

BRITAIN'S LEADING MAGAZINE FOR YOUR ATARI ST

ISSUE 6 ■ JANUARY 1990 ■ £2.95

ST FORMAT

COVER DISK 6

TOWER OF BABEL

FULLY PLAYABLE
DEMO OF THE
MICROPROSE
FORMAT GOLD
WINNER!



NEED HELP? TURN TO **PAGE 25** WHERE ALL IS REVEALED

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FORWARD
INTO THE
1990s!
THE
WHITE HOT
FUTURE OF THE ST



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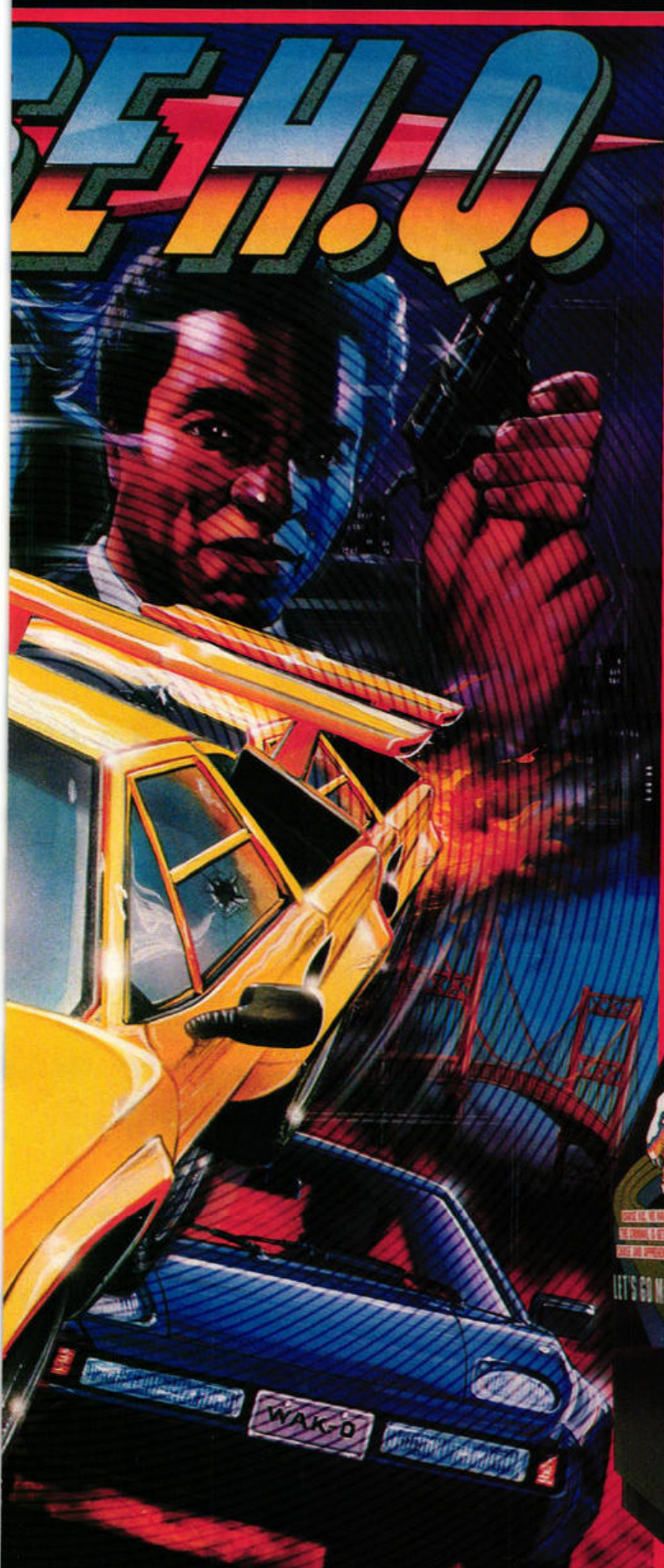
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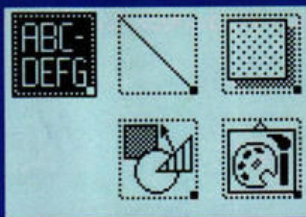
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V O T E D ARCADE GAME OF THE YEAR





ST/DTP: TWO EXTRAORDINARY PROGRAMS ON REVIEW.....82



■ How the ST helped Queen record their latest album - page 110

ST'S KIND OF MAGIC..109

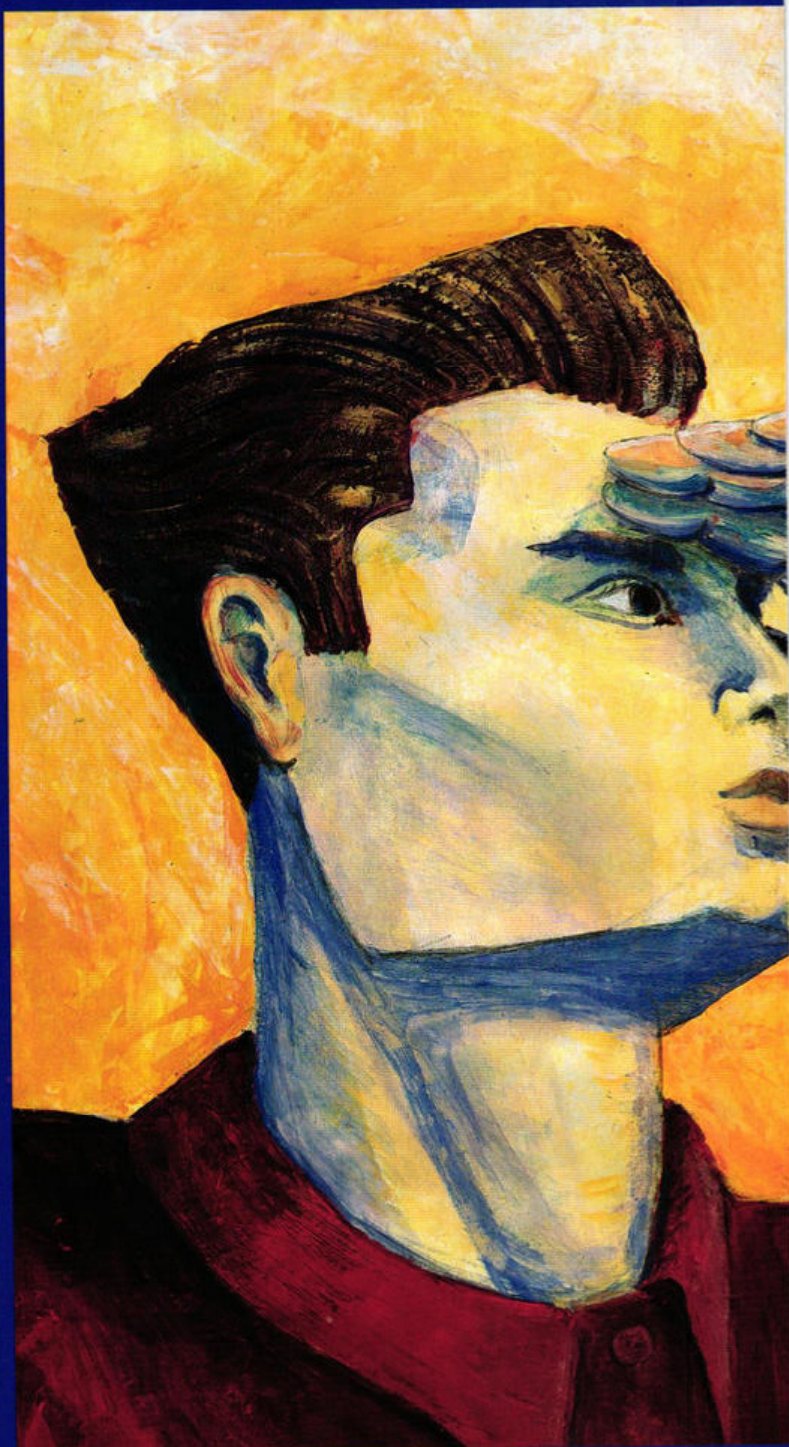
15 pages of reviews and interviews
on the ST music scene



■ Eurobody ST musicians Chris and Cosey - page 112



■ Lies, Damned Lies - and the Atari ST? - page 118



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Side A

TOWER OF BABEL An exclusive and fully playable demo of Microprose's brilliant new *Format Gold* strategy game

REPLAY PROFESSIONAL Great sounds from the most advanced 8/12 bit sampler for the ST

STAR STRUCK Graphically explosive screen saver with its head in the clouds

Side B

EASY TEXT Creative budget DTP package
CYBER ANIMATIONS Hang on to your seats! Brilliant animation sequences to complement our roller coaster/helicopter graphics tutorial
BELLUM INTERNECINUM Super swift alien destruction for the manically trigger-happy – and much, much more!



■ The well wonderful world of Microprose's *Tower of Babel*

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As we move into the '90s we consider
the ST's prospects, and find
the future bright...



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ATARI ANNOUNCE DISMAL RESULTS

Atari have just announced their latest financial figures for the third quarter of this year – and pretty poor they are too.

For the period ending 30th September, Atari's net sales were \$81.4 million, with a net loss of \$5.4 million. Compared to the same period last year, when net sales totalled \$98.8 million with a net profit \$0.9 million, the financial results are hardly encouraging.

Atari are attempting to reverse the trend in falling sales, however, by launching many new products such as the Megafile 44 removable hard drive, the Portfolio hand-held MS-DOS compatible computer and of course, the STE upgrades.

In the States Atari have high hopes for their handheld Lynx console, which is expected to cost about £250 in this country.

SAVE £80 ON ST SOFTWARE!

Fancy a copy of *Aegis Animator* for free? Previously available for £80, the popular animation program has just been released into the public domain. That means you can have your very own copy for just two or three pounds – the price of the disk.

The program has been on sale in America for several years, but author Jim Kent was extremely unhappy about the financial performance under the Aegis handling. Kent decided to secure the rights to the program and release it into the public domain.

"He was worried that people weren't able to get hold of the program," said Martyn Dryden of the Southwest Software Library. "It wasn't being pushed through. He just realised that as PD, it'll make him the same money as a commercial program – nothing."

To emphasize the re-launch the animator has been renamed *Ani-ST* and is available from PD libraries around the country.



■ *Ani-ST*: was £80, now just the price of a disk!



■ The upgraded ST makes its appearance at last

UK FINALLY SEES 1040STE

520 UPGRADE IS NEXT

Atari have begun shipping supplies of the upgraded 1040, the STE, into the UK. The machine is priced at £499 – the current price of the 1040ST, with special pack prices remaining the same. And at the massive Comdex Show in the States, a 520STE was unveiled.

What is odd about the timing of both moves is that Atari have failed to take advantage of the crucially important Christmas rush. Despite stories floated in the trade press that stocks of the ST are running low and Atari are having to air-freight in replacements, it's generally thought that this has not been the ST's busiest Christmas.

The new ST has not been very warmly received, with the majority of programmers who have had development machines expressing indifference about its performance. It is not yet clear that software that takes advantage of the new machines abilities will appear in any large quantity, as long as the majority of users have the lower spec machines currently on sale.

NEW YEAR RESOLUTION

When questioned about the benefits to be had from the STE without specialist software to support it, an Atari spokesperson said, "We're finding that 1040s are being used for business applications mainly, and it's also very strong in

the music market.

"To be honest, at the moment the advantage to the end user is pretty transparent because the software applications that make full use of the STE aren't really available yet." Asked about when new software would appear Atari said "in the first quarter of next year."

First shown in Dusseldorf at the end of the summer the 1040 STE has an improved colour palette, a stereo 8-bit DMA sound chip, and two new game controller ports.

INTO THE 90s

The upgraded 520, meanwhile, is unlikely to appear in any large numbers until well into 1990. Identical to the 1040STE except for lower RAM, it offers all the superior specifications of its larger stablemate but at an affordable price.

The STE is supplied complete with a blitter chip, considerably improving graphics and speed, as well as offering a larger palette of colours – although, disappointingly, the machine can still only display 16 colours at one time.

The lower entry-level STE is priced at £299 for the basic machine and £399 with bundled software.

■ You can read more about Atari's hopes for the STE in our special "Into the 90s" feature beginning on page 18.

NEW FLEET STREET TAKES ON MIGHT OF CALAMUS

Mirrorsoft's *Fleet Street* – the popular desktop publishing package for home and small business users – has been upgraded to what is claimed to be "professional quality."

Fleet Street III addresses many of the criticisms aimed at its predecessor and offers a range of remarkable new features that enable users to produce quality publications.

Arguably the upgraded program's most powerful new function is its ability to make use of the UltraScript printing standard, thereby enabling PostScript prepared documents to be reproduced on non-PostScript printers with amazing clarity and quality. Even 9-pin dot matrix machines can print PostScript files at high resolution. This is an excellent enhancement that dramatically improves the quality of output that can be achieved on a budget printer.

SCAN DELIVERED

Another warmly welcomed feature is the new scanning option that takes pictures scanned at relatively low resolutions such as 200 dots per inch using cheap hand scanners, then re-scales them in size and resolution to produce results of almost photographic quality.

ST MAKES HARD SUMS EASIER

Educational software specialists LCL have recently announced a complete range of GCSE software designed to take you from the basics to a full understanding of a given subject.

The series kicks off with *Micro Maths*, a 24 program, two book package which starts at school entrance level and goes right up to GCSE. A step by step A level course, *Mega Maths*, is expected to be released soon.

Micro Maths costs £24 and can be obtained from LCL on 0491 579345.

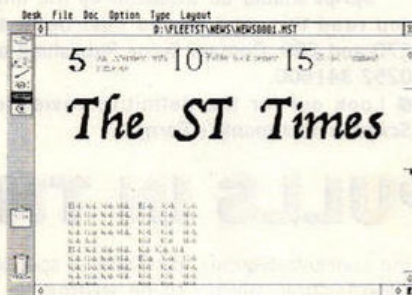


■ LCL say: "If you don't enjoy our maths courses we'll eat your hat"

Frame grouping, text wrapping around regular and irregular objects and vertical justification make *Fleet Street III* one of the most comprehensive DTP solutions on the market.

Fleet Street III costs £199 (or £100 to upgrade existing versions). Contact Mirrorsoft on 01 928 1454.

Mirrorsoft are boldly proclaiming *FSIII* as a new challenger to *Calamus'* hitherto unassailable position as the DTP package for the ST – a claim we put to the test in this issue (see massive six page review beginning on page 82).



■ The all new *Fleet Street III*: is it really up to a fight with *Calamus*?

OF MICE AND MEN

Question: what do the Atari ST, Commodore Amiga and Amstrad PC have in common? Answer: a brand new mouse from Jersey-based electronics company Naksha that works with all three without modification.

The new mouse features super slim design and ultra high resolution



■ Naksha's better mouse trap?

electronics that enable you to move the ST cursor from one side of the screen to the other with just a flick of the wrist.

There's a high quality combined mouse mat/cutting pad and a plastic "mouse house" to store your new rodent in, when not in use.

The Naksha mouse comes in two configurations. With *DeLuxe Paint II* and a pop-up menu maker priced £79; or as a cut-down package consisting of the mouse, mat and house for a reasonable £39.95. Naksha can be contacted on 0925 56398.

■ There's a full review of the new Naksha mouse in next month's *ST Format*.

HIGHLAND FLING

Livingston recently played host to the First Scottish Micro Show. Packed with Atari-related products our man-on-the-spot Stuart Low was there...

• Dynamic new Scottish company BBDP Electronics grasped the opportunity to launch their revolutionary new *DMA Splitter*. This is a unique device which attaches to the Atari DMA port and provides connection facilities for up to eight other devices. Priced at £59.95 the *Splitter* should be available from distributors Frontier in the New Year.

• BBDP Electronics also exhibited their *DMA Host Adaptor* board which facilitates the connection of a hard drive to the ST using either an embedded or separate SCSI controller board. By dropping the usual integral clock from the board, BBDP have managed to beat down the price to £49.95. The company can be contacted on 0383 881 768.

• For those interested in radio communications, Boscad LTD launched their morse code tutor. Costing £29.99, *Morse*

Master works with all STs in both medium and high resolution. Contact Boscad on 0383 729584

• Rombo showed off their upgraded video digitiser *Vidi-ST*. V1.28 now enables digitised images to be output on any Epson compatible printer. Rombo can be reached on 0506 414631

• And for those who spend spare hours leafing through electronic disk magazines devoted to their favourite machine, Lou Nisbet demonstrated his publication the *Music Matrix*, a disk-based publication aimed at professional musos. The magazines contains lots of MIDI public domain software.

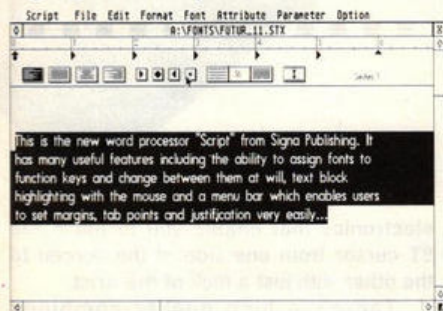
Music Matrix is put together using similar formatting techniques as *ST Format's* Cover Disk, meaning that subscribers get more programs and even better value for money. To subscribe to *Music Matrix* call the magazine on 0592 714 887

The show attracted a high level of interest from the Scottish computing community and a sequel is planned for next year.

SCRIPT SETS NEW STANDARD

UK software suppliers Signa Publishing, well known for their excellent desktop publishing package *Calamus*, are releasing *Script*, a word processor that *Format* predicts will become the standard by which all others are judged.

The program features a user interface similar to the incredibly popular *MacWrite* for the Apple machine. Text blocks can be highlighted easily with the mouse and



■ A brief glimpse of the new *Script* word processor from Signa – tipped by those in the know as the one by which the others will be judged

replaced with a single keystroke, a variety of fonts can be loaded and assigned to function keys and the look and feel of the program is friendly and easy to learn.

The ST has specifications which can surpass almost every other small computer on the market, but until now it has suffered from a severe lack of quality business and productivity software. This is one of many signs that that is changing.

While machines such as Apple's Macintosh have become the businessperson's best friend (after luncheon vouchers and executive toys, that is) the ST has had to wait in the wings, powerful and able, but overlooked – until the arrival of *Script*.

Like many of Signa's products, *Script* emanates from Germany where the ST is regarded as a superior machine for both leisure and serious purposes.

Script should be available by the time you read this, and should cost between £70 and £80. Contact Signa Publishing on 0252 341600.

■ Look out for the definitive review of *Script* in next month's *Format*.

FORMAT ON THE MOVE

Britain's fastest growing publishing company are moving up in the world. Future Publishing Ltd, publishers of that astonishingly tremendous magazine *ST Format* and, at last count, seven other nearly as good titles, is taking leave of dear old Queen St. We're moving to plush exclusive brand new exquisitely situated executive leather bound hand tooled gold blocked environmentally friendly offices at Beauford Court, 30 Monmouth Street, Bath, Avon BA1 2AP. Telephone 0225 442244. By the time you read this we hope to be safely installed at this new address. Complimentary remarks and large sums of money should be addressed to us at Beauford Court: complaints and such can be sent to our abandoned Queen St abode.

FERRARI F1 COMP WINNER

The winner of November's *Ferrari F1* competition is **Mark Rodway** of Gloucester, whose desperate-sounding, last minute entry has won him and a friend an all-expenses paid day out at Brands Hatch racing round the famous circuit at mind-boggling speeds in the safe hands of experts. Well, not in their hands exactly, but you know what we mean, we hope.

NEW SHOW PULLS IN THE SHOPPERS

By Adam Waring

The first Computer Shopper Show, held at Alexander Palace, was a monster success – unless you were among those turned away on the Sunday afternoon. Some 27,000 visitors attended, and so busy did it get that the organisers, Database Exhibitions, were obliged to advertise on Capital Radio begging people not to turn up! Despite the heavy emphasis on bargain hunting, however, plenty of ST products were premiered.

■ Newstar unveiled *Navigator Plus*, an *Autoroute* clone with greatly enhanced graphics. When it arrives on the ST in the next few months it's likely to cost around £300.

■ Rombo were concentrating on their £100 Video Digitizer, which allows you to import mono images from a video camera or recorder. It's a very fast real time frame grabber, and has all sorts of clever features. Once you have the picture in memory you can import them into an art package. It's ideal for creating animation sequences and desktop video.

■ Direct Digital Distribution launched the first commercially available optical re-writeable disk. Initially for available for a games machine called the Amiga, it should be available for the ST soon. Problems arise because the ST TOS has a physical 32 megabyte file limit on drive

partitions, so specific software has to be written for the ST. The device, a direct replacement for a hard drive, has more in common with compact disks than the magnetic medium more commonly used for data storage on computers. A specially designed interface connects the Sony drive mechanism to the computer, and boasts a massive 650 meg storage capacity. The price is massive too, costing £4,900 for the unit, and £350 per additional disk, putting it well out of reach of most home users. It works out cheaper in price per MByte, though, and is aimed at the animation and audio markets, as well as the educational

establishments.

■ B Bytes/Kidsoft were showing their £24.95 database program, *SuperCard*.

■ And Romantic Robot launched a £30 ST trackerball.

■ Mission Software were showing off a pre-production version of *Dominion*, claimed to be "the *Elite* of the future." Programmer and boss of Mission Software Andrew Walrond described it as having "The graphics of *Starglider* and the gameplay of *Elite* – only three times as much!" One of the game's innovative features is that up to eight computers can be networked together, so players can shoot each other, dock each other's space craft and trade.

NEWS IN BRIEF... NEWS IN BRIEF... NEWS IN BRIEF...NEWS

■ Bad news dept: as 8-bit budget kings CodeMasters put together a CPC, Speccy and Commodore 64 CD drive interface, CD-ROM (sort of) and 3MBytes of games all for 20 quid, you may find yourself wondering just how long it's going to be before it's available for ST owners? *Format* hears that a breath-waiting exercise would not appear to be the order of the day. What with technical difficulties and the fact that 3MBytes might be a lot of data for 8-bits games but won't go far on the ST, it seems unlikely that the thing will arrive soon –

if at all.

■ Get off my foot dept: tired of all the pushing and the shoving, the buying and the selling, the to-ing and the fro-ing, the hurly and the burly? Well, in that case you won't want to know about the 16 Bit Computer Show which takes place on January 12th, 13th and 14th at the Royal Horticultural Halls, will you? And you have no desire to be told that tickets cost a reasonable £2 and can be reserved by calling 0726 68020, have you? So we won't tell you. No, you had your chance...

■ Trivia dept: a recent West German study shows that the Atari SM124 monitor emits the smallest electro-magnetic field of all those tested. So the next time you're discussing electro-magnetic physics with your chums (oh yeah?), you've got a handy – yet impressive snippet – to wow them with.

■ Oops Dept: last month we published a snippet detailing Voxel Software – unfortunately, we printed the wrong telephone number. The correct one: 01 452 1916. A slapped wrist and apologies all round.

Bloodwych

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The Super A Board is a complete internal hard disk and memory solution for the Atari Mega ST range. The standard unit comes with 48MB 28ms autobooting hard disk and the space for up to 2MB of extra RAM*, expandable in inexpensive 1MB steps. The board also features space for 256K of EPROMs and a 25 way SCSI bus. Full fitting instructions are provided.

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includes
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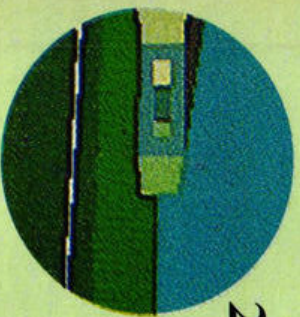
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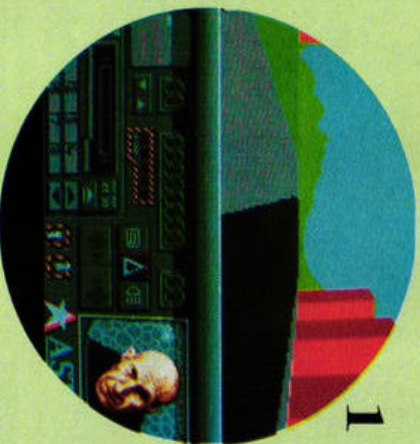
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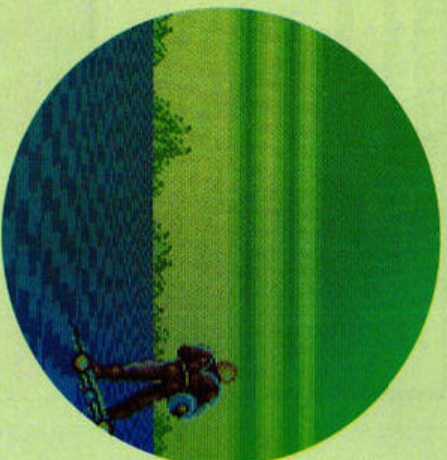
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1

RESOLUTION 101

Logotron

If the demos are anything to go by (which is not to say they are, of course), this is one game no self-respecting gamerster will want to miss. Explore futuristic cities in search of dangerous criminals and check out those sexy graphics! Still several months away from completion, 101, which has very much of an *Archipelagos* feel to it, is said to be "all speed and 3D graphics"

2

DAMOCLES

Novagen

Novagen's much-talked about project is finally going to be ready within the first few months of the year – though which year exactly is not specified. In development for two years now (doesn't seem a day over four), it's a solid 3D game in which the player has to prevent the Damocles comet crashing into another planet. The idea is that you steer a spy module around planet bases, picking up clues as to when this game might finally come off the preview pages and make it to a review

3

S.T.U.N. RUNNER

Domark

The arcades have just been fired into life by this "completely brilliant" (© Wheattley & Strachan) new coin-op. It's a futuristic driving game that catapults you through tunnels at a truly lunch-repeating pace. Shown here is a screenshot from the arcade game – but it's not going to stay in the arcades for long. Domark have already snapped up the licence to write the conversion. Certainly if *Hard Drivin'* is anything to go by (see the car special beginning on page 58), we could be in for a game that can match the furiousness of the coin-op. An early bid for the "all important" Christmas (bah humbug, obviously) 1990 number one

4

P47

Microprose

The classic Jaleco arcade game has made its way onto the ST. Set in World War II, it has you piloting a US fighter against enemy craft based in the air, on land and in water. Expect non-stop blasting, smooth horizontal-scrolling and tons of animated sprites. Hosts of extra weapons and bonuses to amass

5

WILD STREETS

(E1)

Massive animated sprites are the order of the day, and this streetfighting game features some whacking great characters to play with. You're cast as the kind of hero who bumps his head on the ceiling every time he stands up, and who is brave/dumb enough to take on the mafia and other bad guys with his bare fists. Traditional end-of-level hard nuts make it tricky but you've got your own original way around that problem. Definitely not a poodle man, this guy (get this) keeps a panther as a pet! Expected early in the new year

6

SPACE HARRIER II

Grandslam

Set in a fantasy land where the Dark Harrier has taken control and imposed a cruel tyranny, *Space Harrier II* is a shoot-'em-up with the emphasis on colourful graphics and effective music. The original *Space Harrier* was a big hit but with a different programming team, anything could happen. Expected by Easter

BEST TTO ME



11



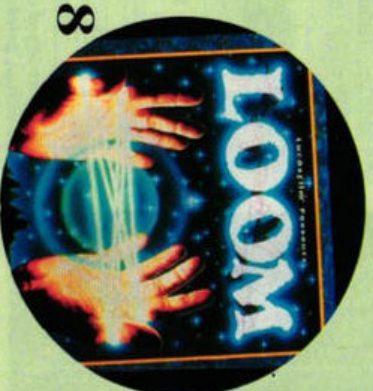
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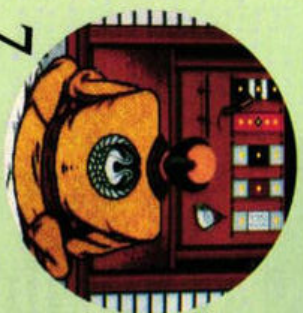
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7

LORDS OF THE RISING SUN

Mirrorsoft

A version on another 16-bit machine called the Amiga was released in the middle of '89 and was a great hit, featuring some of the best action sequences and graphics yet seen in a Cinemaware game. Now the ST gets its turn. Mirrorsoft are aiming for June and claiming it will be Cinemaware's "best ST game to date"

7

8

LOOM

Lucasfilm

With Zak McKracken and Indiana Jones Lucasfilm established a strong and distinctive style for their adventure games. In *Loom*, however, the emphasis is on amazing graphics and a good fantasy storyline. The scenario is some complicated nonsense about changes in the natural path of time affecting the lives of one village family. The point and click environment, sophisticated graphics and animation are likely to be big features. *Loom* is rumoured to be around in time for Easter 1990

INFESTATION

(Pygnosis)

3D vector graphics are where it's at, man: you move in a nightmarish world, meeting new life forms and killing 'em. You're equipped with a sophisticated pressurised body suit complete with a helmet, oxygen pack and cartridge pulse rifle - but even this lot are little help against the eager aliens. With a ridiculous number of them to defeat, you've got your work cut out for you. High-speed 3D graphics and a huge number of levels are the game's claimed strong points

9

10

CYBERBALL

Domark

This one's similar, as its name suggests, to the Bitmap Brothers' *Speedball* - except that it's set in 2022 and only the robots are left and they've got plenty of leisure time. But they're filling it by having a whale of a time playing a violent form of football that makes Australian Rules look like a vicarage croquet match. We're expecting exciting things from this coin-op conversion, set for release at the end of January

11

ESCAPE FROM THE PLANET OF THE ROBOT MONSTERS

(Domark)

This, the latest Tengen conversion, adopts a comic tone and a Sci-fi storyline (oh, you guessed). Your objective is to fight for control of an evil robot who's attempting to destroy the earth. It's set up with the various levels as factories where the hero must rescue captives. *Game With A Ridiculously Long Title* was a highly original coin-op, but a comic book adventure is hardly breaking new ground on the ST, and Domark have their work cut out to avoid the wince factor.

12

DARK CENTURY

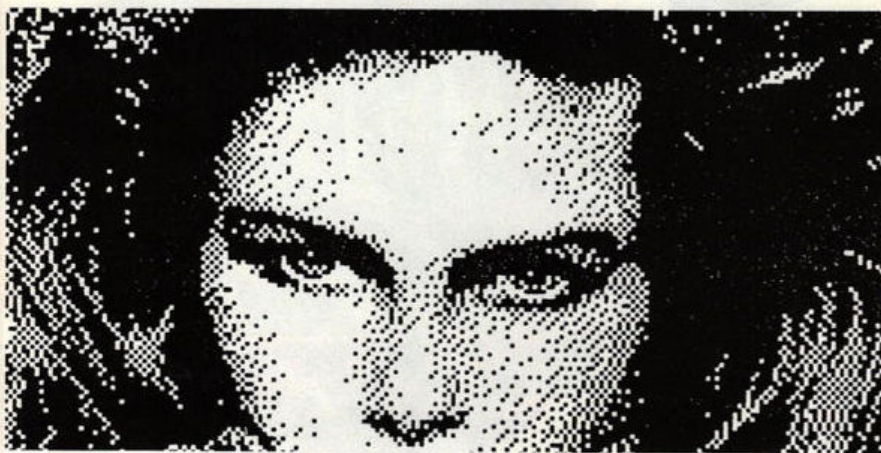
(Titus)

Ray-traced graphics is the aim of the game in this two-player simultaneous space tank effort. The tanks come hurtling towards you at a fair old lick, and while the demos suggest the gameplay may have trouble keeping up with the graphics, *Dark Century* looks promising ■

GERMAN SCENE

If you want to know what's really going on for the ST you've got to ask someone in Germany. So that's what we did

STORY Don Maple



■ GFA-GUP provides a library of easy to use GEM routines - available soon in the UK

GFA SAILS ON

The ST market in Germany is quite different from either the North American or the UK environments. Not only is the ST one of the most popular game machines over here, but it is also considered to be a serious business computer.

NEW INTERPRETER

This standing is reflected in a plethora of excellent professional software. The German software developers had a headstart on the rest of the world as the ST was actually test marketed here years ago (ever heard of an ST 260? I've seen one!).

GFA is probably the best known of all German ST companies. The flagship of GFA software for the ST, GFA-Basic, is now up to version 3.5. This version includes both a new interpreter and a new compiler. There are 50 new commands incorporating, among others, linear algebra, permutations, combinations, factorials and matrix calculation commands (it does an inverse of a random 100x100 matrix in 149 seconds).

TEMPORARY COLLAPSE

The editor is now faster when handling large programs. In addition to folding the procedures, the functions can now be folded too. "Folding" occurs when the body of a procedure (or a function) is temporarily "collapsed" and only the name remains visible. Everything still works but the programs are much easier to read this way.

All this can be yours in December when the anglicized version is scheduled to hit the streets.

Another gem of a program is GFA-GUP which stands for GEM Utility Package. This is



■ Multitasking demo created using GFA-Structo. Can be used to write programs or as an educational tool

SIGN OF THE TEMPUS

When it comes to text editors everyone in Germany is judged against Tempus. As far as I know Tempus invented fast scrolling on the ST. This is when, instead of lines, the program flips screens.

CCD, the company that brought you Tempus, is now working on a word processor. It's called Tempus-Word or T-Word and contains four programs: text editor, font editor, printer driver generator and a program to redefine the keyboard.

I've seen the program in action and it really is impressive. Among other things it will edit up to eight documents with up to 32 simultaneous character sets, integrated graphics, built-in outliner, printer queue with up to ten documents and so on...

CCD are currently working on an English version and looking for a British distributor so it's up to you. Tempus-Word can be contacted on 01049 6123 1638.



■ Tempus-Word contains a text editor, font editor, printer driver generator and a keyboard redefiner

18K of GFA-Basic source code used as a library. It handles all GEM events for you and will be available in the U.K. shortly.

STRUCTOGRAMS

New from GFA is GFA-Structo. This is a language independent tool for structured programming. Using this program the user can create so-called "structograms." Once the program logic has been worked out the programmer inserts the particular language syntax and then saves the lot as an ASCII file. This file can then either be merged into another program or compiled by itself.

GFA-Structo usage is twofold. It can be used to write programs or as an educational tool. The multitasking demo shown above was written using this program and it ran three virtual machines with three tasks each!

GFA-Structo is due in an English version soon - supposedly in January 1990. All GFA products are available on 0734 794941.

HARDCORE

Ever since the arrival of the 1040 one of the most popular hardware extensions for the ST has been memory upgrades.

While we were trying to achieve this by soldering "double-decker" memory

chips, the Germans went all the way. Solderless 2 and 4MByte upgrades are old hat in Germany.

Weide Elektronik has compact memory upgrades to match STs of all types and ages. The

boards can be had either stark naked (unpopulated) or partially/fully dressed (populated).

The U.K. distributor for these is Third Coast Technologies, now awaiting their call on 0257 426464.

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- **Help-Line.** Manned weekdays until 8pm and Sundays. The Help-Line can help you solve most problems on most adventures.
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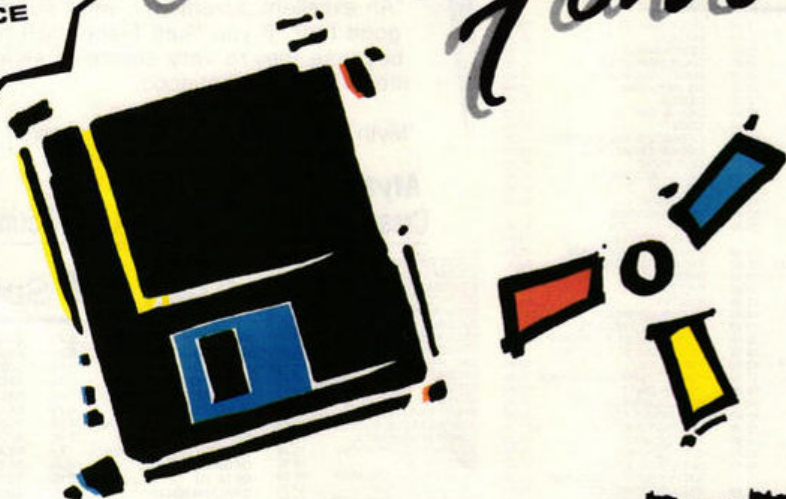
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FAST FORWARD

The ST's future promises power –

“The ST can, and will, stand on its own two feet against any other machine – including the Apple Mac. The future lies in the Mega ST side of the business, an area where the machine has enormous potential”

Mike Dale, Signa Publishing

– but the future is also upwardly compatible:

“[The TT] has an open architecture, allowing the second or third time buyer an upgrade path to a machine they can expand... And as for the STE, I'm not concerned about programmers not taking advantage of its enhancements. The STFM market is now large enough that people will keep writing for it. Because the STE is fully STFM compatible, more software will exploit its features: there'll be a crossover”

Bob Gleadow, Atari UK

When the ST was first launched at the January 1985 CES Show, one could reasonably argue it marked the end of the term “home micro.” Here was a “personal computer” – admittedly a collection of boxes comprising a keyboard and processing unit, disk drive and power supply – but a “system” nevertheless. All this baby needed to reach maturity was a world of software.

Its growth was assured – it had a better spec than the only other friendly machine on the block, the Mac, and it was a darned sight cheaper. As for the PC – well MS-DOS was a joke even then. The ST set out to meet our expectations by realising our dreams. 256 colours, half a meg of RAM, WIMPS front-end – it all sounds so hackneyed now, but five years is an eternity in computing. So much so, that

New Products

Spectre GCR

The only 128K Macintosh™ Emulator

Spectre GCR is the long-awaited sequel to the Spectre128 Mac™ emulator, itself immensely popular because of its support for the 128K ROMs, allowing you to run the majority of up-to-date Macintosh™ programs.

Now comes Spectre GCR which allows you to read and write Mac™ disks using your Atari ST's disk drive! Transferring data from the Mac™ to the ST and vice versa is now a snap; no more fiddling with serial leads and comms programs, just push in the disk!

