out - take note of the position of the blanked three.

Also in the room is a poster, which shows someone's room with an arrow pointing to the sideboard. You now get Module A, but the Orbs override and request the names of the three suspects. Give them: Harvey, Anna and Reno.

(Continued next month)

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A sort of mini Maxwell

NOT so long ago desktop publishing was considered to be the exclusive domain of people with highly disposable incomes or corporations with more than their fair share of Macintoshes.

Then somebody realised that you didn't really need more than £5,000 worth of Apple technology to make up a simple page, and DTP became popular on the IBM PC.

With the advent of 16 bit home computers, which are in many ways more powerful for applications like DTP than their more expensive office-bound cousins, the technology was slowly but eventually transferred across so that everybody could produce pages cheaply (relative to a Macintosh) and easily.

This was the thinking behind Easytext+, which is in fact the second DTP offering from ZZSoft – the first, naturally enough, being Easytext. Easytext+ will run on an ST in medium resolution on a colour monitor or in high resolution with a monochrome monitor.

It is also essential to have some form of printer. At the moment Easytext+ supports 24 and 9 pin printers and future versions may include laser drivers.

The principle involved in desktop publishing is really quite simple. Basically you want to be able to define specific areas on the page – shown onscreen – and then more or less pour your carefully crafted prose into them. On a secondary level you want to be able to experiment using different fonts or styles for introductions and headers, separate columns with key-lines, justified text and various other layout tools.

Areas for text or graphics are known as boxes and before you can put anything on the page you must define a box to put it in. In fact it is a good idea to draw out a rough plan of what the page should look like before you start placing anything.

Creating a box is easy. Simply choose the Start Box

Nic Veitch tries out a package that brings affordable desktop publishing to the ST

option which, like all the other commands, appears on a drop down menu. Then drag the cursor to the exact dimensions you require after turning on the page guides.

The page guides give you an idea of where you are and what's going on. They will divide the page up into halves or quarters both vertically and horizontally according to your prefer-

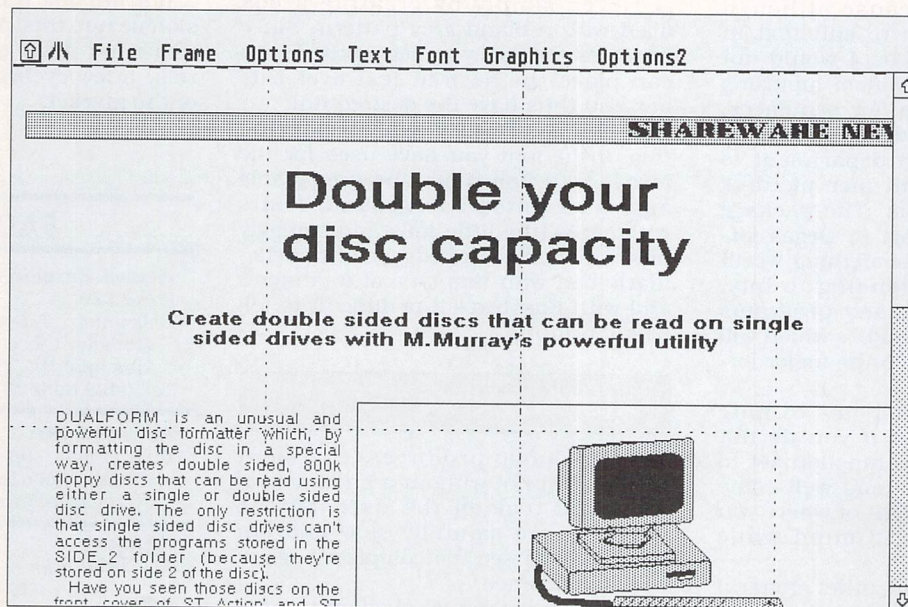
ence. The dotted lines will give you some idea of positioning, but this package lacks the ruler-marked page guides of more sophisticated software. A further Snap tool, which will automatically place a box to line up with the current grid, proves useful, but unfortunately the grid resolution is not user-definable.

A further limitation is the lack of a magnify option. Not only does this mean that you can't inspect the graphics in great detail, but it is also impossible to step back from the page, as it were, and see your work at one glance. The first time you'll see it is when it pops out of your printer. Something that does work well are the printer drivers. Fonts are stored on the disc for both the 9 and 24 pin versions of

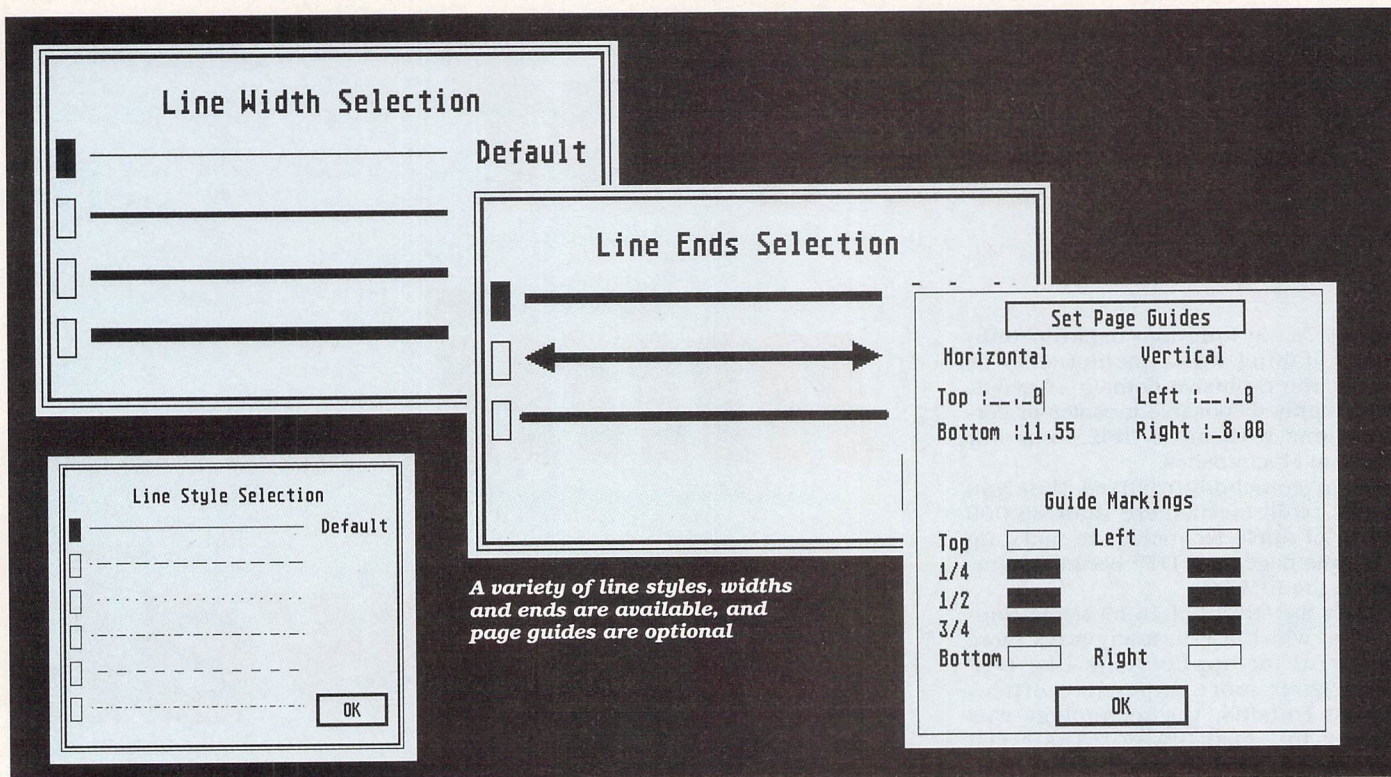
Easytext+, presuming you have an Epson compatible printer – which you probably do, even if you didn't know it.

This means when it comes to printing, the fonts are output at the resolution of your printer – sort of Postscript on the cheap. The fonts aren't truly scalable – you have to have the required point size on your disc before you can use it – but a good range is supplied and more are promised for the future.

Output on a 24



Easytext+ is excellent for one-off, but not so good for bulk work



pin is very impressive. Fonts appear at least as good as your printer's internal ones and mix easily with graphics.

Another area in which praise should be abundant is the text management controls. Once your prose is in a box there is very little that you can't do to it. Text can be formatted left or right justified, centred or fully justified. For full justification the kerning can be set to character spacing or pixel spacing, something not usually found on DTP software.

Leading, which controls the amount of space between lines of text, can also be adjusted, as can the top and side margins for the box.

Text can be imported from 1st Word and 1st Word Plus, and the style commands will be carried across. This is quite important, because although Easytext+ allows you to edit text in boxes via its own editor, I would not recommend this as a way of inputting anything more than a few sentences, or to correct text already on screen.

There is no real art department to Easytext+, if you want nice pictures you must import them. The package will only accept clip art in Degas format, which might be something worth noting if you are intending to buy. However, there are many programs around – some of them PD – which will convert art files between the major formats.

Another important point to note about clip art is that if you do not place it with the Snap function set to 16 pixels the picture may well come out to the left or the right of where you intended. Bear this in mind while planning the layout.

Blobs, keylines and other general layout graphics are more than adequately provided for. Keylines – the

lines used to separate columns or occasionally to box out sections of text – can come in many varieties. The thickness of the line, or the weight if you are really up on printing technology, can be varied, as can with the style. Six different styles are available, including various mixes of dashes and dots.

Lines can have one of three endings, the conventional square block, a nicely rounded end or a very attractive set of arrows. There are more features here than you could possibly use.

Boxes may have square or rounded corners and be filled with one of 36 patterns. Some of these aren't much use, but a few can double up as tints.

You must have noticed boxes in magazines which have a shaded background. In Easytext this effect can be achieved simply by creating a box filled with a bland grey pattern. Since windows are easily superimposed, you can place the desired text over this box and thus have the desired tint.

Be very careful when attempting this. If the font you have used for the text is very fine it may be unreadable against a tinted background. Fonts with serifs (the little tails and squiggly bits at the ends and edges) look particularly bad with this type of treatment, and with Easytext+ it is difficult to tell before printing.

Conclusions

The package produces excellent results, but not without a great deal of wear and tear on the user. Screen refreshes are painfully slow and not being able to see the complete page at once is nuisance.

It is competent for designing one-offs, but multi-page documents are

out of the question unless you like to suffer.

Now prepare for a bit of a surprise. At the beginning of this review I was determined to treat this package just as I would any other DTP software which might happen to fall on my desk, but Easytext+ is different. It costs as little as an average arcade game.

For the price of blasting a few aliens off some planet you can fulfil most of your DTP desires. Admittedly I can't see any adverts appearing on the TV in the near future where a man leans back in his swivel chair, his face a study of smugness having just knocked out a 60 page feasibility study on an ST, but at the price of this software you will be able at least to afford a swivel chair too.

It's not for the publishing professional, but this package accomplishes well what it set out to do and should raise a few eyebrows at the higher end of the market.

FACT FILE

Product: Easytext+

Price: £20

Distributor: ZZSoft, 3 Riverdale House, Mytholm Close, Hebden Bridge, West Yorkshire HX7 6BP.

Tel: 0422 845528

POINTS FOR:

Good printer support. Most common features supported as well as some not so common. Incredibly cheap.

AGAINST:

Slow and a bit of a pain to use. Graphic handling could be better.

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Full SPEED ahead

Elliot Stein turns his ST into a PC with the aid of PC Speed

CAST your mind back a couple of years. Remember PC Ditto, the IBM emulator which ran about 90 per cent of IBM software on the ST? It worked, but it ran painfully slowly. At last, there is a solution called PC Speed, a hardware addition to the ST.

It consists of a small PC circuit board, a 64 pole IC socket, instructions and a disc. It works on all STs and with colour or monochrome monitors.

Installation is best left to someone with soldering skills who has knowledge of the ST's innards. Most owners will choose to have PC Speed fitted by their dealer.

That done, the software must be customised through the special installation program on the PC Ditto disc supplied. When this program boots up a menu appears with five choices: Keyboard, floppy/hard disc, screen and quit.

Keyboard allows you to set key repeats, delay and keyboard layout, such as English or German. The most frustrating set-up screen is floppy/hard disc configuration. It is here that you can set your hard disc to autoboot – and it was here that I spent hours trying to do so, but with no joy.

In the end the best I could do was have PC Speed merely recognise a hard disc partition, but not boot up from it. The poor instruction manual offered little help. However, PC Speed's manufacturer claims it had no trouble setting its hard disc to autoboot.

The screen section of the configuration program allows PC Speed to emulate either a Hercules, GFA or Hyper-Herc graphics cards or an

Olivetti on either colour or monochrome ST monitors. With colour monitors, the colour menu allows you to customise the display.

Now for the exciting part of PC Speed – the magnificent transformation of the ST to an IBM compatible. In

a side-by-side comparison between the ST running PC Speed and a Zenith laptop PC compatible, PC Speed wins hands down.

Boasting a Norton rating of 4.0, it is significantly faster than many IBMs and compatibles on the market today. Also, there aren't many IBM screens which compare with the magnificent clarity of the ST's monochrome monitor.

It supports all ST peripherals including mouse, floppy and hard discs, serial and parallel ports. Most importantly, it is as near 100 per cent compatible as a PC can be.

I tried the major IBM software titles: Lotus 1-2-3, Word Perfect 5.0, Wordstar Professional, dBase IV, Microsoft Write and other IBM heavyweights. They not only ran, but in all areas of operation ran noticeably faster and with full integrity.

I next tried public domain software and games: All ran. I tried my best, in vain, to crash programs, but PC Speed performed like any quality IBM compatible would. Even PC Gem runs under PC Speed, though if you want to use it you will need to buy a serial mouse since PC Speed's mouse, naturally emulates a Microsoft rodent. PC



```
PC-SPEED  installationsprogram V1.2  (C) SACK electronic GmbH 12/ 5:32:34pm

(K)eYboard  (F)loppy/Hard-disk  (S)creen  (C)olors  (Q)uit
```

```
Floppy/Harddisk installation 12/ 5:32:56pm

Floppy A  [ INTERN ]  EXTERN
Floppy B  NONE      [ 3 1/2 ]  5 1/4

If a harddisk is connected you can choose between starting an attempt to
boot from disk (YES) or from harddisk straight away.

Harddisk  NONE      [ YES ]  HD-BOOT

You can now assign a partition of your harddisk to each drive under DOS.

DOSdrive C =TOS-part  C  [ D ]  E  F  G  H  I  J
DOSdrive D =TOS-part  [ C ]  D  E  F  G  H  I  J
DOSdrive E =TOS-part  C  D  [ E ]  F  G  H  I  J
DOSdrive F =TOS-part  C  D  E  [ F ]  G  H  I  J
DOSdrive G =TOS-part  C  D  E  F  [ G ]  H  I  J
DOSdrive H =TOS-part  C  D  E  F  G  [ H ]  I  J
DOSdrive I =TOS-part  C  D  E  F  G  H  [ I ]  J
DOSdrive J =TOS-part  C  D  E  F  G  H  I  [ J ]

Please give type of your harddisk driversoftware.

Typ  NORM  [ ICD ]
```

```
Screen installation 12/ 5:33:09pm
If you use the HYPER-HERC emulation, you can display the full HERCULES
resolution. You only need a little hardware called HYPER-SCREEN.

Grafikcard  HERCULES  [ CGA ]  OLIVETTI  HYPER-HERC
Fonts       [ BOTH ]  LIGHT  DARK
```

Installing PC Speed's software is through menus

Speed opens the ST to the business world which requires any serious computer to be able to run the standard IBM applications. It allows the ST to tackle a wide range of software which isn't converted for the Atari due to the lack of confidence in the ST as a serious business computer.

This is a significant advance over previous PC emulators. Full PC compatibility allows ST users to delve into a rich market of exciting programs while still using ST software.

FACT FILE

Product: PC Speed
Price: £249
Supplier: Gasteiner Technologies, Unit 12, Millmead Business Centre, Millmead Road, London N17.
Tel: 01-365 1151

POINTS FOR:

Full and fast IBM compatibility for the ST. Internal hardware upgrade. Uses all ST peripherals.

AGAINST:

Problems with hard disc autobooting. Installation only by experienced technician.

