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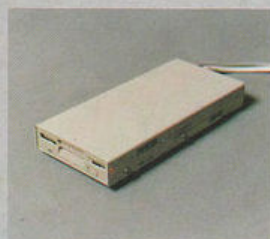


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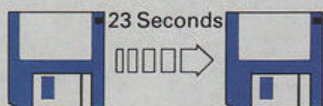
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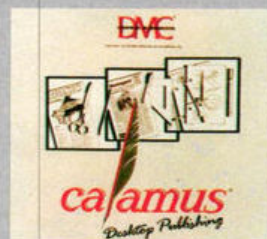
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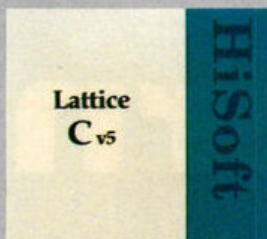
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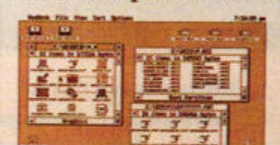
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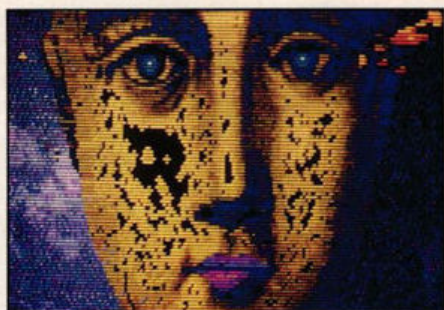
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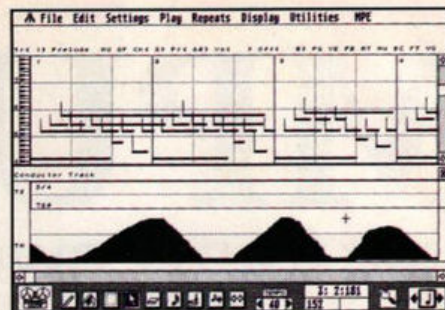
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How you can create pictures like this on your ST — 16



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COVER FEATURE

modern classics₇₀

WHAT does it take to turn a good game into a truly *great* game? WHY despite all its technical excellence can *Batman* never be a classic? HOW is it ancient games like *Space Invaders* still sell? WHAT does car park sex have to do with all of this?

— AND FINALLY, we name the 30 best games of all time

ST FORMAT

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Is good educational software as rare as they say? —125



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While we welcome letters for use in Desktop and on our letters pages, we regret we cannot reply to individual enquiries, either by letter or by phone. We're too busy making *ST FORMAT* even better!

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ST FORMAT comes to you from the company that publishes *Amiga Format*, *New Computer Express*, *Amstrad Action*, *Your Sinclair*, *PC Plus*, *Mac Publishing*, *S* and *8000 Plus*



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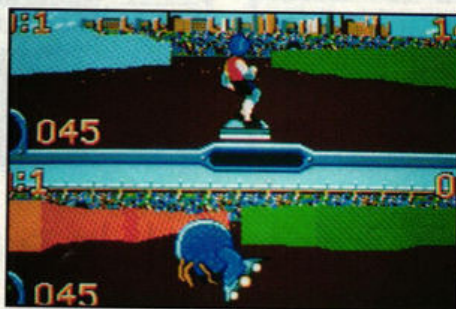
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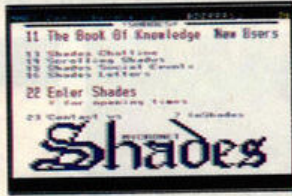
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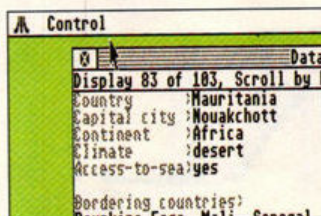


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■ A whacking 40% off the much-praised *Data Manager Professional*

Database tumbles

Electric Distribution have chopped more than 40% off the price of the much praised *Data Manager Professional*, from £69.95 down to £39.95. "Now everyone from business to home users can afford it," a spokesperson said.

The program is very flexible, so the user can change the structure of a database even after the data has been entered. Fields can be sorted and searched and special reports generated which fill in values taken from existing records. ☐ Electric Distribution 0480 496789.

Buzzbox



■ Seen this somewhere before? *The Juggler* demo is just one of the many colourful and fun demos on a new monthly disk-based magazine called *The Buzzbox*



■ It includes programs like *Tetris*, *Invaders*, *Daleks*, *Blast Virus Killer* and also snippets, trivia and gossip



■ Each disk contains 1,140,000 archived bytes and can be obtained by sending £2 to 5 Balmoral Road, Moorlands, Lancaster, Lancs LA1 3BT

STE up £100 – STOS is bundle star ST set to regain sales initiative

Following last month's revelations about the fate of the *PowerPack*, *ST FORMAT* can now reveal the details of the new *ST Discovery* bundle.

For just £299, the entry-level *Discovery* pack includes a 520 STFM computer and four games: *Outrun*, a former number one from US Gold; Rainbird's *Carrier Command*; and *Bombjack* and *Space Harrier* from Elite. The pack also includes *Atari BASIC*, the *Neochrome* paint package, a disk-based computer tutorial and an ST introductory textbook.

The real coup, however – and the feature that should really help sell the machine – is the inclusion of Database Software's excellent games programming language *STOS*.

According to Atari the new bundle "enables even the entirely inexperienced user to work, learn and play with one of the most advanced systems in the world."

Prospective owners wanting the extra power of the STE can buy the *Discovery* pack replacing the STFM with an STE for an extra £100. For £499, power users can buy the 1040STE *Discovery* pack, which includes a range of business and serious software from popular programmers Kuma.

Atari are backing the launch



■ Coming soon to a television screen near you: the new *Discovery* pack is about to become the focus of Atari's biggest ever TV advertising campaign

with a series of colourful television ads designed to pull in the first-time buyer. The advertisements, which started on the 31st March, run until after Christmas. The TV ads are to be followed up with full-colour advertising in the national and computer press. There'll also be leaflets, posters and a demo disk.

The campaign is in marked contrast to Atari's usual laidback launch attitude, and is in response to fierce criticism of the company's release of the STE.

The *Discovery* pack should be appearing in shops as you read this.

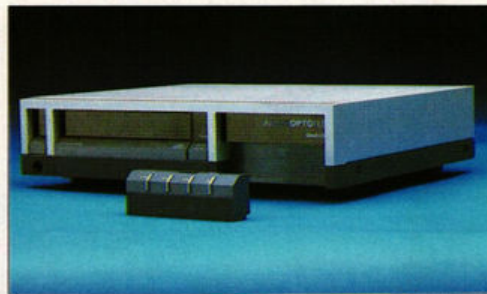
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CD-ROM drive for ST?

Three years ago Atari unleashed a CD-ROM drive way ahead of its time in terms of quality and price. Computer journalists everywhere did back flips in print praising the device. Unfortunately, although breathtakingly cheap and offering immense possibilities for interactive applications, software developers ignored the optical drive and, consequently, Atari ended up with a warehouse full of them.

Now Atari are once more attempting to generate applications for the much-neglected device. At a recent software developer's conference hosted by Atari, one of the topics on the agenda is thought to have been the future of the compact disk and its role in the latest Atari "high-tech development project." Atari's boffins are known to have been working on a presentation



■ Re-packaged and re-launched, CD-ROM is set to make a comeback

front-end which could be used with the CD-ROM and there's talk of making the drive compatible with the IBM PC and its kin in a bid to widen the possible market.

In the short term Atari are looking at bundling the drive with games and applications and re-launching it as a mass market product. Watch this space...

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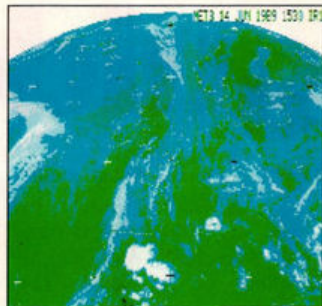
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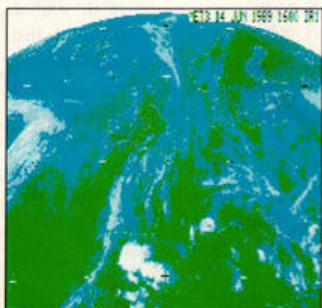
Mind your language

■ Learning to read on the ST - a new definition of computer literacy?

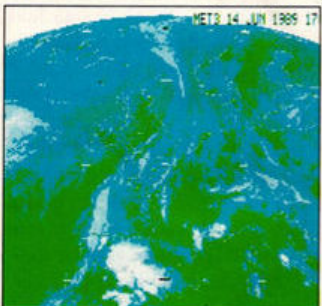
The sky's the limit



■ A new system has been released which enables the ST to receive live satellite pictures like the sequence shown here.



■ ICS's MET-2 can pick up detailed cloud cover pictures every half an hour directly from the European Meteosat 4 and the American GOES satellites.



■ At £600 - it's claimed to be "competitively priced" - it won't surprise you to know that you need at least 1Mbyte RAM ■ ICS Electronics, 0903 731101.

Educational software house Kosmos have released all of their popular educational titles for the ST. The range includes a variety of subjects suitable for ages from six to adult.

For those attempting to master the intricacies of a foreign language, four tutors are available: the *French Mistress*, *German Master*, *Spanish Tutor* and *Italian Tutor* - providing everything necessary for beginners, GCSE and advanced students. Each program includes ready made vocabularies covering nouns, adjectives, verbs, adverbs, conjunctions, prepositions and phrases conjugated in six tenses. Students can create their own special lessons such as homework or revision lists and these can be stored on disk for recall at exam time. To aid ease of use, all vocabulary is arranged under 32 separate headings including the family, the dwelling, vehicles, substances, parts of the body and food and drink. Each tutor costs £19.95.

Kosmos have also just launched two educational quiz programs entitled *Answer Back Junior Quiz* and *Answer Back Senior Quiz*. Both programs combine large databases of general knowledge questions with simple yet compelling games. Each program contains 750 questions selected from 15 topics - nursery rhymes, word fun, books and poetry for the under 11's;

discoveries, inventions, music, art and sport for adults. Each question can be answered in a true or false, multiple choice or complete-the-answer mode, and correct answers are awarded with further games. Users who've exhausted the built-in question database can create their own using the facilities provided.

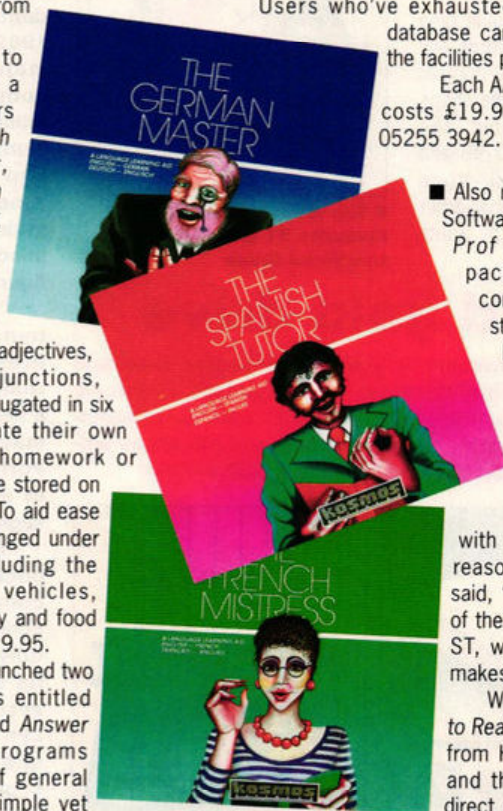
Each *Answer Back Quiz* program costs £19.95 ■ Kosmos Software, 05255 3942.

■ Also recently released, Prisma Software's *Learn to Read with Prof* is an early reading package for children that combines ST programs, a story on cassette read by Patricia Hayes and five books.

Prisma's spokesman Jason Salisbury claims that it helps children of all abilities to learn to read with success and fun. "One reason for its attraction," he said, "is that the learning part of the pack takes place on the ST, which to young children makes learning to read fun."

Written with STOS, *Learn to Read with Prof* costs £29.99 from Harrods, Boots, Hanleys and the Tandy catalogue, or direct from Prisma Software ■ 0244 326244.

■ Be prepared for 1992 with Kosmos' four European language tutors



Atari show their hand at last

Details of attractions at Atari's forthcoming computer show have finally been announced. To be held at the Hammersmith Novotel during the first weekend of June, the exhibition includes all of Atari's current range of computers including the high-end TT and ATW transputer.

Atari believe the exhibition, covering two floors, will be an opportunity for the public to examine hardware and keep abreast of the company's future

plans, as well as providing an arena for the usual mad dash for bargains from the box-shifters. Visitors to the upper floor will be able to enter an Atari workshop where software developers and those responsible for hardware design will be on hand to "help you get the most out of your machine."

Atari are attaching much importance to a planned desktop publishing section also situated on the upper floor which will include

examples of popular hardware and software DTP solutions. Punters intending to buy a Lynx or Portfolio hand-held can tinker before they purchase, and there'll be an opportunity for prospective power users to play with the top of the range TT or ATW. The lower floor will house hardware and software bargains.

Tickets, priced at £2 each for individuals, are also available in a breathtakingly cheap £4 for-all-the-family versions.

SOBOZON C AND THAT "MISSING" DOCUMENTATION

To accompany our series on programming in C, which continues this month (see page 121 and the items in the 'C' folder on the Cover Disk), the author of the series Warwick Grigg compiled a special version of the public domain *Sozobon C*. We originally mentioned that there would be full documentation on paper, which unfortunately proved not to be possible. But full documentation is, of course, on disk.

New games guide for ST

There are more quality games available for the ST than any other home micro. Adventures, shoot-em-ups scrolling every which way, simulations – you name it and someone, somewhere has programmed it. But how do you choose from this ever growing mountain of games? *ST FORMAT* is of course a most valuable source of information, but what if the game you're thinking about buying was released some time ago and isn't on this month's list (see page 77) of "30 Kick Ass Classics"?

Now, for all those suffering the no-review blues comes *The Unofficial Guide to the Best Games*, a handy little reference

work to the best in ST gameplay.

The Unofficial Guide features leading reviewers selecting their 35 favourites from the hundreds of games released within the last three years. Each of the games, all chosen for their play value and lasting appeal, has a 500 word review and full colour screen and package illustrations.

Every copy of the Guide also carries a £5 voucher towards any games purchase from Microprose, Rainbird and Firebird. In the shops by the time you read this, *The Unofficial Guide* costs £2.95 and is available from all good newsagents or direct by mail-order from MACS, PO Box 325, South Croydon CR2 0XT.



■ Top reviewers list their favourite ST games in *The Unofficial Guide*

Kangaroo caught!

A new ST genlock with a superb technical specification has just been launched in Australia. Unveiled at a recent computer show, the AGS-20 is claimed to be the world's first dual standard CVL (computer/video link), compatible with all 625 line PAL composite video formats. The unit can detect which CVL compatible computer is connected and adapt itself to suit.

AGS-20 is very competitively priced, at approximately AS900, or £400-£450. Manufacturers Acre do not currently have a UK distributor. ☎ 010618 364 2702 (remembering they're nine hours ahead of us!).

Zoo's old gold drive

If you're considering investing in a new external disk drive, and are tempted by a bunch of games of varying vintage, **Electronic Zoo's £100 bundle is just the job. The games are the Breakout-style Impact, the helicopter sim Super Huey and the shoot-em-ups Gold Runner, Exolon and Leatherneck.** ☎ 0453 887008.



■ Driving a hard bargain: a five game tempting offer from **Electronic Zoo**

The money program

Jewsbury Software have produced a share price analysis package and portfolio manager. Working with the *Microtext Teletext Adaptor* available for the ST (reviewed in *ST FORMAT* issue 5), it automatically downloads share price information from Ceefax and Oracle. Share prices can be input manually without the *Teletext Adaptor*. The program comes complete with hundreds of shares dating back to October 1987's huge stockmarket crash.

Market Breaker features options to keep track of existing investments and spot new openings. It generates graphs in five formats, including a moving average depicting suggested selling and buying points based on the average price of the share in preceding weeks. It also allows for part paid shares and Scrip or Rights issues (whatever they are) together with commission and taxes on share sales.

Market Breaker is £69.95 ☎ Jewsbury Software 0705 595694.

Atari get their sums right

After a dreadful showing last year, Atari's profit margins have started to climb again. For the quarterly period ending December 1989, Atari made profits of \$45.7 million – a significant improvement compared to the same period during 1988 when the company experienced a loss of \$97 million.

Total sales during the quarter topped \$170 million compared to just over \$152 million for the last quarter during 1988. Overall, however, 1989 saw Atari make less money – \$423.6 million compared to 1988's \$452.2 million. The company say the slump in games console sales and the sell-off of Atari's American chain of loss-making electronics stores accounts for the lower sales figures.

"For Atari, 1989 was a transition year," said Atari's President Sam Tramiel. "It witnessed the introduction of a new generation of hand-held machines, the Lynx and Portfolio, and the disposition of an extraneous business segment."

Atari expect their new pocket business and games computers to revitalise the company's fortunes. "Atari is fully committed to regaining its share in the video game sector with products like the Lynx, increasing our market share in the personal computer sector with products like the STE and maximising our opportunity in the hand-held computer business with the Portfolio."

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euro-news

There's tons of ST activity in Europe at the moment. Our man in Germany, Don Maple, previews the programs we'll be seeing soon

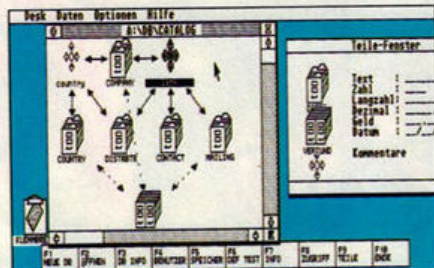
Top database is on the way

The top database in West Germany, *Adimens ST Plus*, is currently being translated by Atari UK and is soon to be released in England. The latest version 3.0 is fully WYSIWYG (What You See Is What You Get) with intuitive icons and clear menus. And it's friendly, too: common DB functions such as clipboard, sorting, mail merge and printing are represented on the desktop as icons.

After loading your own database each component file is shown as an icon. Even programming the search criteria is achieved by a foolproof "point and shoot" method and the commands in effect write themselves. As you'd expect with such a heavyweight program the files can be massive: up to 32 files, with a enormous total size of 32MBytes and with up to 192 key fields.

Adimens ST Plus also comes in a network version. Related programs, sold separately, include *AdiTALK* (a query

language) and several *AdiPROG* interfaces: two for C and one for Modula (see last month's column). The drawback? Price, of course: 399 deutschmarks (£150) for a single user, or an eye-watering DM 1,995 (£750) for a network version. ADI Software Hardeckerstr, 5 7500 Karlsruhe 1 FR Germany ☎ 01049-721-570000.



Coming soon: painless database creation using friendly and helpful icons

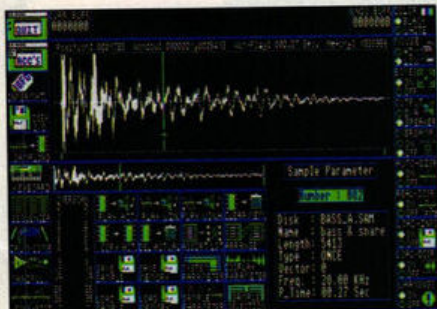
Sounds like magic

Samples sounding a little off? *SoundMerlin* to the rescue! This sample editing program by Tommy Software can actually do much more than merely edit samples, thanks to its built-in 8 track/100 entry sequencer and 16 sound drum machine with 60-240 beats per minute.

But the program's real power is in its editing features: vertical and horizontal mirroring, loudness control, blending, anti-aliasing, multi-purpose digital filters, Bessel/Butterworth algorithms (but of course!) and the humble but delightful UNDO... you

name it, *SoundMerlin* can do it!

The auditory magician, including a second disk with 65 free samples, costs DM 299 (£110) from Tommy Software Selchower Str. 32 1000 Berlin 44 F.R. Germany ☎ 01049-30-6214063.



SoundMerlin weaves its musical magic in colour and mono

Showtime for Atari in Germany

CeBit, which claims to be Europe's largest computer fair, attracting over half a million visitors and 4,000 exhibition stands, took place recently in Hannover.

Top ST news was the arrival of the colour version of mighty DTP package *Calamus*, as well as something Sam Tramiel let slip about an ST-compatible version of the Portfolio handheld. Look out for next month's exclusive report on all the news from CeBit - only in *Euro-news!*

One for the mono

The trouble with treating the ST as a serious heavyweight machine, as happens particularly in Germany, is that almost everyone has a mono monitor. The resolution might be superb, but you have the devil's own job getting games that run.

Now Application Systems Heidelberg, noted for their stylish and professional software such as the word processor *Sprint*, have added *Esprit*, a game that runs in monochrome only, to their catalogue. There are a total of 100 screens, but every 9th screen is a so-called "meditation" level offering a little breather. To order your copy, have 99 DM (£36) ready and contact Application Systems Heidelberg Postfach 10 26 46 6900 Heidelberg 1 FR Germany ☎ 01049-6221-300002.

Little bit of politics (part 1)

Atari Germany donated 18 1040 STs, with a total value of DM 30,000 (£11,000), toward the recent East German elections. The computers went to a West German institute from Mannheim called "Elections," which helped ZDF (the West German equivalent of BBC1) predict and show the election results from their temporary studio in "Palace of the Republic" in East Berlin. After the elections the STs remained in East Germany - a kind of reverse defection, perhaps?

Atari computers have been used in local West German elections and for gauging the general political climate since March 1988.

Little bit of politics (part 2)

Tommy Software, well-known for their graphic and sound programs for the ST, ran an imaginative ad campaign in Germany recently. Called "Glasnost first," and sprinkled liberally with Russian words, the ad invited readers to send 20 DM or 4 Russian roubles for a demo version of their *Megapaint II* program (see this column, March).

The rouble has, however, devalued considerably, making the whole deal a better bargain than had been anticipated. Several readers noticed this and, having a few roubles to spare (!?), promptly sent them in. Tommy Software honoured their word. The person who thought up the daft scheme can be contacted in Siberia, where he is currently working on a saltmining project.

Harlekin

HiSoft Software

Everything's Possible

We are pleased to announce the release of Harlekin, a truly amazing collection of easy-to-use and extremely useful programs that is there whenever you need it.

Harlekin is:

A Wordprocessor - simple yet very effective, the Harlekin wordprocessor allows you to write, edit and print any size of document (memory permitting) with search and replace, block commands, macro processor, text sorting, page numbers, footers and headers and much more.

A Scrapbook - *the heart of Harlekin*. A tremendously flexible program allowing you to create cards and notes of unlimited size, each card having its own icon (if you want) and capable of being shown as a list or a calendar. The scrapbook is a complete information management system which you tailor to your own needs and method of working.

A Terminal Emulator - allows communication between machines or, via a modem, with the many bulletin boards available. Supports ASCII and XMODEM file transfer.

And so much more - a disk utility, memory monitor, clock, calculator (base 2, 10 and 16), RAMdisk, macro processor, ASCII table, printer filter and spooler etc. etc.

Above all, Harlekin is always there as a desk accessory - all the utilities you are ever likely to need available instantly. Harlekin comes with a clearly-written, 100 page manual and costs only **£49.95** inclusive. Needs 1Mb+ of memory.

Your 2nd Manual

HiSoft Books

Invaluable Information

You've just bought your Atari ST, you flip through the manual, you start it up and stare blankly at the screen. The salesman handed you the system disk with the same seriousness that you father once gave you the keys to the family car. You spend a week working at it; the disk is in worse shape than the Ford. It takes you hours to print out a single page or to understand the desktop while your neighbour's kid can program a flight to Jupiter - the whole thing looked easy in the shop, computers can't really be that hard.

Well, the good news is that they're not when you have Your 2nd Manual - the hitchhiker's guide to the ST. Y2M is packed full of useful hints and tips on the whys and wherefores of the ST, where to get the best programs, information on magazines and user groups and everything else you need to know as a proud owner. It even comes packaged with a free disk containing some essential PD programs.

Your 2nd Manual is ideal for anyone who wants to get the most out of their Atari ST and costs only **£14.95** inclusive of book and free software.

Harlekin and Your 2nd Manual are just two of our growing range of products for the Atari ST. Other titles include: Lattice C 5 (£99.95), KnifeST (£29.95), HiSoft DevpacST (£59.95), HiSoft BASIC (£79.95), Power BASIC (£49.95), HiSoft C (£49.95), FTL Modula-2 (£99.95), TurboST (£34.95), Tempus 2 (£39.95), CRAFT (£49.95), WERCS (£29.95) and many more.

All software should be available from your local dealer. In case of difficulty, you can order directly from HiSoft by phone, using your Access or Visa card or by mail, using Access, Visa, a cheque or postal orders. Our prices include VAT and shipping within the UK.

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Size is no object.

For the first time on the Atari ST, you can now work with scanned and painted images larger than your screen. That's because Touch-Up is a "virtual page" graphics program. It can handle bit mapped images of any size and resolution, not based on your computer's available memory, but the amount of room on your hard drive, as Touch-Up now supports Hard Disk Caching.

And that's a sizeable advantage because high resolution images give your desktop publications the professional look they deserve.

Pixel-perfect images.

You can design and redesign an image - pixel by pixel - until it's exactly what you need. Four zoom modes put you right where you want to work, and you'll have no trouble keeping the big picture in mind,

thanks to on-screen locator that shows which part of the image you're working in.

Powerful, Versatile, and easy to use.

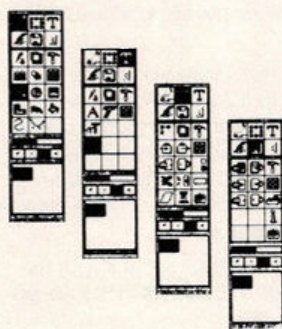
Your adjustable workspace is outfitted with powerful editing functions, a complete paint program, and an array of drawing tools, not to mention special effects and scalable outline fonts.

Touch-Up is easy to learn and easy to use, and Touch-Up imports and exports a wide variety of file formats - making it easy to share images with other programs.

Migraph Touch-Up, A powerful tool for professional-quality results.

Features Include:

- **GEM User Interface.** Touch-Up uses the convenient GEM interface. Pull-down menus, tear-away menus, icons, scroll bars, and dialog boxes to help you learn and use the program quickly and easily.



Icon
Driven
Menus.

- **Desktop publishing compatibility.** Touch-Up files load easily into your favourite programs, including Calamus, Page Stream, Publisher ST™ and Supercharged Easy-Draw™
- **Image accessibility.** You can import images in a variety of popular formats: .IMG, .GEM,

Neochrome, TIFF, Macpaint™, Degas™, Printmaster™, and PCX.

- **Versatile file formats.** Touch-Up exports monochrome images in these widely used formats:
IMG, IFF/ILBM, TIFF, GIF, MacPaint, Printmaster, Degas, and PCX.
- **Drawing Tools galore.** You have a full selection of drawing tools at your command, including Bezier and B-Spline curves. Four writing modes let you be creative at various zoom levels.
- **Superior editing functions.** Standard commands like clear, invert, flip and mirror, plus extras like rotate, slant, stretch, compress, clean-up and outline.
- **A flexible palette.** Your tools include a complete paint program with Lasso, FatBit, and Airbrush features, plus the ability to define your own brush size and shape.
- **Creative text options.** Use scalable outline fonts in 10 typefaces to create headlines of up to 35 characters, and fill text with patterns.
- **Scanner support.** Touch-up now supports direct input from the Migraph hand scanner. Scanned images may be imported in 100, 200, 300 and true 400 dpi.
- **Image rotation.** Touch-up allows the rotation of the clip box by 1/10th of a degree.

Atari Explorer Magazine:

...I can't think of a stronger recommendation. If you use your ST for desktop publishing, you **NEED** Touch-Up...

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Inc. V A I

START Magazine:

...A single session with Touch-Up will justify its purchase...

...Touch-Up has one of the slickest user interfaces in the ST market...

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Telephone: 021-643 9100



HAND SCANNER

The Migraph hand held scanner and supplied software has features not available on any other hand scanner currently available.

Hardware:

- Over 4" wide Scanning area.
- Four adjustable resolutions, 100, 200, and true 300, and 400 dots per inch.
- Four dither settings, one for line art and three for halftones.
- Adjustable contrast setting to lighten and darken the image
- Easy to use
- Compact interface which plugs into the cartridge port.
- Speed indicator light for accurate scanning of images, (light blinks if scan speed is too fast, and light goes off if scan speed is too slow).

Software:

Touch-Up, being a full-blown image editing program has hundreds of features not contained in any of the other simple scanning packages. Features include:

- Virtual paging to hard drive for images larger than available RAM. This is the most important feature for Atari ST owners with a limited amount of RAM. It allows 1040 owners to work on the same images that only Mega 4 owners could work on in the past. (User configurable RAM usage for resident images).

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:

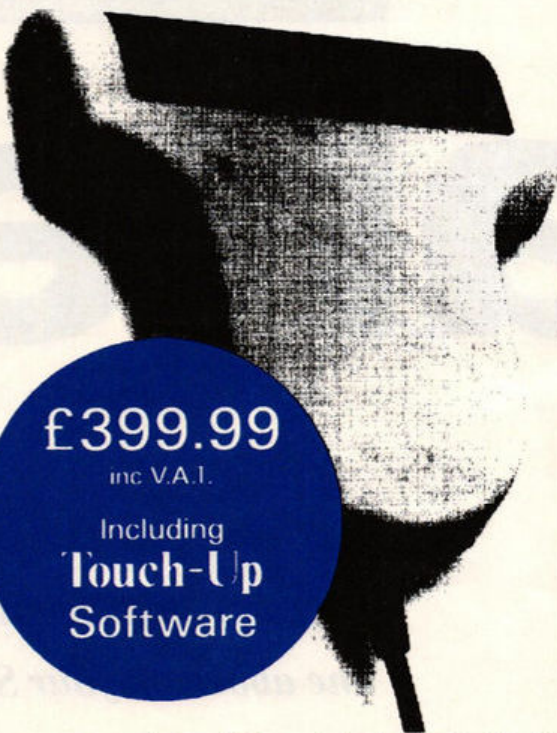
- (All commands work at all zoom levels, including full zoom).
- Move, Copy, Flip, Mirror or rotate by 1/10th of a degree
- Load .IMG or .GEM into clip area
- Save clip area in any of the supported formats.
- .IMG file previewer

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
- Scan to clip area (Also uses writing modes).



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Images created with *Touch-Up* can be loaded into Desktop Publishing programs, including Calamus, Fleet Street, PageStream, and Publisher ST, and others that support the listed file formats.

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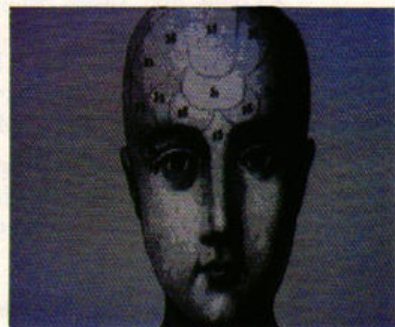


TEXT & PICTURES *Mehar Kalyk*

altered

It doesn't take the genius of da Vinci to create amazing pictures like the one above on your ST. Using the four elements shown (right), we show you, step by step, how to let your imagination run wild!

■ A head from a book of Victorian illustrations



The computer is changing not only how we see the world but also how we record and express these new perceptions. According to Nicholas Negroponte, founder and director of the Media Laboratory at the Massachusetts Institute of Technology: "The impact of computers on the arts will be bringing out the artist in all of us." Creativity no longer depends, as it traditionally has, on the ability to draw – it depends on using your imagination to express yourself. Drawing is only one of many aspects of self-expression.

Since the invention of photography, artists have been released from the bondage of attempting to figuratively and realistically represent the world. Photography opened the door to an exciting fusion of technology and artistic talent. Apart from an aesthetic vision, the mechanics involved in producing an image simply involved pressing your finger on a tiny button. Cinema extended that technology (and its potential for artifice) and television brought moving images into our living rooms. Now computer technology has given us the power to mix and manipulate all of these different media.

Despite popular belief, the inability to draw when using an ST is not an obstacle to artistic expression. If you're in the "I can't draw" category this may even be to your advantage. If you don't have traditional artistic skills to rely on, it forces you to be more imaginative about the way you construct and compose pictures.

Computer graphics is an entirely new medium and it requires a new range of skills to fully utilise its potential. Just as pop music has discovered sound sampling, so ST graphics has revealed the world of creativity in sampling and editing pictures. Experimentation is the key to discovering new possibilities.

The ST has excellent graphic abilities and there's a wealth of software to take advantage of it. There's software for painting, drawing, animation, ray tracing, CAD 3D object creation and manipulation, texture mapping, and a programming language for CAD 3D. Graphics hardware consists of digitisers (reviewed in *ST FORMAT* issue 7), scanners (issue 9), genlocks (issue 5), graphics tablet and the unique Parsec Board.

So how do you create pictures without drawing? One solution is to start with pictures

fed into the computer with a digitiser. This is a piece of hardware that plugs into the cartridge port of the ST. It comes with a disk enabling your computer to accept video inputs from TV, video recorders or cameras. The video signal is then displayed on your monitor. You can save the image of your choice and load it into a paint program. All this is quick and easy requiring no artistic or technical skill.

Another option is to use a scanner, a small hand-held electronic device that connects to your ST's cartridge port. Scanners enable you to capture exact copies of photographs and line drawings and recreate the original picture in digital form on the ST's monitor. Once stored, the information making up this digital picture becomes the perfect raw material for manipulation in any of the ST's major paint packages.

The results you achieve depend upon your choice of original material, your imagination and how you use the software. To find out which graphics software you need, turn to page 79 for a comprehensive review of the major art packages available.

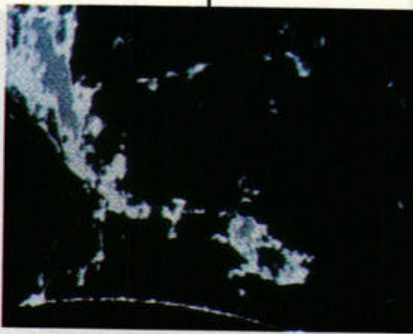
"Creativity doesn't depend on the ability to draw – it depends on using your imagination to express yourself"

images

If your digitiser grabs images in real time, capturing this picture poses no problems. Digitisers which are not that fast may not be able to grab a moving picture, but this isn't a serious drawback. Instead of grabbing live TV, record on video first, then freeze-frame what you want. The quality of your image depends on how good the freeze-frame is on your video recorder.



■ A postcard of Earth taken from Apollo in 1972

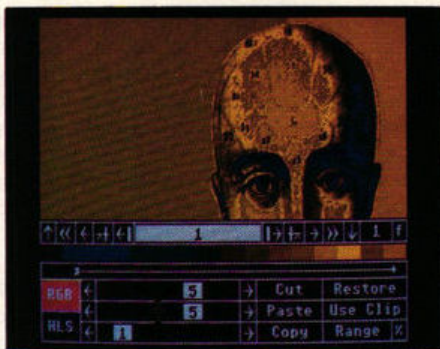


■ A dramatic image of a solar flare taken from a TV program



■ A video shot of an interesting cloud formation. Simply point the camera, focus, press the space bar and the image is trapped on your monitor

Copying flat artwork successfully depends on an even distribution of light. The best set-up is to have two light sources pointing at the artwork at a 45 degree angle. If the heat of the lights bends the picture, put a clean piece of glass on top of whatever you're copying. This keeps it flat and eliminates distortion.



■ I used *Cyber Paint* to change the head from mono to golden yellow. Changing colours is simple: select a colour and adjust the RGB value by moving the slider bars until you get the desired effect. Changing the palette colour automatically changes the colour in your picture



■ It's time to work on the head. The first step is to make the surrounding colour transparent to make superimpositions easy. I cleaned up the edges with a small brush and created some texture by erasing small areas of colour. This gives the face more expression



Using the power of the ST and your imagination it's easy to develop your



■ I've picked a medium size brush, selected the transparency and erased the top of the head. By frequently changing the size of the brush, I made the edges appear jagged to give the head a broken appearance

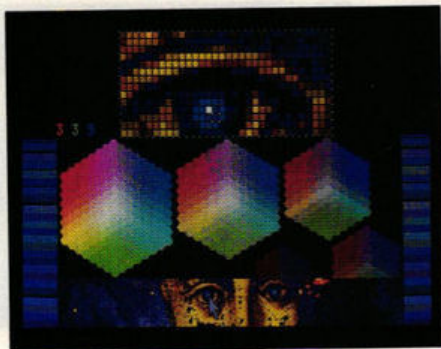


■ I took the planet out of the buffer and pasted it inside the head - making sure the lower part lay behind the forehead

more you discover that creating pictures is fast, easy and more fun than

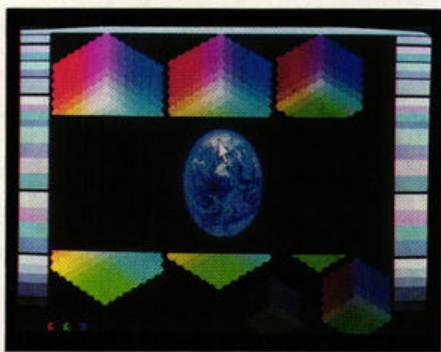


■ I took the cloudy sky from the buffer and positioned it behind the head so that part of the sun peeked out from the lighter side of the face

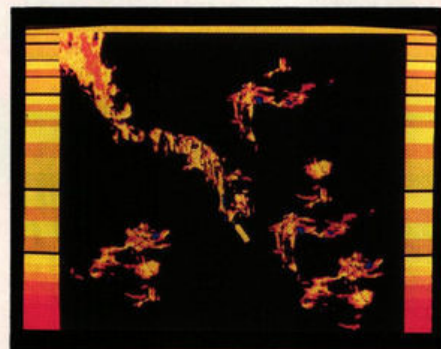


■ Now we're nearly there, and it's just a case of adding one or two final touches. The eyes were lifeless and needed more colour. I chose blue to echo the image of the planet. For extra precision I changed the colours pixel by pixel

potential. Let the machine do all the work - leaving you free to create!



■ I moved all the pictures into *Spectrum 512* because this program displays 512 colours. I've changed the colour of the planet to blue by activating the Colour Edit and Hue B+. This increases the blue content in all the colours of the planet. *Spectrum 512* has a scrolling 12 screen buffer - a block function - which provides a way to move all or part of a picture into a special area of memory. It also enables me to change the size and shape of the blocks. Having recoloured the planet I reduced it in size and put it away in the buffer



■ I put colour into the solar flare using the colour edit facilities. The Hue function enables me to change the tint of the picture by adding or subtracting the RGB values. Having got the colours to look like fire, I cut and pasted small sections of the flames to change their shape and size and put them in the buffer for future use

creative abilities. The more time you spend playing and experimenting, the



■ I took the flames out of the buffer and placed the big flame to the side of the head. Positioning little flames one by one, I slowly built up the impression of a fire

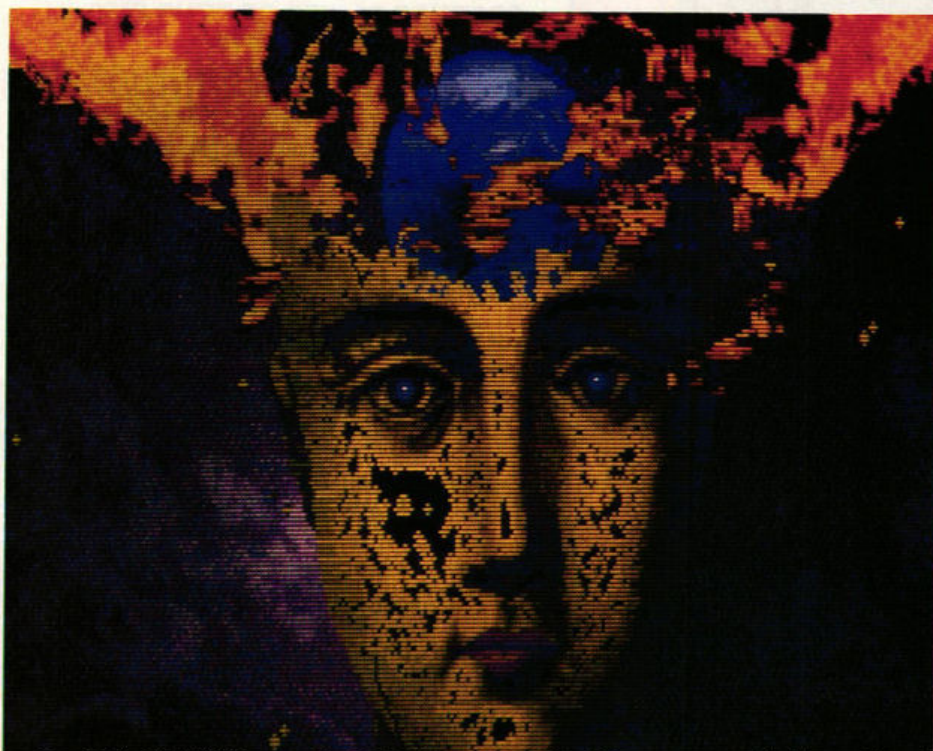


■ I continued to build up the fire until the flames were rushing out of the head. I put a big flame on the right side of the head to balance the picture



■ The face needed more colour so I activated Magnify and coloured the lips pixel by pixel until I'd achieved the desired effect

you previously thought. You don't need to draw to realise your artistic



■ Finally I used the Colour Edit to change the mono sky backdrop and altered the hue by adding a little blue and red to get a tint of violet. The picture is finished

WHAT WE USED

These pictures were produced with:

1040 ST with a Phillips 883 colour monitor

SAM digitiser: £249.95

Start Systems 0304 369364

Cyber Paint: £69.95

Electric Distribution 0480 496666

Spectrum 512: £59.95

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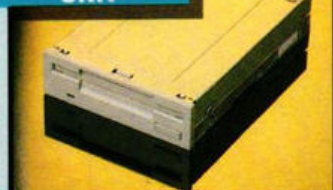
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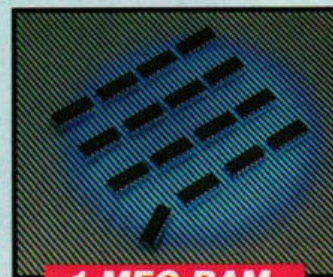
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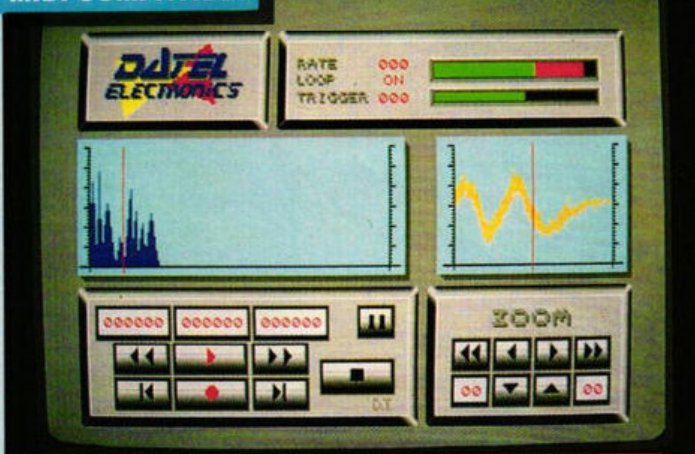


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ST FORMAT

Side A

WIPE OUT – a hilarious intergalactic hoverboard challenge awaits you in Gonzo Games' incredibly addictive fully playable demo

GFA RAYTRACE – GFA's stunning 512-colour raytracing program. **This is not a demo; this is the complete package!**

DEVPAC 2 – as used by programming teams worldwide, now you too can produce power-packed code with HiSoft's assembler, editor and debugger

Side B

PERSONAL FINANCE MANAGER – Microdeal's fantastic home accounts package

ANIMATION – Mark "The Pix" Pickavance shows off his 3D human animation (see tutorial on page 87)

C-TUTORIAL – source files for Warwick Grigg's fascinating C-series (see page 121)

GAME BUSTERS – saved-game character editor for Mirrorsoft's ever-so-difficult *Bloodwych*

PLUS STE medium res utility and GFA Joystick Utility

cover disk

■ Delve into the delights of this month's *ST FORMAT* Cover Disk which comes crammed with over 1,000K of demos, games and utilities.