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Spectre GCR works on all Atari STs with 1Mb of RAM or more, supports all regular SCSI hard disk drives and costs only £389 including VAT. Please phone or write for full details, or to get in the order queue!

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KnifeST

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KnifeST is all you need to recover files that you thought you had lost forever, to learn and understand how ST disks work or to simply enjoy a good hack! Some key features are:

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- Full statistics on directories, BIOS parameter blocks etc.
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- Powerful 'Build File' commands for easy recovery of files
- Undelete program restores many deleted files, instantly
- GEM-based for ease-of-use and convenience
- Full printer support

KnifeST can edit many disks that can be physically read on the ST e.g. those of the Archimedes and Sinclair QL and can also read entire tracks, including sync bytes and track address fields. You can even run other programs from within KnifeST. Comes complete with a 64 page manual full of information and help on ST disks and costs £29.95 inclusive.

Both Shipping Now!

KnifeST and Spectre GCR are just two of our growing range of software products for the Atari ST. Other titles include: DevpacST, HiSoft BASIC, Power BASIC, HiSoft C, FTL Modula-2, TurboST, Tempus 2, CRAFT, WERCS and many more.

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despite claimed sales of 1.5 million, Atari appears to believe it's time to move on. STes, TTs, RISC based 68040s – they're all on the cards to change your ST as you know it. But it's not because the ST is suddenly out of date – it's because the ST has encouraged our demands for even better Atari products.

LAUNCH 'N' LISTEN

Atari has always had a policy of launching then listening. If you visited the British PCW show some nine months after CES 85 you'd have found a basic 520 ST with TOS on disk that would have cost you £749.99. And if you'd known anything about Atari you wouldn't have touched it with a barge pole. They're a company that doesn't stand still. They have the kind of corporate philosophy which states, "If there's any advancement to be had, it should have an Atari logo." And what's more it should be affordable – there's no point bringing out an Archimedes if you can't shout "Eureka!" at the wealth of software and peripherals available for it.

Low manufacturing prices encourage publishers, publishers encourage distributors, distributors encourage third party manufacturers. The wheel comes full circle. Before you know it you have a machine within a machine. You have Elmtech producing the Parsec graphics board which addresses 16.7 million colours. And you have Atari going back to the drawing board, content with its marketing strategy.

But back in February '86, you would have only seen this "Power Without The Price" policy bringing you the STM – an upgrade with TV modulator and TOS in ROM. However, in less than a month there was the STFM with all the hardware in a single box and by the next PCW Show there was a 1040 and Mega ST2 and 4 models.

So was this the time to buy? February '87 saw STFMs for £399: six months later they were available for £299. In less than two years the machine had carved out a market and was making heavy inroads into the future. September '87 also saw another pointer to the future – for an extra £100 you could get an ST with £500 of bundled software. That deal is still going. But is the momentum?

A COOL MILLION

We're now on the brink of the 90s and there's a million STs in the world – Sam Tramiel reckons on 1.5 million – half of them in Germany alone. Most of these are 1040s or Megas, which explains the presence of companies like Signa, GFA and GST – all geared towards producing professional software for professional applications.

There are around 160,000 STs in the UK and about the same number in France but at the moment only some 10-15,000 using Megas for DTP work and program development. So the massive worldwide user base is multi-layered – there's no predominant type of use, no typical ST user. The beauty of the ST is that you can run a sophisticated DTP package, output your work to laser and linotype bureau, produce ray-trace animations, record a 99 track synthesised extravaganza and cut some TV titles – all in the one evening.

With the appearance of stereo sound boards like the Tweety, enhanced graphics

cards like the Parsec, genlocks, CD-ROM players, Mac and PC emulators and, of course, state of the art shoot-'em-ups, the only limit to your imagination is your bank balance.

For what we're looking at is a system platform – a base from which a whole host of TOS compatible machines can launch into the 90s, machines assured of running all our current software and peripherals. So the ST's longevity is secured. After all, a million machines is a very solid platform. But how do all the new announcements and developments fit into the ST future?

The ST range is ideally placed to meet the wider, and quite often conflicting, demands of general personal computing: pleasure, of course, with greatly improved gameplay; but

also factors such as increased portability, compatibility, specialisation, and power. But above all power.

THE FUTURE IS POWER

"We want the guy with real buying power"
– Bob Gleadow, Atari UK

With a choice of screen resolutions, monochrome at 1280x960 and colour at both 640x480 and 320x480, the 2MByte TT steams along at 16Mhz on a 68030 chip and provides, as Gleadow is only too quick to point out, "an open architecture... allowing the second or third time buyer an upgrade path to a machine they can expand... its initial market will be in universities as a very fast workstation, as text and graphics engine."

The beauty of the ST is that

you can run a sophisticated

DTP package, output your

work to laser and linotype

bureau, produce ray-trace

animations, record a 99 track

synthesised extravaganza

and cut some TV titles – all in

the same evening

STORY Andy Storer

But Atari want more than that. Gleadow's on record as saying he wants the "high-end of the workstation market." And that means RISC. The most likely contender here, and one that various Atari spokesmen have hinted at this year, is a TOS compatible 68040 machine. Expect to see it by 1992.

The recently launched TT has three modes of operation - ST TOS 1.4, MS-DOS and Unix 5.31, making it downwardly compatible with the ST, horizontally compatible with the PC and to a degree future-proof with Unix.

THE FUTURE IS COMPATIBILITY

"Windows is the key - it's the serious interface... the operating system of the future"

- Ian Rhyl, Digita International

Rhyl is not exaggerating, and that's why there's a plethora of PC emulators already beginning to appear for the ST. The latest, *Supercharger*, claims to run faster than a PC 286. For whether you like it or not, the IBM PC compatible standard is important to the whole future of computing - otherwise Atari wouldn't be pushing its Folio and PCs so strongly. Sales of PC Ditto and PC Speed are also reported to be very healthy.

So does that mean we shall see Atari releasing an ST with a built-in bridgeboard in the next two years? Probably not. It's more likely to go for a version of GEM that can co-exist with a Windows front-end supplied by the next wave of third party emulators.

THE FUTURE IS SPECIALISATION

"The future lies in the Mega ST side of the business where the machine has enormous potential for Desktop Publishing, Local Area Networking, Desktop Video, hi-res scanning and high-class word processing. More and more companies are looking at ways of networking a good DTP machine that has possibilities such as optical character recognition"

- Mike Dale, Signa

And you can be sure Signa will be spearheading those developments in years to come. From its Calamus Desk Top Publishing system (reviewed in this issue; feature starting page 82) to its Chilli Desktop Video system, it's done more than most to pioneer the ST as a professional platform.

With the increased portability, compatibility and power supplied by new ST hardware and third-party add-ons, the future of the ST as a personal workstation is assured - and that's before you start to bring 68030 and 040 chips into the picture. Such advances open up the ST platform for even more sophisticated operations, such as multimedia where the machine can shortly be expected to act as a controlling device for desktop presentation and interactive training.

Drivers and front-ends to combine laser-disks, CD-ROMs, professional video machines and slide generators are already available for the Mac and Amiga. Now the ST has a working genlock, the unifying device (see the review of Gold, imported by Third Coast, in last month's ST Format), you can expect multimedia software to start appearing in the next year.

"The future lies in the Mega ST side of the business where the machine has enormous potential for Desktop Publishing, Local Area Networking, Desktop Video, hi-res scanning and high class word processing. More and more companies are looking at ways of networking a good DTP machine that has possibilities such as optical character recognition" - Mike Dale Signa

THE FUTURE IS PORTABILITY

£1500 will buy you one of the three versions of the Stacy portable running TOS 1.4 on a 8 MHz 68000 with 256K ROM and up to 4MBytes of RAM. With a 20MByte hard disk for storage, a Supertwist monochrome 640x400 LCD screen, 3.5 inch DD disk drive and serial, parallel, and MIDI ports, the Stacy would seem ideal for the pro on the move - whether s/he's a writer, musician or business person. With a cartridge slot for a Mac or PC emulator you have a versatile, mobile ST that's a pointer of things to come

THE FUTURE IS PLEASURE

Last but not least, what can we expect in the leisure department? Even if Gleadow and Dale are right in their guesses about where the ST/STE/TT is headed - ie, up - there will always be a need for entertainment software. Indeed the PC world is experiencing an explosion of games. Atari realise this, for their assault on the games world, ARC, is aiming to cream some of the vast rewards yet to be had in the Amiga, PC and ST markets. A machine can be powerful and fun at the same time.

Yet many owners of singled-sided STs and even 1040s are beginning to worry. With the announcement of the 1040STE and at November's Comdex Show of the 520STE, they wonder whether they have bought into obsolete equipment. Not a bit of it.

Although the machine has a 4,096 colour

pallette, four channel stereo and multi-directional hardware scrolling, it still runs off a 8 MHz 68000, so it's 100% compatible with the current ST. Bob Gleadow represents Atari's careful thinking on its future when he admits, "It's intended to replace the 1040 and as such is priced identically... I'm not unduly concerned about programmers not taking advantage of the STE's enhancements - the STFM market is now large enough so that people will keep writing for it. Because the STE is fully STFM compatible, more and more software will exploit its new features, there'll be a crossover."

Reading between the lines it's fairly obvious that Atari are determined that the ST should not go the way of the Spectrum, the Commodore 64 and the Amstrad CPC - it needs to remain on top of current developments, not get left behind by them. On the other hand they realise that a million customers can't be wrong.

The answer is upward compatibility, allowing programmers to take advantage of new enhancements while they continue to service their existing customers.

So how might games programmers set about exploiting its features? Very briefly we can expect Solid 3D to become ray-traced 3D and spot-effect sound to be sampled in stereo. In the longer term we'll see greater screen handling open up areas such as colourful Disney-style animation, and simulations will benefit from more detailed reality.

■ And over the page Jon Bates predicts the ST's future as a music machine ➤

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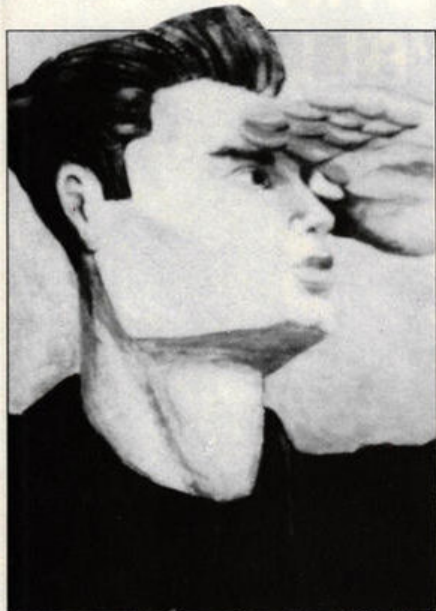
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THE SOUND OF THE FUTURE

While today's ST is certainly no slouch at playing back sampled sounds, it's not what you might call Mr Fabulous at actually synthesizing them. The much-vaunted upgraded ST, the STE, does offer a little more than the ST in sonic terms. Although it has had to retain the original sound chip to maintain compatibility, it has been awarded two additional hardware features. One is a dedicated tone, volume and mixing chip, and the other is the ability to read and convert digital samples from the memory directly without involving the 68000 processor.

It is disappointing, however, that the sampling rates are set at four predetermined speeds. This is bad news for sampling program producers, because to get a succession of variable sample rates some fairly intensive maths (sums – yeugh!) will be involved.

The bottom line is probably that although the new, cleaner method of reproducing sampled stereo sound will be used in dedicated sampling routines, for the likes of game soundtracks you're going to be asked which machine you are running on. The ST will perform as ever and the STE will have a greater spectrum of sounds, probably mixing sounds from the old sound chip with the samples in the memory thanks to the volume, tone and mixing chip. An improvement, but not a radical step forward as a program may well need two independent sampling and sound playing routines.

BREEDING LIKE RABBITS

The half-way house is to offer a package that consists of a bolt-on dedicated sound chip (see *ST Format 4* for review of Hybrid Arts *FM Melody Maker*). These are good value for money, but they are usually made up from surplus sound chips nearing the end of their marketable life from synth and single keyboard manufacturers. One or two more of these might well surface in 1990.

MIDI "Musical Environment" programs are definitely on the horizon. These will have several MIDI programs co-existing at the same time and interacting with each other. This is already happening with software from C-Lab, Steinberg, Hybrid Arts and Doctor T with a trend, thank goodness, towards making the compatibility

We asked ST Format's new music editor, Jon Bates, to hazard a few guesses about the ST's musical future

extend beyond their own software. There is not much point in having compatible software if you are tied to one software developer.

Of course this eats into the memory, and the 520ST won't really get a look-in. The italicised small print reminds one that at least 2MBytes is required for serious work. Perhaps this heralds a price reduction in the multi MByte machines, as they start to sell in larger quantities.

Another major trend is the universal editor. Synths are usually launched, followed, after suitable development time, by editing software. Thanks to MIDI your favourite synth is no longer obsolete but can be augmented by newer synths with totally different internal architecture and sound creating methods.

Nowadays to keep up to date you would need a veritable suite of software to program all the synths – each one with its own library. The result is a time consuming set-up and re-booting session each time you start. Since different revamped synths pour out onto the market with a gestation period similar to rabbits, software developers find it hard to keep up and the public at large can't be bothered to buy it anyway.

Enter the universal editor and sound librarian, a program that can adapt itself to pretty well any synth once a set of instructions has been set up to allow it to work with the synth of your choice.

COVER DISK:

LET'S HEAR IT FOR THE ST!

If, like many readers, you're relatively new to the idea of the ST as a music controller, get our Cover Disk loaded up and give the demo of *Replay Professional* a good going over. This brilliant sampling program is reviewed on page 125.

One thing it cannot do, however, is transfer sound from one synth to another – that would be asking too much! Expect to see lots of these soon at prices varying from well under £100 for the librarian, to about £200 plus for the full blown editor.

UNIVERSAL CHALLENGE

As well as universal synth editors, you can expect to see more universal sample editors, which will perform tricks like taking data from a CD, editing it and preparing it for a wide range of dedicated samplers. This is really getting towards the professional end of the market and is available on Steinberg's *Avalon* program. It is, though, an exciting thought that, armed with a dedicated high quality sampler – Cheetah are due to launch one at under £800 – you could reproduce the sound of any synth simply by sampling it!

On the down side of all this is the failure of MIDI time code to have taken off. This was to be a universal time code that would link sequencers, videos, reel-to-reel tape recorders and some four-track cassette machines, thus replacing the expensive hardware required for SMPTE, the current synchronizing system. The failure of any agreement between soft and hardware developers has, unfortunately, left this cheaper option well aground for the moment, which is where it looks like staying.

Finally, what would be terrific would be more routines to convert the MIDI exclusive data that comprises the sound of one synth, directly into MIDI sample data. This was done with the *X-Alyser* from C-Lab a year or two ago, but no-one seems to have taken the initiative. Maybe this year, chaps? ■

Turn to page 109 for an *ST Format* music special – 15 pages packed full of software reviews as well as a clutch of interviews with top bands who use the ST.

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ST Format - "A hard act to follow" - Nov 1989

ST World - "It took Germany by storm" - Nov 1989

Popular Computing Weekly - "PC speed is capable of out performing an 80286 band PC when fitted to a 1040ST" - Oct 5th 1989.

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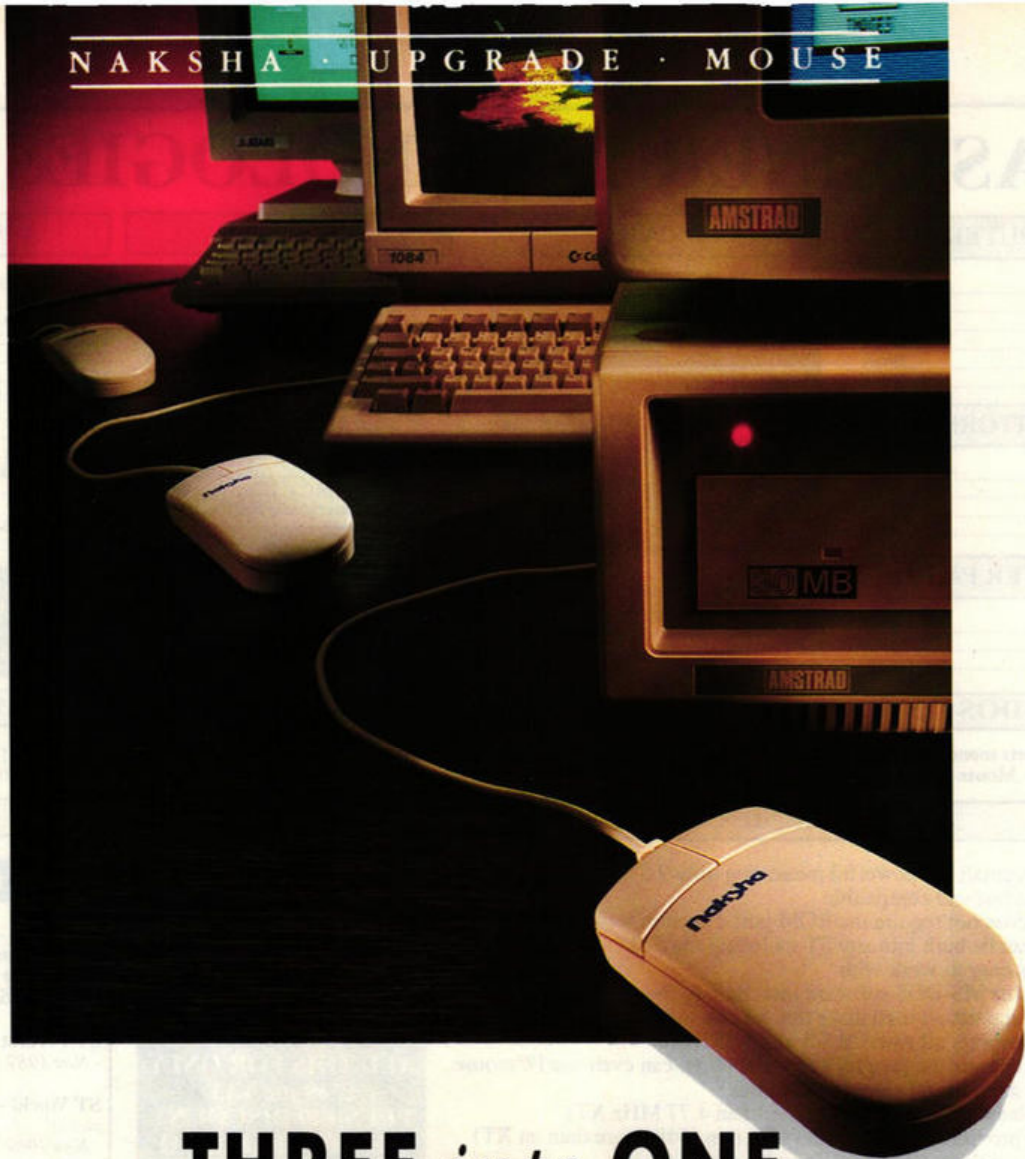
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ST FORMAT

Side A

- **TOWER OF BABEL** – fully playable demo of Microprose's fabulous *Format* Gold-rated 3D strategy game
- **REPLAY PROFESSIONAL** – see the review (page 125) and then hear why we rave about this package
- **STAR STRUCK** – fun screen-saving accessory

Side B

- **EASY TEXT DTP** – get into DTP with this great WYSIWYG package
- **BELLUM INTERNECINUM** – Swoop-like shoot-'em-up
- **ANIMATIONS** – all the files you need to create stunning Cyber animations
- **NO BORDER** – stunning "impossible" demo!
- **& more** – it's the king of Cover Disks!

COVER DISK

The unbelievably delicious and toothsome *ST format* Cover Disk packs in over 800K of jolly demos, games and utilities. Not all 520ST owners, however, are lucky enough to have double sided drives. So a special format disk is used that can be read by both single sided and double sided drives. Of course, single sided drives can only access the top side of the disk.

Rob "Brain the Size of a Planet" (so he claims) Northen has produced the latest format which allows everyone to access the astonishing *Tower of Babel* demo (details below) and all the other goodies on side A.

Double sided owners get a double hit with all the amazing

demos on side A as well as the unbelievable utilities on side B.

To get at side B – assuming, of course, you have a double sided drive – simply double click on the folder **SIDE_2**. If you have a single sided drive, a box appears with the rather alarming news that there's an error on the disk.

As Jonesy used to say to Mr Mainwaring: don't panic, Mr Mainwaring! The data is not damaged – it's just a consequence of the format (he didn't say that bit). Just lick on **CANCEL** and rest easy.

Remember though, *you won't be able to access anything on side B if you have a single sided drive.*

TOWER OF BABEL

BY: RAINBIRD/MICROPROSE

SIDE: A

MACHINE: ALL COLOUR STs

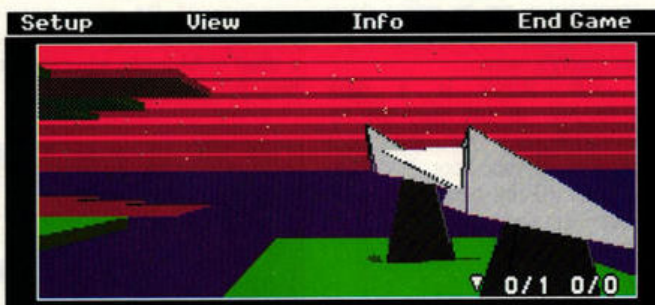
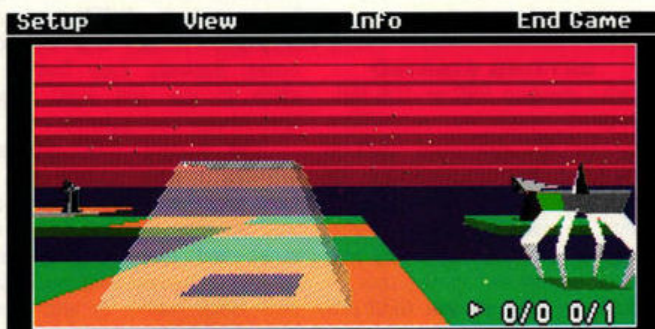
FILES: BABEL.TOS

And the whole Earth was one. Of language, and of speech. 'Twas one purpose that broughttestest men from near and far to construct a tower so tall 'twould penetrate the sky. For all believestest (etc) that Ye Maker wast yonder clouds. The one that wast named God. And it came to pass, as men journeyed from afar, that they found a plain in the land of Shinar; and they dwelt there to build.

Generation after generation was begat, and the tower grew in distance. For soon the skies could be touched. And men becamest scared to climb the top for fear of falling from the Earth.

After many generations didst pass, Serag told of big spiders, cast not of flesh and bone but substances shiny, that dwelt on the tower. And how men treaded the distance of the tower of Babel and begat knowledge from the creatures.

So it was, the men told of tower's purpose and spiders told of ways to build the tower taller.



■ (top) Just look at that thing! Friend or foe? Contact with it tells you soon enough... (above) those damn Shinarians, look what they've left you to clear up!

And the tower grew.

But disarray and argument came to be when men whose minds could not comprehend smote all, and built objects to keep

the spiders from their task. And 'tis said no mortal men live in the tower of Babel. But great spiders seek final asylum with thine makers.

Didst thou get all that, mush? It's up to you to control three robotic spiders – Zapper, Pusher and Grabber – and solve puzzles, rid the tower of alien filth and collect Klondikes. By highlighting a spider's name and clicking on the directional icons (arrows) you can control a spider and see the tower through its eyes.

Compass (or camera) icons let you see the tower from North, South, East and West viewpoints.

With a few exceptions (text entry, for one), *Tower of Babel* is entirely mouse driven. Options in the main menu – and indeed all subsequent menus – are selected by moving the mouse pointer over the boxed option and clicking with the left mouse button. Menu options are only selectable if the boxes they are contained in become highlighted. This automatically happens if the mouse pointer lies within the box.

There is no luck in *Tower of Babel*: only logic.

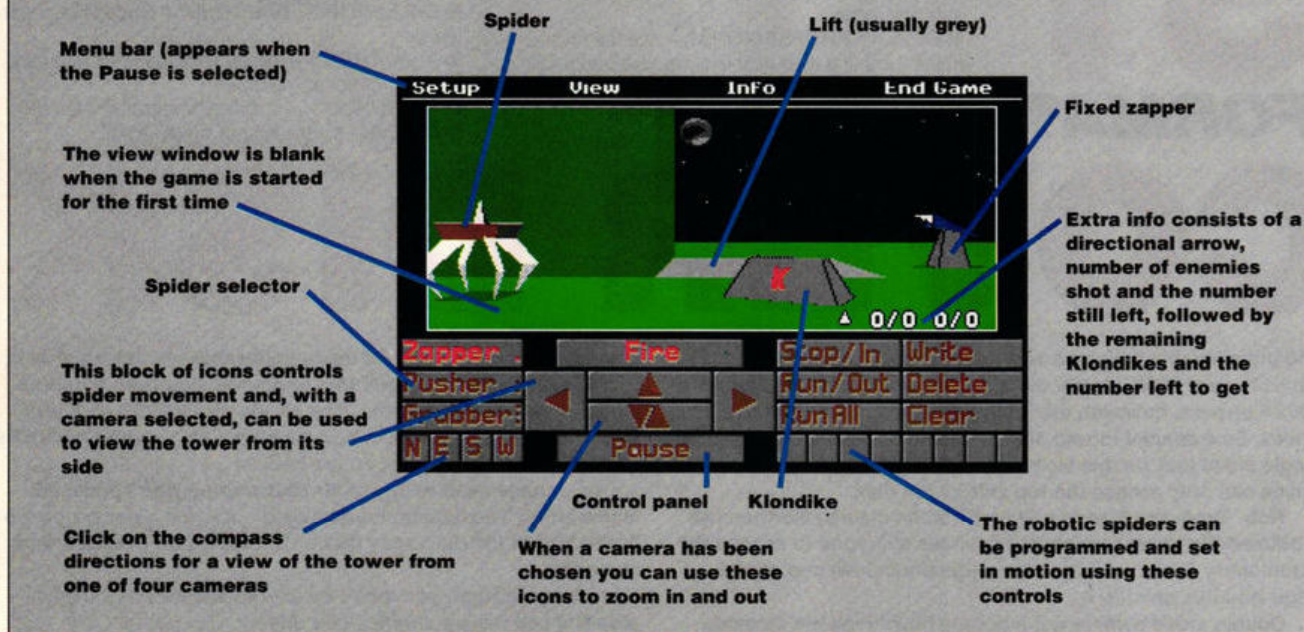
GETTING STARTED

Run the playable demo by double clicking on the **BABEL** folder. Once inside, double click on **BABEL.TOS**.

Type in your name when ➤

DON'T BE DUMB! BACK UP YOUR COVER DISK NOW! How? See page 30

TOWER OF BABEL CONTROLS



requested and press Return. Select Play Game from the main menu by positioning the pointer over the option and clicking the left mouse button. Pick Standard Game from the menu that subsequently appears.

A three-by-three grid, lettered from A to I, appears. Highlight the grey square labelled A by clicking on it. Click on OK to proceed. Tower objective and information are displayed. Read what you have to do and click on OK. You're presented with a blank game window and control icons underneath. Click on Pause, which is highlighted, to start the game.

Star Struck

BY: TONY SANSON

SIDE: A

MACHINE: ALL STs

FILES: STARSTRK.ACC,
STARSTRK.DOC

Here's a screen saver with a difference. Instead of just blanking your screen after three minutes, Star Struck smoothly fades the screen to black and then fills the screen with a burst of stars exploding from the centre point. Not only that, but it works in all resolutions. Once you've installed Star Struck as described below, simply click on Star Struck in the Desk menu.

Star Struck can be run at any time from the Desktop or from within many correctly-written GEM programs. Just click on its name in the Desk menu and let go of the mouse within two seconds. Star Struck detects if you don't stop

moving the mouse, and returns you to your original screen.

Tony's program automatically starts to run if you don't touch the mouse or the keyboard for three minutes. Pressing any key or moving the mouse returns you to your original screen.

GETTING STARTED

Unlike standard .PRG or .TOS files, Desktop accessories, recognisable by their .ACC extensions, can't be executed by double-clicking on their file names. Instead, GEM must be given instructions to load them at start up. Accessory files must be present in the root or main directory so that GEM can find them. Once installed, an accessory is run by pulling down the Desk menu and clicking on the accessory's name.

Star Struck is a desk accessory, so just copy the file STARSTRK.ACC to the root directory of your boot disk. Boot up your ST by hitting the reset button and find something extra in your Desk menu.

Easy Text

BY: ZZSOFT

SIDE: B

MACHINE: ALL STs

FILES: EASYTEXT.PRG,

EASYTEXT.DOC, EXAMPLE.EZ1,

EXAMPLE.EZ2, EXAMPLE1.EZM,

EXAMPLE1.EZ2, HALF (folder),

ASSIGN.SYS, FONTS (folder),

CALIGR10.FNT, CALIGR14.FNT,

CALIGR18.FNT, CALIGR28.FNT,

CALIGR36.FNT

Who says you need a large bank balance to do DTP seriously? zzSoft's Easy Text is a Public Domain version of its fully-fledged WYSIWYG page-based package. Easy Text is easy to learn and intuitive to operate. Full advantage has been made of GEM windows, drop-down menus and dialogue boxes. Basically, Easy Text is a cinch to use and won't singe (geddit) your bank balance.

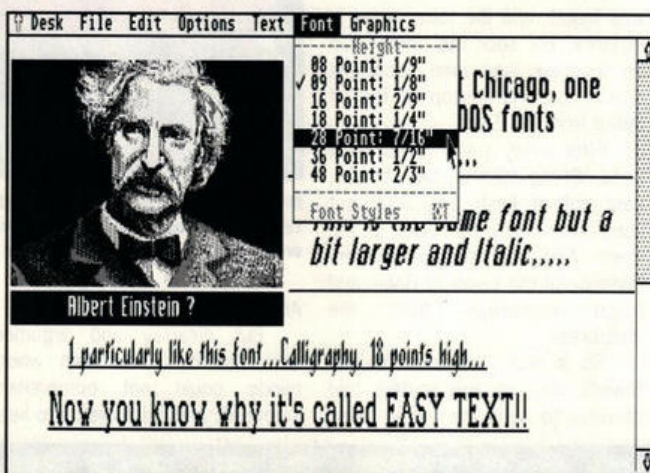
The budget DTP program provides a work surface like a blank piece of paper onto which you can enter text in a variety of styles and clip art. Easy Text differs from a paint program in that each block graphic or text frame can be selected and positioned anywhere on the work surface. Because the screen is smaller than a sheet of A4 paper, you can scroll through the document.

Easy Text can be used with or without GDOS (graphics device operating system) which has been left out of the Atari ROMs and is therefore not part of the GEM environment when you switch on. The usual method of incorporating GDOS is to place GDOS.PRG into an AUTO folder on your boot disk.

By having GDOS installed, different fonts designed for use by GDOS may be incorporated into your text. GDOS.PRG is not included on the Cover Disk, but it can be found in many commercial programs including Easy Draw, Degas Elite, Timeworks DTP, Hyper Draw and Hyper Paint.

GETTING STARTED

A sample GDOS font, along with the appropriate ASSIGN.SYS file, is included on the Cover Disk. You need GDOS to use the font.



Text and graphics can be planted anywhere on Easy Text's page. Unless you've got GDOS installed, you're be restricted to using the ST's internal font

No More 'Out Of Memory' Headaches

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

• No Need To Send Your ST Away

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

• Easy To Install - No Soldering

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

• No Need To Stop At 1MB

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

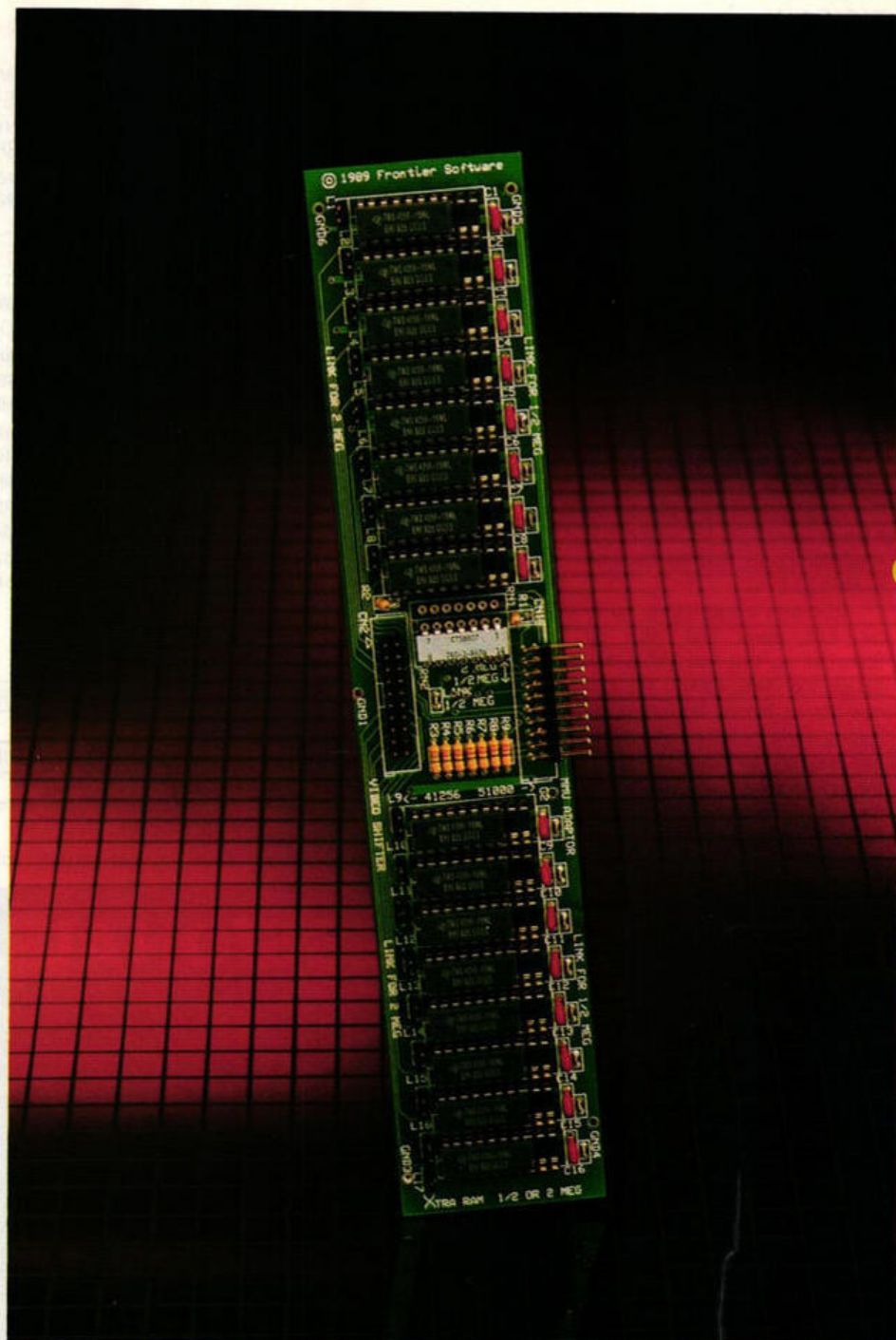
• Totally Compatible

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

• Software Included

Every XTRA-RAM upgrade is supplied with a free

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



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

• Satisfaction Guaranteed

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

• Available With Or Without RAM Chips

Frontier supply the XTRA-RAM in three ways:

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

• Prices

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

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

Available from your local dealer, or direct from:



Frontier Software

P.O. Box 113, Harrogate, North Yorkshire HG2 0BE.
Telephone (0423) 567140/530577. Fax (0423) 522874.

If you've got GDOS, boot a disk containing GDOS.PRGM in the AUTO folder. Don't worry if you don't have GDOS - Easy Text still works, but you won't be able to use fonts other than the internal offerings. Inside the SIDE_2 folder is the EASYTEXT folder. Double click on EASYTEXT.PRGM inside the EASYTEXT folder.

If you want to see what Easy Text can do, there are a couple example files which can be loaded. Go to the File menu and select Load. If you are in monochrome mode, find the file called EXAMPLE.EZ1 - double click on the filename to load the document. If you're using Easy text in medium resolution colour, find the filename EXAMPLE1.EZM.

To create a text frame, go to the Edit menu and click on Start/Cut so that you get a tick beside the menu option. You can now draw a box on the screen by holding down the left mouse button and dragging the mouse. Let go of the mouse button when the box is the size you require. Click on Use Frame when you're done. Click on Paste/End.

Once you're happy with the frame positioning, select Edit Text from the Edit menu. You can't enter text into the text frame by typing characters into the box that appears. Select OK if you want the new text to replace the old text in the frame; Cancel if you decide otherwise. To see edits appear in the frame, click on Select in the Edit menu and then click in the rough location of the frame. For full details of using Easy Text see the comprehensive help file on disk.

Cyber Animations

BY: MARK PICKAVANCE

SIDE: B

MACHINE: ALL COLOUR STs

FILES: GUN1.3D2, GUN2.3D2,

GUN3.3D2, GUN4.3D2,

FLOOR.3D2, GUNSHIP.CTL,

GUNSHIP.NEO, NEOVIEW.PRGM,

ROLLER.3D2, ROLLER.CTL,

README.DOC

More animation mayhem from Mark Pickavance. All the files in the ANIMATE folder go with Mark's Cyber tutorial starting on page 98.

You need Cyber Control to run

the helicopter and helter-skelter animations in the ANIMATE folder. The helicopter animation requires the following files: GUNSHIP.CTL (Cyber animation program), GUN1.3D2, GUN2.3D2, GUN3.3D2, GUN4.3D2, FLOOR.3D2. The helter-skelter animation needs: ROLLER.CTL, ROLLER.3D2.