Sources of free software

A GOOD place to begin acquiring software for new owners of any computer is public domain and shareware, and ST users may wish to explore the rich libraries available for the PC. Many feature spreadsheets, word processors and databases

And there are a number of obscure specialty applications like project planners, language tutors, idea outliners, yachting navigation, genealogy, cooking recipes and others.

Some of the most interesting PD programs include:

PC-Outline Plus: A powerful idea outliner which can be used as a standalone or a memory resident program. A must for any writer.

PC File/DB: A powerful dBase compatible data base which includes graph functions.

As-Easy-As: Excellent Lotus 1-2-3 compatible spreadsheet with built-in goalseeking.

Easy Project: Excellent project management program which creates

GANTT charts to show how well the project is doing.

Homebase: Powerful Sidekick type of program.

Tapestry: For constructing artificial intelligence databases.

Thor: A thought planning database/wp for for organising creative ideas.

Mindreader: A word processor which tries to anticipate what you are writing.

Two of the best PD libraries for PC software are:

The Public Domain Software Library, Winscombe House, Beacon Road, Crowborough, Sussex TN6 1UL. Tel: 0892-663298.

PC Independent User Group, The Computer Advice Centre, 87 High Street, Tonbridge, Kent TN9 1RX. Tel: 0732-771512

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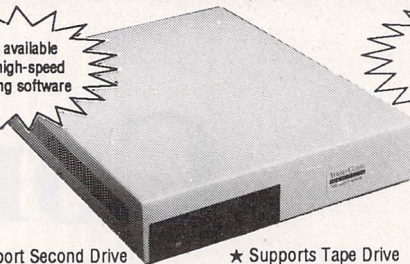
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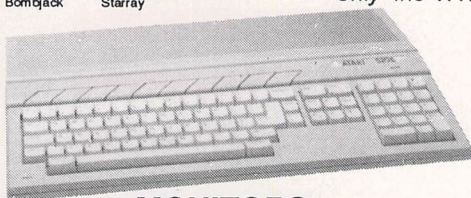
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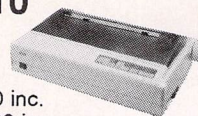
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LLEFT you last month with the problem of scrolling text both horizontally and vertically, and if you have managed to do it, well done. In programming there is no right or wrong way of doing things. As long as the code works and is easy to follow, almost any method you want can be used to give the desired results.

As I promised this month's article is devoted to high-score routines, displaying the scores and entering players' names.

First, you'll have to design a screen and squash it with the COMPACT.ACB utility.

To help you, Program I will produce the screen I have used throughout this article. It should be compacted and stored in bank five.

You will also have to create a sprite bank of letters and a full stop. This can easily be done with the SPRITE.ACB accessory by grabbing the letters from the picture created with Program I, where sprites 1 to 26 should be the letters A to Z, and sprite 27 being the full stop:

```
5 REM Program I
10 MODE 0 : KEY OFF : HIDE
20 WINDOPEN 1,0,0,40,12,0,3
30 CURS OFF : RESTORE 100
40 FOR a=1 TO 4 : READ mess$
50 LOCATE 0,(a*2) : CENTRE mess$
60 NEXT a
70 WAIT 100
80 SAVE "HIPIC.PI1",BACK
90 GOTO 90
100 DATA "A B C D E F G H I"
110 DATA "J K L M N O P Q R"
120 DATA "S T U V W X Y Z ."
130 DATA "Enter Delete Space"
```

No matter how you decide to display

The name game

Phil Lawson continues
to examine useful
subroutines and turns
his attention to the
high-score table

the table and enter the players' names, you first have to produce a dummy table which contains a few high scores for the players to try and beat which can give the player an incentive.

Lines 21040 and 21050 of Program II set up this initial table, which is displayed with lines 21060 to 21100. I've used a simple print loop, but you could easily substitute this for one of

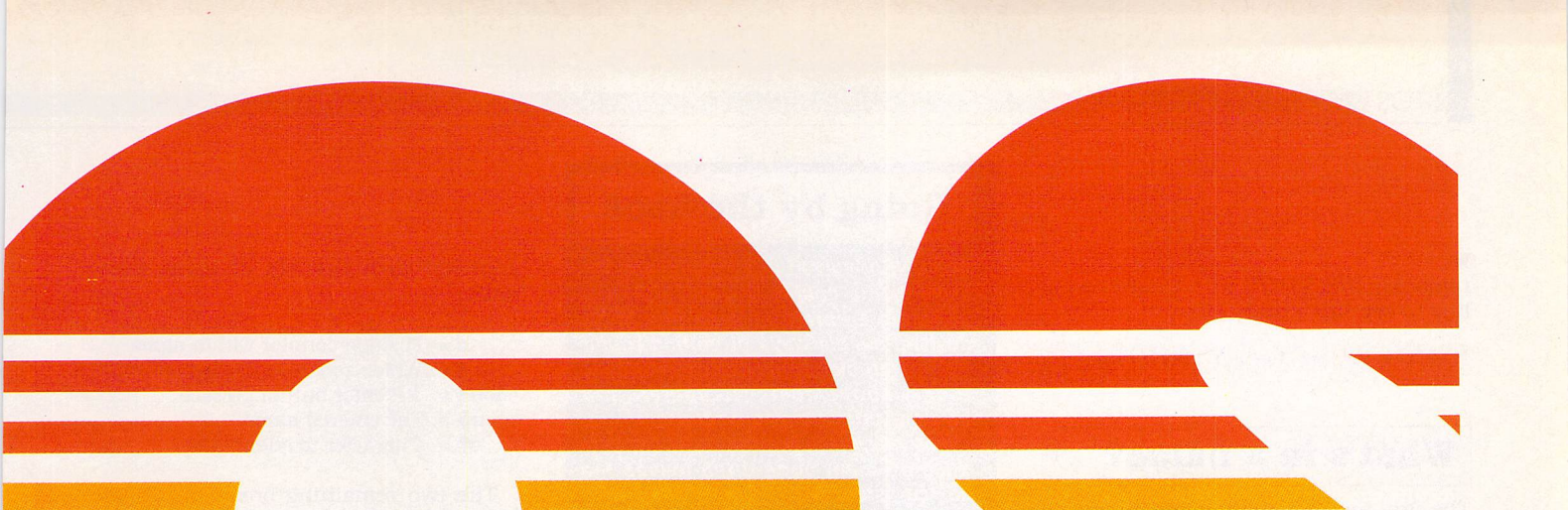
the routines we discussed last month:

```
21000 REM Program II
21010 MODE 0 : KEY OFF
21020 WINDOPEN 1,0,0,40,12,0,3
21030 CURS OFF
21040 DIM hs(10),hs$(10)
21050 FOR a=1 TO 10:hs$(a)="Atari ST
User" : hs(a)=(11-a)*1000 : NEXT a
21055 sc=6543 : GOSUB 21200
21060 LOCATE 0,0:CENTRE "High Score
Table"
21070 FOR a=1 TO 10:LOCATE 18-LEN(hs
$(a)),a+1
21080 PRINT hs$(a);" .....";hs(a);
21090 NEXT a
21100 GOTO 21100
21200 IF sc<hs(10) THEN RETURN
21210 GOSUB 22000 : REM get name
21220 hs$(10)=n$ : hs(10)=sc
21230 FOR a=9 TO 1 STEP -1
21240 IF hs(a+1)>hs(a) THEN SWAP hs$
(a),hs$(a+1) : SWAP hs(a),hs(a+1)
21250 NEXT a : RETURN
22000 n$="Phil" : RETURN
```

The rest of Program II – lines 21200 to 22000 – is concerned with reading the player's name and placing it into the correct high-score position. This section of code is called from line 21055, which also sets a dummy score so you can see the routines working.

Running the above program will show that Phil's score of 6,543 is placed into position in the table. Looking at lines 21200 to 21250 will show how the program decides exactly where the new score should appear. The simplest way of doing this is to use a technique called bubble sorting.

First, the player's score is checked with the tenth or lowest score. If the player hasn't beaten this value, he hasn't made it to the table and the program will return to line 21060. Try



changing the value of `sc` to 900 in line 21055 to see what I mean.

Line 21210 jumps to the routine starting at 22000 to get the player's name. For the time being I've placed a dummy line at this position, but we'll be exploring different ways of doing this in a moment.

The important lines are 21220 to 21250, which first places the new score at position 10. We now check if this score is greater than the next one at position 9.

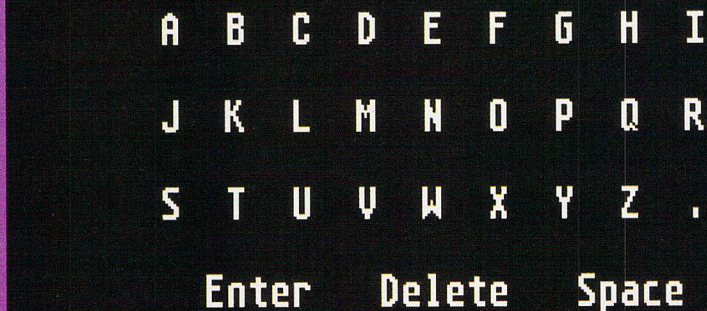
If it is, the program makes use of the `SWAP` command, which just exchanges the contents of two variables or strings. For example, enter the following commands:

```
A=10 : B=20
A$="YES" : B$="NO"
SWAP A,B
SWAP A$,B$
PRINT A,B
PRINT A$,B$
```

You'll see that the value of `a` is 20, `b` is 10, `a$` is "NO" and `b$` is "YES".

When the player's score is less than the next one in the table, the new name and score will be in the correct place. What happens when two scores are the same? Try changing the value of `sc` to 6,000 and run the program again. You'll notice that Phil's score is placed immediately below the existing one. This is how it should be, as you can only pass a score if you beat it.

Notice that in line 20170 the `LOCATE` command uses the length of each name. This is because the player may only enter a short name, or just his initials, so leaving the high-score table looking rather messy. Try



A	B	C	D	E	F	G	H	I
J	K	L	M	N	O	P	Q	R
S	T	U	V	W	X	Y	Z	.
Enter Delete Space								

The output from Program I is used to create a sprite bank of letters and a full stop



A	B	C	D	E	F	G	H	I
J	K	L	M	N	O	P	Q	R
S	T	U	V	W	X	Y	Z	.
Enter Delete Space								

Click on the letters, and use delete and space to edit the input

replacing line 21070 with the following line to see this untidy effect:

```
21070 FOR a=1 TO 10 : LOCATE 5,a+1
```

What's in a name?

The first method of inputting a player's name that we'll examine is probably the most common, where the letters of the alphabet are displayed on the screen, and the player chooses which ones to use with the mouse. Add the following lines to Program II:

```
22000 REM Hiscore 3
22010 REM =====
22020 RESERVE AS SCREEN 10 : UNPACK 5,10
22030 SCREEN COPY 10 TO PHYSIC : SCREEN COPY 10 TO BACK
22040 x=1
22050 FOR a=1 TO 3 : FOR b=1 TO 9
22060 SET ZONE x,b*24+30,a*32 TO b*24+42,a*32+16
22070 BOX b*24+30,a*32 TO b*24+42,a*32+16
22080 INC x : NEXT b : NEXT a
22090 BOX 70,127 TO 114,145
22100 SET ZONE 28,70,127 TO 114,145
22110 BOX 134,127 TO 186,145
22120 SET ZONE 29,134,127 TO 186,145
22130 BOX 206,127 TO 250,145
22140 SET ZONE 30,206,127 TO 250,145
22150 SHOW : LOCATE 14,10 : n$=""
      " : PRINT n$
22160 done=0 : c=1 : WHILE done=0
22170 z=0 : IF MOUSE KEY=0 THEN 22170
22180 z=ZONE(0) : IF z=0 THEN 22170
22190 c$="" : IF z<27 THEN c$=CHR$(z+64)
22200 IF z=27 THEN c$=""
22210 IF z=28 THEN done=1
22220 IF z=30 THEN c$=""
22230 IF c$<>" " AND c<>14 THEN GOSUB 22300
22300 : INC c
22240 IF z=29 AND c>1 THEN DEC c : c$="" : GOSUB 22300
22250 WEND
22260 FOR a=1 TO 13 : IF MID$(n$,a,1)="" THEN MID$(n$,a,1)=" "
22270 NEXT a
22280 IF RIGHT$(n$,1)="" THEN n$=LEFT$(n$,LEN(n$)-1) : GOTO 22280
22290 CLW : RETURN
22300 MID$(n$,c,1)=c$
22310 LOCATE 14,10 : PRINT n$
22320 WHILE MOUSE KEY<>0 : WEND
22330 RETURN
```

Lines 22000 to 22150 are concerned with displaying the screen, defining a zone and drawing a box around each character and option.

Running the program is probably the best way to see how it works. Whenever you click on a letter or full stop, that character is placed in the name and displayed on the screen. Spaces can also be entered by clicking on the SPACE box. Since we have rather a lot to get through this month, I'll not bother explaining exactly how the routine works, but as it is straightforward you should be able to follow it

Going by the book

ANYONE involved in programming for more than a couple of years will have collected a library of useful routines, devised simple ways of getting round difficult problems and discovered many tricks about their computer and favourite programming language.

The rate which professionals can produce efficient code often leaves the novice astounded. Novices often wish they could bypass the tedious learning process and write quality software at the same speed.

Sadly there's no easy way to learn these programming techniques and using other people's routines can lead to great difficulties if you're not entirely sure what's going on. Many books have been published which explain how to write simple routines and now one has been written for STOS programmers.

Stephen Hill, author of the original STOS manual, has collected many interesting routines and combines them with easy to follow text which explains many of the pitfalls of game creation. How to produce fast action sprites, animation, scrolling, 3D graphics and sound are only a few of the topics covered.

As STOS is a true programming language rather than just a construction kit, many different types of games are possible, including shoot-'em-ups, simulations, role playing, rebound games and adventures. This book has chapters devoted to each and explains how best to write them with the help of fully working programs.

I'm glad to say that the book makes use of the free games supplied with each copy of STOS, explaining the various tricks and techniques stored within Orbiter and Zoltar. Producing alien attack waves, deciding the angle at which a ball should bounce, scrolling the screen, getting the best from the map definer and using screen-flipping routines for high-speed graphics are just some of the subjects covered in great detail.

If a particular section of Basic code is too slow, it may be necessary to re-write it in machine code. Programming in 68000 isn't all that difficult, especially as STOS has included many functions to control sprites, windows, sound and every other command available in Basic.

The final chapter contains all the information you'll need to include fancy machine code effects within your Basic program, along with many examples to get you started.

With more than 280 pages packed with vital information and routines, The Game Maker's Manual is a book no STOS user should be without. Stephen Hill deserves full marks for this work.

Product: The Game maker's Manual
Price: £11.95
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ISBN: 1-85058-158-4

yourself with the aid of these variables:

c = Position counter within name
z = Which zone was clicked on
done = 1 if enter button pressed
n\$ = The entered name
c\$ = Character to add to n\$

The two remaining boxes are Delete and Enter. The first removes the last chosen character, while Enter returns to the line which called the routine, with the name stored in the string n\$. Since the name started off being 13 underline characters (-), lines 22260 to 22280 change these and remove unnecessary spaces at the end of the name.

Instead of the chosen letter automatically appearing at the next position in the name, this alternative version of Program III allows us to pick up a character and place it wherever we wish. Before entering these lines type:

```
DELETE 22160-22330
```

You can now add the new lines which give a more pleasing effect.

```
22000 REM Hiscore 3b
22160 done=0 : WHILE done=0
22170 z=0 : WHILE z=0 : WHILE MOUSE KEY<>1 : WEND : z=ZONE(0) : WEND
22180 IF z<28 THEN CHANGE MOUSE 3+z : WHILE MOUSE KEY<>0 : WEND : GOSUB 22260
22190 IF z=28 THEN done=1
22200 IF z=29 THEN n$=""
      " : LOCATE 14,10 : PRINT n$
22210 WEND
22220 FOR a=1 TO 13 : IF MID$(n$,a,1)="" THEN MID$(n$,a,1)=" "
22230 NEXT a
22240 IF RIGHT$(n$,1)="" THEN n$=LEFT$(n$,LEN(n$)-1) : GOTO 22240
22250 RETURN
22260 IF z=27 THEN c$="" ELSE c$=CHR$(64+z)
22270 WHILE MOUSE KEY=0 : WEND
22280 IF MOUSE KEY=2 THEN CHANGE MOUSE 1 : RETURN
22290 x=X MOUSE : y=Y MOUSE
22300 IF x<110 OR x>210 OR y<157 OR y>172 THEN 22260
22310 c=(x-100)/8 : MID$(n$,c,1)=c$ : LOCATE 14,10 : PRINT n$
22320 GOTO 22270
```

Whenever you click on a letter, the mouse pointer becomes that letter, which can be placed anywhere within the name. Line 22300 makes sure the mouse/letter is within range of the name grid and line 22310 calculates exactly where in the name the new letter should appear.