■ Unfortunately not all STs have double-sided disk drives as standard. For that reason a special format has been devised which can be read by both single and double-sided drives. Single-sided drive owners can still only access the top side of the disk.

■ Rob "the sector skew every 10th track was slightly out, so I decided to do a new format" Northern is the man responsible for the disk format which allows everyone to access *Wipe Out*, *GFA Raytrace* and *Devpac 2* on side A of the disk. And lets those with a double-sided drive get at the

Personal Finance Manager, the *Bloodwych Character Editor* and the *STE* medium resolution utility on side B.

■ You can get to side A of the disk if you've got a double-sided drive by double-clicking on the folder *SIDE_2*.

■ If you have a single-sided drive and try clicking on the *SIDE_2* folder a warning message appears telling you there is data damaged on the disk. The disk isn't damaged; it's just your ST's way of saying it has a single-sided drive. Click on the *CANCEL* button in the box and all will be well.

■ Ensure you back-up up your Cover Disk before running any programs. And remember to write-protect the disk before putting it in the drive.

WIPE OUT

BY: GONZO GAMES

SIDE: A

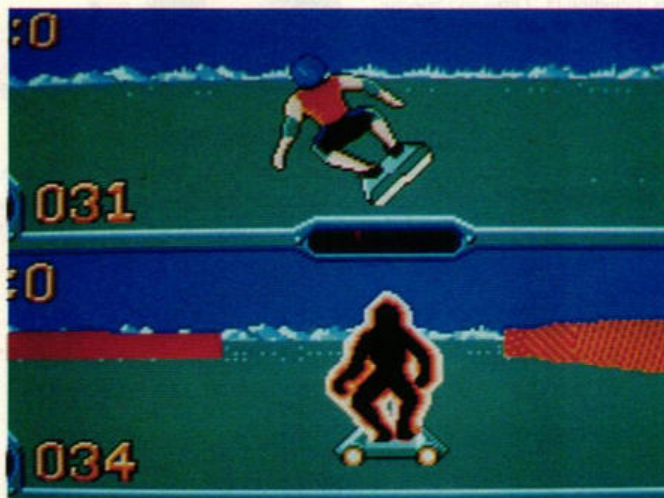
MACHINE: ALL COLOUR STs

FILES: WIPEOUT.PRG,
WIPEOUT.DOC

As any hard-bitten hack who's had to haul his board halfway across the galaxy and back will tell you, it's not easy getting far in the infamous Intergalactic Hoverboard Challenge.

You may laugh, but few Sapiens have reached the Hall of Fame. Training on water-based surfaces is no substitute for the real thrill of hoverboarding. Windsurfing, skiing, skating and scree-riding are all good for balance training, but they're poor preparation for the phenomenal speeds attainable on a hoverboard. Sapiens are simply not considered good contenders; they don't have the right temperament to take on the best in the hoverboard stakes.

Of course there are exceptions: one in particular, a chap called Olbane Woldmunsey-Brickett III, caused a sensation several years ago by actually spelling his name in the wake left



■ The manic thrills of hoverboarding await you in the Intergalactic Hoverboard Challenge. As a mere earthling you're not exactly favourite to win, but you could teach the Cyborgs a trick or two!

behind his board. A real crowd pleaser.

Don't be put off, but when you're up against things like Cyborgs, Archeoptra, Ameboids, Thermoids, Mechanoids and Photonians, you've got to be good. Damn good!

Welcome to the Intergalactic Hoverboard Challenge. You're

locked in an area with a hostile opponent. As you move around you leave a crystallised wake behind you. So does your opponent. To win you must force your opponent to make a mistake. Likewise, your opponent will be looking to sink you. Contact with any wall is a big mistake. First one to wipe out loses. Hhho hoverboard away!

Use these moves to get your hoverboard humming:

Up – forward fast

Up and fire – forward even faster if turbo option fitted to board

Fire – jump

Left – slow left turn

Right – slow right turn

Diagonal left – fast left turn

Diagonal right – fast right turn

GETTING STARTED

Enter the *WIPEOUT* folder by double-clicking on it. Double-click on *WIPEOUT.PRG* to start the game. Ensure you have a joystick plugged into port 1.

Devpac 2

BY: HISOFT

SIDE: A

MACHINE: ALL STs

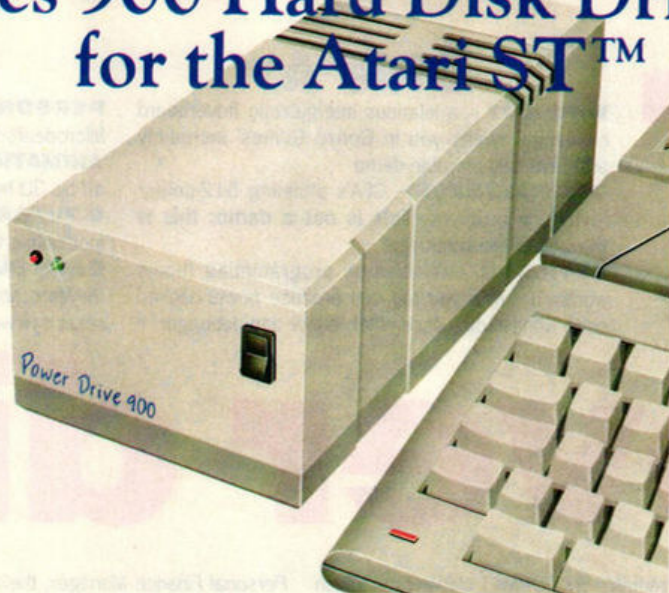
FILES: GENST2.PRG,
MONST2.PRG, DEVPAC.DOC,
EXAMPLE.S, GENST2.INF

Here it is! The development tool for the ST used by countless programming teams worldwide. HiSoft's *Devpac 2* combines a full 68000 macro assembler, complete screen editor, powerful

DON'T BE DUMB! BACK UP YOUR COVER DISK NOW! How? See page 28

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100MB	£799.00	£868.95	£59.95	£69.95

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GFA RAYTRACE

GFA Raytrace

BY: GFA DATA MEDIA

SIDE: A

MACHINE: ALL STs

FILES: RAYTRACE.PRG,
GFA_RAY.SYS, BOX.SYS,
JUGGLER.SCL, RAYTRACE.DOC

GFA Raytrace is back, and this time it works on all machines! Apologies if you had trouble with the demo on issue 8. To make amends, GFA Data Media have put the full version of the program on this month's disk. The only bits missing are the demo files, animation-playback program and manual - which can be supplied for £19.95 ☎ 0734 794941.



Raytracing is a technique which adds shading and reflections to images by simulating light sources from various directions. Raytracing literally means tracking light rays. As you can see by the images dotted around this page, GFA Raytrace images are stunning because, using 512 colours, they are more realistic and colourful than ordinary pictures.

GFA Raytrace lets you place elements like spheres, cylinders and triangles together with lamps in an imaginary space. A pre-defined picture or pattern can be added. The program traces the light beams as they reflect off objects and the environment and displays the results.

You'll find two main areas

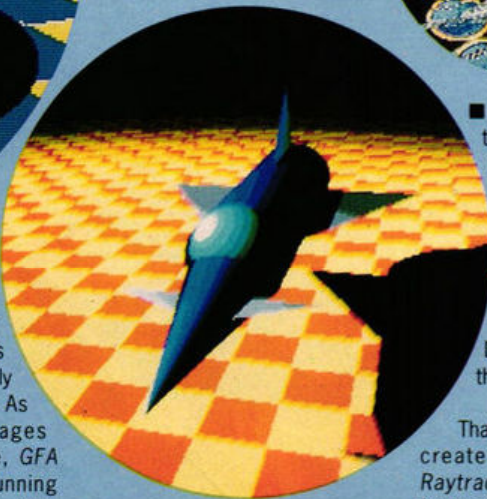
within Raytrace: the editor and raytrace department. The editor enables you to create a scene with primitive objects and position them together with imaginary lamps (light sources), the floor and horizon. Once everything is to your satisfaction, the wireframe is rendered from within the raytrace section in glorious technicolour.

A text file inside the RAYTRACE folder called RAYTRACE.DOC provides you with basic operating instructions.

GETTING STARTED

You'll find RAYTRACE.PRG inside the RAYTRACE folder. To create a simple raytraced image do the following:

- Double-click on RAYTRACE.PRG. It works in mono and colour.
- Click the Add item in the top right corner of the screen with the left mouse button. A new menu appears.
- You'll notice an RGB slider towards the middle right of the screen. Click on one of the sliders until you get a colour (this doesn't apply in mono). Then click on the first of the



icons towards the top right of the screen. Hit the right mouse button. Click on the Ground option when the new menu appears. Move the mouse until you notice the line in the Front window is towards the bottom. Press the left mouse button to plant the Ground.

■ Change the colour in the RGB window and then click the right mouse button. Click on Horizon.

Moving the mouse causes the horizon to move in the View window. Click the left button to drop the Horizon.

■ Change the colour in the RGB window and then click on the parallelogram icon. Click the right mouse button, move the mouse, and then press the left button. Move the mouse until a single side of the parallelogram is the shape and size you require. Click the left button to continue. Move the mouse again and click the left mouse button to finish off the parallelogram.

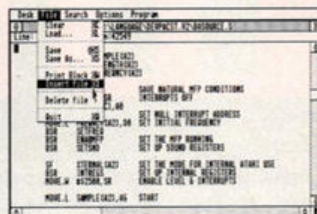
■ Highlight the lamp icon (the last in the group of icons towards the top right of the screen) and then click the right mouse button. Position the lamp somewhere to the left of the parallelogram when viewed from the Front window. Click the left mouse button to continue.



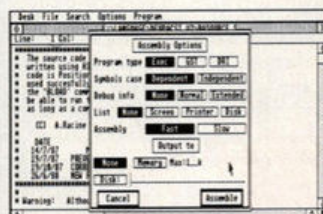
- Click on the Exit option towards the bottom right of the screen.
- Click on Raytrace from the menu that subsequently appears.
- Highlight the number 2 at the bottom right of the screen. Then click on Do Raytracing to render the image. Wait...

That briefly shows you how to create a raytraced image. Raytrace contains many other features but it's for you to discover how these work. Most options are relatively logical to use. Remember if the left mouse button fails to work, use the right!

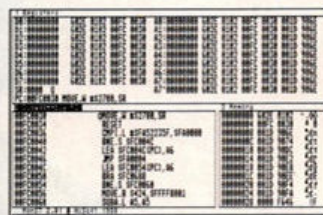
If all the above sounds too much like hard work, click on the LOAD option from the main menu. Go into the RAYTRACE folder and double-click on the JUGGLER.SCL file name. When control returns to you, click on the Raytrace menu option to see the beautiful image.



■ Get those ADDs and BRAs into shape in the Devpac editor



■ Now assemble the source to disk or memory



■ Check that everything works as it should in the debugger

disassembler and debugger, and fast linker. In this fantastic useable demo you can get to see and use almost all the features that developers rave about.

Programs are typed in using a Gem-based editor and assembled from the very same environment. And, to top it all, your compiled programs can be executed and subsequently debugged from within Devpac. It's this unique friendly development environment that makes Hisoft's package such an instant attraction.

On the disk you'll find a useable demo of the Devpac editor and assembler together with a stripped-down version of MonST (the debugging tool that forms part of the package). This demo version of Devpac 2 has a maximum text file size of 4K and the save operation removed. Programs can only be assembled to memory.

There is so much to this package that the entire disk pages could easily be filled with information about it. Instead, there's a comprehensive help file called DEVPAC2.DOC which you must read before you run the package.

GETTING STARTED

Double-click on the file GENST2.PRG, which is inside the DEVPAC folder, to get going. You can try out the system by using Load from the File menu to load

WARHEAD

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- EXAMPLE.S. Click on Assemble from the Program menu and select Assemble to Memory. This assembles the example which you may then debug or run.

Personal Finance Manager

BY: MICHTRON/MICRODEAL

SIDE: B

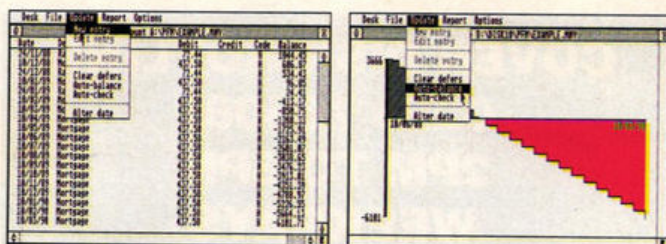
MACHINE: ALL STs

FILES: PFM.PRG, PFM.RSC, PFM.DOC, EXAMPLE.MNY

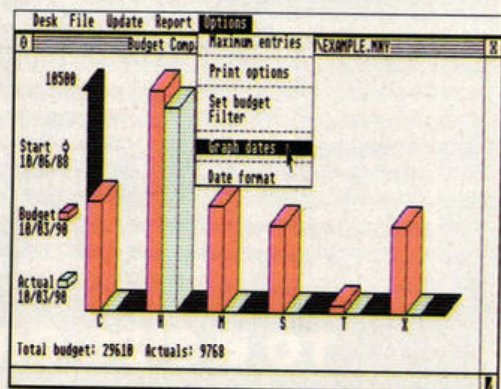
Poll tax, mortgage, electric bill, final gas demand, telephone rental – who needs them? Little wonder there's no money left at the end of the month when all you do is shell out for household bills. From now on, though, you don't have to worry about your finances. Microdeal's *Personal Finance Manager* isn't guaranteed to make you a millionaire overnight, but it certainly shows you where you're going wrong.

Designed specifically to handle bank accounts, savings accounts and credit card transactions, it records and tabulates your income and expenditure. With such detailed, well-organised information only an idiot could fail to see where their finances were going wrong.

With its full GEM interface, entering new transactions is as easy as filling out a form. When all the relevant data has been installed, graphical reports can be instantly called up. Standing orders can be automatically debited or credited to your account without you having to remember them. And when its time to check the account against an official statement, *PFM* even works out which transactions have not yet cleared.



■ (above left) Enter all the relevant data about your monthly cash flow. If you're in debt, the graphics (above right) show you clearly, and you can even call up a graph (left) of the activity within your account



Personal Finance Manager can be used with either a mono or colour monitor. The only difference between the full version of the program and the demo is the lack of printing facilities and a maximum of 30 entries and two standing orders.

GETTING STARTED

It's best to read the PFM.DOC before loading the program as full operating instructions can be found there. To run the program simply double-click on the file PFM.PRG inside the PFM folder.

Bloodwych Editor

BY: WILLIAM O'NEILL, JOHN LOGAN

SIDE: B

MACHINE: ALL STs

FILES: BLDEDIT.TOS, BLDEDIT.TOS

If you've been having trouble completing *Bloodwych*, you'll find this character editor a definite boon. With this program you can load a one or two-player game and give the characters super powers. You can arm the party with plenty of keys and any weapon you choose. All the characters' statistics can be set to the maximum and have full spell power. Details on how to use the editor can be found in BLDEDIT.DOC.

GETTING STARTED

Double-click on BLDEDIT.TOS and insert your *Bloodwych* saved-game disk when prompted. Follow the on-screen instructions and then modify your heroic adventurers to your hearts content. When your heroes have been turned into super heroes, save the modified party to disk. Load *Bloodwych* and load in the modified characters.

STE Medium Res Utility

BY: DON MAPLE

SIDE: B

MACHINE: ALL STEs

FILES: MEDREZ.DOC, MEDREZ.PRG

Leapfrog incompatibility problems by using this patch to boot your STE up into medium resolution.

GETTING STARTED

Put MEDREZ.PRG into the AUTO folder on the Boot Disk. When the STE boots it runs this folder first and goes straight into medium resolution.

GFA Joystick utility

BY: COLIN BYRNE

SIDE: B

MACHINE: ALL STs

FILES: GFAJOY.BAS, GFAJOY.DOC

This program allows you to read the joystick port from GFA Basic 2. See Desktop on page 99 for full instructions.

C Series

BY: WARWICK GRIGG

SIDE: B

MACHINE: ALL STs

FILES: ALL FILES INSIDE THE C_TUTOR FOLDER

Warwick Grigg continues his work on the pinball sim written in C. The tutorial can be found on page 121 of this month's *ST FORMAT*. To save you typing in the lengthy program listing, Warwick has provided the source files on disk. A compiled version of the program is

Animation

BY: MARK PICKAVANCE

SIDE: B

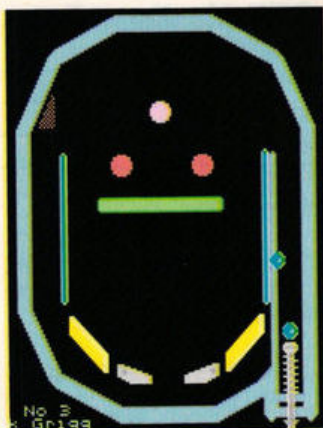
MACHINE: ALL COLOUR STs

FILES: ANIMATE4.PRG, ANIMATE4.DOC, ROBOT.SEQ

Follow the Cyber tutorial on page 87 to find out how to give your body dynamic motion!

GETTING STARTED

First double-click on the SIDE_2 folder and then on the CYBER folder that subsequently appears. Double-click on ANIMATE4.PRG. When the file selection screen appears click on .SEQ. Click on the file ROBOT.SEQ and then click on OK.



■ The pinball simulation from our C programming tutorial on page 121

also on the disk; this enables you to see what to expect once you've compiled the source.

GETTING STARTED

Double-click on the file PINBALL.PRG to see the compiled program in action. This works in any screen resolution. To compile the program, copy all the files except PINBALL.PRG, into the WORK folder on your Sozobon C compiler disk. Run GULAM and type MAKE. This compiles and links the program using the information contained in the file named MAKEFILE. ■

READING DOCUMENTATION FILES

In virtually every folder on the Cover Disk you'll find a file with the extension .DOC. This is a help file and contains instructions on using the program. Ensure you read all help files before running any program.

To read a help file (or .DOC file) simply double-click on the file. Click on CANCEL if you don't wish to read the file; click on PRINT to

send the document to a printer; click on SCREEN to send the text to your monitor.

After each screenful of text the display will halt. Pressing return will scroll you up a line while pressing space will scroll up a complete page of text. Pressing Q or Control C will return you to the Desktop.

Future Publishing CANNOT be

held responsible for improper use of any programs on the Cover Disk. Basically, if you wreck your disk collection because you failed to read a help file, it's tough. Your problem, etc etc. Be sensible, follow the instructions, and you won't have any trouble.

Next month: how to improve your ST's performance by repeatedly dropping it from a great height.

COVER DISK HOTLINE 0225 765086 2PM TO 6PM WEEKDAYS

Flummoxed by files? Dumbfounded by disks? Perplexed by Cover Disk programs? If you have a problem with the disk – and you're sure there is no corrupted data – phone 0225 765086 between 2pm and 6pm on weekdays with your query. You'll be through to Richard Monteiro, our Disk Editor.

Before you call have ready the info Dickie needs to help you: the model of your machine; the version of GEM/TOS you're using; and anything you've got attached to (or plugged inside) the computer. Have the disk handy and your ST up and running, and a pen and paper handy to take any notes.

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BACK UP YOUR DISK!

Because the oh-so-delicious *ST FORMAT* Cover Disk is non-standard and squeezes in a whacking great 400K plus of data per side, the back up procedure is not simple. Follow these steps, though, and you won't encounter any problems. Do it any other way and you could knacker your Cover Disk.

1. Format a couple of blank disks – single-sided if you've got a single-sided drive, double-sided if you have a double-sided drive.
2. Write-protect the Cover Disk and insert it into drive A (if you have two drives, you lucky devil, insert the Cover Disk into drive B). Double-click on the drive B icon. If you're still saving up to buy a second drive, a message appears requesting you to put disk B in drive A. Simply click on OK.
3. Insert a freshly formatted disk into drive A. Double-click on the drive A icon.
4. Pick up a folder at a time from the Cover Disk window and plonk it into the drive A window.
5. If you have one drive then you'll be asked to insert disk A and disk B at regular intervals. Don't mix the two up! Disk B is the Cover Disk and disk A is the freshly formatted disk.
6. When you get a "disk full" error message, recopy the last folder – and subsequent folders – onto the second freshly formatted disk.
7. Double-sided owners, double-click on SIDE_2 once you've finished copying all the folders from side A of the Cover Disk. Job done!

FAULTY DISK?

In any disk duplication run as massive as *ST FORMAT*, it's possible that a minuscule proportion of the disks might be faulty. If you're unlucky, sorry. You're guaranteed a working replacement if you send your corrupted disk to:

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THE DISK NEEDS YOU!

We need *your* software – games, utilities, demos, anything good, original and preferably short. If you've written anything worthy of the *ST FORMAT* Cover Disk (and remember, it's the ones we reject that makes ours the best), send it with this form and full documentation to: Richard Monteiro, *ST FORMAT* Cover Disk Editor, 71 Barn Glebe, Trowbridge, Wiltshire, BA14 7JZ. Allow four weeks for a reply.

Name _____

Address _____ Daytime 'phone _____

Program title _____

Size of files in K _____

What's so brilliant about it _____

Don't forget to: ■ Enclose an SAE ■ Include on-disk and paper documentation ■ Write your name and address on the disk ■ Use a virus-free disk ■ Avoid exposure to deadly radiation

Please sign the following declaration: This program is submitted for publication in *ST FORMAT*. It is wholly my own work and I agree to indemnify Future Publishing against any legal action should copyright problems arise.

Signed _____

Note: we pay out up to £800 for contributions to our Cover Disk. But to earn that kind of dosh, of course, you'd have to write something pretty spectacular, original and complex.

KICK OFF 2



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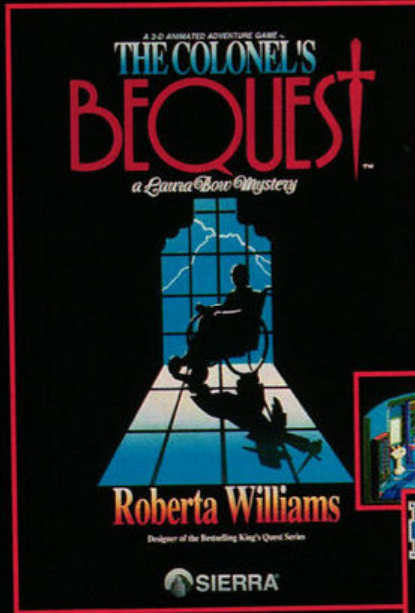
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ST FORMAT

Welcome to the very best in ST entertainment! This month we reveal what makes a great game great and list the best 30 games of all time (page 70). We offer a host of nasty cheats on top ST games (page 67) and tell you today what you'll be playing tomorrow (page 62). But the action starts with 15 pages of new games as Mark "Hard to Please" Higham and the Format team introduce you to...

screenplay



ARMADA

Borodino, Waterloo and Austerlitz were the best war sims ever. Has Dr. Peter Turcan done it again?

(page 57)



WAYNE GRETZKY HOCKEY

Get your skates on for the first ice hockey sim on the ST (page 41)

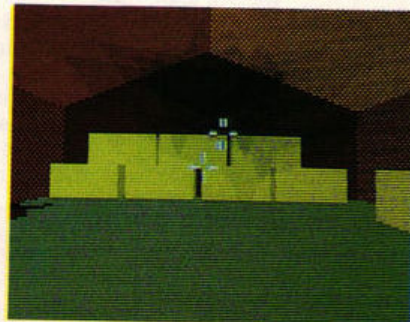


PARIS DAKAR

— then get your racing gear on for the roughest, toughest rally in the world (page 38)

ORIENTAL GAMES

Tidy up your back flips in the biggest karate game since IK+ (page 58)



CASTLE MASTER

Fourth time lucky? Freescape gets adventurous in a mammoth 16-bit way (page 51)



CRACKDOWN

US Gold's conversion of the classic arcade hit makes it onto the ST (page 45)



ESCAPE FROM THE PLANET OF THE ROBOT MONSTERS

Give 'em a blast in the steel balls with Domark's hilarious kitsch arcade conversion (page 48)



DRAGONS BREATH

Incubate dragon eggs, cast spells and reduce villages to ashes in Palace's new strategy role-playing extravaganza (page 34)



KID GLOVES

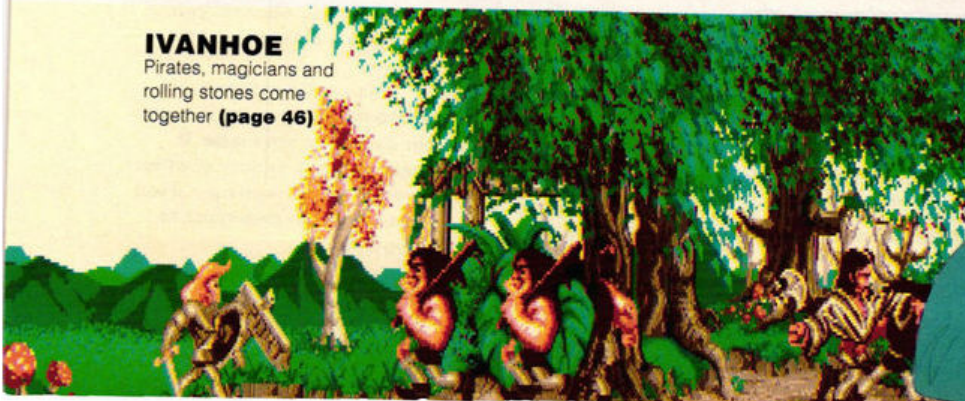
Another wave in the never-ending invasion of the cutesy games (page 42)

IVANHOE

Pirates, magicians and rolling stones come together (page 46)

SPACE ACE

First class animation and non-stop sampled music... but be prepared for a shock! (page 54)



YOUR FIRST STEPS...

Once you've decided which of the three opponents should be controlled by human and which by computer, you're through to the map screen where the game really starts.



Click on your character icon to see his castle and you're presented with a whole new range of icons (see The Castle Screen panel opposite).

Your first task is to hatch an egg. When the game begins you already have one dragon but you need more to win the game.



Put the egg on high heat so that it hatches quickly and find some way of raising fistfuls of cash to finance the egg cooking.

The answer to this temporary financial problem is to go to the library to find out which villages are warring with each other. If you attack a village at war, you receive a handsome reward from their opponents.



The books tell you that a barbarian rests in Phostic. If you dispatch a dragon to Phostic it is going to be killed so steer clear. But you could still attack Wernac or Valen. As you become experienced, you realise which villages offer greater rewards. Wernac is a very large village and is difficult to destroy but Valen is much smaller and therefore an easier target. By wiping out Valen, you can obtain a reward from Wernac and because of the size of this village, it's going to be a substantial one.



Before going to war you decide to mix a spell which should speed up the egg hatching process. Now click on the Spell Casting icon to proceed...

PALACE

dragons br

Since *Barbarian II*, all of 15 months ago, Palace have not released a game under their own label – until now. In yet another *ST FORMAT* exclusive, Mark Higham masterminds covert Dragon missions and imposes huge taxes on a suffering populace (apt indeed!)

Fought in the magical kingdom of Anrea, *Dragons Breath* is quite unlike any other RPG you've ever played. Using flying dragons, you find and guard sections of a talisman scattered around your mountain, impose taxes to balance your finances and hatch eggs to breed yet more dragons.

The game is always played by three players, with any player not controlled by human hands looked after by the computer. The game is played

from a main screen with a row of icons running along the bottom enabling you to make choices. One game turn lasts for a month and within this time you can make an unlimited number of moves. When you've finished moving, your opponents take their turn.

Since you need dragons to search out elusive sections of the talisman, it's imperative to breed as many as possible. You start the game with a single dragon, but one must be left with

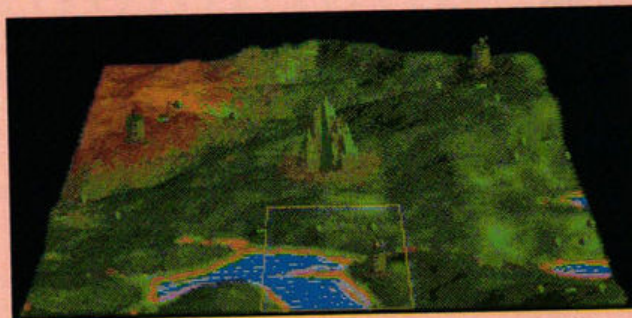
each piece of the talisman so you need at least three to win. To accomplish this you need to go to the egg incubation room and put an egg on to hatch. You can incubate four eggs at once and vary the length of time required to hatch them by adjusting the heat. If you turn the heat fully on, an egg should hatch within four months; but turn it on low and it takes considerably longer. The cooking time is important because the longer you spend hatching an egg, the stronger the dragon that emerges.

If you want to speed up the egg incubation period, you can cast spells on the egg. Spells have



GETTING TO GRIPS WITH DRAGONS

THE MAP SCREEN



The land of Anrea. In the centre lies your ultimate goal – Dwarf mountain. To the west is the castle of Bachim, to the north-east is the castle of Oureod and to the south lies the castle of Ametrin



You select an area of Anrea to view in detail and then click to present villages and woodland. Now make your move



The objective is to track down the pieces of the talisman, so make sure your dragons have good eyesight before they attack. If a piece is in a village, you discover it when attacking, so keep your eyes peeled



When you finish your turn, you watch the other players make their choices

■ *Dragons Breath* is played from two main screens. The first is the map screen where you see the land of Anrea and can make choices about who to attack and how. If you attack the right villages, you discover parts of the talisman. The objective is to collect all three sections and leave one dragon guarding each piece.

At the end of your turn the map of Anrea also displays the movements of your opponents, depicted as red, green and blue circles.

The second major screen in *Dragons Breath* is the castle screen. There are different castles for each of the three players – Oureod, Ametrin and Bachim. Depending on the character you choose, you play with a different castle screen.

This castle screen is where all the important strategic decisions are made. It leads you to a variety of other screens where icons are used to convey your decisions to the game.

Death

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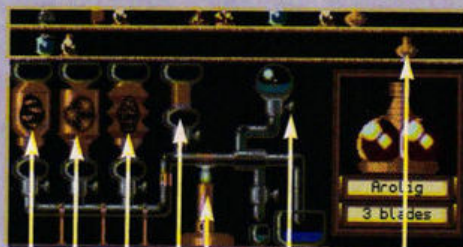
useful effects on all sorts of things – from building up egg supplies and improving your finances to increasing the number of villages under your control. (See Casting Spells panel for more information.)

The more heat you apply to an egg, the more money you need to keep the flame burning. Money is raised by capturing villages and imposing monthly taxes on the populace. The taxation level is variable, but if you set it high you're increasing the risk of an uprising by the angry village folk and you may lose control.

To attack and conquer villages you move onto the map and select a portion of the landscape to view in detail. You can then dispatch one of your dragons to conquer the village. If the village is controlled by an enemy dragon, the stronger of the two kills the other.

Another way to make money is to see if one village is in combat with another. By sending your >

CASTING SPELLS



Mixing Cutting Heat Ingredients
Grinding Normal Condenser

■ Be sure to add ingredients and mix spells correctly in the spell room

It's possible to play and win *Dragons Breath* without ever casting a spell but you aren't going to stand much chance of success, particularly if you play against a computer opponent who always uses spells. The right spell can increase the speed at which an egg hatches, it can weaken your opponents or increase the performance of your dragon.

Casting spells is a sub-game in itself. When the game starts you have a limited amount of magic stock but traders outside the castle gates sell extra ingredients.

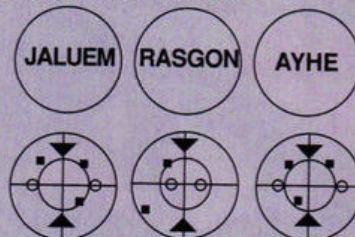
The crystal ball takes you to the spell room. This houses the alchemy set and shelves lined with magic stock. You can cut, grind, mix or simply add ingredients, switch on a bunsen burner to heat the mixture or a condenser to turn gas into liquid. It's important the right settings are made which means referring to the spell book provided.

Ingredients are divided into two categories – directors and affectors. Directors are the ingredients which direct power at your target, a human, egg, dragon or village. Affectors affect an attribute of these such as disease, wisdom and growth.

STEP-BY-STEP GUIDE TO MIXING SPELLS

Interpreting how the ingredients are mixed together means turning to the tables in the spell book. All ingredients are arranged as circles and the position of squares and triangles indicate their usage and effect.

If you wanted to mix a spell for curing dragons, you would look at the director effect table for dragons to find the most effective ingredient. The quadrant indicates how the ingredient should be added – ground, chopped, mixed or normal. The closer to the circumference the more effective the ingredient is. Triangles show the effect of using the bunsen burners. Again, the closer to the circumference, the greater their effect. Finally, small circles show the effect of the condenser. Of all the ingredients, Rasgon has a square closest to the circumference, and should thus be ground with bunsen and condenser on. Now look at other tables to see if Rasgon has nasty side-effects. In this case heating lessens the chance of problems.

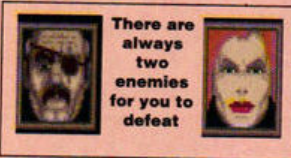


This ingredient affects only the dragon, now you need to find the spell which cures disease. Look through another set of tables and compare the same points, making sure to add an ingredient which reduces disease – the square must be closer to the centre of the circle. When you have worked out the best available ingredients you can work out an extra ingredient which may make the mix more potent.

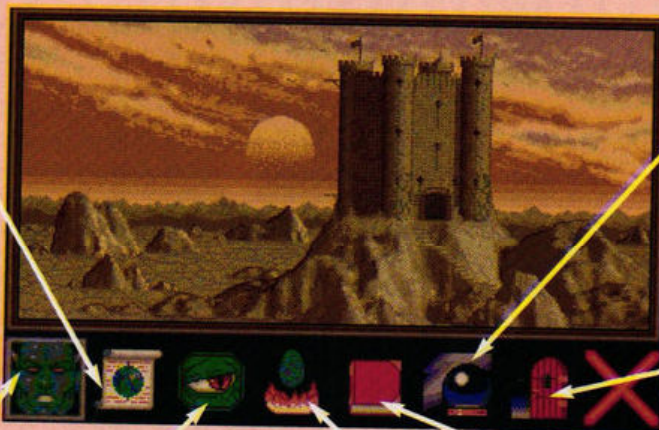
THE CASTLE SCREEN



The **WORLD** icon takes you to the map. Select an area to view in detail and then dispatch dragons to conquer villages



There are always two enemies for you to defeat



Visit the spell room to cast any of a whole range of spells (See the Spell Casting panel)



When the **DOOR** icon is illuminated you can visit a trader and buy spell ingredients



The **EYE** icon shows you which dragons you have at home. Here, only Estar is in her cell and available for missions

Eggs take at least four months to hatch in the egg incubation room. You can regulate the heat to slow down or increase this process. Eggs on high heat hatch fast but turn into weaker dragons



The library shows which villages are at war. Attack a warring village and you receive a reward from their enemies

CLOUD KINGDOMS



When Terry's magic crystals are stolen by Baron von Bonsai and taken to the land of Cloud Kingdoms there's only one thing to do! He climbs into his super-giant green skycopter and sets off to rescue them. There Terry searches each kingdom collecting the crystals as he goes - but things aren't that easy.. along the way he encounters the Giant Rolling Eightballs and the Bad Insect Monsters...



Cloud Kingdoms is addictive arcade action all the way! Each of the 32 levels are totally different - explore them all and delight at the stunning graphics, sound effects and compulsive joystick twitching gameplay. This is one game you just won't be able to switch off!!

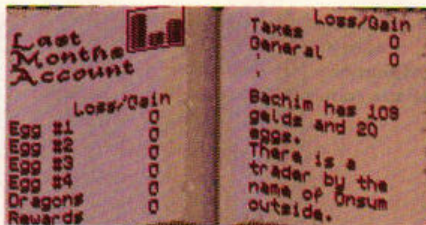
- ★ WITH PINBALL BUMPERS, ICE, MAGNETS, BLACK HOLES, TRAPDOORS, ACID POOLS, LOCKED DOORS... TOO MANY TO LIST!
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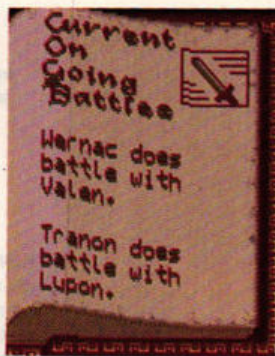


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■ Three library books (above and right) reveal details to read during each turn. One shows your general status, another who's at war with whom, while the third lets you know the potions you hold



MONEY-GO-ROUND

Although you can initiate an attack on the villages, it won't take place until you reach the end of your turn. Only then do you discover whether the attack was successful.

Here, your dragon successfully wiped out the enemy village, so another offers you a reward.



Calgor makes his move over the village in an action sequence over which you have no control.

In the attack, he destroys enough of the village to earn a reward from their enemies.



Now you have the chance to accept either seven gelds (er, dosh to you) or seven crystals. At this point in the game, you desperately need money to finance your egg hatching so you accept the seven gelds and proceed.



Since you now control the village, you can impose taxes on the inhabitants to receive a regular monthly income. If you set the taxes too high, you risk a revolt, but set them too low and you may not be able to afford to heat the egg.

When the other two players have taken their turn, you return to your castle for another month of fighting.



The game heats up as you build up larger amounts of money and as the villages grow in size. By spending much of your time casting spells, you can keep your dragons from dying and even improve your financial position.

Dragons Breath concludes when you've either wiped out both opponents or come across the three pieces of the talisman located around your castle.

> dragon to wipe out one of the villages, you receive a reward from the other.

A good deal of *Dragons Breath* involves keeping opponents at bay, so it's not uncommon to find that you've wiped out both enemies but still haven't discovered any pieces of the talisman. Some may be scattered across the countryside, while others may be found in villages.

The health of a dragon can be improved with spells and it's important to make sure your dragons have good eyesight so they can spot the sections of talisman when they conquer a village. You win the game when you have a dragon guarding each piece of the talisman.

EFFECTS

Dragons Breath is played from two main screens. One shows your castle with a list of icons underneath, and the other a map

where you can view villages and proceed to conquer them. The rows of icons take you to other areas of the game where you can scour the library, incubate eggs or impose taxes.

Thus much of the game is made up of static pictures which may be pretty but serve little purpose. There are two arcade scenes, one which you watch as your dragon flies over a village breathing fire, and the other a vertically-scrolling joystick-testing shoot-'em-up that decides whether you deserve to keep the village.

With small sprites and poor animation these aren't exactly state-of-the-art, but they make an unusual addition to the RPG format.

VERDICT

Dragons Breath is created in such a way that the basic objectives and mechanics of the game can be understood very quickly. This makes it an easy game to get to

grips with – until you decide to venture into the area of spell casting. Although this initially looks complicated, once you start using the spell diagrams and taking risks with the potions you begin to see their versatility. You need to spend time with pen and paper calculating your spell, like a genuine alchemist, and that does much to reinforce the atmosphere of the game.

Visuals and sound effects are exciting but it's the gameplay which makes *Dragons Breath* addictive. It takes time to mastermind the strategies to ensure that you don't fall victim to cash flow problems or lose any of your cherished dragons, but it's time well spent. For once you become proficient at casting spells, the game takes on a whole new dimension. Indeed it is these elements that make *Dragons Breath* one of the strongest games of its type the ST has ever seen. It deserves your attention.

MARK HIGHAM

BASHING THE VILLAGERS

You're not going to get anywhere at all without money, and the fastest way to make it is to capture villages and impose taxes

for a regular income. Look at the map and move the box around until you select an area of land to view in detail.

When you now click on a village, you obtain detailed information about how advanced it is and the population size. If you choose to attack this village, you must select a dragon to use. Some dragons are stronger than others – you should match a



■ The land of Frenedic is small and just 10km away. You decide to attack...

dragon with the size and intelligence of the village. There are two attack missions: one instructs your dragon to conquer the village and remain behind, while the other instructs him simply to raid it. There are two ways of carrying out the attack. Either the computer can proceed automatically or you can control the dragon in an arcade level.

Choose to fight using the joystick and you face a vertically-scrolling shoot-'em-up where the objective is simply to blast everything that comes at you.

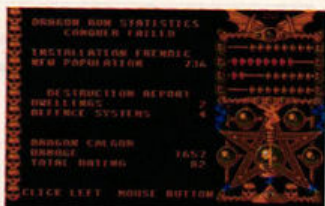
In automatic attack you select a zeal level, dictating just how much energy your dragon should expend. Greater zeal means more chance of success – but your poor dragon may collapse and even die from exhaustion!



■ Set your zeal levels then send out a dragon to conquer and keep Frenedic



■ If you fancy some arcade action, you can compete in an arcade sequence (above) using the joystick to destroy the villages in a horizontally-scrolling shoot-'em-up section. Afterwards (below), you receive a report on your success



GRAPHICS 8
SOUNDTRACK 6
INTELLIGENCE 8
INSTANT APPEAL 7
LONG TERM INTEREST 9
OVERALL 92%



■ Allegedly "sultry" entertainment after the race



■ Follow the path shown on your navigator's map (centre) to reach the desert checkpoint, but watch out for the other cars which provide some heavy competition!