Also in the ANIMATE folder are the files GUNSHIP.NEO and NEOVIEW.PRGM. Simply double click on NEOVIEW.PRGM to see the Neochrome still, GUNSHIP.NEO, from Mark's helicopter animation. Press the space bar to exit. NeoView can be used to view any NeoChrome pictures. Simply run NeoView from the same directory as any NeoChrome pictures to show the images within the folder.

Bellum Internecinum

BY: MATT GOSS-CUSTARD (?)

SIDE: B

MACHINE: ALL COLOUR STs

FILES: BELLUM.PRGM,

BELLUM.DOC

Come on, get serious, nobody is

called Matt Goss-Custard! Anyway, Bellum Internecinum is extraordinary. In less than 32K Matt Custard - or whatever his real name is - has produced a real corker of a game.

It's a fast action destruction game - much like Swoop of old, only faster and more furious. The aim is to try and survive for as long as possible against an endless onslaught of suicidal aliens. You've got to play it to believe it. Bellum runs in low resolution and requires a joystick in port 2.

You control a ship which starts life as a very basic low power affair. By shooting certain types of objects you increase your ship's speed and fire power. But your ship falls to bits when hit by aliens.

To quit Bellum (but why would you want to?), press both SHIFT keys together after you die.

GETTING STARTED

Make sure you're in low resolution. Double click on the SIDE_2 folder, double click on the BELLUM folder and double click on the BELLUM.PRGM file. Press the joystick's fire button to start.

REPLAY PROFESSIONAL

BY: MICRODEAL

SIDE: A

MACHINE: ALL STs

FILES: EDITOR.PRGM,

EDITOR.DOC, CLAP.SPL,

COOTS.SPL, HHCLOSE.SPL

Without doubt *Replay Professional* is the most advanced 8/12-bit sampler for the ST. Read the full review of Microdeal's excellent new sound sampling system (page 125) and then sample the delights of the stunning Editor (you're too kind - ed) on this month's gorgeous Cover Disk.

The *Replay Professional* Editor lets you sample sounds, edit them and play them back.

Here are just some of the facilities available: sample/playback frequencies of 5.5, 8, 11, 16, 22, 32, 44 and 48kHz; sample magnification up to 600 sample bytes; filled, outline and envelope wave displays; reverse, fade in/out, overlay, insert, delete, copy, clear, fill, shrink; MIDI functions including 10-note assignable samples, loop points with full ASR (attack, sustain, release), real-time pitch shift, trigger/shift. Phew!

If you already have the *Replay*

4 cartridge, you can sample software with this demo version of the *Replay Professional* Editor. Only the sampling/replay Editor section of the *Replay Professional* package is present. Drumbeat, MIDplay and the sampling/playback cartridge - not included with this demo - also form part of the *Replay* package. However, all the features mentioned above are available in the Editor.

GETTING STARTED

Open the REPLAY.PRO folder by double clicking on it. Double click on EDITOR.PRGM. To load a sample go to the File menu in the menu bar and click on the Load item. A file selector appears: enter the REPLAY.PRO directory and double click on any file with an SPL extension.

Here's a brief rundown of some of the Editor options: Playforwd - plays the sample in memory held between the two cursors. Playbkwd - replays a sample in memory backwards. Sample - records the signal entering the *Replay Professional* cartridge. You can also use a *Replay 4* cartridge.

Pre-sample - continuous sampling. Loop - a sample plays continuously in a loop. Fade In/Out - causes the sample between the two cursors to fade in from zero to maximum volume or fade out from maximum volume to zero. Fill - the area between the cursors is filled with as many repetitions of the sample presently held in the paste buffer. Volume - increases or decreases the volume of the sample between

the cursors.

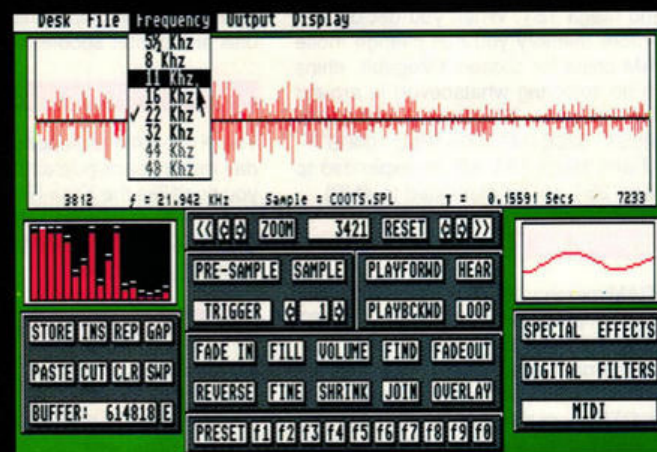
Find - locates the occurrences of a sample segment held in the paste buffer.

Reverse - reverses the sample in memory.

Fine - allows accurate positioning of the upper and lower cursors.

Shrink - compresses a sample to half its original size.

Overlay - the sample in the paste buffer is superimposed on top of the sample between the current cursor positions.



■ Dig those digitised ditties from within Microdeal's *Replay Professional* Editor!

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If you have a problem with the disk – and you're sure there is no corrupted data – phone 0225 765086 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.

For problems with disks before issue 5 phone ST Format on 0225 442244.

TO B-SIDE OR NOT TO B-SIDE

You single sided drive owners don't have to miss out: get hold of the B side by sending your name and address with a cheque or postal order for £1.75 to:

**January B-Side Disk,
ST Format, Beauford
Court, 30 Monmouth St,
Bath,
Avon BA1 2AP**

Head Start

BY: CODEHEAD

SIDE: B

MACHINE: ALL STs <TOS 1.4

FILES: HEADSTRT.PRG,
HEADSTRT.DOC, MAKELIST.PRG

Boot Maker on last issue's Cover Disk refuses to work with some of latest versions of TOS. So Head Start is a complete rewrite of this popular public domain program booter. In other words, it works!

GETTING STARTED

HS runs from your boot disk AUTO folder, so copy HEADSTRT.PRG to your AUTO folder. (If you don't have an AUTO folder on your boot disk, create one.)

Before re-booting to try out Head Start, create the Head Start data file, containing a list of the programs you wish to auto run. When Head Start runs, it looks in the main directory of your boot disk for a file called HEADSTRT.DAT.

This data file is an ordinary ASCII text file, and can be created with any text editor or with the included MAKELIST.PRG. A Head Start data file might look like this:

C:\FLASH.PRG
A:\TIMESSET.PRG
XW C:\NEODESK2\NEOMASTR.PRG
B:\1STWORD\1STWORD.PRG

There are two special options which can be enabled for each program in the list. These are set by starting the line containing the pathname with a special character; either X or W (or both) followed by a space. The X option tells Head Start to make this program the default program to auto run. When Head Start runs, the selection cursor is placed on this filename.

The W option is intended for use with MultiDesk (see documentation file for details).

The easiest way to create the HEADSTRT.DAT file is with the supplied MAKELIST.PRG program. Double click on the filename and full operating instructions appear.

Once the data file is created, re-boot your computer with the disk containing HEADSTRT.PRG in the AUTO folder. If you've set everything up properly, a list of the filenames contained in the HEADSTRT.DAT file appear.

No Border

BY: KEIRON O'MAHONEY

SIDE: B

MACHINE: ALL COLOUR STs

FILES: NOBORDER.PRG,
NOBORDER.DOC, EXTRA.S

This demo proves that screen borders can be dispensed with. Other features: bouncy ST Format logo with disk light bounce indicator; seven wavy 16-colour sine sprites; big colour cycling scroller; 8-plane, multi-coloured, bi-directional star-field with 72 stars; 45 colours on screen; partridge in pear tree (bah humbug).

The bottom of the screen scrolling message can be edited. Run a text editor or word processor and load the file EXTRA.S. ASCII characters from 32 to 90 (space to lowercase z) can be used.

GETTING STARTED

Double click on the SIDE_2 folder, double click on the NOBORDER folder and finally double click on the program icon NOBORDER.PRG to start. Press F10 to return to the Desktop.

BACK UP YOUR DISK!

Because the oh-so-delicious ST Format Cover Disk is non-standard and squeezes in a whopping great 400K 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, however, if you send your corrupted disk to:

ST FORMAT

**January disk returns,
Discopy Labs Unit A,
West March, London Rd,
Daventry, Northants NN11 4NA**

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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 _____

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PROGRAM TITLE _____

SIZE OF FILES IN K _____

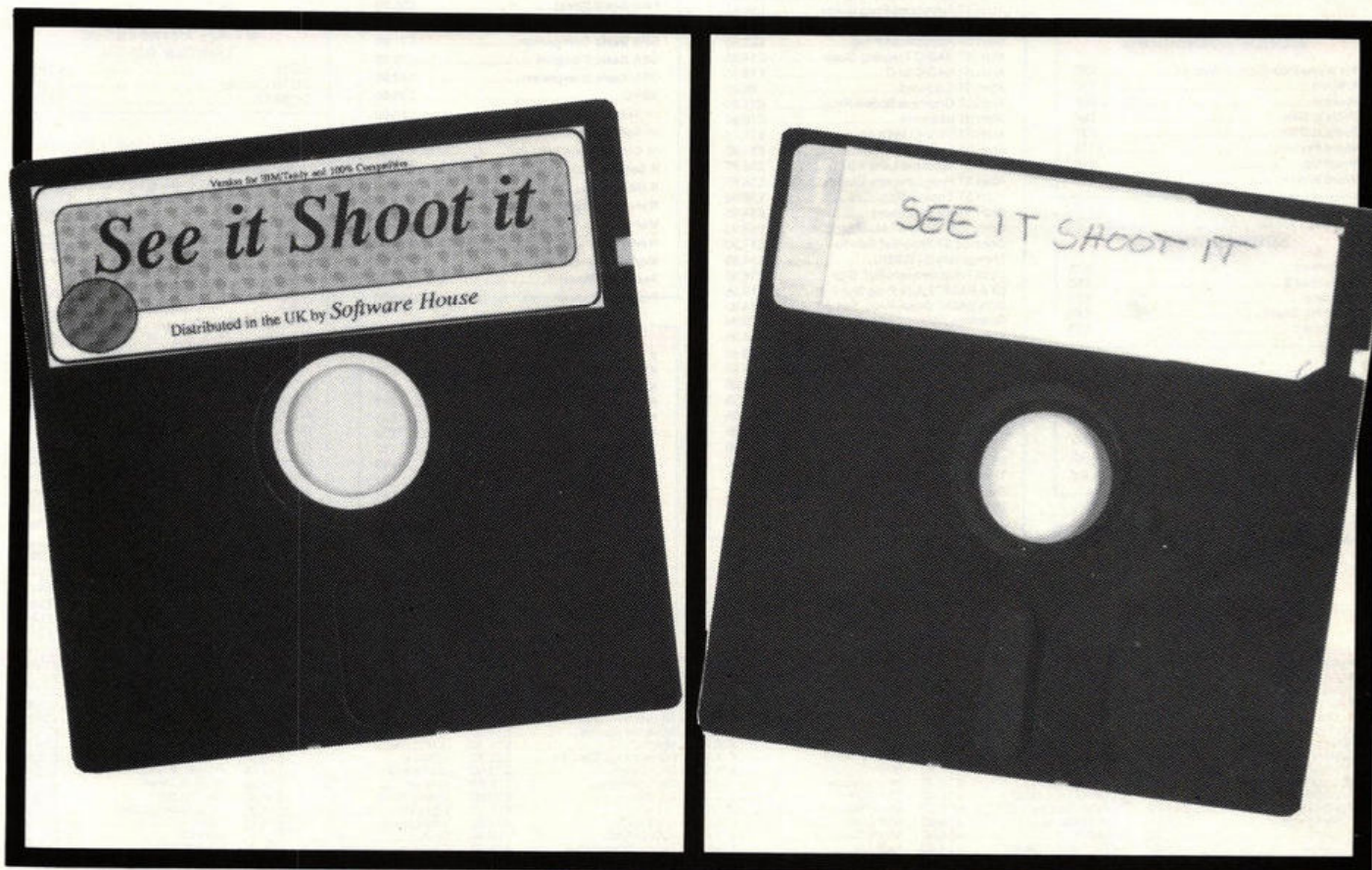
WHAT'S SO BRILLIANT ABOUT IT: _____

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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.

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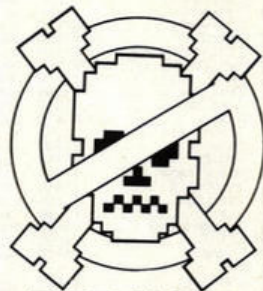
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INTO THE 90s...



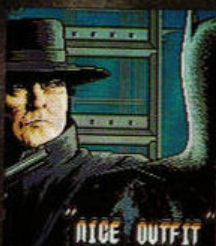
The classic arcade hit, *Ghosts 'n Ghouls*, gets the *Format* grilling on page 70

– and, as you'd expect, the first games of 1990 are among the best to date.

Many are making new strides forward, laying down a formidable

challenge for tomorrow's programmers. With the late rush of arcade car game conversions, *ST Format* reviews three of the best

in a big car special, beginning on page 58, in which we see just how frontiers are being reached and smashed.



We put Ocean's *Batman* licence through its paces – page 52

There's never been a better time to take your *ST* for a ride!



Can Hewson do it again with *Stormlord*? Turn to page 38, where all is revealed...

THE ST FORMAT RATINGS SYSTEM

GRAPHICS

The *ST* is capable of some superb graphics and animation: the last thing you want is crummy 8-bit graphics with tiny sprites and jerky movement. The graphics rating takes both still and moving graphics into account.

SOUND

Your *ST* holds the power to output some great audio effects – not just sampled music but also some pretty nifty tunes using the sound chip. One thing which doesn't go down well with our experts is notorious beep.

INTELLIGENCE

Some games you can just pick up and play: if you've seen half a dozen vertical-scrolling shoot-'em-ups you know what to expect. Other games however, take some thought and intelligence to play. Look out for a high score here if you like your games brainy.

INSTANT APPEAL

If there are 1,001 instructions to read before you can even boot up then it's hardly instantly playable. You need to be able to shove the disk in, pick up your joystick and play for lots of instant appeal.

LONG-TERM INTEREST

Here we measure the appeal of a game after several hours' play. Combine this, and the previous score to find out how long a game needs working at to appreciate its finer points.

OVERALL

Taking all the above into consideration and comparing it to recent similar games, we award a percentage score. Remember though, that *ST* games are becoming better all the time so a game rated *Format Gold* a year ago may well no longer warrant such a score now.

VIRGIN GAMES NINJA WARRIORS

£19.99

A mere three years into the future, the evil President Bangler controls the army and police force, and is self-appointed leader of the underworld. With a stranglehold on the authorities, his reign of vice and terror knows no bounds.

To thwart the vile despot a group of revolutionaries, led by the dashing-named Mulk, have designed and built a pair of robotic Ninjas, whose single intention in life is the assassination of said Bangler.

As if you hadn't guessed, your task is to guide these robots (either solo, or in conjunction with a friend) in an attempt to penetrate the six areas of Bangler's domain, slashing your way past his menagerie of military and mutant henchmen on a mission to finally defeat the 'President' himself.

The background scrolls from right to left as the two robots walk and leap across the screen. Enemy characters approach from either side and shoot, throw grenades or simply wield knives in a menacing fashion and must be despatched with all due haste.

Your robot comes with a stash of 30 throwing stars, and can slash with his two blades or cross them in front as a defensive manoeuvre. To further evade attack, the robots can perform jumps and forward somersaults over the heads of the enemy, or crouch to attack low and avoid gunfire.

As hits are sustained, the human exterior of the robots is blown away to reveal the metallic skeleton beneath (a nice touch) until eventually the robot goes critical and explodes. Four lives are provided, but these are shared in two-player mode.

Progress through the different stages sees the enemy become increasingly numerous and potent. Fire-breathing giants, a Ninja swordlady, some big dude with a ball and chain (who's very tough to beat) and laser-firing robots all join



■ Death, slaughter and mayhem – and it's only the first level. Can this robot fight? Shuriken! (You're fired – ed)



■ The poor droids get a real tanking at the end of level two

in the robot-kicking contest. And just to prove its arcade parentage, you also have to face and defeat end-of-level guardians in the shape of shuriken-throwing Ninja and huge tanks with a machine-gunning crew member.

EFFECTS

Ninja Warriors really excels on the graphics front, with gorgeous backdrops, smooth animation and

huge enemy sprites – especially the tank, which is superb. The wide, three-screen layout of the original is represented by a long, narrow playing area and a unique load-while-you-play system has allowed the programming team, Random Access, to reproduce all of the arcade backdrops without interruption. The one fly in the visual soup is the jerky horizontal scrolling, which only serves to



■ Just a sample of the many gorgeous backdrops taken directly from the coin-op, which load in as the game is played



lessen the overall impact.

Sound too is used well with a pleasant soundtrack, supplemented by an array of sampled speech, screams, explosions, dog yelps and so on. This effect is unfortunately diminished by having only a few samples which are repeated over and over again.

VERDICT

Without doubt Virgin's latest Oriental beat-'em-up is graphically excellent, aurally sound (groan) and technically excellent. But (there had to be a but, didn't there?) the look and feel of the game simply flatter to deceive, since the all-important gameplay is fairly mediocre stuff. Walk, slash, walk, slash, jump, walk a bit more... and on it goes. All the action takes place across a horizontally-scrolling path, with no obstructions to clear, and no other levels to jump up or down to.

Your range of attack and defensive manoeuvres is pretty limited and so the strategic aspect is restricted to finding the best method of dealing with the more vicious opponents and end-of-level guardians. There are only half-a-dozen different enemies, which are mix 'n' matched on the later levels to inject some variety to the proceedings.

A major plus point in its favour is the inclusion of a simultaneous two-player mode which considerably ups its appeal and makes the game slightly easier. Ultimately, though, Ninja Warriors remains one of those annoying games which, while very slickly executed and presented, is limited by the quality of the original. Nice conversion – shame about the coin-op.

STEVE JARRATT

GRAPHICS	9
SOUNDTRACK	7
INTELLIGENCE	3
INSTANT APPEAL	8
LONG TERM INTEREST	5
OVERALL	69%

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DOMARK

PICTIONARY

£24.95

Domark have a clear and successful strategy of balancing "fast" games with "slow" ones. The former are their frantic but shortlived arcade conversions – such as *Toobin'* and *Hard Drivin'* (both of which we're reviewin' this issue, on pages 44 and 59 respectively); the latter are slow burners such as *Trivial Pursuit* and now *Pictionary*. A penny gets you a pound Xybots and *Dragon Spirit* crop up on compilations some time in the next year: a pound gets you a hundred *Pictionary* won't, and will still be selling steadily three years from now.

Pictionary, if you're not familiar with the board game, is simply charades on paper. You draw, your teammates guess and the opposition howl derisively. It's a laughably simple idea: it's also been massively successful, selling some 15 million board games in the States.

What's fun about the board game is the gulf between the drawer's conviction that what's on paper could be guessed by any fool – and the rest of the team's frustration at the complete inscrutability of the doodle.

Multiply this gulf a hundred times and you have *Pictionary*, the ST game. The object is to identify, through clues sketched on the screen, a word taken from one of five categories: person, place or animal; object; action; a group of difficult words; and words taken from any category.

There are two ways to play. The computer draws the word, and you (and your team, if you play in groups) attempt to guess. Alternatively, you can do the drawing for yourself, using the built-in drawing program. With it you can draw straight, curved and freehand lines, boxes, circles and ellipses and fill designated areas with a selection of patterns and inks.

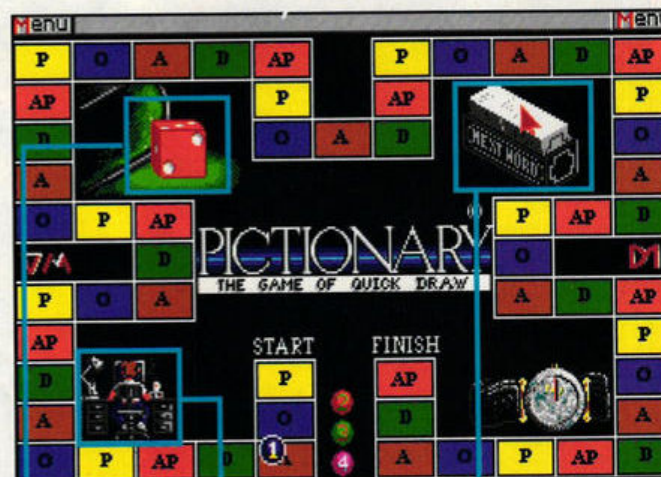
For those who've used *Degas Elite* or *Spectrum 512* this junior art package is tame stuff. But if



Click on these icons to choose your tool

Did you get the word? Tell the truth!

Time up! (You can select 1, 2 or 3 minutes)



The die rolls down to say what square you land on

That's Art, the know-all in charge of proceedings

Click on the "next word" icon to start your turn

you've only ever used your ST as a games machine, it makes a fine introduction to stuff you've been missing out on.

Drawing onscreen, though, is one almighty pain to learn. It is so frustrating to find that what you have in your mind just won't appear on the screen. You may find as I did that you set out to draw one thing – a church, say, complete

with steeple – and find halfway through that you're well on the way to creating a reasonably convincing frog or banana.

Pictionary is definitely in that category of software more bought for than by its owner. But if you wake up on Christmas morning (bah humbug) to find that box looks suspiciously like *Pictionary*, don't despair. Clear the house, call up a

few of your rowdier mates, stock up on the tubes and Tortilla chips, put your money where your mouth is and get down to some serious aggro. "That's a what? A truncheon? What kind of a sick mind you got, pal? If that's a truncheon I'm Yehudi Menuhin and you're my cat Eric!" That kind of thing.

EFFECTS

I have a lot of time for Domark's care in converting titles, both arcade and otherwise, and I like what they've done with *Pictionary*. To anyone who knows what GEM is and has ever done anything as advanced as copying files it's a cinch to pick up. Graphics are hardly spectacular and the drawing program wouldn't win awards as a standalone, but then again you don't need flashy distractions, and a simple picture is all you want to produce anyway. The sound, mercifully, can be switched off: there's a wretchedly cheerful ooooo! noise that accompanies fills I would not want to inflict even on Kylie.

One observation: the manual and list of 2,500 words is printed in a size that makes Lawyer Small-print look like a Sun headline.

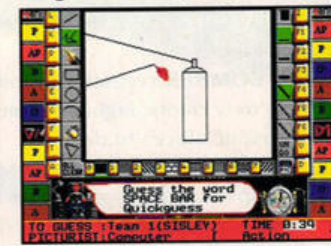
VERDICT

It's no good anyone trying to pretend that *Pictionary* is the birth of the cool, and if it's joystick wrist you're after you've come to the wrong place. But it could well surprise you. And in the right company you might even get into a fight over it – which I don't think you could say about *Xybots* or *Dragon Spirit*.

STEVE CAREY

GRAPHICS	7
SOUNDTRACK	-2
INTELLIGENCE	8
INSTANT APPEAL	6
LONG TERM INTEREST	8
OVERALL	72%

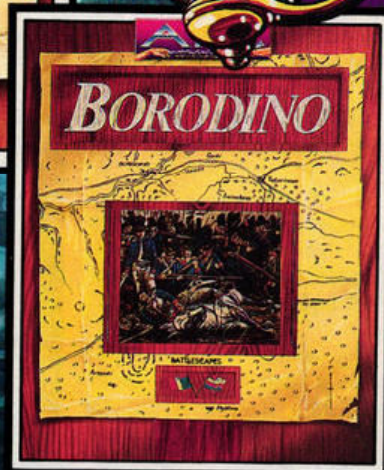
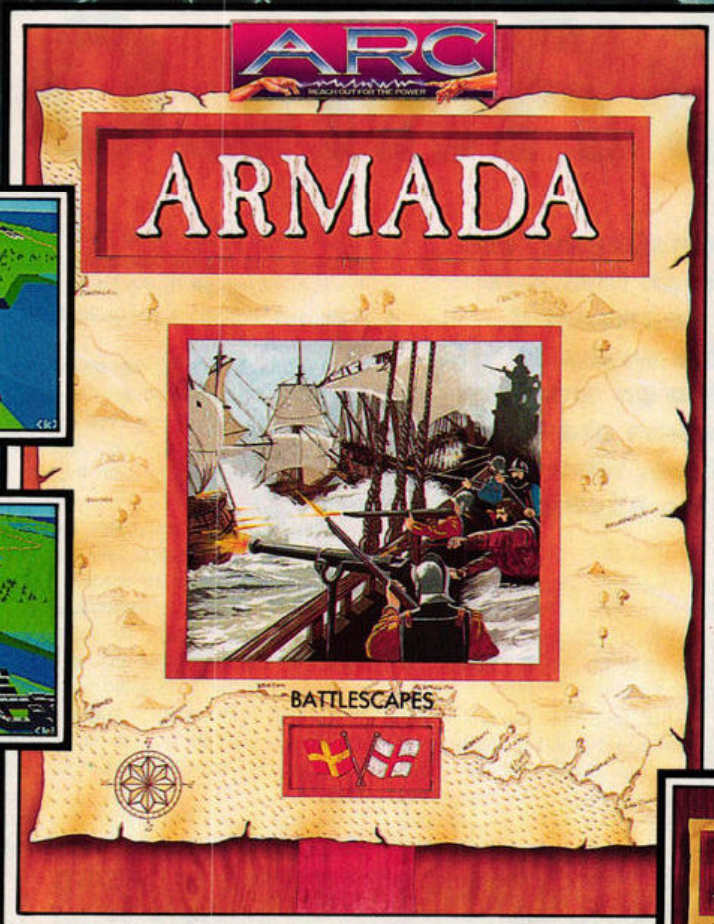
Three stages in the creation of a masterpiece. Oh alright, I admit it: the computer drew this one for me. But I did guess correctly (eventually): spray. Remember, you're told it's a "doing" word (or "verb" as we used to say at school). You'll have even more fun trying to draw your own clues



ATARI...THE POWER BEHIND



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BORODINO Take the command from Napoleon and replan the strategy for one of his most disappointing encounters at Borodino where 131,000 French met 120,000 Russians, or take the role of Prince Kutusov and plan the Emperor's downfall. "Game of the Week" - Popular Computing Weekly.

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■ Stormlord finds a magic spring. Step on it and you can go to another part of the game



■ There you go, whizzing through stars and space to get to somewhere less dangerous



■ You land amidst fatal plants and drops of acid rain. Hang around too long and you'll be in real trouble

HEWSON

STORMLORD

£19.99

Hot on the heels of *Onslaught*, the new game from Hewson features man-eating orchids, imprisoned fairies and a hero who walks on thin air. It might sound like an amazing action game but Hewson are billing it as an arcade adventure. Who said adventures couldn't be exciting and action-packed?

There was a time when the only 16-bit games which Hewson could be relied on to produce were silly little challenges like *Cybernoid* and *Custodian*. Although testing, these were never about to take the world by storm. But with the Christmas season snapping at our heels, we're seeing some of their best products ever.

Boasting the same high quality-graphics as *Onslaught*, *Stormlord* is billed as an action/adventure game with a difference. Just like *Onslaught*, it consists of a lot more than a saunter through a horizontally-scrolling ancient land, picking up the odd pot of gold and magic spells.

The aim of each level is to release a band of trapped fairies who are scattered elusively between problems. Problems are overcome in one of two ways, either give up a life or find the object to solve them.

To accomplish this task you wander through the level seeking out items which will help you and the fairies. Okay, so the idea sounds a little too twee for comfort but it does make an interesting change from the usual scenarios.

You need only step into an object to pick it up. If you're carrying anything else at the time then

it's swapped for the new item. Keys are one of the most useful icons to collect since these let you pass through doors leading to other parts of the level.

The problems you encounter are solved by finding appropriate items. For example, at one point the fairy is trapped by several bees buzzing around her. If you step into this lot then it's instant death. How-

ever, you can find a pot of honey and swap it for the key next to her. They'll all swarm off to the honey, leaving you to go back and rescue the fairy.

This brings us to another problem. You can't just drop an item anywhere you want. If you need to put it down then it must be swapped for another item on the ground.

Along the way you meet all sorts of strange beasts ranging from winged dragons to wizards. Some of these take considerable beating if you're going to wipe them out and this is where you really need to be a dabhand with the joystick. Some of them leap up and down across the level so much that your only hope is to dodge them.

At any point in the game you can dispatch a single firebolt which

has a limited impact on the aliens in front of you. Alternatively, you can hold down on the firebutton to release a mammoth sword that plunges its way through any live flesh in its path.

Aliens aren't the only obstacles which present themselves. The elfin enemies have also developed a nice line in man-eating orchids and other ferocious wildlife. If you stop looking at the ground in front of you then you'll end up as plant food.

EFFECTS

Stormlord has smooth horizontal-scrolling with superb backdrops and definitely some of the best drawn sprites in a long time. The attacking enemies are beautifully animated and *Stormlord* himself looks and moves well. The main character, though, is an odd creature who can't run particularly fast so escaping is never that easy.

The only real complaint with the graphics is the way your character walks on the wildlife. This looks very contrived, especially when he leaps from toadstools and appears to walk on thin air.

There are some brilliant extra effects adding to the thrills. For example, if you step on a spring, you're catapulted into outer space and fired to another part of the game. This effect is superbly achieved showing *Stormlord* hurtling through the stars.

You can choose to play with sound effects or music. The music is brooding and sombre, reflecting the Tolkeinesque atmosphere. Although the sound effects aren't quite as impressive, *Stormlord*'s agonising death screams and the extra explosion sounds are very effective.



■ Hold down on the fire button and release a gem of a weapon. This sword effectively deals with anything in your way, but can you afford the time to hold down on fire?



■ Aliens might look nasty but don't take much blasting to defeat

VERDICT

The secret of Stormlord's attraction is its unusual combination of adventure and action. You need to discover objects in a horizontally-scrolling scenario, but also defeat monsters and overcome the voracious wildlife — this is where the action side of things steps in for a bow.

Sometimes this combination is just too demanding. The action scenes require some extraordinarily deft moves of the joystick if you're going to keep yourself out of trouble. Even then, some of the problems can seem impossible to overcome without giving up a life, particularly when wild orchids are gobbling at your ankles or swarms of bees are staring you in the face.

This would be acceptable if it was all there was to the game, but things are complicated by having to run back to find pots of honey and keys to progress further through each level.

If you don't find action and adventure combinations a problem, then you have a very challenging, difficult and visually charming game on your hands

MARK HIGHAM

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



■ The objective is to rescue the trapped fairies. Walk up to the bubble and release her from her prison



■ Released from her soap sud, she flies off to safer pastures

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Gar? Well, the folks on Earth decided that it was about time they built a super automaton with the reasoning powers of a human, the calculating abilities of a room full of Cray silicon and the destructive capabilities of an assault vehicle, and send it out to perform menial mining tasks.

Of course with all those assets at its finger (or should that be pincer?) tips, the animated dustcan decided to chuck in the mining lark and rampage through the solar system destroying all in its path, and the rest, as they say, is Hollywood plot.

You and your attack droid have been assigned to the mission. Beam down to the SLDF (Sun League Defense Force) complex on the planet, locate the 25 hidden floppy disks that make up the weapons research currently in the hands of Gar, kill him and his forces and re-program the central computer. Not exactly afternoon tea with your favourite aunt, right?

To achieve these ends, you take remote control of the attack droid Viper-5. Everything that appears in the game is seen through special cameras attached to this robot, and objects and other creatures are manipulated via him (why are robots never female?).

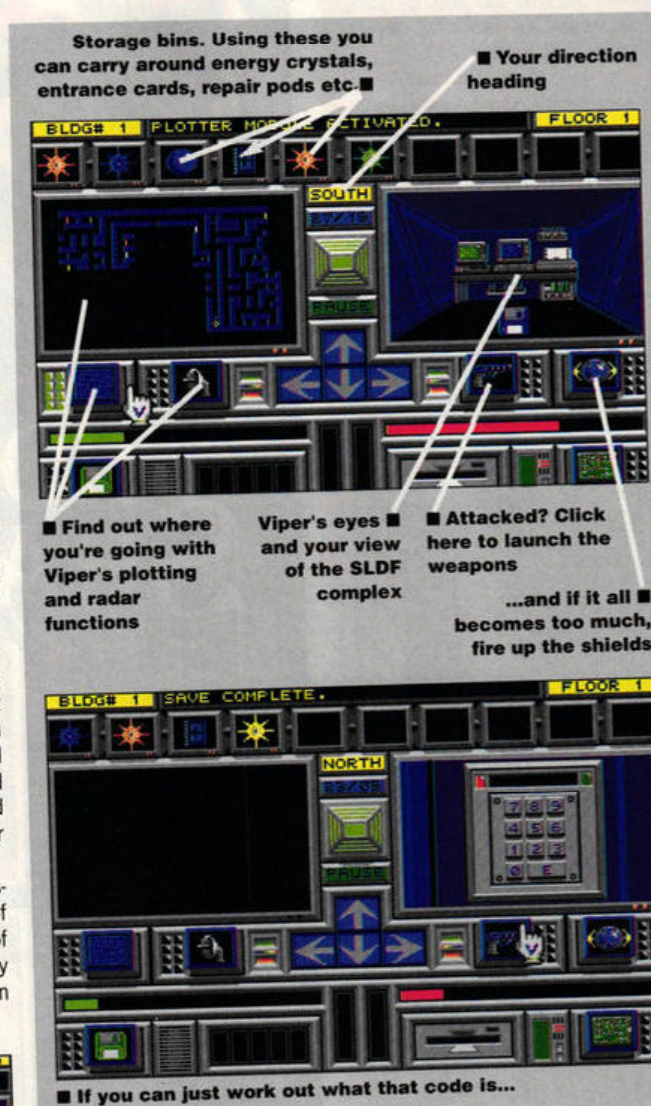
The SLDF complex is reminiscent of those 3-D maze games of yesteryear. Walls at each side of your field of vision stretching away to a "meeting point" somewhere in the distance.



■ All Viper functions can be accessed from the main screen using the mouse. There's views of the SLDF complex and Viper's status

ACCOLADE DAY OF THE VIPER

£19.95



All of the Viper's functions are controlled using the mouse – the weapons, radar systems, plotter and shields are switched on by clicking the relevant button.

The complex itself is built on five floors with approximately 25 rooms on each floor and countless corridors, cul-de-sacs and dead ends. Cavorting hither and thither

brings you into contact with items such as energy crystals and pass cards, and unfortunately, the forces of the enemy.

In order to deal with those aggressive mechanoids you switch on the weapons system, move the mouse pointer into the viewing window where it becomes a cross-hair, and blast away until you've



reduced the creature to a twisted pile of smouldering metal.

Sooner or later you'll start to encounter the floppy disks and the mission will be underway (or you'll be killed in the first encounter with one of Gar's metal minions; it's a tough life as a space ranger).

EFFECTS

From the opening screen you just know the sound effects are gonna be good. The game opens with a heavily throbbing electronic beat which is suitably eerie, and continues with some of the best spot effects I've ever heard in a space game. The whoosh of sliding doors, zaps of laser guns and clicks and buzzes of the various systems being switched on and off are magnificent.

The graphics are pretty, animation is smooth, but the whole display is rather limited in that the main part of the screen consists of a control panel, and the animated display for the most part shows walls, walls and more walls with an occasional door to break up the monotony. That said, the display conveys a sense of "being there."

VERDICT

It must be difficult to write yet another foraging/scavenging game involving the player travelling around a 3-D building collecting objects and to inject it with a note of excitement, yet that's exactly what Accolade have managed to do. From the moment you invade the complex, encounter and deal with your first enemy and try to figure out the code which will operate the lifts, you're completely hooked.

You just have to round the next corner, open the next door, blast one last rampaging mechanoid before bed. Fortunately, Day of the Viper has a Save Game feature making it all there the next time you feel the urge. And with this game, there'll be lots of next times.

JERRY GLENWRIGHT

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

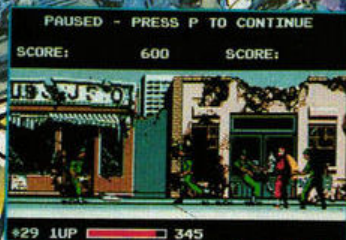
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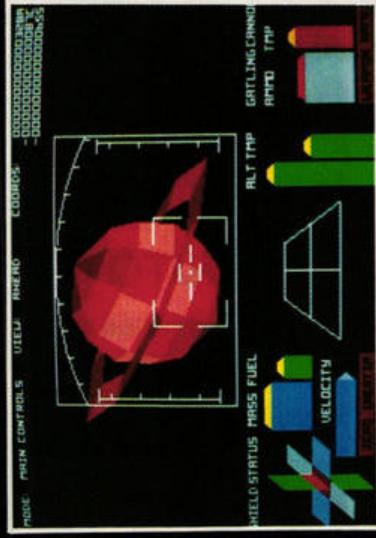
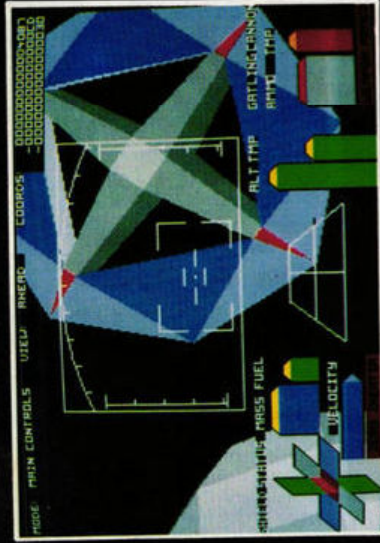
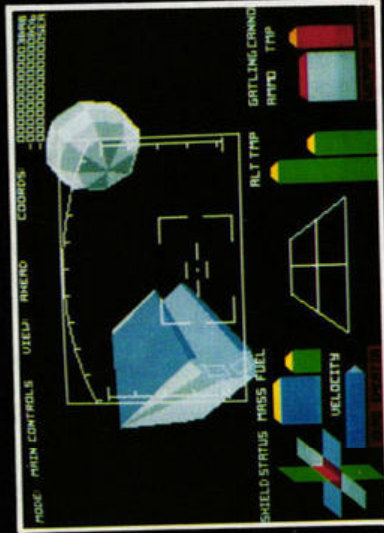
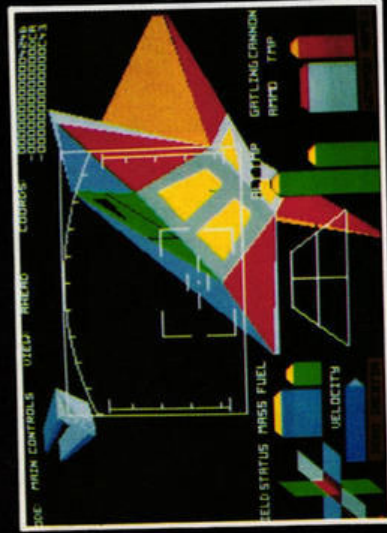
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Screen shots from Atari ST version.