The final program for this month only allows the player to enter his or her initials. This technique was widely used on arcade machines and many computer games back in the early '80s, but has now become quite rare. After examining the code you should

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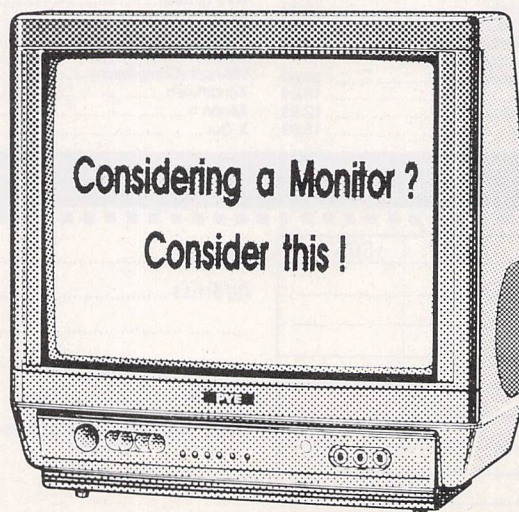
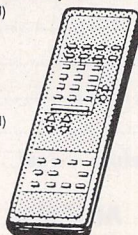
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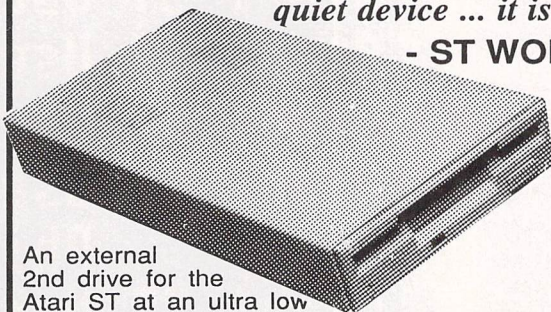
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➤ be able to expand it to take 10 or more characters:

```
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22010 MODE 0 : KEY OFF
22020 CURS OFF : HIDE
22030 FOR a=1 TO 3
22040 BOX a*30+80,70 TO a*30+100,90
22050 NEXT
22060 n$=""
22070 FOR a=1 TO 3
22080 sp=1 : done=0 : WHILE done=0
22090 SPRITE 1,a*30+88,75,sp
22100 IF JOY=4 THEN DEC sp ELSE IF
JOY=8 THEN INC sp
22110 IF JOY=0 THEN i$=INKEY$ : s=
SCANCODE
22120 IF s=75 THEN DEC sp : CLEAR KEY
: ELSE IF s=77 THEN INC sp : CLEAR KEY
22130 IF sp<1 THEN sp=27 ELSE IF sp>27
THEN sp=1
22140 IF FIRE=-1 OR s=57 THEN done=1 :
PUT SPRITE 1 : WAIT VBL.: IF sp=27 THE
N n$=n$+"." ELSE n$=n$+CHR$(64+sp)
22150 WAIT 5 : WEND
22160 NEXT : SPRITE OFF : CLW : RETURN
```

To enter a character either use the joystick or left/right cursor keys to scroll through the available letters. When you find the one you want, press the fire button or the spacebar.

● In the June issue we'll be taking a look at cheat modes. If you have any problems, tips or suggestions for this column, write to me and I'll include the most interesting.

High Score Table

Atari	ST	User	.....	10000
Atari	ST	User	.....	9000
Atari	ST	User	.....	8000
Atari	ST	User	.....	7000
		Phil	.....	6543
Atari	ST	User	.....	6000
Atari	ST	User	.....	5000
Atari	ST	User	.....	4000
Atari	ST	User	3000
Atari	ST	User	2000

Testing the high score table with a dummy value

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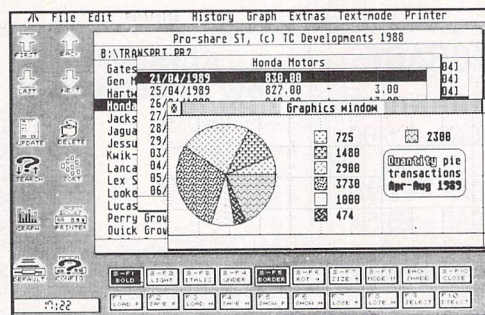
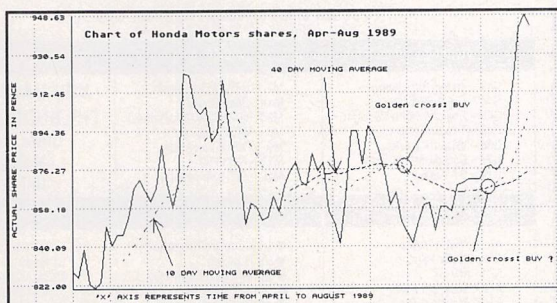
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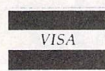
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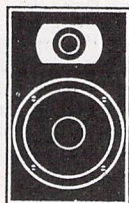
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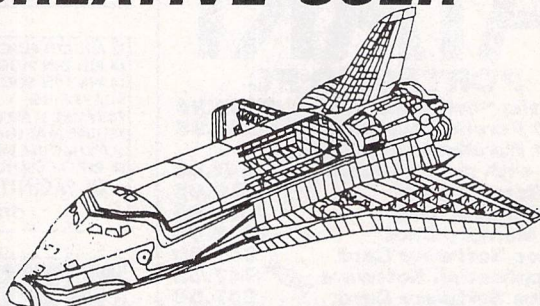
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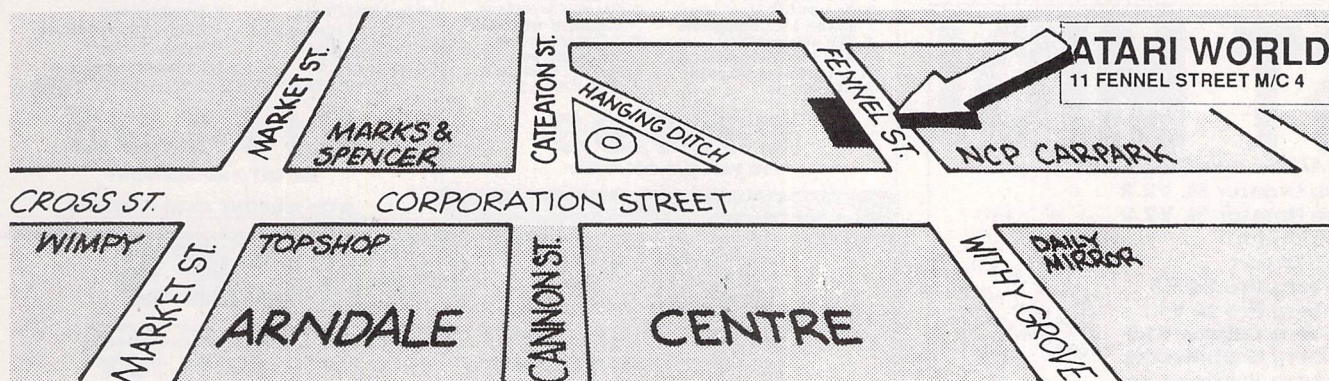


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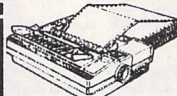
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LEARNING to Type by HAT Software is a clear and easily understandable typing tutor for users with a colour monitor or TV. Priced at £14.95, it is a bit expensive for this type of educational software, however, it is suitable for people of all ages with a desire to learn how to type accurately and correctly.

The program, written by H. Dunn in GFA Basic, does not autoboot, but the documentation accompanying it thoughtfully considers that users may be new to the Atari ST mouse and provides ample help in getting started. Four of the manual's 12 pages are given over to the power up and booting process – almost a fool's guide to switching on.

The user is presented with a colourful mouse-driven screen from which all the facilities are controlled. This consists of these options: Keyboard, Picture, Load Picture, Load Wordlist, Information, Game, Continue, Quit, Word and Time. Control is simple and logical avoiding the use of too many dialogue boxes.

The Keyboard option, the most important, displays a graphic keyboard on the screen while the typing exercise is running. Other selections are generally variations on this theme. The keys displayed on the screen are colour coded for each finger, each flashing as the corresponding key is pressed. The screen response can keep up with all the typists I have tried the program on. The unique feature of this

program is the multi-format open structure that provides the framework in which to practise. The word stream facility is accessed via default wordlists or through user-configured ones from the supplied editor.

The time limit for the exercise is user definable, as are the number of words to be displayed. As words or characters pass across the screen the aim is to control the keyboard accurately and select the right keys with the appropriate finger.

The Picture and Game options are alternative screen display settings for typing exercises. The former offers a blank screen with the exception of the text stream. As you type, the screen slowly reveals the picture, which can

be either selected from supplied examples or your own artwork library.

The Game option is very much a variation on a theme, offering a limited arcade-like environment in which missile selection is effected via the spacebar and correct keyboard control destroys them. There is no accompanying music or sound effects other than the standard keypress click. The Game also has no Quit option which makes it tedious when interest is lost since it has to run through to the end of the allocated time before returning to the opening screen.

This typing tutor package has been professionally developed and is well presented. Cost is likely to be the only drawback for some potential users.

A touch of class

John Martin learns to type and reports on his progress

FACT FILE

Product: Learning to Type

Price: £14.95

Supplier: HAT, 21 Wyllie Cop, Shrewsbury, Shropshire SY1 1XB.

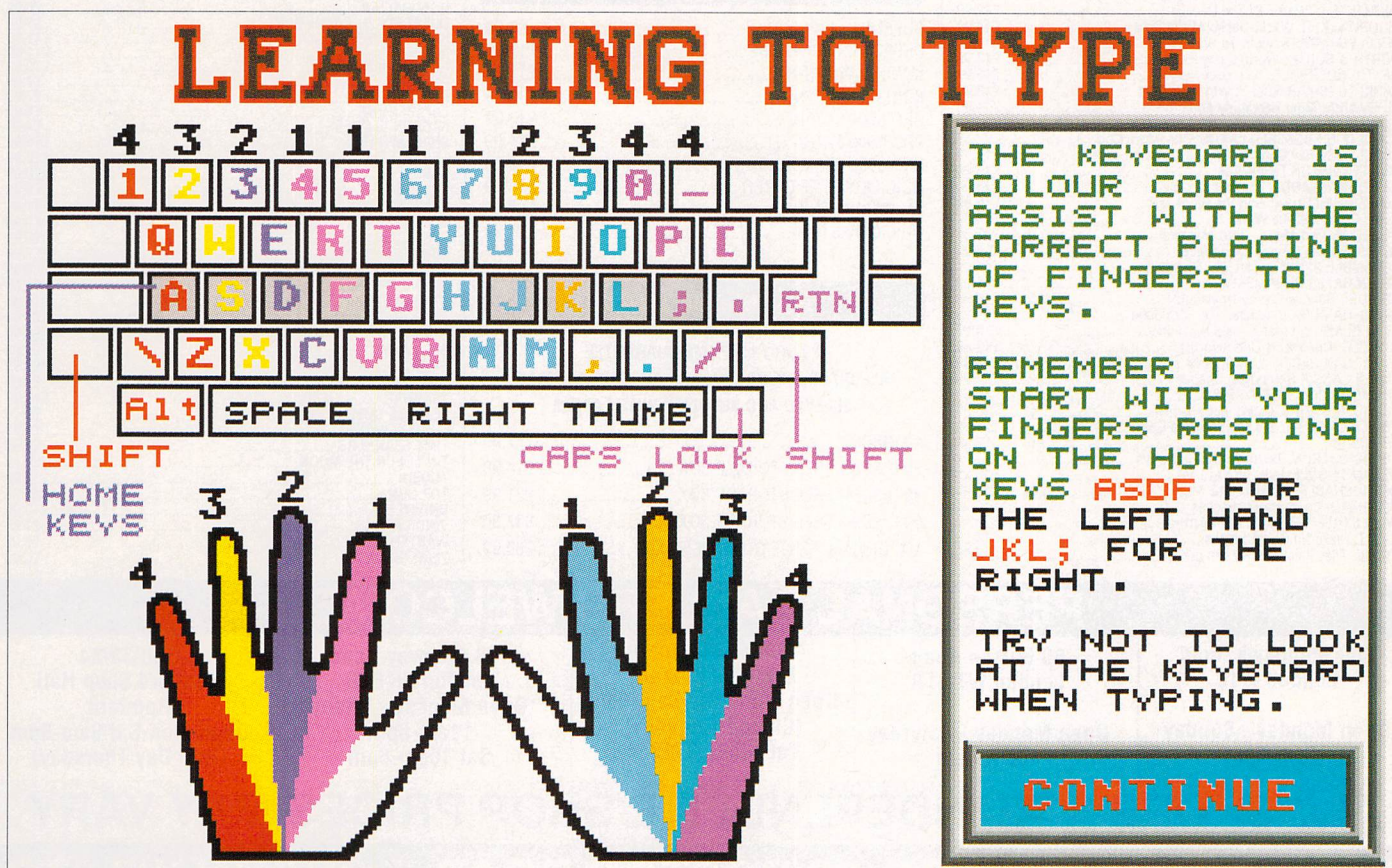
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POINTS FOR:

Well presented and easy to use software.
Good variety of exercises.

AGAINST:

A bit expensive for a simple typing tutor.
No quick way to quit the game.



This colour coded introductory screen shows which keys are pressed by each finger

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THE ST has built up an enviable reputation in the sphere of computer music, mainly due to the foresight of the designers who included a Midi interface as standard. To a lesser degree the extremely high quality monochrome monitor has also helped, because it is ideal for complicated keyboard and score displays.

In turn the ST has generated a great deal of high quality software, both commercial and public domain. It all adds up to the perfect machine for both the computer user interested in

John Kennedy plays with Midi and presents a useful project for people new to DIY

music, and the musician interested in computers.

Midi is the standardised protocol for transferring information between musical instruments and anything

else fitted with a Midi interface via three types of socket – In, Out and Thru. The names are surprisingly apt for computer jargon. The Out transmits information, In receives information and the Thru echoes any incoming signals at the In. For example, a keyboard should be connected to the In socket, a sound module to the Out and a drum machine to the Thru.

The Midi standard is based on the five pin 180 degree DIN plug, the same type used on some hi-fi equipment. This choice of connector has been criticised, but we're stuck with it and have to make the best of it.

There is one slight eccentricity with the Midi implementation used on the ST – a cost cutting measure which combines the Out and the Thru sockets into one. Getting at this Thru connection may present a problem, especially to those not 100 per cent au fait with soldering.

To split the combined Out/Thru socket into two, we need one DIN plug and two DIN sockets. The sockets can either be in-line or chassis style. The first type allows you to construct the entire project as a loose expansion cable. The second type may be used if you intend to mount the new sockets in a plastic case of some sort.

This may be a useful approach if you would like to expand the Midi interface yet further, and perhaps need to put extra electronics in the case as well.