TOMAHAWK

paris dakar

£24.99

Depending on whether you already own a Porsche 911 or Ferrari F40 simulation, you'll know all about screaming round circuits in a dream car at ridiculously high speeds. But how would you cope in a rally, driving vehicles built like shock-absorbers on wheels, over the most treacherous terrain in the world? Find out by pitting your wits against crack drivers in the ultimate test – the Paris-Dakar rally!

The race has six sections through 24 areas driving from Tripoli in Libya to Dakar in Senegal. Sections one, three, five and six are "normal" stages, requiring you to race against other cars in an attempt to reach the end of the stage first. Sections two and four are "special" tests, in which you race against the clock between check points.

You can choose to drive in one of three categories of vehicle: in a standard all-roads car (reliable but slow), an improved all-roads car (more suited to the speeds required of top rallying) or a prototype car

(very fast and very dangerous!). The condition of your vehicle is crucial because a total breakdown can mean the end of the race for you. Balance your choice between reliability and speed until you're fully proficient at driving.

You must be first to reach Dakar as well as clock up a decent time in the special stages to win the rally. Those who feel they're good enough can enter their achievements in a competition Tomahawk have organised for the European championships.

EFFECTS

If a 3D racing game is to be successful anymore, it has to be hot stuff in the audio-visual department. Unfortunately *Paris-Dakar 90* has nothing remarkable in either graphics or sound to raise it above the competition. In fact both are pretty dire.

Africa has some amazing scenery, but *Paris-Dakar* has neglected to include any of it. The 3D objects jerk out of the distance, making driving through the desert (which, funnily enough, looks the

same on every stage) a tedious and confusing experience. The intermission screens of "local colour" are of dubious relevance and not incredibly well-drawn.

Some of the sound has to be heard to be believed. The revving engine at the start sounds like somebody shouted "Vroooooom-brum!" into a microphone, and the sound of the engine throughout the race sounds like a wind-up toy.

The whole thing smacks of a lack of effort, which is hardly sensible in a market already swamped with driving games.

VERDICT

Realism and atmosphere are important factors in racing games, but it's hard to find much of either in this so-called simulation. The track consists of simple straight sections interrupted by the occasional 90 degree bend – hardly the



■ While you're here, why not take in the picturesque view?

kind of thing usually seen on a rally circuit. The control of the car is particularly unruly and annoying.

Paris-Dakar 90 is billed as a game for hard drivers. If your idea of hard driving is shockingly unrealistic, repetitive and frustrating action then that's what it is. If, on the other hand, you want a good-looking, realistic and playable racing game then steer clear.

MAFF EVANS

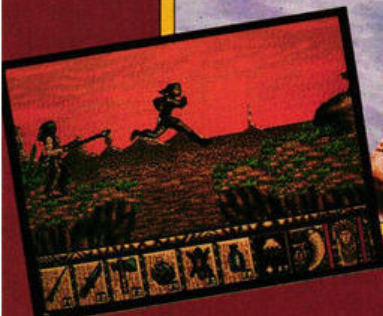
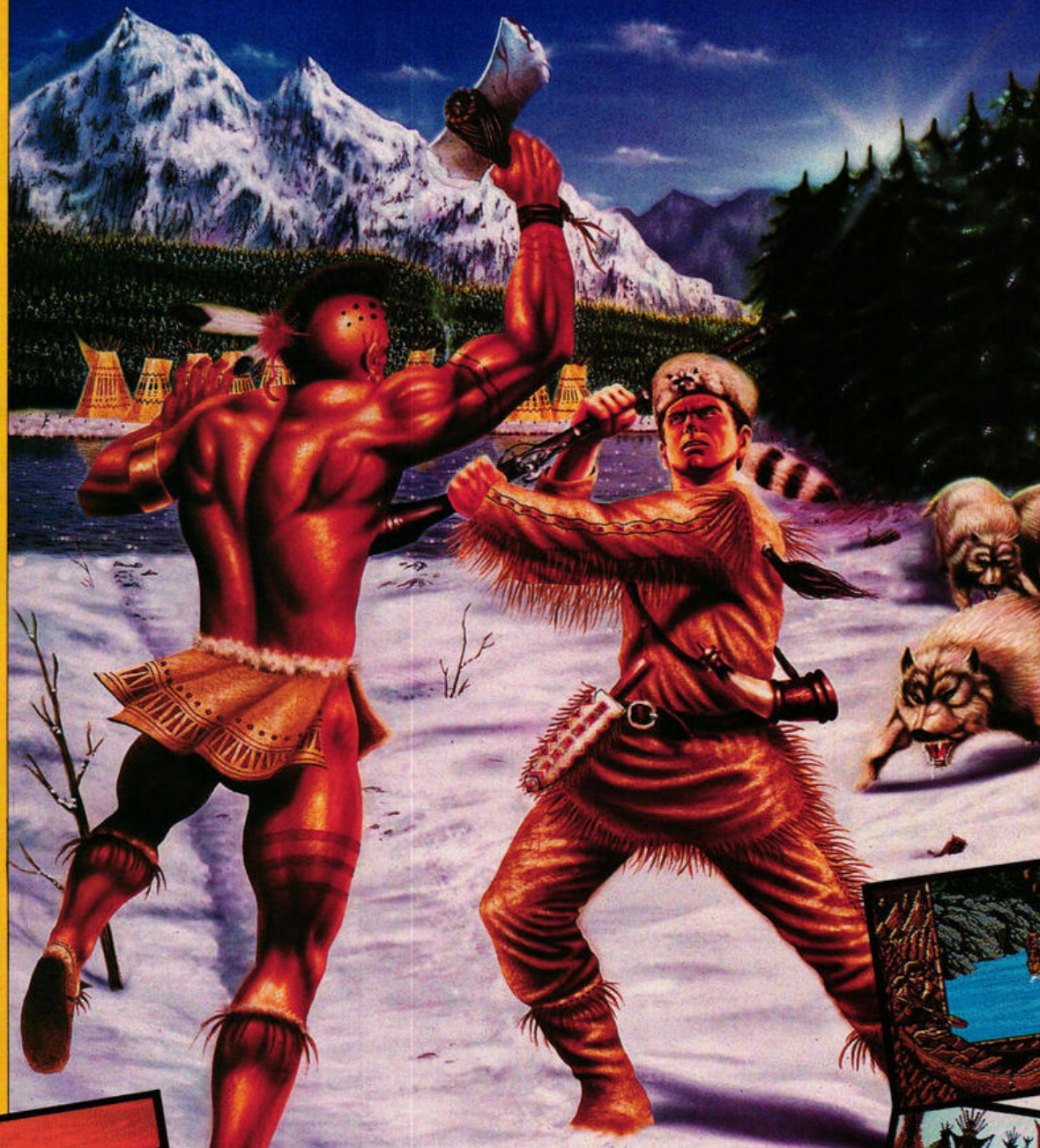
PARIS-DAKAR 90			
name	time		
1 LEON M'BA	00 36 24		
2 FRANCESCO PARMESAN	00 37 31		
3 LAZLO LAJTHA	00 39 43		
4 FRIEDRICH KLOPSTOCK	00 40 21		
5 HOUAN KONG-WANG	00 40 29		
6 FLANNERY O'CONNOR	00 47 16		
7 MICHA GLINKA	00 56 13		
8 JEAN GILES	01 06 19		
9 PLAYER	01 10 00		

■ Your ranking after the first stage – you can only get better!

GRAPHICS	4
SOUNDTRACK	3
INTELLIGENCE	2
INSTANT APPEAL	4
LONG TERM INTEREST	2
OVERALL	32%

COLORADO

100 SCREENS OF BEAUTIFULLY ILLUSTRATED 3D ARCADE ACTION.
CANOE THE DEADLY WHITE-WATER RAPIDS OF THE COLORADO AND
AXE, KNIFE, SHOOT, AND BOMB YOUR WAY TO A FORTUNE!



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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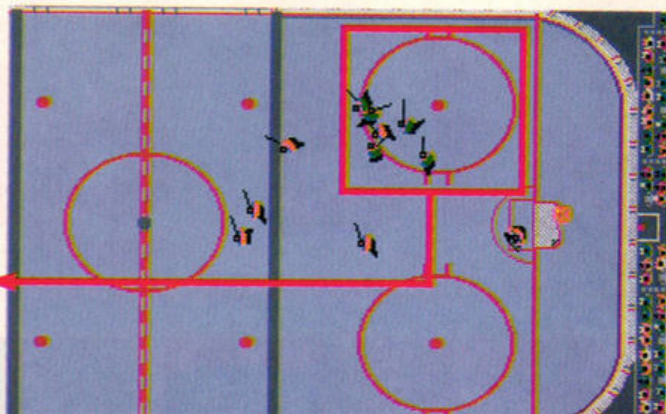
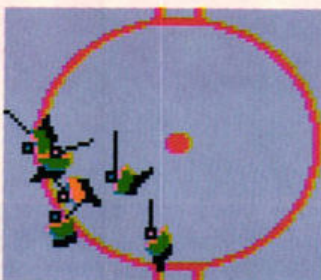
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**THE WORLD'S FIRST ARCADE
GAME USING RAY-TRACING !!**

■ The goalie's on his knees and the puck's in the back of the net - it's time for a kiss and cuddle with your Canadian cohorts



this is what ice hockey's all about.

Not much of a plot to this one. Get on the ice, wrest the ball from the opposing half-dozen, then skate like billy-o to the opposite side of the rink until the goal's in your sight and the puck's in the net. Sound easy? Well, there's a little more to it than that - there's an entire team coached by the great stick-wielder himself just waiting to put an end to your best laid plans.

You're positioned somewhere in the roof of the stadium, looking down on what appears to be a bunch of insects with feelers twitching their way around the ice. In fact, these are the players and the feelers are their hockey sticks. This bird's eye view provides an excellent representation of the game and, as Mr Gretzky says in the manual, you become "aware of strategic aspects and don't get lost in the action."

Comprehensive game control options enable you to play, coach or perform both operations at the same time, although this latter option is extremely difficult and should only be attempted by seasoned stick-wielders. Rather than bullying six muscled hockey players into submission, you're responsible for only one, easily distinguished by his white helmet. The other players on your team

respond to coaching instructions issued by you before the game.

EFFECTS

Surprisingly good, considering the view-from-above positioning. Players move as if they really are gliding over the frozen wastes - how do they achieve this effect? A kind of smooth, slightly swaying, forward and turning motion that's completely realistic. You can practically hear skates swishing over the ice.

Each time a foul play is detected, an animated referee mimes the official signals. Goals are accompanied by a representation of an electronic scoreboard with spinning pucks, exploding fireworks and "Goal!" flipping around the screen. If you get into a scuffle with an opposing player, an on-screen digitised fight scene depicts two players punching, kicking, biting and butting with assorted referees trying desperately to pull them apart.

Digitised spot effects taken from a real rink accompany whistle blowing, the clash of sticks, the clatter of the puck, the roar of the crowd and butting of heads.

There's a two-player option, league tables, action replay and you can print out game statistics to determine weak spots in your attack and defence.

VERDICT

Ice hockey isn't exactly a popular sport in the UK - too much dressing up in outrageous gaudy outfits and indulging in hard violence for those whose ultimate in strenuous sport is epitomised by an afternoon on the river bank, worm on hook and rod in hand. But *Wayne Gretzky Hockey* is so well-programmed with so many little features and surprises that the game is utterly addictive to hockey freaks and ludo-players alike from the moment your skates touch the ice.

It's obvious that a lot of research and effort has gone into producing the ultimate in hockey simulation, and far from simply covering the box with known faces, the pro whose name sells the game has actually contributed something to the feel of the play.

If *Hockey* doesn't have you reaching for your stick when other games have bored you senseless I'll eat my puck!

JERRY GLENWRIGHT

GRAPHICS	8
SOUNDTRACK	7
INTELLIGENCE	5
INSTANT APPEAL	9
LONG TERM INTEREST	9
OVERALL	90%



Ever heard of Wayne Gretzky? Nor had I, until a hockey game arrived from the States endorsed by the man himself. W.G is apparently the greatest name in the ice hockey arena today and there's a picture of the hulking great brute clad in full hockey regalia on the box to prove it. The swish of the puck, the clank of the stick, the howl of pain as a skate runs over your fingers,



MIRRORSOFT

wayne

gretzky hockey

£24.95



■ Animated foul calls and...



■ on-screen, digitised fight scenes...



■ make *Hockey* the top skate sim around

LOGOTRON

kid gloves

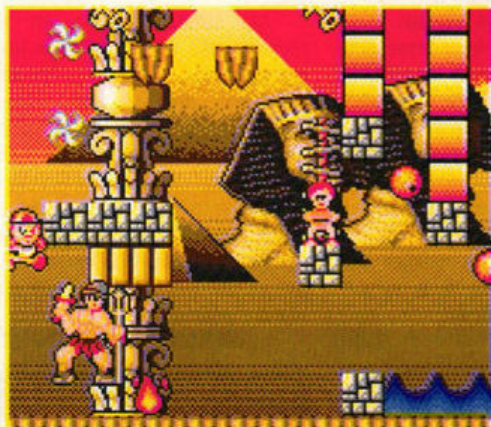
£24.99



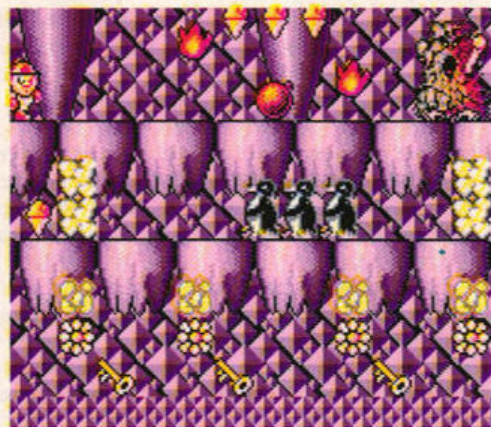
■ Agh! Where did that snake come from?



■ Violent tribesmen attack you in the jungle



■ Leap up to avoid being spiked by the guard



■ Watch out for the Yeti in the Ice Age!

Boring relatives – we've all got them. How many Sunday afternoons have you spent listening to mind-numbingly tedious family anecdotes?

Kid has exactly the same problem. His great uncle Indiana Stallone is always harping on about his adventures in the Amazon jungle, ancient Egypt and California. I ask you – ancient Egypt!

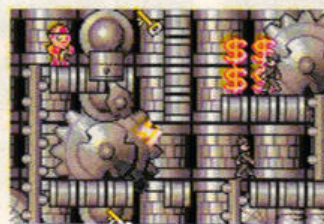
One Sunday it all becomes too much for Kid so he sneaks up to the old junk room that serves as his uncle's study to hide. Poking around, he discovers a pair of old boxing gloves and decides to try them on. As soon as he does, the gloves begin to sparkle. Thinking this is a bad sign, Kid tries to remove the gloves, but when they touch there's a blinding flash and Kid wakes up to find himself in a prehistoric jungle. Oh 'eck!

You take the role of the unfortunate Kid in his quest through the five time zones. They include the Amazon jungle, the Ice Age, ancient Egypt, London in the industrial revolution and 1960s psychedelic California – looks as though uncle Indiana was quite an adventurer after all!

The game is spread over 50 screens, each zone consisting of ten screens, and they contain falling platforms, precarious obstacles and dangerous inhabitants that can kill you with a single touch. Fortunately Kid can be revived as long as he has enough magic to regenerate, and enemies can be taken out with a well placed shot from a weapon. After the tenth screen of each zone, the gloves transport Kid to the next era, each one taking him back closer to home.

You start off armed with a catapult and a pair of magical Death-coins which can knock out most adversaries. Extra items are found on the way such as smart bombs for clearing difficult screens, food for bonus points and cash that Kid uses to buy additional weapons, lives and magic spells.

Spells such as "Frozen" come in useful when creatures block the way and "Sesame" opens barriers if you forgot to pick up the keys.



■ Close to home, but watch for the wheels of industry

Can you help Kid get back to his own time or will the game end up like *The Time Tunnel*?

EFFECTS

The graphics style is similar to other games in this genre: the cute main character, glowing pick-up items and bouncing adversaries set the general tone for the proceedings ahead. Having said that, all the elements have been well-drawn with a liberal use of colour – especially in the psychedelic Californian scenes where it's so colourful that it's difficult to see exactly where the platforms and creatures are at times! Each level has its own look and feel, with creatures and scenery appropriate to the time and place – even if the Egyptian scenes seem to contain a lot of Roman elements!

The sound consists of the usual boppy ditty and ping-pong effects, but let's face it, a stirring anthemic soundtrack and crashing samples would seem just a tad out of place.

VERDICT

The cutesy presentation gives the impression that *Kid Gloves* is a jolly old laugh, but there'll be a few rude words flying around when you fall off that platform for the fifth time in a row!

The early screens are easy enough, giving you the chance to get used to the controls and the format before encountering the really tricky levels. These require some planning and you'll be battling away for a long time before you get it right.

Kid Gloves is a fun game that should prove adequate fodder for starved platform fans, but those not converted to this classic format should test the water carefully before parting with their dosh.

MAFF EVANS

GRAPHICS	7
SOUNDTRACK	5
INTELLIGENCE	4
INSTANT APPEAL	8
LONG TERM INTEREST	6
OVERALL	77%

GHOSTS 'N GOBLINS

TM

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Coin-op; GHOSTS 'N GOBLINS™,
is now available for your
16-bit home computer.

Capturing all the features from
the ORIGINAL coin-op
GHOSTS 'N GOBLINS™
captures every detail in true
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from coin-op ROM's
- 1 or 2 Player Section
- Amiga & IBM PC versions
contain all six levels of coin-op
- Well over 100 screens to
battle through
- Choice of five weapons with
which to fight
- 28 enemy characters to
overcome
- 4 way
scrolling
effect

CAPCOM

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RELEASE DATE
Europe 16th April 1990
U.K. 2nd May 1990

ATARI ST™

£19.99

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£19.99

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(available in 3 1/2" or 5 1/4", supports CGA,
EGA and Tandy)
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elite

WIPE-OUT

- the story so far

- The World's first Intergalactic Hoverboard Challenge.
- Fast, addictive 3-D action.
- Single or multiple player - play against fiendishly clever computer opponents, or just a friend!
- Over 1,100 stars - each with its own local league, and prizes.
- More than 77,340 possible opponents - each with its own individual characteristics.
- Form your own Interplanetary League
- Great rocking music - neck breaking speed!
- Can you survive the Death or Glory chicken-run challenge? Can you handle the Futon Flip?
- Qualify for the once-in-a-millennium All Time Greats Tournament.
- Have you slimed an Amebeid today?

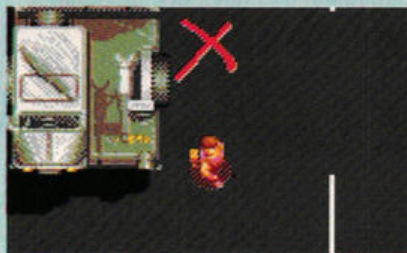


There really is no feeling quite like turbo-boosting past your hapless opponent, hanging a wickedly fast 180 degree turn and sliming across his path before he's realised what's happening. Be warned - WIPE OUT may be the only game you'll want to play for some time.



GONZO GAMES • SOUTH BANK TECHNOPARK • 90 LONDON ROAD • LONDON SE1 • TEL. 01-922 8856

AMIGA £19.99 • ATARI ST £19.99



■ One of the bomb positions clearly marked in red



■ Place bombs on the crosses to destroy the fortress



■ The bomb is primed and ready to explode

US GOLD

crackdown

£19.99

Does the decline of Western civilization bother you? Do you lie awake at night fretting over the gutter press, the loss of faith and rampant philistinism? In US Gold's latest release, a cross between *Invasion of the Bodysnatchers* and Cold War paranoia, the real reason for the decline is far more sinister than you could possibly have imagined.

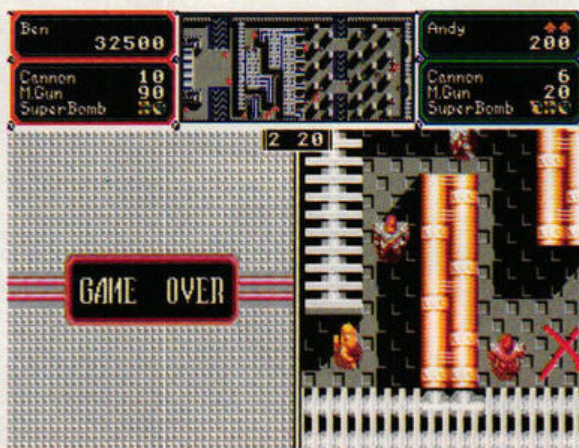
Deep within a huge fortress, the mysterious Doctor K has been subverting the human race by placing biogenetically created beings in key positions in society. These beings have been subtly planting dangerous, evil thoughts into the minds of the populace so that one day Doctor K can emerge as a gloirous leader and rule the world.

Who can save us from this terrible threat? Who else but the FBI? The feds have selected two crack commandos, Ben Breaker and Andy Attacker, to infiltrate Doctor K's fortress and crack down on his nefarious plans.

You and a friend adopt the roles of the two heroes, infiltrate Doctor K's fortress, fight your way past the Doctor's guards and plant explosives in key positions to destroy the complex. These points have been conveniently marked with large red X's by previous infiltrators who didn't have time to get the bombs in place.

The commandos are armed with machine guns and a limited supply of ammunition – including three super bombs which destroy all guards in the vicinity. Extra supplies can be found in cases dropped by the earlier, unsuccessful agents, which can contain anything from extra bullets to rocket launchers.

Once the key locations in each zone have been primed with explosives, Ben and Andy can safely travel to the next area. They travel through increasingly dangerous



■ Crackdown's screen (left) is split into three main areas. The top displays the area map, the left section shows Ben's immediate vicinity and the right shows Andy's surroundings. This screen shows Andy skulking around the docks. In level two (above) Ben falls foul of Dr K's guards in the caverns

scenarios until reaching the laboratory where Doctor K creates his awful monsters.

EFFECTS

Arc have done a sterling job squashing the split-screen graphics of the arcade original onto the somewhat smaller ST display. All the sprites have been carefully designed so their original character has been retained and the scenery has kept the solid feel of the coin-op mazes.

The title sequence loses some of the elements of the original –

such as the isometric view of the fortress at the start – but the tense atmosphere and delapidated scenery has been enriched by rapidly changing intro screens.

The sound effects aren't as powerful as they might have been because the deafening blasts of rockets and the rattle of machine guns have been replaced by simple spot effects. The only way Arc could have made the ST version look more like the original would have been to drop the standard ST graphics and plump for the STE's extended palette.

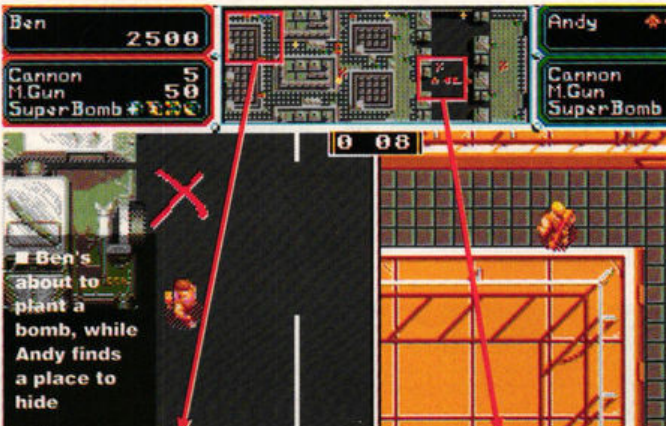
VERDICT

Crackdown wasn't the most well received coin-op, which raises questions about the validity of converting it to home machines, but this conversion proves to be surprisingly enjoyable – especially when battling through the levels with a friend.

At first it seems as if the difficulty level is a little too high because the heroes are mown down almost immediately. Perseverance, however, reaps its reward and you soon learn how to use walls as cover and find quicker ways through the mazes. The going is still tough though, so it's a good while before you wipe out the Doctor and his troops.

Crackdown is an intriguing romp and worth a few hours of anyone's time. Don't just take my word for it – try it out!

MAFF EVANS



■ This area is displayed in the right window

■ The portion of map shown in the left window

GRAPHICS	7
SOUNDTRACK	5
INTELLIGENCE	4
INSTANT APPEAL	6
LONG TERM INTEREST	7
OVERALL	81%

Level one and the battle is on. Be prepared to whip out your trusty sword and hack off their heads

You pass the thugs and meet the magician. Before you've time to act, you take a smack in the face

Oh no, two thugs at once! How are you going to keep these guys off your back?

OCEAN

Ivanhoe

£19.99



With the recent release of *Ghouls 'n' Ghosts*, *Strider* and *Rick Dangerous*, the horizontally-scrolling action game has become the latest fashion craze – play one or be square! Before the excitement subsides, Ocean are cashing in with *Ivanhoe* – an action game in which you clash swords with all sorts of no-neck muscle-bound nasties in spooky forests.

You start the game on the outskirts of one such daunting forest. Before you're given any chance to draw breath a barrage of ugly swordsmen descend upon you and the action begins. From here, it's an unremitting battle with one enemy after another. These bad guys can move fast but the action speeds up even more when your trusty horse rears his head. In a fast horizontally-scrolling level, you need to control your horse carefully so that he leaps cleanly over any obstacles in the way.

As the levels proceed, the enemies change from wizards and pirates to dragons and hunters, and each is harder to beat than the last. But it's when they gang up on you that you really want to dive for cover. It's not uncommon to find



■ Climb aboard the ship and battle it out with the chief cook – he's a charming fellow



■ *Ivanhoe* is a fast moving horizontally-scrolling action game where you cross swords with every enemy who pops up. It gets tough when you have sword-wielding opponents either side of you, but it's nothing you can't handle. Go for it...

yourself trapped between foes, desperately shielding yourself in a frantic effort to stay alive.

The shield and sword are controlled by logical joystick movements, but the weapons change as you progress through the levels so later on you can easily find yourself shooting fireballs instead of slashing with your sword. In the middle and at the end of each level, you encounter the standard guardians who try to prevent you from going any further. Defeat them and you pick up scores of extra points.

In between levels there's a short bonus section where you attempt to plunge your sword into the gut of a massive Arab. It's an awesome task but if you manage to pierce his bloated belly then you pick up extra points.

EFFECTS

More and more games are fully exploiting the superb graphic capabilities of the ST, but it isn't often that we see something as stylised as *Ivanhoe*. The graphics have been designed by the same cartoonist who worked on the *Asterix* movie and his characters move and die in a dramatic manner – particularly *Ivanhoe* who raises his arm to his head and swoons like Gloria Swanson.

All of the action takes place against a beautifully detailed and extremely colourful horizontally-scrolling backdrop.

Sound effects are appalling and inexcusably confined to dated 8-bit beeps. Supposedly tuneful, they do nothing but give you serious earache.



■ This level moves at break-neck speed. Be careful to avoid crashing onto boulders

VERDICT

Ivanhoe is a horizontally-scrolling action game elevated out of the forgettable morass of other clones by some brilliant graphics. The scrolling is smooth and the animation looks fun even if the movement of the characters is slightly jerky. The enemy sprites are superb; all sorts of bad guys lurk in the shadows from dangerous knife-wielding pirates to ugly and malicious muscly thugs.

Unfortunately the moves required to tackle the menacing enemies have little variation and, with few bonus weapons to pick up, *Ivanhoe* can quickly become tedious. Unless you're a dedicated hack-'em-up player, *Ivanhoe* is unlikely to hold much appeal once the novelty of the stunning visuals has worn off.

MARK HIGHAM

GRAPHICS	8
SOUNDTRACK	2
INTELLIGENCE	2
INSTANT APPEAL	8
LONG TERM INTEREST	5
OVERALL	66%

More magicians to face on the bridge. Watch out for that knife!

Everything looks quiet – must be a bad sign

It takes pure muscle to reach the end of the level. Defeat this fiend and you pick up big bonus points

Castle Master



A sensational new 3D Action Adventure from Incentive, in spectacular Super Freescape™

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Atari ST C64 Spectrum & Amiga Screenshots

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incentive
The Award Winners

DOMARK

If you've been in an arcade recently you may have seen a machine blaring out a strange 40s serial-style soundtrack and flashing up comic-book images. This strange machine is Atari's coin-op *Escape from the Planet of the Robot Monsters*. Plotted in the same vein as the classic adventures of Superheroes like Flash Gordon and Dan Dare, the experimental synthetic Planet X is being invaded by Reptilons. These dangerous and twisted lizard-like monsters have imprisoned the planet's scientists and forced them to work in the factories producing Reptilon robots which will be used to invade Earth.

Jake and Duke are the two tough warriors given the unenviable task of travelling to Planet X to try and free the hostages - who include the eminent scientist Professor Sarah Bellum (cerebellum? Oh go back to sleep!).

The hostages are held in the factory sections. These are split into levels linked by escalators with a teleport located on the top floor. To stop renegade hostages making a break for it, a power switch has to be thrown before the escalators can be used, so Jake and Duke must reach the switch before proceeding to the next floor. Easy enough, except that robot troopers and guards armed with laser guns are trying to stop you.

Some factory sections are empty save for a large Reptilon robot - rather like a Zoid - which requires some heavy artillery to defeat. There's no hanging around because there's a strict time limit imposed. Once a complete section has been cleared, the two heroes must negotiate a metallic maze in their cyber-sleds.

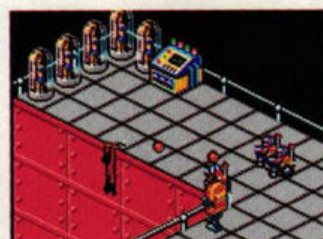
Jake and Duke bravely fight their way through the entire complex, taking on the might of the Reptilon forces, so that Professor Bellum can return safely to Earth and do sterling work for the good of mankind by inventing yet another pain killer.



■ Jake blasts a few robots to pick up some firepower



■ That poor girl looks in dire need of rescuing



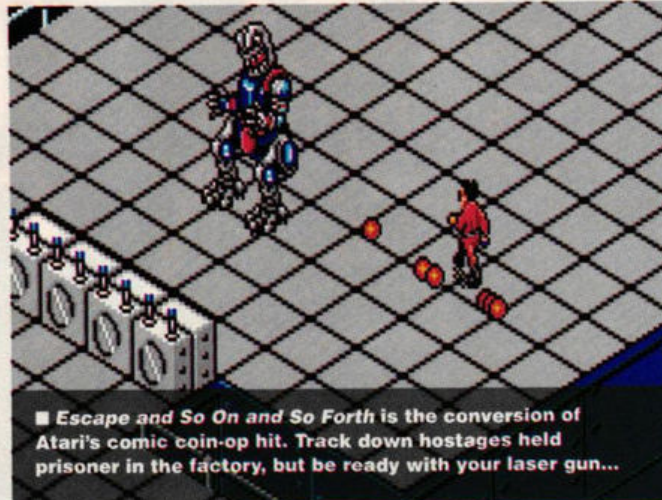
■ Oops! Our hero hangs by his fingertips in a factory



■ "Ha! Can't catch me! I'm off to the space ship"



■ Finding a dead end in the maze section



■ *Escape and So On and So Forth* is the conversion of Atari's comic coin-op hit. Track down hostages held prisoner in the factory, but be ready with your laser gun...

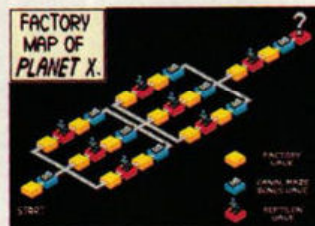
EFFECTS

The overall appearance of *Escape* is very similar to the arcade original. All the original elements have been retained, including the comic-style intro and the cartoon sprites. The animation is packed with humorous touches, such as Jake and Duke clambering back onto the platforms after taking a step too far and the stunned look of the hostages when a stray shot hits them.

The tunes have been copied from the coin-op, but using the ST sound chip means that a certain amount of power and atmosphere has been lost. The game has a slick feel to it, which is good news at a time when mediocre conversions are appearing at an unhealthy rate.

VERDICT

Escape's sense of humour makes the game a joy to get into. It's great fun finding all the quirky pieces of animation and watching



■ The layout of Planet X showing the quest ahead

the heroes race around battling the Reptilon robots. The control method has been carefully designed, resorting to use of the keyboard only when really necessary, so it's easy to get straight into the frantic action.

Once the jokey graphics have worn off and you've reached the end of the game for the first time, the gameplay can become repetitive. Fans won't be bored and newcomers will take a long time to get to that point, so that's no real problem. Check the game out - it's a superb conversion!

MAFF EVANS

GRAPHICS	8
SOUNDTRACK	7
INTELLIGENCE	3
INSTANT APPEAL	9
LONG TERM INTEREST	6
OVERALL	80%



■ Poor Jake comes a cropper on some spikes (painful)

DOMARK

escape

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RAF Pilot Officer David Crook.



"There were about twelve Me-109s diving at me from the sun and at least half of them must have been firing deflection shots at me. There was a popping noise and my control column became useless. I found myself doing a vertical dive, getting faster and faster. I pulled the hood back, I got my head out of the cockpit, and the slipstream tore the rest of me clean out of the machine."

RAF Pilot Officer Stevenson.

"There isn't much time to muck about in a head on attack. I gave a short burst then slid underneath his big black belly with only fuel to spare, and flashed through the rest of the formation. I hadn't meant to cut it so close, and instinctively ducked as I saw wings, engines, cockpits and black crosses go streaking through my hood. I had reached about 450 mph in my dive, and heaved back on the stick. I blacked out completely as I went up and over in an enormous loop."

RAF Pilot Officer Boggle Bodie



Screen Shots from IBM PC Version.

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Fans of the solid 3D environment *Freescape* (previous games: *Driller*, *Dark Side*, *Total Eclipse*) are in for a surprise, because here comes the first developed on 16-bit machines. The results have Steve Carey in a fair old lather of excitement...



INCENTIVE

castle master



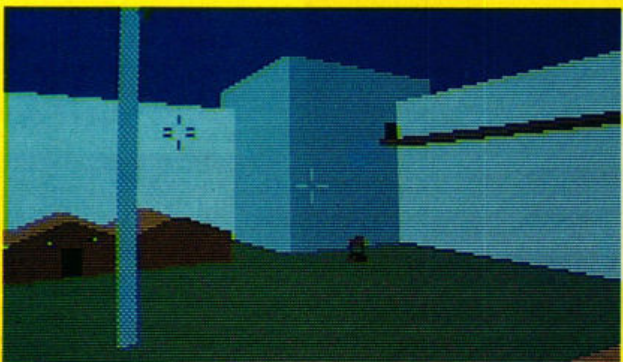
■ (above) The information screen, from which, of course, you remember to make plenty of saves!

£19.99

HOW TO GET A FLYING START



■ Beginning in front of the castle, lob a rock at the switch to the left of the drawbridge to open it up... Now, standing on the drawbridge look up and chuck another brick at the button. Result: up goes the drawbridge, catapulting you over the castle wall and onto the roof. Now *that's* what I call travelling in style!



In the beginning was the word, and the word was *Freescape*. It wasn't a game, but a style of game and a programming technique that offered a solid 3D environment you could explore: "The nearest thing yet," boasted the blurb, "to being there." But *Freescape* was developed on 8-bit machines, with all the limitations of memory traded off against speed and screen refreshing that such technology implied.

Castle Master marks two breaks with tradition, being not only the first *Freescape* game to be marketed for Incentive by Domark, but the first developed on 16-bit machines. Fans of *Driller*, *Dark Side* and *Total Eclipse* will already be familiar with the look and feel of *Freescape* - that peculiarly straight-edged world, with suspiciously inviting blocks, handles, Roman numerals and oblong lumps, all seen from the point of view of the explorer - but what they may not be prepared for is the size of this latest world.

For the benefit of those who don't know the earlier games (and it's still not too late), a brief

description is in order. A journey into *Freescape* is a journey into a world, distant either in space (*Driller*, *Dark Side*) or in time (*Total Eclipse*, set in 1930s Egypt). The aim is to explore that world, achieving objectives by collecting or drilling. As such a description suggests, these are not frantic shoot-'em-ups or fighting games, but thoughtful, clue-based entertainment. Occasionally something

dreadful happens - you take a step and plummet to your death, or find yourself trapped with nowhere to go - but generally it's a game that tests lateral thinking rather than hand-eye coordination.

File under mouse, not joystick.

In that respect *Castle Master* is no different from the others. What is different, however, is the sheer scale of the game. There seem to be hundreds of rooms, miles of corridor and acres of courtyard. Where previously you could be fairly certain that every room held a dark secret and every panel concealed a clue, in *Castle Master* there are dozens of objects whose purpose is to be, rather than to do.



LEISURE

This greatly aids the illusion that you're exploring a real world. How many games, for instance, can you name that include a toilet? *Castle Master* does, complete with flushing cistern and unravelling lo-roll. Not that this has any relevance to the plot, or any rightful place in a very medieval-looking building. You're intrigued, of course, to discover the room, go through the motions as it were, and check it out for clues in the loos. Time ticks away but you're none the wiser, except for being pretty certain that you've eliminated another room.

Controls are sensibly designed so you can use joystick, mouse or keyboard, though I recommend a combination of the latter two. You'll need a spare disk to save your game position, something you'd be well advised to do frequently. There's nothing more frustrating than building up a decent score, only to get zapped by a spirit and have to start all over again.

You come to your senses facing an imposing and mysterious castle surrounded by a moat that, oddly, has sharks swimming in it.



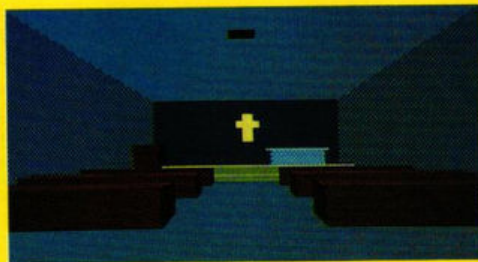
■ The potter's wheel is fun but offers no clues

Stand before the drawbridge and you can't miss the "button" on the wall. Sling a rock at it, down comes the drawbridge and in you go. (If, though, you fancy starting with a bit of a swing, stand on the drawbridge, looking upwards and firing again at the "button". Up goes the drawbridge and up, up and away go you, flying over the castle wall - don't think about it too hard! - and onto the roof.)

Now it's a case of hunting around the castle's halls, rooms and corridors like some medieval combination of Sherlock Holmes, Indiana Jones and Anka Rice. One innovation that 16-bit development has enabled and which works especially well is the presence of other living beings in the castle. Open a door or a cupboard and you're likely to find yourself face to face with a rat, or worse, some batfaced item that does your strength no favours at all. It's hardly *Blood Money*, but it comes as a violent shock in such a carefully paced and thoughtful game.

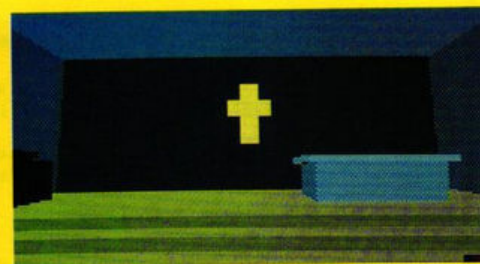
EFFECTS

Games players of an excitable nature who judge a game by the



IN THE CHAPEL

Head for the altar - bumping your knees on the benches as you go! - and then, standing behind it, look closely. Down there behind the screen is a hidden doorway. Ring a bell? It will!



hammering it gives the joystick will find little in *Castle Master* to curb the shoot-'em-up withdrawal symptoms. That's a pity, because they're missing out on a tremendously entertaining and engrossing piece of software. There's so much to explore you're inclined to take the smoothness and sheer speed of scrolling for granted. Controls

and options have built on experience gained from *Freescape*, and after ten minutes learning them you'll be playing like a veteran.

Sound too is rather good, with a variety of sampled sounds of rocks bouncing off hard objects, gates crashing and spirits, er, spiriting. A quibble: at one point the screen tells you "You hear a cry":

you don't. Perhaps they ran out of room? Could be, for the whole game is fitted onto a single disk. Not surprisingly it takes a fair while to load, though there's no irritating in-game disk accessing to slow things down.

VERDICT

In some quarters I've no doubt *Castle Master* will lose out because it's the fourth in the *Freescape* series and therefore lacking in originality. But that is to miss the point, for fans of *Freescape* will make a beeline for this latest addition, while those who haven't seen it before will be won over immediately: neither set of customers will be disappointed. Whatever you read, this is not a sequel but simply a new game that uses a style which has been developed over several previous games.

Whether *Castle Master* has the long term playability to maintain interest over weeks and months is difficult to judge. Certainly there's enough in it to prevent any but the most hard-bitten gamer from complaining that it only took a week to complete.

Though *Castle Master* lacks the heart pounding excitement of a first class shoot-'em-up, it has the depth and quality to keep you engrossed. Pound for pound, no game this year will give you more gameplay. Enjoy!

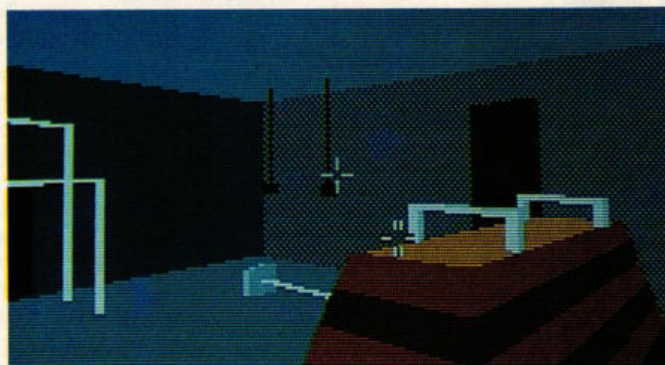
STEVE CAREY

AN AWFUL TALE

The scenario? Ah yes, the scenario. As if the plot - some tosh to do with rescuing a prince/princess - isn't corny enough, the *Castle Master* manual is padded out with page after page of unforgivably painful doggerel, full of ludicrously inept Ye Olde Worlde-type inversions and pseudo-archaisms. Adventurers will love it to death. A taste, if you can take it:

*Now cast ill's caste o'er Castle bridge
I'll speak of what's behind that ridge
Behind before bestride bedpanned
Bejusus betamax bedamned
Bedevilled beebeccee beknighted
Be still become bewitched beflighted
Be! Bop Alulah, What! Insane?
Not I, who causes you this pain...*

- pain indeed. There's nigh on 500 lines of this stuff, and it does nothing for the player's temper. Leave the manual open at the keyboard controls page, load up and just get on with it. The in-game clues are quite enough to be going on with, and though you may miss out on the odd clue or ten, for the first few hours at least you won't need them. The pleasure of *Freescape* is as much in the exploring as the solving: it's not the arriving, it's the driving.