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There's no-one more obsessed with releasing cartoon licences than The Edge and this time they've turned their attention to the biggest comic strip hero of them all.

The Edge's best hit was with the original Garfield game released last Christmas. But they steered off of the arcade adventure path a few months ago when they released the follow-up - *Garfield - A Winter's Tail* which was an all-action game. Now they're returning to their original formula for this latest release.

The objective is a simple one - track down Linus' blanket and carry it back to the poor fellow. The task is complicated by the fact that you must use various objects in specific circumstances if you're to get through the game successfully and return the emotionally

rain cloud which you can't do without first finding the umbrella. When you've got this, you can walk under the cloud and pick the ball up but you can't carry it back through the rain without the umbrella - and you can't carry both at once. The answer is to kick the ball through the cloud then use the umbrella to walk to the other side. Now you can pick up the ball.

There are two blankets in the game but you only need to find one to win. The theory is that since all the objects are in the same place each time, it doesn't matter if you locate one blanket because there will still be another one to discover.

EFFECTS

The game is arranged as a series of static screens. As Snoopy moves out of the end of one screen, he pops up at the start of



■ How do you get the ball without being zapped by lightning as you pass through the incredibly impressive rain cloud?



■ Find the umbrella to shield you from the vicious lightning and put it up to pass through dry and unhurt



■ Put down the umbrella and, if you have the strength, kick the ball through the enormous stormcloud



■ Use the umbrella to pass back through the rain and try not to ask exactly why Kermit is trying to commit suicide at your feet

THE EDGE

SNOOPY

£19.95

retarded Linus back to a full sense of security.

The environment constructed consists of a street with several houses for you to explore. As you wander through these you come across such items as footballs, a watch, scoreboard and even a cookie jar.

These must be used to overcome problems, but since you can only hold one at a time it's not just a matter of picking them all up and using them whenever you need to.

For example, to collect the football you need to pass under a

the next. As a result you can't always see what's happening just in front of you.

If you thought games were becoming more and more sophisticated in the graphics department this one proves that theory wrong. Snoopy is the only character you can depend on for movement. Charlie Brown, Lucy and the others rarely move while you're around, but if you step off somewhere else for a moment they'll suddenly dash forward several frames.

What's even worse is the speed of the movement which

does take place; the real Snoopy could have all four legs sawn off and still move faster.

Music or spot effects can be selected. The music is nothing exciting but at least it gives you something to listen to while Snoopy is limping from one side of the screen to the other.

VERDICT

You've seen the screenshots by now and probably thought it looks an addictive and cuddly licence - presumably what The Edge are banking on. It's hard to see anything else which might even remotely encourage people to splash out 20 quid on it.

By far the biggest problem is the ridiculously slow pace at which things move. Since a vast number of other games have handled considerably more animation without any hiccups, there's no excuse for such problems.

If you still insist on playing after seeing how slowly it runs then you'll only suffer further annoyance. For a start, the adventure isn't nearly large enough and because of the way the game is constructed you end up exploring the same scenes and the same territory over and over again.

Then there's the comic element - where is it? Schultz's car-

toon hero was brilliantly funny but the only joke here is the lack of programming accomplishments.

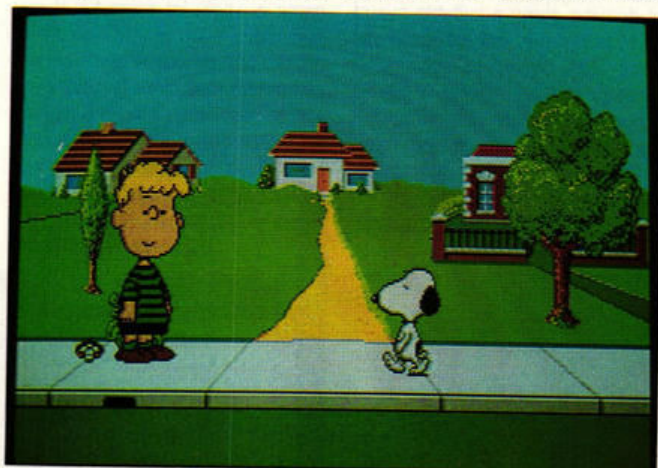
Arcade adventures have moved on a lot and it takes more than just "find object X to solve problem Y" to make a good game nowadays.

It also takes more than just having a famous lovable cartoon character as a hero to make gameplay interesting. Snoopy would make a great slideshow but as a game it's a completely wet blanket.

MARK HIGHAM



■ Hungry? Give your bowl to Charlie Brown and he'll go and fill it up for you



■ All the famous Schultz heroes are included. Unfortunately, they rarely move while you're in the scene, so don't hang around chatting to them

GRAPHICS	4
SOUNDTRACK	5
INTELLIGENCE	3
INSTANT APPEAL	4
LONG TERM INTEREST	2
OVERALL	39%

DOMARK

TOOBIN'

£19.95

Just a pair of dudes (doods, perhaps?) with rubber tubes and anti-social attitudes: that's Biff and Jet, heroes of this jolly coin-op conversion. There's nothing this merry duo enjoy more than sailing down the river in their inflated car-tyre inner tubes, slurping down a few six-packs of the old liquid refreshment and lobbing the empty cans at unsuspecting fishermen.

This ain't no party, though: not until you complete the course, at any rate. This is serious Toobin', with gates to be negotiated in slalom canoe fashion in order to score points. More serious still, if you dawdle too much the big bad 'gator appears to hurry you up, so if you don't paddle pretty sharpish he'll chomp large pieces out of your ass.

You follow the course of the river, scrolling vertically down the screen, controlling your tube with the joystick or the keyboard. The control method is somewhat Asteroids-like and a touch awkward to get to grips with at first: it involves paddling left or right to turn the tube round and then forwards or back to move it, with the added bonus of a touch of inertia as you drift through the water or bounce off the river-bank. Control off the keys sounds like a good idea, but is actually tougher to get to grips with because, weird as it sounds, there's no key to go straight: you have to press Left and Right together!

Once you've sussed the controls you can whizz happily down the river, collecting such goodies as beach balls and lunchboxes to give you a bit more oomph, patches to repair your tube (giving you an extra lease of life), the letters of the word 'Toobin' for a



■ The two Toobin' dudes together: Biff is about to score points, while Jet's trying to pick up a six-pack

handy little bonus and, of course, cans to lob around with a press of the fire button.

Rack up the score by whizzing through those slalom gates, but watch out for the obstacles that puncture your toob and sink you: branches, whole trees that collapse into the water, fishermen's floats. Fortunately, you can dispose of some of these by lobbing a can at them, a particularly worthwhile exercise with the bits of bush because they turn into collectable goodies.

Further on down the river, things start to get really interesting. The innocent fishermen are replaced by duck hunters with large and dangerous weapons, water-snakes abound and deadly mosquitoes bite. Even more shocks await the other side of the various free-fall connecting sec-

tions, where you find yourself on Mars being picked on by marauding aliens, in Hell where the hands of the dead grab upwards out of the water, at the Antarctic under attack from suicide penguins, or suddenly amongst the Egyptian monuments of the Nile.

EFFECTS

Toobin's by no means a bad representation of the coin-op. Graphically it's quite jolly, with bright colours and a cheerful style of drawing giving a suitable mix of cartoon humour and antisocial violence. The downward scrolling is smooth and the sprites whizzing around the screen are small but fun, except for the dudes themselves, who are, er, big and fun. The little spurts of water as the dudes paddle their tubes are quite sweet.

Only two real problems: firstly your Toober can get stuck behind the score panels, top left and right, in which position it is obscured totally; and secondly, some of the smaller objects flying around are a bit lacking in detail, which makes it hard to tell whether you should avoid them or collect them.

The sound is limited to a couple of different tunes, one in a bouncy Spanish style and one slightly more creepy for the weird stretches of river. Not too bad for the ST's limited sound chip, but ultimately more irritating than enjoyable.

VERDICT

Toobin' is an enjoyable little game, with an entertaining and refreshing anti-social attitude and some witty ideas. Where else can you lob tin cans around to dizzy the heads of land-lubbers, or meet suicide penguins? The progress through the levels is interesting, made varied by the choice of left or right courses on the connecting stretches which take you to different places.

Although it won't be too long before you find yourself reaching the beach party at the end of the game, there's enough variety in the levels to keep you whizzing through in search of better scores, different scenes or those elusive letters.

Finally, it really does make the game a whole lot more fun if you take advantage of the two-player option. Not so much because you co-operate, but more because you get in each other's way. Bouncing the other player down the screen for a close encounter with a green blob of pollution gives real cut-and-thrust to the game!

DAMIEN NOONAN



■ Picking up a repair patch



■ Squeezing past a hippo



■ Skull attack on Hell's river

GRAPHICS	7
SOUNDTRACK	4
INTELLIGENCE	4
INSTANT APPEAL	4
LONG TERM INTEREST	7
OVERALL	74%

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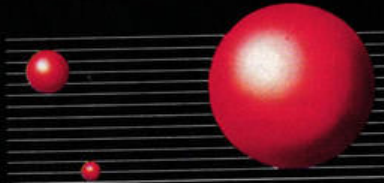
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Screen shots from Amiga version.



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There's something about cute, horizontally-scrolling adventures which makes them instantly playable and inexplicably addictive. *Super Mario Brothers* is one of the classic Nintendo versions, but there have been many others, including *New Zealand Story* and *Skweek* which have followed the same theme with considerable success.

Now comes *Axel's Magic Hammer*, one of Gremlin's most promising releases for '89. The scenario is the usual dross about Axel's ultimate ambition to rescue the princess at the end of level eight, blah blah.

In short it's an action game in which you use a hammer to punch through special bricks located on each screen. Behind the majority of bricks is a bonus icon which can do anything from grant you extra lives to give you a helmet, enabling you to jump up and smash the bricks from underneath.

Along the way you encounter bats, pigeons and other ghouls which sap your energy. By collecting the right icon you can blast them to pieces and obtain special bonuses. To direct Axel around the screen, you need some nifty joystick movements: perfect them

GREMLIN

AXEL'S MAGIC HAMMER



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you really need to keep your eye on. Every time you're hit by aliens or bolts of lightning, you lose valuable energy. This can be topped up if you find the correct icon, but there aren't many around for you to be too chivalrous.

There are other obstacles which are instantly fatal, including taking a tumble into water and leaping onto fatal spikes.

It's also obvious that each screen is treated as a separate entity. This is apparent whenever you cross from one screen to another and then cross back again. The aliens on each screen have a point from where they first start moving, thus, you cannot hide in the previous scene until a nasty situation has resolved itself.

This is a minor grievance, admittedly, but it becomes more annoying in the vertically-scrolling sections when you need to master the fine art of hopping from one moving ladder at the top of the screen to the other on the next screen up – very frustrating when you can't depend on it to move at the expected time!

This isn't the game's only major problem in the graphics department. With the exception of a large, animated, end-of-level guardian, the sprites are all fairly small.

Sound can be music, sound effects or both. There are no sampled effects but what's on offer is a cuddly little ditty typical to cute game soundtracks.

VERDICT

Axel's no great shakes in the graphics department, but how does it stack up elsewhere? The nature of the game means that you

can pick it up straightaway and start hammering your way through various stages.

There's a lot of thought gone into keeping this game alive for longer than the first few hours. The occasional secret room, often discovered by accident when you land in the right place, makes it possible to find new things in each level to keep you entertained.

Axel has one thing in common with *Skweek*, and that is the enormous number of icons that are available to be collected on the route. Even if you can never remember what they all do, you collect them anyway and this is what entices you to keep hammering away at the bricks. It's precisely this element that makes *Axel* one of the best of the current crop of "cutesy" efforts.

MARK HIGHAM



■ The guardian at the end of level one is a dangerous woman to bump into: she fires arrows at you until you persuade her otherwise. But you must get past her to rescue the princess at the end of level eight

and Axel can leap very high.

There's a strategy element to getting as many blocks as you can. It's easy to accidentally knock out one that you should have left and used as a stepping stone to other blocks which are otherwise out of reach.

You lose one of your four lives when either the energy or time limit drops to zero. It's the energy limit

EFFECTS

Instead of being horizontally-scrolling, Axel steps out of the end of one screen and into the beginning of the next. This is a shame because otherwise it would have been a serious competitor to other games treading the same territory. Vertical-scrolling is used very effectively in scenes when Axel is falling down deep wells.



■ Fall through the trees and catch the apple to get extra energy



■ Some levels are horizontally-scrolling...



■ ...and some are vertically-scrolling...



■ ...but they all have secret rooms with extra bonuses

GRAPHICS	5
SOUNDTRACK	5
INTELLIGENCE	5
INSTANT APPEAL	8
LONG TERM INTEREST	7
OVERALL	76%

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SUBLOGIC

HAWAIIAN ODYSSEY

£19.99



Flight Simulator II, probably the most comprehensive simulation of small aircraft flight you can buy for a computer, has been around a long time. In order to sustain the punter's interest in SubLogic's elderly but exciting adventures in aviation, the company decided to introduce scenery disks. A collection of bolt-on scenery featuring even more landmarks to buzz, even more home towns to visit, even more city residents to annoy.

Unfortunately for SubLogic, although the scenery disks are good, they're a little over-priced for what amounts to blue above, green below and some box-like buildings and wire-frame bridges in between. Consequently, discerning electronic pilots didn't exactly block traffic forming queues outside their local software stores to buy them!

To get around this, the latest scenery disks had many added bonuses such as extra navigation aids, highly detailed ground features and interesting challenges for you to complete, and the latest offering, *Hawaiian Odyssey*, is no exception.

But what places this disk light years ahead of the others is that it comes with a little feature tentatively described as Experimental Scenery. I can just feel a ripple of anticipation running through you...

Turns out that the experimental scenery is the whackiest collection of objects any pilot ever had to encounter. Salvador Dali will be turning in his grave in envy. Enormous pianos, giant kitchens, Egyptian pyramids, airports in the sky – even a giant sailing ship, fully rigged and waiting for you to fly around, over or through.

Such fun! Even flight purists for whom the mere mention of a trigger button or invader from another world would send into an apoplectic convulsion of outraged pomposity will enjoy the craziest flight of their lives.

What's that? Hawaii? Oh, yeah, Hawaii's there too, resplendent in its several islands of glory. There's even an adventure/challenge involving you cavorting around trying to locate the secret jewel of the Goddess Pele.

26 airstrips, lots of visual approach slope indicators, landing lights systems and numerous other navigational aids complete the package.

There's also the usual collection of maps, airport vectors and scenery discussions with a plastic wallet in which to keep it all in the box.

EFFECTS

Absolutely wonderful. If you're into *Flight Simulator II* then this scenery disk is more of the same colourful and geographically accurate landscaping with volcanoes, patchwork ground detail, trees and other features all stunningly represented.

Sound consists of the usual engine buzz, but then this is meant to be straight flight simulation and snappy toons aren't necessary.

VERDICT

SubLogic have struck gold with this one. Many of the other disks were criticised for being somewhat lacking in features considering the 20 quid asking price. But *Hawaiian Odyssey* will repay your investment by providing you with many hours of enjoyable – if fanciful – flight. See you at the pyramids for drinks.

JERRY GLENWRIGHT



■ Worm holes through time and space... Inside the tunnel... and out into alternate reality

GRAPHICS	9
SOUNDTRACK	2
INTELLIGENCE	8
INSTANT APPEAL	9
LONG TERM INTEREST	9
OVERALL	73%

OCEAN

BATMAN

The Dark Knight is back in Ocean's second *Batman* game, this time based on the over-hyped film. It's already advancing up the charts on other formats, and now the wait is over for ST batfans: the definitive review has arrived

Forget those beat-'em-ups and car games: they're for wimps. If you're a real man (er, person?) then play a superhero's game. After the hype for the film (which failed miserably, by the way, to live up to inflated expectations), the repeat of the wonderfully camp 60s *Batman* TV series and even the dust-

ing off of the cartoon strip, you'd be hard pressed to find a superhero more famous than Batman. But superheroes have super enemies to defeat, and now's your chance to pit your skills against the greatest arch-villain of them all.

The objective is broadly the same as the film: wipe the smile off that nasty Joker's chops and thereby make the world a safe place to live, etc. With Gotham City currently under the Joker's thumb everyone is susceptible to attack from lethal Smilex gas, which he's maliciously injecting into everything from balloons to food.

Accomplishing this mammoth feat is a challenge of both joystick skill and brain power. You do battle against the infamous villian across five levels so distinct that Batman is really five games rolled into one - indeed, three different programmers have been involved in programming separate levels. As a result you end up with a platform game, a car-racing game and even a strategy level tossed in for good measure. If you can overcome this lot you fully deserve to defeat the Joker. Nonetheless it still boils down to a nailbiting, on-going life-or-death type situation at the end.

The five scenes are tied in commendably closely to the film, with the game beginning in the Axis chemical factory. This is under attack by Jack Napier and his evil gun-toting



■ Your score

■ That evil arch-villian

■ Remaining time

■ Number of Batlives left

■ It's carnival time for Batman in level three where you must stop the poison-filled balloons flying into the air

IAN

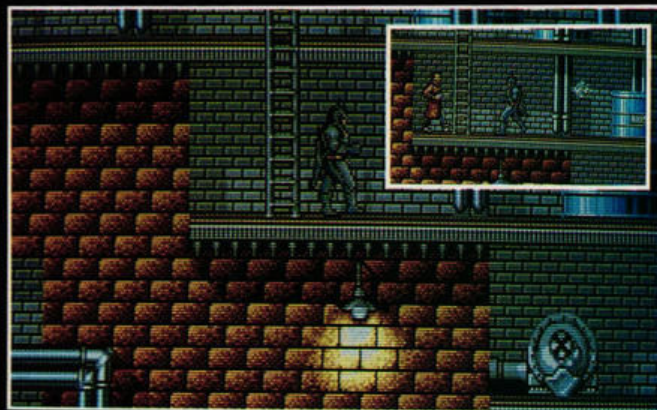


£24.99

henchmen. As Batman, you must work your way through the plant and find Napier, then drop him into the acid vat. This will disfigure him so badly that he becomes the Joker and the challenge is really on.

Scene one is a platform level and finding your way through the maze of corridors is an enormous problem. This

man while the other is one of Napier's special henchmen who can aim his bullets straight at you even if you're on the level below him. Fortunately you have your Batarang at hand and you can aim this at the enemies - one hit and they drop to the ground. The whole thing is made harder by the need to dodge drops of lethal



■ Avoid the drips but don't hang around or you'll meet the local mafia. The gas leaking from the pipes (inset) is lethal!

stick movements and this is common for other levels. In the second level the game abruptly switches to racing simulator mode. Race through the streets, dodging all the other cars in front of you: hit 'em and you lose valuable energy, drifting ever closer to the big sleep. The speed of the Batmobile makes it easier to

lamp post. This wraps itself around the corner. If you're whizzing along it's very easy to miss the lamp post and sail straight by without a care. Miss three turns in a row and you fall foul of a police roadblock. (So much for the People's hero.)

Level three, set inside the



■ One of the most exiting moments in the game. Race through the city streets in the world's most unobtrusive car, avoiding those ordinary-looking vehicles in front of you

is one of the hardest levels because if you're going to make an impact on the rest of the game, you need to get through this scene without losing any of your three lives.

The factory is a multi-directional scrolling hive of rooms, crawling with two types of enemy. You have to progress constantly to the right but with lots of dead-ends scattered all over the place, this isn't always as easy as it sounds.

And of course there are the obligatory bad guys: one of these is a forward-firing mob

oil which drip from the pipes. Reach Napier at the end of the level and he falls into a vat of toxic chemicals and emerges so melted that he's known henceforth as The Joker.

To move around the platforms you either take the slow route of climbing ladders and running along, or you can take the much speedier option of using your bat rope. You can shoot this up to the ceiling and fly or climb to the top. One of the game's strengths is that all these options are controlled using a very logical set of joy-



■ Follow the red arrow at the top of the screen if you want to get back to the Batcave. You're in for some fun when it stops pointing straight ahead!

avoid other vehicles, but drive too slow too long and you're going to run out of time before you reach the end of the level.

Because finding your Batcave isn't the easiest thing in the world, the direction you need to pursue is indicated by a red arrow at the top of the screen. Sounds easy enough, but the prob is, you're supposedly going so fast you can't steer. So what do you do? Ah hell, you're Batman, you figure it out... Aha! By pressing the fire button you can toss out a rope and grapnel at a nearby

Batcave, brings you in contact with the Joker's Smilex - a brew so wicked it kills anyone it gets in contact with (bit like privatised water, really, bit of politics). Its victims drop down dead in agony with a big grin on their face - cue interesting horrible sprite.

Strategy comes in at this level, and it runs something like Mastermind without Magnusson. Certain food items have been contaminated with the Smilex and it's down to you to choose which three are thus infected. You choose three



■ The first level: getting through all these bad guys without any problem is one way of surviving, but you really need to find the quickest route through the factory to make real progress in the game



■ When the time comes to turn, you realise you've got no steering wheel. Find another method of getting round that corner - the lamp post comes in useful

objects at a time and the computer tells you how many of these are deadly. Using a process of elimination, you work out the right ones within a time limit. It's not hard if you're as incredibly intelligent as what I am.

For the fourth level you end up back in the middle of Gotham City under cover of the night. The Joker has promised lots of money to everyone who turns up, so not surprisingly there's a massive carnival taking place on the streets. But The Joker isn't all laughs. Inside the carnival balloons there's more of the nasty Smiley gas: and the balloons are about to burst. You're at the helm of the Batwing and you've got to slice through the mooring ropes of the balloons with its wings. This is trickier than you'd imagine, because you have to chop through every rope or the gas escapes into the air. Let too much gas loose and you kiss goodbye to yet another precious life. Things are looking bad for Batman. And of course there's a time limit - take too long and the balloons go up anyway.

Last of all comes the Cathedral scene - the tedious, protracted final conflict in the film. Here, you need to dodge the floors as they crumble beneath your feet, and at the same time avoid rabid rats. As in the first level you need to use your Batrope to avoid meeting your death during a tumble through the floor, and also use your Batarang again to kill the rats.

Make it as far as the roof and you get to participate in the final act of conflict where you must kill the Joker or he'll escape to Gotham City. This is where the crucial battle is won or lost.

EFFECTS

Although sound effects are no more than competent, graphically *Batman* is one of the most exciting games for a very long time. In the platform level the sprites of the enemies and Batman have all been carefully animated so that they run, shoot and die most convincingly. Unfortunately, Batman



■ The fourth level is fun - if you get this far. Cut the ropes holding the balloons and release them into the air

can only walk through the levels, which is frustrating until you get used to making the most of the Batrope.

Get off the first level and things get absolutely incredible, the Batcar in the second level features some state-of-the-art programming. The cars in front and the roadside sprites come at you very quickly, but it's the 90 degree turns around corners which look out of this world. This



■ Out goes the rope and grapnel and if you hit the lamppost accurately, you'll go straight round the corner, making a full 90 degree spin, guaranteed to make you car sick

ultra-fast movement is brought up again in the fourth level where you take the controls of the Batwing.

VERDICT

Apart from the rather jolly New Zealand Story, Ocean's achievements in the 16-bit field have hardly been earth-shattering. *Robocop* may have hit the



■ Tilt the Batwing to pop the balloon. If you release too much poison you'll kill all the good citizens of Gotham City

top of the charts and got stuck there, but it was one of the worst film conversions of all time, and a truly appalling ST game. *Red Heat* was little better. *Batman*, however, appears to mark the start of a new direction for Ocean. With *Chase HQ* and *Untouchables* to follow soon, the signs are certainly promising.

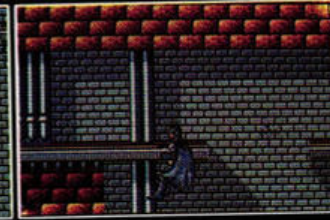
It seems *Batman* may well make that "all important" number one slot in the ST charts,

and it fully deserves to. Until recently, it's been commonplace for film licences to be underwhelming, with the cost of acquiring the title so enormous that approximately £4.85 is left over to try and program the thing. If *Batman* is anything to go by, things are changing for the better.

It can be frustrating when you find yourself returning to the start of a level every time you lose a life. On the other hand, this does teach you how to solve the problems ahead: and that's just as well, for there's never any short-cuts to later levels. If anything puts you off it's likely to be the sheer difficulty involved in getting through some scenes without losing a life.

Principally because of the massive variation between levels, there's a strong incitement to progress further and further into the game, ably assisted by some superb graphics. The game has remained faithful to the film and dedicated Batfans won't be disappointed. As *Batman* curls up into a dead and lonely ball, there's only one question left unanswered: "Where's Kim?"

MARK HIGHAM



■ The figure of Batman is brilliantly animated so all his actions look sleek and sophisticated. Just see how he climbs onto that platform with the true agility of a superhero. Lucky he's wearing rubber pants!

GRAPHICS	9
SOUNDTRACK	7
INTELLIGENCE	5
INSTANT APPEAL	8
LONG TERM INTEREST	9
OVERALL	91%

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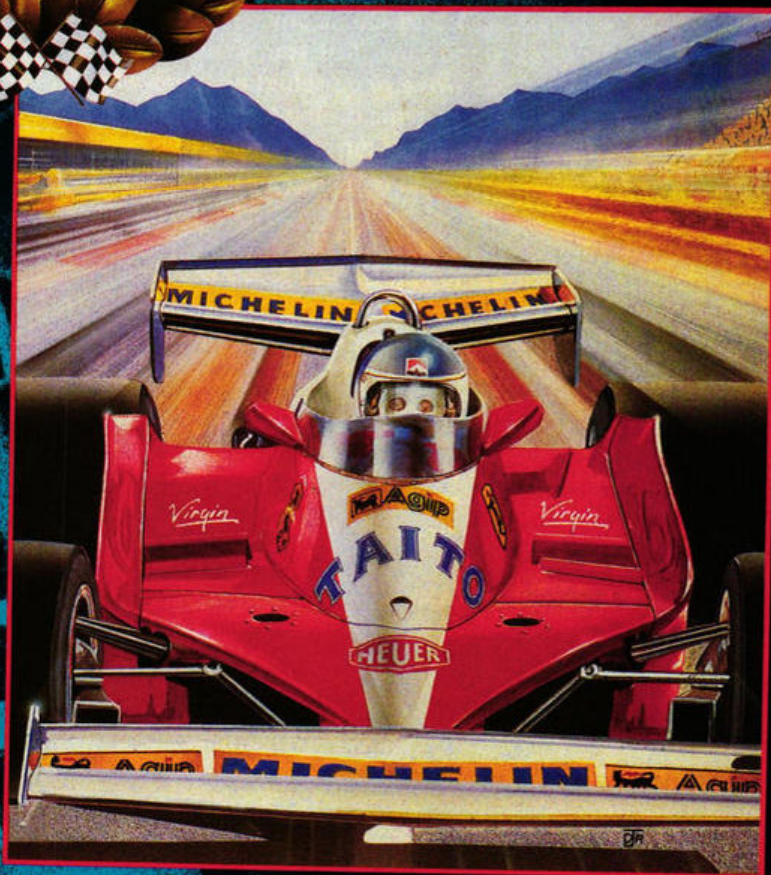
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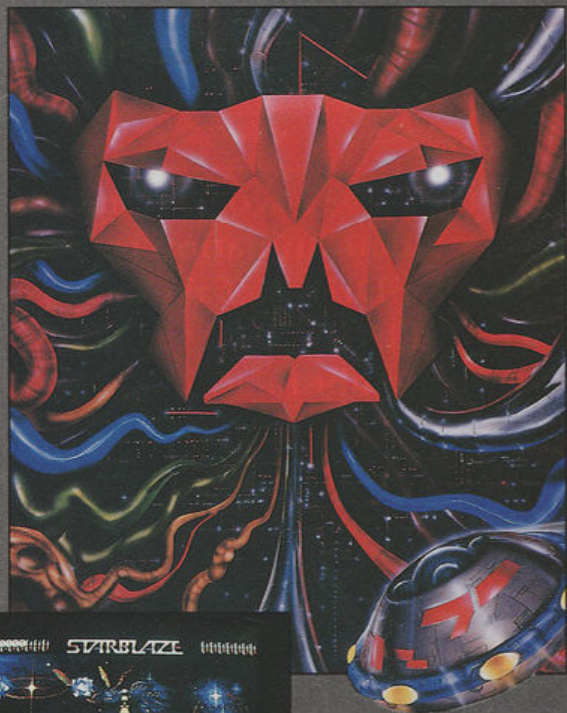
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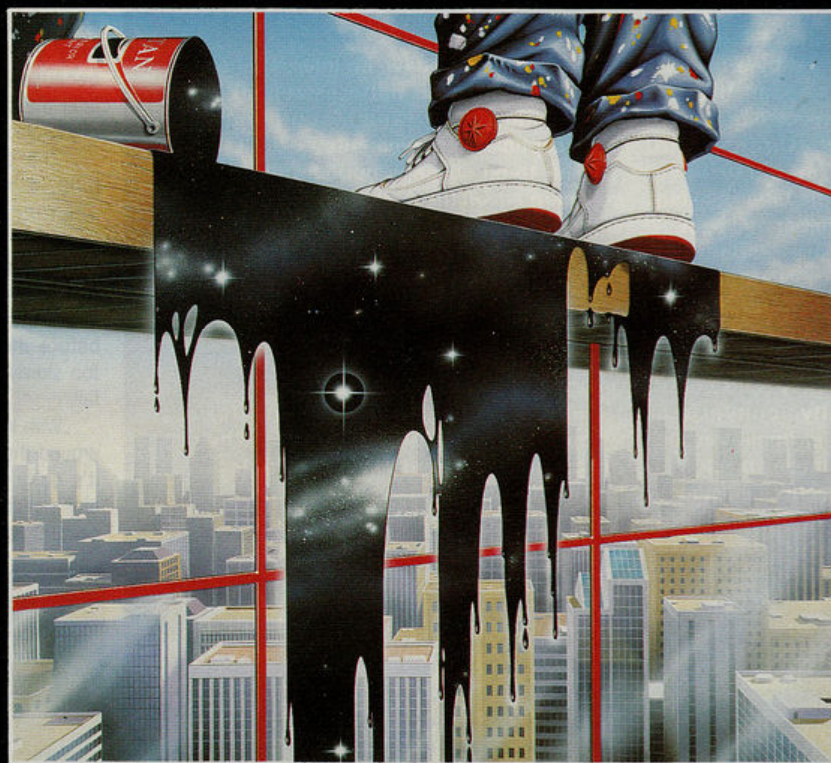
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VROOM AT THE TOP

This Christmas the ST games world is dominated by a fleet of new car games – and they're coming from some unexpected quarters. Virgin's *Continental Circus* and Microprose's *Stunt Car Racer* have already been released, the latter making a surprise bid for the number one spot.

Now the big boys are responding with the launches of their own Christmas contenders. US Gold's much-hyped *Turbo Outrun* and Activision's *Powerdrift* race in ready to burn some rubber; and the game they said could never be realistically converted, Domark's *Hard Drivin'*, is finally on the grid: all are reviewed in these six pages.

We've seen many quality car games and what surprises is the lack of imagination bestowed on their development. Almost invariably they stick to one boring, hackneyed format: that you race a car other cars.

Though the setting and objective may differ, each treads the same old ground as its predecessor, trying to make the roadside sprites a fraction more visually attractive, and making them come at you that little bit faster, that tad smoother.

Within these restricted objectives it's hardly surprising that instead of becoming more addictive, the car game has become a byword for predictability. They're the lowest common denominator

of 16-bit games.

But gamers have no interest at all in seeing standard patterns repeated with marginal (and sometimes imperceptible) improvements.

The 16-bit scene is hurtling forward, so where are all these startling advances supposedly being made in programming techniques and playability? *Turbo Outrun* and *Powerdrift* may move a smidgeon faster and smoother, but they don't stray from the well-worn conventions of those old 8-bit car games.

Full marks, then, to Domark for attempting to fill the void. The programmer behind *Hard Drivin'* is a mathematician rather than a programmer, and when you see the 3D graphics you'll believe he's pretty hot on the old hard sums. Instead of going all out for that elusive quality, realism, he cleverly opts for a 3D-filled representation of cars and stunts, giving the game a futuristic feel.

It's too soon to predict with any great conviction that a new type of car game is on its way. Futuristic car sims may just be a fashion – though the new arcade sensation, *S.T.U.N. Runner*, suggests that traditional car games are indeed out of date at the arcades.

How long, we wonder, before that also becomes true for the ST, and 16-bit owners start getting 16-bit software?

Far and away one of the most sophisticated coin-ops ever was *Hard Drivin'*. Its 3D routines made it more of a strategy game than a slam-your-foot-down and sprint round the track. Everyone said it would be impossible to convert but Domark have taken up the challenge.

Hard Drivin' has two tracks – the speed course and the stunt course. The first few times you play you'll go for the second because it's more attractive, but later the speed course is more of a challenge.

The stunt track has lots of hills, a half-opened bridge, a daunting loop-the-loop and a section of angled track. To succeed at these events you must be moving at the right speed, suggested by a roadside sprite before the obstacle. If you move too slowly or too fast then you will fail.

With lots of other cars straying around the track at the same time, it's easy to bump into someone else tackling the same obstacle or coming at you in the opposite



■ Go too fast or too slow and you'll never get across



■ You land but your next problem is round the corner



■ If you reach the checkpoint you get extra time



■ But you need to get all the way to the finish to qualify



DOMARK

HARD DRIVIN'

£24.95

direction. This can transform an easy stunt into a complex timing of movements.

The speed track is more about getting a good lap time. This is important because if you complete enough challenges you take on the super-racer, the Phantom Photon. He races against you on the speed track and, if you beat him, you win his hero's crown and your lap progress is saved onto disk. Your

track, then you die. Irrespective of how you meet your end, an action replay of your mistake is offered.

The game can be played using the joystick or keyboard but the mouse is the recommended way. In this event, the left button accelerates while the right brakes. Movements left or right indicate your direction.

You can play the game using an automatic or manual clutch

dodgy sprites appearing, but nothing likely to upset your gameplay. There are three sound effects - engine noise, the skid screech and a warning sound when you stray from the track. They all use the sound chip so don't win any prizes for quality.

VERDICT

Hard Drivin's main claim to fame is its 3D routines. Similar effects

■ You try tackling the bridge, but make a dog's breakfast of the whole affair. What's worse, your mistakes are preserved and replayed for you to live them all over again. Did I really do that?

will skid. Speed is usually the factor deciding whether you survive a stunt or not.

The long-term interest value of the game is suspect. Two playing tracks are a lot of fun but they become tedious and less challenging in time. This is more noticeable than in the arcades, because without the steering wheel and stick of the arcades much of the tension has been lost.

Domark have anticipated these problems and plan two releases for 1990. In Spring they hope to release a disk of extra courses, while a course designer is planned



■ There are two possible courses for you to take - the speed track or the stunt track

decisions can be used in future races. As a result, you can compete against your own last lap time or you could even give the disk of your progress to a friend so they can race against you.

It takes a long time to get this good and you'll become far more experienced at crashing than anything else. There are two crash situations apart from collisions: if you stray off the road for too long or if you drive too far from the

system. By selecting manual you can plug in a joystick and treat it like a conventional gearstick.

EFFECTS

It's the 3D routines which are Hard Drivin's strong point. They add a sophisticated feel which makes the hills, bridge and loop exciting to tackle. With fast sprites, obstacles are a big problem on the stunt track. There are occasional glitches in graphics, such as



■ Take the speed track and you meet the bridge from a different angle. This time it's far easier to get past

were achieved with Microprose's hit game *Stunt Car Racer*, but without the same sleek feel. When you learn the programmer has a mathematics background you realise why he movement is so fast and smooth.

Largely because Hard Drivin' is mouse-controlled it feels similar to EA's *Powerdrome*, but not nearly as difficult. Sideways movements must still be made carefully though - push over too far and your car

for the end of the year. It looks as though we shall be enjoying the 3D environment of Hard Drivin' for some time to come.

MARK HIGHAM

GRAPHICS	9
SOUNDTRACK	7
INTELLIGENCE	6
INSTANT APPEAL	8
LONG TERM INTEREST	6
OVERALL	84%



■ Take the loop-the-loop at the right speed to get across



■ But it's far from easy. You prepare for the long haul up



■ But you didn't spot that character on his way down



■ You hit it and bang go your chances of getting round

US GOLD

TURBO OUTRUN

£19.99



Outrun is back and it's been given a new name – Turbo Outrun. Turbo is the Capcom follow-up which treads the same ground as its parent but with improved roadside sprites and extra speed.

Squeezing even more speed out of the car game has been Probe's aim and they had a lot of experience to draw on because they wrote the original Outrun.