The wire used to hook everything up can be any bog standard low-powered cable. Speaker wire is entirely suitable and easy to get hold of. The length

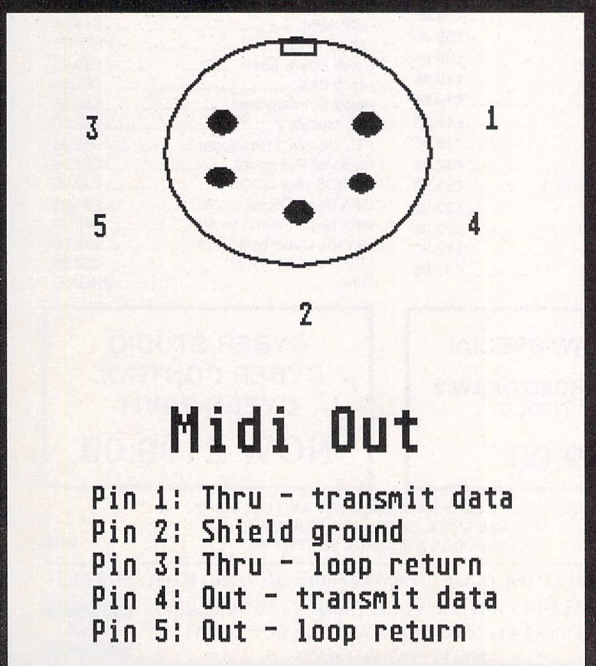


Figure 1:
The Midi Out
socket as it
appears on the
outside of the ST

required is probably less than a metre, although you may want to use the project as an opportunity to increase the length of your current Midi cables.

Figure I shows the pinouts of the socket we are dealing with, looking into it mounted on the computer. Two pairs of wires are taken from the plug and each pair connected to a socket, one Out and one Thru.

Figure II shows the small number of connections to be made. Soldering is difficult because of the design of the plug, and the small size of the pins. The best approach is to strip about a centimetre of the insulation from each wire and then tin them.

Tinning is the process of allowing a small amount of solder to coat the wire, binding separate strands into one core.

This length can be cut back to about a quarter of its size, and then touched to the pins inside the socket or plug briefly with the iron forming a strong and neat join. Remember that if you are using in-line sockets, the covers should be slid over the wires before soldering.

If you hope to do a lot of soldering, the small device called Helping Hands is worth its weight in scar tissue. It is a set of crocodile clips attached to

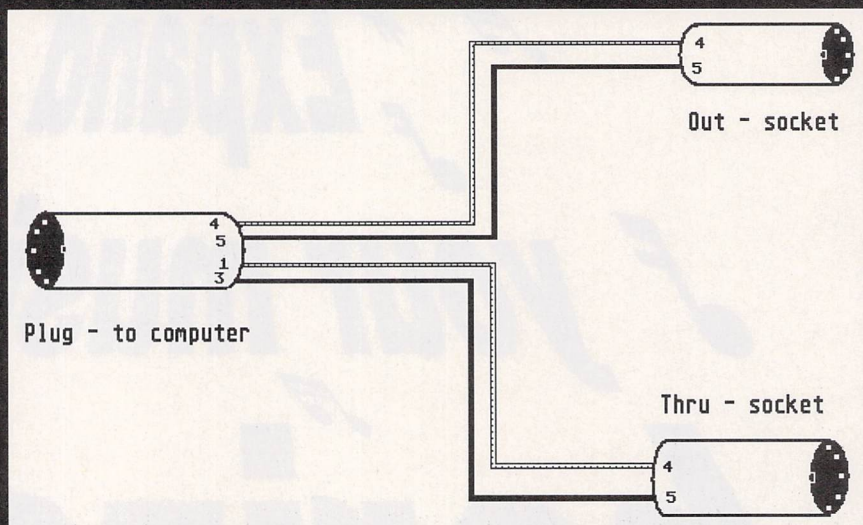


Figure II: The new Midi Thru socket

movable arms with a magnifying glass and a weighted base.

The clips hold whatever you need to solder, keeping your fingers away from the hot iron. These wonderful friendship saving toys are available from

many sources, including mail order companies like Maplins.

Before connecting your Midi expansion device, check the wiring carefully – more so if you experience any problems.

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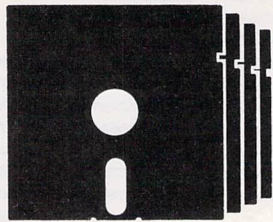
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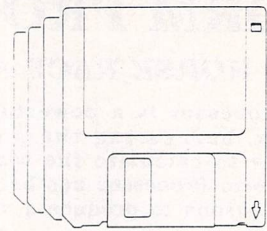
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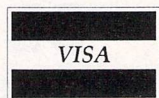
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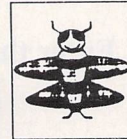
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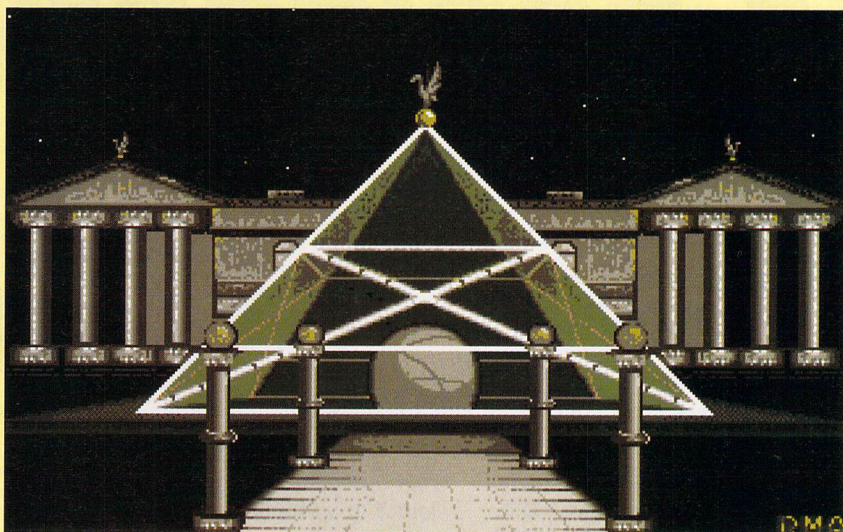


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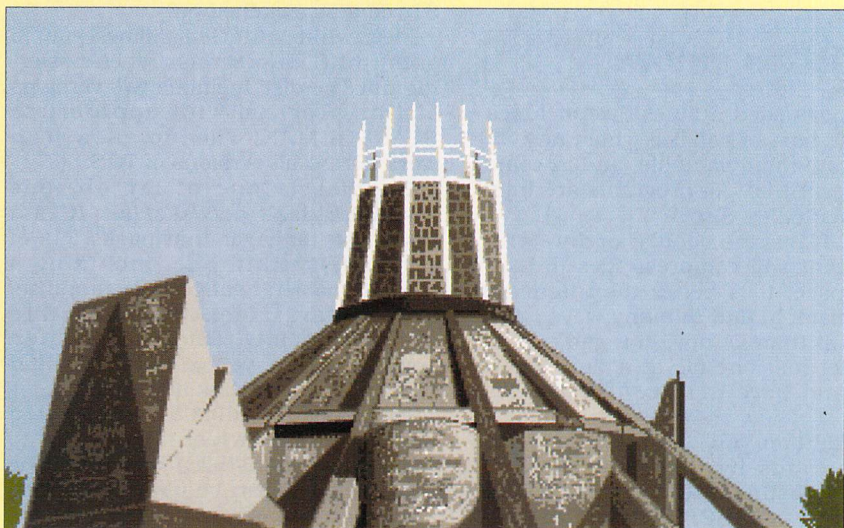


Beacon

Gallery



Pyramid



Cathedral

THIS month's Gallery is devoted to the work of Richard Anderson of Marlow, Buckinghamshire. He presents four superb pictures, all drawn using the popular Degas Elite art package. Each picture took between three and eight hours to complete – impressively fast sketching.

Beacon is based on the view of the Beacon from St. George's Hall in Liverpool. Cathedral is the Metropolitan Cathedral, again in Liverpool. Bike is a speedway racer and Pyramid was inspired by the Louvre Pyramid in Paris.

If you have a work of art that you would like to see exhibited on our worldwide stage, why not send it in on disc to Gallery? Remember though, that anything you submit must be original – for instance, don't copy posters or record covers – unusual and all your own work.

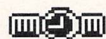
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The address to send your ST art masterpiece to is:

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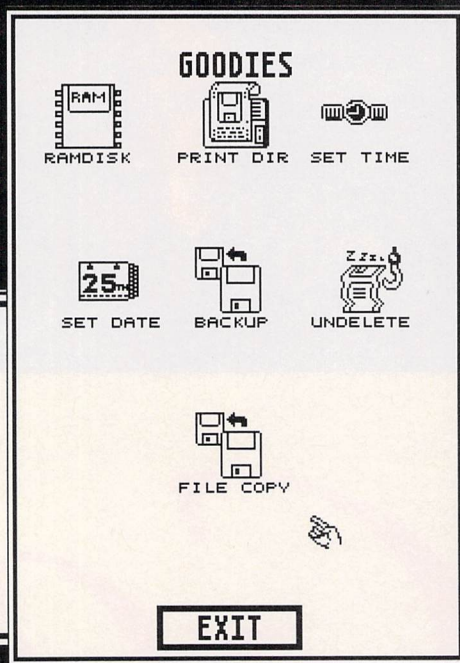
Goodies combines a host of superb utilities into one package

Present time is 16:34:00
Enter new time



CHANGE !

NO CHANGE !



Absolute beginners

This month Jayne West turns her attention to newcomers to the ST and examines a superb new PD starter pack offered by PDOM-PD

THE greatest obstacle to any novice in the world of PD software, and indeed to the ST in general, is where to begin learning about the new machine, and how to start collecting useful and easy to use public domain software.

Until recently PDOM-PD (formerly ST UK) offered an exclusive and popular Mega starter pack for beginners, available on three discs and priced at only £5. This pack included a disc full of useful utilities, an enormous 250k text file containing the whole of the Second Manual to the ST v.4, and the ever popular ST Tour suite of beginner's programs.

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The company responded to user-pressure and soon produced a more than worthy successor. Going under the flamboyant title of Public Domina-

tor Mega Starter Pack, this package is a winner all down the line.

The new bundle of three discs retails at only £7.50 and includes Neochrome v1.2, ST Writer v3, Data Handler v1, and a disc full of superb utilities and desk accessories.

Utilities galore

The single-sided utilities disc includes a whole host of goodies which any ST user would find valuable, and in some cases essential. All programs are fully documented on disc.

ARC.TTP is the popular archive program that will compress files to save disc space. It is better than Squeeze and Scrunch, and in many ways more powerful than DCopy. You can add or subtract just one file at a time if you want and have the free use of wild-cards.

In addition you can see what each file contains by using the verbose directory listing. ARC.TTP also comes with the ARCSHELL.PRg v2 shell – more powerful than the equivalent

DCopyShell.

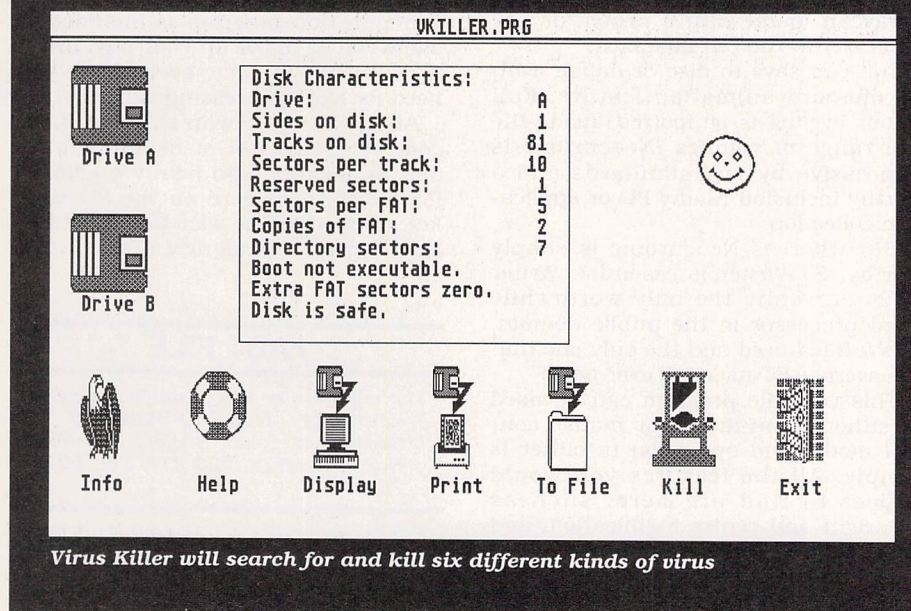
Autodate is a small but handy utility which lets you set the time and date on your ST. Placed in the AUTO folder, it will ask you to enter the date and time when you boot up, and will run a clock/calendar as long as your ST remains switched on.

Meanwhile AutoGem allows you to auto-run Gem programs when powering up. The disc includes two versions of this program with appropriate STARTGEM.INF files to allow it to work across all versions of TOS.

Goodies is one of my all-time favourite desk accessories. It is a disc/desk manager that packs lots of programs within one, including a printer spooler, configurable ram disc, file copier, clock/calendar and undelete facility. Once installed on your work disc, you will probably find it as indispensable as I do.

Intersect Ramdisc is a dedicated desk accessory which allows you to install and de-install a ram disc. The ram disc can then be used as a memory-based disc drive.

It is very fast, but like all ram discs,



queue here

all information is lost when your ST is rebooted.

A ram disc is also ideal for copying files quickly and easily from one disc to another.

MONO_EMU.PRG v5 is a 34k configurable monochrome emulator which lets you use high resolution mode on the ST and run monochrome-only programs on a normal TV or medium resolution monitor.

The main use of the emulator is in running the large number of public domain mono-only programs. But there are also some commercial programs too, such as Signum, that also only run in monochrome.

The program resides in an AUTO folder and loads automatically when you boot your ST. Onscreen configuration allows you to control how the quality of screen representation relates to how much your program is slowed down by the emulator.

PicSwitch v0.7 is a versatile program which enables you to view almost any ST artwork by converting pictures to a format usable with your favourite art package or DTP program. Using PicSwitch, all ST pictures can be viewed on either a colour or monochrome monitor, and may be saved in any resolution to either system, with automatic conversion to the selected resolution.

Conversions from a higher resolution to a lower one are automatically

“Main use of the emulator is in running the large number of public domain mono-only programs”

optimised using a colour averaging technique, while conversions from low and medium-resolution to monochrome use sophisticated dithering.

PicSwitch is certainly flexible, and reads most file formats, including Degas and Degas Elite, Tiny, NVision, and MacPaint. It also writes to the following file formats: Degas, Degas Elite compressed, Neochrome and Neochrome page (for NVision).

Meanwhile, Volume Namer allows easy label changing for floppy, hard, and even ramdiscs. The program is easy to use. Just click on the drive the volume of which you wish to change, and the old volume name will be

retrieved. Then all you do is type in the new name and press Retrun or click on the UPDATE button. This is not an essential program, but it is certainly handy to have on board.

Contents is perhaps of wider use, as it lets you create a text file called CONTENTS.TXT which will contain full file information about any disc. This is particularly useful if you have a large collection of PD discs and you want to keep track of individual programs.

If two timekeepers weren't enough, Digital Watch is a desk accessory that appears as a small window showing the current date and time. Unfortunately, it is incompatible with Auto-date, so a choice must be made.

Printer Spooler, however, is an essential facility if you own a printer. It creates a 32k printer buffer in memory – important for lengthy documents you may wish to type and print out.

The enigmatic sounding Rat Trap is an excellent, if quirkish, desk accessory which changes the drop-down menus on your ST to pull-down menus as on the Apple Mac – and it can be toggled on and off. You have to try it to fully appreciate the difference.

However, perhaps the pick of the utilities in this collection is Virus Killer 2, an excellent icon-based virus detector and killer. It will search for, report on, and if selected, destroy six different kinds of virus. With version 3 now available, we can assume that PDOM-PD will soon update this program in the Mega Pack.

Elsewhere, Super Formatter will produce normal format discs or extended sectors to allow more data to be stored. It is not perhaps as quick and flexible as Glenn Williams' Toxic Formatter, but is a good user-friendly utility for the ST beginner.

The last addition to the utilities disc is Ram Free, a small desk accessory that tells you how much memory you have left free.

Still more

However tempting the utilities are on their own, this package is made wholly worthwhile by the inclusion of the three larger application programs.

Disc two incorporates Data Handler v1, which is a very good Gem-based database/databcard program. Although, like all other PD databases, Data Handler is non-relational and lacks some calculatory functions, it does allow up to 1,000 records in any one file with easy cross referencing.

A novice will find it very easy to use and it contains a comprehensive inbuilt help screen facility.