■ In the gym - don't ask why there's a gym in a medieval castle: there's an indoor football court and a toilet, too!

GRAPHICS	8
SOUNDTRACK	8
INTELLIGENCE	9
INSTANT APPEAL	7
LONG TERM INTEREST	9
OVERALL	90%



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■ With its superb cartoon animation and amazing sound, *Space Ace*, the first of Readysoft's laser disk conversions for the ST, is the most exciting audio-visual experience yet. But does it really give you £44.95's worth of playability, or is it just a hellishly expensive demo for rich ST owners to show off their machine's capabilities?



■ Make the right joystick moves at the right time and leap through the levels

Space Ace promises the finest animation ever on a home computer – and delivers triumphantly. But Mark “Hard to please” Higham wonders if looks are everything...

**READYSOFT/
EMPIRE**

space ace

£44.95

GREAT EXPECTATIONS

Readysoft aren't the first company to attempt an ST conversion of *Dragon's Lair*. In early 1988 Microdeal made their own contribution, releasing a special video disk player and game disk called *Journey to the Lair*.

The video disk player connected to a television and to your ST, which had to be linked up to a separate monitor or television. At strategic points the



■ Video disk version of *Dragon's Lair*

action froze and a message would appear asking you to type the correct direction key for Dirk's responses – not what you'd call gripping

interactive stuff! Perhaps not surprisingly the game flopped.

If Readysoft's investment succeeds, expect to see *Escape from Singe's Castle* out by Christmas. Maybe...



■ *Dragon's Lair* – to be released in June



■ *Escape from Singe's Castle* – due November

Imagine a game centred around a cartoon theme with animated Superheroes ruling the planet. Add to that a brilliant Disney animator, a stunning soundtrack, a degree of player-interaction and extend the whole thing across an amazing 33 levels and you have the most startling visual feast on an ST game ever!

The objective of *Space Ace* is typical Superhero stuff: the evil Borf is threatening to take over the world and only one person can save it from his clutches. That person is you – Dexter! Unfortunately, before saving Earth, you have a recurring distraction to overcome – the delectable Kimberly screams in your ear to save her after every scene.

The plot sounds exciting and opens up enormous animation possibilities. To a large extent the game delivers, but it fails in player interaction. You watch the scene of anima-

tion, lasting around 45 seconds, and simply make the correct joystick response at the right time.

Skill is limited to remembering the right moves whenever Dexter looks like he's in distress. These moves direct him into any one of four directions and the fire button causes him to whip out his laser and blast it. Only one move is correct and if you make the wrong choice Dexter meets his doom. Make the right move and you continue to the next danger point. Some levels require three moves to be made before they can be completed, while others only take one.

Each level therefore has only two possible endings – one in which you continue and the other (far more interesting) where Dexter dies in all kinds of dramatic incidents: blasted, crushed or drilled into the ground.

For example, in level one you

THE MAN BEHIND DRAGON'S LAIR

Space Ace's visuals are out of this world. When you look into the history of Don Bluth, designer of the animated sequences you begin to understand why.

Born in El Paso Texas in 1955, as a child he was fascinated by animation and in 1971 joined Disney where his career flourished, working on such hits as *Robin Hood*, *Winnie the Pooh* and *Tigger Too* and *The Rescuers*.

Animation as an art had really taken off in 1937 when it was first used in the feature-length story of *Snow White*. Little changed until 1949 when *Crusader Rabbit* appeared, the first character to be designed and animated specifically for television.

But at Disney Bluth wasn't

happy. He felt the company had turned their back on classical animation techniques and in 1979, while working on the *Fox and the Hounds*, he resigned.

Bluth pioneered the next stage, uniting computers with animation. "Computers are the next logical step in the



■ Don Bluth, animator extraordinaire

progression toward the future," he says. In 1983 he came up with the first laser disk arcade game – *Dragon's Lair*. 25 minutes of animation was produced, filmed onto videotape and programmed onto the surface of a 12" disk. In *Dragon's Lair* the laser disk heads were faulty and a long pause occurred between levels. This problem was remedied – but others weren't.

The arcade machines were vastly expensive – as much as £7,000 – and easily damaged by children. Combine that with the game's very short-term interest factor and they were destined to fail. It's now thought, for instance, that not a single laser disk game is left in the UK!

■ Level one of *Space Ace* looks annoyingly difficult but make three joystick moves and you're through



Borf aims at you for the third time. Move RIGHT



Move LEFT before Borf can shoot the rock



Now move DOWN before Borf fires at you



ST FORMAT 55

confront Borf who fires at you with his laser. Just before the third laser shot, move RIGHT. Dexter jumps behind a large rock but Borf fires at it, blasting it to pieces. Before Borf fires again, move LEFT to make Dexter jump into the centre of the screen. As Borf moves to fire again, move DOWN, Dexter hides behind the rock again and the level is over. If you make a mistake at any of these points, you don't realise it until Dexter gets blasted by Borf at the end of the scene.

When *Space Ace* begins you have three lives but with every 10,000 points you receive an extra one. The game comes on four double-sided disks but this doesn't

mean single-sided owners don't get a bite at Borf. With half of the levels contained on the second side of the disk, single-sided owners are restricted to half a game but that's better than nothing at all. Readysoft haven't stopped at adapting the game for different types of drives, they've also written a version which runs on monochrome monitors. It isn't available at the moment but should be along by the end of May.

EFFECTS

There's no doubt the brilliant visuals are *Space Ace's* strong point. So far, we've seen nothing else like it on the ST – this is professional

animation on a home micro and it looks bloody amazing. The characters move smoothly, colours are bright and exciting and all movement is exaggerated in the same vein as illustrated comics.

The great effects don't stop with the animation. Accompanying the entire game is a high-quality sampled soundtrack which adds cartoon-style sound to *Space Ace's* cartoon-style visuals and effectively draws you into the action.

VERDICT

No-one is going to tell you *Space Ace* is amazingly playable – if gameplay was all it had going for it, it would disappear behind a mass of laser sparks and never be heard of again. It's the incredible animation that makes it unique. Watch the game and you'll be stupefied by the spectacle; try playing it and you realise its limitations. Mastering the joystick moves is a case of trial and error rather than skill and the save game option means you complete it within hours of ripping off the cellophane, dramatically lessening its long-term appeal.

The result is not so much a game as a demo – with annoying breaks where you're supposed to move the joystick to advance. If you want to show off your ST's capabilities there's no better game, but as for playability it sucks.

MARK HIGHAM

GRAPHICS	9
SOUNDTRACK	9
INTELLIGENCE	1
INSTANT APPEAL	8
LONG TERM INTEREST	1
OVERALL	58%



■ Each level has two endings. Here you must cross the bridge by



moving the joystick RIGHT twice. Get it wrong and you go



plunging down a hole where there's no hope. Dexter, you're dead

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Available on: Atari ST, Amiga, IBM PC 3.5" & 5.25", Commodore 64 (cassette, disk) Amstrad (cassette, disk) Spectrum +3, Spectrum 48/128
 Programmed by: Teque Software developments Ltd. Atari ST Screenshots
 Published by Domark Ltd, Ferry House, 51-57 Lacy Road, London SW15 1PR Tel: 01-780 2224

DOMARK

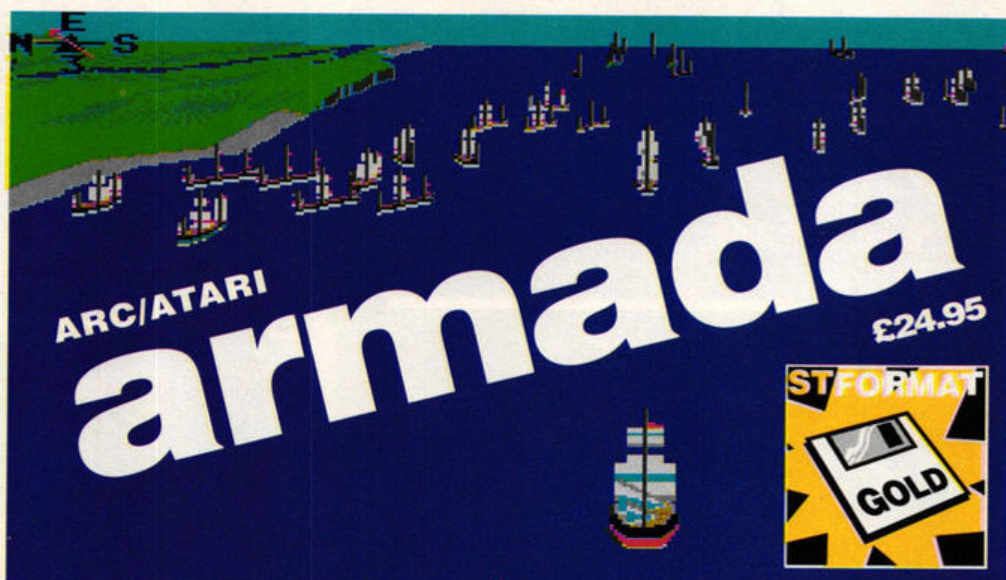
It was easy to fall in love with *Borodino*, *Waterloo* and *Austerlitz*, but there's no escaping the sneaking suspicion that however technically brilliant Turcan's wargames might be, they just don't offer enough variation. The battles and historical periods have changed, but the visuals remained the same. With his latest release, *Armada*, Turcan has moved to the high seas and is highlighting the individual movements of ships in an attempt to prove that war can be a visual treat as well as a strategic ordeal.

The Spanish Armada was one of the strongest fleets in history, posing a real invasion threat to England. For thousands of men the battle started out as an adventure but ended five days later as a massive human tragedy.

Now you can replay the battle, assuming the role of either Lord Howard or Medina Sidonia. Turcan tries hard to adhere to reality and as a result the battle doesn't always run according to plan. Ships' captains have far more control over their own actions than those in land combat and this can make it difficult to control the movements of those ships engaged in battle.

To attack enemy ships you have three types of fighting manoeuvre – long range, short range and grappling. The cannon ball is used in long and short range tactics while grappling sees you attempting to storm the ship.

To win, the Spanish must capture a major town and harbour and keep a clear seaway for at least three miles. Alternatively, they can win by defeating enough English



ships at sea. The English can only win by annihilating enough ships to fend off the invasion.

■ (above) English ships sail to war. Few are destined to return

hasn't been included – which is a disappointment.

EFFECTS

If there's one thing to send your head spinning in *Armada* it's the authentic look of the graphics. The battlefield is represented on screen as a solid 3D view which details

the land heights, coastline, buildings and ships. Fought at sea, much of the playing environment comprises of visually exciting seascapes which expand the possibilities for strategic manoeuvres. As in previous wargames, sound

VERDICT

The game has preserved all the inflammatory qualities found in Turcan's previous wargames – attention to detail, atmosphere and strategic power – and expanded on them with astounding 3D graphics and a radically different scenario that emphasizes ship formations. The result is a game certain to send wargame fanatics into an animated frenzy.

MARK HIGHAM

DISHING OUT THE ORDERS

Issue battle orders to communicate your strategies to ships. These are logical English instructions which take the form:

<to who> <when to start> <what to do> <for how long/where>

Commands such as SIGNAL HAWKINS TO SAIL IN DOUBLE CRESCENT FORMATION or SIGNAL DRAKE TO ATTACK THE ENEMY 3 MILES SOUTH OF PLYMOUTH are all acceptable orders. If you play the Spanish side, there are orders to put the crew ashore and attack or defend land bases: SIGNAL OQUENDO AT 1 PM ATTACK THE FORT 1 MILE SOUTHWEST OF PLYMOUTH FOR 3 HOURS.

You need to be aware that outside influences can also affect the battle; if a storm is brewing you may need to call off your attack. Steer clear of wrecks caught on rocks and be prepared in the event of a battle to evacuate the crew from a damaged ship to a safe one.

GRAPHICS	7
SOUNDTRACK	N/A
INTELLIGENCE	8
INSTANT APPEAL	7
LONG TERM INTEREST	9
OVERALL	91%

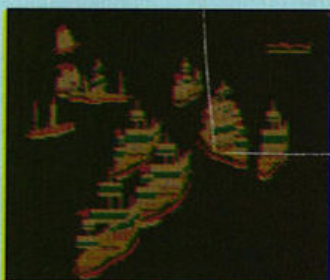
THE FRENZY OF WAR

Wind strength and direction are shown in the compass display



1588. A message from Armada has been sighted

Mail appears to keep you regularly informed



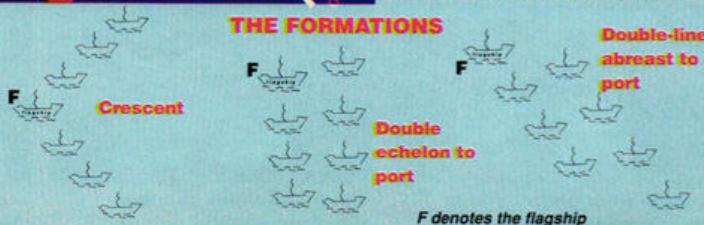
■ The battle is raging but you would be advised to retreat. The screen darkens as night approaches and you aren't well-equipped for night-time antics

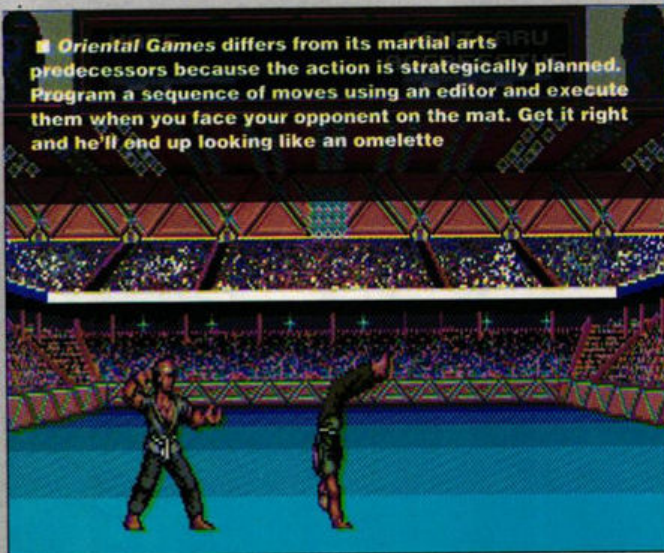


When you get down to the brutalities of battle, your strategies are going to be important. Keep your squadrons in careful formation to enable you to issue orders to squadron leaders instead of a mass of individual ships. If you instruct the squadron to move relative to the flagship you need issue no other commands to them. By arranging your ships into clever formations you can become a formidable opponent. Some recognised formations are shown below.



Spanish ships English ships





■ The arena where all the action is poised to take place



■ Before you start, define some movements to use in the fight



■ Get ready to execute those programmed moves...



■ ... and use them at the right time to emerge as the victor

Bruce Lee-type shouting and the cracking of bone on bone, but the individual players have their own "voices" which adds a touch of realism to the game. The selection screens and background animations are well-drawn and polished.

VERDICT

The general feel of the game is very sporty, and rather more strategic than your normal thump, smash and kick affair. The fighting is a little jerky and disjointed compared to games such as the aforementioned *IK+*, but the ability to set your own sequences and attack patterns means that you have the feeling of training your fighter to win bouts, rather than simply going in fists flying. You can use this approach if you prefer, but this means that each bout is the result of simply standing your ground and getting more attacking moves in than your opponent.

As a stand alone Karate game, *Oriental Games* isn't really the kind of thing that sets martial arts fans' pulses racing, but the combination of strategy, action and three disciplines in one package makes it worth checking out.

MAFF EVANS

GRAPHICS	7
SOUNDTRACK	7
INTELLIGENCE	5
INSTANT APPEAL	8
LONG TERM INTEREST	6
OVERALL	78%

MICROSTYLE

oriental games

£24.99

Rather than following the current trend of using temples, dragons and Japanese paintings galore to create a traditional oriental setting for their new beat-'em-up, Microprose have decided to give the game a contemporary feel. *Oriental Games* takes place in a modern fully-equipped sports arena. There are separate sections for each of the three disciplines - kyo-kushin-kai, a straightforward karate combat; kung-fu, a more elaborate and dangerous variation; and kendo, the ancient art of swordplay.

Play begins as the team check in at the desk, prompting the player to enter the settings for the game. You can choose either to jump straight into the competition and fight from scratch, or determine fighting strategies by choreographing set sequences of moves to use in the fight.

All the joystick positions can be programmed with sequences of up to four moves. A fighter can, for example, deliver a jump-kick to his opponent's head, perform a forward flip, turn round and deliver a hefty roundhouse kick to his back all with one joystick move! Winning combinations can be saved to disk for use in future fights, along with the preferred joystick settings for each player.

The fight screen has an info bar at the top containing pictures of the combatants and each player's health and stamina ratings. Health is lost as you receive blows and stamina diminishes as you carry out more and quicker moves. The result of the fight is determined by which fighter loses his health points first.

The contest takes place between 16 fighters in a knockout competition to decide the master of each discipline. Once a player

has mastered the three events, he can then go on to battle 24 other competitors to decide the martial arts "Grand Master." Any number of players can be human or computer controlled.

EFFECTS

With games of this type, a trade-off has to be made between realistic animation and speed of playability. *Oriental Games* manages to maintain a quick pace while retaining the graceful fluidity of the fighters' movements. The sprites aren't quite up to the standard of the now-classic *IK+*, but taking into account the extra number of moves and the variety of design in the three events, the programmers have done a good job packing it all in. The kendo warriors are particularly intricate, having all the paraphernalia strapped to them required in this tough but graceful event. The sound is of the usual



■ The editor allows you to build sequences of moves



■ The first move is a low attacking punch...



... followed by a vicious head butt...



... and a flip to get behind your opponent

WE'RE FIT, WE'RE ALIVE, BUT WE'RE NOT BACK HOME

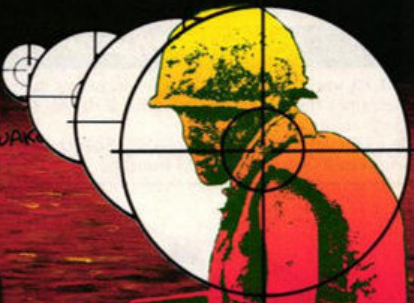
LOST PATROL



"Polished until it sparkles,
The Lost Patrol features
animated screens the like of
which we've never seen before"
The Games Machine

1965 JUNE

Monday We were glad to be going home -
seven survivors all looking forward to
a real cup of coffee, a piece of mom's
apple pie, and then it happened - our
chopper took a little over the top and
crash landed - I Love Lucy again!
Tuesday We've been foot-slogging a gam
but it's slow, dangerous and well flat trail
by impenetrable bush. I know Charlie
knows we're here - maybe we can surprise
him, maybe not - that's just one thing
that helps our squad - I gotta figure out
psycho in my squad - I gotta figure out
if it is before the movie factor
becomes our worst enemy



ocean



AMIGA
ATARI ST

Pdom PD Atari Public Domain and Shareware Software

Application Disks

- **A87** - Electronic Bank Statement the excellent accounts package from Budgie UK.
- **A96** - DOUBLE SIDED DISK. Sheet v2.0. powerful all features spreadsheet, includes documentation and tutorial.
- **A121** - POOLS - Expert Results Predictor v2.3.
- **W5** - Micro-Emacs editor V3.925 full screen editor.
- **W13** - DOUBLE SIDED DISK. STWriter Elite V3.0. English, German and

Spanish versions. Includes document files etc.

- **MP21** - 6 DOUBLE SIDED DISKS. TEX the document processor and typesetting system. TEX is not a wordprocessor, you will need a text editor such as Micro EMACS (disk W5). Requires 1Mb RAM and comes on 6 double sided disks with a Mega Pack price of £15.00!
- **A125** - DOUBLE SIDED DISK. REQUIRES 1MB. Opus V2.10 of the spreadsheet and charting program. Requires GDOS which is not PD.
- **A138** - Double Sentry V0.00 the accounting program by Graham R Hutcheon.

Utility Disks

- **A40** - Hard Disk disk 1: Directory counter, Gem Soft a 40 folder fix, Hard Auto, SBackup, Turtle backup v3.01 and UNTurtle restore v1.1.
- **A52** - Hard Disk disk 2: FolderXXX allows you to specify upto 999 folders - a 40 folders fix, an excellent directory lister, Hard Disk Install, Hard Disk Auto boot, and other HD utilities.
- **A41** - Monochrome emulator version 5. Run monochrome programs on a colour monitor.
- **A88** - Double Click Format v3.03 THE ST disk formatter and copier. Can format Spectre 128 disks and place MSDOS boot sector.
- **A90** - Superboot v5.5 THE ST Boot program - choose: desktop accessories, AUTO programs to run, DESKTOP.INF, GDOS ASSIGN.SYS, display a welcome screen, date/time setter, inforce a password on booting and loads more including even stopping Super Boot from running with a 'key hold' includes a 50K document file, excellent.
- **A97** - Sticker III. THE disk label program full GEM includes dozens of icon graphics that can be included in label. Monochrome monitor required.

- **A109** - The Quick disk of utilities.
- **A124** - ARCHiver: ARC V5.21b, ARCSHELL V2.0 and V2.05 and a utility to switch back and forth between LHARC and ARC.
- **STW41** - FSelect v3.89, ICone.Acc and ACACHE. As featured in Issue 41 of STWorld.
- **A128** - Recover is a program that copies any number of specified sectors on a disk to a named file on another disk.
- **A134** - Boot Drive Select allows you to select a drive to boot from when you reset your ST. GrafTool and Chart Maker are 2 chart makers.
- **DA9** - DOSACC V2.8 the desktop accessory that basically it displays just about everything the user needs to know, and allows the setting of most ST and printer configurations.
- **A157** - Custom Formattor by Stuart Coates allows you to enter the capacity required and it will calculate the tracks and sectors etc. required to format; will also test which track your A drive goes upto. BSS: Boot Sector Storage by Stuart Coates allows you to store many boot sectors in a database on 1 disk.

Graphics Disks

- **GR3** - MASTER Painter - excellent fully featured graphics program works in ALL resolutions.
- **GR17** - Picture converters. Print Master/Degas converter, NEO/Degas/Tiny/IFF/SPEC512 to NEO/Degas/IFF converter. IMG/AIM converter IMG/AIM to Postscript, Mac GIF stripper, Spectrum 512 SPC/.SPU to GIF

converter and Spectrum 512 SPC, SPS and SPU slide show.

- **GR20** - .IMG utilities. Convert2IMG V0.9 converts any Degas format, Tiny, NEOchrome, MACPaint, Spectrum compressed and uncompressed to a monochrome .IMG format.IMG Quick View an .IMG file Viewer. The .IMG slide show V1.1 and IMGCAT V1.0 the .IMG catalogue and printer.
- **GR21** - ANI ST formerly Aegis Animator for £80.00 now PD as ANI ST!

Demo Disks

- **D144** - The official Atari STE demo! Only works on an STE, uses all the features of the new machine!
- **D151** - The Batman Remix.
- **D149** - The Dclerious mega mega demo from France. Excellent 2 disk demo. Requires 1MB RAM and disk D150.

- **D149** - see **D150** for details.
- **D122** - DOUBLE SIDED DISK. NOT STE. The Union demo! It requires a colour screen and a joystick.
- **D123** - DOUBLE SIDED DISK. Snow Man demo. Requires colour screen, and 1Mb RAM.
- **D125** - DOUBLE SIDED DISK. NOT STE. The CareBears Cuddly demos. The CareBears did some demos on the Mega Union demo. Here they have created the best demos on the 'ST' to date! Requires colour screen.

Game Disks

Budgie UK P.D. Licenseware games:

- **G17** - Damonoid - arcade.
- **G18** - Football - speculation game.
- **G19** - Blitz III - arcade.
- **G20** - Othello - board game.
- **G33** - Doctor Boris and Puzzler - TNT.
- **G36** - Tycoon - Adventure/simulation.
- **G38** - MoneySpinner - slot machine.
- **G39** - Ace Invaders - arcade.
- **G40** - Zenith - arcade.
- **G41** - Maelstrom - arcade.

- **G42** - Speculator - simulation.
- **G45** - Zephod and Gold Rush - labyrinth.
- **G54** - Line of Four - connect.
- **G55** - Word Puzzle generator.
- **G56** - Make a Break - Quizz.
- **G57** - Parabellum - platform.
- **G58** - Tri-heli - Arcade.
- **G59** - Perils of Penfold - Arcade.
- **G60** - Operation Angelica - Battle.
- **G64** - Bandit - One armed bandit.
- **G65** - Impulse - shoot 'em up.
- **G66** - Carrier Attack - Battleships type.
- **G68** - Slippery Sid.

- **G69** - Psycotic - Shoot 'Em Up.
- **G70** - Space Blob - Platform type.
- **G71** - Scary - Platform type.
- **G72** - Death Camp - graphic adventure
- **G73** - A Quest for Galaxia - Shoot 'em up.
- **G74** - Sub Hunt and Sea Fisherman - Battleships and a shoot 'em up.
- **G75** - Inferno.

NOTE: Only **G20** and **G18** work in colour and monochrome. All the other Budgie games are colour only. We always have the latest Budgie games as soon as they are released. All now work on STE.

Miscellaneous Disks

- **L13** and **L14** Modula 2 development system V1.0 from Ana systems. Requires minimum 520ST with 2 drives OR a 1040ST. This is a 2 disk set. Both disks are needed.
- **L15** - DOUBLE SIDED DISK. Sozobon C Compiler. A complete K&R implementation of the C language.

This disk is **NOT** for the beginner as it is poorly documented, but it is still an excellent disk.

- **M15** - The COSH 16 Voice MIDI Sequencer. A fully working MIDI sequencer by Henry Cosh. Fully featured this is the program you want if you are using MIDI equipment.



Most of the disks in this advert actually contain more files than is listed. The ad also only shows a small portion of our catalogue so for details of the service and a free copy of the 56 page bumper catalogue send a Stamped S.A.E. (If you are ordering you will get the latest catalogue). Disk Prices: 1 to 5 disks are 3.00 each, 6 to 10 disks are £2.75 each and 11 or more disks are only £2.50 each!

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■ **BATLEMASTER (PSS - Mirrorsoft):** dwarves, elves, orcs and indeed humans are eagerly anticipating the arrival of this stirring combination of arcade style graphics, strategy and fantasy roleplay. The plot? Er, each race guards part of a gem which must be made whole again - clearly no advance in the narrative department. Still, if PSS' past achievements such as *Waterloo* are anything to go by, this could prove hobbit forming (sorry)



■ **BACK TO THE FUTURE II (Image-works):** judging by the cost of acquiring such a film licence, this had better be a success - *BTF III* has already been signed up, and they're still shooting the film! Expect plenty of time travel, skateboarding and a suitably monstrous Bif. Spare a thought for the programmers on film licences such as this, who have to develop a game from a standing start and finish it fast - or else!



■ **WORLD SOCCER (Microprose):** another soccer sim whose well-timed arrival coincides with the heady rush of football fervour guaranteed to be emanating from Italy this summer. You control one player at a time and interact with the computer-controlled members of your team. Viewed in 3D perspective, with solid-filled polygons used for the pitch and stadium, the game is reputed to be fast-playing, realistic and action-packed - which contradicts just about everything we've seen in the last three World Cups

PREVIEW EXPECT

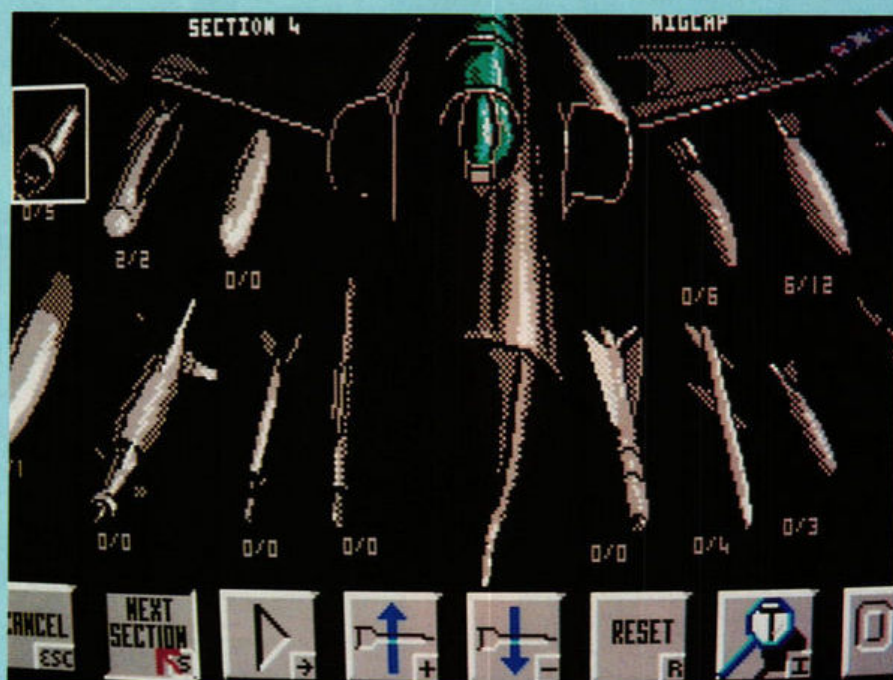
*Take a look at the spanking new software that's just about to hit the game shelves. From Microprose's elemental *Fire and Brimstone* to Spectrum Holobyte's war-hungry *Flight of the Intruder*, the future is full of games guaranteed to quicken your pulse*



FIRE AND BRIMSTONE (Microprose)

■ Sounding suspiciously like a tub thumping hell 'n' damnation sermon, this is in fact a mythical Nordic quest to douse the satanic flames of the underworld. Having drawn the short straw Thor is chosen by the other Gods to stop the forces of evil permeating into the world. Avoiding traps, pitfalls, and nasty monsters you go, according to Microprose, "to the depths of depravity" in your bid to be the number one moral fireman

S: GREAT ACTIONS



FLIGHT OF THE INTRUDER (Spectrum Holobyte)

■ While the rest of America continues to wallow in guilty retrospection over Vietnam, Spectrum Holobyte present the successor to *Falcon*, an entertainment set during the 1972 Linebacker campaign over North Vietnam. The film, featuring Sean "Poison" Penn, is coming soon



Their Finest Hour: THE BATTLE OF BRITAIN (Lucasfilm)

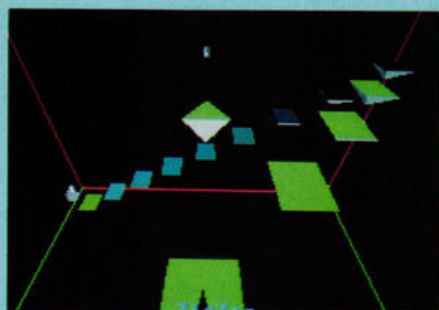
■ (left) Remember all those morale building 1940s matinee movies? The stiff upper lipped brave young men of England dogfighting over La Manche with the nasty Hun while their girlfriends had brief encounters with Trevor Howard in dismal railway stations. Boasting photographic realism and a cacophony of sound, *Battle of Britain* combines historical accuracy and technical wizardry to take you back to those gritty days, recreating the life or death intensity of aerial combat. Aiming to please flight sim buffs and trigger fiends alike, the game encourages you to don your flying jacket, pull on your goggles, hit the throttle and grab yourself a few fine hours at the Luftwaffe's expense



■ **DRAGON FLIGHT (Grandslam):** if searching for dragons and fighting off armies of living skeletons is your idea of fun this could be just what the doctor ordered. Claimed to be three years in development, and apparently glowing with the effort put into it, *Dragon Flight* involves (stop me if you've heard this one before) solving puzzles, fighting monsters, visiting dungeons and concocting potions

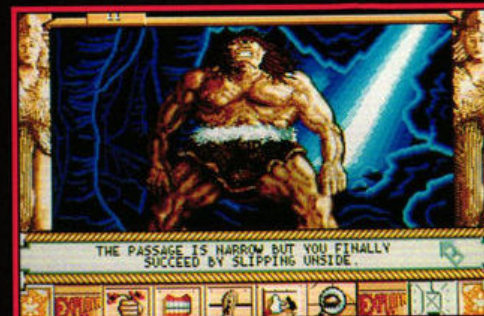


■ (PC shot) **THUNDERSTRIKE (Millennium):** due for ST release in June, *Thunderstrike* (once upon a time titled *Defender of the Ground*) is already shaping up to be one of the fastest and smoothest fully light-source shaded 3D solid polyhedron combat arcade action games ever seen. The breakneck action is tracked by a camera following close on the tail of the player's craft, flying along a trench or hugging the undulating contours of the ground. The project is in the very capable hands of three ex-Teque programmers who previously worked on *Blasteroids*, *Continental Circus* and *Chase HQ*



■ **ALPHA WAVE (Infogrames):** using a dream-like 3D environment reminiscent of *Interphase*, Infogrames latest release is a hypnotic slow-motion and visually disorientating test of steering skills. Guide a bouncing object over levitating stepping stones to reach the distant doorway and escape from inside the cube. A mindwarping visual experience that's guaranteed to leave you bug-eyed, entranced and having nostalgic dreams about your trusty old Spacehopper

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Screen Shots from the Amiga version AMIGA/ATARI ST £29.99 PC £39.99

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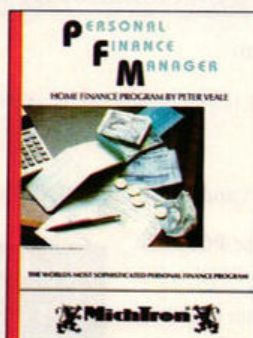


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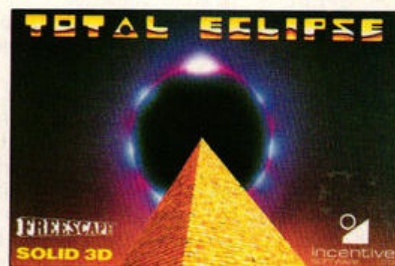
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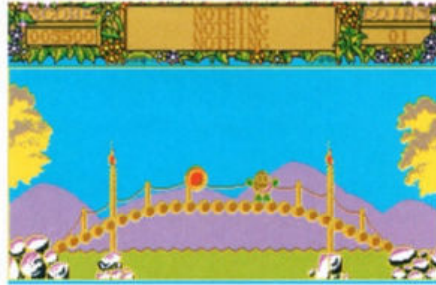
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Another gargantuan grab-bag of ingenious cheats gathered together for the delectation of skulking ST sneaks

gamebusters



TREASURE ISLAND DIZZY

This month we have a dozen dirty sneaks starting with **John Lee Barker** of Nottinghamshire who has repelled all boarders playing *Treasure Island Dizzy* and presents the definitive guide.

- Empty chest – drop this at the wall one room to the left
- Bag of coins – give this to the boatman at the store for a piece of the boat
- Magic stone – drop this at the foot of the totem pole to teleport to the top of it
- Rubber snorkel – use this to go under water
- Heavy weight – attach this to the hook in the Snoggle's tree house to lower a branch
- Remote detonator – stand behind the small hump in the room with the bag of gold coins and use it
- Gravedigger's spade – use this on the gravestone which is on the second island to make a hole
- Pogo stick – to get it, you must jump right from the edge of the platform which the Gravedigger's spade is on. Now take it underwater to the saltwater crowbar and stand in front of the scroll next to it
- Saltwater crowbar – drop this on the wobbly stone one screen to the right of where you found it
- Fireproof suit – protects you from the flames in Smuggler's cave and the lights on the bridge
- Axe – drop this in the middle of the bridge for the middle section to fall into the water (you must be wearing the snorkel when you do this otherwise you'll die)
- Bible – protects you from lightning which appears when you get Hookjaw's treasure and walk past his gravestone
- Dehydrated boat – drop it off at the pier to make it into a full size boat
- Outboard motor – drop it onto the boat
- Can of petrol – drop it onto the boat
- Ignition key – drop it onto the boat and start the boat up

- Brass key – drop it on the trapdoor inside Smuggler's cave to open the door
- Hookjaw's treasure – give it to the man at the store to buy a piece of the boat
- Dynamite – drop it at the wall in the room with the bag of coins
- Vintage wine – give it to the man at the store to buy a piece of the boat
- Solid gold egg – give it to the man at the store to buy a piece of the boat
- Flippers – allows you to swim anywhere in water so you can swim up from the air pocket after collecting the coin at the bottom.

GHOULS 'N' GHOSTS

Worried that those ethereal spooks having been getting the better of you lately? Well, **Andrew Armstrong** has sent in some sterling tips for US Gold's *Ghouls 'n' Ghosts*.

Weapons

- | | |
|-----------------|--|
| Darts | good |
| Axe | hopeless |
| Blue Flame | not very good, you can't use long range shots |
| Spears | good |
| Ninja stars | good |
| Lightning balls | good |
| Flaming thing | OK, but doesn't kill much (it's too near you, to do much damage) |

Level 1

Leave the first box as you get turned into a duck. Fire upwards at the vulture and you kill it without being touched. Tap on the following box for a reward. Jump over the tombstone and keep running or you get hit by vultures. Pass through the guillotine and run across the

■ In a dizzy playing *Treasure Island*? Relax and read our super sneaks to find out exactly what you should be doing with that pogo stick and rubber snorkel!

bridge. Avoid and shoot the bats. Go on top of the metal platform so the orange exploding blobs are out of sight. Run to the ladder to avoid the pig-man. As soon as the men come into sight, fire at them.

Level 2

Kill tortoises and avoid the bouncing shells. Jump onto the bridge, take two jumps onto the second bridge and if you fall, keep jumping forwards. Avoid the fire balls and kill the red and white bird. Kill the snakes and tap on the box to receive a prize. Fire repeatedly at the monster. He jumps over you but shouldn't touch you.

Level 3

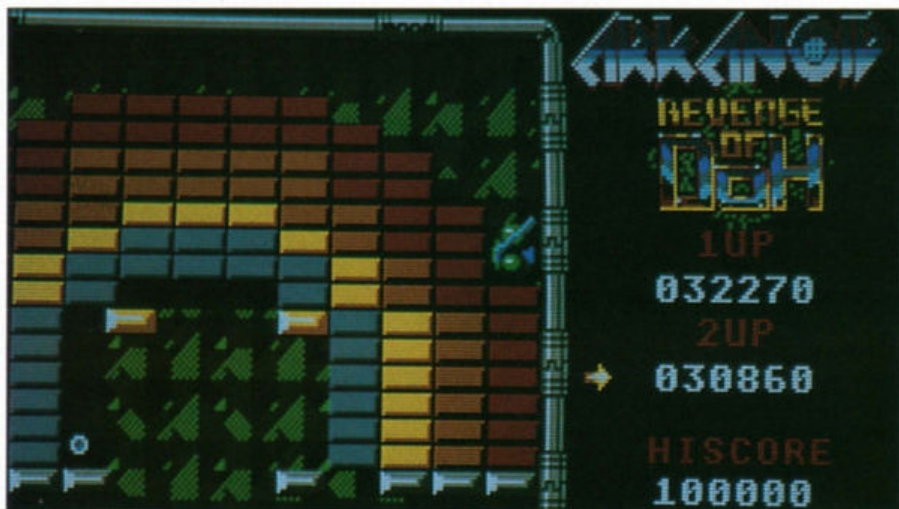
Don't get caught under the moving floor. Shoot the flying things and the knights hanging from the ceiling. Pass between the two platforms and kill the second knight. Go onto the steps and wait for a tongue to come from the right. Jump on it and move along. When you're above a blue platform drop onto it avoiding the flying things. Continue using the tongues and platforms until you reach the grass. When the cloud appears, shoot it in the eye repeatedly to kill it and you'll be given the key to the next level.



■ *Ghouls 'n' Ghosts* can have you jumping up and down with frustration

Level 4

Don't go down the ladders. Jump over the warm things that pop up. Drop onto the slime and slide. Shoot the hand and kill the monster. Once off the slime, you're on a lift that looks like a dead flower head. Go to the left, until you're level with the lift which moves down rapidly. Don't stay on it too long or you'll be killed. Kill the green caterpillars and the blue and yellow blobs.



■ Everlasting life available in *Arkanoid: Revenge of Doh* with a simple gamebusters tip

Level 5

This level is similar to the first. Kill the red and white bird, go up the ladder and jump the gap. Rise up the platforms and ladders. Let the man fall down the gap in front of you. Kill the man above you. Move under the heads that fire at you. Stay out of range of the last man. Face the fly and fire at it repeatedly to kill it.

Get between Lucifer's legs so as not to get hit by his rays, then fire up lots of times to kill him. You're be rewarded with a message informing you that you've completed the game.

CARRIER COMMAND

Lee Bridle is a busy little sneak. Burrowing away into the inner recesses of a variety of popular games, he's managed to come up with a collection of tips that will put a smile on the faces of many frustrated gamers. Let it rip, Lee... Here are some cheats for *Carrier Command*, *Better Dead Than Alien*, *Impact* and *Arkanoid: Revenge of Doh*.

In *Carrier Command*, start the game as normal then go into pause mode. Type in "grow old along with me." The message "cheat mode active" is displayed on the screen. You can then use the numeric keypad to select the following options:

- key 6: shows the colour palette used
- key 7: advances the carrier when held down and freezes the display
- key 8: strange numbers are printed at the top of the screen
- key +: protects the Manta And Walrus from missiles and collisions
- key -: deactivates Manta and Walrus protection

HARD DRIVIN'

Are you a *Hard Drivin'* speed freak whose tyres persist in leaving the road? Tony Skinner of Newbury, Berkshire, has a neat little tip to keep you firmly on the track.

If you move the cursor to the manual gear box at the start, then on the starting grid put the car in gear and pull away, when you get to the desired speed of travel press the N key to put the gear box into neutral. You continue to move at the same speed but you won't skid no matter how hard you try. You can also slow down and speed up with the accelerator, so you can still negotiate the stunt track. This option also ensures that you never run out of time making the game a lot easier. The best time to press N is when you're going downhill.

ARKANOID: REVENGE OF DOH

When you've lost all your lives in *Arkanoid: Revenge of Doh* and returned to the title screen, hit caps lock and type "valey 88." This provides a handy continue play feature. Now when you start a new game you're returned to the screen on which you died. Repeat as necessary.

BETTER DEAD THAN ALIEN

Here are all the passwords for *Better Dead Than Alien*: elektra, syzygy, drambuie, plug, soprano, mayonnaise, faucet, woomera, narcissus, debutante, firkin, acoustic, triptych, jabberwocky, whimsical, cornucopia, punjabi, tiddly pom, kewpie doll, grammarian, crossworld and quarantine.