The objective of Turbo Outrun is the same as it's always been – to race through one level after another towards an elusive city. Each level you pass through greets you with different roadside sprites and more and more vehicles to negotiate. The road is as wide as it was in Outrun in most places so it should be easy enough to get to

your intended location, but unfortunately you'll find so many other cars on the road that getting past them can be a serious problem.

Complicating matters in this version is the turbo mode. Hit the spacebar during play and your boosters are fired, taking you across the tarmac at a phenomenal speed. This can often be the difference between getting to the end of a level in time or perishing at the hands of the clock. Unfortunately, if you're speeding too fast for too long then you start getting engine trouble. Overheating can occur if you forget to switch the turbo motors off, but you're unlikely to do this since you'll probably be defeated by a corner long before you get too far. At speeds like this, it's almost impossible to keep to the track as you sail round even the smoothest corners.

EFFECTS

There's a certain gloss to Turbo Outrun which shines instantly from the quality graphics. There are no unusual course effects and as a result the emphasis has been on making the roadside sprites and

other vehicles hurtle along at a startling rate. Not only do they move fast, they're also incredibly smooth. You meet countless varieties of cars along the way and roadside sprites are so numerous that the game is played on three disks.

Some of the more interesting effects include passing under extremely long or low bridges. Here, the ordinary roadside sprites are replaced with representations of the side of the bridge and these move at super fast speeds.

Although sound effects still use the sound chip, they're actually not too bad. A reasonable rendition of the coin-op music plays constantly and sound effects such as crashing and clipping other vehicles are overlaid. There's an option to switch off the music and just have the sound effects which helps you keep your mind on the track.

VERDICT

There's no denying that this version of Outrun is an enormous improvement on US Gold's last attempt but how does it stack up against the rest? Car games have progressed so that we now have the whacky

■ (Left) You see another car looming up but you're going too fast to dodge it as easily as usual

■ (Centre) You make a wrong move and it's into a spin. Some sophisticated crash routines see you in a major muddle. Wait a few moments and the computer will put you back on the road

■ (Right) You quickly recover but you've lost valuable seconds. With a time like this you might not make it to the next checkpoint. There's only one thing to do – go into turbo mode and burn some rubber

courses of Powerdrift and the 3D routines of Hard Drivin'.

Turbo Outrun consequently comes across as being very dated. It isn't that it doesn't move smoothly and fast enough because it does, but in the two years since Outrun we've seen similar racing games striving for the same thing.

Turbo Outrun is a lot of fun to play if you were impressed by the arcade machine or if you just want to slam your foot to the ground and race round at top speed. As a conversion, it has been done very well. The game has captured the spirit and pace of its coin-op parent – but even that was an unoriginal and tiresome game. Take away the steering wheel and great sound effects of the coin-op and you're not left with anything particularly thrilling.

MARK HIGHAM

GRAPHICS	6
SOUNDTRACK	7
INTELLIGENCE	2
INSTANT APPEAL	7
LONG TERM INTEREST	5
OVERALL	70%



■ Change gear and an icon appears letting you know if you're in high or low mode. It's a great little extra but when you're facing the snowy wastes in turbo mode, you don't have time to look. You bomb along facing the prospect of an overheated engine



■ You're in tenement city whizzing through New York. Even in the country it's no easy run: if the twists of the road aren't enough, you face damage from other vehicles. You need all the help you can get so slam on the turbo mode

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■ Your opponents on the track aren't going to do anything helpful, like move out of the way...



■ - so that only leaves one option - put your foot down, barge straight through and don't spare the horses



■ But you don't always come off the winner. A crash like this can set you back several valuable positions



■ As opponents race in for the top positions, your view is filled by their ugly mugs. It's time to go for it!

ACTIVISION POWERDRIFT

£24.95

We're always hearing about classic Sega coin-ops, but how many really good conversions have we seen? *Powerdrift* is the latest to come under the programmer's scrutiny, and it's no small challenge. What distinguishes it from other car games is the buggy you drive and a ferociously tricky course. Playing in a buggy might have its limitations but you wouldn't catch a Testarossa leaping off log courses.

Powerdrift is the kind of race against other vehicles which we've seen many times before. What makes it more of a challenge are the serious obstacles which confront you. These include long hill slopes and scores of roadside sprites. The game is complicated even more by the 12 competitors that you're battling against. With these road hogs swerving in front of you, fighting your way to a leading position can be a nightmare.

Powerdrift begins by asking you to select one of five race courses - there's little difference between any of them other than a change of roadside sprites and the twists and turns in different places. You also choose one of 12 drivers to command the vehicle for you - there's definitely no difference here, since they all look like they've crawled straight out of an acid bath.

You start at fourth position and the challenge is then to keep up with the rest. To qualify for the next round, you only need to get in to one of the top three positions, and for the first few circuits this is relatively easy. However, with each round the challenge becomes more and more intense. Bends begin to get sharper, your



■ Pick which driver you want to use and the circuit you want to try. A choice of 12 drivers and five courses gives you lots of scope



■ You make a turn left just as everyone else goes right. Can you get back on the track without crashing into roadside sprites?



■ Obviously not. The crashing routines are very impressive, which some small consolation, because you'll be making a lot of wrong moves!

opponents begin to move faster, and hills become almost unbearably steep. Fortunately, it's not a case of crash three times and die; you can crash the buggy as many times as you like but since this takes up valuable time and knocks your speed down, it isn't an advisable way of completing the circuit.

There are four laps to each

circuit. You know when you've completed a lap because you pass under the start flag and a brief bout of sampled speech lets you know the number of remaining laps.

Various controls are depicted under the main playing screen. Here, you're informed of your speed, the gear you're using (either high or low) and the lap

you're negotiating. To assess your position in the race, there's a counter at the bottom right of the screen. Only when you reach one of the top three positions can you breathe a sigh of relief and hope you don't go careering off the next bend.

As other competitors shoot into the top three positions, their vehicle is displayed, working from the top of the screen downwards. These can make it harder to play as you can no longer see the entire course but they do remind you that you need to put your foot down if you're going to qualify.

If you don't qualify for the next lap then you have five credits to your name which can be used to buy you another chance.

EFFECTS

There's no denying the remarkable similarity between the ST and arcade versions of *Powerdrift*. Just as you'd expect, views of the hills and corners looming up are exciting and brilliantly drawn. Some of the roadside sprites, particularly sign boards, are brilliant. What you never expect to see in arcade conversions is attention to fine detail. This is extended to a lap time sprite which appears in the middle of the screen between levels.

Other vehicles make up a major part of the game and these often swerve across your path, acting just like real opponents in a race. Seeing them hurtle at top speed and hog most of the road, you can really find yourself racing on the edge of your seat.

When it comes to the speed of the animation, things aren't quite as impressive. At lower speeds, and especially when there's little else on screen at the same time,

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■ Get ready at the **START** line for the race of your life in a er... buggy



■ With hills like this you start seriously considering your pension fund

the road moves smoothly and clearly.

But start speeding up and you begin to notice a definite and unwelcome jerkiness. Choose to play without the noise of your rumbling engine over the top of everything else and this becomes even more apparent.



■ Then it's into battle - and beaten into *sixth* place by a dodgy corner. Aargh!



■ Life is punctuated with ups and downs but some are more deadly than others

VERDICT

Powerdrift looks remarkably similar to the coin-op game, and that's its strength. It doesn't play as well, largely because sprites insist on bouncing towards you at higher speeds, but if you were a fan of the arcade game then it will still please you. What makes this more



■ Watching for log hills is one of the high points. It's easy enough getting up, it's coming down again that's the problem

appealing than other driving games is the originality of the course and vehicle. There's been so many standard racing games that finding one where you drive a buggy across a whacky course is positively refreshing. It's impossible to convey the thrill of seeing one of Powerdrift's enormous log hills looming up, or the excitement of facing a gruelling bout of turns through a forest of roadsides, but

these are exactly what make Powerdrift fun to play.

MARK HIGHAM

GRAPHICS	8
SOUNDTRACK	7
INTELLIGENCE	2
INSTANT APPEAL	8
LONG TERM INTEREST	6
OVERALL	83%



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■ Choose which level to begin on; space, land, sea or caverns



■ Hectic action in the fortress means you're in a tight spot



■ Aim at the swine and blast them to bits...



■ ... the graphics leave nothing to the imagination

ACTIVISION

GALAXY FORCE

£24.99

Last Christmas (bah humbug) Activision released *Afterburner* to a generally ho-hum type reception. Now they're taking on a much harder challenge. There was a lot more to the *Galaxy Force* coin-op in the arcades than there ever was in *Afterburner*, so have programming skills advanced enough to present a fully playable and addictive conversion?

Galaxy Force is set in an outer space gripped by constant wars. Your job is to fly, guns ablazing, through one level after another, defeating the giant fortress at the end of each.

The game is split into five levels which see you exploring space, land, sea and even gruelling caverns in your quest to reach the fortress at the end. At the start of a game you can choose which of these to begin at, and then you fight your way through the cannon-fodder bad guys at the start to the real toughies you encounter in the fortress. When you've completed all five levels you go on to the sixth and most gruelling level. In this one you race through tunnels and construction sites in what is undoubtedly the game's most difficult section.

Each level is crawling with enemy ships and you use either your missiles or laser guns to defeat them. In fact your only break from giving the fire button some severe grief comes in between levels.

The fortress at the end of the level is like a massive space city and flying through it means following a long winding main corridor. Seeing the fortress loom up ahead and then drawing closer and closer, you get the uncomfortable feeling of something sinister about to approach. Get inside and you start to discover exactly why you were worrying.

You observe your craft from behind and use the joystick to manoeuvre it up and down or to turn. The only time your joystick skills are put to the test is when you enter the end of level fortress, where you need to be careful to prevent damage to your craft and still find time to shoot the odd missile.

EFFECTS

The backdrops and sprites have been drawn well, but it's the scenes of rapid movement which matter most. The enlarging view of the fortress and your journey through this is one of the most appealing, and is heightened by some very effective and fast routines. Movement of your craft has

also been very well thought out. As a result you can tilt forward, backwards and to the sides very quickly indeed – all accompanied by great graphics.

You can toggle between music and sound effects, and with both going you can really start to feel like you're back in the arcades.

VERDICT

Well, have Activision got this one right? You'd certainly be hard-pressed to put your hand on your wallet and answer a categorical "Yes." *Galaxy Force* has its high spots, which are more frequent than you might expect. The graphics are fast and brilliant, and when you see the fortress looming up there's nothing to take away the excitement of preparing for it.

Unfortunately the game doesn't respond to movements of the joystick as fast as it should, particularly in the fortress, where you need to make crucial decisions about movements left or right. The action slows down when there's a lot on screen, too.

There's also no escaping the jerky shifts of some of the larger sprites, which makes the game confusing and clumsy.

Galaxy Force is great fun for half an hour. If you're into mindless blasting you'll have a whale of a time, but it lacks the challenging gameplay which is rapidly becoming crucial to 16-bit games. Gone are the days when a game could succeed solely on the "Wow!" factor.

MARK HIGHAM



■ What are these things? Ah stop asking questions and get blasting! Shoot well and you might reach the fortress: steer carefully and keep shooting and you could even survive

GRAPHICS	8
SOUNDTRACK	6
INTELLIGENCE	2
INSTANT APPEAL	8
LONG TERM INTEREST	3
OVERALL	68%

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INFOGRAMES

JUMPING JACKSON

£19.95

Aiming to follow the formulaic conventions of cutesy games *Jumping Jackson* adds a spark of originality with its musical theme.

Each level is arranged as a series of platforms, and within each of these is a set of coloured tiles. *Jumping Jackson's* claim to fame is that he can change colour through purple, red, yellow and green. As he moves over the coloured squares they change to whichever colour is currently active – shown by the colour of his hair.



■ As Jackson's hair changes to the right colour, move him over the coloured square

Your job is to make all the coloured squares on each platform the same colour: achieve this and a



■ Oh no, you're about to be mugged by a musical instrument! Death is imminent

record appears on the platform. Pick this up, find a record-player which is the same colour and place it on the deck. Only by setting all the record players going do you complete the level.

Your task is complicated by musical instruments dashing around the level. Bump into them and you lose one of your four lives. To dodge them you usually end up having to run back over all the squares you've just changed, thus turning them to a different colour. All of this is played to a nifty rock and roll track, which desperately tries to make the game seem less twee, but never quite pulls it off.

VERDICT

The first time you see *Jumping Jackson* you're struck by its similarity to Loricel's *Skweek*, but play



■ Bif, bom, bam! Caught by a frisky bass drum. Kiss goodbye to one of your lives

it for a while and you quickly realise that it requires much more skillful timing.

One of the most annoying and challenging aspects of the game is the way that in an attempt to escape being killed by the instruments you often end up wrecking all your progress by changing the tiles back again. This makes it fun, but without the multitude of icons to collect, it's lost a lot of long-term excitement and variety.

MARK HIGHAM



■ Place the record on the deck to complete the platform

GRAPHICS	5
SOUNDTRACK	7
INTELLIGENCE	6
INSTANT APPEAL	8
LONG TERM INTEREST	4
OVERALL	56%

INFOGRAMES

SAFARI GUNS

£19.95

A little while ago an amusing game appeared called *African Safari* from US Action. The objective was to line up the sights of a gun on all the wildlife which ran past you and blast everything to death as fast as you could. *Safari Guns* offers a "green" variation on this, but the idea is still the same.

The sights have turned into

the viewfinder of a camera and the objective is to take photographs of the creatures who are passing by. There's still a bout of shooting involved, but this time you take aim at the nasty poachers who pop up all over the place.

The purpose is to take three photographs of each animal: take more and your score suffers. At

the end of an allotted time period, all the photographs you took are displayed so you can assess your success.

Some clever, fast moving graphics make it tricky lining up the viewfinder in time, and with poachers popping up all over the place it's easy to blast the brains out of friendly wildlife by mistake (there are times when "sorry" just doesn't seem adequate).

VERDICT

Though it's addictive for a short while, *Safari Guns* isn't what you could call state-of-the-art software. Where it falls down is in the long-term challenge. It's a good laugh for the first hour but it's difficult to sustain an interest much longer.

It should be pointed out that

the Ed loved the game to bits, but then, what the hell does he know? (I heard that, pardon – ed) Graphically, it's quite an achievement but the wildlife on-screen isn't done any justice by the tame gameplay.

MARK HIGHAM



■ Poachers crop up all over the place and you need to blow'em away before they can do any damage



■ "Shoot" all the animals who run in front of you by lining up your viewfinder and shooting. You need to be fast though: some of these critturs can't half shift

GRAPHICS	8
SOUNDTRACK	5
INTELLIGENCE	3
INSTANT APPEAL	8
LONG TERM INTEREST	0
OVERALL	33%



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■ In level two you carefully walk through revolving fireballs

■ Move past the skulls to meet the gargyle

■ Creatures like this insist on following you

US GOLD

GHOULS 'N' GHOSTS

£19.99

Those pale-faced ghosties are back in action again, screaming and howling like a bad nightmare.

It's been a while since we last saw Knight Arthur in *Ghosts 'n' Goblins* and programming skills have advanced a lot in that time, so it's not surprising that we should be expecting something more than just an assault from the ghouls in your local cemetery.

The Capcom coin-op delivered considerably more in the form of horizontal and vertical-scrolling levels and hordes of horrendous attackers, so the ST version sure has something to live up to.

The objective of *Ghouls 'n' Ghosts* is to rescue the stunning princess imprisoned by half-dead monsters. Do this and you'll get

The intrepid Knight Arthur has finally crossed the murky waters separating coin-ops from the home micro.

***Ghouls 'n' Ghosts* has been out of the arcades for three years now, so what sort of game can we expect?**

Outdated graphics and medieval gameplay or state-of-the-art action?

unprintable rewards!

You wander across a horizontally-scrolling landscape, sidestepping ghosts and objectionable creatures that pop out of the ground for a breath of fresh air. If you want even more fun then you can turn to a range of weaponry and have lots of laughs tossing poisoned arrows at your foes.

Weaponry includes hammers, spears and arrows which you can fling at anyone fool enough to get in your way. Most weapons have pretty much the same effect so there's not a lot of point risking your best coat of armour for a brief spell with a shirikin.

Fireballs are the one exception to this rule; they act like mini time

bombs. Hurl them at the ground and they flare up moments later, scorching anything that dares to follow you. But they do have disadvantages, the main one being that you can't throw them up and give those hazardous buzzards a rude awakening. If fireballs are your only defence against these characters then you'll never see dawn.

You gather weaponry by blasting ghouls, and if you're lucky they'll leave behind some useful extra weapons. It's impossible to change weaponry once you've picked something up, so you need to be careful not to replace a good weapon with a useless one.

Whilst you're blindly wandering across different terrains, the odd magic box will glide out of the earth. Kneel down and tap it and you'll receive a chance reward. Either an evil magician will temporarily transform you into a duck or some new bonuses will materialise. These include bolts of fire-power which blast across the screen killing everything in sight or even a twin knight who follows your actions several steps behind. Doubling your firepower obviously means you can conquer more ghouls.

Ghouls 'n' Ghosts doesn't just set you off on a boring jaunt across a scrolling landscape. You go through different platforms and tackle all sorts of creatures in your quest to complete the game. At the end of each level is a guardian or a major obstacle which must be overcome if you're going to collect the key – which is the goal of each level.

The game is played with three lives. When you start a level, Arthur is equipped with a shield of armour. After his first unsuccessful

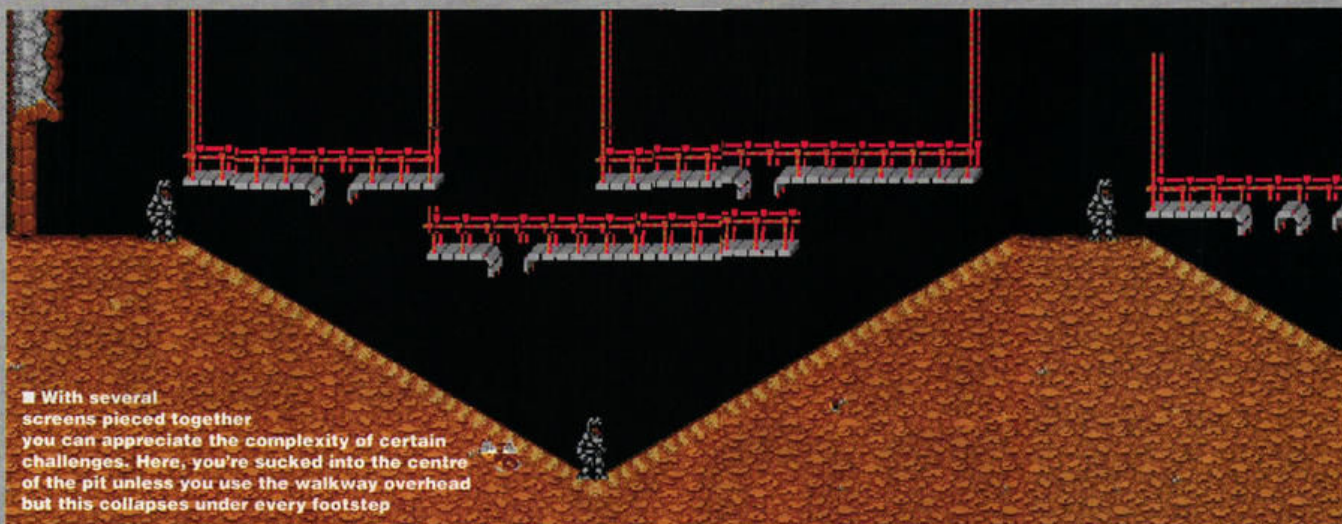
The gargyle fires lethal stars at you

Later on you meet this little fellow springing out of the flames. He follows you with deadly intentions

Fall down here and you're dead. These test your jumping skills

You're approaching the fireballs. These move up and down so you need to time things right to get past





■ With several screens pieced together you can appreciate the complexity of certain challenges. Here, you're sucked into the centre of the pit unless you use the walkway overhead but this collapses under every footstep

encounter with a ghoul, this is taken away, leaving him in his underwear. Bump into someone while dressed like this and you lose a life.

Instead of returning to the start of the game, there are points which must be reached within each level and you return to the last one. A Continue Game option gives you three chances to progress from the last point reached.

EFFECTS

The graphics consist of excellent atmospheric backdrops and an enormous number of animated sprites. If the sprites had been larger there would have been a better impression of movement, but we're stuck with small characters only.

Backdrops look exciting but it's all the added extras which make it fun to play. Falling rain and lethal pools of fire are excellent but it's when you switch into vertical-scrolling mode things really liven up. Suddenly the landscape becomes as much of a problem as the aliens floating overhead, with sharp points to avoid and blood-drenched stone walls.

The sound effects make excellent use of the ST's sound chip. Although there are no extra spot effects during the game, you can have the music playing throughout. It's captured the coin-op music brilliantly and added its own slick and sophisticated style.



■ The buzzards make perilous enemies. Not only do they follow you all over the place but they take two shots to be defeated. Get past them and you meet the end of level enemy. Defeat him and you're given a key into the next level

VERDICT

The scenario is great fun to play – if it wasn't then it would never have been such a hit in the arcades. It's translation to the home micro has taken a long time but it only takes an instant to become addicted.

The only thing which grates is the joystick controls – lose concentration for two seconds and Arthur kisses goodbye to his shining armour. He doesn't respond to your joystick movements as fast as he did in the arcades.

There's nothing novel about the effects – all the sprites could easily have been doubled in size. *Altered Beast* and *Knight Force* have proved that it's possible to use massive sprites in horizontally-scrolling games without running slower than a Skoda.

So the game takes a few steps backwards in the graphics department but don't let this put you off. Whatever it lacks, is more than made up for by brilliantly addictive gameplay. It's a "just-one-more-go" challenge which has you coming back tackling the ghouls and ghosts well into the night.

MARK HIGHAM

GRAPHICS	7
SOUNDTRACK	8
INTELLIGENCE	3
INSTANT APPEAL	9
LONG TERM INTEREST	8
OVERALL	84%



The blue creature spits eyeballs at you

Fall into the flames and you'll be burnt to a crisp

That most pleasant of kingdoms, Wonderland, is in danger from the evil fire-breathing meka dragon. The dragon has employed a multitude of monsters and minions to go around Wonderland and beat everybody up. Misery and depression falls everywhere and it looks set to stay. Never fear, though, because Wonder Boy is here to save the day. He's got a clean nappy and he's willing to risk all to return peace and tranquillity to the land.

The character of Wonderboy first appeared as long ago as 1986 in a Sega coin-op, originally called "Bock Lee Temjin" (I kid you not!). How does he fare on the all-grown up ST?

Before you start your dragon-slaying quest you'll need something a little more substantial than a nappy pin. There's a building at the start of the game which contains a nice man – a very nice man, a very, very nice man – who gives you a sword and a bottle of medicine. The sword serves to hack off evil heads and the medicine will make you healthy again if your heart stops a-beating.

All manner of monsters can be found in Wonderland and the only way to stop them is with your rusty... er, trusty sword. Killing them stops them from killing you

ACTIVISION

SUPER WONDER BOY

IN MONSTER LAND

£24.99

and usually results in some small reward. Sometimes extra weapons such as bombs, fireballs, whirlwinds, but mostly gold coins.

Wonderland is made up of a multitude of levels that get progressively harder.

At the end of each one there's the compulsory guardian. Defeat him/her/it and you go on to the next level with wads of bonus points.

Periodically you'll come across a doorway which will either contain a horrible monster or a shopkeeper. There's

no bargaining in though, you have to knock on the door first. If only all games would teach such good manners! Monsters must be battled, but shopkeepers must be bathed in bullion. Shops sell all sorts of things including armour, shields, healing potions, alcohol (for medicinal purposes – honest) and extra weapons. Take care how you spend your money though, it's not easy to come by and some things can be darned expensive.

EFFECTS

Wonder Boy has a jolly tune playing throughout.

Although the sprites aren't very large, they're colourful and cute. And cuteness is what the game's all about. Ok, so you have to go around killing things gratuitously, but there's no gore.

The monsters just have a



■ The end of level four is guarded by a green lumpy thing



■ A choice of weapons. Do you go for the bombs or whirlwinds? Decisions, decisions...



■ A thirsty and thoughtful Wonderboy ponders deeply whether to buy a cocktail or a pint of ale

slightly dazed look on their faces when they're hit and then they shed their mortal coil. The various shopkeepers are nicely drawn and the end of level guardians are suitably detailed. In general, Wonderboy looks and sounds very good.

VERDICT

Although Wonderboy is not the most original of concepts and is a very simple game, it is enjoyable. It has that elusive just-one-more-game quality that so much software lacks. Go out there and get yourself a fresh nappy and tackle the nasty old dragon, 'cos reaching the end of the game will take a very long time indeed.

RICHARD MONTEIRO



GRAPHICS	8
SOUNDTRACK	6
INTELLIGENCE	5
INSTANT APPEAL	9
LONG TERM INTEREST	7
OVERALL	82%



In 1989 the Wall cracked... ...in 1948 a nation cracked...

As a nation is torn apart in one of the greatest political tragedies in modern history, this is only but a backdrop for a far more sinister event that has taken place. An atomic bomb is found missing from a British base and is believed to be headed to the Soviet forces. As a lone American agent, you must scour the city questioning the military police and occupying forces and interrogating the shadowy figures of the underworld, in your mission to recover the bomb before the Cold War takes a much more dramatic twist.

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THE AMERICAN SECTOR
ВЫ ВЫЕЗЖАЕТЕ ИЗ
АМЕРИКАНСКОЙ ОБЛАСТИ
VOUS SORTEZ
DU SECTEUR AMERICAIN
YOU ARE ENTERING THE
SOVIET ZONE

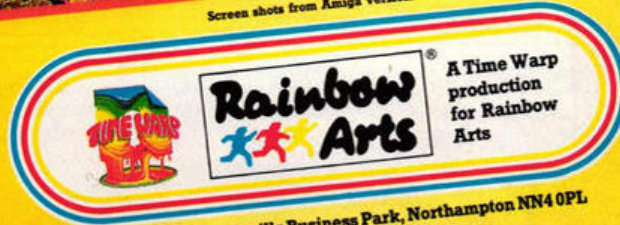
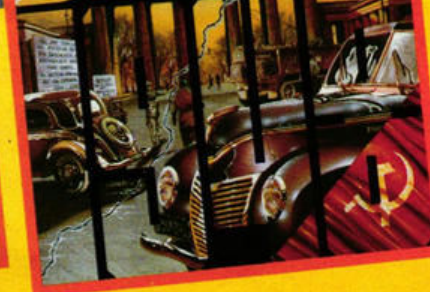
Achtung!
Sie verlassen
West-Berlin
Sofort!

EAST vs WEST BERLIN 1948

East vs. West
BERLIN



Screen shots from Amiga version.



A Time Warp
production
for Rainbow
Arts

65 Sketty Close, Brackmills Business Park, Northampton NN4 0PL

www.stformat.com

Let's face it, management sims have traditionally been the style of game accountants love to play. The sort of game doctors recommend to insomniacs and people with dodgy tickers. With football itself becoming ever more defensive and dull, a game in which you have to do the tax returns, as well as control the on-field antics, hardly sounds thrilling. What hope is there then for *Superleague Soccer*?

The patient, *ST Format* is glad to announce, is showing unexpected signs of vitality. *Soccer* avoids the trap of thinking that more is automatically better and concentrates solely on the First Division. It doesn't weigh you down by involving teams you've never heard of, from places you never want to visit, in leagues you didn't even care existed (ie. the Second Division!).

You're the freshfaced new boy who begins work at the start of the football season with all the First Division clubs as potential employers. At more successful clubs there's a greater depth of players and finances, so the seeding system is obvious. Any fool can take Liverpool to the top (*Kenny Dalglish couldn't - ed!*), but the real challenge comes with the Charlton Athletics of this world. Win the league with them and you're in the wrong job.

All the actual gaming between matches is done on a series of clipboard pages that you can leaf through. Click on top of the respective document to reveal more in-depth information on the topic. These categories are mutually exclusive and let you control the clubs activities quickly and easily. Tables, Money, Train, Pick and Play are the menu choices, each dealing with a certain area of the club's operation. The process is made considerably faster with the help of a quick start flow chart, which outlines every choice and the sub-headings to select in order to get to them.

No typing is necessary once

IMPRESSIONS SUPER LEAGUE SOCCER

£19.95



■ To take control of a match, simply select your player on the list and then click where you want him to run, fiddly but fun!

you've established your squad, club name and players. Based solely on the use of the mouse, you can speed through the most laborious of tasks. A pen and paper will always be necessary for this style of game, as player stats are too detailed to implement effectively from sketchy memories. It's no fun trying to pick a team when you find half your star players contracts have expired and they're now playing for the opposition.

If you do well in the three domestic competitions then the following season you have the chance to go for further glory in European cups of all shapes and

sizes. Avoiding failure is your initial goal, as nobody loves a loser. True to life, success breeds further success and continual defeat ushers in your P45 very quickly.

EFFECTS

Soccer's main claim to fame is the control you can exercise over matches as they're played. Most management sims have merely given full-time results, or a blow by blow account of a match, while you sit powerless to influence events except by substitution - not much use when you're 16 goals behind at half time! *Soccer* actually lets you control each of your players kick by kick.

Using a team roster, displayed below the match screen, you click on the player you want to move, click where you want them to run or kick the ball and determine the shot's strength. A good working knowledge of which number player stands where on the field is necessary, as the figures are too small to display shirt numbers - again the quick start card proves invaluable here.

It's tricky to begin with and time consuming, but you can develop quite a feel for the match itself. If mistakes are made then at least you have yourself and not the program to blame. These controlled matches can be either short "highlight" versions or a full game, and those managers who believe that their team is a dead cert winner can just opt for an instant result.

VERDICT

For all these features *Soccer* cannot escape the fact that it's a management game, and will therefore never have those heart-stopping moments found in shoot-'em-ups. The new extras do lift it out of the typical management quagmire, by allowing a greater element of control than has been realised before.

It doesn't try to guide the manager along a set route, the pitfalls are yours to fall into whenever you want. Its brevity in concentrating only on the First Division almost gives the game pace. But *Soccer* is still a game that you'll have to devote hours to if you want to play it well, and there will be many angry moments until then. It's still a game accountants will love, but real people can play too without feeling sick as a parrot.

TRENTON WEBB

GRAPHICS	5
SOUNDTRACK	0
INTELLIGENCE	9
INSTANT APPEAL	4
LONG TERM INTEREST	7
OVERALL	62%

TABLE	MONEY	TRAIN	PICK	PLAY
LEAGUE GAME BETWEEN:				
BRISTOL ROY 1 0 MAN UNITED				
LENCH, J				
GAME NO. 4				

■ All the results of your division are shown after each Saturday's play

RESERVE	INJURY	SPY
NAME GRANTHAM, M TEAM ARSENAL		
STATUS PICKED WORTH 1130000		
AGE 24 CONTRACT 81 WAGES 252		
GAMES PLAYED THIS SEASON 3		
GOALS SCORED THIS SEASON 1		
IN CAREER 1		
SPEED 40 HEIGHT 6.00 SIDE LEFT		
FITNESS 73 MORALE 73		
TACKLING 64 TEAM FORMATION 4 3 3		
HEADING 82 PLAYER POSITION 1 BACK		
SHOOTING 73		
CONTROL 75		

■ Each player's abilities are outlined in terms of a score out of 100

FORMATION	SELECT	TACTICS
PLAYERS PICKED = 11 TT = 70 EXIT		
AVA BAILEY, M	AVA EDWARDS, T	
PICK COLYER, B	AVA FRANKLIN, R	
AVA FLOWER, N	PICK DAVIDSON, D	
PICK MANTELL, P	AVA CHARLES, C	
PICK PRITCHARD, G	AVA BENTLEY, E	
PICK TOPP, B	AVA BAILEY, M	
AVA VICKERS, J	PICK MACHIN, R	
AVA PHELAN, A	AVA TELLER, P	
AVA ROBINSON, F	PICK RICHARDSON, T	
PICK SIMONS, K	PICK DEVLIN, C	
PICK ALFRED, L		
PICK BLACK, J		
AVA NIGEL, W		
AVA SANDERSON, L		
AVA THOMPSON, T		

■ Picking the squad couldn't be easier, just guide and click

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Screenshots from various systems.

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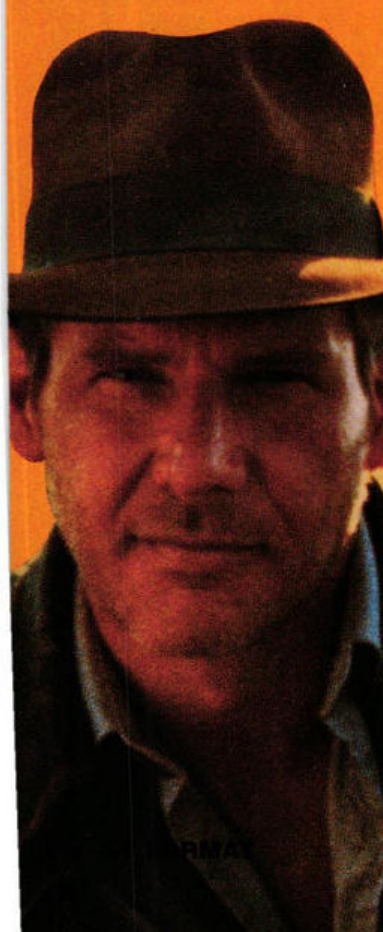
■ The rather spiffing Strider (above)



■ Blood Money: kick yourself hard if you missed it



■ The wacky world of Zak McKracken - fun, fun, fun! And below, Indie The Graphic Adventure, another Lucasfilm cracker



10

ARCADE ACTION

XENON II

Mirrorsoft ■ £24.95

The perfect shoot-'em-up: an absolute classic from the Bitmap stables. Flawless graphics, nightmarish wriggly sprites, and instantaneous addiction made it the gamer's rave of the year.

BLOOD MONEY

Psygnosis ■ £19.95

Conquer entire planets in an attempt to swell your depleted coffers. You must purchase entry to a chosen planet then stitch the inhabitants with lead and collect the coins they drop when falling dead to the ground. Lots of fun, lots of colour and lots of blood (hopefully of the alien pale green variety).

RICK DANGEROUS

Microprose ■ £19.95

A multi-level, four-directional scrolling game which manages to combine classic cutesy elements with all-action blasting. Highly addictive and challenging.

INTERPHASE

Mirrorsoft ■ £24.99

Direct your girlfriend around a building by exploring the insides of a computer. Brilliant 3D graphics and amazingly fast when you confront the computer's defence system.

DARK SIDE

Incentive ■ £24.95

Featuring the breathtaking graphic worlds created with Freescape, Darkside combines puzzles and freely moving opponents in a visually compelling game which is fun to play.

R-TYPE

Mediagenic ■ £19.95

Take control of the R-9 space craft and wipe out the evil forces of Bydo. A horizontal-scroller featuring amazing visuals and sexy sounds.

POWERDROME

Electronic Arts ■ £24.95

Novel and visually effective race game which places you in the seat of a Typhoon space racer flying around race tracks on the surfaces of four planets. Off-world smooth scrolling graphics and lots of fever-pitch action.

NINJA WARRIORS

Virgin Mastertronic

■ £24.95

One of the better beat-'em-ups. Clear the streets of toughs by

ST FORMAT

THE YEAR 50 GAMES OF

In all departments – from shoot-'em-ups to sport and from space trading to adventures – the class of '89 has been the best yet

using the marvellous martial-arts magic at your disposal. Excellent graphics, well implemented spot effects and plenty of addiction.

INDIANA JONES: THE LAST CRUSADE

Lucasfilm ■ £19.99

Graphically interesting and fun to play, Last Crusade turned out to be one of the best animated adventure/shoot-'em-up releases of '89. A film tie-in with a difference: it's good!

STRIDER

US Gold ■ £19.99

Many coin-op conversions quickly fall from grace. You play it in the arcades, rush out to buy the conversion and are severely disappointed by the results. Not so with Strider. Graphics and sounds lifted straight from the arcade version, stirring action and a highly novel plot put it right up there with the greats.

long ago, Ultima V revived flagging interest by providing a superior plot, lots of monsters with which to interact and some mind-numbing puzzles.

ZAK McKRACKEN

Lucasfilm ■ £24.99

Adopt the persona of Zak McKracken, ace newshound with the National Inquisitor, on the trail of aliens bent on making the world look stupid. Hey, hang on, maybe they've succeeded... An original plot which pushed back the frontiers of adventure games.

FUTURE WARS

Palace ■ £24.95

A combination of an intricately involved plot and graphics rivalling any previous animated adventure, made Future Wars a must for adventure fans. The problems are very difficult to solve and there's enough to keep hardened adventurers playing for months.

SPACE QUEST III

Sierra ■ £24.95

A visually magnificent 3D animated space adventure. Take on the monkey-suited minions of Sludge, pig-out on Monolithic burgers and revel in the whacky humour and challenging gameplay! Oh what fun we had.

10

ADVENTURES/
STRATEGIES

ULTIMA V

Microprose ■ £24.95

In a genre where originality died

WATERLOO**Mirrorsoft ■ £24.99**

Unlike many wargaming and strategy programs, *Waterloo* was easy to learn but comprehensive in its implementation and extremely enjoyable to play. Featuring masterful battlefield representations, and the ability to play out conflicts using the original historical battle orders or those of your own making, *Waterloo* promises months of intriguing play for strategists.

QUEST FOR THE TIME BIRD**Infogrames ■ £24.95**

One of the newer icon-driven graphics adventures, *Quest* featured novel twists, highly colourful graphics and an amusing text: adored by adventurers everywhere.

CONFLICT EUROPE**Mirrorsoft ■ £24.99**

Supreme battle simulation. Super visuals and complex gameplay lift *Conflict Europe* into the supergame league. You can switch between map, unit position and computer displays and the whole game is instilled with a chilling atmosphere.