The same disc also includes two useful desk accessories, Private Eye and Speed Mouse. The latter is a superb mouse accelerator desk accessory which can be adjusted from slow to fast speed.

Like all such devices, it speeds the

► mouse pointer movements, thus reducing the footprint arena within which the mouse needs to perform on your desk or table. This is obviously handy if you have limited space or your desk is cluttered.

Private Eye v2.0 is a compact and useful desk accessory which allows you to take a peephole look at the ST's workings. It reports on four basic groups of information: The system, which includes an indication of top of memory, the amount of free working memory available and Gem version number, disc drive information, including an indication of which drives are in use and the drive seek rate, video information giving the current screen resolution, And keyboard and mouse peculiarities showing whether key click is on or off, what the key repeat rate is set to, and so on.

Disc three includes both the ever popular Neochrome, and the well-respected ST Writer. So if you need both a good art program and a dependable word processor for free, look no further.

Neochrome is an excellent painting package with features you would expect to find on commercial equivalents. These include all the usual drawing functions such as Jackknife and a Copy Box to let you cut, copy, paste, rotate and flip parts of your pictures.

A font function allows you to write

on your picture with selectable sizes from 6-28 point, and styles range from plain to bold, italic and outlined. You can draw with a pen, spray with a spraycan, paint with a brush, or use an eraser to rub out mistakes.

You can save to disc or dabble with an onboard animation feature. Full colour cycling is supported, using the full range of colours. Neochrome is impressive by any standards and a worthy inclusion in any PD or application collection.

But whereas Neochrome is simply worthy, ST Writer is essential. Writer v3 is currently the only worthwhile word processor in the public domain. It is full featured and the only one that the average ST user will ever need.

This versatile program can be used in either menu-driven or mouse control mode, and operation in either is simple. All the features you would expect to find are here, such as left/right and centre justification, and left/right and two column margin sets.

Top and bottom margins can be set, as can paper length and width. Text styles that can be included are elongated, sub/superscript, Pica, bold, condensed, italics and Elite, which can all be mixed to suite your needs. You can also load in alternative foreign and mathematical character sets.

Easy editing functions allow cursor movement to beginning/end of line, top/bottom of file, and search, movement and deletion of letters, words,

lines and blocks.

The program can be used in all resolutions and comes configured for use with an Epson compatible printer. A configuration program is included to allow you to make up your own driver if required. In fact, everything you need for word processing is here.

All in all, you won't find a more comprehensive set of useful utilities and applications so neatly packaged for the ST anywhere on the PD market. Atari would be wise to bundle this starter pack with all new STs.

FACT FILE

The software in this month's article is available from: PDOM-PD, 1 Bartholomew Road, Bishops Stortford, Hertfordshire CM23 3TP. Tel: 0279 757692.

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Virus Killer 2 incorporates a beautiful and easy to follow graphic front end

ST Writer lets you load in files created on other word processors, to be converted and edited

Neochrome is a colourful and easy to use paint package

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Free memory is 348892 bytes
GEM version number is 0.19
TOS base is 16515072 (ROM)

Private Eye reports on the state of the ST's system variables

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Drive seek rate is
Write verify ✓ is
Screen resolution
Video RAM starts at
Key click is on
Key repeat is on
Keyboard repeat rate
Keyboard delay © is
Bell is on
CapsLock is off
Double-click speed

@h = Absolute beginners

@sh = This month Jayne West focuses her attention on the ST beginner and examines a superb new PD starter pack offered by PDOM-PD

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THE ST's operating system is the large and complex computer program which, combined with the micro's hardware, makes the ST so powerful. Its functions range from reading the keyboard to displaying information on screen to handling data storage on floppy and hard discs.

We have looked at a great number of the operating system's functions in this series, but there are still quite a few left, so let's get on with our exploration.

Last time we examined some disc operating system (Dos) commands involving directories and filenames. Staying on that track, I'll now show how to create and delete directories, delete files and hide files from view so no one but you knows they are on the disc – a great way of hiding data from unauthorised eyes.

In Part 3 we saw how to create a file on disc and store data in it; now we'll see how to delete a file. It is quite straightforward, as there is a Gem Bdos function called *f-delete* which will do the necessary work for us. All it requires is the address of the filename:

PEA name(PC)	stack addr of name
MOVE.W #65,-(A7)	f_delete
TRAP #1	Gem Bdos
ADDQ.L #6,A7	tidy stack up

This snippet of code assumes that the name of the file to delete is stored at the relative offset *name*. A program that deletes just one specifically named file wouldn't be much use, so let's look at an input routine that allows us to type in the name of a file to delete.

We have already looked at several methods of reading the keyboard, but another routine is *c-conrs*. This handy function allows you to enter a string which it then stores at the address you indicate.

To make use of it you must first reserve some memory for use as an input buffer. In the first byte you should place the maximum number of characters to be read from the keyboard. Note that if the first byte is zero no text will be input and the function will appear not to work.

The characters typed in will be placed in memory starting at byte two. Byte zero, remember, contains the maximum number to input, and after calling *c-conrs* byte one will contain the number entered – which isn't necessarily the maximum allowed.

Program I is a short demonstration that implements these two routines – *f-delete* and *c-conrs*. Assemble it using an assembler such as HiSoft's Devpac and give a filename like DELETE.TOS.

When it is run you'll be prompted for the name of the file to delete. It will quickly carry out the function and return to the desktop.

We can use this program as a basic

A variety of disc commands come under the microscope in Part 5 of Roland Waddilove's guide to the operating system



Just drossing around

framework for two other related Gem Bdos functions. We have seen how to create and delete ordinary files, so now we'll do the same with directories, or folders – whichever you prefer to call them.

To create a new directory we make

use of the Gem Bdos function *d-create*. It requires just one parameter and that's the address at which it can find the directory name.

Take Program I and replace the *f-delete* function with this section of



```
*****
*      Program I: Delete a file      *
*****

* Print the input prompt string
  PEA prompt(PC)           address of string
  MOVE.W #9,-(A7)          c_conws
  TRAP #1                  Gem Bdos
  ADDQ.L #6,A7             tidy stack up

* Input the filename of the file to delete
  PEA name(PC)             stack input buffer addr
  MOVE.W #10,-(A7)         c_conrs
  TRAP #1                  Gem Bdos
  ADDQ.L #6,A7             tidy stack

* Delete the file using f_delete
  PEA name+2(PC)           stack address of name
  MOVE.W #65,-(A7)         f_delete
  TRAP #1                  Gem Bdos
  ADDQ.L #6,A7             tidy stack up

* Finished, so return to the desktop
  CLR -(A7)                p_term_old
  TRAP #1                  Gem Bdos

prompt DC.B 'Enter file to delete: ',0
name   DC.B 63,0           input buffer
       DS.B 64             name stored here
       EVEN
```


code that calls the *d-create* function:

```
PEA name+2(PC)    stack addr of name
MOVE.W #57,-(A7)  d_create
TRAP #1           Gem Bdos
ADDQ.L #6,A7      tidy stack up
```

You'll also need to change the prompt string at the end of the listing to something more appropriate, like "Enter the directory to create:". The rest of the code is identical, so I won't list the complete program.

Deleting a directory is a simple matter of altering *d-create* to *d-delete* in your modified Program I. The prompt should also be changed – something like "Enter the directory to delete:" could be substituted for the original message. The input routine is unaltered, and all you need to do is add the following lines in place of *d-create*:

```
PEA name+2(PC)    stack addr of name
MOVE.W #58,-(A7)  d_delete
TRAP #1           Gem Bdos
ADDQ.L #6,A7      tidy stack up
```

One important point worth noting is

that you can't delete a directory unless it is empty and you must first delete all the files stored in it.

Now for something slightly different: Each file on disc has a set of attribute flags which indicate whether it is possible to read and write data to it, whether it is a system file, whether it is hidden, a volume label or a subdirectory. All these flags are stored in a single byte and each binary bit signals a particular effect:

Bit	Effect
0	Read only
1	Hidden file
2	Hidden system file
3	Volume label
4	Subdirectory

The Gem Bdos function to manipulate these bits is *f-attrib*. It requires three parameters – the attribute byte, a flag to show whether to read or write the attributes and the address at which the filename is stored. Again using Program I as a framework, keep the section to print the prompt – altering the text to something suitable like

"Enter filename:" – and keep the input routine, but remove the *f-delete* section and replace it with the following code to call the *f-attrib* function:

```
MOVE.W #2,-(A7)    hide filename
MOVE.W #1,-(A7)    set flag
PEA name+2(PC)     stack addr of name
MOVE.W #67,-(A7)   f_attrib
TRAP #1            Gem Bdos
ADDQ.L #6,A7       tidy stack up
```

This routine sets the attribute byte to two, making it a hidden file. It means that the filename doesn't appear in a file selector, nor as an icon or name on the desktop directory window. In fact, unless you have a utility to specifically search for the file you won't know it is there.

However, the file can still be loaded, run, opened, closed and so on. It is a good way of hiding sensitive data and other important files from prying eyes.

Assemble the program to disc as a TOS file and then run it. Enter the name of any file on the disc and its name or icon will disappear from the desktop. Alter the attribute byte in the listing to zero and run the program again. Enter the filename as before and the original file will magically reappear.

The flag byte enables you to read the attribute byte (flag equal to zero) of a file as well as setting it (flag equal to one), so with a bit of extra code you could, for instance, search for all hidden files and make them visible again, or vice versa.

Finally, we'll see how to rename a file. Again, it is a very simple procedure, and simply involves calling the Gem Bdos *f-rename* function. It requires three parameters – the address of the old filename, the address of the new filename to change it to and a dummy parameter (zero) which it ignores. Here is the code:

```
PEA newname(PC)    stack new name
PEA oldname(PC)    stack old name
CLR -(A7)          dummy value - 0
MOVE.W #86,-(A7)   f_rename
TRAP #1            Gem Bdos
ADDA.L #12,A7      tidy stack up
```

Unfortunately, we can't simply add this code to Program I, but there are a number of similarities in the routines used. Instead of entering one filename you must now enter two, so there are two prompts with two buffers called by two input routines, instead of the one used before.

Program II shows the whole listing. Assemble it to disc with the filename *RENAME.TOS* and run it. You'll be prompted to enter the old filename, then the new one to change it to. The program will then exit to the desktop after renaming the file entered.

And that just about wraps up this hitch-hiker's guide to the ST's operating system. I have not covered all the OS calls, but there is enough here to get you started as an ST 68000 assembly language programmer. Good luck.

```
*****
*      Program II: Rename a file      *
*****

* Print the old name input prompt
PEA prompt1(PC)    address of string
MOVE.W #9,-(A7)    c_conws
TRAP #1            Gem Bdos
ADDQ.L #6,A7       tidy stack up

* Input the old name of the file
PEA oldname(PC)    stack input buffer address
MOVE.W #10,-(A7)   c_conrs
TRAP #1            Gem Bdos
ADDQ.L #6,A7       tidy stack

* Print the new name input prompt
PEA prompt2(PC)    address of string
MOVE.W #9,-(A7)    c_conws
TRAP #1            Gem Bdos
ADDQ.L #6,A7       tidy stack up

* Input the new name of the file
PEA newname(PC)    stack input buffer address
MOVE.W #10,-(A7)   c_conrs
TRAP #1            Gem Bdos
ADDQ.L #6,A7       tidy stack

* Rename the file from oldname to newname
PEA newname+2(PC)  stack new filename
PEA oldname+2(PC)  stack old filename
CLR -(A7)          dummy value - 0
MOVE.W #86,-(A7)   f_rename
TRAP #1            Gem Bdos
ADDA.L #12,A7      tidy stack up

* Finished, so return to the desktop
CLR -(A7)          p_term_old
TRAP #1            Gem Bdos

prompt1 DC.B 13,10,'Enter old filename: ',0
prompt2 DC.B 13,10,'Enter new filename: ',0
oldname DC.B 63,0
DS.B 64            old name stored here
newname DC.B 63,0
DS.B 64            new name stored here
EVEN
```


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Snow fun with fractals

Haniff Dinn takes a handful of fractals and cooks up a snowflake



MANY readers will be familiar with the Mandelbrot set, a simple mathematical formula which when iterated many times produces stunningly beautiful and somewhat surreal pictures that have a seemingly infinite level of detail to be explored.

This object is one of many found in a relatively new branch of mathematics known as fractal geometry. The term fractal was first coined by Benior Mandelbrot in the 1960s while working at Harvard University, and it was used to describe objects which exhibit self-similarity, that is objects for which a small part looks either exactly or

statistically indetical to the whole object. There are many examples of such objects both in mathematics and nature. A branch of a tree, if it is chopped off and held upright looks like the whole tree. If we zoom in further and look at a small twig it still looks similar to the whole tree, and we can carry this further right down to a single leaf. A tree can be thought of as a statistical fractal.

The number of examples are endless – rivers, clouds, landscapes and even lighting are fractals. Indeed you could quite easily simulate a country scene using nothing but fractals.

There are many different methods of

drawing fractals, depending on what the fractal is and the mathematics used to represent it. One method is known as fractal curves, which is analogous to drawing a function on graph paper. The fractal is represented as a list of axioms and rules, and from this the fractal is created.

As an illustration, let's take as an example one of the earliest fractals – the Von Koch Snowflake curve. This was first described around 1904, long before the word fractal was thought of, somewhat a curiosity in those days.

Fractal curves are described by a set of procedures, unlike a single equation for a normal function. The procedures consist of one axiom and a set of procedures, these can be thought of as an algorithm. For the Snowflake curve the procedures are:

Take an equilateral triangle and divide each side into three parts. Replace the centre third of each side by an another equilateral triangle pointing outwards, thus obtaining the next stage. Now repeat this infinitely, dividing into three each side of the triangle on the three sides of the triangle, and drawing triangles in the middle third.

We have an infinite number of repeated rules here, and if you drew this on paper the bends and twists would soon get smaller than the pencil line you are using, so there is no need to apply any more substitutions. You then would have a good approximation to the curve.

The same applies to drawing fractal curves on a computer display. You might notice that some fine detail on

BASE	LENGTH	-22	.....-0-.....	
LENGTH	DIFF.	-0.8	-0-.....	
INITIAL	ANGLE	-80	-0-.....	
ANGLE	DIFF.	-31	.....-0-.....	
RECURSION	LEV	8	.....-0-.....	
COLOUR		1	.....-0-.....	



Save
snowflakes
to disc

Load
snowflakes
from disc

Draw
snowflakes

Save
screen

Quit

Cover Disc

the curves displayed is a little fuzzy. This is because the fractal has an infinite amount of detail and we only have a finite number of spaces on which to plot points – screen pixels.

This gives the resulting image a natural limit, so rounding errors will cause a fuzziness around the fine detail. To avoid this we simply ensure the curve never has too much detail.

Figure I shows the first four orders of the Snowflake curve. The Von Koch Snowflake, like all fractal curves, has some interesting properties. As the order of the curve is increased the number of sides is increased by four. And because we divide each line into three parts, this increases the length of the curve by $4/3$ at each step. Therefore, the length of the fractal curve tends to infinity as more detail is added.

Other interesting properties of the Snowflake curve are that it always has a finite area, and no point possesses a tangent. If we zoom in and look at a highly magnified section of the curve it will look the same as the unmagnified section.

Compare this result to, for example, an ordinary function of a circle. As we look closer at the magnified arc of the circle we would eventually end up with a straight line. We say that the circle has a fractal dimension of one. If the given curve looked like a solid area under magnification, we say it was a surface and so it would have a fractal dimension of two.

A Von Koch Snowflake has a fractal dimension somewhere between these, at around 1.26. For a landscape, because it is a surface, its fractal dimension would lie between 2.3 and 2.4. The fractal dimension is just a measure of the wiggleness of a fractal, each type having its own dimension.

For drawing fractal curves then, we would need a different program for each different type of curve. To solve this problem we use a method known as OL-Systems which encompasses a number of drawing commands similar to Logo's turtle drawing commands. Figure I shows the available commands.

Saving the current position on the stack means that it can be recovered

On the Cover Disc you'll find the Fast Basic program, OLSYSTEM.BSC, the GFA Basic program, FRACSNOW.BAS, and the compiled program FRACSNOW.PRG. There are also several example fractals and snowflakes that can be loaded into the programs and drawn onscreen.