IMPACT

Stuck on low levels of *Impact*? Here are the passwords to higher levels:

level	password	level	password
1	gold	2	fish
3	wall	4	plus
5	head	6	fork
7	road	8	user

■ Look out for the all-new, enhanced, improved, upgraded packed three page *Gamebusters* coming soon to *ST FORMAT!*

TURBO OUTRUN

Lost the race in *Turbo Outrun*? Type in these cheats from C. Margrove of Milton Keynes for extra time and credits.

To activate the cheat mode type WEAR-APEEPEL after the countdown. You can then press these keys for extras:

- T extra time
- N next stage (use with the 1-9 keys)
- D refresh turbo
- G remove credit
- F see the finish of the game
- B begin again, keeping the same score



■ If *Turbo Outrun* gets too hairy, use the cheat modes now you know them

DOUBLE DRAGON

How about infinite credits while playing *Double Dragon*? When the game has loaded and is prompting you to press 1 or 2 to start, hold down both mouse keys and press the Esc key. Keep pressing Esc and the credits display will go wonky and you'll have infinite credits. Well done, David Paterson of Hamilton, Scotland.

ROBOCOP

Has *Robocop* got you beat? Here's a neat little cheat to bring you infinite energy. Simply pause the game and type BEST KEPT SECRET. Then restart the game.



■ Infinite energy available in *Robocop*

DEFENDER OF THE CROWN

If the crown is being defended just a little too vigilantly in Mirrosoft's *Defender of the Crown*, try holding down the K key on the title screen until the game has loaded. You'll now have a battalion of 2048 soldiers.

EMPIRE STRIKES BACK

If you want to see something stunning in *Empire Strikes Back*, hold down the Help key and type XIMARGROTKEV. Now press ILC and you're rewarded with amazing special effects.

Thanks to Matthew Stapley of Kent for that trio of tricks.

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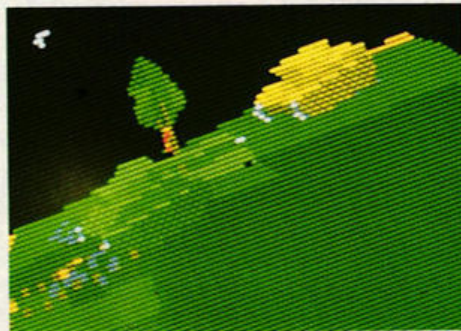


*What makes games such as **Dungeon Master**, **Falcon** and **Populous** so riveting? And why will **Batman**, for all its technical skill, never be a classic? Mark Higham reveals all in the...*

attack of the killer games



■ **A real killer: *Conqueror*** (right) isn't just a tank simulator - it fuses action and strategy in an exciting tank scenario. The game has a non-standard playing environment created by David Braben - renowned for releases such as *Virus* (middle) and *Elite* (far right). It requires few disk accesses and is particularly responsive. Top this with great long-term interest and you've got your hands on an all-time classic





It's late at night and you know you should be asleep but you just have to have one more shot at teaching those aliens a lesson. You've got sweaty palms, dangerously high blood pressure, blisters on your trigger finger and you're hooked on a game that won't let go. Just what is it that makes a great game this great?

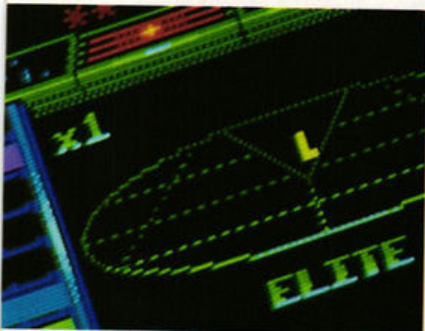
Cast an eye over the acknowledged classics and with the blessing of hindsight a pattern can be discerned. *Dungeon Master* was the first big adventure, *Falcon* marked the start of a new type of realistic flight sim and *Arkanoid* was the bat and ball game that had been waiting to happen.

Being the first was at least part of the reason they became ST legends. Peter Molyneux of Bullfrog, the team that wrote *Populous*, reckons that for a game to be great

it must have some element of originality: "They say all games can be traced back to four typical game styles, but even the common shoot-'em-up must have something new to it."

If anyone knew what makes a great game great they'd be mass producing software that fitted the criteria. Indeed, part of the answer is that a great game fits no formula and needs to have that spark of originality that makes its success an entirely unexpected pleasure.

There's something impalpable about the mystery ingredient, but you know when you've found it, because a game screams out to be played again and again. No ST game has achieved this more than the legendary *Dungeon Master* which, according to Mirrorsoft, has sold an extraordinary 60,000 copies to date on the ST alone – a record for adventures. The results of our questionnaire indicate that *Dungeon* ➤

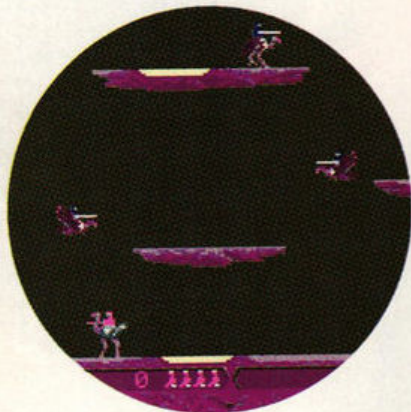


KILLER games

Master is still one of the best games you've played – and that's despite many challenging follow-ups.

Killer games go all the way back to the arcades, to the days of *Space Invaders*, *Galaxian*, *Asteroids*, *Pacman* and *Defender*. When coin-op fever hit the arcades in 1978, newspapers around the world carried hysterical stories of how those fiendish aliens were corrupting the morals of youths. On the 13th November 1981, to take but one example, a London paper reported that a 14 year old schoolboy had turned to prostitution to support his *Space Invaders* habit. The youngster explained that he sold sex in a car park for £2 – the price of ten games of *Space Invaders*.

The headlines may have died down, but the addiction alarm bell is still ringing. Two months ago BBC television ran a scaremongering programme in its QED series about child computer addiction. The reality is less dramatic, but there's no doubt that some games just won't let go.



■ Early ST software concentrated exclusively on gameplay and ignored much of the machine's potential. *Joust*, one of the first ST games, was enormously addictive – but the graphics were laughable

"They are great," said Sam Johnson of great men, "because their associates are little." And perhaps we only rave about games such as *Populous* because it stands out from a mediocre crowd. Of all the games from yesteryear, only a handful could be considered classics. It's extraordinary that games such as *Space Invaders* still exercise their fascination over games players. Not only are there PD versions still doing well years after the arcade machine died, but Digita International are actually selling a version at £15 and Impressions have just released *Renaissance*, a compilation of four ancient arcade hits – *Invaders*, *Draxion*, *Asteroids* and *Centipede*.

Whatever those primitive games had, they've still got. Despite laughably poor graphics and sound, ST games players are reaching past the latest shoot-'em-up and the hottest film licence to grab games arcade bosses were giving away when Kylie was still in nappies.

To discover the magic ingredients which make a great game, we have to take a giant leap back to the days when coin-ops started dominating the arcades. The games gobbled up

10p coins (and that's when two bob was two bob) as if eating metal was a new fashion craze. As a result, it was crucial that games should be instantly playable and at the same time have some kind of incentive to keep players returning with their bulging piggy banks. The credit system employed in ST coin-op conversions such as *R-Type* and *Rainbow Islands* is a hangover from those arcade days.

The parent of this new sensation sweeping the nation was a black box bearing the highly appropriate title of *Space Invaders*. Even though the game itself, with its predictable attacks and its wrist-wrecking controls, looked to be no great shakes, somehow it just demanded to be played – and people the world over obliged. The shoot-'em-up had been born. It hadn't yet been categorised but *Space Invaders* harboured all the elements which typify the genre: it was fast enough and skillful enough in a moronic kind of way to demand intense and constant attention.

Other one-offs have managed to appeal to the same kind of audience, particularly

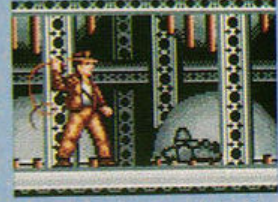
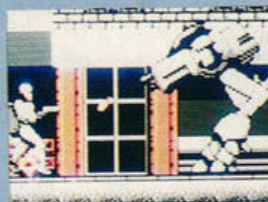
"A London paper reported that a 14 year old schoolboy had turned to prostitution to support his *Space Invaders* habit"

Mirrorsoft's *Tetris* which involved controlling falling squares and attempting to line them up. Little wonder that teenagers who discovered the arcades went so completely ape over the game that they spent every spare moment feeding cash into the slot. Those that really took the colourless space fiends to heart wasted hours, missed school, stole money and even (supposedly) sold their bodies for sex in car parks in a bid to push their name into the high score table.

Atari's early *Pong* machine, a simple bat and ball tennis game, first hit the market in the 70s. For all its ineptitude, the bat and ball theme never died. As machines grew more capable, those early tennis games were continually re-developed until Taito released the

■ The birth of an era. Released in 1972, this prototype of *Computer Space* was the first arcade game ever

A LICENCE TO THRILL?



■ Movie licences were big bucks in 1989. *Robocop*, *Batman* and *The Last Crusade* were just some of the big titles to move from the silver screen to your ST

The ST is the ideal machine for converting arcade and movie licences into brilliant games, yet only a handful of conversions have fully exploited the ST's capabilities. US Gold's *Strider* was the last game to go to town with astonishing graphics and speed, but it's one of a very small minority.

Software such as *Robocop* just doesn't wash as a playable computer game and its success has gone a long way towards keeping afloat the philosophy that software houses can spend a fortune on licences and nothing on programming.

Ocean's Gary Bracey insists, "*Batman* wasn't just a licence. Companies have a tendency to release an OK game and then depend on the strength of the licence. When we did *Batman* we wanted to enhance the licence." Ocean's view is that movie licences are really original games and that the interpretation of the licence is vital to a good game, but games such as *Batman* and *The Untouchables* were simply cocktails of game types combined in a single game. Such a

formula might be playable and addictive in the short-term but it doesn't make a long-term classic. With the licences for *Robocop II* and *Knight Breed* under their belt, we'll have to wait and see what "interpretations" Ocean can come up with.

By contrast, other companies are increasingly suspicious of the big licence scenario. "16-bit machines will always be good for arcade conversions because of their graphics and sound," explained US Gold's Danielle Woodyatt, "but it's original games which people want to see from us now. They're more in-depth and sophisticated."

The immediate reply to this debate is to note that no killer game has ever sprung from a film licence. There is nothing inherently flawed about film conversions, but games released simultaneously with films tend to be programmed at breakneck

speed. And if a software house spends a medium sized fortune obtaining the licence, you can be sure they'll be cutting costs in the programming and design processes.



"Companies tend to release an OK game and then depend on the strength of the licence"

– Gary Bracey, Ocean

coin-op version of *Breakout* in 1974. Then, all of 14 years later, with the ST already up and running, *Arkanoid* hit the home computer. The objective of *Breakout* had been to knock down a brick wall using the traditional bat and ball, but computer entertainment was changing fast and it never had the long-term appeal to last. When it was revitalised with falling bonuses and changing screens and adopted the new name of *Arkanoid*, it was suddenly launched to megastardom.

In the wake of these short-lived bursts of entertainment, programmers came to the conclusion that players wanted to see constantly striking visuals and to feel the ST was being pushed to its limit. Programmers therefore tended to sacrifice gameplay for special effects. A game needed enough instant appeal to justify spending the £20 cover price, but after that no-one cared if you spent six days or six months splattering aliens across the universe. When you're paying £20 for a game you certainly don't want it to look prehistoric. The old 8-bit machines might have taught us what great gameplay is, but they could never teach us anything about graphics. Now that we know the ST is capable of top-quality effects, we want to see them coupled with – not instead of – great gameplay.

Software companies have learnt much from the film industry. Last year saw the biggest upsurge in film licences ever, with ST versions of *Robocop*, *Moonwalker*, *The Untouchables*, *Indiana Jones*, *Beverly Hills Cop* and *Batman*. Film companies themselves are crossing into the games market: Buena Vista, the Disney division, produces 16-bit computer games in America, and Lucasfilm have established an enormous reputation for themselves with *Zak McKracken* and the *Indy* games. Here in the UK, Palace films are behind Palace, made famous by such releases as *Barbarian* and *Future Wars*.

The film industry is doing much to inspire exciting visuals, but is it bringing us decent games? A game can't be written by a schoolkid in his bedroom any more. Now project managers, graphics teams, sound experts and separate programmers have to be involved.


Don Bluth, for example, comes from a background of Disney animation. Refusing to accept the limitations of computers, he and his

IT CAN BE DONE!


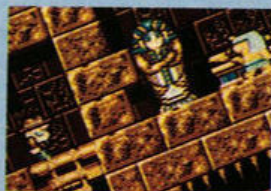

In 1954 Dr Roger Bannister achieved the supposedly impossible and broke the four minute mile. People had been saying for years that it couldn't be done, but within five years more than 300 men had gone on to do what had once been considered madness to attempt.

It's the same in software. On 31st August 1989, Psygnosis released *Blood Money* and Wayne Smithson rewrote the rule book by proving that the ST could handle fast-paced horizontal-scrolling as well as massive amounts of on-screen animation. Already that game has been followed by *Strider* and *Rick Dangerous*, showing that yesterday's state-of-the-art is ('scuse metaphors) today's run of the mill.

It's fair to say that we're just emerging from a period where poor conversions and hackneyed game styles flooded the market. Games such as Delphine's *Bio Challenge*, Psygnosis' *Menace*, Activision's *R-Type* and US Gold's *Thunderblade* looked good at the time but lacked those special ingredients that give a game lasting power. They're probably propping up your monitor right now, but at the time they fooled us all, parting us from our dosh and offering precious little in return. There's little chance we'll be fooled so easily in the future.



"Blood Money proved that the ST could handle fast-paced horizontal-scrolling as well as massive amounts of on-screen animation"

■ In 1989 Blood Money proved the ST could handle fast horizontal-scrolling. Within months Strider (above left), Rick Dangerous (centre) and P-47 (right) followed and horizontal-scrolling was a problem of the past

artists designed and animated 22 minutes of animation for *Dragon's Lair* in 1983, eventually releasing the first animated interactive laser disk game. This was followed a year later by *Space Ace*, featuring 25 minutes of animation. The ST conversion of *Dragon's Lair* is set to appear soon and *Space Ace* is already here, proving that if you animate well, there are no limits to the ST's talents.

Examine the Don Bluth story and you begin to get the impression that 16-bit games are about much more than just programming. Games now fuse three different skills – music, graphics and programming with three different teams often employed on a game's design.

As a result, games have lost much of their unity and direction. The graphics team struggle

to make the best visuals, the sound team try to create top-quality sound and the programmer attempts to tie it all together with decent code. Just about every ST game is now programmed in this way, but does it work? It certainly didn't in *Moonwalker*. The intro screens featured some incredible animation and the sound effects were some of the best heard on an ST. But the game itself was mediocre.

With such little emphasis placed on good gameplay it's hardly surprising that much of today's software might be technically wonderful but just doesn't have those addictive elements found in games such as *Oids* or *Pacmania*. Just as the film industry has replaced plot with spectacle, so the games industry has gone down the same road.



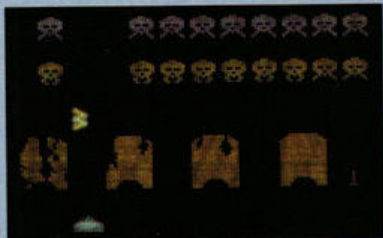
■ Recapturing the past: PD clones (top) of *Arkanoid (Orbit)*, *Pacman (Spooks)* and *Blaster (Defender)*. Below are the commercial versions *Arkanoid II*, *Pacmania* and *Anarchy*. (PD versions available from the South West Software Library, PO Box 562, Wimborne, Dorset; commercial versions £20 plus from all good computer stores)

SUREFIRE SEQUELS

Once a game has secured long-term success, you can be sure that follow-ups are hot on its tail. They won't make a poor game great but data disks have done much to keep a good game going. *Populous* benefitted enormously when *The Promised Lands* was released. *Dungeon Master* was followed last year by the *Chaos Strikes Back* data disk and *Kick Off – Extra Time* has expanded the classic football sim.

In the racing stakes, Domark have lined up a top class course designer to supplement *Hard Drivin'* with a data disk planned for release in the summer. Delphine are planning more games using the same *Future Wars* environment, the first of which is *Operation Stealth*. If a game's great, you certainly won't be allowed to forget it!

THE RISE AND FALL OF THE VERTICAL SHOOT-'EM-UP



■ *Space Invaders* inspired the shoot-'em-up and turned kids to crime as far back as the late '70s



■ *Goldrunner*: vertical-scrolling games were still achieving classic status in 1987



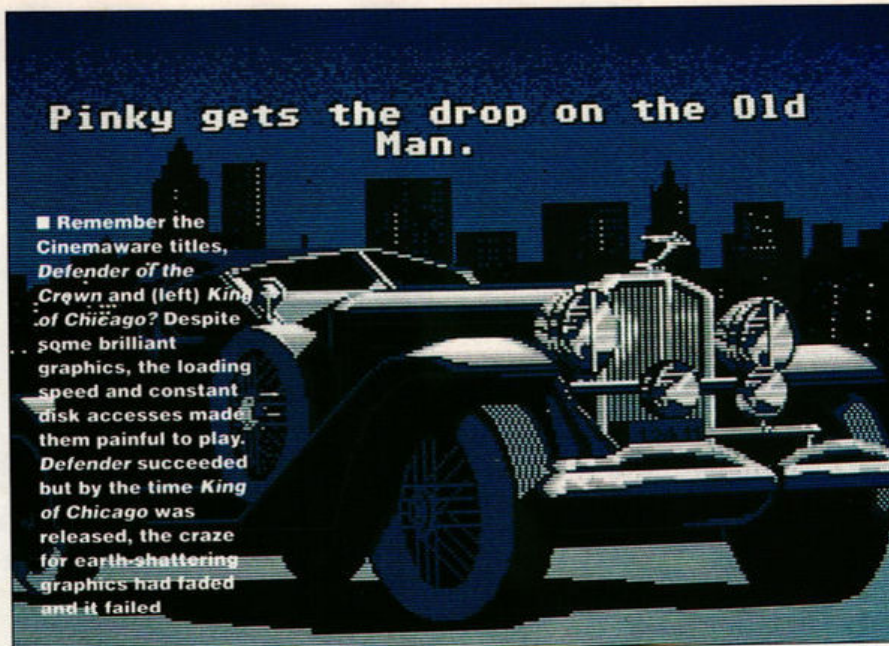
■ *Better Dead Than Alien*: the human face of suffering. The vertical-scroller goes comic in 1988



■ *SEUCK*: in 1989 everyone could be a programmer. It's official: vertical-scrolling shoot-'em-ups are easy



■ *Xenon II*: the death of the vertical-scrolling shoot-'em-up. The Bitmaps milked what credibility remained



➤ **Speed is now** recognised as being one of the most important elements in a good game. No-one is prepared to tolerate constant disk accesses and the worst sin of all is slow scrolling or poorly animated sprites. Often, one of the easiest ways to tell a bad game is by the speed at which it loads. If you've enough time to design your own shoot-'em-up before the game has loaded, it's destined to end up as a data disk for *Dungeon Master*.

It wasn't until last year that Sales Curve came up with the ultimate solution. They were the team behind *Ninja Warriors* and *Silkworm*

"There's no need to invest a fortune creating a great original game when hackneyed old bunkum can be whacked on the market in a jiffy and, with the necessary hype, make the same commercial impact"

and their philosophy was not to banish disk accesses but to hide them. In the case of *Silkworm*, the next level was loaded into memory while the score revolved for the last. *Ninja Warriors* went much further by loading character sprites from disk during the actual game. As you come up against enemies, extra ones are loaded from disk and you don't fall victim to delays. The advantage is that because fewer sprites are held in memory at one time, more use can be made of the free memory. As a result the levels look spectacularly exciting and this was enough to make *Ninja Warriors* a hit, even though the game followed the traditional beat-'em-up formula. The enormous variety of sprites rescued it from being just another boring *Double Dragon* or *Shinobi* clone.

As Bullfrog's Peter Molyneux admits, "originality is essential to great games." It's lack of originality which will prevent *Batman* from entering the gaming history books. Although the game is fun to play and the levels are really four games in one, there is nothing about it which could be considered original. The four levels were written by two programmers and comprise of platform sections and a car game

– assuring you that considerable programming talent went into the game – but without originality, it won't stand the test of time, its chart success notwithstanding.

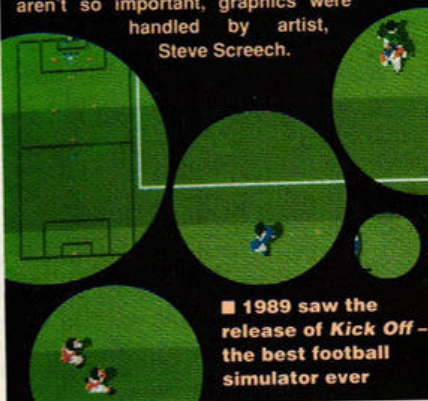
Let's face it, commercial software houses are in business to produce commercially successful games. *Robocop* has been top of the ST games chart for what seems like forever, but not even Ocean would call it a work of genius.

Artistic flair, say the cynics, comes a poor second to marketing strategy. Why invest lots of effort and cash creating a great original game, when hackneyed old bunkum can be whacked on the market in a jiffy and, with the necessary hype, make the same commercial impact?

KICK START

Kick Off's sprites are tiny and its sound effects meagre, yet it managed to scoop the award for best arcade game at the 1989 Indian awards. As Anco's boss Anil Gupta explains, "We think it owes its success to gameplay. It's the first time the ball wasn't glued to the player's foot." Unlike many football games, the proportions between the players and the size of the pitch are accurate. This means the playing sprites are small, but the game plays fast and realistically conjures up the atmosphere of a football match.

Dino Dini was responsible for programming the game and even here, where visuals aren't so important, graphics were handled by artist, Steve Screech.



■ 1989 saw the release of *Kick Off* – the best football simulator ever

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Saturday 10.30
Saturday 11.30, Sunday 15.30
Saturday 12.30, Sunday 11.30
Saturday 13.30, Sunday 14.30
Saturday 14.00, Sunday 12.30
Saturday 15.30, Sunday 13.30
Saturday 16.30, Sunday 10.30

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New - another one you've been asking for!

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Other games new to the ST

- Traffic Control: Birmingham 1984 - a real challenge! Five routes to be handled in 12 platforms. Fit a 15-minute interval local Cross-City service, and other local services, between main-line services on the former Midland and North-Western routes, with the added complication of loco-changing on the routes to the south and west.
- Traffic Control: Reading 1987 - still busy on a summer Saturday, with Devon and Cornwall services diverging from the Great Western main line, as well as the reversal of Bournemouth line services to and from the north.
- Fleet Manager Class 45 (Peak) - Your eighteen Peaks cover passenger services on the Midland main line between St Pancras, Derby, Nottingham and Sheffield.
- Fleet Manager Class 55 (Deltic) - Your eighteen Deltics cover principal services on the East Coast main line from King's Cross to Leeds, Newcastle and Edinburgh.
- Traffic Control: Kings Cross 1978 - in the early days of the HST, when most services were still loco-hauled, often by Deltics. The challenge here is to keep enough platforms clear for incoming trains, while refuelling locos when necessary, all in a layout with very limited shunting space.

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As the fledgling games industry develops its first superstars, the selling power of big names is becoming an important factor in making this commercial impact. If the name of a respected programmer can be found lurking on the packaging, it goes a long way towards convincing you of the game's quality. *Virus* and *Elite* have succeeded on the back of Braben's fame, the Bitmaps make a living out of promoting their image and after *Populous*, the Bullfrogs have become an industry name.


But that doesn't always mean we get great games. *Xenon* was an amazingly playable shoot-'em-up but there was nothing to *Xenon II* which hadn't been done before: it was just a straightforward vertical-scrolling shoot-'em-up with one recommendation, the Bitmap name.

Populous was the biggest 16-bit title of the 80s because it successfully combined all the essential ingredients. The game was written by the Bullfrogs, already well-known programmers, who successfully combined great graphics with the fact that it could be very quickly mastered. Most importantly, it was radically different from any other game on the market. Not only was the plot original, but the playing environment was unique too. Its long-term appeal was assured by the added bonus of two-player action and

THE PRICE OF FAME

That £20 cover price might sound expensive, but it goes a long way towards convincing you that your purchase must be worth it. It's the "you get what you pay for" mentality. When Microprose were designing the packaging for *MidWinter* they employed independent consultants to see what consumers wanted. They concluded that people preferred a larger box and were quite happy to pay for it.

Budget games have never become classics because the moment anyone spots potential in the design, they push up the price – irrespective of the programming talent required. *Arkanoid* and even last month's *Pipe Mania* required little skill and could easily have retailed at under £10. When Entertainment International were first looking at releasing *Pipe Mania* last February, they considered selling it for less than £15. If they had, it's unlikely it would have attracted such widespread attention.



extended even further when *The Promised Lands* data disk was released last October.

Throughout the ST's short history the supposedly unattainable has constantly proved to be within reach. *Space Ace* has shown that state-of-the-art sound and graphics have most definitely arrived. Programmers are now aiming to marry the machine's superior graphics and euphonious sound with that elusive addictive

quality of early ST games. The attack of the killer games is only just beginning. ■

Below, the *FORMAT* team list the 30 best games of all time. We're sure you won't disagree with a single choice, but if you do, write to "ST *FORMAT*'s Kick-Ass Classics," Future Publishing, Beauford Court, 30 Monmouth St, Bath BA1 2AP. Tell us why we're wrong and we'll give you £25 if you can come up with a better list!

ST FORMAT'S 30 KICK-ASS CLASSICS!

1 ARCHIPELAGOS

Logotron
The biggest game of 1988, a unique strategy game involving islands, stones and a ticking clock. Absolutely brilliant

2 ARKANOID

Ocean
A simple tile challenge but still the most addictive ST game ever

3 BLOOD MONEY

Psygnosis
The biggest horizontally-scrolling shoot-'em up on the ST. Enormously addictive!

4 BLOODWYCH

Mirrorsoft
In the *Dungeon Master* vein but with split-screen two-player simultaneous action

5 BORODINO

Atari
Unequaled attention to detail and concern for the reality of war have made Turcan's games unique

6 CHESSMASTER 2000

Software Toolworks
Originally the definitive ST chess game and one of the most skillful

7 COLOSSUS CHESS

X CDS
Play across the telephone line! One of the monsters of chess

8 DEFENDER OF THE CROWN

Mirrorsoft
Not so much a game as an experience. Staggering graphics

9 DRILLER

Incentive
The first Freespace game, it brought 3D environments to the ST

10 DUNGEON MASTER

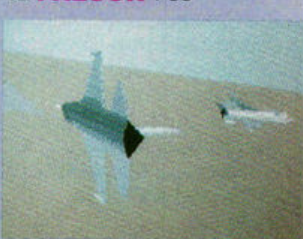


FTL
The first big ST adventure with lots of depth and strong visuals

11 ELITE

Firebird
Early ST game that proves a good game formula can work on all machines

12 FALCON



PSS
The first flight sim with 3D graphics. Incredibly realistic

13 GUNSHIP

Microprose
A navy captain has been quoted as saying it's the only game to effectively simulate ship control

14 IK+

System 3
The best karate sim! Responsive movements and detailed graphics

15 KICK OFF

Anco
Concentrating on great gameplay rather than stunning graphics make *Kick Off* the best soccer sim ever

16 MIDI MAZE

Hybrid Arts
16-player simultaneous action make it an innovative extension to the standard *Pacman* formula

17 MIDWINTER

Microprose
Combines strategy with in-depth gameplay – the best game released this year

18 OIDS

FTL
A shoot-'em-up with a unique method of ship control

19 PACMANIA

Sottek
Coin-op conversion that captures much of the atmosphere of its arcade parent

20 PIPE MANIA

Empire
Wildly addictive and unbeatable fun

21 POPULOUS



Electronic Arts
Combined deep strategy, a unique scenario and lots of long-term interest to become a true classic

22 RICK DANGEROUS

Microprose
A four-way scrolling action game with an engaging hero and addictively challenging problems

23 RAINBOW ISLANDS

Ocean
Cutesy scenario and the most

addictive game of 1990 so far

24 SENTINEL

Rainbird
The first 3D strategy game wowed everyone. Plans for a re-release soon

25 SPACE ACE



Empire
Incomparable graphics but appalling gameplay. A great demo of the ST's graphics and sound abilities

26 STARGLIDER 2

Firebird
One of the most brilliant games ever. Play it as a strategy game or as a straight shoot-'em-up

27 STRIDER

US Gold
Uncontested as the best coin-op conversion for the ST.

28 THE LAST CRUSADE

US Gold
One of only a handful of licences ever to have worked. A great adventure with five disks to explore

29 VIRUS

Rainbird
Braben's angled screens and unusual graphics marked the start of the non-standard playing field

30 XENON II

Imageworks
Fabulous graphics and sampled sound made it the definitive vertical-scrolling shoot-'em-up. Nothing else could follow it

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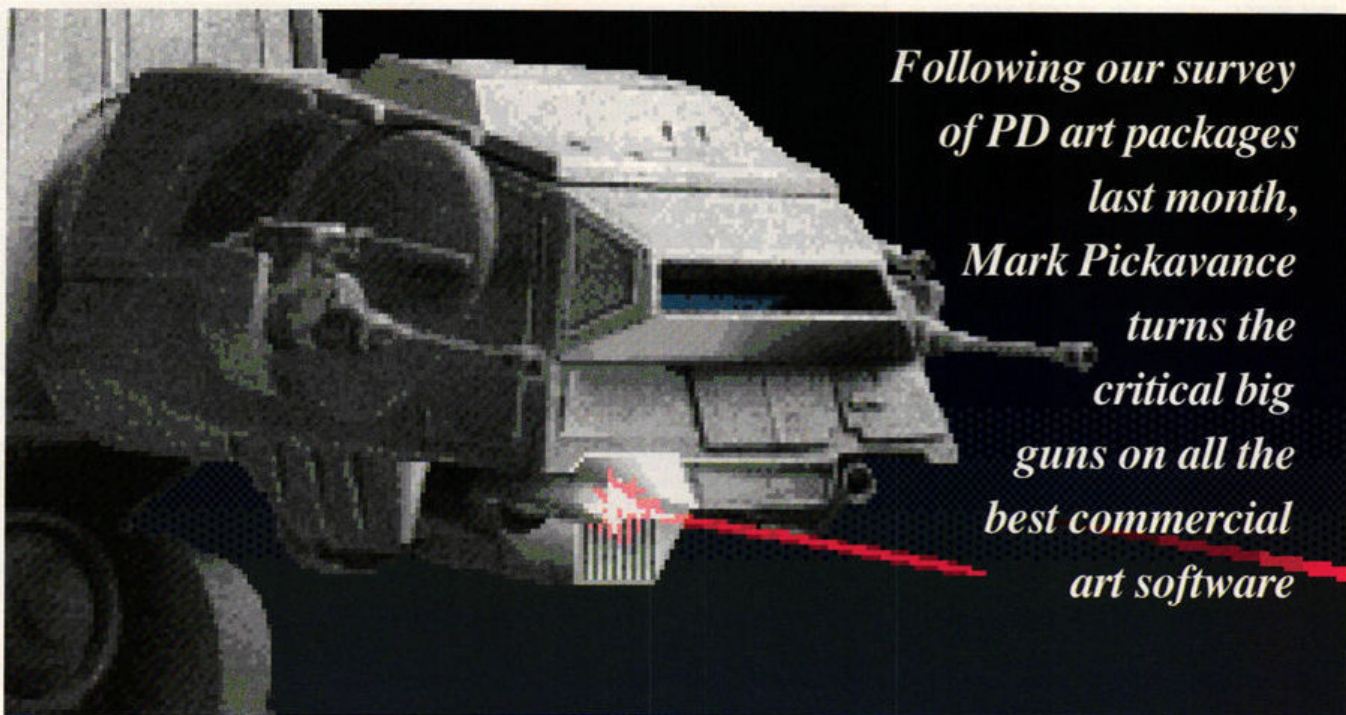
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Prop M. J. Cooper





Following our survey of PD art packages last month, Mark Pickavance turns the critical big guns on all the best commercial art software

■ Eidersoft's £20 Quantum Paint is a special mode art package that can display an amazing 4096 colours on your ST

state of the art software

Last month's investigation into art packages available in the public domain turned up some impressive software, but ST owners who want to explore the machine's graphics capabilities fully need to part with some money. But how do you choose the right package for you from the many available?

Before you splash out it's a good idea to decide exactly what you want. Are you interested in painting pictures, creating sprites, doing graphics for DTP, or are you after an all purpose system? Is any one resolution more important, and how much money do you want to spend? There is a bewildering choice, but read this and you should be in a better position to make that decision.

DEGAS ELITE

£19.95 ■ Discount Software
☎ 0462 420847

One of the earliest packages available for the ST, *Degas* was soon followed by the more sophisticated *Degas Elite*. The style of *Degas* combined simplicity with functionality. Both programs were written by Tom Hudson, who has since gone on to write CAD and much of the acclaimed *Cyber Series*.

Degas Elite operates in all graphic modes

and can convert images between them. It can load a large range of formats, but only exports screens in its own compressed or uncompressed *Degas* structure. This is not a problem, however, since *Degas* has become the industry accepted standard for picture files.

Among its plus points are a good zoom, keyboard shortcuts, block save in IFF and colour cycling. On the negative side is reliance on the ST built-in GEM functions for many facilities, making some graphic operations painfully slow. The use of GEM also extends to GDOS, which means you cannot use GEM fonts not previously specified in an ASSIGN.SYS file.

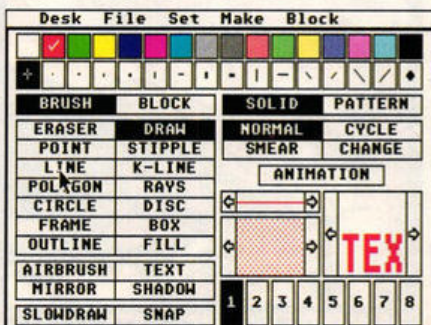
Apart from these complaints this is a fine package and one I often use for composing screen images.

OCP ART STUDIO

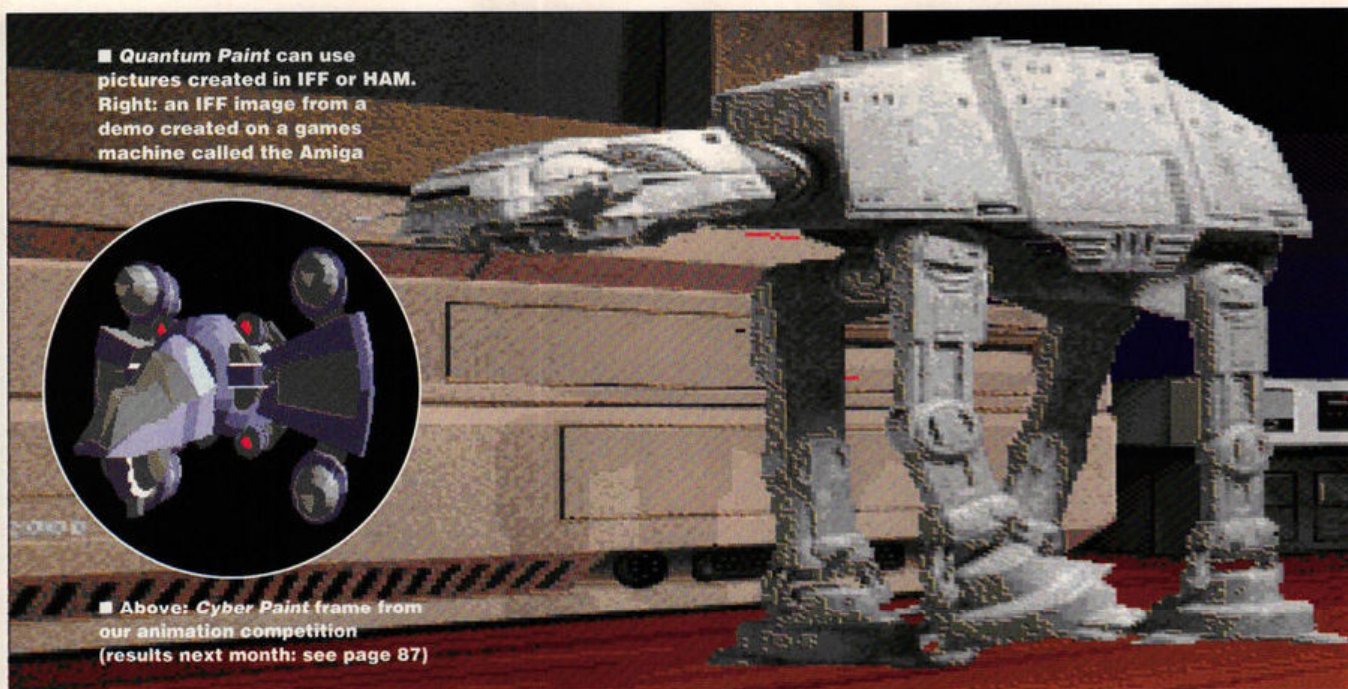
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☎ 0923 896969

I hate *OCP Art Studio*, yet I know one games designer who never uses anything else. This software seems to have started life as an in-house development tool for designers and perhaps this explains many of its tortuous processes.

You have no direct access to the screen – instead you must produce sprites, which are then pasted onto the display. The production of sprites uses the most bizarre user interface, consisting of a huge number of obscure icons which have variable effects depending which mouse button you use to click on them. Once you get the hang of this it's possible to cycle through series of sprites and so test game animation sequences. The software loads/saves *Degas* and *NeoChrome*, as well as exporting in sprite formats suitable for inclusion in a range of programming languages. Recommended if your intention is to create animated sprites for games, and you have a high frustration threshold.



■ The loading screen of *Degas Elite*, which combines elegance with power



QUANTUM PAINT V2

£19.95 ■ Eidersoft
☎ 0268 541212

This is a "special mode" paint program: the authors have created new "super" screen modes with more colours than are normally possible. The snag with special screen modes are that they use up so much processor time that you cannot use them for anything other than static screen images or slideshows. There is simply not enough processor time left to run an arcade game.

Having said that you're limited with this package (if you use the "super" modes) to pretty screen images, the quality of these images is very high. You're not limited to using one special mode but have a range to choose from. These give you various restrictions, in terms of trading off colours and resolution. When you're working on a picture you must view it in "native" 16 colour mode, which looks a complete mess. To see the actual picture you must stop moving the mouse. After a short while the picture is displayed in a possible 4096 colours. I can only describe this experience as being similar to one of those card games where you turn over all the cards and try to remember pairs. Things are never exactly as you recalled or expected.

As with *Spectrum 512* you cannot have any pixel any colour. To a computer artist this means "zoning" the screen into areas where you can use a set number of colours. This is alright for subject matter which lends itself to this system - if it doesn't, you're up a creek without a mouse mat.

CYBER PAINT

£29.95 ■ Electronic Distribution
☎ 0480 496666

Although strictly speaking this is an animation package, it also has some excellent paint facilities. Its design as an animation system means it only works in low resolution and with a minimum 1MByte of memory.

What's useful about *Cyber Paint* is that you can use the animation frames to store different versions of an image you're working on. You

TWO THAT NEARLY GOT AWAY

In addition to the packages mentioned here, see the review of *Canvas* and *Paintpot* in last month's *ST FORMAT* (page 85).

Canvas, a useable demo of which appeared on last month's Cover Disk, is the first art package to take advantage of the STE's extra colours. It supports *Degas* and *NeoChrome*, operates in any ST mode and has up to 512 colours on screen.

Paintpot supports *Degas* and *NeoChrome*, allows you to work on nine different screens, and apart from the usual drawing features also has pie chart and bar chart options.



CANVAS (FORMAT RATED 94%)
£14.95 ■ Microdeal ☎ 0726 68020



PAINTPOT (FORMAT RATED 76%)
£19.95 ■ Switchsoft ☎ 0325 482454

could easily have 20-100 images in memory depending on just how different they are from each other. The animation compression system only stores the differences between images and not whole 32K blocks. Its load and save options are very comprehensive, loading screens and blocks in various formats as well as animation files, palettes and masks.

If it has any limitations they are that it can only deal with screen size images and it has no patterned flood fill - a strange omission. Great for animation, and good for painting pictures.

SPECTRUM 512

£29.95 ■ Electric Distribution
☎ 0480 496666

This is the major competitor for *Quantum Paint* in the "super" mode art package stakes. It has only one mode which is all 512 colours on the screen at once, though you are limited to around 40 colours per horizontal line. In practice this is not much of a limitation and enables the computer artist to feel quite free in use and positioning of colours - which is in strong contrast to *Quantum*. The special display, also very different from its competitor, is maintained while you paint on it. This makes creating pictures much easier and straightforward. It loads *Degas*, *IFF* and *NeoChrome*, but can only save in its own SPC file type. Again the limitation is that these are screen images and have no other value.

Given a choice of this or *Quantum Paint*, I'd have this, mainly because it's more interactive, but also because the special mode is less restrictive.

FLAIR PAINT

£24.95 ■ Database Software
☎ 0625 878888

Before somebody shouts "Foul!" I'll declare an interest and admit that I'm jointly responsible for the design of *Flair Paint*. In addition to that I admit that *Flair* is sometimes just a bit too clever for its own good. It was always intended to be an art system for use with DTP, and in hindsight I think it would have served better as a mono package. (Cont'd on page 85)

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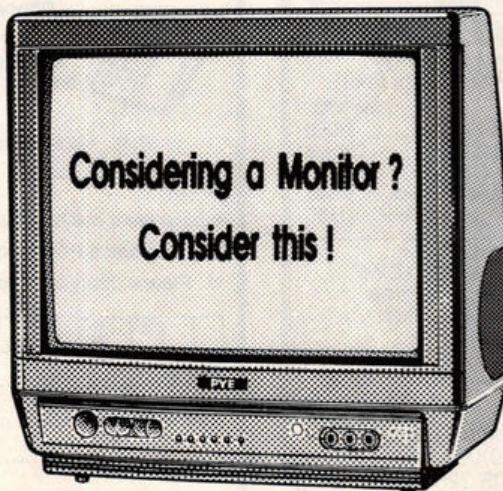
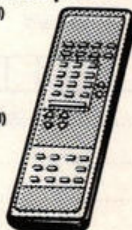
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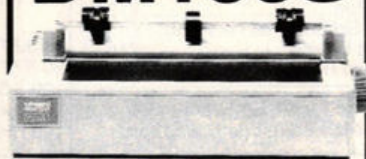
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850 - *FONTKIT 3.31*, by Jeremy Hughes. Latest version of this superb Font creation prog. (DS Drive)
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309 - *ADVENTURE WRITING SYSTEM*, A fully documented prog for writing text advs with a sample adv. called Starship Columbus.
829 - *THE LABEL PRINTER*, Packed with programs for printing all kinds of labels.
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839 - *NIGEL SMITH'S ST 68000 Ref Guide v2.0* This prog is a pop up guide to Assembly Language for the 68000 processor. It loads as an .ACC so it can be used with other programs.
840 - *FILE SELECTOR V6.0*, Replacement for the Gem file selector. Select drive, sort, print, shows time or size in selector. VIRUS KILLER V2.01 Detects 6 different types of Virus.
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398- *PICTURES*, Cartoon & Space themes. 28 pics in all with viewer for slide show.
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356 - *FAST BASIC 1*, Selection of progs that DO NOT need Fast Bas to run. There is an address Database, a printer config utility and a phone call cost calculator.
366 - *COMMS*, Unterm vers. 2.0a with auto-dial & phone book, x-modem, y-modem, Kermit & ASCII protocols. VT200, 102, 100, 52, Tektronix 4010 and DCM term emulation. Lots of Docs. Also Teklogem transformer prog & Keyedit, a prog for redefining of the keyboard keys.
347 - *GAMES*, A selection of space games, Spacewar and Firestorm are arcade types and Azarian is a space strategy game.(Colour)
325 - *XLISP V1.7*, An experimental object orientated language. Inc masses of Docs. Transcript of th Xlisp AI conference and plenty of example Lisp programs. Full C source code included.