INDIANA JONES: THE GRAPHIC ADVENTURE**LUCASFILM ■ £24.95**

A smooth scrolling graphic adventure with the prettiest colour pictures you ever did see. Based around the movie *The Last Crusade*, the game covers six disks; enough to keep even the most ardent adventurer fully occupied.

THE HOUND OF SHADOW**Electronic Arts ■ £24.99**

One of the new breed of role-playing graphic adventures and a fine implementation too. Wonderful

sepia stills enhance the complex gameplay. Characters develop as the game progresses meaning that each time you play the game it's different.

DRAKKHEN**Infogrames ■ £24.95**

3-D fantasy that has you exploring, gathering, fighting and befriending. Original graphics and a complex plot help make *Drakkhen* one of the better animated adventures.

10**UNIQUE CONCEPTS****PURPLE SATURN DAY****Infogrames ■ £24.95**

Wild and whacky space trading game in the *Elite* mould but with many novel twists including the need to learn a new language in order to communicate with the aliens encountered in the game. Bright, brash and lots of fun.

BORODINO**Atari ■ £24.95**

One of the first, and definitely the best, of Atari's games. 3D routines and a dedication to historical detail make it the finest simulation of a Napoleonic War.

WICKED**Activision ■ £19.95**

Mythic challenge of good versus evil using zodiac signs and clever strategy made this an instant hit. If you can't be good, be wicked.

MILLENNIUM 2.2**Activision ■ £24.99**

Keeping the inhabitants of a moon base alive isn't easy when Earth isn't around any more and your supplies are wearing thin. How about colonising another planet?

ARCHIPELAGOS**Logotron ■ £24.95**

If you're talking "Unique Concepts" (and you are) you're talking *Archipelagos*. The object of the game is to leap from island to island (the archipelagos of the title) destroying the evil wildlife threatening to overtake them. Excellent graphics and an unusual plot makes playing the game a compelling experience.



Fine, but the original inhabitants might not take too kindly to your bright ideas!

BIO CHALLENGE**Palace ■ £19.99**

A shoot-'em-up, a strategy game, an adventure? *Bio Challenge* combined all genres to become a highly addictive game with a super unusual plot which kept games players at their joysticks for hours.

BLOODWYCH**Mirrorsoft ■ £24.99**

Brilliant graphics coupled with tricky puzzles and an addictive plot meant that *Bloodwych* was played long after the others gathered dust at the bottom of the toy box.

WEIRD DREAMS**Rainbird ■ £24.99**

Faultless graphics featuring smooth animation and one of the weirdest storylines ever told, *Weird Dreams* was a winner in the originality stakes. After falling asleep, you wake in a strange, confusing land where incredible characters and plant forms are bent on your destruction.

POPULOUS**Electronic Arts ■ £24.95**

The game for those of you who would be Gods. Create new worlds, populate them with beautiful people, then use them to wipe out the beautiful people belonging to other Gods. Massage your ego and spill some blood.

TOWER OF BABEL**Microprose ■ £24.99**

Cavort around an off-world landscape controlling a grabber – a kind of giant mud hut on stabilisers – in an attempt to collect blocks and avoid the evil mechanical forces of Zantor. Groovy graphics, sexy sounds and smooth animation make *Tower of Babel* contender for the game of the year award.

10**SPORTS GAMES****INTERNATIONAL SOCCER****Microdeal ■ £19.95**

Graphically superior football game with skilful player control and a 3-D perspective of the pitch and teams. One of the better footie programs.

BUFFALO BILL'S WILD WEST RODEO GAMES**Tynesoft ■ £24.95**

A novel approach to the "several events" sports genre. Rodeo



■ Above: *Conflict Europe* was frightening in its realism

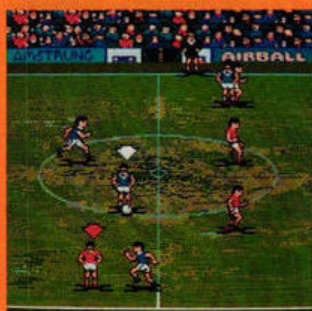
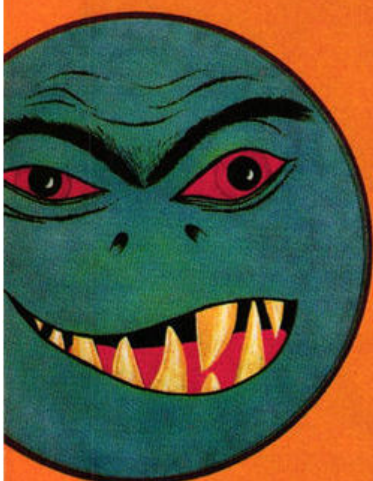


■ Above: *Purple Saturn Day* fully deserves to make the list



■ Above: the superb *Drakkhen*; below, *Waterloo* – the nearest thing yet to being there





■ **International Soccer** - in the footie sim first division



■ **Millenium 2.2** was a colonial tutorial that put you up against some unfriendly natives



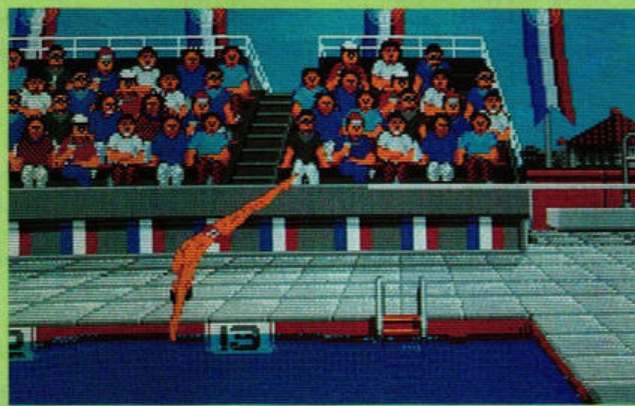
■ The superb, astonishing, amazingly quite good **Populous**; and (below) **Bloodwych**



GAMES: SUMMER EDITION

US Gold ■ £19.95

Sports games? Archery, diving, rings, vaulting, parallel bars... just a few of the many events in which to compete in the graphically excellent **Games** from US Gold. Lots of fun for sports fans everywhere.



Games features knife throwing, trick shooting and bronco riding. Smooth animation and sparkling spot effects enhance play.

KICK OFF Anco ■ £19.95

For many, the game of the year. The football sim with superior gameplay featuring hundreds of teams, leagues and levels, superb player control, and the secret ingredient: excitement. It had them screaming on the terraces.

TV SPORTS FOOTBALL

Mirrorsoft ■ £24.99

Another football simulation but with a difference: it's American football. That's right, get on the grid iron and give 'em what for. Lots of colour, plenty of smooth animation, excitement and fun.

PRO TENNIS TOUR UBI Soft ■ £19.95

3-D cross-court perspectives, very smooth animation, quality spot effects and digitised speech make **Pro Tennis Tour** a must for tennis fans and non-fans alike.

CIRCUS GAMES Tynesoft ■ £19.95

All the fun of the big top. Trapeze, high wire, tiger taming and other highly dangerous circus acts performed by your daring self wearing only silly spangled costumes. For the smell of the sawdust and a taste of the ring get a copy of **Circus Games**.

LOMBARD RALLY Mandarin Software ■ £24.95

The game which allowed aspiring rally drivers to log some practise

time. Stunning representation of the car's interior and the courses. Race against the clock to qualify and the other drivers to win.

KINGS OF THE BEACH

Ocean ■ £24.95

Highly unusual and well implemented volley-ball simulation. Colourful, smoothly animated graphics and super spot sounds made **Kings** one of the most original sports releases of the year. Fun to play and addictive.

RVF HONDA

MicroStyle ■ £24.99

Climb aboard the throbbing saddle of the Honda superbike and burn up the other riders in **MicroStyle's** fast and exciting motorcycle race simulation. **RVF Honda** features sexy graphics and stunning sounds.

10 REAL DOGS

ROBOCOP

Ocean ■ £19.99

Underwhelmingly mediocre game with only a film tie-in deal to push it into the limelight, **Robocop** hardly deserved its months-long occupation of the number one spot.

BALLISTIX

Psygnosis ■ £19.95

Pretty graphics and reasonable sound but entirely lacking in gameplay. Of interest to those with about thirty seconds to kill, otherwise forget it.

VINDICATORS

Domark ■ £19.99

Yet another alien-slaughtering

encounter but without the necessary ingredients of colourful graphics, decent sound or fun! **Vindicators** fell still-born from the shelves of the high street software box-shifters.

NIGHT HUNTER

Electronic Arts ■ £19.95

Vampiric farce with mediocre 8-bit graphics, second-rate blood-slurping sound effects, and deficient, shallow gameplay that gives you nothing juicy to sink your teeth into.

SAVAGE

Rainbird ■ £24.99

Featuring an whacking great three levels of play (gasp, wow), **Savage** pits you against waves and waves of dull monsters hurtling their way across a scrolling landscape. Lasting attraction of at least five minutes.

SOCCER

Microprose ■ £19.99

In the year when so many games houses produced so many football games, this offering from **Microprose** broke new records for sub-standard gameplay, lousy graphics and poor control of players. Bit of an own goal.

DISK 15

Cascade ■ £14.99

Compilation of 15 dreadful games such as hangman, pong and less which plumbed new depths of awfulness. Total trash: so bad it's terrible.

KING OF CHICAGO

Mirrorsoft ■ £19.95

Pretty pictures and an imaginative idea, but neither of these worthy attributes were enough to lift this game from the pits of plotless-induced boredom. Gamesters everywhere gave it the thumbs down.

RED HEAT

Ocean ■ £19.99

Yet another attempt to generate megabucks by tying up a film/software licensing deal then offloading an inferior game on an unsuspecting public. Miniscule graphics and puny sounds did not live up to the advertising bull and the game flopped.

CASTLE WARRIOR

Palace ■ £19.99

Tedious dungeon wanderings, laughable monsters, and gossamer-like plots hardly make a decent animated adventure. Slow, turgid graphics and utterly boring gameplay make **Wossname** instantly forgettable. ■

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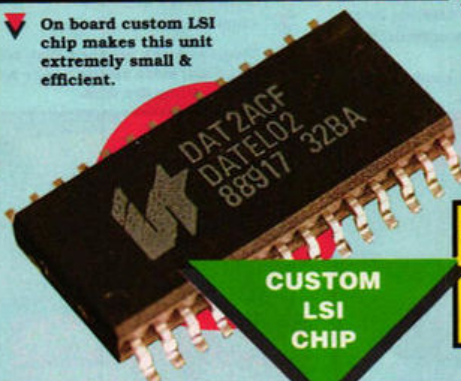
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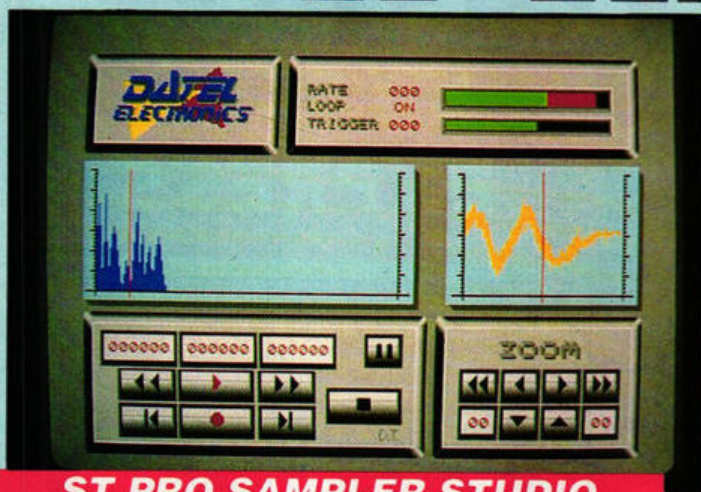
- ▼ PLUS - its a Photocopier!! Yes, just press start and it will deliver a superb photocopy of your original in seconds!

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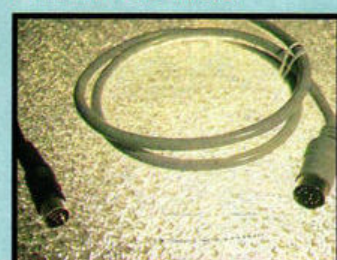
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- ▼ Model 420, high performance, low cost Bar Code Reader.
- ▼ Works with any Amiga/ST computer system (please state which) via the RS232 interface.
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- ▼ Easy to install.

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- ▼ Works on both internal and external drive (switchable).
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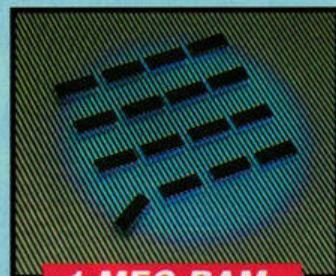
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SAY
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PRESENTATION IS ALL

If the magazine you're reading now were published on bog paper with no pictures and only one kind of text throughout, would you buy it?



P R E S E N T A T I O N applies equally to stamp club fanzines, parish magazines and advertising brochures for small businesses. If you produce – or aspire to produce – a magazine, and you want others to read it, you have to create something that appeals to the **AESTHETIC SENSE** of your intended audience. You could have the best ideas and the

SHARPEST WRITING, but

John Bull's printing set and pages from a school jotter simply don't do the job. Neither does an ordinary word processor.

The kit used by **PROFESSIONALS** – tools such as Apple's Macintosh computer and its software partner in DTP *Quark Xpress* – cost serious money. The real thing could set you back £5,000 and more.

The solution? Buy one of the many **MAC EMULATORS**, shell out nearly a grand for the software – and then spend hundreds of frustrating hours trying to make the damned device support your printer, produce anything vaguely recognisable and not crash at the very moment your fantastic new layout

is about to make it to the safety of the disk.

So you're no further **FORWARD** in the design stakes. *Footballing Fortnightly* has just gone bi-annual and the classifieds are carrying an ad for one slightly used Mac mask.

THE PUBLISHING REVOLUTION

is here, and it's on your ST.

The machine that plays so many games, stores so many club databases and processes so many home accounts has two

DESK TOP PUBLISHING

packages that lift it to the top of the publishing pile:

immensely powerful applications limited only by your own imagination. Jerry

*Glenwright puts the new, beefed-up versions of Signa's **Calamus** and Mirrorsoft's*

***Fleet Street III** through their paces ➤*

WHAT DO YOU DO NOW?

It's all true: combine Atari's baby with the SM124 monochrome monitor and either *Calamus* or *Fleet Street III* knocks the PC into a cocked hat; and *Calamus* at least equals anything that can be done with an Apple Macintosh. For a fraction of the price of Big Blue's bumptious silicon or the financially remote Mac, you too can publish to professional standard. In this special report we give both these remarkable programs a thorough testing.

Originally available as a "grey import" (an unofficial release), *Calamus* has been acclaimed for its features but criticised for its many glitches, most due to the program not being converted for use with UK machines. After acquiring official UK distribution *Calamus* was released in its current guise of version 1.09, rendered fully compatible with British STs and with most of its bugs ironed out.

Since then the ST market has witnessed the release of *PageStream* and is about to see the latest version of *Fleet Street Publisher*, touted as a "Calamus basher." So how does the best compare with the best of the rest?

Calamus

MACHINE: 1MBYTE RAM REQUIRED

PRICE: £399

BY: SIGMA PUBLISHING

CONTACT: 0252 341600

Sigma recommend at least a Mega 2 ST to run *Calamus*, and although the program works happily with 1040s and Mega 1s, you'll be limited to small documents and fewer fonts in memory.

The opening screen is reminiscent of a Jackson Pollock "Homage to the Icon" – an inch at the top of the display and the entire left third, stuffed with the most intricate icons and buttons yet seen on Atari's baby, all competing for space with the standard GEM menu bar.

For the novice the first encounter with this screen is nothing short of horrific. Fortunately there are user definable hot keys assignable to any function, making navigation simple. The program is controlled via the Top Line, a collection of buttons consisting of layout, text, frame and line controls, page size and number selectors and a real-time display depicting your exact position in the editing window. Accuracy is all important when positioning text and graphic frames, and this editing position display facilitates pinpoint precision.

Selecting an icon from the top line gives you access to further menu screens known as Tool Boxes arranged in hierarchical fashion. The Tool Box contains all the icons associated with its function and there are Tool Boxes for frames, layout, text, filled areas and lines.

LAYING IT OUT

Along with most ST DTP packages, *Calamus* is frame based: documents consist of frames in which text and graphics are placed. Frames can be manipulated at will, copied, pasted, deleted and so on, and you can link them together to form "chains" through which text can flow.

The process of document creation begins with defining frames for the text and any graphics which are to form the document. With frames on the screen, you can jiggle them

Calamus

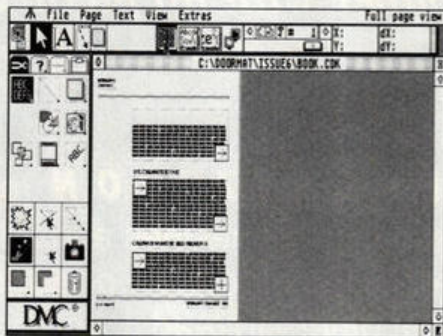


Figure 1: first pages of a book

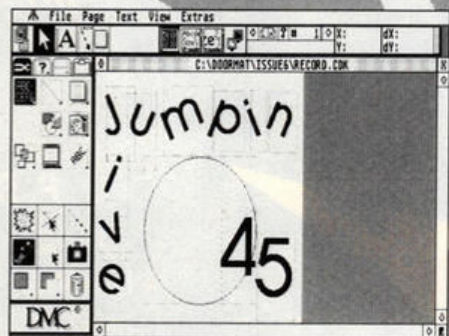


Figure 2: effects using text rotation

The *Calamus* publication possibilities are endless. From record sleeves to posters, magazines to entire newspapers the *Calamus* tools facilitate excellent results. Figure 1 contains the first page of a book. Headers and footers were handled automatically and can be applied to every page or just those selected. Lines help to break up the page and give it a "finished" look and can be selected from a large range within *Calamus*. Figure 2 illustrates some of the effects possible using text rotation. As well as single letters entire columns can be positioned at any angle making highly

stylised effects simple to achieve. Want to design attractive headed paper for your company? Figure 3 shows the eye-catching possibilities of reversed-out text. With *Calamus* professional page layout is easy to achieve. In figure 4 an almost exact replica of an ST Format page can be seen. You can zoom in on pages, making delicate positioning operations simple to perform. Fancy yourself as the next Maxwell, tycoon newspaper magnate? Begin your empire building by using *Calamus* to publish your own distinctive newspaper. The large range of available fonts help to create super results.

Fleet street III

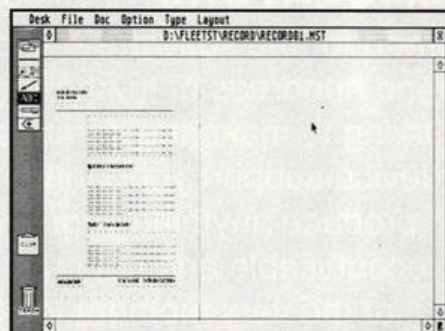


Figure 1

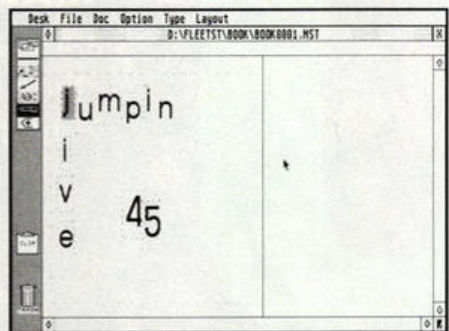


Figure 2

Fleet Street is more suitable for the beginner to DTP. Screens are clear and easy to read. Icons kept to a minimum and the whole program drips ease-of use. All functions contained within *FSIII* are accessible from the buttons and pull-down menus. Page layout begins with the selection of a frame type from the icon menu. Frames can be text, graphic or line orientated. Figure 1 shows the book page put together using *Fleet Street*. Figure 2 depicts the record cover. Unfortunately, *Fleet Street III*'s text rotation is a little difficult to execute, and so a simpler layout involving characters on alternate baselines were

used instead. The reversed-out letter heading in figure 3 was easier to achieve than *Calamus*. Simply select the density of the foreground and background. *Fleet Street III* comes with a huge range of fonts and you can buy more if and when they're needed. Using these it's possible to achieve good results and both the poster and newspaper show what can be done with a little application. The excellent graphic scaling functions provided with *Fleet Street* are simple to use and enable you to re-size pictures effectively. Both the poster and newspaper would benefit greatly when used with pictures and other graphics.

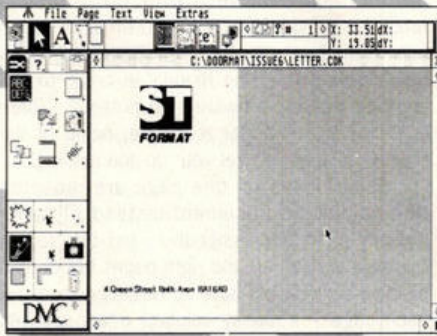


Figure 3

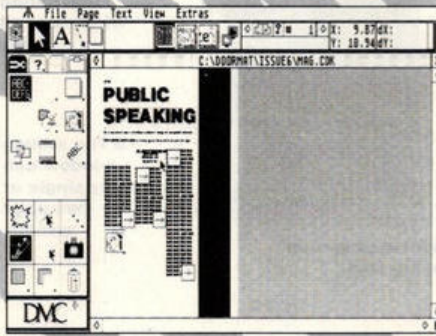


Figure 4

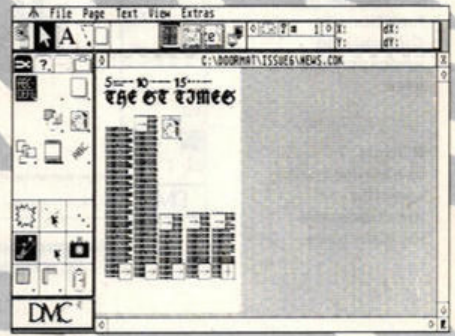


Figure 5

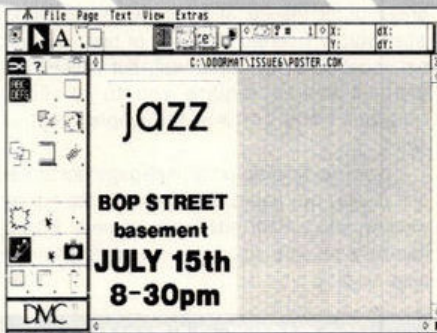


Figure 6

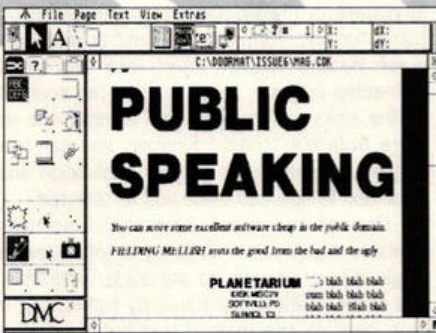


Figure 7

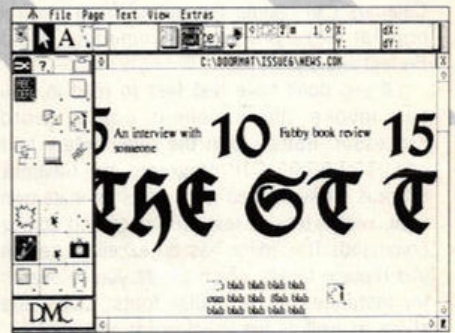


Figure 8



Figure 3

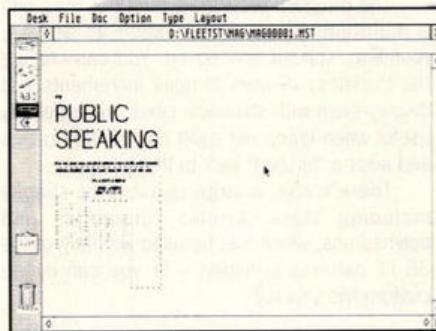


Figure 4

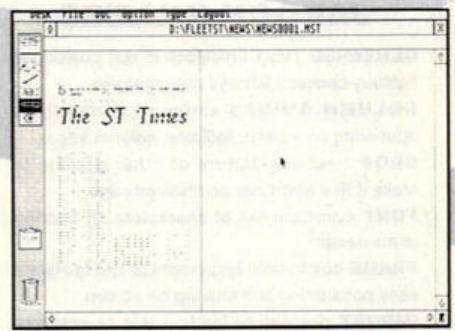


Figure 5

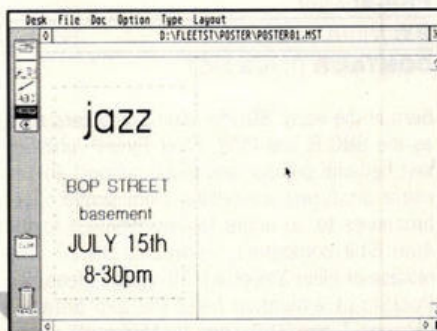


Figure 6

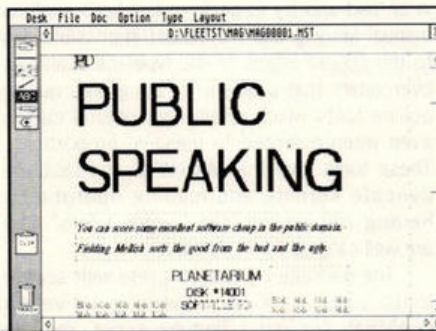


Figure 7

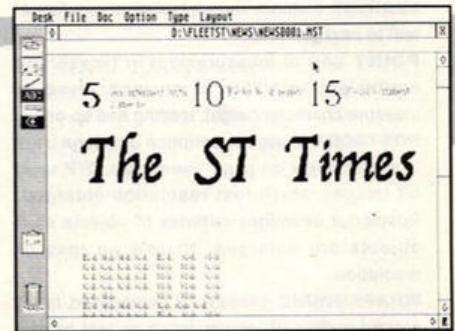
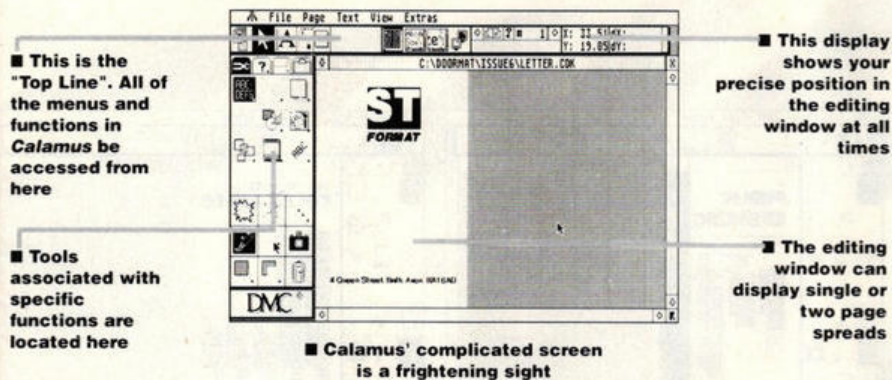


Figure 8



around, overlay text frames with graphic frames and generally tinker until you have a page layout which satisfies your aesthetic sense. Text import is achieved with the relevant icon and Calamus can handle the output from several popular word processors including Word Perfect and 1st Word.

If you don't have text files to read in, you can invoke the excellent pop-up word processor. Rather than the rudimentary text editors of lesser DTP programs, the Calamus editor is a fully fledged word processor in its own right, with extensive text formatting and editing commands. The editor has an excellent search and replace facility which allows you to search for instances of particular fonts, sizes and styles as well as the usual words and phrases. To help you place text at just the right positions within frames you can specify guidelines in either horizontal or vertical orientation. Defining guidelines allows you to "snap" text to them to ensure correct positioning. Snapping means that you can place the text anywhere within the frame, but once there, it instantly moves to the nearest guideline position.

JARGON KILLERS

- CENTERED TEXT** line/block of text positioned halfway between left and right margins
- COLUMN GUIDES** series of dotted lines appearing on screen: indicate column edges
- CROP** trimming picture or other graphic to make it fit a particular position on page
- FONT** complete set of characters all bearing same design
- FRAME** box to hold text/graphics and facilitate easy positioning and moving on screen
- IMPORT** process of loading text or graphics produced by other programs
- KERNING** adjusting space between pairs of characters to make them look even or smooth
- LAYOUT** arrangement of text/graphics on page
- LEADING** distance from baseline of one line of text to next text line.
- POINT** unit of measurement in typesetting equivalent to 1/72th of an inch. Used to measure character height, leading and so on
- POSTSCRIPT** page description language used to define items on page. Previously, DTP used bit images which lost resolution enlarged: Postscript describes outlines of objects so if objects are enlarged, there's no loss of resolution
- WRAPAROUND** process of getting text to sit around outline of regular (such as text boxes) and irregular (such as pictures) objects

You can create perfect columns, force text around objects and into other frames by judicious use of the guides. Text overflowing a frame can be made to flow into frames anywhere in the document on any page by using "chains." (Imagine a plumber installing wash basins. Water flows into the sinks connected by water pipes and he can connect all the sinks with water pipes or omit one or more from the "chain." Similarly you can link pages and text frames of your publication and force text to flow into those you've selected.)

One of the most powerful functions available in Calamus is its ability to rotate text in single lines or columns to any angle. To do this, you simply mark a text frame by highlighting it then click on the rotated text button. You're presented with a menu into which you can type the angle of rotation. Click the "go for it" button and before your very eyes the text is rotated to the specified angle.

Calamus allows you to illustrate documents with graphics from a variety of sources including Degas, IMG and GEM metafiles. Scanners are well supported and you can even scan a picture directly into a page.

The program provides a range of lines with a multitude of end styles such as arrows, rounding, spliced and so on. You can change the thickness of lines in point increments and display them with shadows. Lines are extremely useful when laying out multi column text pages and adds a "finished" look to these pages.

There's also a large quantity of shapes including stars, circles, diamonds and polyhedrons, which can be used with any of the 36 fill patterns provided - or you can define custom fills yourself.

FONTASTIC!

Many ST DTP packages, such as PageStream, make use of GDOS fonts for screen displays. They're powerful and comprehensive, but zoom in on text and try to perform functions such as manual kerning and it's almost impossible due to the jagged edges of the typeface. Calamus overcomes that problem by using high quality outline fonts which retain their natural curves even when enlarged to massive proportions. These fonts give true WYSIWYG and facilitate delicate kerning and leading operations. Kerning and leading (see "Jargon killers" box) are well catered for in Calamus.

The package comes complete with several fonts including Times, Swiss (a Helvetica lookalike), Arc and a Teutonic script. You can buy others from Signa by quoting the serial number of your copy of the program.

MOANS AND GROANS

The sheer size of Calamus makes it difficult to learn. Developing an affinity with the 427 buttons and countless drop-down menus requires considerable time and effort. If you're new to the concept of DTP you'll have to spend hours poring over the manual in order to tap anything like the software's full potential. There is, however, a tutorial at the beginning of the manual designed to get you "up and running."

Guides used on one page are repeated throughout the document instead of being globally or locally assignable; and they're not mirrored across left and right pages but copied exactly, so that you have to re-assign them for each page - a messy solution which negates their practicality.

The text editor won't let you delete blocks of text, so you have to use the delete button on the clipboard. You can't define a block by dragging the mouse, and word wrap only works when you've inserted a full line of text. The text runaround function works well, but subsequent graphic moves require you to re-select runaround and perform the whole function again.

If you're working on a multi-page document and display two pages at once within the editing window, you cannot edit the document. Editing can only resume when you return to a single page display.

FORMAT RATINGS

Features	97%
Comprehensive page make-up facilities. Text functions including rotation, chaining between frames. Outline fonts on screen	
Speed	95%
Very fast: almost instantaneous page zooming	
Ease of Use	72%
Lots of icons and buttons whose functions tend to blend into one at first: they soon become familiar	
Results	94%
Totally professional results can be obtained with just a little application	
Format Value	94%
£399 is a whacking great price: but a piece of software that provides everything necessary for real DTP, is powerful, quick to learn and fully supported has to be worth every penny!	
The Competition	
Calamus can truly be said to be in a class of its own	

Fleet Street III

MACHINE: 1MBYTE RAM REQUIRED
PRICE: £199
BY: MIRRORSOFT
CONTACT: 01 928 1454

Born in the early '80s for 8-bit computers such as the BBC B and PCW, Fleet Street Publisher fast became popular and found support among users producing everything from single sheet brochures to an entire fanzine devoted to the Atari 8-bit computers, as well as the ST. The release of Fleet Street III (a US release featuring PostScript emulation filled the gap between versions 1 and 3) is seen by Mirrorsoft as the coming of age of the program. There are new features aplenty, while major criticisms

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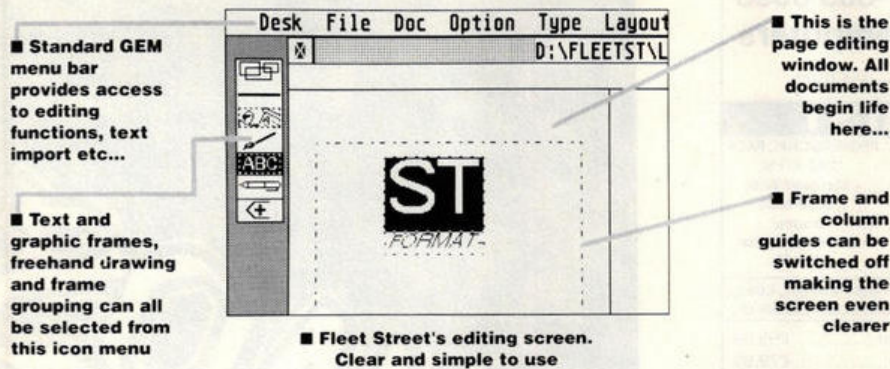
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have been addressed.

Mirrorsoft are aiming *FS III* at users who would previously have chosen *Calamus* to produce professional publications. *FS III* is good, but is it good enough?

FIRST ENCOUNTER

If you don't go a bundle on icons then you'll like *FS III*'s opening screen – it's bleak! A standard GEM menu bar and an editing window with eight icons to the left of it constitute the entire display. All functions are accessible via the eight icons and pull-down menus.

Like *Calamus*, *FS III* is a frame based desktop publishing program. But unlike almost all other DTP packages, it offers a first encounter via an editing window on a text document. If you want to start making up a page you must close this text document and open a new page.

Although *FS III* works with STs bearing only 512K of RAM, Mirrorsoft don't advertise the fact. The company would prefer you to have at least 1Mbyte of memory. Anything less imposes severe restrictions on the size of documents, the amount of fonts in memory and other memory-sapping facilities.

With frames positioned on screen you can start importing text or graphics to fill them. *FS III* allows you to read in text from several sources including 1st Word, WordPerfect and the very popular Protext.

The original *Fleet Street* didn't allow text flow between pages: version III rectifies that dire situation, allowing the creation of documents with up to 99,999 pages – which should be enough to be going on with!

One of *FS III*'s most powerful new features is its ability to wrap text around regular and irregular objects. Simply marking points freehand around a graphic or other object enables you to force text around it. It's fast and simple to use, and goes a long way towards making your publications look professional.

Text search and replace works well,

enabling you to search for attributes as well as character strings. Vertical justification makes text to column lengths simple. Previously, if you wanted to make a column of text fit the page length, you'd need to insert hard returns. Now you can alter the width of the spaces between lines of text by tiny amounts, so that columns can be made to fit page lengths and remain aesthetically acceptable.

If you're unsure of some of the spellings in your copy there's a phonetic spell checker containing 120,000 words that traps words such as *fonetic*, or *literate* and replaces them with the correct spelling (*phonetic* and *illiterate*).

Graphics are extremely well covered and the program accepts GEM metafiles, Degas, NeoChrome, Art Director and Tiny formats. One really nice feature is the graphic scaling function. Most DTP programs allow you to import a scanned picture then enlarge it. Unfortunately, enlarging bit images means that the bits which constitute the image move apart and the resultant graphic is of poor quality. *FS III* uses complex scaling equations that let you capture an image using a cheap scanner with a resolution of say, 200 dots per inch, then scale that picture up to 600 dpi or more. Thus you can have pictures of almost photographic quality scaled up from 200dpi scans!

FORMATS OF USE

FS III comes with 15 Lucida fonts, and Mirrorsoft can supply you with many more, all genuine Linotype and ITC typefaces at a reasonable price of around £30. The program offers PostScript compatibility so fonts are object orientated entities rather than bit images.

But to make the most of PostScript you need access to a PostScript printer, right? Wrong! *FS III* comes with Ultrascript, a licensed utility embedded in the code which allows you to print PostScript files on any printer – even archaic devices such as the Epson LX and FX80. Consequently, quality is amazing. Text actually has the characteristics of the font

you're using, such as broad strokes on the tails of e and a. If you reproduce the printed output from a dot matrix machine on a photocopier with the darkness increased, you end up with output almost indistinguishable from a laser printer. Using Ultrascript, everyone can produce brochures, handbills and so on, with near laser quality on cheap dot matrix machines.

ON THE DOWNSIDE

The latest version of *Fleet Street* includes a fix for the text flow between pages problem much criticised in the earlier offering. Unfortunately, the new program still feels as though multi-page accessing is bolted on as an afterthought. Documents must be named with 001, 00001, and so on, so that your document is only as large as the amount of filename characters you're prepared to give over to page numbering. If the first page of your publication bears the filename Letter01, for example, then you have the opportunity for only nine other pages (Letter02 – Letter10) before needing to change the name. This can hardly be described as an elegant solution.