You can use OLSYSTEM.BSC to experiment with OL-System commands, either by loading and editing the ones supplied on disc, or by creating your own from scratch. The program is menu driven and quite straightforward to use.

FRACSNOW.PRG can be used to experiment with fractal snowflakes. Use the mouse to set the parameters by dragging the slider controls across the screen. Click on the large snowflake icon at the bottom of the screen to draw the snowflake. (You can abort drawing by holding down the right mouse button).

The other icons at the foot of the screen allow you to save your snowflake parameters to disc, reload a snowflake (there are several examples already stored on disc), save the snowflake as a Neochrome picture or quit back to the desktop.

later. To define a curve using the OL-System we must have an axiom and a set of production rules. The axiom can be thought of as the control string which determines the shape of the overall curve and the production rules can be thought of as genes which control the growth of the object.

The whole curve is then determined by the axiom, production rules and the amount of recursion allowed. Note that the same turning angle is used to draw the curve.

Each command that moves the turtle can be replaced by a whole sequence of extra production rules. If one has not been defined it will simply be replaced by itself. We can also introduce as many dummy commands as we like, later to be replaced with the real turtle commands, although they can also contain dummy commands. All commands must consist of just one character.

Any shape that is drawn from such a system will be a deterministic fractal, in other words the shape is determined by the axiom and the production rules. The Fast Basic pro-

gram on the Cover Disc, OL-SYSTEM.BSC, allows you to enter an axiom and production rules which are then used to produce a curve.

The rules are entered and held in string variables and when the program begins to draw the curve it will examine each letter of the axiom. Then it will search through all the rules and find the appropriate command string to substitute.

It will search through each character of the command string and again the rules will be searched for substitutions to be made. This is repeated until the number of substitutions are the same as the order of the curve. This algorithm is implemented recursively, so the order of the curve is the same as the recursive level used.

OL-Systems are in many ways small languages which can be used to produce fractal curves. Figure II shows another famous curve, the Sierpinsky Gasket and the required source code.

The Von Koch snowflake curve is similar to the edge of a snowflake, but how can we more accurately approximate a snowflake? All snowflakes have a rotational symmetry of 60 degrees. There are six branches in the centre, which all extend outwards.

Each branch is very similar to a tree, so we can approximate a snowflake by drawing a fractal tree. We simply replace each central branch of the snowflake by a fractal tree. Figure II shows the OL-System rules to produce a fractal tree. It also shows how six trees are combined to produce an approximation of a snowflake.

This is the basic method in which the program FRACSNOW.PRG on the Cover Disc produces snowflakes, but unlike OL-Systems it allows the angles to be changed while the snowflake is being drawn, this allows many more snowflake variations to be produced. The program can produce thousands of different snowflakes, each one different in its own way.

Only six numbers are needed to code any snowflake. These are base length, length difference, initial angle, angle difference, recursive level and colour. These can be thought of as genes which determine the final snowflake. The program allows all these to be changed.

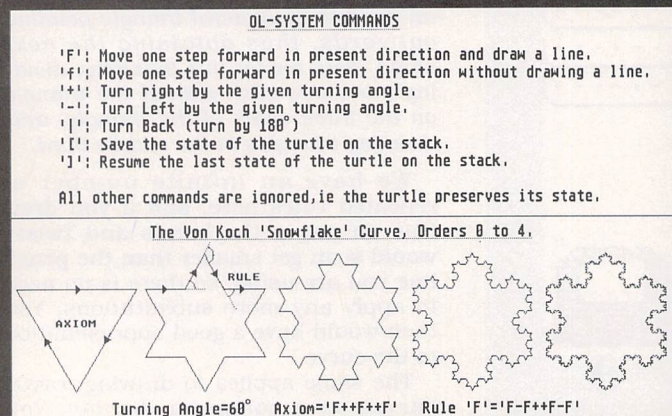


Figure I: The OL-System command set

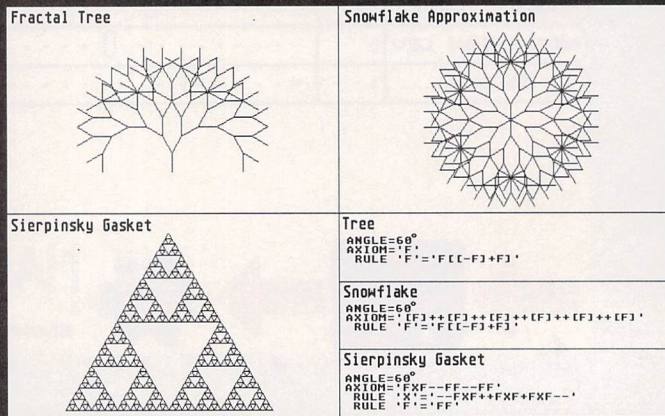


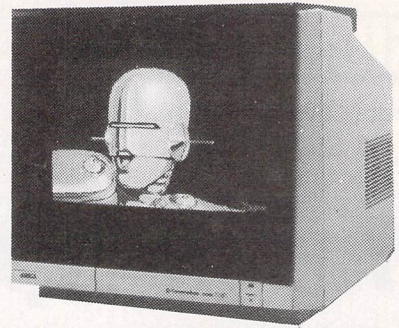
Figure II: Fractals drawn using the rules bottom right corner

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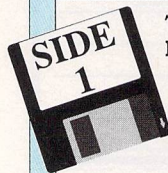
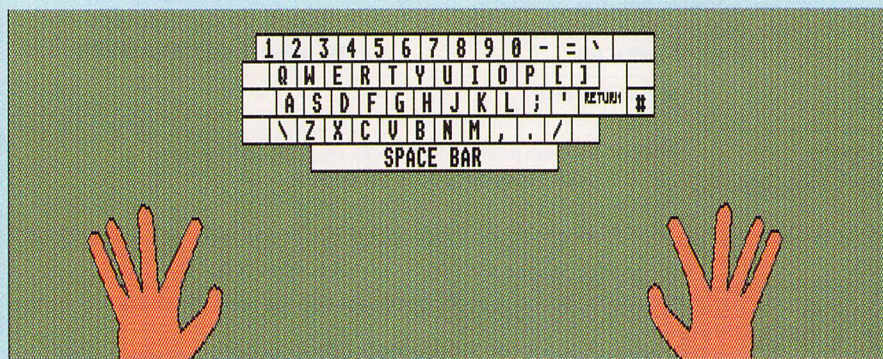
SIDE ONE

Touch Typing Tutor
ST Sound Lab

SIDE TWO

Domain
Startrek

Touch Typing Tutor



To load: Double click on
KEYBOARD.PRG.

- Low res colour
- Medium res colour
- Monochrome

THIS program has been written in GFA Basic by Daniel Setchfield to help people wanting to learn touch typing skills. First select one of the options from the Exercises menu.

The first four exercises teach the different positions of the characters on the keyboard and which finger you should use. While you are carrying out an exercise the computer checks for errors and times you.

You are shown an image of a key-

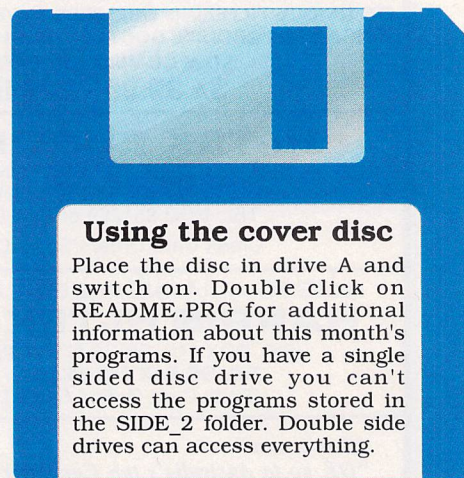
board and a pair of hands on the screen. A character will be highlighted on the keyboard and an arrow shows you the correct hand and finger to press the high-lighted character.

Exercise five is for advanced typists who don't need any help from the computer. You are tested on all the characters on the keyboard using nursery rhymes.

Included is a facility to create your own exercises which you can save and a metronome option helps you keep up rhythmic typing.

Your results are displayed together with the number of mistakes made, in the form of a graph. Scroll through the graph blocks using the < and > keys. Hit the spacebar to return to the main screen.

THE



Using the cover disc

Place the disc in drive A and switch on. Double click on README.PRG for additional information about this month's programs. If you have a single sided disc drive you can't access the programs stored in the SIDE_2 folder. Double side drives can access everything.

Domain



To load: Double click on
**DOMAIN.PRG in the
SIDE_2 folder**

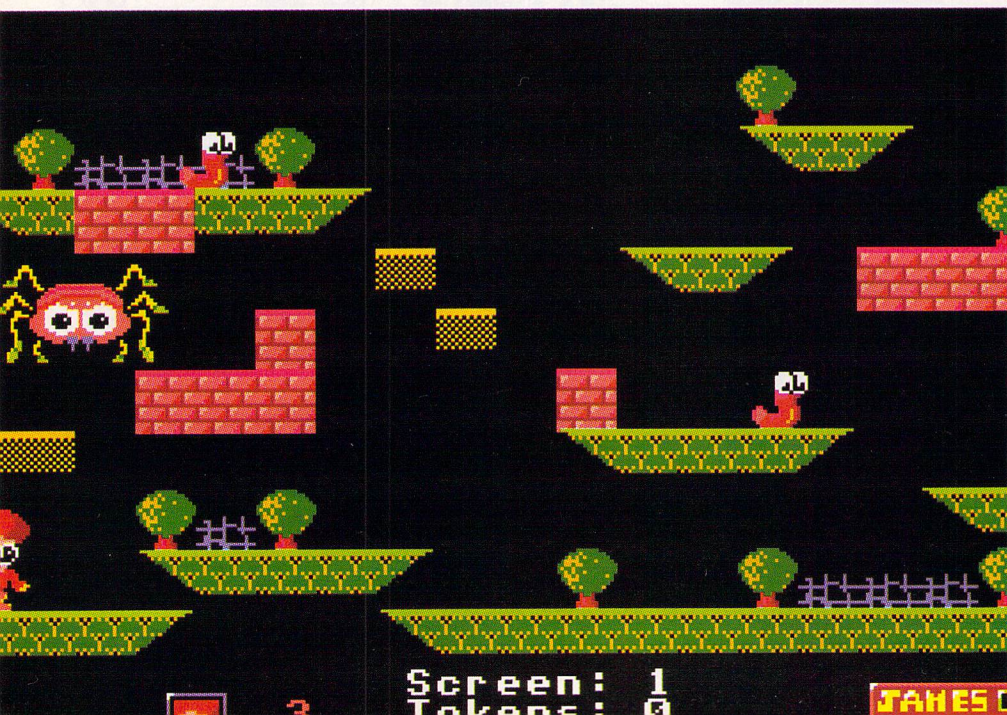
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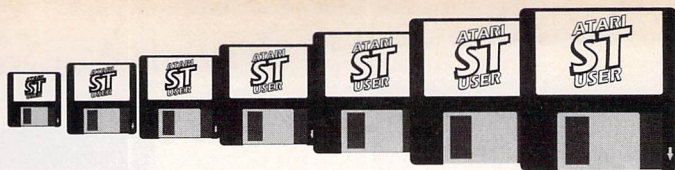
DOMAIN is an addictive arcade adventure platform game, written and compiled by James Grant using STOS. The object is to guide an ageing punk rocker called Bert up through 15 perilous levels, blasting worms along the way. If you dally too long on a level Sid the spider will come down and make a meal of Bert.

Blasting the baddies results in bonus tokens which can be used to buy extra features at stores - if Bert can find them. Extra lives are available, increased shot speed and distance enables him to zap baddies in awkward places, jump power increases the height and distance leapt and a turbo lets him run faster.

To get to the next level Bert must make his way to the highest point on the screen and jump upwards. If you are lucky he may be whisked off to a special bonus screen where cash rains down for a few seconds - so collect as much as possible.

If Bert falls off the bottom of the screen he will find himself on the previous one, unless it's the first screen, in which case he will end up dead. If you do exceptionally well you can put your name on the high score table.





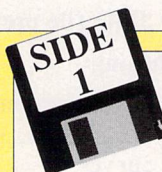
DISC PAGES

ST Sound Lab

THIS interesting utility was designed and programmed by Chris Skellern who wanted a simple means of experimenting, creating and saving sounds to a disc where they could later be included within a game or utility.

ST Sound Lab is an easy means of reaching and programming the ST's sound chip registers without the headaches of working out bit patterns, coarse and fine values and so on.

The program is self explanatory, being nearly 100 per cent mouse controlled, with the keyboard only used for text input. Information and help are always available by selecting the Info icon. The program does not use VDI and AES calls so booting directly from an AUTO folder is possible.



To load: Double click on **DS-SOUND.PRG** in the **SOUND** folder.

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DISC PROBLEMS?

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If you damage the disc yourself please include a cheque/postal order for £1.50 made payable to Stanley Precision Data Systems. If the disc has been damaged in transit please return it to Database Direct at the address shown at the foot of the order form on Page 121.

STARTREK



To load: Double click on **SLOWTREK.TOS** in the **SIDE_2** folder

- ☐ Low res colour
- ☐ Medium res colour
- ☐ Monochrome

SLOWTREK is a fairly straightforward implementation by Pat Middleton of the original Startrek game. This version was developed in Prospero C and development is continuing using Prospero's Developers' Toolkit towards a realtime version with Gem and sampled sound.

To win the game you must kill all the Klingons before running out of time and without wrecking the Enterprise by running out of energy.

Docking at a starbase repairs all space storm damage and replenishes photon torpedoes and energy.

Key	command	Effect
0	Warp drive	You are prompted for a bearing and a range. A warp jump of any size takes one Star Day.
1	Short range scan	Displays the contents of the quadrant and information about the Enterprise.
2	Long range scan	Displays the contents of adjacent quadrants - where units is the number of stars, tens is the number of starbases and hundreds is the number of Klingons.
3	Phasers	Prompts for the number of energy units to fire. It is necessary to hit a Klingon with 100 units at once to destroy it.
4	Photon torpedoes	Prompts for a bearing to fire a torpedo on. They will destroy stars and starbases, phasers won't.
5	Damage report	Displays current state of repair. Damage is incurred in space storms and repaired at the rate of one unit per star day.
6	Course computer	Prompts for the destination quadrant and sector coordinates. Useful for calculating torpedo angles.
7	Galaxy scan	This displays the contents of all quadrants that have been short range scanned, long range scanned, or contain a starbase, using the same format as long range scan.
8	Quit game	If selected, you are asked if you wish to resume the current game.
9	Fake DOS prompt	Those of you playing Slowtrek in offices may like to know that this command clears the screen and displays A:\>. The command to resume the game is 1.



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NOTE: While *Touch-Up* does not require a hard drive, it is strongly recommended if you will be working with images that use more memory than your computer has (especially 1 Mb systems). Caching only works well with a hard drive and not a floppy based system.

- Works on ALL monitors (including Viking 1 and colour).
- Loads and saves images in a variety of formats, these include Degas, Degas Elite, Neochrome, Macpaint, Tiff, PCX, .IMG, .GEM, IFF, Printmaster, and Tiny allowing files to be interchanged between Atari, Amiga, Apple Mac, and PC environments.
- Includes full paint program, with extensive drawing tools, including Bezier curves, scalable outline typefaces, and special effects.

User Interface:

- GEM dropdown menus
- Icon panel interface
- Tear-away menus

Draw Mode:

- All commands work at all zoom levels, including full zoom.

Clip Mode:

- (All commands work at all zoom levels, including full zoom).
- Move, Copy, Flip, Mirror or rotate by 1/10th of a degree
- Load .IMG or .GEM into clip area
- Save clip area in any of the supported formats.
- .IMG file previewer

Lightning:

- Full selection of user defined brush tools including box, circle, polylines, sketch, B-spline and Bezier curves.
- Special features including, Lasso, FatBits and Airbrush.