847 - *FRUIT MACHINE*, A good arcade fruit machine simulation written in STOS by Richard Glass.
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354 - *GAMES*, Diamond Mines a multi-screen game with a built in games editor. There's another game called Snafu and a card game called Skat (Mono)
826 - *DATABASE 1*, A Gem driven database. Very easy to use. Online help screens.
364 *COMMS*, Pack-Et-Term 3.3A, Yarp a split screen RTTY term. prog ported by WB20SZ with .doc &.arc file packer.
363 - *ST WRITER ELITE*, The first version to have a GEM option. A very professional pron with an on disk tutorial.
372 - *GHOSTBUSTERS*, Digitised, Requires 1 Meg ram and DS drive
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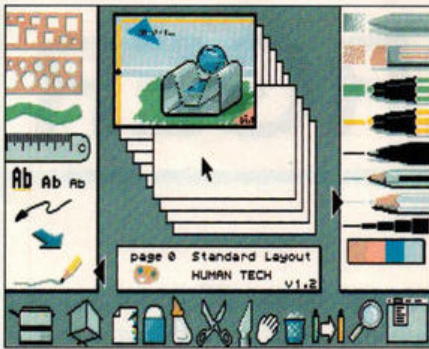
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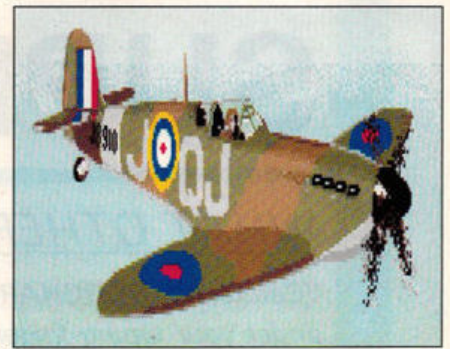
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■ The, erm, individual interface of the French art package ZZ Rough



■ You can tell a ZZ Rough image by the quite distinctive...



- quality of line and colour produced by its unique method

➤ The best features of *Flair* are that it operates as an ACC (Desk accessory), is very fast at most things, can edit very large images and has an excellent 8-way flood fill. Not being a GEM program it has no "Desk" pull-down menu so you can't get to other ACCs directly. *Flair* gets around this by supplying its own ACCs. Alternatively you can leave *Flair*, use your ACC and return.

If I can be truly critical of the program I'd say that the user interface is a bit too radical. I just don't think the world is ready for a paint system that includes a robotic cuckoo clock! For those of you who need a multi-faceted package with an eye to DTP, then *Flair* is a good option. Those with a dread of metal cuckoos can suffer *Hyperpaint* for their sins.

HYPER PAINT
£25 ■ Atari Corp UK
 ☎ 10753 33344

This is another item in the long catalogue of Atari's ineptitude. On paper *Hyperpaint* looks superb. It works in all modes, can edit large IMG files, has lots of paint tools, can use nine fonts at once, produces excellent printouts... In fact you are well impressed, right up to the moment you start actually using *Hyperpaint*.

Atari Corp commissioned this package from a very nice chap called Dimitri Koveos. He wrote *Hyperpaint* in the 'C' programming language, which might be fine for some applications, but for art packages it isn't. The upshot is that some painting modes - zoom in particular - are very slow. If these routines had been re-coded in assembler then *Hyperpaint* might have replaced *Degas Elite* as the industry standard.

The responsibility lies with Atari who creatively screwed up yet another project. *Hyperpaint* is fine for those in slow motion, but not much use to me, or you.

ZZ ROUGH
£19.95 ■ Rombo Productions
 ☎ 0506 39046

This French program must be one of the most unusual art packages I have ever used. That's not to say it's bad, just different. The approach taken is based on a sketch pad and the tools closely mimic the function of real pens and pencils. The application of colour is in layers, so if you go over an area of colour with another colour you get a combined colour. I can only marvel at such an idea even being attempted on a 16 colour system.

Because of these unique working methods the images created with *ZZ Rough* are unlike

any produced on any other package.

Another facility not available elsewhere is a neat 3D drawing option. You can scale, rotate and finally place a range of 3D primitive objects. If you require more complex models a utility supplied converts CAD 3D objects into the *ZZ Rough* object format.

The range of file formats supported is extensive, but you don't even have to use floppy disks to get images into *ZZ Rough*. Sold by ROMBO in this country, the software provides for their *VIDI-ST*, enabling digitising from within the program.

All in all, *ZZ Rough* is a very good package for low resolution screen painting.

So how to choose? For those who doodle the odd graphic *Degas Elite* is still a great buy. If you don't need high res go for *ZZ Rough*, while if colour range is all important *Spectrum 512* takes some beating. If large scale IMG editing is crucial then it has to be *Flair Paint*. Sprite editing is more difficult, *OCF Art Studio* was designed for the job, but lacks the necessary degree of control. For budding Bitmap Brothers I recommend creating and animating the sprites on *Cyber Paint*.

In short, work out the kind of visuals you want most, and then choose the paint program that most fully accommodates them. With such a vast range, you certainly won't be limited! ■

	Price	High-Res (Mono)	Medium-Res	Low-Res (16-Colour)	Special Screen Modes	Font Loading	Animation	Minimum Memory in k	Printouts	File Formats Loaded	File Formats Saved	Score as a Percentage %
ZZ Rough	£19.95	No	No	Yes	No	Yes	No	512	Yes	All*	All	82%
Spectrum 512	£29.95	No	No	Yes	Yes	No	No	512	No	PI1 SPC IFF	SPC	79%
Cyber Paint	£29.95	No	No	Yes	No	Yes	Yes	1024	No	NEO PI? PC? IFF	NEO PI? PC? IFF	78%
Flair Paint	£24.95	Yes	No	Yes	No	Yes	No	512	Yes	PI1 PI3 IMG NEO ART	PI1 PI3 IMG**	75%
Degas Elite	£19.95	Yes	Yes	Yes	No	No	No	512	Yes	NEO PI? PC? IFF	KOALA PI? PC? IFF	70%
Quantum Paint	£19.95	No	Yes	No	Yes	Yes	Yes	512	No	IFF HAM PBX PI? NEO	PBX	69%
Hyperpaint	£25	Yes	Yes	Yes	No	Yes	No	512	Yes	PI? PC? IMG	PI? PC? IMG	45%
Art Studio	£22	No	No	Yes	No	No	Yes	512	Yes	NEO PI1	NEO PI1	41%

Notes: * *ZZ Rough* loads and saves virtually all formats
 ** *Flair* also loads its own non-extended files

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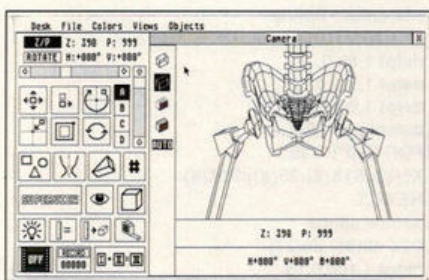


To demonstrate human animation in three dimensions I created my own simple model of a robot. I find this easy, but for those people less confident with modelling, one of the Cyber series extra disks has all you need.

The *Human Design Disk* (£19.95 from Electric Distribution ☎ 0480 496666) contains a number of finished models of extremely high quality. These include full male and female skeletons plus two simplified models which demonstrate the arrangement of the human body. The full skeletons are highly detailed and take up over 100K of disk space. The upshot is that even with 1MByte you have only enough memory to load the skeleton without desk accessories and the render times are long. If

■ A walking robot viewed from above in the first of 36 frames. The upper body swings to give the impression of dynamic movement and the legs and hips drive to propel the body forwards

take control with cyber



■ Uneasy constructing models? The *Human Design Disk* has them ready-made



■ Braced for action – this bow-legged brute is the *Design Disk's* male skeleton

In the penultimate Cyber tutorial Mark Pickavance makes no bones about a little sampling and gets you up and running with 3D human animation



■ This superbly detailed model eats up 100K so it can take a while to plot

➤ you're developing animation I suggest you use the simplified models to test the motion. Once the whole thing is working you can change models.

In addition to using superbly sculpted models you can also brush up on your human biology. I had completely forgotten what an acetabulum or zygomatic was. The *Human Design* package includes some labelled schematics which enable you to identify these and other parts by their anatomical names.

The same disk includes a good example of using the *Cyber Control* language – showing a figure performing a majestic back-flip. Within this code are all the definitions you need to drive the skeletal model. This is very convenient because setting up the relationship between parts is the most time-consuming aspect of this type of animation. Instead of re-inventing the wheel, copy this file and use it as the starting point for your own work.

Beginning with the legs from last month's

■ The models from the *Human Design* Disk are realistically bone-coloured

tutorial, I completed an entire human figure. Simplicity was the main objective. The figure was defined from the smallest number of parts so that I could refine the movement without excessive time delays. For this reason the parts were mostly made from primitive shapes and omitted physical features like hands which I considered unnecessary.

It was during this stage that I discovered a stupid mistake I'd made in the "Legs" model last month. I'd positioned the hip objects on the edge of the thigh instead of the centre. This made the legs behave as if they were on hinges rather than ball-and-socket joints. When I

BODY MOTION

```

; Legs Plus by Mark Pickavance
INPUT "Watch (0) or Record (1)?" ,option
LOAD3d "C:\CAD\ROBOT.3D2"
BOUNDS minx,miny,minz,maxx,maxy,
maxz
GOSUB DEFINELEGS
GOSUB DEFSPLINES
ZOOM 110:PERSPEC 999:CAM1 50,60,0
FINAL:VIEW SOLID:MONO
IF option THEN RSTART
"C:\CAD\ROBOT",m:GOTO runit
WATCH ON
@runit
FOR frame=0 to 35
frame2 = frame + 18
IF frame2 > 35 THEN frame2 = frame2-36
LOAD3d "C:\CAD\ROBOT.3D2"
position L_upper,X1(frame),0,0
position R_upper,X1(frame2),0,0
position L_lower,X2(frame),0,0
position R_lower,X2(frame2),0,0
position L_Foot,X3(frame),0,0
position R_Foot,X3(frame2),0,0
position L_Toes,X4(frame),0,0
position R_Toes,X4(frame2),0,0
position L_Arm_up,X5(frame2),0,Z5(frame2)
position R_Arm_up,X5(frame),0,-Z5(frame)
position L_Ulna,X6(frame),0,Z6(frame2)
position R_Ulna,X6(frame2),0,-Z6(frame)
position Chest,0,0,Z7(frame)
position Head,0,0,Z7(frame2)
TREESET Pelvis
ALIGN B,minz
SUPERVIEW
camera = camera + 10: IF camera = 180 THEN
camera = -180
IF option THEN record
NEXT frame
IF option THEN RSTOP:END
WATCH OFF:END
; Define the Whole Robot
; Defines each part, the movement area
; limits, and define their relationships to each
other.
@DEFINELEGS
treeclr
treeadd
Pelvis,R_upper,L_upper,R_lower,L_lower,R_F
oot,L_Foot,R_Toes,L_Toes
treeadd
Chest,Head,L_Arm_up,R_Arm_up,R_Ulna,L_
Ulna,Neck
limit R_upper,-45,90,0,0,0
limit L_upper,-45,90,0,0,0
limit R_lower,-130,0,0,0,0
limit L_lower,-130,0,0,0,0
limit R_Foot,-10,5,0,0,0
limit L_Foot,-10,5,0,0,0
limit R_Toes,-5,30,0,0,0
limit L_Toes,-5,30,0,0,0
limit Chest,-120,40,-20,20,-90,90
limit Head,-5,30,0,0,0
limit L_Arm_up,-180,90,-90,2,-45,45
limit R_Arm_up,-180,90,-2,90,-45,45
limit R_Ulna,0,150,0,0,0
limit L_Ulna,0,150,0,0,0
Relate Head,Chest,Neck
relate L_Ulna,L_Arm_up,L_elbow
relate R_Ulna,R_Arm_up,R_elbow
relate R_Arm_up,Chest,R_Should
relate L_Arm_up,Chest,L_Should
relate Chest,Pelvis,Back
relate L_upper,Pelvis,L_Hip
relate R_upper,Pelvis,R_Hip
relate L_lower,L_upper,L_Knee
relate R_lower,R_upper,R_Knee
relate L_Foot,L_lower,L_Ankle
relate R_Foot,R_lower,R_Ankle
relate L_Toes,L_Foot,L_Arch
relate R_Toes,R_Foot,R_Arch

return
; that's how you walk

relate R_Toes,R_Foot,R_Arch
return

@DEFSPLINES
; This subroutine defines 6 splines – but you
can only have 5
; So Each one is copied into its own Array
; So – No limit on splines!
; Hip spline
DIM X1(37)
defpt 1,45,0,0
defpt 1,5,0,0
defpt 1,-5,0,0
defpt 1,-45,0,0
defpt 1,0,0,0
defpt 1,45,0,0
defpline 1,36,L
FOR X=0 TO 35
X1(X)=S1X(X)
NEXT X
; Knee spline
DIM X2(37)
defpt 1,-30,0,0
defpt 1,-5,0,0
defpt 1,-10,0,0
defpt 1,-70,0,0
defpt 1,-30,0,0
defpline 1,36,L
FOR X=0 TO 35
X2(X)=S1X(X)
NEXT X
; Ankle spline
DIM X3(37)
defpt 1,0,0,0
defpt 1,5,0,0
defpt 1,-5,0,0
defpline 1,36,L
FOR X=0 TO 35
X3(X)=S1X(X)
NEXT X
; Toe spline
DIM X4(37)
defpt 1,0,0,0
defpt 1,30,0,0
defpt 1,5,0,0
defpt 1,0,0,0
defpline 1,36,L
FOR X=0 TO 35
X4(X)=S1X(X)
NEXT X
; Shoulder Spline
DIM X5(37),Z5(37)
defpt 1,80,0,30
defpt 1,-30,0,-5
defpt 1,80,0,30
defpline 1,36,L
FOR X=0 TO 35
X5(X)=S1X(X):Z5(X)=S1Z(X)
NEXT X
;elbow spline
DIM X6(37),Z6(37)
defpt 1,100,0,15
defpt 1,45,0,0
defpt 1,100,0,15
defpline 1,36,L
FOR X=0 TO 35
X6(X)=S1X(X):Z6(X)=S1Z(X)
NEXT X
;Chest spline
DIM Z7(37)
defpt 1,0,0,-5
defpt 1,0,0,5
defpt 1,100,-5,0
defpline 1,36,L
FOR X=0 TO 35
Z7(X)=S1Z(X)
NEXT X
return

```


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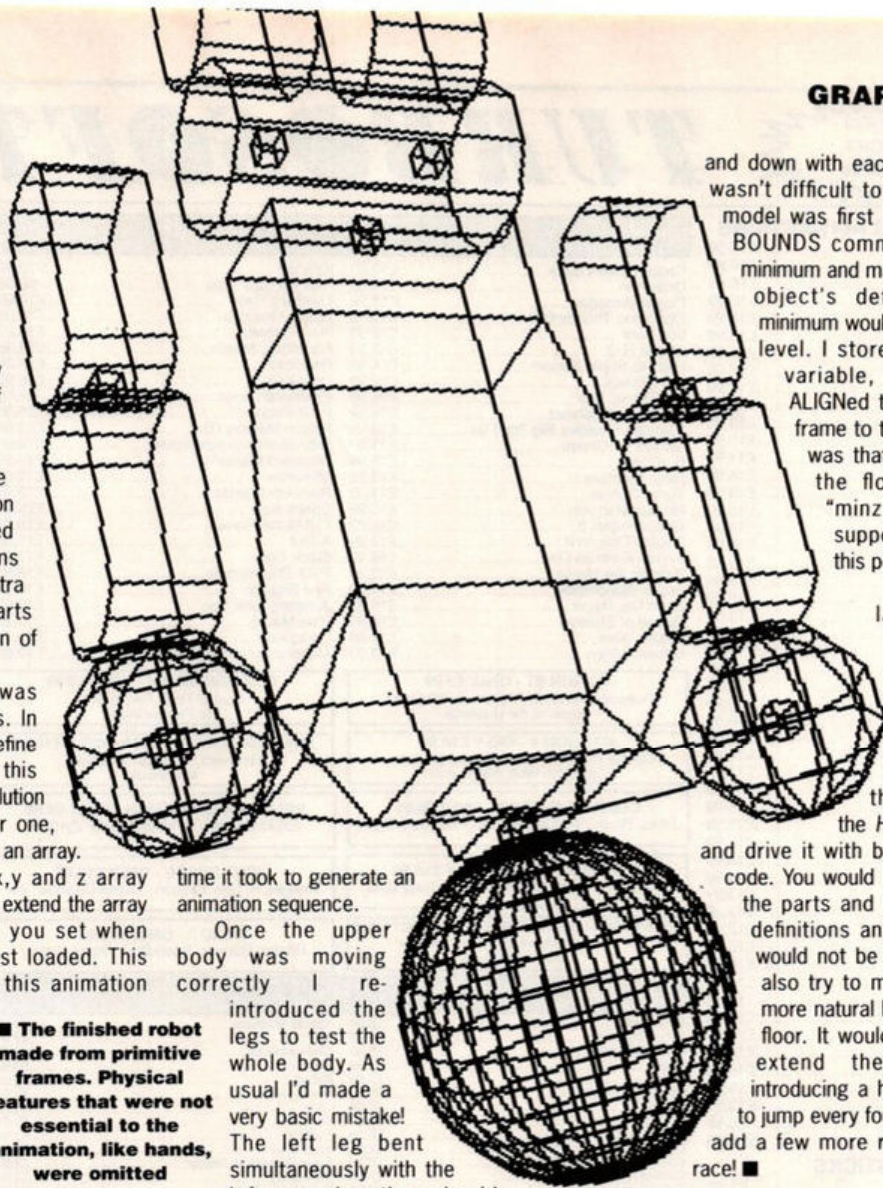
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> corrected this the movement looked a great deal better. The leg action was less extensive - more like a walk than a run, but I decided to live with this and get on with the *Cyber Control* language. This meant altering last month's code which only considered the lower part of the body.

The new code has some significant changes. The addition of a torso (the object is called "chest") with a head and arms connected has necessitated extra definitions. To move these parts has also required the definition of new splines.

The first problem was overcoming spline limitations. In *Cyber Control* you can only define five different splines and for this animation I needed six. The solution was to only use spline number one, then to copy the spline data to an array. If all joints were given 37 x,y and z array components you would have to extend the array memory allocation - which you set when the *Cyber Control ACC* is first loaded. This isn't necessary because in this animation movement is generally only in one or two planes. Having a "y" array is not useful if the limb never moves from 0 in "y," so I only defined the arrays I needed, and stayed within the standard array size.

Once the spline snag was solved I could concentrate on getting the upper body to move correctly. One tip that I discovered was to use ";" to REMark out the legs while working on the body. I also created a legless version of the model which meant I was only rendering the parts I was interested in and shortened the



■ The finished robot made from primitive frames. Physical features that were not essential to the animation, like hands, were omitted

time it took to generate an animation sequence.

Once the upper body was moving correctly I re-introduced the legs to test the whole body. As usual I'd made a very basic mistake! The left leg bent simultaneously with the left arm when they should

have had complementary actions. After a minor change to the arms' "position" commands I was back in business.

One final touch was needed to polish the movement. If the imaginary robot was walking around in the real world he would be in contact with the floor - which would mean moving up

and down with each step. This effect wasn't difficult to create. When the model was first loaded, I used the BOUNDS command, to give the minimum and maximum limits of the object's definition. The "z" minimum would obviously be floor level. I stored this value to a variable, "minz," and then ALIGNED the figure on every frame to this level. The result was that the foot touching the floor is always at "minz" and appears to support the body from this point.

There are a large number of improvements you could make to this basic sequence. The most obvious would be to use the skeleton from the *Human Design Disk* and drive it with basically the same code. You would have to re-name all the parts and include some new definitions and splines but this would not be difficult. You could also try to make the animation more natural by adding a moving floor. It would be interesting to extend the sequence by introducing a hurdle for the robot to jump every four steps, or even to add a few more robots and have a race! ■

Next month is the final *Cyber* tutorial, and we end the series by looking at *Cyber Smash*. We also announce the winners of our strongly contested CAD/Animation competition. There's a £100 up for grabs and the winners could be on the *ST FORMAT* Cover Disk. See you then!

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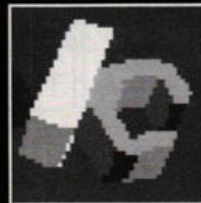
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Working for the Cobra Steel Company, your task is to prove yourself the best pilot in the fleet by collecting as much ore as possible from the metal planet. You have competition from three pilots of an opposing company who are also out to prove themselves. It's well within the bounds of decent business practice to capture or destroy their ships. Whichever ore grabber has the most minerals when take-off time comes is the winner of the game. Take-off time is dictated by the approaching high tide which eventually swamps the whole planet.

Two to four players (either human or computer controlled) may take part in the race for precious raw materials, with each proudly ransacking the planet under his company's flag. The flag is either chosen from those provided in the game or you may design your own pennant.

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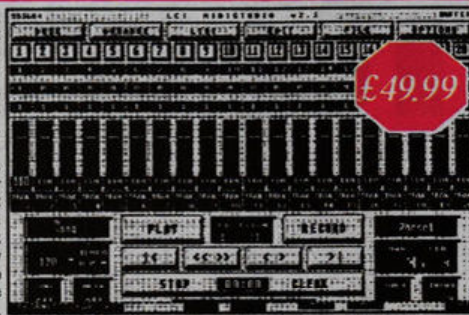
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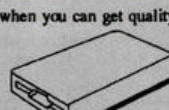
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This high quality 200dpi flat bed scanner is also a thermal printer and photocopyier. It can scan high resolution images in up to 16 grey scales. Software runs on Amiga and ST (ST software includes editor) and requires 1Mb of memory. This is probably the most cost effective piece of office equipment you could own. Centronics cable included.



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■ Your goal is to prove yourself the top ore-grabbing pilot on the planet. Under the protection of your company pennant, you can use just about any underhand method to achieve this aim



■ Make sure you escape with your hoard before the tide rises! Your Weather Hen should help you to predict the strength of tides and enable you to avoid being stranded

porters such as barges to carry items across water and crabs to carry items over land. It's these Transporters that pick up the vital ore scattered over the planet.

Your most important vehicle, however, is a Weather Hen. This transforms ore into tanks, crabs or pontoons (used to bridge rivers) and also predict tides. High tides immobilise land vehicles as low tides strand boats, so it's useful to be able to forecast water levels; the more Hens you have, the further forward you can predict tides.

During each turn all players have their go which takes from one to nine minutes – decided at the start of play. You're allowed 15 energy points per go to allocate to moving craft, transforming ore and so on. Any points saved during a go can be used next time round.

Based on the board game of the same name, *Full Metal Planete* is certainly very playable, easy to get to grips with and interesting enough to please veteran strategists as well as those new to the genre.

Playing against computer opponents is quite a challenge as each has its own characteristics, but the real fun is in battling against humans. Detailed graphics and unusual sound effects add to the alien atmosphere of this slick, if basic, game. Playing *Full Metal Planete* will fill you with ore. ■

GRAPHICS	8
SOUNDTRACK	6
CREDIBILITY	7
LONG TERM INTEREST	8
OVERALL	78%

demon's tomb

Demon's Tomb

MACHINE: ALL STs

PRICE: £24.99

FROM: VIRGIN/MELBOURNE HOUSE

CONTACT: 01 727 8070

Twin brothers became high priests: one of them was good, the other bad. Tzen, the fractious brother, is waiting dormant in his tomb, for the right moment to unleash Darsuggotha (The Forbidden God) on an unsuspecting world. Thai, the good priest, is determined not to let this happen and from his own burial mound keeps watch on Tzen in the hope that when the time come he'll be able to prevent Darsuggotha's arrival. The priests began their long and silent wait for the right moment many years ago; that moment is now at hand.

Professor Edward Lynton is an archaeologist and while digging in an ancient burial mound (guess whose?) in deepest darkest Devon, Tzen stirs. The prologue shows a fire

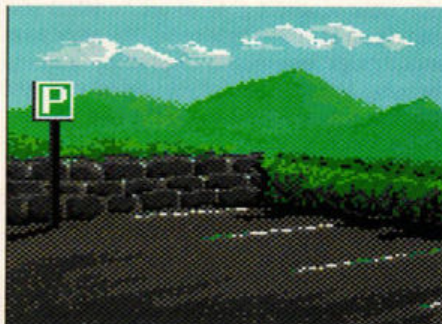
breaking out in the tomb. You play Lynton and only have minutes to save all the recovered artefacts from the flames. Unfortunately, Lynton is doomed to die, but all his possessions need to be saved to enable completion of the game.

In the main part of *Demon Tomb* you play Richard, the son of Professor Lynton. Your father's recent disappearance is troubling you and you decide to seek him out. You know where he's been working for the past few years (having visited the burial mound when you were very young) so you set off for Devon, taking your dog Sam for company.

Beginning in a car park just off the main road you're free to wander around exploring locations and experimenting with the objects you find. There's a time limit, so get down to serious adventuring as soon as possible.

Eventually you come across the tomb and find a coffin containing your father's possessions. Then it's off to the mansion grounds to try to find a way to wake Thai so he can put a stop to Tzen's conjurings – you hope!

Given the scenario, one might think >



■ You begin at a car park near the burial mounds but don't hang around...



■ Fire breaks out in the tomb and there's no chance of escape



"..a curious construction.."

There's a time limit so start exploring curious constructions like this straightaway



■ The beautiful Devonshire countryside hides sleeping demons

A complete solution to the game lurks in the booklet provided with the packaging – a solution that is not very cryptic (it's written backwards) and is very tempting to look at. If you don't have an iron will then succumbing to the temptation to have a peek at a clue could ruin the game. I suggest you staple the booklet closed until you've completed the game.

Demon's Tomb has interesting options. You can, for example, use menus or typed input, the edit facility is comprehensive, letting you recall up to ten previous inputs, you can define abbreviations for often-used words (X for examine and so on) and the reconfigurable game environment allows you to change colours, text size and number of text columns.

Graphics, which are optional, appear throughout the game and are representative

rather than informative. However, good graphics don't necessarily make a good adventure. Demon's Tomb's major flaw is that it's far too easy to complete. Even without the clues I finished the game in one sitting. This considerably lowers value for money. A shame really, because apart from one or two oddities Demon's Tomb is enjoyable to play, has a good sense of humour, an excellent parser and logical mapping. ■

GRAPHICS	7
SOUNDTRACK	N/A
CREDIBILITY	5
LONG TERM INTEREST	7
OVERALL	61%

Demon's Tomb revolves around magic, curses and devilry, but it doesn't. In fact, apart from a mysterious door, an odd rod and a curious folly, there's no occult ingredients – unless you consider fluffy bunnies, litter-conscious seagulls and sandwich-eating ducks to be demonic.

windwalker

Packaged with I Ching, bursting with folklore and demanding deft combat skills, Windwalker takes you to the heart of the Orient

Windwalker

MACHINE: ALL STs

PRICE: £29.99

FROM: MINDSCAPE

CONTACT: 0444 86545

Emperor Chao Ti rules peacefully over Khantun and his subjects are happy – exactly the sort of blissful situation ripe for evil to pounce. In this case the evil is one of the emperor's warlords who, together with the court alchemist, overthrow Chao Ti and imprison both he and his wife. He makes slaves of the womenfolk and conscripts able-bodied men to work the jade mines. The alchemist conjures up evil spirits to take possession of Khantun's once-holy shrines and the dark clouds of evil and misery spread across the land.

Moebius the Windwalker observes the plight of Khantun and dispatches one of his disciples to enter the realm, dispel the darkness and, while he's about it, achieve enlightenment.

Before your quest you're offered the choice of having a combat training session or venturing forth and freeing Khantun. As combat plays a major part in Windwalker it makes sense to practice before actually taking on the warlord and his cronies.

Combat screens (both in practice mode and when it's for real) display the two fighters from a third person perspective. Both combatants are amply scaled and nicely detailed, though they're slow and jerky when they move. Controlled by mouse or keys you fight in one of two modes: concentration (each move you make is followed

by a single move from your opponent) or intuition (your opponent goes all out to defeat you and it's up to you to fight back). You work your way through ever-tougher opponents (learning by using action replays of your fights) until you consider yourself good enough to free Khantun of the warlord's tyranny.

Once on your way the display changes to show an oriental landscape with you and all other characters depicted as busts. Landscape



■ Practise combat skills before the game or you won't last long



■ Conversing with others is a novel alternative to kicking them



■ You meet all sorts of weirdos in your quest for enlightenment



■ Windwalker evokes the atmosphere of a mythological Orient

features such as rocks, trees and buildings are well-detailed and realistically scroll forward from the horizon. Move your character step by step using the mouse or keyboard. Buildings can be entered and explored and travel by sea is possible by walking onto a boat.

You free Khantun by conversing with other characters, fighting adversaries, praying for help and collecting objects such as elixirs and mystical scrolls to help your quest.

Throughout your quest you should try to remain honourable (and thus gain enlightenment) by not stealing or running away from fair fights – losing honour may make people reluctant to talk to you.

There's a lot to do in Windwalker and attention to detail, especially oriental folk lore and traditions, is impressive. Unfortunately, gameplay is very slow. Conversing with other characters is tedious and any realism induced by the scrolling landscapes is ruined by having heads jerk around the screen. Research into the Orient for Windwalker's background has evidently been extensive and thorough. It is a shame it didn't result in a better game. ■

GRAPHICS	6
SOUNDTRACK	4
CREDIBILITY	7
LONG TERM INTEREST	4
OVERALL	51%

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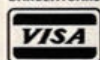
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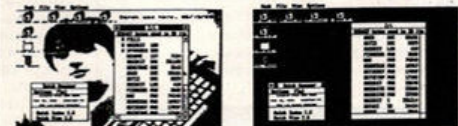
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desktop

Printer giving you hassle? Upgraded your internal drive and don't know what to do with the old one? Your friendly Format passes on tips, answers queries and solves problems

The printer monster

Judging by your letters, printers can be a nightmare to get to grips with. One of the most common problems is being unable to exploit their best features. For example, many printers offer the ability to print text proportionally, correctly justifying each line, but there are few word processors which send out the right codes to utilise this feature. Another example comes from **V. Cook** from Sussex who owns a colour plotter but cannot make the printer change colours from any of his programs.

It's impossible to send out printer control codes from most language programs - so your listings are unlikely to benefit from the added features of a quality printer - but word processors can be made to use extra commands. Most word processors support simple commands like bold, italic and underscore. To use these you enter the codes to switch the text effects on and off using a sort of printer driver utility in the package. If you want to use double-sized text then replace the codes for bold with those for double-sized. Now all bold text is printed in this new style.

Alternatively, the best method is to lay your hands on a more sophisticated word processor such as **Arnor's Protext**. This enables you to assign a string of control codes to each letter of the alphabet and then insert this letter into your document. When you come to print, the special letters are replaced by codes, instructing the printer to respond accordingly. Thus, a special letter can be used to send out the code to turn text blue, switch on proportional spacing or change the font.

Cover disk joy

In issue 8 we received a query on how to access the joystick ports from within **GFA Basic 2**. Now **Colin Byrne** from Richmond has come up with a routine which reads data from the joystick ports. The routine is too large to print here, so we've included it on this month's Cover Disk. Simply MERGE the **GFAJOY.DOC** ASCII file into your own GFA program and then call it as a subroutine from within the main code.

Sounds promising

A. Jadzinski from Northampton tried our B-Boot modification (**ST FORMAT** issue 6) and unfortunately managed to snap off one of the pins on the Yamaha sound chip. If you try buying this chip from Yamaha, not only do they take an age to send it out, they also charge a fortune. For only half the price, **Maplins** sell an equivalent chip. The chip number is **AY-3-8910** - **Maplins 0702 554155**.

Money-making tip

We're throwing this query open to everyone and the first reader to come up with the most compact solution wins next month's coveted £30 Desktop prize.

Assume you own **GFA Basic version 3** and the accompanying compiler and that you have no knowledge of 68000 machine code. You've written a short program in Basic and you want to turn it into a desktop accessory. How do you do it without resorting to using another language? Send your answers to Desktop at the usual address and we'll print the best solution next month.

Blit of a problem

The Mega ST range and the STE are the only machines with a blitter chip fitted as standard, but it's possible, particularly on older STs, to fit your own blitter chip. These aren't expensive and companies such as **Frontier** stock them. **Wayne Howard** from the West Midlands wants to know what advantages, if any, there are to having the blitter installed.

The blitter chip speeds up graphics handling commands so that GEM windows open faster and areas of the screen can be picked up and re-positioned much quicker. However, as far as games software is concerned, the blitter is largely ignored. Although the blitter could certainly be put to enormous use in games, since it is missing from all 520s, no-one writes games which depend on the blitter to run. As a result, the only real advantage is to speed up window operations in serious software and even here it is rarely fully exploited.

When the blitter was first released, there was concern that it wouldn't be compatible with existing software, but all problems have been ironed out.

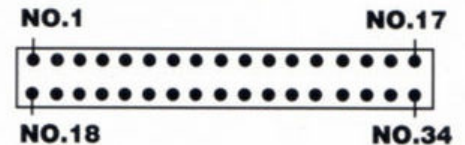
If you don't want to invest in a blitter chip, **Hisoft** sell an excellent blitter emulator called **TurboST** which performs the same job. **TurboST** is a desktop accessory which can be switched on or off in the same way as the blitter. It costs £34.95 - **Hisoft 0525 718181**.

Hard driving

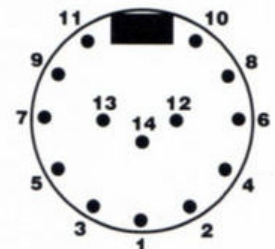
Many ST owners have purchased a 1Mbyte internal disk drive to replace their existing 0.5Mbyte drive. This renders the current internal drive useless. However, before you toss it into a dusty box with your **Dragon 32** and

ZX81, it's possible to link it up as an external second drive. This is wired into the floppy disk port on the back of your ST, as **J. Richards** from **Staffs** has discovered.

To make the most of the drive you'll require a 14-pin DIN plug which connects into the floppy drive port and a 34-pin edge connector to plug into the back of the disk drive. You also need a length of 14-core cable which shouldn't be any more than 50cm in length. Looking at the pinout diagrams from the rear, you see the pins are numbered as follows:



■ Looking at the plug from the rear



■ Looking at the plug from the front

Now make the following connections:

14-PIN DIN	34-PIN EDGE CON
01	32
02	33
03	08
04	21
05	22
06	23
07	04
08	25
09	26
10	27
11	28
12	29
13	30
14	31

There is a smaller four pin connector, separated from the 34 pin edge connector, which must be used to supply power to the drive. It's possible to daisy chain the power supply from the internal drive - or alternatively you can invest in a separate adaptor. ■

SHARE YOUR TIPS!

If you're having trouble with your ST or if you have any hints or tips which you think other ST owners will drool over, send them immediately to: Desktop, **ST FORMAT**, Beauford Court, 30 Monmouth Street, Bath BA1 2AP.

Please don't send stamped addressed envelopes. Due to time considerations we are only able to answer enquiries in the pages of the magazine.

Each month we give away £30 for our favourite tip so if you're looking for some extra dosh, get writing. **J. Richards** wins this month's coveted prize for his disk drive advice.

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Educational by design. Covering every aspect of the MIDI and MUSIC data available for the ST computer. Each issue has files with Synth Editors, New Voices, News, Reviews, MIDI & MUSIC tutorials, **Complete WORKING SEQUENCERS** (1&7). Along with these extensive files each issue includes **MFS SEQUENCES**. YOU become the **ARRANGER/PRODUCER** of the music. E.g. Eroica Passage (Issue 5). **ALGORITHMIC MUSIC GENERATORS - MIDI Demos, MIDI Software written in Basic**. Series starting from scratch WITH EXAMPLE MIDI PROGRAMS in ST, FAST, GFA, POWER, HISOFT and STOS Basics also **TEACHING MIDI IN 68000 Assembler**, (Issue 5) **Issue 7 NEW 16-TRAK SEQUENCER** which supports MIDI THRU and EDITING, a **KAWAI K1 Editor with new voice banks and KORG M1 DEFAULT VOICES**. **JUST RELEASED - ISSUE 8 with 50 NEW KORG M1 VOICES also 32 NEW KAWAI K1 VOICES many Original MFS Sequences**.
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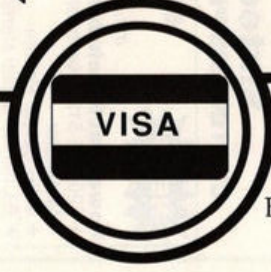
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ROBOMIX & BATMIX

Dungeon DEM11

Contains two music demos from successfully hyped films: *Robocop* and *Batman*. *Robomix* consists of a series of digitised pictures coupled to a soundtrack. Sound quality is high, pictures are crisp and the synchronising of pictures and sound is excellent. Watch out for that cute little robot ED-209 as he opens fire!

Batmix consists of a scrolling message tied to the hypnotic sound of Prince's *Batdance*. The lyrics are a tad risqué and without the visuals it doesn't have the same impact as *Robomix*, but it's still good stuff.

★★★

BATDANCE DEMO

Dungeon DEM8

Batdance is another version of the Prince theme song only this time you get the whole caboodle and a couple of static screens to add interest. Sound quality isn't as good as that on demos disk DEM11, but it's still worth listening to.

★★★

STAR WARS DEMO

Paradise Disk 142

"Look at the size of that thing," "It's so big" and "Red 5 standing by" are all classic phrases coined a hundred and one times from *Star Wars*. You can brush up on all the old phrases by sitting through a *Star Wars* sight and sound extravaganza.

Most pictures are sequences of shots combined to make mini-animations like the *Snowman* demo of yesteryear. The accompanying sampled sounds are excellent.

If there's a demo that you should get your paws on it's this one!

★★★★

AGT

Goodman 435/436

AGT, or *Adventure Game Toolkit*, is designed to create text adventures on your ST. Hundreds of locations can be created and populated with people, animals and monsters to add realism to the surroundings. An example of how an adventure works is supplied on the disk to help beginners get under way.

AGT can be taught a vocabulary of over 400 words. Consequently the irritating "what?" comment appears less often. The parser (the bit that interprets what you type in) is sophisticated enough to understand complex combinations of instructions.

The second AGT disk (436) contains nine example adventures, including a version of the original *Colossal Caves* mainframe adventure.

There's no going wrong with the AGT disks.

RATINGS

★★★★★ Beg, steal, borrow

★★★★ Beg

★★★ Steal

★★ Borrow

★ Burn

BUDGIE GAMES TOP TEN

Goodman titles

- 1 *Ace invaders* (GBU12)
- 2 *Goldrush* (GBU14)
- 3 *Word Find Puzzle Generator* (GBU16)
- 4 *Line Of Four* (GBU15)
- 5 *Maelstrom* (GBU11)
- 6 *Speculator* (GBU8)
- 7 *Othello* (GBU4)
- 8 *Make A Break* (GBU17)
- 9 *Slippery Sid* (GBU24)
- 10 *Bandit* (GBU22)



■ The fall of a Jedi knight in the *Star Wars* demo

If you're creative or enjoy solving puzzles, disks 435 and 436 will be welcome additions to your PD collection.

★★★

TARK

Goodman 438

You play a spiritually pure priestess who travels the astral plane in order to defeat the Demon of Desire. It may sound puritan but this text-only role-playing game, created using AGT reviewed above, conveys a real sense of adventure.

As with most role-playing adventures there are things to hack 'n' slash, but this isn't a kill-everything-in-sight game: problems must be solved and spells used wisely if you are to succeed in your mission.

★★★

■ Nana, nana, nana, nana, nana, nana, nana... *Batman!* Dance along with Prince in *Batdance*

FRACTAL

Goodman 466

Oh no, not another fractal program. Well, yes, but this one's different – it's brilliant! It isn't just a mandelbrot generator as most fractal programs seem to be. You can create the Julia set and two Chaos sets as well. Each set is so colourful that letting *Fractal* loose on your ST's screen can do serious damage to your eyes.

You can zoom in and out of a set and enter a nifty preview mode. The preview feature generates a much smaller version of the set and is consequently much faster. In preview mode you can create movies or sequences of frames that can be played back to show a set as it changes the further away from it you get.

★★★★★

TREASURE HUNT

The Other PDL

Don't expect Anika Rice to pop onto your screen – it has absolutely nothing to do with the TV series. Instead it's a simple game in which you hunt for buried treasure on a desert island. Just type in the coordinates where you think the treasure is and a pair of feet walk to the relevant square. You're then informed whether there's any treasure there or not. Success or failure is accompanied by digitised speech and a picture.



■ You've struck lucky and the treasure is all yours!

There are various difficulty levels to select and you can switch on hint mode if you're having problems. Guaranteed to transfix kids with its bright colours and sampled sounds.