There's now a text rotation function but it's too messy, requiring much tinkering to produce text at the required angle. To highlight a text block in *FS III*, you must drag a box around the desired text and click with the mouse. The ST mouse is not renowned for its highly geared or accurate movement, and it would be much easier to have text highlight as you drag the mouse over it. Keyboard shortcuts are provided for power users: but as they're not user-

FORMAT RATINGS

Features	75%
Easy to use and quick to learn. Comprehensive text flow facilities and a phonetic spell checker	
Speed	70%
Overall a reasonable turn of speed, but some functions such as block highlighting and pasting can take ages	
Ease of Use	90%
All functions accessible via eight icons and several pull-down menus	
Results	85%
Very good results can be achieved without a large expenditure of time and effort	
Format Value	75%
Expensive for a product whose functionality places it firmly in the home and very small business field	
The Competition	
<i>FS III</i> is the "best of the rest" and has no competition at this price or level	

FINAL VERDICT: CALAMUS VERSUS FLEET STREET III

Both programs provide features which until recently could only be dreamed of by ST DTP users.

Fleet Street's text wraparound functions, UltraScript engine and reasonable price make it the best DTP solution for home users. For professionals –

magazine and newspaper publishers, large and small businesses wishing to produce advertising literature and so on – *Calamus* is simply the best desktop publishing program available for the ST.

It may be difficult to learn and has one or two annoying little foibles, but the program

puts the power of professional DTP applications into the hands of ordinary ST users for a small fraction of the enormous price of traditional Apple Mac or IBM PC-based systems.

There are no inherent limitations in *Calamus* and its scope is measured by your

abilities rather than those of the program.

The next update, due soon, includes colour separation facilities, firmly reinforcing the program's claim to be at the cutting edge of desktop publishing technology for any machine. ■

ST DTP

THE GERMAN EXPERIENCE

It is abundantly clear from the way the ST is marketed – and, more importantly, used – in Germany that we in Britain have a long way to go before we've exploited its full potential. We asked our German correspondent, Don Maple, to talk to a couple of users.

Type Design is a design studio founded in 1986 and based in Düsseldorf, West Germany. It saw the introduction of computers the very next year in the shape of the IBM. In the words of Managing Director and chief designer Harry Kühnle, however, "it only lasted two months, and that says it all..." Like most design studios

they migrated to Macintosh, but about six months ago started using Calamus on a Mega ST, and are currently using v1.09.

What sets Type Design apart is that they are one of only eight studios in Germany to drive the Linotype (a £30,000 high resolution printer used to prepare pages for the printing press: as used by ST Format!) directly using an ST. "DMC (the makers of Calamus) supplied us with an interface so after designing our product we can send the result straight to the Linotype. This service is also available to our customers who can bring the disk and we will print it out.

We like Calamus because it is very easy to learn for beginners. All of us use it."

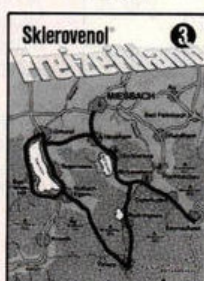
Comparing the ST/Calamus partnership to the considerably more expensive Macintosh, Kühnle says: "With our Mac software and Postscript, What You See Is Not What You Get! Calamus, on the other hand, is genuinely WYSIWYG, since the ratio between the screen display and the finished product is 1:1."

Weide Elektronik, maker of a wide range of hardware add-ons for the ST, is a typical example of a small business Calamus user. In addition to manufacturing, the company comprises a store that caters to ST users by offering the full range of ST hardware and software.

Store manager Norbert Kulisko has been using Calamus for over a year. "We are currently running version 1.09. Our basic usage is for advertising, producing leaflets and manuals for our products, business cards and various forms." Like most professional users in Germany, Kulisko has a Mega ST with a hard drive and a laser printer. "I like Calamus because it offers true WYSIWYG, but most of all I like the wide range of affordable fonts. The hyphenation could be better, but this is going to be improved in the next version that's coming out soon. I must reiterate that the vector fonts are, for me, the most impressive Calamus asset."

And as if to drive home the lesson that what Germany is doing today we shall be doing tomorrow, Signa have recently installed a Linotype, so that customers can produce the kind of first class, professional material that hitherto has been the exclusive domain of Macintosh users.

DTP for the ST has arrived!



■ Just some of the many publications produced using Calamus. The Germans tend to take the ST a little more seriously and both Calamus and the ST can be found in a variety of "real" situations. The magazine Weide Elektronik is a good example of the results of this attitude

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PUBLIC SPEAKING

STORY
Stuart
Anderton

This month's survey of free ST software concentrates on those little utilities that make life bearable; and has news of how to get your hands on an £80 art program – for just £3!

The public domain is often derided as being full of nothing but RAM disks and formatting tools. This is far from the truth, but this month let's play along with the stereotype and devote some of the column to a round up of the accessories and utilities you can find.

There is a very good reason for the existence of the plethora of short programs for the ST: TOS and GEM simply don't cut the mustard in so many ways. Because the ST was launched in a hurry (to beat the imminent Amiga), Atari made the decision to use an off the shelf graphical interface, GEM. Regrettably GEM has many shortcomings. Hopefully TOS 1.4 will cure many of the more annoying quirks, but until then we must turn to the public domain to try to make the ST more friendly.

The accessories you can find fall into several categories, and I shall look at each in turn and pick out some of the best. In each case the utilities mentioned are available in almost all the libraries, not only the one whose catalogue number is given.

RAM DISKS

One of the difficulties with the ST's operating system is the way it copies files. No matter how much free memory it has (usually a single-sided diskful) it copies files one at a time. Those of us with a single drive know well the boredom of copying a disk. RAM disks can banish disk swapping for ever.

A RAM disk sets aside a section of the ST's memory which it then regards as another disk drive. You can copy files to and from it and

even run programs from it if the fancy takes you. To save all those hours of swapping you simply copy the files into the RAM disk, change the floppies and copy the files back down again.

RAM disks can also massively speed up programs which use the floppy a lot as the memory access is many times faster than the mechanical disk. Unfortunately you need a lot of memory to do this effectively; a 1040 is probably required. Another problem with using the RAM disk this way is data loss – if the machine crashes (never happens!) or you forget to copy the files onto floppy at the end of the day that's the end of it.

There are dozens of RAM disks in the PD, so what should you look for? A perfect RAM disk should be flexible in size – say from 64K to 512K – and be reset-proof. Some RAM disk data is lost when you so much as change resolution! Another handy feature is the ability to run from the AUTO folder of a disk, so you could set up a copying disk with a RAM disk ready and waiting on it.

One I use successfully is imaginatively entitled RAMDisk, on South West Software Library's disk 187.

DISK FORMATTERS

Atari Corp are a conservative bunch and when they fixed the disk format for the ST they chose a smaller size than they could have. Most ST drives will quite happily read more than 400K from one side of a disk, and there is a range of PD disk formatters designed to give you that little bit of extra space on your floppies.

This is an area to be very careful of – if you're going to store valuable data on a disk you want to be damned sure the formatter is working properly. Test the disks you produce thoroughly.

All drives will take the extension from nine sectors per track to ten, but some are less keen on including one or two extra tracks. Experiment but be cautious.

The most reliable extended formatter is DC Format (Softville PD ACC57). This program gives you all the options, including formatting Spectre 128 disks for use with the Mac emulator.

It's also sometimes handy to be able to format a PC-compatible disk. The ST and the PC use roughly the same format and the ST can read and write PC disks. This provides an easy way to transfer files between the ST and machines which can read the PC format, including the Archimedes and newer Macintoshes. DC Format also does this.

MOUSE CONTROL

The way GEM uses the mouse can be downright annoying. For a start it's slow; you have to move the mouse a long way to get a decent response on the screen.

Far more troublesome are the drop-down menus. Flick the mouse towards the top of the screen and the object you were trying to point to is instantly obscured by a menu. Most other WIMP systems have pull-down menus, where you have to actually click the mouse to get the menu to fall.

Naturally other frustrated owners have found the solution to these problems. Speed-Mouse accelerates the mouse to a more reasonable pace and Mousetrap banishes those annoying menus.

COMMANDING LINES

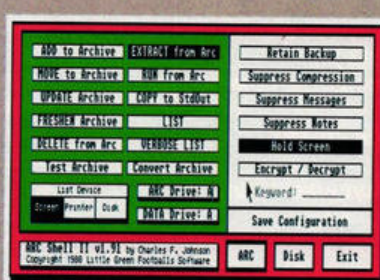
There are times using the ST when I would kill to be able to type in a simple command instead of all this clicking and dragging.

Suppose you want to copy all the files starting with WP: to do that on an ST you have to click on them individually and drag them to the B drive folder. If there is a dozen files that could take a while. With a command driven computer you would type `COPY WP** B:` or similar. More technical but a damn sight quicker.

For those who want to play with the joys of wildcards and command line interfaces try out PCCommand on South West Software disk 331. ➤



■ **Extend your floppies! DC Format gives you extra space on your disks**



■ **Alternatively use Arcshell to compress data files and save valuable disk space. It compresses text files to half their normal size**



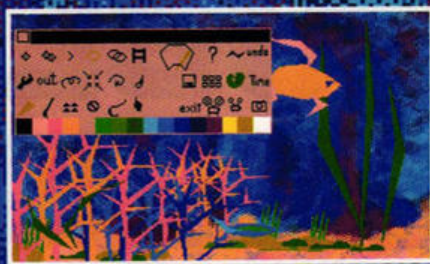
■ **ST cribbage on its way to ignominious defeat (see over). Whatever happened to keeping aces up your sleeve?**



■ **Fun School 2 demonstrates how dull it is. Boring programs that wouldn't hold a child's attention for even five minutes**

ANI-ST

SOUTH WEST SOFTWARE LIBRARY DISK 635



Those of you with long memories may recall the launch a couple of years ago of *Aegis Animator*. This £80 program enabled you to create animations easily by handling the "tweening" process automatically. Tweening is the process of interpolating between the start and end points of a move to give smooth animation.

The program was quite well thought of at the time, but sold slowly

because of distribution problems, so now the author Jim Kent has put it in the public domain with a new title, *Ani-ST*.

Ani-ST lets you draw shapes and animate them. The drawing tools are sophisticated – there is a star option for instance – and the palette is fully under your control. If the drawing tools are not enough though you can import the background from any art package

■ (Inset) A full range of features on offer from *Ani-ST*

or scanner that saves in *Neochrome* or *Degas* format.

This is a fully featured program and is perfect for anyone tired of drawing Darth Vader for the 18th time. *Ani-ST* is an outstanding bargain from the public domain – buy it!

★★★★★

OUT OF THE ARC

Disks are expensive, so there's a family of programs that let you store more on them. They do this not by expanding the disk but by compressing the data files. They're called archivers and the best example is *Arc*.

Unfortunately *Arc* is very difficult to use, so a mouse driven version has been developed called *ArcShell*. This can compress program files by around a fifth and text files by up to a half. *ArcShell* is available from South West Software Library, disk 308, and will soon pay for itself. Especially as it's free.

Enough accessories, let's have a look at some of the other goodies in the public domain.

CRIBBAGE

B-SOFT DISK BG2

This disk has a selection of games; Cribbage, Othello, Pentominoes and Wheel of Fortune.

The latter has to be seen to be believed. Rather tackily programmed in Basic, it's a version of that wonderful TV show – and without the chance to win anything it's even worse tor-

ture than the telly. Unbelievably tedious.

The versions of Crib and Othello are better. The only poor feature of Cribbage is the way it insists that you count up the cards in your hand yourself. Pentominoes will be familiar to regular readers as a version of the game appeared on the cover disk a few issues back.

★★

JOE 90

RIVERDENE PDL



production line.

There are a thousand and one demos consisting entirely of a sound sample floating about, and this one just isn't very good. It looks and feels as if it's been churned out on a

★

While the sample itself is of a reasonably good quality, the edit between the two sections is so awful as to make you cringe and completely ruins the effect. The graphics screen that accompanies the sample is naff too.

FUN SCHOOL 2 DEMO

PAGE 6 DISK 187

Fun School 2 had the distinction this year of being the only educational program to make an appearance in the software charts. This disk gives you a run through of the three versions of the program – one for under-sixes, one for over-eights and one for those in between.

More companies would do well to put demo versions of their software in the public domain to let potential users try them before buying, but in this case I don't think I'll be shelling out for Database's full-price disks. The programs on this disk are boring and wouldn't hold a child's interest for very long. Prospective purchasers would be foolish not to see this disk first.

★★★

RATINGS

★★★★★ Beg, steal, borrow

★★★★ Beg

★★★ Steal

★★ Borrow

★ Burn

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ROUND TABLE PD

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SOFTVILLE PD Unit 5, Stratfield Park, Waterlooville, Hants PO7 7XN

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THE OTHER PDL

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WIZARD PD 178 Waverley Road, Reading, Berks RG3 2PZ

PURPLE PD PUBLIC DOMAIN SOFTWARE

APPLICATION DISKS

- **FFISH 189** - UEdit V2.4g the excellent word processor.
- **FFISH 176** - AnalyticCalc V2.23a of the large and powerful spreadsheet. Requires 1Mb RAM and 2 drives.
- **FFISH 143** - RIM V5.0 is a Relational Information Manager, a fully relational DBMS that is suitable for very large databases using B-Tree data storage. Versions of RIM run on a variety of micro systems both small and large, and produce compatible databases, includes a built in HELP database and a programming language.
- **AMP 1** - Home Business Pack 1, RIM the relational database, UEdit the brilliant word processor, spell checkers, VisiCalc and VC spreadsheets. A 3 disk pack for only £7.50!

UTILITY DISKS

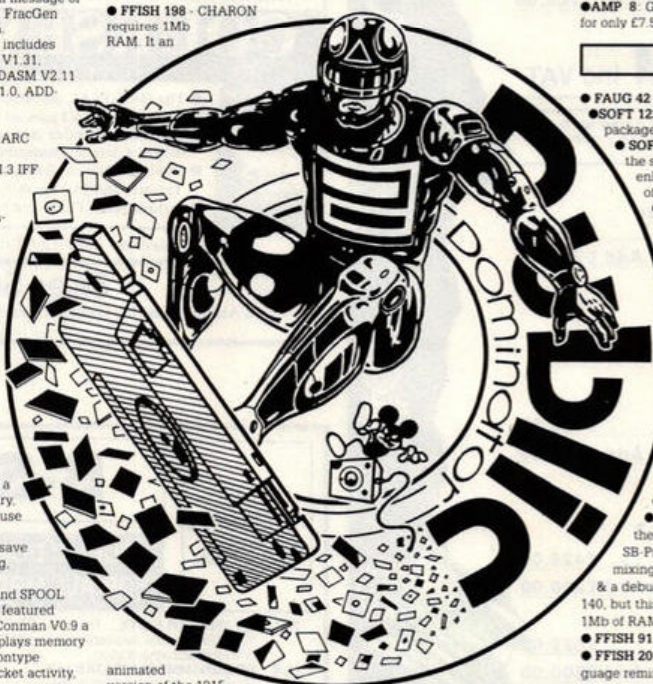
- **PDOM 62** - The Public Dominator Anti Virus Disk: Virus X V3.2b, VCheck V1.2 (for memory), VCheck V1.9 (for disk drives), Zero Virus V1.3 the fully integrated virus detector and killer. Also Boot Block Champion the utility.
- **PDOM 59** - Amateur Radio Disk: StarTerm V3.0, P81 and P1027.2 packet terminal programs, TA Term V5.0 a HAM Database for the Amiga Amateur Radio Group, Morse Code, Satellite Tracking and loads of HAM utilities. A real must for the serious HAM user.
- **FFISH 243** - Fraght V2.0 is a dynamic memory thrasher! ImageLab V2.2 is an IFF pictures manipulator. LPE V1.0 is a LaTeX Picture Editor for the LATEX system. NoClick V3.5 stops the disk drive clicking if there is no disk in the drive. PassWord V1.21p you specify the password for your system security. Peopy V2.0 the excellent disk copier. SimGen adds a 2 or 4 colour picture to your WB screen. Warp V1.11, UNWarp V1.0 and WarpSplit V1.1 - WARP reads raw filesystems and archives them into a normal file.
- **FFISH 213** - Bitplanes the 8 colour icon user and 300 8 colour program icons!
- **FFISH 188** - Boot Intro V1.0 displays a scrolling and a still message of your choice at boot up. DiffDir V1.0 compares 2 directories. FracGen V1.23 fractal generator a real fully featured fractal program.
- **FFISH 168** and **FFISH 169** - The Matt Dillon disk special includes loads of utilities and source: Config V1.0, Clock V1.0, DME V1.31, DMouse V1.1, Backup V2.01, SUPLIB, LIBREF, DRES V1.0, DASM V2.11, FILES V1.2, SHELL V2.1, FINDIT V1.0, LIBS V1.0, SCAT V1.0, ADD-CRV1.0, REMCR V1.0 and CMP V1.0. You will need both disks at £3.00 each.
- **FAUG 41** - Rain Bench, Amiga ARC V0.2 compatible with ARC V5.0.
- **AMICUS 22** - Printer Driver Generator V2.3, Show Print II 3 IFF screen dump.
- **FFISH 158** - DiskX is a sector based disk editor, MemBoardTest V2.4, MSDOS V0.1 lists files written in standard MSDOS or ST format, then copies them to RAM then rewrites to disk in AmigaDOS format. PCBT00L V2.6 is an early version of PC Board layout program that does not support printers. ScreenX is a small clock/memory counter. TaskX V2.0 is a 'realtime' task editor.
- **FFISH 157** - Xicon V2.01 allows you to call up scripts containing CLI commands from an icon. 60 or 80 toggles 60/80 column text. BootBack is a disk boot block save/rewrite and copy program. ECPM is a CP/M emulator.
- **FFISH 145** - Dmouse V1.06 is a versatile program that includes screen/mouse blander, auto window activator, mouse accelerator, popch, pop window to front, push to back etc.
- **FFISH 131** - DFC is a disk copier that multi-tasks. Hyperbase V1.6 is a database system. Mackie is a PopCLI replacement. Micro Emacs VMg1b the text editor.
- **FFISH 130** - DirMaster V1.1 is a disk catalogue, Hp V1.0 a nice RPN calculator which supports calculations with binary, decimal, hex float & complex numbers. Mach V1.6a the mouse accelerator.
- **FFISH 129** - DoakWink a pair of progs which allow you to save files or groups of files to one or more disks for quick loading. MRBackup V2.0 and V2.1 a hard disk back up utility.
- **FFISH 69** - Spool V1.2 - a queue manager, printer driver and SPOOL requester and Wc a file word counter. Asm68K V1.0.3 fully featured macro Assembler. Blitlab a blitter exploring program in C Conman V0.9 a sort of CLI shell. Dk decays the screen bit by bit. Frags displays memory fragmentation by listing the size of free memory blocks. IcoType changes the icon type. MonProc monitors processes for packet activity. MouseClock turns mouse pointer into a digital clock. Spew generates News of The World type headlines. Sb a system browser.
- **FFISH 65** - Sunmouse V1.0 automatically clicks in windows when the mouse is moved over them. RunBack starts programs from CLI allowing CLI window to close.
- **FFISH 55** - ASDG-rnd a RAM disk that survives reset. BigView displays any size IFF picture, EGraph creates graphs from X.Y pair text files. Hyperbase V1.5 a neat database management system. MemClear Zero fills free memory. NewZap V3.0 disk sector editor. Rainbow makes Workbench background a rainbow. 2 Smusplayers to play SMS IFF music files. View a tiny IFF picture viewer. WB to JX-80 screen dump.
- **FFISH 244** - BBChampion V3.1 the Boot Block Champion load, save and analyze boot blocks. BootIntro V1.2 you specify The headline text of upto 44 characters and the scrolling text of upto 300. FMC V1.2 is a no

fast memory program. SizeChecker V1.0 uses a list of file sizes to check unexpected file changes. TextDisplay V1.52 the great text display that handles all screen formats. XColour V1.2 the screen colour setter.

- **FAUG 67** - Disk X V2.0 the sector editor. Hand Shake V1.06b a VT100 terminal emulator. Pack It a whole disk compressor.
- **FAUG 62** - Access! V2.6 very powerful telecommunications package. Hide II allows you to turn off and on your RAM expansion. Cron - runs a table of background tasks. Add Icon V1.0 adds icons to files without icons. IFF Mirrors is an ILSM slide show with X and Y mirroring. FFormat V1.1 a fast formatter.
- **FAUG 50** - Dir Util V1.0 the disk manager. Roll Back V1.0 rolls back text that has rolled off the top of the screen. Short Cut allows you to define text to a single key stroke, thus CLI commands are simpler to type.
- **FAUG 47** - FunKey assign any text string to a function key.
- **PAN 25A** - Disk Wipe very quick disk contents wiper. SELECT allows you to select in your Startup-Sequence from a number of scripts. Virus Check V1.1.
- **PAN 19D** - ZOO V1.42a a very good file compressor. Con Man V0.99b provides line editing and command line histories. Distinguish type of files with File Type. Pipe Handler, Pop CLI V3.0.
- **PAN 17B** - AmGazer 1573 stars to view any time, date or latitude CLI only. Date Book the diary, bind any text string to a function key, use CLI from a menu, a disk catalogue Lightning Logger V1.2.
- **APDC 18** - Floppy Disk Utils: Quick Copy V1.0, Disk Mapper, Disk Salvage, Virus check, System Utils. Blitz V1.0 text editor, TimeSet, ACalc calculator Amiga Monitor V1.1, MeM Grab fast memory grabber. DirectoryMaster V1.1.
- **APDC 15** - Icon utilities: full of icon files and creators. Some animated! Brilliant disk for icon manipulation.
- **AMICUS 24** - Sectorama - disk sector utility, Iconize V1.0 reduce a full screen pic to an icon, Bmon system browser, Virus Check v2.21 checks disk & memory. Boing Machine.

DEMO DISKS

- **FFISH 196** - CHARON requires 1mb RAM. It an



- **PDOM 01** - The Walker Demo I is a mega animation demo that requires 1Mb RAM.
- **PDOM 02** - The Walker Demo II the mega animation demo that requires 1Mb RAM.
- **PDOM 06** - The Mahoney and Haktus sounds of the knome music disk II, great graphics and mega sounds. With a bouncy mouse pointer and things flying everywhere. A really good demo with loads going on.
- **PDOM 40** - Northstar Fair Light mega demo III a 2 disk set of incredible demos! Needs PDOM40 and PDOM41. Including Mahoney and Kaktus with Blue.
- **PDOM 41** - See PDOM 40 for details.
- **PDOM 42** - DeathStar Blasting II - Enlightenment demo a 2 disk set of mega mega good demos. Needs disk PDOM 43.
- **PDOM 43** - See PDOM 42 for details.
- **PDOM 44** - The Walker demo. This is the original 2Mb RAM, 2 Disk version. It is absolutely stunning! The 1Mb RAM version is on PDOM1. Also needs PDOM 45.
- **PDOM 45** - See PDOM 44 for details.
- **PDOM 65** - Red Sector Mega Demo. THE best demo on the Amiga! A mega good demo that requires disk PDOM 66, but you only need 1 drive. Amazing graphics, fabulous sounds, astounding vectorgraphics!!!!
- **PDOM 66** - See PDOM 65 for details.
- **PDOM 67** - IPEC UK demo Disk 10 includes: Nice Scroller, Sunriders, 178 Bobium and others.
- **PDOM 68** - Rebels Mega Competition demo includes: Pirazy, Nabob, Subway, Smiley, Aloha and Sin o' Delic.
- **PDOM 69** - HighClass UK compilation: Triangle, New BS1, Zoom First, W.O.W., RAF First, Spreadpoint, Subway/TNTand others.

- **PDOM 70** - Rebels demo: Nabob, Clones Demtro, Sunriders, Bloodsuckers, Flash and Vision Factory.
- **PDOM 73** - AGATron Special disk 10: Star Trek The Enterprise Leaves Dock. Excellent! Mega! Brilliant! Prefers 1Mb RAM, but you will get part of the demo on a 1/2Mb RAM.
- **PDOM 74** - Star Trek The Starship Enterprise flying around in a circle.
- **PDOM 76** - Agatron Animation 14: Star Trek Shuttle landing on the SS Enterprise. Prefers 1Mb RAM, but you'll get part of it on 1/2Mb RAM.

GAME DISKS

- **FFISH 194** - Moria V3.0 the single player dungeon simulation adventure game. Requires 1Mb RAM.
- **FFISH 205** - Bailly the arcade game, Battle Force V3.01 simulated battle between 2 robots. Chess V2.0.
- **SOFT 042** - Chinese Checkers excellent version.
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- **SOFT 069** - Backgammon, Yahzee, TVision, Missile Command, Cosmo 2 and 3D Breakout.
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- **SOFT 042** - Chinese Checkers excellent version.
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- **FFISH 259** - Escape From Jovi a fast action mega graphics games with stereo sound, hi res scrolling etc.
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- **FAUG 42** - DBW Render a very good Ray Tracing utility.
- **SOFT 123** - Amiga MCAD V1.2.2 excellent Computer Aided Design package.
- **SOFT 022** - Disk Full of graphic utilities: Clip It! clip any part of the screen and save to disk. Filter Pics manipulate pictures with enhancers, edge definition, colour and size shifters, plus loads of excellent packages.
- **SOFT 013** - Mandelbrot Explorer. Excellent full features mandelbrot designer.
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LANGUAGE DISKS

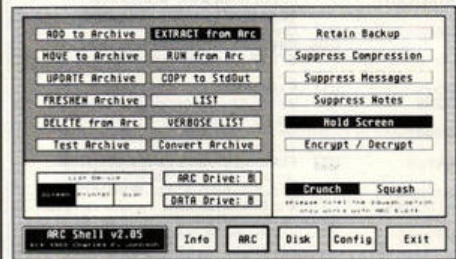
- **FFISH 171** - Sobozon C a port of the Atari ST version of this full K&R C compiler, assembler and linker. It has been tested on an A2000 and appears to work well. Not for the beginner due to lack of disk info.
- **FFISH 193** - Ze V1.01 modified version of the Sobozon C compiler from disk FFish 171. It now generates code compatible with A68k assembler and has a front end to allow easier usage.
- **FFISH 140** - Stony Brook PROLOG v2.3.2. This disk contains the executables & libraries. In addition to providing a compiler SB-Prolog also offers advanced features such as dynamic loading, mixing of compiled and interpreted code, macros, extension tables & a debugging facility. The Source for SB-Prolog is contained on FFISH 140, but this is not needed to operate FFish 140. SB PROLOG requires 1Mb of RAM.
- **FFISH 91** - The Adventure Definition Language (ADL).
- **FFISH 201** and **FFish 77** - Draco V1.2 is a compiled - structured language reminiscent of both C & Pascal. A full interface to AmigaDOS & Intuition is supplied. Be sure to get both FFish 201 AND FFish 77 - £3.00.
- **APDC 25** - Logo, XLisp, Modular 2, MVP Forth.
- **PDOM 60** - Modula II compiler. Apparently fully working, complete and ready to use version with on disk documentation and examples.

MUSIC DISKS

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One of the IMG files on disk A140



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HOLY DINGBATS!

STORY Mark Pickavance



Font Editor

MACHINE: 1040s WITH CALAMUS

PRICE: FREE TO CALAMUS USERS

FROM: SIGNA PUBLISHING

CONTACT: 0252 341600

A welcome addition to the Calamus family is Signa's recently released *Font Editor*, supplied free of charge to all Calamus users. The *Font Editor* is unique primarily because of the nature of the Calamus font system, but also in its style of implementation – functioning as a desk accessory.

SMALL CAD

The Calamus fonts are unlike those used within the majority of microbased DTP systems. Most use pre-defined graphics of each character within a font. These can be re-scaled by

Joining the Calamus gang and functioning as a desk accessory, Signa's vector font editor makes mincemeat of the Bat logo

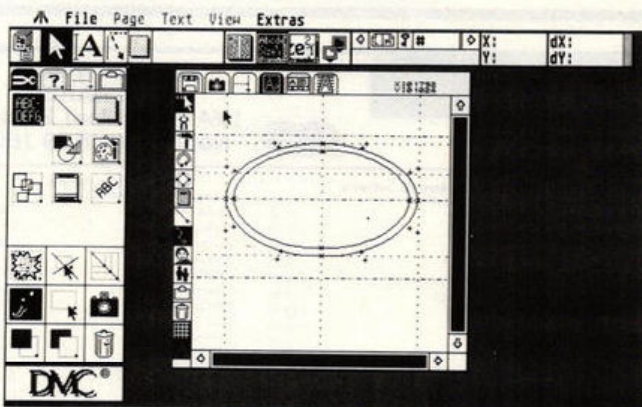
software, but commonly each point size is a single file. This makes for large font files and a limited choice of sizes. The alternative is that taken by – among others – laser printers using Adobe's Postscript. The outline of each character is specified by a series of connected straight lines and Bezier curves. This gives a flexible system, small file sizes with unlimited point sizes and special "styles" by simple mathematic manipulation. The *Font Editor*, therefore, has more in common with a small CAD package than the usual pixel tweakers we associate with font editing (such as Fontz).

To find out just what it could do I set about designing my own Dingbats. This is the printing term used for symbols such as stars, bullets, dots – anything that isn't actually a letter form.

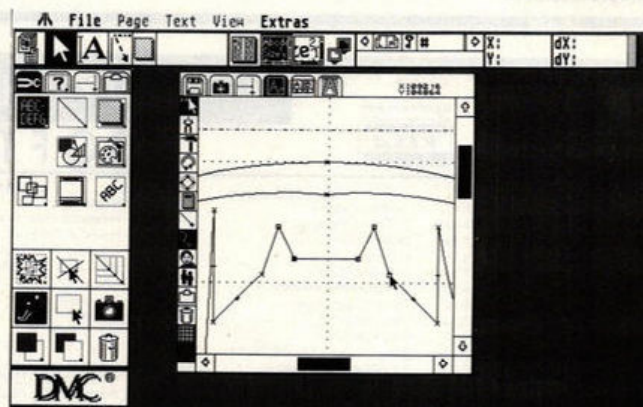
TANGENTIAL EXPERIENCE

For my Dingbat I chose the Batman logo. It has an elliptical surround so I placed a number of control points on the work area, specified a Bezier curve in between, and "smoothed" the outline. To my disbelief I had produced the desired shape – almost.

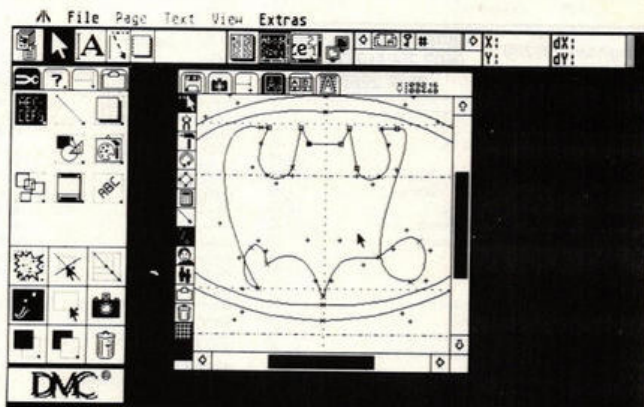
Each of the four curves had two "tangent" ➤



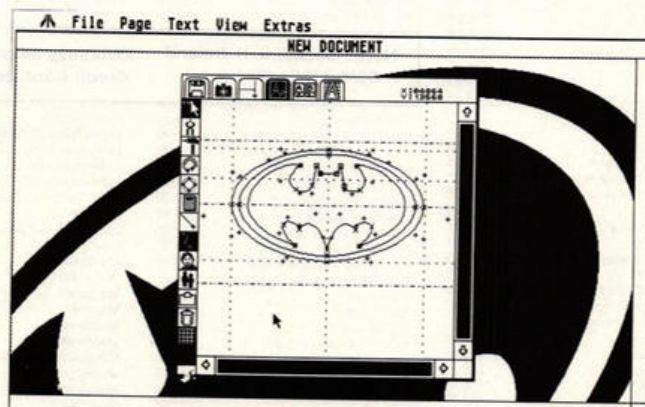
■ A sprinkling of control points, a Bezier curve between them, and a little "smoothing," produces the elliptical Bat logo outline



■ Designing the bat proved to be the most difficult part but the font editor coped brilliantly



■ As control points were defined, it alternated from straight to curved without terminating the sub-path



■ Once the correct sub-path was found it was just a matter of tidying up the design by moving the "tangent" points

markers – these dictate the course of the line between its start and end points. By activating the Grid Lock I was able to align all of these to maintain symmetry. After a small amount of copying and re-scaling I had a complete ring, with an inside and outside. The rings themselves are referred to as sub-paths. A tool enables you to set the direction in which the sub-path is perceived by the system. In my Bat logo the inner ring has been "reversed" so that when used in Calamus it appears as a ring and not a solid shape.

To finish the logo, one more sub-path had to be designed – the bat. This proved to be the

most difficult part. The bat outline is a combination of curved and straight sections. The editor coped brilliantly; as I defined the control points I could change from straight to curve without terminating the sub-path.

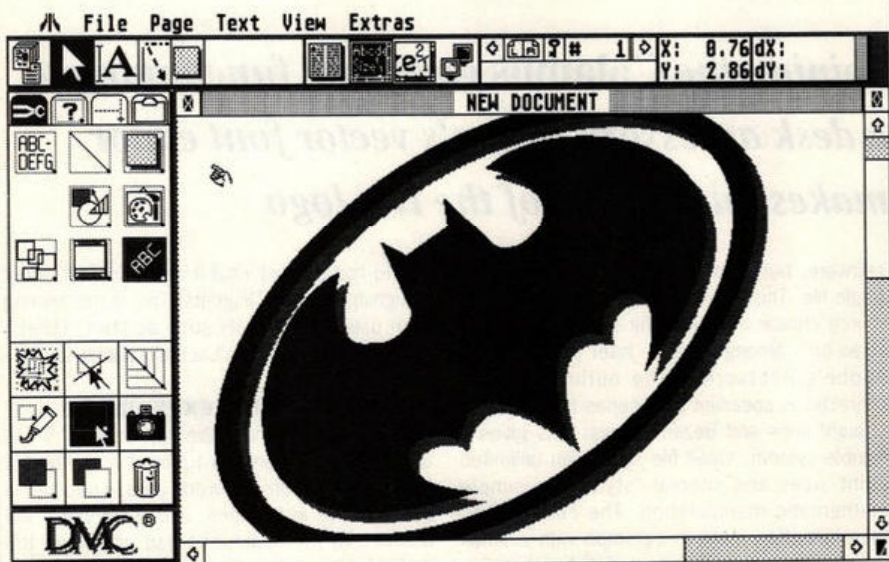
ACID TEST

I did make mistakes, but this wasn't traumatic. Even within an existing sub-path, control points can be removed or inserted to give additional lines or curves. Once I had the correct sub-path for the bat, I only needed to move the "tangent" points around until the design looked right. I did get confused figuring out which tangent point

was controlling which curve, but a little experimentation soon resolved the situation.

The acid test for the logo was to load it into Calamus and display it. It took only seconds to have a screen full of bat. To say I was impressed is an understatement. The bigger it got, the better it looked.

Font editor is incredible, and has numerous helpful features and options. My only criticism is that the actual area of the screen used for editing is small. But if you have the money even this can be fixed – a version is available for use on the Matrix A3 screen which gives a bigger edit screen for professional font editing. ■



■ The Bat logo in full flight as a Zapf Dingbat. To say the finished product is impressive is an understatement

FORMAT RATINGS

Features 85%
Imports Degas screens for tracing purposes.
Editing window is not large enough

Speed 80%
All operations performed rapidly

Ease of Use 92%
Functions as a desk accessory. Even good software doesn't make creating vectored fonts any easier

Results 95%
Makes GDOS look as bad as they really are

Format Value 100%
It's free! But pretty Calamus isn't

The Competition

No other software uses this font system.
Pagestream uses vector fonts for printing but the data structure is incompatible

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TAKE CONTROL WITH CYBER 3

This month we reach new heights of "motion control" with the aid of a helicopter gunship and a roller coaster ride

In the last two months we've looked at how to move objects through a three dimensional universe. In all the examples the camera remained static and the movement was performed by the objects. Now that we have objects moving in a sophisticated manner it's about time the camera got into the act as well.

ON CAMERA

Within Cyber Control there are three types of camera available: CAM1 always looks to 0,0,0 from whatever position it's located. CAM2 looks from a given point to another defined point.

CAM3 looks with a given angle from its current position.

The default camera is CAM1 which we've already used. Now I want to progress to the second camera, which is a great deal more interesting. This camera has such potential that I've tried to make these examples as dynamic as possible without making the code too involved.

My first idea was as follows: a helicopter flies towards the camera. The camera tracks it, looking down from above as the helicopter moves away. Sounds easy doesn't it? But first we need to build a helicopter.

If you've had any experience creating objects in CAD then you may have developed a standard procedure of making them by creating sections and "gluing" them together. More refined techniques are available but you'll need Cyber Sculpt to achieve these.

This is my personal approach to making objects, so don't be put off if you prefer other methods. To make the helicopter we first need a fuselage, which is by far the most intricate part of our construction.

Figure 1 shows a cross section which was created in the extrude part of Cyber Sculpt.

Figure 2 shows the extrusion of this outline into the third dimension. This object will become the body of our helicopter.

In successive stages, figures 3 and 4, you can see how by distorting this tube, pairs of coordinates at a time, you can produce an elaborate shape from primitive beginnings. Figure 3 shows what you see in sculpt while working. The view is from the front looking backwards. The confusion of lines is primarily caused by the fact that the CAD system creates all shapes from triangles. If you need more clarity I suggest you use the "hide" function to remove parts of the helicopter you're not interested in temporarily.

Once satisfied with the fuselage the next step is to make a rotor assembly. Again an outline is used, not extruded but spun to produce the desired form. The extrude tool also generated the rotor blades and tail rotor, which I then positioned using "drag."

The completed helicopter required some modification and "tweaking." In the construction process several facets had changed from being a four-sided polygon into two triangles. As a result extra facets and "edges" needed to be defined.