Scan Mode:

- Scan to full page
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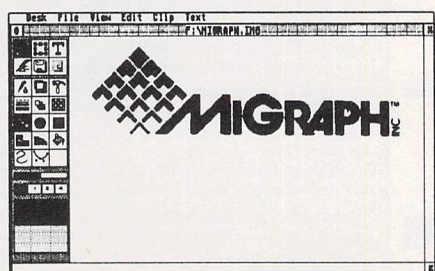
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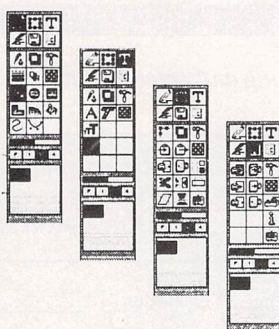
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Icon Driven Menus.

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- **Image accessibility.** You can import images in a variety of popular formats: .IMG, .GEM,

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Arnor, the makers of PROTEXT, are pleased to announce the arrival of our complementary database program, PRODATA.

This is the program that our customers have been requesting for years. Prodata is an ideal companion to Protex - it uses the same key strokes and many of the same concepts, so Protex users will immediately feel comfortable. Prodata offers the same standards of ease of use and flexibility as Protex.

But you do not need Protex to use Prodata - it is a powerful database manager in its own right, ideal for all your filing applications. The program uses a simple set of menus which may be used with the keyboard or a mouse, as required.

Prodata is available now for the IBM PC and compatibles, Atari ST and Commodore Amiga computers.

Amiga owners please note that you need 1MB to run Prodata - see below for special price for Prodata plus A501 (512K memory + clock expansion).

Variable length fields. up to 300 fields per record. Fields up to 999 characters per field. (Multi-line fields have word-wrap and justification.) Data files automatically extended as data is entered. Extra fields may be added at any time.

Indexed files may have up to 10 indexes, which may use supplementary sort fields. Instantly switch indexes to change sorting method.

Flexible layout design includes field, text and variable items, line drawing mode for boxes, layouts wider and longer than screen sizes with automatic scrolling, formatting of items (decimal places, justify, centring), printer attributes (bold, italic etc) both global and on each item, special 'attach' attributes to join items. Duplicate layout facility. Up to 100 different layouts.

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Importing and exporting of data in different formats suitable for other software including Protex. Selective importing allowing data to be checked and altered as it is imported.

Prodata is exceptionally versatile:-

You can keep data files which are automatically sorted as you add information. The type of data can be very varied, ranging from simple names and addresses to inventories and catalogues and even invoices and records of transactions.

You can keep the data sorted in several different ways, e.g. by name, number, date. Almost instantly find information using any of these sort keys.

You can design different ways of presenting the data, e.g. straight list, address labels, tabulated data.

Using Prodata is simplicity itself :-

All facilities are accessed from a few simple to use menus. To set up a new database file you merely need to enter names for each data field - you need not concern yourself with the size of fields or the type of data to be stored or even the total number of fields.

Undo changes. The most recent data changes / deletions / insertions are logged and may be reversed to allow you to correct mistakes easily.

Password protection. 5 levels, ability to protect individual layouts to restrict access to sensitive data.

File management screen with directory map, rename, erase, copy, type, attribute alterator.

Powerful expression evaluator provides date calculations, substrings, conditional expressions and rounding, using field contents and variables (incl. running totals). The result of an expression can be assigned to a field throughout the database, or to another variable.

Data entry verification. Fields may be required to be integer, number or date within a given range, or a string subject to a maximum length and mask.

Data editing with ability to duplicate an existing record, insert and overwrite mode, insert and delete line that automatically move fields up or down, swap characters, convert to upper or lower case, change layout or index from display mode, finds individual record almost instantly.

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Plus macro record mode, create sub-database, batch delete facility, configuration program, example data files, on screen indication of bold, underlining, italics, comprehensive 190 page illustrated manual.

**Version 1.1
Now Available**

Printer (P) EPSON Directory E:\PROD
Sel: ALL Layout: 1 Index: 0 15:23:22

INVOICE		Select field name
Invoice Address	Del	Field 4 : Address 3
-----		Field 5 : Address 4
-----		Field 6 : Address 5
-----		Field 7 : Del Addr 1
-----		Field 8 : Del Addr 2
-----		Field 9 : Del Addr 3
-----		Field 10 : Del Addr 4
-----		Field 11 : Del Addr 5
-----		Field 12 : Telephone
-----		Field 13 : Fax
-----		Field 14 : Contact
-----		Field 15 : Invoice Number
DATE	Your Ref	Field 16 : Order Ref
????????????????		Field 17 : Quantity 1
		Field 18 : description 1
		Field 19 : Unit Cost 1

Top left = (0,0), Pos = (3,17), Length=20.
Variable name: DATE Use <<<> to move, < and > to resize
(F)ield (T)ext (V)ariable (L)ine draw (A)tttrs (D)el (E)dit (TAB) next:

Designing a new layout

PRODATA v1.00 (c) Arnor 1989 Printer (P) EPSON Directory E:\PROD
Open: ARNOR (L6F) Recs: 3621 Sel: ALL Layout: 2 Index: 1 15:55:04

Name	Mr G B Smith	Computer	IBM PC AT
Address	34 Mulberry Way	Protex Reg	7312
	Lower Thrashley	Date Purchased	13/8/89
	Witton-under-the-Hill	Prodata Reg	4447
	Wittonshire	Date Purchased	3/2/90
	WI12 5GT	Notes	
Tel No			

(E)dit (F)ind (A)dd (C)opy (D)el (P)rint (E)xport (I)ndex (L)ayout
(B)ack (N)ext (F)irst (L)ast (I)nsert (E)sc Quit, Opt->

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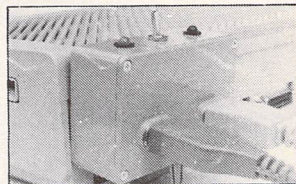
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This is a new publication from Floppyshop ST. It is a complete Touch Typing tutorial based around the ST's keyboard. Written by William Hern, a regular contributor to various computer publications, it offers you the chance to get the most out of your keyboard. It runs into over fifty pages consisting of ten individual lessons.



Floppyshop News No 16
Out Now - only £1.00

Please Note Our New Address



Tinkering with our future

I AM 14 years old and about to take my options at school, which uses an Econet system hooked up to around 30 BBC Micros and stores all the software and files for more than 700 pupils.

When I last tried to access my work I found that some idiot had placed a password on the system, which meant that no one could get at their programs.

This part of the year is especially important to us third-year pupils, as it's the time we receive our reports and decide which options to choose, which ultimately decides our future careers.

Due to the fact that everyone's Information Technology work is stored on the Econet System and therefore cannot be accessed, it's very unlikely that anyone will receive an IT report.

You may think this isn't a very important problem, but I'm trying to make the point that people shouldn't do this sort of thing, as it ruins other people's enjoyment of computers and destroys valuable information. What's so clever about ruining thousands of pounds worth of software and denying people access to their own property?

At home I own an Atari ST, which blows the BBC Micro away and so far I've only come across a few harmless viruses, which are easily dealt with using a public domain killer.

However, this doesn't change my opinions about the sick people who write these viruses and make software unaccessable with new passwords.

Accessing single program disc

BEING a subscriber, I look forward to receiving each month's issue of Atari ST User and especially the cover disc. However, the March issue has me totally stumped.

Inside the magazine it clearly mentions that the disc contains many programs, but I can only access one of them.

When I boot the disc a title screen appears and after pressing a key the main demonstration game appears, which for March was DeathStar. Is

Anyone who intentionally places a virus on a disc is as guilty of vandalism as though he'd attacked it with a chainsaw.

I don't mind the silly viruses so much, the ones which simply display some text on the screen and mess the mouse pointer about for a minute or so, but anyone caught writing a malicious virus should be severely punished.

I hope that any virus writers reading this letter will turn their skills to something more useful such as games and demonstrations. – **Lee Upcraft, Broadmeadows, Derbyshire.**

● As these pages have shown on several occasions, we feel much the same way as you do about virus writers. How would they feel if all their discs were wiped out by a rival's code?

We've received many letters, normally boasting just how good these programmers are, but as you say, if they're so good why don't they do something productive and earn some money for their time.

Moving into the modem world

I AM thinking of buying a modem and I want to know how much it will cost me, not only to buy but also to use. Occasionally I have come across the term bulletin board, but have no idea of

my disc faulty or am I doing something wrong? – **Bernard Swift, Bromley, Kent.**

● Some of our discs have AUTO programs so that they boot up into a game or demonstration automatically. To access the rest of the disc, simply boot with another disc first to get to the desktop and place the cover disc in the drive. You'll now be able to use all the programs quite easily.

what it is or where it can be found.

Could you please help me with these two points and also tell me what the games Shades and Federation II are like and how I can join? – **John Skates (14), Northolt, Middlesex.**

● We published a four page article covering communications, modems and their usage in last month's issue of Atari ST User. In the same issue we also devoted two pages to Federation II, so order a back copy if you haven't got that issue.

To briefly answer your questions, modems range from around £20 to more than £1,000, depending on what extras are bundled with it. To access bulletin boards and play these games a good quality modem of around £200 will be sufficient, and the cost of using one is normally charged at local telephone rates, currently around 10 pence for three minutes after 6pm.

Shades, Federation II and the very latest, Bloodstone, are multi-user games, similar in style to normal text adventures but with you battling against dozens of other people playing the same game at the same time.

Best for mail order

FURTHER to the March issue's star letter from C. Benham, I would like to add my best company for hard and software. I use my Atari 1040ST 95 per cent of the time for writing music scores with C-lab's Notator.

When I originally bought my ST package, I phoned a large number of dealers and found Best Prices of Worthing to be both the most helpful and cheapest. Their backup service is first rate and are always willing to give telephone advice on programs. Also, when they recommend a piece of software, it's not always the most expensive.

I have now bought quite a lot of equipment from them and have recommended them to friends, who have also been delighted at the service.

From now on Best Prices will get all my business, so Jason and Co, keep up the good work. – **P.J.Mellors, Sprotbrough, Doncaster.**

● It's nice to get a letter praising a mail order company for a change and maybe it will jolt others into providing a better service. Even if a title is well established a sudden rush can leave a mail order company out of stock, so always phone around rather than just sending a cheque and hoping for quick service.

ATARI STAR USER GAME

VDUs can seriously damage your mouse

I WOULD like to give a word of warning to fellow ST users who have a joystick splitter or extension lead plugged into their computer. Do not wipe the screen when everything is switched on.

If you happen to be near the open

end of the lead, a massive discharge of static electricity can occur which damages the internal mouse-pointer control. The resulting repair job is very expensive, as I've just found out. — D.E.Lee, Dagenham, Essex.

● Static electricity is the bane of any computer user. Monitors and televisions are a rich source of static and merely touching the screen with a finger and then touching the micro

can cause serious damage. Also watch out for nylon carpets and certain types of clothes which cause static.

The problem is even more serious for repair technicians and DIYers who take micros apart and handle the PCB and chips. It is good practice to touch something metal like a water pipe to earth yourself before touching a micro, especially the chips inside.

Competition for Elvira

I MUST admit that the competitions in the March issue of Atari ST User made me a bit miffed, in particular the rule that the magazine must be ripped to shreds to enter. I can understand that photocopies or answers on postcards open the door to multiple entries, but are ST users really that dishonest?

I'm assuming that the rules stated apply to all three competitions, which is particularly painful seeing that I'm one of the many who are profoundly in love with Elvira. I would be consoled enormously if you could print the address of her fan club. — The Android, Rhyl, Clwyd.

● The rules do apply to each competition, but we always try to make sure that cutting out the forms doesn't destroy any vital part of the magazine. We haven't got the address of Elvira's fan club, but since she's American perhaps one of our US readers could supply this vital information.

Pearl on the grapevine

IN reply to Mrs. Moorhouse's letter in the March issue of Atari ST User, I've heard rumours of a program for knitters, but I don't know anything else apart from its name — Puncher. Could you find out if the grapevine has got it right? — Miss Jenny Green, Buckinghamshire.

● Your sources must be nearly as good as ours, since the product you mention has just been released. Designed to take patterns planned on the Atari ST, Puncher will produce the required design on a knitting machine, providing it has been connected to the ST in

the first place. For more information contact Mark Lancaster, 84 Redfern Avenue, Hounslow, Middlesex TU4 5LX.

Getting from A to B

LIKE so many others these days, I have invested in a 1Mb second drive, but the drive in my 520STFM is only single sided and therefore won't boot from the one megabyte discs. As I see it there are three solutions:

■ A software utility to make drive B act as drive A.

■ Changing the internal hardware to make drive B act permanently as drive A.

■ Tailoring my software to work from both drives.

I have not heard of anyone with a utility to solve my problem with point one. The second option has some nasty implications, but I've been in a similar line of work for some time, so I feel quite confident that detailed instructions would enable me to make this modification.

The third option is rather a waste of time, since the whole point of using double sided drives is that twice the amount of program space can be stored on one disc. I would be grateful if you could suggest a way out of this dilemma. — Denzil Botting, Hednesford, Staffordshire.

● Software is available within the public domain to make your ST boot from drive B, and not surprisingly it's called BBOOT. The only problem is that you have to power up as normal, run this program and press the reset switch to boot from B. However, it doesn't work with everything.

As far as hardware modifications go, it's really quite simple. When designing the ST, Atari used two of the unused pins on the sound generator,

(PSG YM2149), to signify which drive was the active one. The two pins in question are 19 and 20, and desoldering and swapping the wires around will make the ST believe that drive B is drive A and vice-versa.

If any other readers are thinking of performing this operation, please get someone who knows what they're doing to carry it out for you. You need to be fairly competent at soldering and desoldering chips on printed circuit boards.

Conversion problems

AFTER reading the article Full Speed Head in your January issue, I tried running the programs on the cover disc, but met with failure. With CONVERT.PRGM I was told the disc I inserted didn't have nine sectors and the program returned to the desktop.

I was under the impression that all discs were nine sector, so could you explain whether it was me or the program that was at fault?

Trying to run the program STOSCONV.BAS was even more bewildering, as I was given the options of Show, Print or Cancel. All the other programs within the STOS folder did exactly the same thing. These problems may be due to my inexperience, and help you could offer would be of use and much appreciated. — K. Crawley, Cambridge.

● The speed at which your ST reads and writes to floppy discs can be greatly increased by using a clever technique of reading the disc, reformatting it in a different way, and writing the data back again. This process however, can only be done if the disc has nine sectors on each track, which is exactly how the ST normally formats them. Some formatters allow 10 sec-

Undiscovered masters

CONGRATULATIONS on the arcade game Crisslefridge by A.J. Cook on the disc given with the February issue of Atari ST User. It is the best game I've seen for a long time and it even comes with its own editor.

The puzzles certainly get you thinking and the graphics are first class, all of which makes a welcome change from the endless flow of shoot-'em-ups. I have quite a few games which just sit on the shelf, they're either boring or unplayable and a complete

waste of £20. There's nothing on the market at the moment which I would bother spending my money on and the last game I bought was XOR, which isn't even advertised.

This brings me to my point. Could you include a page covering older games which recent owners may not be aware of?

I'm certainly glad I renewed my subscription, otherwise I would have missed an excellent game. — R.E.Riches, Langleigh, Southampton.

● If enough readers send in a list of their favourite but lesser known games and where they can be obtained, we'll gladly pass the information on to the rest of the world.

► tors to placed on each track, which means that if the program tried to convert these discs back to nine sectors, one would be left off and so you'd lose some of the data it held. Therefore the program reports that it can't continue and returns to the desktop.

To see it working, format a disc using the Atari's built-in formatter, copy a large program on to it and time how long it takes to load and run. Now use the converter and when it has finished run the large program again. The time difference should be around 50 per cent.

The program STOSCONV.BAS does exactly the same thing, except that it has been written for owners of STOS – The Games Creator. In fact, all the programs within the STOS folder will only work with this package, which has become a favourite with many ST programmers.

Here's a nice pair of boots

STE Owners who have experienced problems booting up in medium resolution, may like to hear how I overcame this problem. First set medium resolution from the preferences panel and save the desktop. Now load the DESKTOP.INF file into a word processor and change the 2 at the end of line #E to 3:

```
#E 98 12
```

to

```
#E 98 13
```

Saving the file again as DESKTOP.INF will now enable the STE to boot correctly.

Note that if the word processor creates .BAK files, it may be necessary to remove this before booting. — S. Bryars, Scunthorpe, South Humberside.

● Many thanks for this tip, which should ease the minds of troubled STE

owners. However, it isn't necessary to remove the .BAK file before booting from the disc.