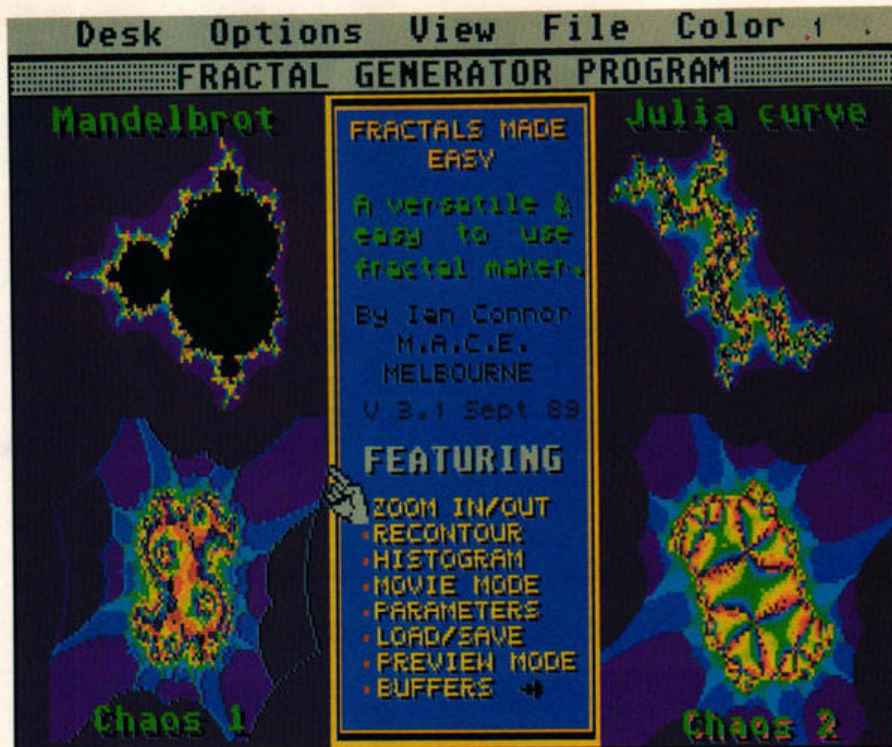
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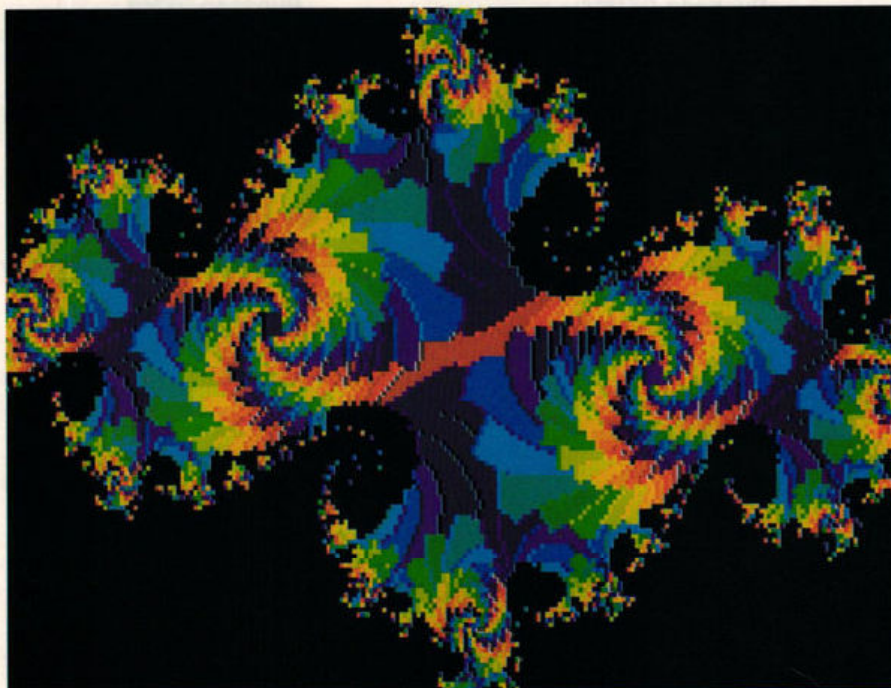
Riverdene PDL

Just as we were about to go to press, the first STE demo plopped through the letter box – and what a good one it is too! Sampled stereo music and hardware controlled sprites. Here's your chance to get a taste of the STE's power.

★★★★★



■ Four fractal sets can be created within the fractal generator on Goodman disk 466



■ Some of the images produced can be absolutely breathtaking

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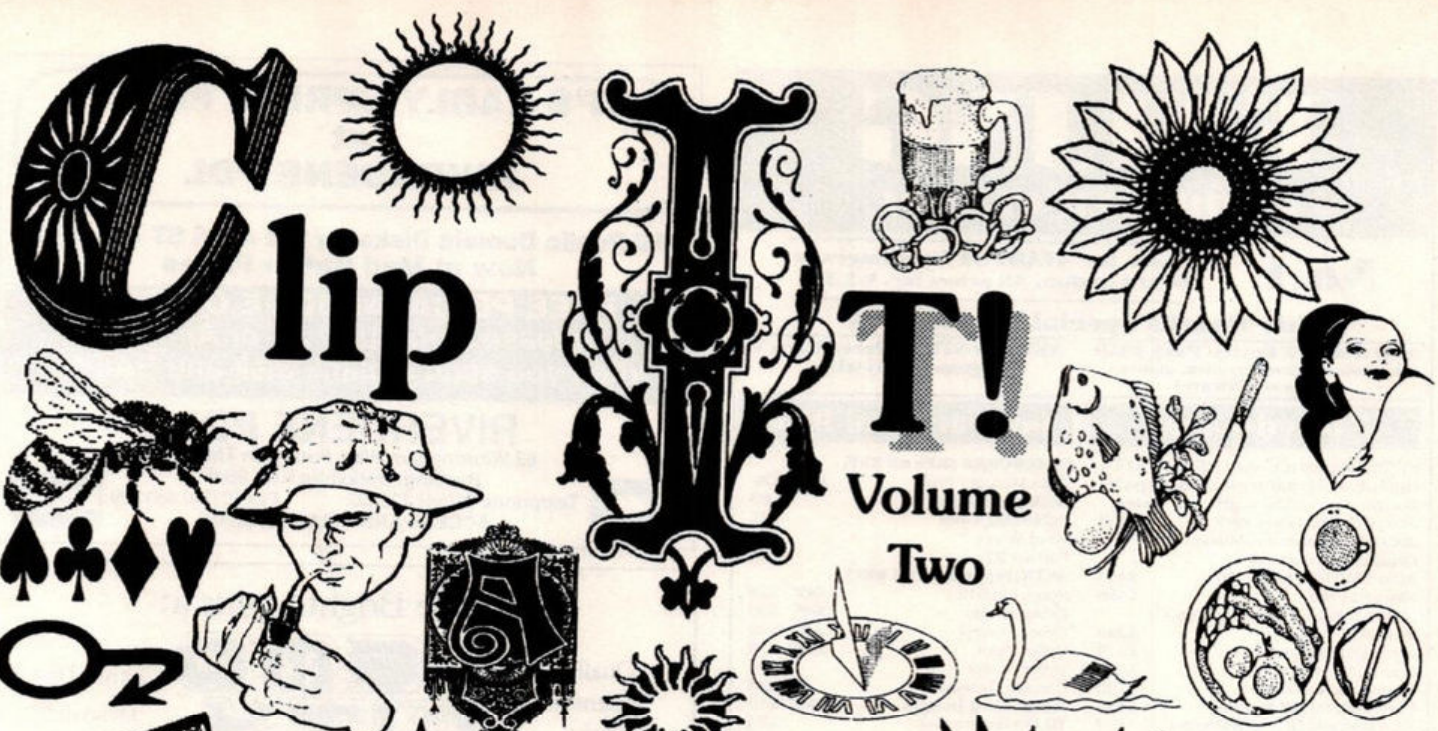
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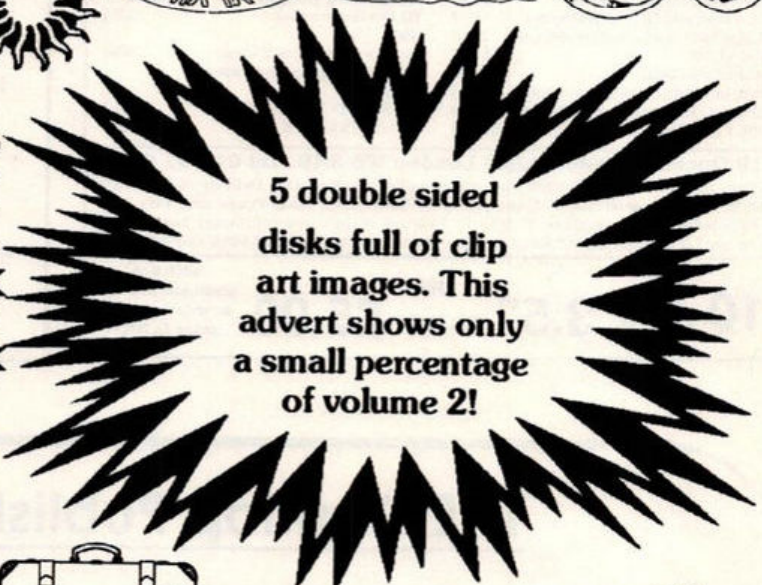
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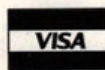
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We've dealt with single and double page documents; now Simon Williams shows how to combine styles with master pages to make book layout a matter of a few mouse-clicks

The paragraph style, covered in some depth last month, is one of two techniques used to speed up the production of long documents. The other is the master page. In the same way that you can set up the layout of each page in a word processor, you can specify a default page within most DTPs. The default layout is superimposed onto each page before any text or graphics are added to it. In a book-style document, which has to allow for a binding gutter, you can use separate master layouts for left-hand and right-hand pages.

A master page can contain column guides, text and graphics frames, rules, boxes and repeating text. For example, if you're laying out a book you probably want to repeat the title and page number on each page. It's also useful to start the text at the same position on each of the pages. This is easily achieved by adding directives to the master pages.

When master pages and paragraph styles have been set, it's a comparatively simple job to flow the text into the empty document from a text file and apply the styles to it. It's possible to flow documents of several hundred pages in this way, and if you can embed calls for fonts, sizes or whole styles within the word processed text, the job can be made simpler still.

A DTP system makes an internal copy of any text or graphics imported in this way, so you needn't worry about changes within the DTP affecting the text file you've imported. You obviously need to allow disk space for the word processed and the DTP versions of your document, though.

The sample document this month is the manual for a fictitious ST business graphics package called Sumo. Before starting to lay out any of the pages, spend half an hour setting up the master pages and paragraph styles. The master page layouts should be offset for left-

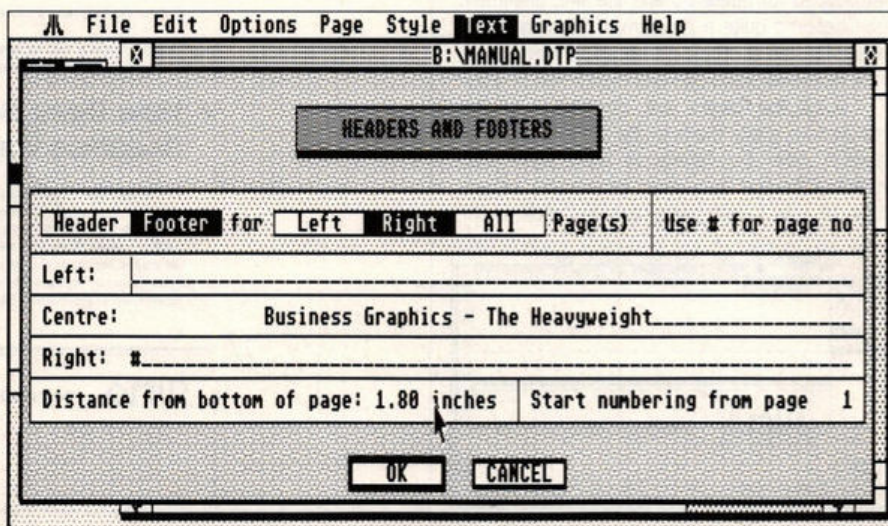
hand and right-hand pages because the finished manual is likely to be paper-bound or punched and ring bound.

It's useful to add text frames to the master pages and rules to divide the body text from the headers and footers. These are created by opening frames and snapping them to the page guides. The top and bottom edges of the frame are then switched to solid lines so that they show on screen and when printed.

The header and footer areas of the page can be handled semi-automatically within *Timeworks*, though text and graphics can also be added by hand. Headers and footers consist of three parts each, with text being flushed left and right, and centred. You don't have to add text to any of the parts, but those you do use create their own paragraph styles which can be amended like any other. The special symbol "#" is used to represent the current page number and *Timeworks* then keeps track of the pages automatically and updates the numbers on each page. The "#" symbol can be combined with fixed text, like the word "Page," if needed.

One of the most useful facilities within the header and footer window is the ability to alter the vertical position of the text. You can use this feature to line headers and footers up with other elements on the page. These elements can be text or, as in this case, graphics. The product logo for *Sumo* was created in *Degas* – rather hurriedly – and imported into the *Timeworks* document. Then it was resized and positioned to line up with the text of the footer already placed on the page.

Any page element may be cut and pasted in *Timeworks*, so the logo can be copied to the clipboard, moved to the other master page, and a copy pasted there. Using this technique ensures that each copy is the same size, and even positions them at equivalent points on

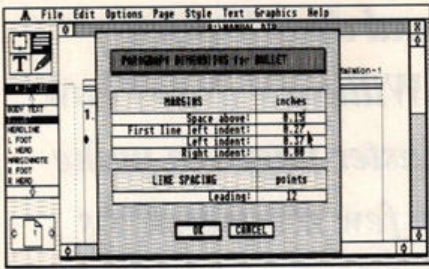


■ Headers and footers are added to the master pages separately

TIMWORKS DTP

For consistency, this series refers to *Timeworks DTP* screens and facilities. If you're using another DTP you may find that the method of operation differs from that shown here. The principles involved, however, can be applied to any DTP program.

Timeworks DTP was designed as a budget rival to high-priced DTP packages and provides a dazzling array of features. It costs £99.95 □ Electric Distribution (0480) 496660.



■ **Timeworks caters for hanging indents by specifying a paragraph indent separately from the "first line" indent**

each page. All that's needed is to slide one copy along to take account of the gutter offset.

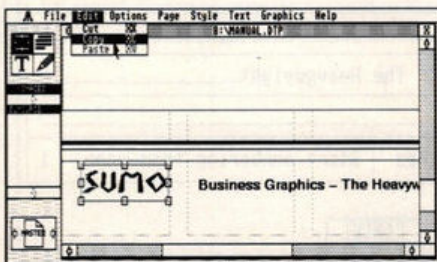
When the master pages are complete you can move to page one and add or amend the paragraph styles. The default style names are useful because they are appropriate for almost all documents. The default body text style is almost exactly what's needed for this document, except that the font needs to be Dutch because it's more readable than Swiss. It also needs an indent so that the bullets on the chapter titles and section headings stand out.

Hanging indents can be very useful for adding emphasis to sections of text. They are easily added by setting the first line indent to zero and giving the rest of each paragraph a set indent. This technique is used for the section headings "Welcome To Sumo" and "How Does Sumo Business Graphics Work?" and to delineate the six particular features of the package the manual is describing.

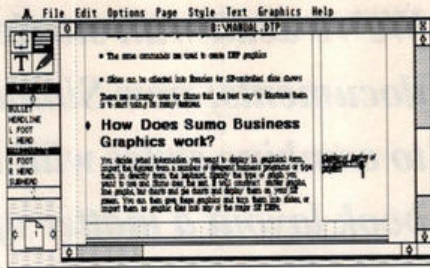
The only freshly-named paragraph style is "MARGINNOTE" which is used in the second, narrower text frame on each page to annotate the paragraphs of the main text. This is quite a common technique in technical manuals and helps the reader scan through the pages of the book to find a section of particular interest. In most cases it's difficult to align margin notes with the main text in this way, unless the leading of the margin note is a sub-multiple of the body text leading.

The point is worth making that alignment of text across columns depends very much on the choice of font size and line spacing (leading). If one column is leaded at 12 points, for instance, then another leaded at seven points only aligns with it every 84 points, or at intervals of just over an inch. When different line spacings are introduced for headings and the like, alignment can become quite a problem. If the number of margin notes is small, it's easier to open separate boxes for each one and align them by eye.

Once the styles are complete, it only remains to apply them to the text. *Timeworks* doesn't offer the facility to build style commands into text in a word processor, so you have to select each paragraph and click on the



■ **Graphic elements, such as product logos, may be added to master pages**



■ **By adding two text frames to each page you can run separate texts parallel to each other through a document**

style name in the browser to apply the style.

Other DTPs do offer embedded codes, however, making life much simpler. Some, including *Timeworks Publisher PC*, let you type style and typographical commands within angled brackets in your text. By allocating these pure ASCII sequences as macros in your word processor, you can automate the layout of long documents which take on any specified attributes as the text flows into the pages.

■ **Next month, in the last of our DTP tutorials, we look at special features to get the most out of your DTP package.**

JARGON BUSTERS

BULLET: a small graphic symbol used at the beginning of a paragraph to highlight its contents

FONT: a typeface in a particular point size and style

FRAME: a normally non-printing rectangular box used to hold text or graphics. Can be easily moved around and resized by the use of a series of small square handles

GUTTER: the area of a printed page left blank to allow for binding pages together

HANGING INDENT: indenting all but the first line of a section of text

INDENT: the space between the left margin and the start of the first word in a line of text

MASTER PAGE: default page layout applied automatically to each page of a document

PARAGRAPH STYLE: the attributes which effect the typography and layout of a paragraph of text

POINTER: a section of text preceded by a bullet, which sets out to emphasise one particular point or feature

TYPEFACE: a particular design of text characters

Installation - 1

1.

◆ Welcome to Sumo

Congratulations for having bought the best business graphics package on the market today. It embodies the latest developments in computer graphics, available today on your Atari ST computer. Sumo business graphics gives you the power to create full three dimensional graphics for use in presentations or desktop publishing pages. Sumo can bring many benefits to the way you work:

- Quickly produce professional standard graphs and charts
- Integrate graphics and text within a single presentation package
- Easy to use within the GEM graphics environment
- Simple commands can produce presentation quality slides
- The same commands are used to create DTP graphics
- Slides can be collected into libraries for ST-controlled slide shows

There are so many uses for Sumo that the best way to illustrate them is to start using its many features.

◆ How Does Sumo Business Graphics work?

You decide what information you want to display in graphical form, import the figures from a number of different business programs or type them in directly from the keyboard. Specify the type of graph you want to use and Sumo does the rest. It will construct scatter graphs, line graphs, bar charts and pie charts and display them on your ST screen. You can then save these graphics and turn them into slides, or import them as graphic files into any of the major ST DTPs.

Overview of functions of Sumo and benefits of program

SUMO Business Graphics - The Heavyweight

1

■ **A neatly constructed page from the finished manual. Notice the page is offset when printed to take account of the natural shift to the gutter which occurs when bound**

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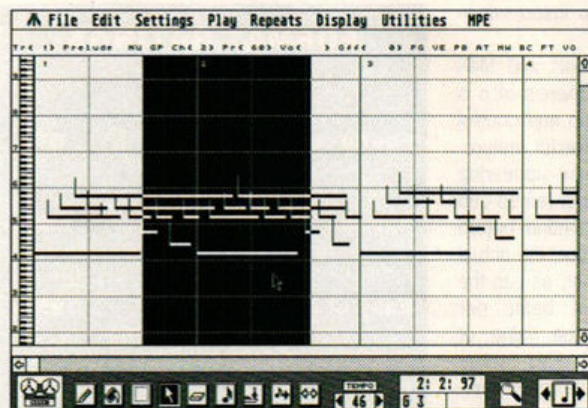
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EDUCATION AND GOVERNMENT ORDERS WELCOME



■ **Conductor and controller track. Tempo changes are literally drawn on screen**

■ **The main screen of Tiger Cub: 12 tracks and plenty of information easily accessible**



From low cost to no cost, we take our hats off to two fine entry-level sequencers and Jon Bates scratches his head emerging from the public domain asking...

so, how low can you go?

Tiger Cub

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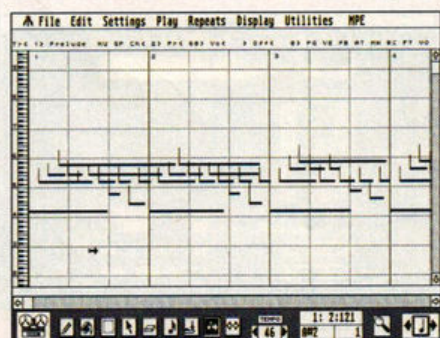
The latest sequencer to emerge from the production line of US software house Dr T is aimed directly at the non-professional first-time home user. *Tiger Cub* is very simple to use, because unlike many entry-level programs, it's not a cut down version of an advanced professional program. It comes with a selection of sounds, has a high degree of accuracy (384 pulses per quarter note) and though cut out to work with MIDI, it can function without it using the internal voice chip.

It's designed to make everything easy to understand and see. The main page loads up with 12 tracks ready to record on and the word "record" flashes away to egg you on. As soon as recording finishes the record logo jumps to the next track waiting for more. It has an internal metronome to keep you in check, enables you to name the instrument you're using, name the track, and add any additional information you might want to enter for future use. What's unusual is that you can't change the MIDI channel from this part of the screen.

You can Solo (turn off all other tracks) or Mute (turn off a particular track or Group). Group is an interesting idea as it enables a selected number of tracks to be played simultaneously and makes for fast comparisons.

The controls for playing follow the familiar formula of tape player icons for play, pause, record, fast forward and reverse. The tempo control is a bar slider and there's an additional tempo range accessible from the Environment menu option. To the right of this are buttons for the Group control, linking several marked tracks together and deleting the track being recorded - X-REC - which is handy if you screw up in mid flight. Cue does not find preset locations in the music and should really be renamed Loop which is what it does. The upper number is the start point, the lower the end, and the whole function kicks off by pressing the Cue button. This means you can keep recording over any marked section until you get it right!

If keyboard dexterity is not your strong point you can also record in step time, one note or chord at a time from a menu option on the edit page. This is well thought out with function



■ **Cut and paste - the inverse video area is now cut and ready for pasting**

keys playing a major part in helping you to achieve perfection without tantrums.

In the bottom left of the screen are more controls. Edit takes you through to the edit screen, Merge and Rechannelize are mentioned above and Quantize is a real-time quantize that fixes up the note times as they enter the ST to the nearest value set in the box. Great for rock-steady techno-percussion but not too handy on fiddly sections with pitch bend. Never mind, you can always fix up those chunks later in the edit section.

The Edit screen offers several different ways to edit notes and controller data. The notes are presented in a graphic form, scrolling - if auto scroll is on - from left to right across the upper section of the screen. An indication of pitch is given by the vertical piano keyboard along the left-hand edge of the screen, although if you're using a colour monitor you may lose an octave because the medium resolution can't quite get it all in focus. The simplest way to edit is to select an edit function from the set of button icons on the lower screen and zoom in on an area or particular note. As you do, relevant information concerning the note is displayed - exact point within the sequence, pitch, velocity or, if a drum map has been selected, the name of the drum.

The notes are shown as horizontal bars with length in proportion to note duration. As a token nod to traditional notation each note has an upright stem at its starting point.

The drum map caters for different drum

machines. It's there because no two drum machines have the same notes allotted to the same drums. This means that, having set up a pattern using snare, bass drum and hi-hat on one drum machine, should you then try to use another drum machine the result will be absolute gibberish. However, if you have a map that alters one track to fit another drum machine, you load that up and it converts the original pattern - end of problem. It means you can return to your first drum machine - ideal if you borrow another drum machine for a few days.

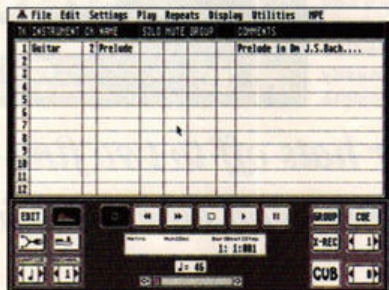
Moving notes presents no problems because the buttons enable you to move up for pitch, across for timing, select any variety of notes, select a complete area for cutting and pasting, add or erase notes, alter velocity and quantize according to the note value displayed in the far right-hand box. *Tiger Cub* uses traditional music notes on screen but the drop-down menu gives you a wider and more selective choice including the option to "nail the first note" which means all notes quantized take their point of fixed reference as the first note and not the actual beat. This is possibly for use with synchronized tracks to accompany tapes or video.

I was a bit puzzled when I couldn't pick up some selected notes, but it transpires that you must set the maximum amount on the environment window. This is because the program takes a copy of all edit and non-quantized tracks and memory space starts to get tight. To alleviate this you can do your housework, so to speak, and instruct the program to "clean up" or get rid of all unnecessary copies.

I like the idea of being able to flip from track to track within the edit screen, because with so many sequencers you're forced to go back via the main screen. This is achieved from the very small print information line above the graph. It should be in a large and bolder typeface because even on a high res screen it is only just about legible and it's actually quite a

powerful dealer of commands to insert within the sequenced track.

Voice changes, volume controls and MIDI channels are all changed here. There's also a display of the very powerful tempo and control changes - *Tiger Cub's* most powerful feature. The Conductor track is a window appearing under the score in which changes in tempo can be drawn by hand with the right-hand button and edited with the left. What's more, the actual tempo can be fixed from bar to bar, as can the



■ The unique edit screen - half graphic, half notation. The edit icons are along the bottom with a menu of editing options

number of beats per bar and the value of each beat. This makes for an amazingly powerful editing facility and one which seems to belong to a far more powerful range of software. The same is true for the MIDI controller track which lets you define any of the 30 odd MIDI controllers - volume, modulation, pitch bend, chorus, sustain, pan and so on -

and draw them in place. They're fixed in place to the notes and can also be cut and pasted. For a novice this is deep water but for someone who's familiar with the ins and outs of producing variable tempos and odd features it's tremendous - fast, easy and clearly visible.

Quick Score, a traditional notation scoring program, is bundled with *Tiger Cub*. It works very well with a wide selection of functions printing up to 12 staves at a time, has options for piano staves, key signatures, percussion notation and printout for laser and dot matrix. It struggles when asked to display 12 staves but as a quick reference and guide, which is all it's really intended for, it's certainly a most welcome free gift.

Tiger Cub is an excellent beginner's program and very simple to get to know. The more discerning user may become frustrated by the sequencing side which doesn't measure up to the amazing MIDI editing facilities available, but this is an entry-level package. Not so much a cub but a very friendly and house trained pet - one that's safe with children!

FORMAT RATINGS

TIGER CUB

£99 ■ Dr T ■ 01 256 3454

Features 87%

Basic sequencer with good note editing and astounding MIDI control editing

Speed 92%

No complaints - the routines have been well-written, tried and tested

Ease of Use 95%

The outline of the program is very simple. You can't go wrong if you stick to the basics

Results 92%

Good recording accuracy. A bit awkward if you slave it to another sequencer

FORMAT VALUE 91%

Well-documented, ideal beginners program. The MIDI editing is a masterstroke, though beyond the grasp of a beginner

The Competition

Track 24 Comus/Soundbits £79.95 ■ 021 733 2063. Sequencer One Gajits £79 ■ 061 434 2768, and Master Tracks Jnr MCM £99 ■ 01 724 4104

16 Voice Sequencer

MACHINE: ALL STs

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This 16 track sequencer, usually named after its creator Henry Cosh, is a smart piece of software that can stay the course with pretty well all sequencers under the £100 mark. It even has several features that other pro sequencers lack.

The layout is simple. The screen splits into three main areas: top left is a track list, top right is the editing display for each track and the bottom half of the screen has controls for playing, recording and editing. Everything else is accessed from drop-down menus.

Recording is simple: pick your track, click on the record icon in the lower half and play away. The sequencer has a built-in metronome that burps away like a frog but is usable never-

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This is just one example of the need for a multiple environment on the ST. Present solutions are driven by individual software houses developing their own environments for their own software. These happily interface and changes made in real-time can be registered on another resident piece of software - but only if it's from the same company. Steinberg have MROS, Hybrid Arts have CHAOS, Dr T have Multi Program Environment and C-Lab have Soft Link. So far C-Lab have been the most

open, devoting several pages of the manual for version 2.2 of *Creator* and *Notator* to a general philosophy of true compatibility and inter-synchronization for all programs. They also supply information to allow third party programmers to use their solution but admit



■ The C-Lab approach to multi-tasking. Creator version 2.2 has a memory configuration program

that even this is flawed as it uses non-standard communications routines.

All very well but you need a good deal of memory to use it and this doesn't come cheaply. C-Lab aren't happy about memory upgrades because they believe they cause problems with software, particularly if you try to run two or more simultaneously. Once again the pocket looks like taking some serious punishment if we are to get anywhere with the multi-tasking ST.

The other stumbling block is the hardware that some software uses. Hardware components like MIDI or SMPTE interfaces can't be duplicated and conflicts occur when two programs try to address hardware in different ways, both looking for ports that already have "foreign" hardware inserted. MIDI was born from an urgent need for multi-lateral communication: surely the major software houses can follow suit? At present the true multi-environment is limited by brand name and could well snuff itself out of existence.

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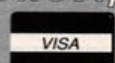
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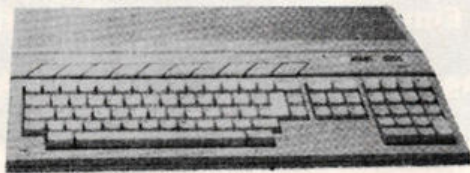
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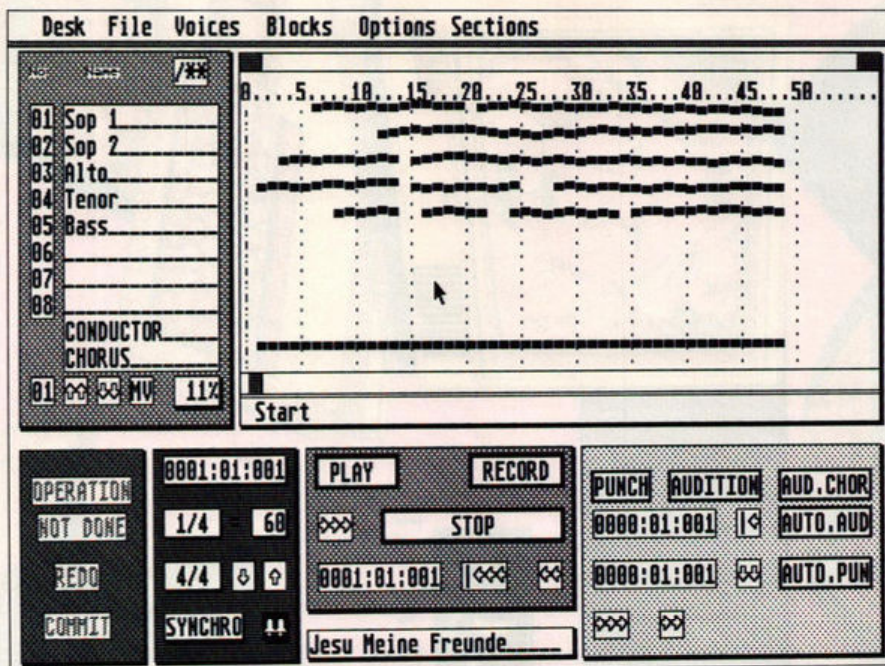
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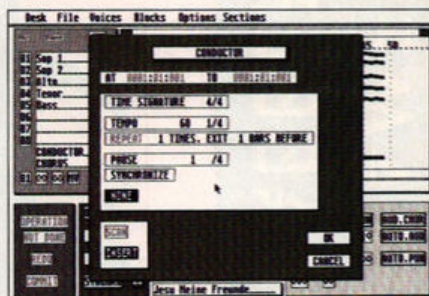
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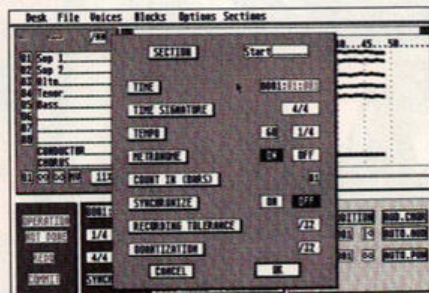




■ Who says PD is cheap and nasty? The 16 track sequencer displays eight at one time - editing controls to the right and main controls down below



■ Setting up the PD conductor to change tempo



■ Define sections for recording on the PD 16 tracker

theless. Your actions and notes are accurate up to 96 ppq and unless requested, the software records all MIDI data.

The sequencer not only records and plays back on any MIDI track but also records on several simultaneously; the multi-voice option lets you cross sequences from other software or from several performers simultaneously. All tracks can be named and the music is displayed on the edit screen running to the right of the track list. Anything recorded is put in a temporary storage area so that you can decide whether or not to commit it to the track.

Tracks can be merged, rechannelled and quantized either during or after record. By using the copious menu options you can split the tracks from any note, alter the velocity, transpose the track and set the filtering and range of MIDI controllers.

Its best feature

enables you to record in sections. It would be tricky, though not impossible, to record each section of a song separately and not necessarily in performance order.

A section is a slice of all 16 tracks. You can name the section at the bottom of the edit display - lining it up against a track called Conductor. The conductor is a full-ranging tempo controller that remembers alterations in tempo and has the ability to speed up and slow down. Make a note of the bars you want to control and fill them in on the Conductor menu. The time signature, like the tempo, can be altered from section to section.

Up to 20 sections can exist in a piece, which can be up to 9,999 bars long depending on memory available, and each section can have a different quantize value.

Program changes can be moved backwards and forwards so they don't interfere with

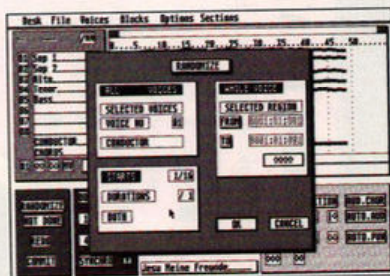
notes and all the refinements of MIDI control can be altered at will. It even puts a pause of a pre-defined length in at any point or on any note - a very slick option indeed.

Nearly all operations are mouse controlled with a neat way of incrementing numeric data. Click on the appropriate numeric box, hold the left button and then "roll" the mouse; left or right gives a slow rate of change up or down, the vertical axis a faster rate. You can hold down the right button and make continual "sweeps," rather like a friction motor on a toy car, until the correct number appears.

Fine detail editing is achieved without reference to a data stream or graphic notation. The display, which can be altered in size, shows bars in blocks. Listen until you hear the offending bar. Increase the size of the display and hone in on the duff "fragment," which can be as

small as one note or one chord, then use the definable auto-punch section to replace it. You can perform this in step-time as well. This is actually overdubbing renamed as editing - using exactly the same process as a multi-track recorder except that it works very slowly or in step-time.

The Henry Cosh sequencer works with other sequencing hardware and software from drum machines and syncs to internal and external synchronization. I did manage to lock it up when transferring data from another sequencer at more than twice the speed of the piece. However it recovered and didn't actually crash. My only serious criticism was that should you drop a menu down, or indeed do anything on the screen while recording or playing back, the program either slows up or stops. Given its advanced features it would have been good not to have to stop every time you wanted to check some detail.



■ Randomize the timing for unexpected results

Up to 8,000 notes can be recorded on a 520 and over 58,000 notes available to 1040 owners. There are refinements to the program coming out in due course, one of which lets the program read and store in MIDI file format - useful when you upgrade or transfer song files to other software.

This is the most powerful and successful sequencer seen in the public domain for the ST. Its few idiosyncrasies aren't debilitating and it has features that rival programs of professional class. The documentation is contained on a print file and is comprehensive. The whole package is user friendly and you would probably have to start shopping armed with a black mask and crowbar to beat this for amazing value. Get one now and bung the author a well deserved contribution. ■

FORMAT RATINGS

16 TRACK SEQUENCER

£2.50 ■ Henry Cosh ■ public domain

Features	96%
Full set of controls - copes with lots of tricky things like altering speed and pausing on notes	
Speed	80%
Ponderous at times, but that's due more to the architecture than duff programming	
Ease of Use	85%
Very good if you stick to basics - beginners might find the refinements and menus hard to grasp	
Results	95%
Good - it only broke down once and that was under a fair degree of undue pressure from another sequencer	
FORMAT VALUE	100%
It represents astounding value for money. As a low cost entry to music software it has no equal!	

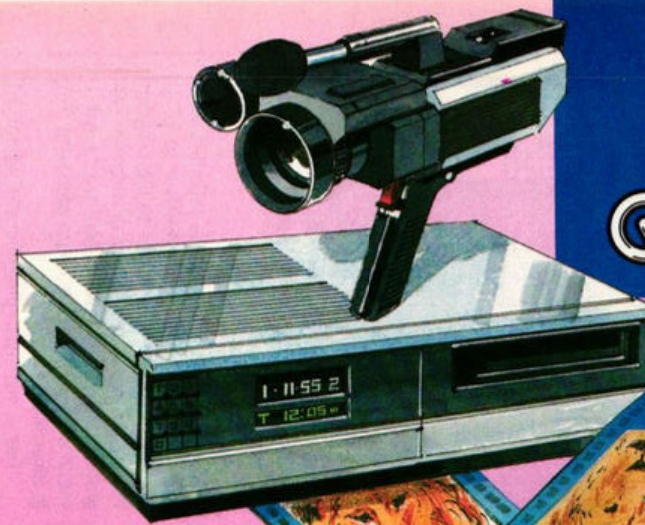
The Competition

There is an older 64 track sequencer known as the Waddington sequencer in the public domain, but this is no match for the Cosh sequencer

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Image

MACHINE: STs with 1MByte
PRICE: £69.55
FROM: THIRD COAST TECHNOLOGIES
CONTACT: 0257 42442

Within the last year a steady influx of quality software has found its way onto the market, proving beyond doubt that the ST is "where it's at" for cheap yet high quality graphical construction. Packages such as *Becker CAD*, *Cyber Paint*, *O-Line* and *ZZ-Rough* have set new standards for art applications (see page 79 for graphics details).



Enhancing the ST's image in the art market, *Image* is packed with tools

Image is the latest paint program to hit the ST market. Boasting impressive specs including the ability to create and manipulate images larger than the screen size (the normal limitation for most painting programs), it looks set to become one of the foremost paint packages.

Booting *Image*, you're presented with the archetypal paint program screen consisting of a standard GEM menu bar, editing window and a strip of tools down the left of the screen.

Setting up a new image is straightforward. Select *New.IMG* from the drop-down menu, define its size in pixels and you're ready to start. All the usual tools are here including a spray can, pencil, brush (with multi-selectable widths), and scalpel for cut and pasting, several pre-defined shapes (square, circle/ellipse, square with rounded corners and so on), and a measuring jug for area fills. There's also a variety of fill patterns and a microscope to magnify and edit a particular area.

After selecting the microscope, you're provided with a new window containing an enlargement of your drawing. The left corner of this window shows the full image so that you can see exactly what you're editing - very useful.

But what makes *Image* so good is its ability to import images from *GEM.FNT* and *Calamus .IMG* files! You can port in a GEM font and manipulate it in any way. *Calamus* output files can be stretched, twisted, mirrored and edited and the whole dumped to a 9-pin or 24-pin dot matrix, or a laser or inkjet printer.

All functions are accessible via keyboard shortcuts and you can work on up to seven images at once via separate windows, limited only by available memory. *Image* is a comprehensive, easy to use painting program packed with drawing, draughting and painting tools well-designed to overcome any problems.

FORMAT RATINGS

IMAGE

£69.55 ■ Third Coast ■ 0257 42442

Features	90%
Packed with every conceivable tool	
Speed	75%
Putting fills over fills sometimes takes a while, but it's generally fast enough	
Ease of Use	85%
No specialist knowledge required and the manual is friendly and easy to follow	
Results	85%
Very good	
FORMAT VALUE	50%
Expensive, but it has a lot of features	

The Competition

Hyperpaint £25 Atari Corp is the closest competition but *Image* offers so much more

st host adaptor

Hard drives go DIY

ST Host Adaptor

MACHINE: ALL STs
PRICE: £86.94
FROM: THIRD COAST TECHNOLOGIES
CONTACT: 0257 42442

Hard drives provide more speed and more storage capacity than any other single peripheral you can hang on your ST. Until now, though, they've been financially remote for all those not directly related to royalty. That's about to change with the launch of a new adaptor from American company ICD.

The *ST Host Adaptor* is a clever little interface which forms a link between your ST and a standard SCSI hard drive. SCSI means Small Computer Systems Interface and is a - more or less - standard interface between hard drives and personal computers. Machines such

as the Apple Mac come complete with a SCSI port, but unfortunately the ST doesn't. Using the *Host Adaptor*, however, you can connect an embedded SCSI hard drive (ie a drive with SCSI interface built-in) directly to your ST or make use of one of the widely available Seagate ST506/ST412 drives and SCSI controller cards on the PC market (these drives can often be bought very cheaply second-hand).

The interface comes complete with a con-



The *ST Host Adaptor*: bringing down the cost of hard drives

necting lead, an excellent manual and the ICD hard drive utilities - widely recognised as being the best hard drive programs around. Following the simple, step by step instructions, you'll have a hard drive up and running in no time.

Other features include a battery-based clock, daisy chaining options to connect extra drives, error checking and autobooting from the hard drive. The *ST Host Adaptor* is a cheap and effective way of adding the all-important hard drive to your ST system without breaking the bank. ■

FORMAT RATINGS

ST HOST ADAPTOR

£86.94 ■ Third Coast ■ 0257 42442

Features	90%
Comes complete with a real-time clock, good manual and excellent disk utilities	
Speed	85%
It's fast	
Ease of Use	85%
Simple to set up, but you need to be handy with a screwdriver	
Results	85%
Good results with a little time and application	
FORMAT VALUE	85%
With a second-hand drive you'll have a hard drive system for under £200	

The Competition

No competition!

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
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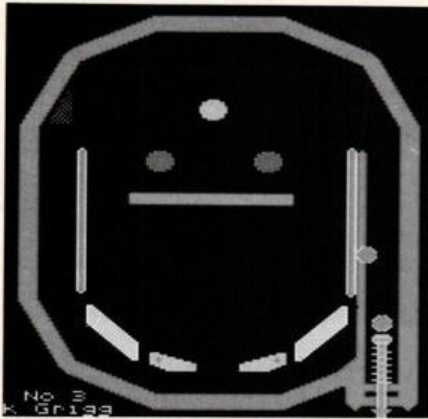
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■ You'll find the new improved source code for our fledgling pinball program on this month's Cover Disk. It's easy to read and you should be able to identify how each module interfaces with the others. Some of the modules make a good start to anyone's library of really useful ST game routines: there are routines to display a *Degas* picture, to switch between screens, and to draw sprites. See page 23 to find out how to get the most out of your Cover Disk

Everyone agrees that small programs compile much quicker, need less memory and are easier to understand. On the other hand, powerful programs that do complex tasks just have to be big. Take the pinball program we're writing for this series – soon it will be too big to compile in one go on a 520ST. So what can be done about it?