Broken resolutions

HAVING recently upgraded from a ZX Spectrum to the Atari 520STFM, I decided to dive straight into 68000 machine code with the help of the Abacus range of books.

I was interested to note in the February issue of Atari ST User that Roland Waddilove failed to mention that you can change screen resolution with the function -setscreen:

MOVE.W #1,-(A7)	Medium resolution
MOVE.L #-1,-(A7)	Same physbase
MOVE.L #-1,-(A7)	Same logbase
MOVE.W #5,-(A7)	setscreen
TRAP #14	Xbios function call
ADD.L 12,A7	Tidy the stack

The resolution is changed, but the ink colour becomes yellow and on return to the desktop the screen is set for low res but the text is in medium. Also Gem no longer works correctly.

Do you have any idea why this small routine doesn't work, and could you suggest any other books apart from the Abacus series? — Neil MacPherson, Bournemouth.

● There's no reason why this function cannot be used to change resolution, except – and here's the crunch – Gem will not recognise what you've done. Therefore any programs which use Gem require the correct resolution to be set first from the desktop.

If your program doesn't use any of the Gem, VDI or AES functions, you can use a program like the one above without any problems.

Why Gem should object about a simple change of screen resolution has baffled programmers for quite some time. It's quite likely that Gem can't re-initialise its internal variables with-

out a warm boot. Other books that will be of help are *The Concise Atari ST 68000 Programmers Reference Guide* by K.D.Peel and published by Glentop, ISBN 1-85181-178-8 and the *Compute* range of books covering the Gem VDI and AES functions.

Of mice and machine code

AS a professional computer user I normally write my programs in Fortran or Pascal and have no knowledge of assembly language, which I'd very much like learn. Could you please recommend a comprehensive book about this subject?

Also, where could I obtain an assembler and what programs do I need to define my own windows and buttons?

Have any other readers noticed a problem when opening folders from the desktop. Every so often when several folders have been opened, the up and down mouse controls become reversed.

I know a bug appears when around 40 folders have been opened, but my problem occurs after only four or five. — Paul Paschievici, Rehovoth 76100, Israel.

● Several books have already been mentioned in reply to Neil McPherson's letter this month, all of which are excellent reference manuals. As for a tutorial into learning 68000 assembly language, you could do far worse than *68000 Assembly Language Programming*, Second Edition, published by Osborne McGraw-Hill ISBN0-07-881232-1. Although this is a general book rather than being dedicated to the Atari ST, it takes the novice from simple examples to complicated programs, provides a full explanation of each instruction and its uses.

Several assemblers in the public domain are quite good, but most serious machine coders highly recommend Devpac version 2 from HiSoft, which includes an excellent manual, debugger, linker and reference guide.

Priced at £54.95, Devpac 2 can be obtained from HiSoft, The Old School, Greenfield, Bedford MK45 5DE. Tel 0525 718181.

The software to define buttons and windows is already present within your computer and any book on Gem should give the necessary information to use it.

You may find things simpler if you use a Resource Construction Kit, some of which are available within the public domain. HiSoft can again supply you with a professional software package.

The problem with the mouse pointer sounds very much like a virus, as there is one which does exactly what you describe. We suggest you get hold of a virus killer and go through your whole collection of discs.

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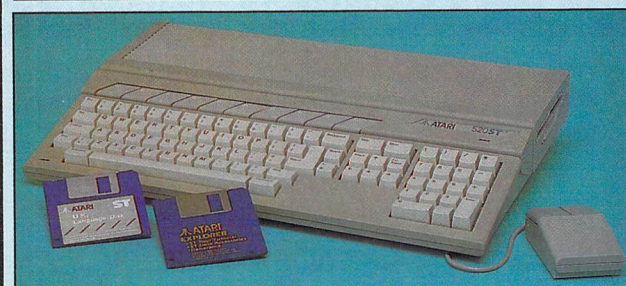


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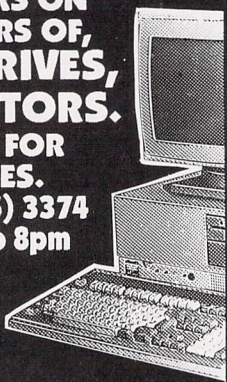
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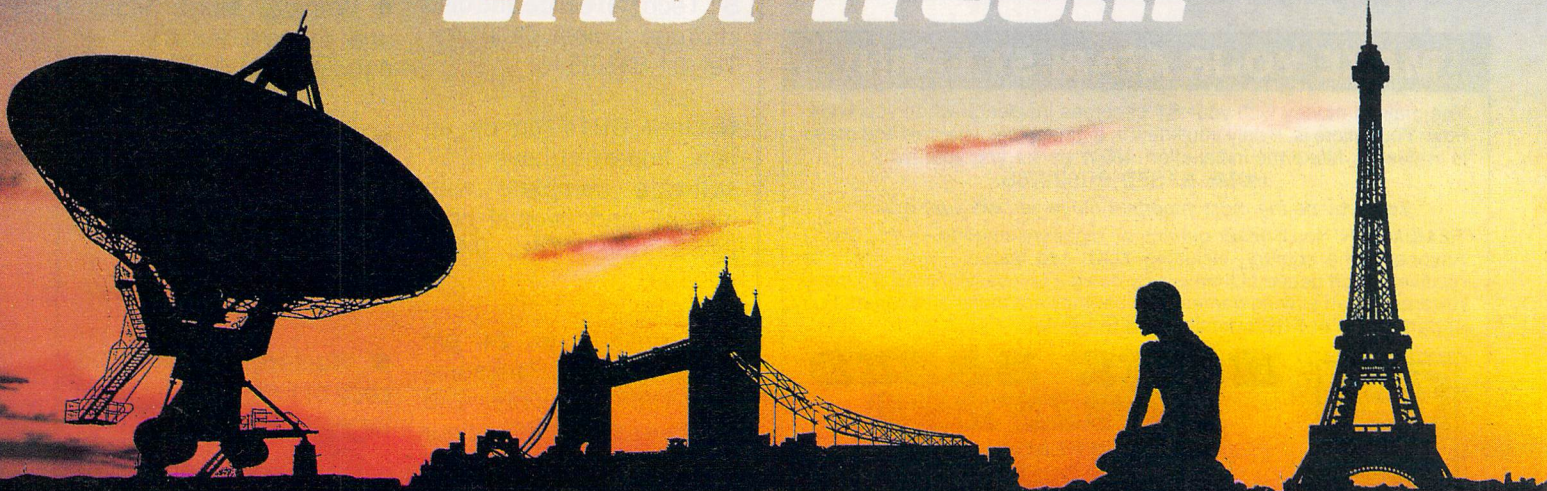
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ST5

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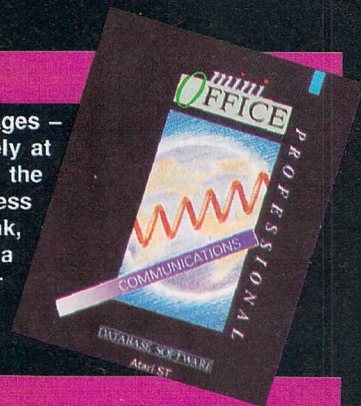
... all for
£259.95 VAT incl.

THE MODEM

The EuroLink modem is a robust and sophisticated device which turns data from your Atari ST into signals which can be sent along a telephone line. It can handle speeds up to 2400 baud – about 40 words a second. Although it has many powerful features, it is simplicity itself to use when combined with its accompanying software. Built into the Hayes-compatible modem is MNP error correction – your guarantee of a corruption-free connection. Its wide range of other features include auto dial and auto answer, auto redial, baud rate scanning, auto terminal baud rate sensing, 32-entry number store, internal loudspeaker, call progress monitor, bell tinkle suppression, external plug mounted power supply unit and built-in 'watchdog' circuitry.

THE SOFTWARE

Accompanying the modem is one of the ST's best-selling comms packages – the complete Mini Office Professional Communications. Sold separately at £24.95, it simplifies connection to MicroLink. Two mouse selections and the rest is automatic – straight to the service you require and with all the access formalities taken care of. After that you can move freely around MicroLink, capture text on disc and send pre-prepared documents – all with a minimum of keystrokes. It can also be used to access Prestel and other services in addition to MicroLink. Included in the software is a text editor and other desk accessories.



WHAT YOU CAN DO WITH MICROLINK

With MicroLink any ST can be turned into a complete communications centre. Without any additional expenditure it becomes a telex machine, a fax machine, an electronic mail terminal.

- ★ You can use it to send a letter for next-day delivery to any address in Britain, send a telegram to anywhere in the world, or even send flowers without moving from your ST.
- ★ It's also a retrieval tool that lets you search out and store data from the world's leading electronic libraries.
- ★ It gives instant access to the credit status of many thousands of companies all over the UK... and it lets you embark on exciting adventures – in real time! – with like-minded enthusiasts in faraway places.
- ★ It keeps you up to date with the latest news, sport and weather.
- ★ It gives you free entry to a wide range of telesoftware from time saving utilities to exciting games – that you can download directly into your own ST.



YES – the long-awaited breakthrough in data communications has finally arrived!

Now you can use your Atari ST (plus phone) to talk to MicroLink and other computers anywhere in the UK – or all round the world* – using the very latest in modem technology.

Today there are hundreds of MicroLink telephone points throughout the British Isles. This means that the majority of subscribers access the service for the price of a local call.

APPROVED for connection to telecommunication systems specified in the instructions for use subject to the conditions set out in them.

**The EuroLink modem and its accompanying software can also be used to access other information services such as Prestel/Micronet, Telecom Gold and CompuServe, as well as innumerable other databases and bulletin boards in the UK and overseas.*

It's all you need to become part of a very friendly and helpful online community

ORDER FORM

Please send me a EuroLink modem with MNP error correction plus ST lead, power supply and Mini Office Professional Comms – all for the special offer price of £259.95 (incl. VAT)

☐ I am already a member of MicroLink ☐ I am not a member of MicroLink. Please send details

I wish to pay by:

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ST5

READER OFFERS

Grab graphics like never before

... with the Vidi-ST Digitiser

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

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

This is the essential package for anyone who wishes to make use of the full graphics potential of their ST. With a saving of £15 off the retail price this is an opportunity you shouldn't ignore.

RRP £99.99

OUR PRICE

£84.95

Increase YOUR wordpower with **KEYWORD**

The essential enhancement for your word processor

Now you don't have to go hunting backwards and forwards through your thesaurus when you're looking for alternative words, because Keyword from Swift Software is a complete word finder – on disc!

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If you ever find yourself stuck for words, Keyword is the answer! Send for your copy today and you'll never be tongue-tied again

ONLY £19.95

WHAT THE REVIEWERS SAY

"As a word finder for everyday use it is excellent. ... Next time I am stuck for a word I shall be using Keyword rather than reaching for the thesaurus on the bookshelf."

– The Micro User

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"Keyword will interest anyone who uses a word processor for more than notes to the milkman."

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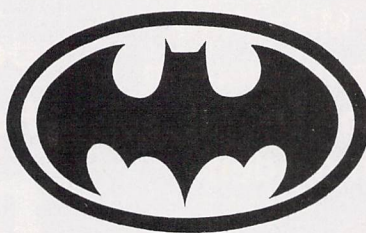
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Need some extra discs?

There's always a demand for spare ST discs – and at Atari ST User we have lots we will be happy to sell off at a really exceptional price. They are all discs that have been prepared as monthly cover discs, but they are brand new and have never been used, so you can safely reformat them and use them for any purpose you like. Look at these prices:

5 for £7.50!

25 for £20!

WordPerfect

This is THE word processor for the ST. It features all the power and flexibility of the PC version, and is specially adapted to the strengths of the ST itself.

SAVE £50

WordPerfect works the way you do. It can be controlled with either the mouse or function keys, and you can display up to five text columns, side by side on a screen.

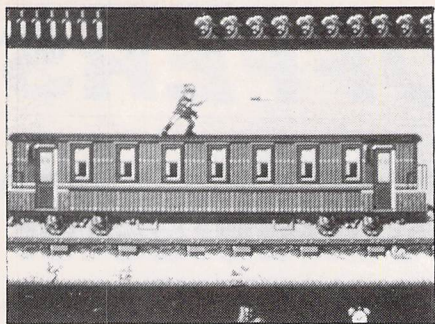
Plus, all the extra features so often missing from other word processors are fully implemented – such as footnotes, endnotes, a thesaurus, spelling checker, mail merger, over 200 printers supported – and FREE SUPPORT is available should you need it.

If you're in any way serious about word processing WordPerfect is the program you need. And with a £50 saving it represents excellent value for money.

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OUR PRICE

£178.85



NORTH & SOUTH

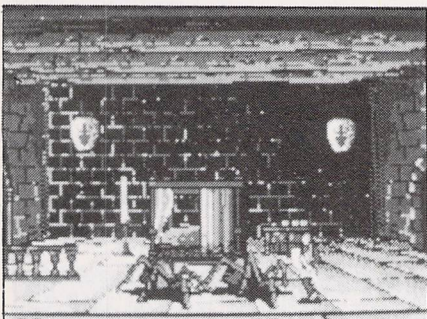
The most impressive game so far – brilliant graphics, clever comic-style animation and sound effects, and imaginative gameplay. **SAVE £5**

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OUR PRICE

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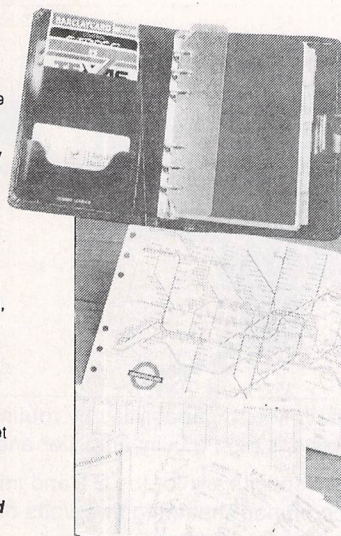
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Just some of the personal organisers information-packed pages

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OUR PRICE

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... with Things to Do with Numbers

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

With its clearly designed graphics and well thought out structure, Things to Do with Numbers is a value-packed educational tool which, with a saving of £7, is now even better value for money.

Home Accounts

Day by Day

RRP £54.90

OUR PRICE

£34.90

Home Accounts has been designed to make full use of the Atari ST's features, giving you the widest range of home accounting facilities available at this price.

The program lets you set budgets and control up to 13 separate accounts, with optional printouts of any data. Within seconds of loading your data disc you can check your budget or any account, and even display or print the data in bar or pie charts.

Day by Day replaces your manual system for diary, business organiser, notepad, planner, reminder and so on.

It's suitable for both business and home applications, including numerous useful functions which serve every requirement.

Written in the easy-to-use Digita style, Day by Day is certainly one program that once you've bought it you'll wonder how you ever managed without it.

Among its many features are:

- ☆ Calendar/diary/planner
- ☆ Categories such as bills, birthdays and letters
- ☆ Appointment sorting
- ☆ 'Urgent' notice board
- ☆ 'Overdue' notice board
- ☆ Advance notice of forthcoming events

- ☆ Updating of regular appointments
- ☆ Comprehensive search facility
- ☆ Automatic reminders
- ☆ At-a-glance week and month summaries
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- ☆ Grouping of related messages

Both of these powerful programs are excellent value on their own, but if you buy this exclusive combination package we'll knock £20 off the combined retail price.

**TO ORDER
PLEASE USE
THE FORM
ON PAGE 121**

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DevpacST is the standard assembly language development system, used by all the top software houses.

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HiSoft FORTH is a multi-standard compiler with a complete set of GEM libraries and is even available as a desk accessory.

New!

We have acquired an invaluable guide to your Atari ST; Your Second Manual is packed with essential facts aimed at first time users and comes complete with a disk full of useful software for you to use immediately ... and at a snip of a price!

Utilities

In addition to providing top quality programming languages, we also offer a wide range of utilities to increase the power and the usefulness of your Atari ST.

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Craft 2 a powerful and flexible programming environment based on the popular UNIX C shell plus a flexible editor.

Finally, **ProFlight**, a slight diversion for us and, we hope, for you too. A supremely accurate and therefore fun-to-fly Tornado flight simulator. Software that matches the hardware!

All software is STE compatible

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