In BASIC or strict PASCAL there isn't much you can do about it, but the designers of C had these problems in mind when they gave C separately compilable modules.

Each module is stored in a separate file. You compile each of these separately to produce an intermediate object file. The intermediate object files cannot be executed: the GEM Desktop would complain. You link these files to produce an executable file. If you need to make a change to one module after you've built your program, you don't need to recompile the whole program. Instead, just compile the module you changed and link the program again.

The separate compilation phases are all handled by the "cc" command. Figure 1 shows how a program called "fred.prg" is built from "freda.c" and "fredb.c."

program in c #4

Insert the Cover Disk and get stuck in to part four of our hands-on beginner's series. This month Warwick Grigg continues his pinball simulation and shows you how to deal with unwieldy programs

Many compilers provide a utility program called *Make*, which automatically builds the program for you, only recompiling the modules you have changed. *Make* was pioneered in the Unix operating system, but the good news is a version of it is included in the *Sozobon C* compiler kit!

Obviously *Make* doesn't know what your program is called nor the name of the files it needs. You need to create a "makefile" in the current directory for this information. The "makefile" for the example in Figure 1 below would be:

```
fred.prg: freda.o fredb.o
cc freda.o fredb.o -o fred.prg
```

```
freda.o: freda.c
cc -O -c freda.c
```

```
fredb.o: fredb.c
cc -O -c fredb.c
```

The "makefile" contains a list of dependencies and actions. The first dependency indicates that "fred.prg" is dependent upon "freda.o" and "fredb.o." If the timestamp on "fred.prg" shows

that it is older than any of the files on which it depends, *Make* executes the commands on the lines following the dependency. For example:

```
cc freda.o fredb.o -o fred.prg
```

Make even checks whether "freda.o" or "fredb.o" need to be regenerated before it checks "fred.prg."

There are lots more goodies built into the program: it knows how to build a ".o" file from a ".c" file and there are macro facilities. The documentation and "makefiles" supplied with the compiler source code are informative and some of the books on the Unix operating system cover *Make* in detail.

You can't split your program into modules any old how. A function can't start in one module and finish in another. And you need to indicate which identifiers are:

- local:** that is, declared in this module and not available for use by other modules
- global:** that is, declared in this module and available for use by other modules
- external:** that is, declared as global in another module and used in this module

Up to now all of the declarations in the example programs have been global (which is the default). Identifiers are made local by adding the "static" prefix:

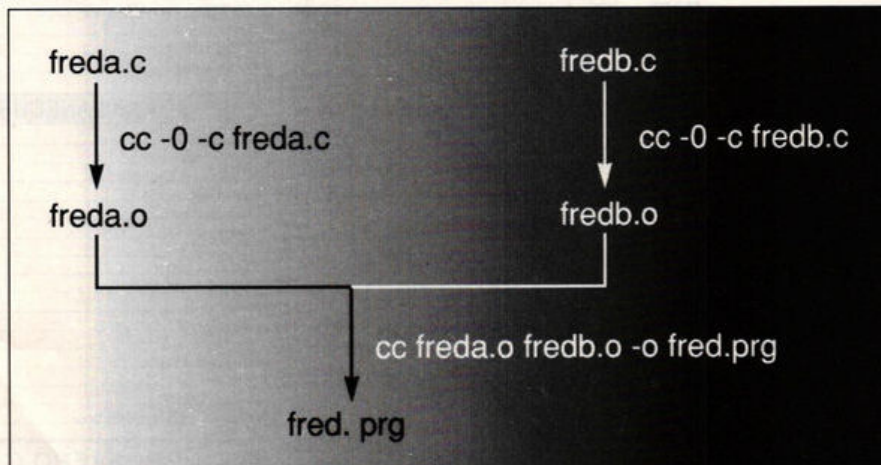
```
static int allmine;
```

To access an identifier declared in another module as global, first you need to declare it as external:

```
extern char *malloc();
```

and then you just use the identifier in the normal way.

Many C compilers are very liberal in their >



■ (Fig 1) How a hypothetical program called "fred.prg" is compiled by the "cc" command

PROGRAMMING C

implementation: if you forget to add a global declaration, relying solely on `extern` many C compilers forgive you without making a fuss. The same goes for calling an external function of `type int`. Nevertheless it's better to stick to the general rules as this makes programs easier to understand and easier to change.

Modular compilation is tremendously powerful when combined with modular programming: you can build up your own library of tried and tested general purpose routines which you can link into any new program instead of cutting and pasting lots of source code. All of the standard C library functions are separate modules. To see what I mean just take a look at the source code for `printf()` on the Sozobon C source diskette. ■

Have fun with the new techniques you've learned. Get that disk out and make a mean program. Next month we'll be looking at adding some more functions to the pinball program.

SOZOBOB C

The package consists of two double-sided disks containing PD Sozobon C compiler (conforming to Kernighan and Ritchie specification); GEM bindings; library functions; Gulam shell; and RAM disk.

The first disk is ready to use straight-away. The second contains the documentation and compiler source code (excellent educational material, by the way, for A level and degree course Computer Science). See the special offer on page 134.

PROGRAMMING IN C: WORKSHOP

The wrong edition

I am following Warwick Grigg's C programming tutorials, can you please answer the following questions:

1) Can you supply simple clear set-up instructions for the Gulam Shell? I have succeeded in compiling the `example1.c` file to assembly source using the `hcc.ttp` file and compiling to code using the `ccd.ttp` file using the command:

```
alias ccd a:\sozobon\bin\ccd.ttp
ccd -Z example1.c -o example.prg
```

where the path has already been defined as

```
a:\sozobon\bin\ccd.ttp
```

using the "cc" command did not compile the file as stated in the series.

2) The documentation supplied with the shell and compiler is very limited and unnecessarily complicated. Therefore can you explain the use of batch files supplied on the compiler and their compatibility with the shell?

3) Is there any support or user group for Sozobon C as the PD library which I bought my Sozobon C from cannot provide support?

Gerry McGeady

You would need to invest a lot of time to bring your configuration up to scratch. Our edition of Sozobon C would save you the hassle. However, in answer to your specific questions:

1) You need to amend the file named "gulam.g" to include the information required

for Sozobon C. In particular you need to include the directory

```
a:\sozobon\bin
```

in the PATH environment variable. I suspect this is why you couldn't compile the program on your disk using the standard "cc" command. 2) I can't think of any reason to use batch files. I don't think any came from Sozobon: the Sozobon package comes with an excellent utility called Make. I can't comment on the documentation you have, as I haven't seen it.

3) Yes, ST FORMAT! The ST FORMAT edition of Sozobon C is set up ready to use straight-away, and has undergone an extensive user trial. We have included all the latest additional libraries (eg the floating point library and GEM bindings). We will be supplying updates to the package, as needed, on the Cover Disk. Further support is provided through the C programming tutorials.

Drive B

Is it possible to change the Sozobon files to look at drive B?

Denzil Botting

Yes, simply edit the GULAM.G file by typing:

```
b:\gulam\gulam.g
```

and change all occurrences of `a:` or `A:` to `b:`. Then save the file. Your disk can now be used in drive B.

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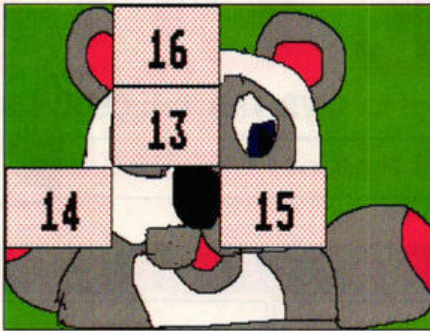
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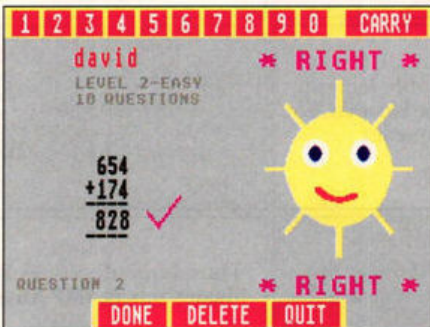
■ **Jig Spell:** complete the jigsaw by spelling the words correctly



■ **B Spell:** point to the nursery bricks to choose your letters



■ **Shopping from Fun School 6-8** is one of 24 programs across the series



■ **Add and Subtract:** smiles when you're right, frowns when you're wrong!

As the range of ST educational software grows ever larger, David Jones assesses the principal packages and suppliers



■ **Zap aliens by typing fast in Learning to Type** from HAT

top marks

The advent of the ST and other 16-bit machines in the mid to late 1980s heralded a new era in home computing. Aside from the lucrative games market, many serious packages have emerged and the ST is now well-served by a wealth of software covering word processing, art, music and DTP. One area that seems to have been ignored is that of education. That is, until now.

The reason why it's taken so long for the ST to be accepted as an educational tool resides in the now archaic BBC's stranglehold on schools. Educational software in the past found its most lucrative market solely on the BBC, but as this machine's grip weakens and faster programming packages (such as STOS basic) speed up development time, increasing numbers of packages are becoming available for the ST.

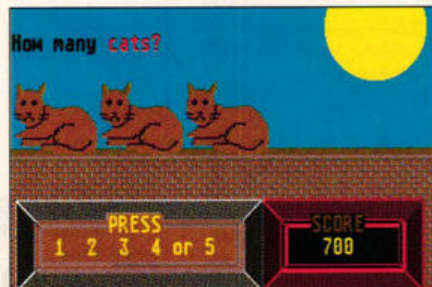
Educational software falls into two main categories: dedicated software and information technology packages. Dedicated software has a specific aim to teach or test and ranges from simple counting, spelling and literacy programs for pre-school children to complex scientific simulations for A-level students and beyond. Information technology packages are well-documented programs produced primarily for use in commerce or industry. These are used in information technology and other courses throughout the school curriculum. A wealth of such products exist for the ST including virtually the

whole of Electric Distribution's output (including *First Word Plus*, the entire *Timeworks* range, the *Cyber art* series and so on) to name but one supplier.

There are three main suppliers of educational material for the ST: B.Bytes, HAT and Softstuff. School Software have 18 titles currently available for the PC and have already converted one for the ST - if more follow this company should soon become one of the market leaders.

Companies traditionally associated with other areas of the market (notably games) are now moving into the educational field. Softex have successfully negotiated the marketing of Miked's titles and Database/Mandarin have set up an educational arm and have already produced *Fun School 2*.

The PD field is also growing. The ST Club



■ **Count it:** attractive and stylish but ultimately insubstantial

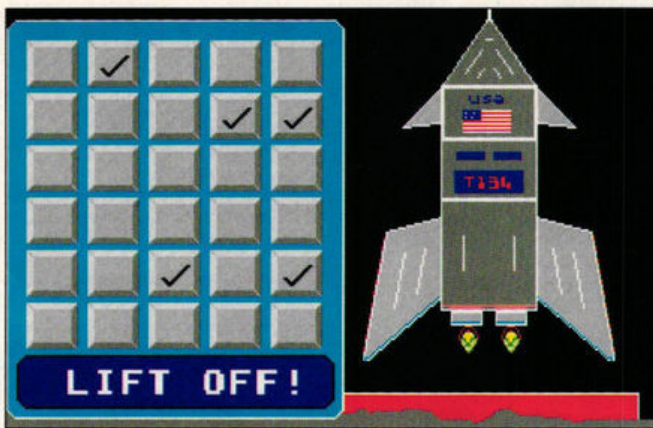
markets 13 educational disks and the Page 6 Library has nine disks considered to be of educational value.

Packages are sold as either single programs or a group of programs covering similar skills (maths, spelling and so on). The advantage is that a clearly defined area can be catered for by a single package. This is not the case, however, with **Database's Fun School 2**. Covering a wide range of topics, it claims to have sold over 100,000 units for the ST in the UK alone and has almost single-handedly convinced suppliers that the educational market is an extremely lucrative field.

Fun School 2 consists of three packages (£19.95 each) aimed at well-defined age groups (under 6s, 6-8s and over 8s). Each consists of eight programs. Under 6's can experiment with shape recognition, number sizes and spotting colours. The skills covered for 6-8 year olds include simple maths, co-ordinate recognition and spelling. The final package (over 8s) deals with such concepts as logic, mapping, foreign currency, code breaking and binary arithmetic.

Fun School 2 has two main strengths. First, the packages are bright, colourful and well animated: they really are fun. Secondly they have a feel of being inter-linked so children can easily progress from one to another.

Softex are just about to move into the educational market having recently purchased



■ All aboard *Maths Mania* and get ready for *Blast Off!*



■ *Driver* is part of *Maths Mania*: get the right answer and go faster!

➤ Miked's four existing programs. These will sell as two compilations at £19.95 each. The first is an odd combination of *Time* and *Word Search*. *Time* is a simple but effective time-telling tutor based on a friendly, smiling clock face. Not only does it teach a child how to tell the time but it also encourages him or her to use these skills either with help or as a test. *Time* is aimed at 5-8 year olds. Its partner in this package consists of 40 traditional word search grids on subjects as diverse as art and snooker. These grids are similar to the ones that you find in competitions or puzzle magazines and are unlikely to appeal to anyone below the age of 11.

Softex's second compilation combines *Add and Subtract* and *Tables Test*. Between them they cover the four basic mathematical skills (adding, subtraction, multiplication and division). They're mouse-driven, have friendly work screens and like the majority of educational packages available on the ST they're aimed squarely at primary school children.

For several years B.Bytes have been producing educational software for the ST. Their output is colourful, interesting and, at £14.95 each, exceptionally good value. *School Time Maths* consists of seven options from counting to multiplying numbers. The main screen is a classroom with an animated teacher producing the work on a blackboard. The numbers are read out as they are printed on the screen. Answers are given by way of a mouse-driven abacus and any errors are clearly corrected.

B.Bytes market two spelling packages. The first, *B.Spell*, uses an environment surrounded by familiar nursery bricks with the letters a to z printed on them. Letters are selected by pointing a cursor to these bricks. There are two age levels. For 5-6 year olds a picture appears, the word is spelt and the child re-spells the word. As each letter is selected a near-perfect phonetic pronunciation is given. For 7-8 year olds no initial spelling of the word is given, only the picture.

An interesting aspect of this program is that it can be developed by teachers or parents using a construction kit (£9.95) enabling the production and importation of your own words and pictures. Using this kit the program can be tailored to a child's individual needs.

Their second spelling package really does represent fun learning. *Play Spell* is an arcade, platform-type game in which letters must be collected from around the screen in the right order to form words. Two data disks (at £9.95

each) are currently available which extend the vocabulary of *Play Spell*. This is a program that does not so much teach as reinforce ideas.

Softstuff are well-established in the ST educational market with a range of material covering numeracy and literacy. They are promising six new packages within the next few months. *Things To Do With Words* (£19.95) is one example of their output. It contains three programs: *Sentences* (placing words in their correct order), *Anagrams* (unjumbling letters to form words) and *Word Hunt* (making words from letters contained in a large word). This package offers a bright and interesting working environment and would benefit primary and younger secondary school children.

Softstuff are apparently on the verge of obtaining selling rights for **Children's Learning Software**, a small London-based firm whose

output for the ST is currently confined to *Let's Spell At The Shops* and its French counterpart each selling for £14.95. The mouse is used to direct a child to a shop. When inside, the mouse icon becomes a shopping basket used to select items. These are then spelt using a mouse-driven finger. Two forms of help are possible: a small teddy bear spells the word and the child then picks the letters in the correct order or a thermometer can be used to show how close (warm) the child is to the letter. As with *B.Spell*, phonetic pronunciations of each letter are given as they're spelt. When leaving the program the child is given the option of printing out the words spelt correctly (giving a permanent record of progress). The English version benefits 4-9 year olds and the French version would help any child during the first few years of studying the language.

Teach Software, a new company, are currently developing two programs for the ST, *Count It* and *Spell It*. The former, aimed at pre-school children, is soon to be released. The child is presented with up to five colourful objects and has to key in the number. The program is limited, though well-written, and doesn't really justify being sold as a single educational package.

If there was an award for educational software it would have to go to *Maths Mania*. This superb package is the only conversion for the ST (so far) from **School Software**. Despite its price tag (£22.95) it represents excellent value for money.

The package consists of five maths/logic games aimed at encouraging these skills in 8-12 year olds. *Mind Power* is a *Mastermind*-type game which involves discovering the sequential order of coloured shapes. *Blast Off* is a memory test that gives a limited time to remember the position of objects on a 5x6 grid. As the objects are found a rocket is built. If they are all found, it blasts off! *Memory Maths* is a mental arithmetic game with a difference: the question dissolves before you can give the answer. *Driver* involves making a train go faster by giving correct answers to simple sums. And finally *Brain Boxes* balances scales by answering maths problems. All of these programs are enjoyable and encourage mental agility.

In total contrast is **Ladbroke Computing's** *Add with Oscar* (£5.99). This is an uninspiring and boring program to be avoided at all costs!

HAT produce consistently high quality educational software. In *Jigsawspell* (£14.95) the child

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- Teach Software,**
31 Harrison Close, Northwood,
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is confronted by a screen obliterated by 16 randomly-numbered boxes. A word appears on the screen which has to be re-spelt. If the spelling is correct a box disappears to reveal part of a picture. Eventually the whole of the picture is seen. Pictures are *Degas* compatible so parents and teachers can design their own. A word editor is included.

First Paint (£12.95) is a simple no frills program aimed at very young artists. It's also *Degas* compatible and carries out some of the main drawing functions associated with this package including line, box and circle drawing, writing and in-filling.

First Type (£12.95) allows the ST to be used as a typewriter. Intended as a straightforward introduction to word processing for children, it's actually a useful utility in its own right.

Learning to Type (£14.95) is an excellent program encouraging children to use the keyboard. It includes a colour-coded tutor mode and a fascinating space-invaders game where speed and accuracy are of the essence! An editor is included for word/character manipulation.



■ **Learning to Type:** letters are colour-coded to aid key location

It's becoming clear that the hitherto commonly held view of there being little high quality educational material for the ST is simply not true. A large number of titles can now be purchased, almost half of which were released within the past 12 months, and a great deal more will become available as the year unfolds.

Sales of *Fun School 2* have demonstrated that there is an almost insatiable demand for good educational software. These sales have also shown the importance of high-quality packaging and a mass marketing strategy.

If parents are going to pay £20 for a package they expect more than a sheet of card to hold their disk. Access to high street retail outlets is also important. Companies are already responding to these points. Mike Riggs of Miked has passed his titles onto Softex because he's unable to develop glossy packaging and doesn't have access to a mass distribution system that will lead to his products being placed on shelves in Boots or WH Smiths.

The ST is finding its way into more and more schools and is gaining respect as a superb educational tool. The primary sector is well catered for, but dedicated subject-based secondary school packages remain virtually non-existent. There is an open market here for any company willing to rise to the challenge. ■

Have you bought educational software? What did you think of the programs you've used? Let us know. Write to: Education, ST Format, 30 Monmouth St, Bath BA1 2AP

EDUCATIONAL SOFTWARE FOR YOUR ST

PRE-SCHOOL/ GENERAL PRIMARY

A B Zoo ■ Microdeal £14.95

Age Range: 3-6
Comments: Alphabet teaching.

Count It ■ Teach £9.99

Age Range: Under 5
Comments: Colourful and simple.

Crebus ■ PD (ST Club)

Age Range: 4-7
Comments: Creates simple stories using pictures.

Fun School 2 ■ Database £19.99

Age Range: Three sets of eight programs (under 6s, 6-8 and over 8s)

Comments: Each set covers a variety of skills. A demo version of these programs can be obtained from Page 6 publishing.

Pre-school Kidprogs ■ Microdeal £14.95

Age Range: 3-7
Comments: Pre-school compendium.

Kid Mix-up Supplier ■ PD (Page 6)

Age Range: 3-6
Comments: Place a storyboard of pictures in order.

Kid Potato ■ PD (Page 6, ST Club)

Age Range: 3-5
Comments: Design or match potato "people."

Time ■ Softex £19.95

Age Range: 5-8
Comments: Time-telling tutor. Packaged with *Word Search*.

NUMERACY SKILLS AND MATHS

Add and Subtract and Tables Test ■ Softex £19.95

Age Range: 6-11
Comments: Covers general primary maths skills.

Add With Oscar ■ Ladbroke £5.99

Age Range: 4-10
Comments: Adding, subtraction, multiplication and division.

Flashcard ■ PD (Page 6)

Age Range: 6-10
Comments: A maths program covering the four basic skills, interesting for its unusual visual and audible rewards.

Maths Mania ■ School Software £22.95

Age Range: 8-12
Comments: A suite of five programs which develop mathematical, logical and memory skills.

Maths Test ■ PD (ST Club)

Age Range: 5-11
Comments: Three levels of difficulty in adding, subtraction, multiplication and division.

School Time Maths ■

B. Bytes £14.95

Age Range: 5-9
Comments: Seven "games" from counting to multiplication.

Things To Do With Numbers ■ Softstuff £19.95

Age Range: 5-9
Comments: Three programs covering basic skills

LITERACY

Alphabet Creator ■ Softstuff £9.95

Comments: Construction kit for use with *Spell Book*.

B.Spell ■ B. Bytes £14.95

Age Range: 5-9
Comments: Adaptable spelling package (see text).

B.Spell Construction Kit ■ B.Bytes £9.95

Age Range: 5-9
Comments: Allows parents and teachers to produce data for *B.Spell*.

Jigsawspell ■ HAT £14.95

Age Range: 5-10
Comments: 300 word + spelling game. Extra words can be added.

Let's Spell At The Shops ■ CLS £14.95

Age Range: 4-9
Comments: Shopping/spelling game.

Playspell ■ B. Bytes £14.95

Age Range: 6-10
Comments: Arcade (platform type) spelling game. Additional data disks (currently *Birds* and *Animals*) are available at £9.95 each or £14.95 for two.

Spelling ■ PD (ST Club)

Age Range: 5+
Comments: Spelling tests using teacher/parent generated lists.

Spell Book ■ Softstuff £19.95

Age Range: See below
Comments: Sold as two packages: 4-6 year olds and 7+ years. Additional data disks (*Spelling Packs*) cost £14.95 each. An Alphabet creator enables the production of data disks (see above).

Things To Do With Words ■ Softstuff £19.95

Age Range: 5-10
Comments: Covers a range of skills including verbal reasoning and sentence composition.

Word Puzzle Generator ■ PD (Page 6)

Age Range: 5-10
Comments: Generates word search games.

Wordsearch ■ Softex £19.95

Age Range: 7+
Comments: Traditional word search game. Packaged with *Time*.

ART

First Paint ■ HAT £12.95

Age Range: 4+
Comments: Easy to use drawing/painting package. *DEGAS* compatible.

Kid Graph/KID GRID ■ PD (ST Club)

Age Range: 3-6
Comments: Creates drawings by filling in triangles or squares.

Kid Shapes ■ PD (Page 6, ST Club)

Age Range: 4-9
Comments: Creates pictures using pre-defined shapes. Two versions: the fairly complex *Kid Shapes plus* (for older children) and the simpler *Kid Shapes2*.

Kid Sketch ■ PD (ST Club)

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Comments: Simple line-drawing program.

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Comments: Progression from *First Paint*.

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Typing Tutor ■ PD (Page 6)

Age Range: 8+
Comments: Multi-lesson tutor created with *STOS*.

MISCELLANEOUS

Geography Tutor - Europe ■ PD (Page 6)

Age Range: 12+
Comments: Cut-down version of a commercial Canadian program. The full version may be imported soon.

Let's Spell At The Shops In French ■ CLS £14.95

Age Range: 8+
Comments: French version of *Let's Spell at the Shops*.

Molgraph ■ ST Club £12.95

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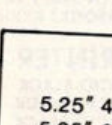
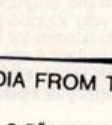
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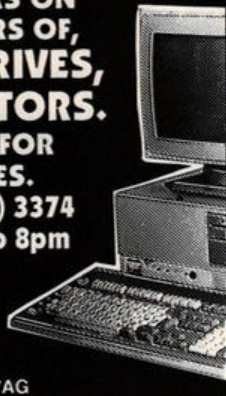
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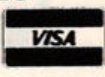
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feedback

Editor Steve Carey delves into another hefty mailbag of comment, complaint and – just occasionally – congratulation; plus, the first samples of your questionnaire replies

One from the art

As the programmer of Microdeal's *Canvas* I ought to point out a couple of slightly misleading comments made in *ST Format's* April review.

Firstly, the review distinctly said that no manual was supplied with *Canvas*. Well, OK, there isn't a printed manual (only an inlay card). Instead, a complete 70 page (A4 equivalent size) manual is supplied on the disk – in much the same way as it could be used on the Cover Disk demo using the instructions to copy it onto another disk (instructions in the *CANVAS.DOC* file).

Also, the reason for not including some features in *Canvas*, such as facilities for loading *Spectrum 512* pictures, is quite simply that I've never had access to the resources necessary! After all, most of *Canvas* was written while I was 16 (during 1989) and still a student at GCSE and now A-level. In fact, I've never even seen *Spectrum 512* or *Quantum Paint* and I've never actually used *Degas Elite*. The root of the matter: programming is my hobby!

I should also point out that there have been one or two changes to *Canvas* since the Demo version on your Cover Disk, including

optimisation of the program size, and ironing out of a couple of bugs which mysteriously crept in after the Demo version had been sent off!

That's about it for *Canvas*. I'm glad you liked it, but please in future, be a bit more careful what you say. The review gave the distinct impression that the manual was non-existent – an excellent way to put potential buyers off!

John Gymer
Lincolnshire

OK so we didn't explain there was a manual on disk – that's because it was on the Cover Disk and there were full instructions on printing out the manual in our Disk pages.

Given your account of the writing of Canvas – your age and the fact of your unfamiliarity with the other ST programs, I think it all the more remarkable that you've produced such an excellent piece of software.

Another one from the art

As the author of the *Paintpot* graphics package I was interested to read Richard Monteiro's review (*ST FORMAT* 9). Since then there have

been a number of improvements, including support for the STE enhanced palette (4096 colours). *Paintpot* is continually updated in accordance with the users' comments, and updates are sent out free of charge.

Readers might like to know that a working demo disk of *Paintpot* is available free of charge if they send an SAE and blank disk. The philosophy behind the program was to produce a fully featured powerful painting environment, but without compromising the quality of the interface.

I felt it would be all too easy to squeeze in as many features as possible while neglecting the basic "useability" of the software. *Macpaint* on the Macintosh, in fact, was more of an inspiration in the writing of *PP* than any existing *ST* program.

To give an example: *PP* automatically recognises the way the user is used to drawing a line (either two mouse clicks or "hold and drag") and behaves accordingly. This holds true for any shape or block function. These "invisible" features seem to have stimulated a cult following of people who especially want a good "feel" to the software they use.

J. Andrew W. McOwan
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Stowe-by-Chartley,
Staffs ST18 OLG

Your free demo is a fine offer, and I suspect you'll be inundated with ST FORMAT readers taking you up on it.

Not game for a laugh

It was pointed out in the first of your C programming series that the course assumed some knowledge of computing, which I have. So I sat down and began to assimilate – until reaching the course proper (the section headed "Let's do it!").

Although I am conversant with *ST BASIC* (for what it's worth), I have been rendered totally bewildered. I was hoping that the March issue would make things clearer, but no such luck!

A beginner's tutorial your article is not. It uses vocabulary and explanations which require a fair knowledge of C programming. As usual with so many such articles and publications on computing, it is written by someone who lacks the skills of transmitting information clearly and concisely. This frightens people away from ➤

£25 PRIZE LETTER: the last STE word

Re your "The STE – what went wrong?" news article in *ST FORMAT* 8, I hope your readers do not misunderstand the problem and see the fault as lying with the programmers whose games do not run on the new machine.

Although I realise you never meant to indicate this, the unfamiliar reader might just misconstrue the situation. Although it goes against the grain having to tirade Atari (they did design the original *ST* after all!) it is absolutely true to say that the software incompatibility problem is entirely their fault. Programmers have not in any way "broken the rules" when addressing the hardware directly – it is not only standard programming practice but essential in order to get the *ST* to perform at its best.

Any program which relies on programming speed or visuals (games are obvious candidates) cannot afford the gigantic loss of power that goes automatically with using the "programming guidelines" mentioned in the article. The problem with codes produced by these methods is that it is very hardware dependent, but nobody realised that games being written would have to run on a different machine now.

As a professional programmer I very much resent Bob Katz laying the blame on

people who have done nothing if not boost Atari's machine to its current status. We have certainly not jumped in "expecting to find everything in the same place," as he says – indeed the list of people who had the chance to jump in at all was very short, and the amount of time they had before the machine's launch minimal. If we had only been given fair warning then games might have been revised and recorded in time – and the machine would have got the respect it deserves. Sticking to standardised methods might have resulted in compatible games, but they would be mediocre and not up to the standard we have already become used to on the *ST*.

The *STE* is a wonderful piece of hardware, but its release was abysmally handled. Software houses and programmers are responding as quickly as they can, but these things take time, which is what Atari did not let us have.

Jason Wingate
London

The £25 letter of the month award to you Jason; and a good place to draw a halt, I think. Correspondence on the STE's fast-lad-ing incompatibility problems is now formally closed.

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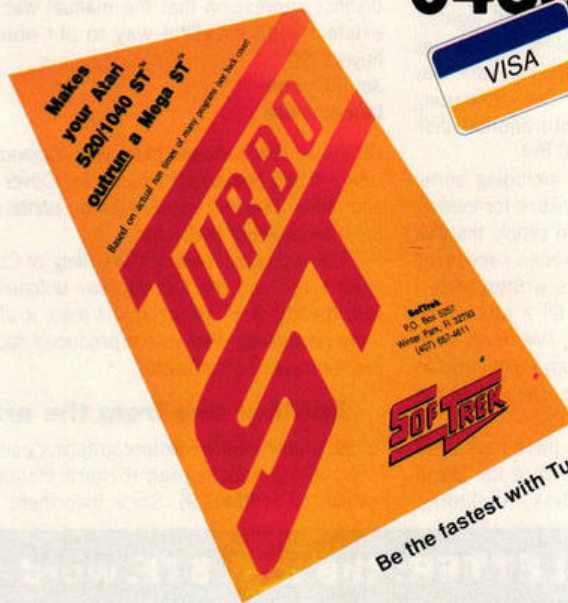
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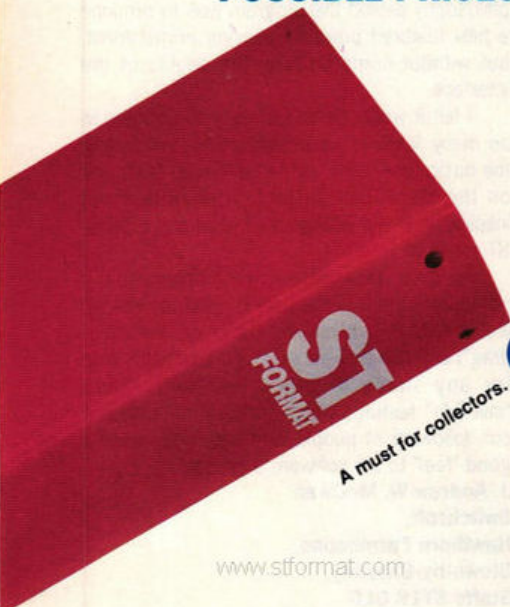
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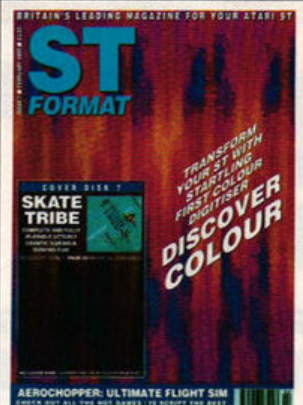
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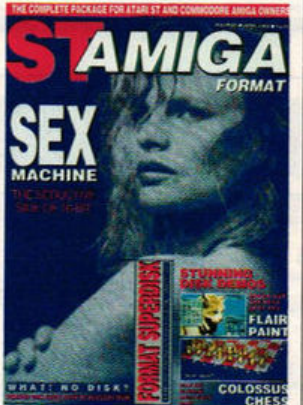


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serious computing, for it only looks frighteningly complicated when it is allowed to appear so.

A beginner's tutorial should be aimed at the intelligence of a bright child. I found the ST BASIC tutorial easier to understand as a raw beginner than your C course now.

Although I have ordered your Sobozon C package, I shall check forthcoming issues before any further purchases. If there is no indication of rectifying the situation then you will have lost an aggrieved customer.

I Bateson
Hanworth, Middlesex

Although I'm of course disturbed to hear that you're struggling with Warwick Grigg's C tutorial, I think it's aimed at about the right level. If it assumed no prior knowledge whatsoever we'd be years before we got anywhere.

C is after all a very powerful language, and if you still struggle you might consider investing in one of the books Warwick has suggested to accompany the series.

By the way, apologies to those who bought the Sozobon compilation expecting full printed documentation. That was originally the intention, but we realised it simply wouldn't be economically feasible and changed the description to read "with full documentation," which of course you'll find on the disks.

If you are unable to print out the disk documentation and feel hard done by, return the original disks to our mail order address: ST FORMAT C Series, The Old Barn, Somerton, Somerset TA11 7PY and we will refund your money. And while we're on the subject of manuals on disk...

All the runners

I have a 520 STE, and while the list in issue 8 of programs that won't run was very helpful, what I'd like is a list of what will run!

AR Harrison
South Humberside

You mean, a list of 95% of all the games ever

£25 UP FOR GRABS

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If your letter is about a technical problem you should address it to *Desktop* at the above address. And if it's to do with subscriptions or special offers, address it to Subscriptions Mail Order, ST FORMAT, The Old Barn, Somerton, Somerset

released on the ST? Hands up everyone who wants a whole issue of ST FORMAT consisting solely of a list of games... Thought so.

Will it won't it?

Please can you write next to each Cover Disk program whether it is STE compatible, rather than us trying to load it several times and sending the disk back thinking the program doesn't work?

Zubair Arasib
West Yorkshire

Good point Zubair: from now on all programs on the Cover Disk will be STE compatible. You have Disk Editor Richard Monteiro's word on that, for what it's worth (37p).

Big down under

Bob Lussier in Canada asked for the address of an Australian ST User Group (ST FORMAT 9). One group we've had lots of contact with are MACE (Melbourne Atari Computer Enthusiast), who can be contacted via Rita Plukks, MACE, PO Box 340, Rosanna 3084, Australia.

There are at least six other well organised Australian user groups - contact MACE or ourselves for more addresses.

Anyone writing to overseas groups should

try and include return postage, in the form of IRC coupons available from any Post Office.

Paul Glover, The ST Club
49 Stoney St, Nottingham

Thanks for your help, Paul: Bob now has the full world set!

Simply irresistible

As soon as you buy a new game, there's a cheat or poke for it in the next magazine.

Please don't suggest that we just don't look at the gamebusters section, because it's very tempting! Hints are OK, but cheats totally spoil games. Once you've completed a game you hardly ever play it again.

Steve Wilkinson
Cheshire

PS I am only 12 but when I am old enough can I work for Future Publishing and do games and hardware reviews for ST FORMAT?

If you're an ST fanatic, and consider money totally unimportant, you could be just the kind of person we're looking for...

Whose side are we on?

The comment column in ST FORMAT 8 raised a smile: "How come the best albums never quite fit onto one side of a C90?" I always thought it was a copyright violation to tape records, regardless of whether the tape is for personal use or commercial gain.

Could it be that someone at ST FORMAT is a music pirate?

Paul Glover
Nottingham

A debatable point, Paul: the 1988 Copyright Act, which became law last August, is less than clear on this point.

My own view is that buying an album and recording it for one's own use is morally - and in all probability legally - permissible. It is in no way similar to copying either records or software to pass on to others. ■

QUESTIONNAIRE REPLIES

The final section of our questionnaire - full run-down next month - asked for comments about ST FORMAT. Here's a brief selection:

"Print more about hardware. Give us some advice about printers, modems etc. People like to know more about what they are going to buy." - **Marc Brown**, Solihull

"More technology and less journalism." (?) - **M. Frulsh**, Northampton

(Favourite game: mono Patience (?)) "How about help/tips for newcomers like me?" - **G. Carter**, Barrow-in-Furness (favourite serious software: Atari Music Maker)

"No decent beginners' articles - I know nothing about computers: any tips or short cuts not printed in the manual?" - **Al McNeish**, Elgin

"More software that runs in hi-res (mono) on Cover Disk." - **William Goodall**, Aberdeen (favourite game: Starglider)

"You could always improve spelling & grammar in parts. I like this magazine very much and it is difficult to be constructive. Perhaps more cheats on

adventures and other games." - **J.B. Melling**, Blackpool

"I wish you would pay as much attention to detail when reviewing serious software as you do when reviewing games software." - **Stephen Donoghue**, Sunderland

"Simple programming for youngsters - under 12s. Simple but with a result that can be used." - **Stuart Garlick**, Shrewsbury

"A bit less war and violence would be nice!" - **Bert Leydekkers**, Netherlands

"Try to get more cheat modes in Gamebusters as it's not very long, and do old games like LED and Storm." - **Darren Braidwood**, Surrey

"More music features on the Cover Disk and better PD items as well." - **Brendan Watt**, Frasersburgh (favourite serious software: BIG Demo PD)

"Keep the music section small - you can't compete with speciality

publications." - **W. Cann**, London

(favourite serious software: Creator) "I feel you could do more coverage for music software." - **Gareth Kingston**, Basildon

"More features on music software." - **Ian Tilley**, London (Favourite serious software: Protex, "written by my brother")

"The adverts are terrible. Many are a rip off. I would like to see some sort of trial of advertisers especially those that claim 24hr despatch." - **Gareth Wilden**, Abingdon

"More letters and programming. Less games. Please show more educational software for A-level - GCSE, not for primary schools." - **Ralph Smyth**, Beauchamp

"What happened to the armadillo?" - **Alan Pearce**, Harrow

"Less on the subject of games." - **S. Lightwood**, Paignton

"Not enough on the subject of games."

- **Rowan O'Donoghue**, Waterford, Eire

"Why do you review games that only achieve ratings of 29% or below? This is a waste of time, space and money."

- **Nicholas Chester**, Romford

"Games are given too high marks; I think for games to score 90% must be unbelievable" - **Jonathan Smith**, Derby

"I am very happy in general with the mag. I think you have the balance about right - at least for someone like me, not a techno-freak but absolutely fascinated by ST computers and with an intelligent interest in most aspects of computing." - **Mike Harth**, Walthamstead

"I think the balance between all major subjects is about right." - **Graham Phillips**, Welwyn

"The Cover Disk should be like Turbo Outrun. ST FORMAT should be published weekly." - **Trevor Madigan**, Waterford, Eire

last word plus

The June issue of *ST FORMAT* goes on sale on Thursday 10th May and it's a real stonker. Don't be disappointed – reserve your copy now!

Coming soon

What delights does Britain's bestselling ST magazine have in store for you next month? Well, you won't be surprised to hear there's another super soaraway 800K plus (nearer 1MByte, truth be told) on our stonking great Cover Disk ("It's the ones we reject that make *ST FORMAT*'S Cover Disk the best").

We ask just how big a problem piracy is on the ST? Would games only cost £10 if there were no cracked copies around? And if that's so, how come Sega console cartridges (which can't be copied) cost £25?

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■ A recent pirate's "For Sale" list, complete with cracked versions of *Calamus* and other top ST programs

We have a world exclusive on what looks like being one of 1990's best games, *Resolution 101*, as well as in-depth reviews on Activision's *Warhead*, Microprose's *Fire and Brimstone*, Electronic Arts' *Imperium*, Infogrames' *Sim City* and many, many more. We unveil the all new, revamped, repainted and revitalised three page *Gamebusters*, absolutely jam-packed with cheats, hints and tips for all kinds of ST game sneaks.

FORMAT GOES WEEKLY!*

Among responses we had from our recent questionnaire were a number of requests (well, OK, two – but that's a number, isn't it?) for *ST FORMAT* to go weekly. It won't happen, unfortunately – at least, not for a while.

But if you find yourself craving ST news and info, why not try our sister magazine *New Computer Express*? Available from your newsagent every Thursday for a very reasonable 58p, it features a whole page every week penned by none other than Steve Carey, *FORMAT* editor and all-round ST-aholic, with valuable assistance in the form of short reviews and cheats on the games side from Mark "Hard to Please" Higham. Don't you dare miss it!

(* Sort of)

There are reports from Hannover's mighty CeBit Show and the Frankfurt Music Fair, both key events in the ST calendar, plus all the usual helpings of news, previews and reviews, letters, twiddly techie bits, and some of those small plastic things they use for keeping socks in pairs in the shop.

All this and less (we lied about the small plastic things) can be yours for just £2.95 on Thursday 10th May, 1990. Miss it and you'll feel ever so left out!

Shortages ahead

We've had letters from readers complaining that they can't get hold of *ST FORMAT* – not surprising really, with well over 43,000 people looking out for it each month (that's thousands more than any other ST magazine sold in Britain).

So why not save yourself the hassle? If you think you can't afford to subscribe (and see page 65 for some very good reasons indeed why that's rather a blinkered attitude),

you could always get your friendly, ever-helpful newsagent to reserve you a copy. Simply fill out the order form below, hand it over and then stroll casually into your local newsagents on Thursday 10th May

and say, "Can I have my reserved copy of *ST FORMAT*, June issue, please?" Could hardly be simpler!

Great scapegoats of our time

It used to be viruses – the thing people always assume is to blame when things go wrong with their ST. We used to get people convinced they'd been hit by the "well known" Bomb Virus, when in fact all that had happened was a program crashing.

Now it's the STE's turn. So, for the sake of the distressed chap who contacted us last week, let's put the record straight: if you find you can't buy midfield players in *Player Manager*, it is definitely not the fault of the STE. ■

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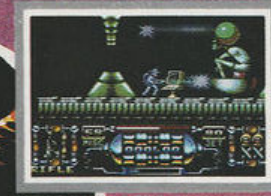
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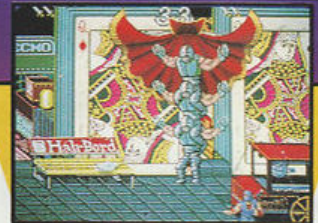
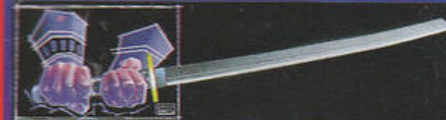
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