SLEDGEHAMMER

The exact nature of your flying vehicle is not important for this example. You may wish to produce a jet or a bi-plane. Whatever object you choose, this method of construction will suffice. If you decide on an object with a complex cross section, I recommend that you increase the number of sides on the original extrude to facilitate a more involved outline.

Once satisfied that my helicopter resembled a real one, it was time to animate it. This I could have accomplished in the cyber code, but >

HOW TO BUILD A HELICOPTER...

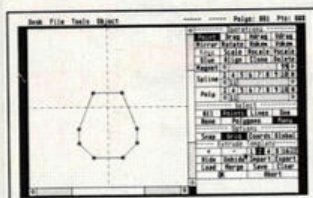


Fig 1 The cross section

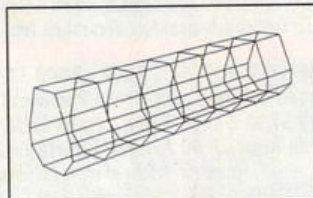


Fig 2 Into the third dimension

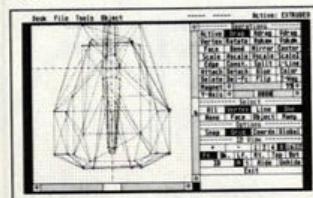


Fig 3 Distorting the tube...

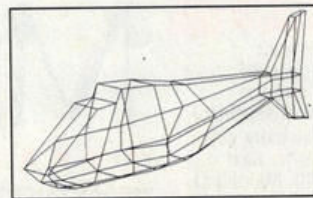


Fig 4 Produces the right shape

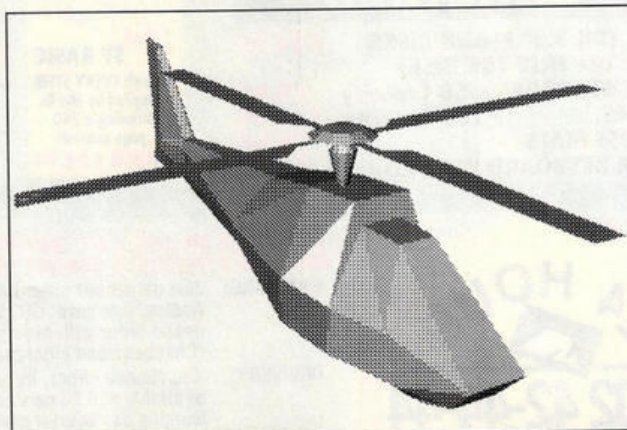


Fig 5 The final product in 3D is an accomplished piece of work



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■ The animation sequence in full flight as the camera tracks the moving helicopter - you can almost hear *Ride of the Valkyries* in the background

a more "sledgehammer" approach produced the desired effect with minimum effort.

I duplicated the helicopter gunship four times and then modified the rotor positions so that they became four successive frames. Keeping this animation outside of *Cyber Control* gave me more flexibility to alter the motion code for the whole object. I named the four copters GUN1, GUN2, GUN3 and GUN4.

Note that on the flying code I have loaded all the objects and saved all the animation files to (and from) E: drive. This is because I have a large memory machine and used a RAM drive to speed up the development and production of this animation. If you are only using a 1MByte machine you should change all these to A: or B:. Alternatively if you have twin drives I suggest that you place the object files on a disk in B: and write your Animation to A:.

In addition to the gunship I introduced a floor object which would enable me to determine if the helicopter was moving correctly: later on I replaced this with a mountain range.

COPTER WOBBLE.

Anyone who understands cyber code will be asking "what is c1? Don't show what cube?"

A story: when I first ran this code I sat back to admire my work only to find that instead of my helicopter flying smoothly past the camera, it jerked and jumped across the screen. After some experimentation I discovered the nature of the problem.

When *Cyber Control* moves an object (or group) to a predefined place it takes the object as a whole and works out a local centre for it. It then offsets the object based on that centre.

When my helicopter animates, its rotor blades move round and change the centre of the object, so over the four frames the helicopter moved back and forth. The solution was straightforward enough; place each gunship within a cube, which because of its size the rotors never travel beyond, and the centre stays still.

All that was left to do was "deselect" the cube, called c1, before each frame was drawn. Once this was done the helicopter flew perfectly.

FRACTAL JITTERS

Originally I intended to fly the helicopter over the fractal landscape generated by *Fractsurf* (Cover Disk 3). I even modified my code to print out the position of the helicopter at each frame. This I fed into *Fractsurf* which generated the correct background image to suit its movement.

The problems occurred when I tested ten frames, overlaying the helicopter in *Cyber Paint*. The fractal mountains moved beautifully, the only snag was the jitter; as the mountains rotated, the routines in fractal continually changed their opinion as to what colour a surface was on the land. This flicking from one colour to another destroyed the whole effect, and I was forced to conclude that this was not a practical proposition; not without getting the *Fractsurf* source code and re-writing it to re-plot without re-shading each time.

Shame, but sometimes great ideas don't always work. To complete my animation I produced a "fractal" landscape of my own in *Cyber Sculpt*. It was acceptable and gave much of the quality of a genuine fractal landscape.

GUNSHIP CODE

```
;GUNSHIP CODE - Mark Pickavance 1989
NEW
; Clear the system of all objects
WATCH ON
View SOLID:DRAFT
Zoom 100:Perspec 999
; lets define a spline
; only 2 points on the spline ( a straight line )
DEFPT 1,-800,3900,600
DEFPT 1,-700,-3900,300
; now the actual spline
DEFSPLINE 1,100,B
RSTART"E:GUNSHIP",M
; Start animation
For loop = 0 to 99 STEP 4
LOAD3D"E:GUN1.3d2"
; load up a copter
MOVETO s1x(loop),s1y(loop),s1z(loop)
; move it to its position of a flight path
MERGE3D"E:FLOOR.3d2"
; merge in a floor object
CAM2 0,0,800,s1x(loop),s1y(loop),s1z(loop),0
; point the camera at the copter
DESELECT c1
; don't show the cube.
SUPERVIEW
RECORD

LOAD3D"E:GUN2.3d2"
MOVETO
s1x(loop+1),s1y(loop+1),s1z(loop+1)
MERGE3D"E:FLOOR.3d2"
CAM2
0,0,800,s1x(loop+1),s1y(loop+1),s1z(loop+1),
0
DESELECT c1
SUPERVIEW
RECORD

LOAD3D"E:GUN3.3d2"
MOVETO
s1x(loop+2),s1y(loop+2),s1z(loop+2)
MERGE3D"E:FLOOR.3d2"
CAM2
0,0,800,s1x(loop+2),s1y(loop+2),s1z(loop+2),
0
DESELECT c1
SUPERVIEW
RECORD

LOAD3D"E:GUN4.3d2"
MOVETO
s1x(loop+3),s1y(loop+3),s1z(loop+3)
MERGE3D"E:FLOOR.3d2"
CAM2
0,0,800,s1x(loop+3),s1y(loop+3),s1z(loop+3),
0
DESELECT c1
SUPERVIEW
RECORD
NEXT loop
RSTOP
END
```



If you want to take this idea a step further you might consider making this animation loop by having the helicopter fly around in a circle. Or you could try producing four versions of this animation from different camera positions and combining them in a split screen effect with Cyber Paint.

In the helicopter animation, the camera remains at the same spot but tracks the target (copter). For my second example the object remains still and the camera flies around it. "Even simpler!" I hear you shout.

ROLLER COASTER

As with the helicopter animation the first process is constructing the model. For this I again called on Cyber Sculpt. The idea was to make a roller coaster and animate a ride around it.

The creation of the ride was time consuming but not difficult. I made a single plank and then duplicated, rotated, grouped and dragged it until I had something resembling a roller coaster ride. The model was then transferred to CAD and the job of writing the ride code could begin. For this I would need to use splines – the curved paths through 3D space.

I had considered making the splines and then using them to place all the planks. This was fine until confronted with the problem of rotating all the planks to the right angles on corners. I worked out a routine to do this but decided that the code was too long to print here. The manual method is adequate for our needs anyway.

WHICH SPLINE?

With the Model loaded into CAD I could then note down the "key" spline definitions. These points along the track would enable my camera to stay on course, and look in the right direction.

After I had input the maximum 20 points for one spline, I tested the animation. It didn't work; the spline type "S" would not make sharp enough corners. The result was spoilt by the camera spending much of the ride looking away from the roller coaster into space.

I changed to "B" type splines. This produced even more bizarre effects: at various locations around the ride the camera appeared to be flying under the track.

This left only "L" or linear splines. These moved the camera around correctly, though the ride seemed slightly jerky. I accepted this fault and animated a reasonable sequence.

As you can see the trick is to send the camera along the spline looking to a position six frames ahead, thus anticipating corners and drops. This makes the whole sequence much more realistic because the camera reacts very much as you or I would on a real ride – looking towards what is coming next.

The Cyber code here only takes you half way round the ride – the number of spline points in a single spline is not enough to get all the way round.

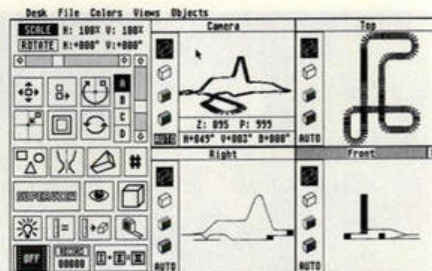
Your task is to create a further spline to get the rest of the way round. Remember that the last frame of this animation is six points from the end of the spline. This means you will have to work out a way of splicing the two splines neatly together. My suggestion is to DIMension an array and put all the spline points into it from both splines.

Only attempt this enhancement if you have a 2 or 4MByte ST – this is a big animation. If you only have a 1MByte machine then you could experiment with moving the "look ahead" factor up and down to see what effect it has.

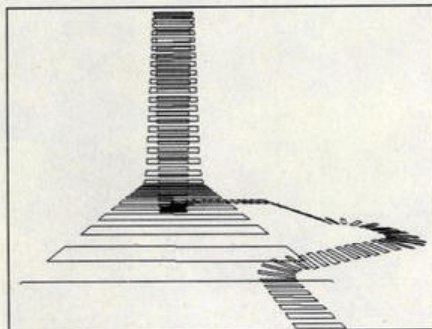
The roller coaster ride could be vastly improved by a more involved technique. This means defining linear splines for the straight sections and "B" splines for the corners. If you could perfect the "junction" of these splines you could produce a very professional sequence.

One added advantage of this method would be the speed control you would have over these short sections. It would be possible to simulate the rapid accelerations and decelerations which accompany a genuine roller coaster ride.

Now we've tackled a tracking camera on a mobile object and a flying camera on a static object, Cyber tutorial four will have moving objects, moving cameras and a good bout of motion sickness. See you next month.



■ To create the track in Cyber Sculpt make a single plank and duplicate it. Group, rotate and drag the single planks around the screen until you've recreated Coney Island



■ The stomach churning view from the camera as you approach the Big Dipper

ROLLER COASTER CODE

;ROLLERCOASTER CODE Version 1.0 - Mark Pickavance 1989

NEW

LOAD3D"ROLLER.3d2"

WATCH ON

View WIRE:DRAFT

Zoom 50:Perspec 999

; lets define a spline

; Lots of points on this spline

DEFPT 1,-1429,-1588,-105

DEFPT 1,-1429,317,-105

DEFPT 1,-1429,582,0

DEFPT 1,-1429,1746,1958

DEFPT 1,-1429,2064,1800

DEFPT 1,-1429,3017,-794

DEFPT 1,-1376,3811,-794

DEFPT 1,-1058,4076,-794

DEFPT 1,2064,4182,-1270

DEFPT 1,2382,4023,-1270

DEFPT 1,2646,3388,-1270

DEFPT 1,2382,2646,-1270

DEFPT 1,1746,2593,-1270

DEFPT 1,635,2593,-1641

DEFPT 1,158,2382,-1641

DEFPT 1,0,1958,-1641

DEFPT 1,0,582,-1641

; now the spline with 106 POINTS

; six more than the animation frames

DEFSPLINE 1,106,L

RSTART"E:ROLLER",M

; animation file

FOR loop = 0 to 99

CAM2

s1x(loop),s1y(loop),s1z(loop),s1x(loop+6),s1y

(loop+6),s1z(loop+6),0

SUPERVIEW

RECORD

NEXT loop

RSTOP

END

THE ST FORMAT CHALLENGE

If you've been following Mark Pickavance's series on animation, and you reckon you can do stuff that's as good or even better, you should certainly be entering the "ST Format Challenge." Besides being up for the £100 prize, your animations and objects could go on the ST Format Cover Disk – and remember, "It's the ones we trash that makes our Cover Disk so flash" (you're fired, again – ed).

There are two categories. In the first category, which we're calling "Category One," to avoid any possible confusion, we

want you to design a really stonking Cyber Control animation sequence. Don't send us the animation itself (if it's any good it won't fit on the disk). Instead send a disk with the object(s) on and the Cyber Control language in text file necessary to generate your animation. There are two sub-sets here: animations that will run in 1Mbyte, and ones that require up to 4Mbytes (hard disk only, obviously!).

The second category, which we'll probably end up referring to as "Category Two" to distinguish it

from "Category One," is for the best CAD (2.02) object under 50K.

And the prizes? Well, we shall be presenting several of the very best entries on our Cover Disk (and remember – oh belt up – ed). In addition, the best overall winner will receive £100's worth of software, as well as a standing ovation and our heartiest congratulations.

Send entries to: ST Format Challenge, 4 Queen St, Bath BA1 1EJ. We shan't state a closing date, but we wouldn't recommend you to delay for too long. Good luck!

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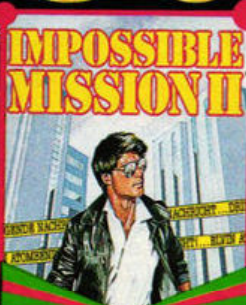
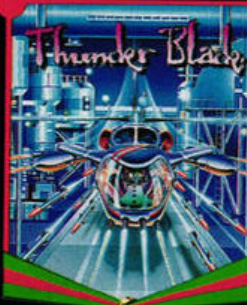
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By the peCUliar EMphasis OF MURRAY WALKER! That there *Hard Drivin'* is LIVin' up to its name, it's so RIDICULOUSLY good that – oh, read it for yourSELF in our vrooming great car games special ON page 58). (That's enough Murray Walker – ed)

And where there's a game this good there's bound to be a competition. We've got not one, not even four but five of these Ferrari F-40s to give away! Reckoned to be worth some £200,000 each, they're – erm...

Apparently James Hunt tells me they're not the real thing, but 1/18 scale radio controlled models, which are not quite so

good for impressing the neighbours, but at least your insurance is bearable.

What can these gorgeous machines do? Well, they can go forward at a hell of a lick, reverse, turn left and right: they can even stop, which comes in handy. There's a speed selector and automatic headlights. There's only one thing better than these Ferrari F-40s: and that's *Hard Drivin'*!

To win one of these beauties, all you have to do is to answer these three well-hard questions. So put your pedal to the metal, shift into top gear, check your mirror, stir the petrol with the stick and *burn some rubber*.

Answer the questions on a postcard or

the back of an envelope and send your entry off to: *Hard Drivin' Comp*, ST Format, Beauford Court, 30 Monmouth St, Bath, Avon BA1 2AP, before the end of January 1990. Step TO it!

RULES

- 1) Entries must be received at our brand new ever so expensive offices by the 31st January, 1990.
- 2) Clare from Domark and the Editor of *ST Format* are most definitely not allowed to enter this competition, neither is anyone employed by either Domark or Future, their relatives or their pets.
- 3) The Judge's decision is absolute, and no correspondence can be entered into.

Domark's conversion of the wonderful Atari coin-op is a marvellous piece of work, as its Format Gold award testifies. We thought we'd celebrate with a competition

QUESTIONS

- 1) The Ferrari F-40 has proved immensely popular, appearing in many driving titles. Which of the following is *not* based on the F-40?
 - a) *The Duel*;
 - b) *Turbo Outrun*;
 - c) *Crazy Cars II*;
 - d) *Trivial Pursuit* or
 - e) *Twin Turbo V8*.
- 2) Why does the Ferrari F-40 have that particular number attached to it? Is it because
 - a) that's its top speed in miles per hour;
 - b) that's how much it costs in pounds; or
 - c) because there were only 40 ever made?
- 3) Domark invariably do *what* to publicise their games?
 - a) ring up every ST owner in the country and tell them all about it;
 - b) don't tell anyone, 'cos they're really shy, bashful, reticent hermits or
 - c) pull off some completely "whacky" mind-boggling stunt that grabs everyone's attention?



Paul Kelly
Rubery
Birmingham
22.8.89

Dear Mr Atherton,

With the help of your Pro Punter software I have just landed two winning doubles and a treble across the first three races on the card of the first day at York. The fact that it predicted ILE DE CHYPRE to win the Juddmore International Stakes as a clear value bet in the face of the heavy betting on CACOETHES prompted me to risk a fiver on it. You can imagine how pleased I am that it came in at 16-1. Pro Punter actually correctly named the first, second and third in the actual finishing order and I do wish I'd gone for the Tricast!

I've been using the software since the Goodwood meeting in July and I can honestly say that I recovered its cost within that first week. I've used it most successfully in the higher-class races although it performs well in any race where there is enough exposed form, including the very 'iffy' Maidens on the Flat. In fact, the only time it really gets things confused seems to be in the low-rated handicaps. Overall, I have found your program to be an excellent aid to stitching my bookie and I am very pleased to have to write and thank you for Pro Punter. I bought the program initially to try to get my father to believe that computers are useful even for pensioners. As he has been a keen punter all his life I thought that a tipster program might give him some enjoyment in his retirement, unfortunately I now find that I can't get him away from the keyboard!

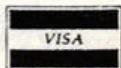
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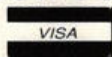
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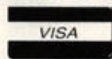
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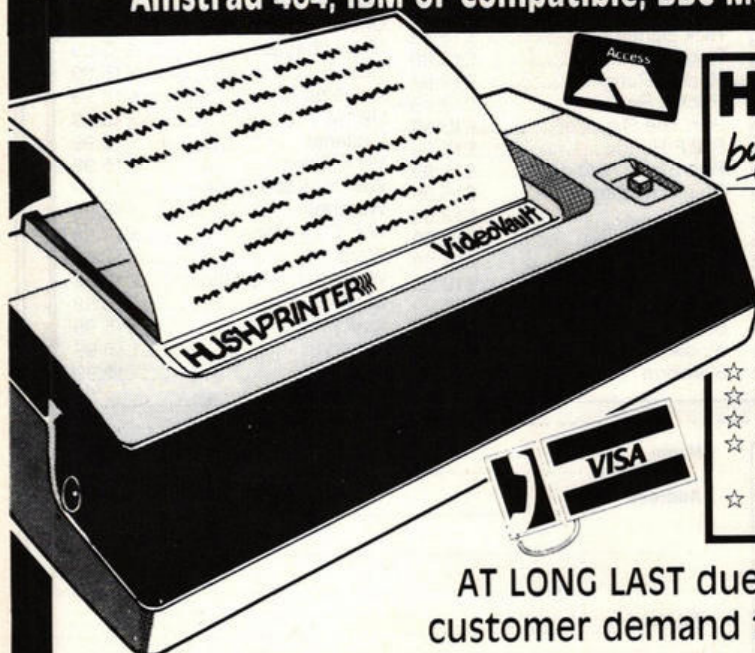


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ST FORMAT MUSIC

*Ladies and gentlemen,
please meet and greet
ST Format's new
Music Editor,*



Jon Bates.

*Uh one, uh two, uh
one two three four...*

Take it away Jon!



■ Chris and Cosey (top)
explaining the ST's role in
their brand of electronic
body music.
Lies Damned Lies (above)
using the ST as a stepping
stone to success



■ The ST performs miracles. Used in the recording of Queen's 16th album, it also kept the boys happy in the backroom with a few well chosen flight sims.

Welcome to an ST Music special, the first in an occasional series in which we concentrate on a particular aspect of MIDI And All That Jazz (And Rock, And Pop...).

In this issue you'll find the usual wide ranging reviews of apparently never-ending new ST music software – *Replay Professional*, and two musical score packages, *ProScore*, and *Music Publisher*.

And in addition we look at three of the many, many bands who've recognised the potential of the Atari's musical prowess: up-and-coming Scots band Lies Damned Lies, who've just signed to Virgin; veteran outsiders Chris and Cosey, who were part of odd outfit Throbbing Gristle and have worked with the Eurythmics, among others; and monsters of rock Queen, who used the ST in the recording of their sixteenth (count 'em) album, "The Miracle."

Before we get started let's just make quite clear three important points of musical coverage in *ST Format*. First of all, you don't have to have the skills of a musical or indeed a computing Einstein to use the ST as a musical tool: you don't have to read music or

understand the theory to get superb results. The software is really doing the hard work and you're supplying the ideas.

Point number two is aimed at those who listen to our beloved record charts and decide that it's all the fault of the technology that the music business is stagnating. Sure, the records are in the main bland, unexciting, repetitive and uninspired. And to be honest that is in one way the fault of the silicon chip, because musicians use and re-use the same old patterns and riffs from one song to the next, pulling in the drum file from one record and cementing it into the the next – repeating the same sound in "different" songs. But it would be a mistake to blame the technology, which makes a marvellous extension of talent, but a dreadful substitution for it.

Thirdly and finally, we won't be losing sight of the bottom line: cash. Few *ST Format* readers are awash with unlimited wealth, so while the exotic and state-of-the art stuff is going to get a look-in – if only because it offers clues to tomorrow's low-cost technology – we'll be concentrating very much on the cheap and cheerful.

That's enough preamble: on with the show! ➤

IT'S A KIND OF MAGIC

With all their hard-earned millions why should monsters of rock Queen bother with the £400 ST? Because it's the best, that's why!

Musicians have been quick to recognise the advantages and time savings that can be obtained through the use of computers, and the ST has very rapidly become the firm favourite. Proof exists in the extremely large library of professional music software for the ST, both in the commercial and public domain. In conjunction with software packages such as Steinberg's PRO-24 and Passport's Mastertracks, the Atari ST is widely used in professional recording studios throughout the world.

It is now quite commonplace to find prominent musicians using the ST in pre-production – preparing the music before going into the studio to record. This involves laying down tracks onto disk and only then taking them to the studio. The result will not be fit for release because the quality isn't good enough, but at least it gives a firm starting point, rather than trying to start work from scratch in a studio which may charge a three figure sum per hour.

To discover how a massive outfit such as Queen make use of what, in the setting of a million pound recording studio, can accurately be called the humble ST, I visited The Music Station in Fulham to talk to John Brough, an engineer who worked on Queen's latest album *The Miracle* – their sixteenth.

John first worked with Freddie and the boys on *It's a Kind of Magic*, and later on the Channel Four broadcast of the Wembley show from the last tour. On the Budapest gig (the largest ever behind the Iron Curtain), he helped to mix the soundtrack, as well as helping out on the live album *Live Magic*.

SMPTE REVEALED

The SMPTE mentioned in this interview refers to the Society of Motion Picture and Television Engineers. It's used in film and TV as the time code visible at the bottom of rough cuts of videos. When associated with MIDI and the ST it is concerned with audio synchronisation. When the group come to make the inevitable video, recordings made in the studio with the SMPTE code are transferred onto video, so that pictures match sound and Freddie isn't doing the lead vocals while Brian's on his big guitar break.

EVERYBODY'S DOING IT

During the several months it took to record the album the Atari ST played a supporting role. But everyone involved is insistent that this did not compromise Queen's claim to be an essentially live band.

Brian May comments: "We tried to capture in the studio the initial enthusiasm that we had from playing together again as a band. And I firmly believe we've retained that live feel. With the advantage of modern technology giving such improved quality, we've been able to utilise every scrap of first 'live takes,' repairing as we went along."

John gauges the extent to which STs have infiltrated studios: "Everyone is using them these days. Some bands are totally reliant upon it, whereas Queen use them for the things they need to get by with. I think it would be wrong, though, for Queen to start using computers in the same way as the Pet Shop Boys."

"It started off with Brian and John (Deacon) having the Atari 400. When the ST came out the band bought me one for Christmas, and that's how I got into it."

"I use an Atari ST myself along with Dave Richards (Queen's producer) and the band. Brian now has a Mega ST. He originally bought an ST for his little boy but liked it so much he went out and bought one for himself. I think Roger went out and bought one for his boy as well. Some days we'd have three or four STs in the studio, one with Mastertracks, one with the synth editors – and games on the other one."

Do the lads ever get time in their hectic "show-biz" lifestyle to play games? After all, the complete and utter king of rock'n'roll, Cliff Richard, is known to be an arcade shoot-em-up addict, even requiring machines backstage in his dressing room. "Well, John Deacon is a bit tasty on the old *Flight Simulator II*: he has maps and we often go on some pretty serious flights with him. He knows exactly what he's doing."

FRED, ROGER, JOHN, BRIAN – AND STACY?

The turning point for the ST in Queen's studios came when Passport's Mastertracks came to their attention: "We sat down and got to grips with it, and decided to use it on bits of the album."

The ST tends to be used more as a tool than a fifth member of the band, since they are essentially a live unit: it comes into its own for



STORY Steve Cogan

the more exotic parts of their songs which couldn't possibly be done by human hands. "The basic set up is just Roger with his drum kit – a few cymbals and a cow bell – and Brian with his VOX AC30s, which leaves John on bass and Fred on piano."

Queen's co-producer, Dave Richards, is from the old school who don't believe in technology for its own sake. Nonetheless he's kept in touch and uses Creator on his ST. Roger Taylor feels much the same: "If Queen recorded an album using 'house' techniques – many of which are very crude anyway – it would sound bloody ridiculous, and we've never compromised before..."

John Brough's own software choice is



"It started off with Brian May and John Deacon having the Atari 400. When the ST came out the band bought me one for Christmas, and that's how I got into it."

John Brough
Queen's sound
engineer



■ Queen's keyboards range from the old to the red-hot. They have two Jupiter 8s, a Yamaha DX5, two DX7s, and a couple of Emulator IIs with a CD-Rom and lots of samples.

Mastertracks. "It's so easy, you don't have to delve into it too deeply, and if you just want to do something really simply, you can do it very quickly. I thought about getting into *Notator*, but it looks a bit complicated and I haven't had time to swot up on it. I'm extremely interested in the portable ST, the *Stacy*."

ME, MY ST AND I

Of all the tracks on the album *The Miracle* makes the most use of the ST. "Fred might say, 'I've got an idea for a string thing,' and we just play it, put it in the sequencer and maybe generate strings and things and perhaps use an Emulator with string samples. So we just record the sequence into *Mastertracks* via MIDI on the

ST. We'd have a song map already laid out on *Mastertracks* and just edit it all about, so Fred would only need to play it once on one verse and we'd copy it onto the other verses. We use an SRC, which converts SMPTE to give 'clock out' to keep everything in sync [see box for an explanation], so it means that we can go back to any point on a track and replace it if we're not happy with the sound."

The lack of a MIDI THRU port on the ST doesn't affect John's work since he uses an SRC which, when attached to the ST's own MIDI port, gives many more IN, OUT and THRU ports.

Finally, how does John rate the ST as a serious "musician's friend"? While he doesn't

expect the ST to be able to do it all on its own: – "After all, what do you want for £400?" – he has a high opinion of its abilities. "It's very good, I like it a lot. It's very affordable, which I think is the reason why so many people can use them now. Before, we only really had the Mac or PCs, but the PCs weren't really user friendly, which is one of the ST's strong points. I think the situation is better now, because lots of companies are putting their software out on ST format. In many ways I actually prefer the ST to the Mac, just because there's so much stuff for it. I can have editors and all that – and also games, so if the band get bored I can just put the golf on. It keeps them quiet while I'm working!" ■

Chris Carter and Cosey Fanni Tutti, formerly in "legendary" and decidedly odd 70s British electronic band Throbbing Gristle, have been working together as a duo since 1981. Known and respected in the music industry, they achieved the penultimate accolade: the cover of *Time* magazine. Chris is a keen devotee of the ST (and a regular reader of *ST Format*, naturally), and now they receive the very highest tribute, the summit of their career: the *Format* interview (look, are you quite sure about this – ed?).

How did you get into the music business?

CC: I started off doing light shows for groups like Yes in the 60s and progressed onto a "multi-media" thing. I built a big modular synth and a friend and I toured English colleges – he'd handle the light show and I'd play the synth. I did a "multi-media" show in London and Cosey came along. We were introduced and I went to her studio, took my synths down and we started jamming.

CT: I used to do a lot of acoustic percussion and wanted to start getting amps so I asked Chris's advice and it all started from there.

CC: We started building our own PA system and it just went on and on. That was in '74, '75, then Throbbing Gristle developed and eventually split up. We started recording our own stuff in about '81. We went to Rough Trade records after TG and did a number of albums with them. But we weren't happy with the way Rough Trade were going. They were getting very guitar orientated and seemed to lose interest in us. So we started looking for a more lively company, one which would be behind us in what we did.

CC: Our biggest sales have always been in Europe, and we had heard good things about Play It Again Sam records, so we approached them and they said "Yes" almost straightaway. We've now done two albums for them and they've also taken all our back catalogue. They're on the ball and very much into the music we play. They have a lot of electronic bands on their label – a lot of English bands as well.

How did you come to use the Atari ST?

CC: We got the ST with the intention of using it for our yearly newsletter, but it ended up in the studio. The first thing we liked about it was the mono monitor, a really crisp, clear display – miles better than the Mac monitor. We got hold of some software for sequencing and it's been here ever since. In fact, now we have to get another ST for the office because we still haven't done the newsletter!

Before we got the ST we used the Roland MC500 sequencer and did a whole album with it. But once we got the ST and used *Mastertracks Pro*, it revolutionised the whole way we record because we could see everything on the screen at once.

Although the MC500 is a very fast and powerful machine it has a tiny restrictive display and a small .5MByte memory – equivalent to a 520ST. When we tried the ST it was a breath of fresh air. Now we use the MC500 for backing up what is on the ST and we download everything through MIDI.

We thought we had a virus for ages, because disks were getting corrupted, but we found out it was because I've got a high formatter for disks and I formatted a lot of our disks with 11 sectors. We used to store the disks

ON THE OUTSIDE, LOOKING IN

Chris and Cosey have been around the music industry for more than a decade without ever getting swallowed by it. They explain how the ST is the bedroom musician's friend



STORY Steve Cogan

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next to the monitor and when you switch the monitor on it sends out an electro-magnetic pulse that was corrupting the high-format disks. CT: It's not so bad if the track is finished, but when it's still in the working process it's terrible. CC: The other big problem is that we get a lot of power cuts, so we have to back-up regularly throughout the day. Otherwise if you've just finished a lot of great synth lines or drum patterns and you get a power cut, that's it.

Describe how a song progresses from a rough idea to a finished track.

CT: It starts various ways, sometimes with a vocal which gives us an idea what to put with it. Whatever the lyrical content is, pre-determines what kind of sound we want to go with it; whether it should be a moody, soft sound or whether it should be a rhythmic, dance orientated sound. If it doesn't start like that then Chris might be in the studio one day just messing around, getting a rhythm going and then it begins from there. But usually it's straight into the ST.

CC: Quite often it's a rhythm thing just to get us moving. We often play something on the Octopad, just try different drum sounds out, and that's recorded straight onto *Mastertracks Pro*. We usually copy the bars and then build on the rhythm with bass-lines and synth ideas. Since it has 64 tracks you can try out lots of things.

CT: We keep that as the guide all the way through and program in breaks.

CC: We shift things about, cut others out and move them further up or down. The biggest thing with any sequencer, whether it's a Roland MC500 or the ST running *Mastertracks Pro* is that it can get a bit robotic if you put everything in and quantise it all. It ends up being exactly on the beat. *Mastertracks Pro* has a feature where you can randomise everything to a percentage. I randomise everything and shuffle it about a bit, to give it a more human feel and take out the rigidity. It begins to sound a bit looser and fluid. We did this a lot on the new album; we added a lot of rhythm on the new songs and some of it was a bit too precise.

CT: We've got to be careful because you can see what's going on, so you tend to say, "Right, there's a gap let's put that in there." It's too calculated and precise. That's why a lot of bands that use that kind of system sound sterile. Although the rhythms are great there is something missing; it hasn't got the "guts," it's too mechanical.

SOUNDS SOMETHING SAMPLED

This sampling business can occasionally get out of hand. "Kraftwerk went to New Order's recording studio," Chris recalls, "because they liked a particular drum sound New Order had used, and which they wanted to use on their own new record. They dug out the sample and it actually turned out to be a Kraftwerk drum sound which had been modified - and they didn't realise it!"

CC: We often put effects on different instruments like fuzzboxes or over-record so things get "gritty" and they have a feeling to them. Or when we're putting drum patterns or keyboard parts in we only quantise to a certain degree. We leave a few mistakes in.

We don't take the ST or the MC500 on the road because they have disk drives and you can wipe the memory just by getting a glitch in the power supply. We tend not to take anything like that on the road even though we play live a lot.

CT: There's quite a lot live to play.

CC: Guitar, cornet, vocals, octopad, two sets of keyboards. Just the two of us play, so there's a lot to do. If I'm on stage and I look over to Cosey, I get distracted and forget the synth line on the sequencer and play a few bum notes! With MIDI it's a bit easier because we use a Roland D110 which has a whole drum kit and all the keyboard parts. We connect it to an SPX90 effects unit. I use the Casio CZ101 just to play the sounds, I don't use any internal sounds.

I'm interested to know how you came to do collaboration tracks with people such as the Eurythmics? Aren't they a bit, well, mainstream for you?

CC: They approached us originally.

CT: A friend of mine was doing work for the Eurythmics as a PR man. They had seen a gig we did as Throbbing Gristle.

CC: Yeah. We used to live nearby each other in North London and once we had been introduced they asked us to do a track with them.

We met in a studio in Camden Town just as they finished working on *Sweet Dreams*. We started the track with them and then *Sweet Dreams* hit the charts and of course they were here there and everywhere. When they came back off tour we finished the track together,

then went on tour ourselves. When we came back we did the mix for the B-side. We sent it to Dave and he played it at a big gig in America and the crowd loved it. We planned to do a video but because everything happened so fast for them it got out of hand.

CC: Then RCA got cold feet and didn't want it released. Since they were getting so big they said it would be bad for their image working with a cult underground band like us. It took us six months to persuade RCA to let us release it and there were lots of strings attached. It couldn't be promoted and had to be done as an obscure one off. It was released anyway, that was the main thing. We just didn't want it to be shelved.

CC: I love working with other people, the only thing about people working in their bedrooms is that sometimes you can get very insular and can't be objective about what you're doing.

When you're working on a track where do you get samples from?

CC: When we first got an S900 sampler we got a lot of disks with it. We've never really used any of them totally straight. As soon as we got them we were editing all of them. We have a professional walkman and we went out with that and did lots of recording. We swap samples with other people with S900s.

CT: People who have money to buy new equipment as it comes out tend to skip from one piece of equipment to another without ever getting to know it properly. We've been asked how we get the sounds we do with the equipment we have and we tell them that we spend a long time with it.

The whole argument when sampling came in about people stealing samples was because they were straight lift-offs, I don't agree with that. The reason your record becomes successful is because of the connection people have with the sound you've stolen, it's commercial familiarity that's already there that makes yours successful. Taking samples and mutating them to suit yourself is totally different.

I see you have a DAT recorder.

CC: We got that over a year ago. It was one of the first ones in the country. It's really good now that we've had it modified to record at CD frequency. It's actually an official import which is specifically for studios. We also have a portable DAT player which we sometimes use for recording our live gigs.

Since the price of music technology has come down - especially with the arrival of



■ Chris and Cosey use the ST as a tool for recording and as a creative and integral part of their song writing process

the ST - would you say almost anyone could write electronic music?

CC: You still have to have the ideas.

CT: Everyone seems to fall into that same trap, they think, "Oh, that's easy I could do that," but I haven't found anyone that can easily use this kind of equipment and come out with some really good sounds.

CC: There's a lot of dross about.

CT: There's a hell of a lot of, "I can do it, listen to this, it's easy, get a rhythm down, bass-line, keyboards and sampled vocals." It's not that simple.

CC: We've had this discussion with a friend from another group. We both said that we could make an album with a sampler, reverb unit and a tape recorder (8 track or something like that), and he's actually just brought out a CD with only a sampler and reverb unit and nothing else.

But you've got to have the ideas, he's got some brilliant ideas and some brilliant samples. It doesn't sound totally electronic, it has an "organic" feel to it, but it can be done with a minimum of equipment.

CT: In the past when equipment was hellishly expensive the people who had all the great ideas simply couldn't afford it. It's generally more accessible now to everybody.

So what would your advice be to readers of *ST Format* who are trying to get music released? Is it still possible to break through without selling your soul to a record company?

CC: I think the biggest problem now for musicians is getting it released. There's so

much music around because equipment is cheap and the quality of the equipment is so good that there are a lot of people sitting in their bedrooms doing brilliant stuff.

They haven't a chance in the world of getting it released because it's not quite commercial or it's not quite what people in record companies want. But you really don't have to go to a 24-track studio to produce something good. It's technically possible to do it in a number of much cheaper ways.

CT: New bands shouldn't think of being in the big league, falling into the trap of following the label's advice and going in a 24-track. The bands think "Great!" and wonder why there's no money at the end of the day because they have a £60,000 bill from the recording studio and maybe still nothing particularly impressive recorded.

CC: If the company says to go into a 24-track studio straightaway, say "no" and try and do it a much cheaper way yourself. If you can buy the gear, record it as cheaply - but as well - as you can. Supply the master tape directly to the record company, then all the royalties go straight to you and not to paying off all the studio bills! That's the way we do it.

We're signed to two companies, Network in America and Canada, and Play It Again Sam in Europe. We just give them finished master tapes. A lot of people do it our way. You couldn't say that they've exactly set up their own studios but they have set up an alternative recording system, one that's more beneficial to them.

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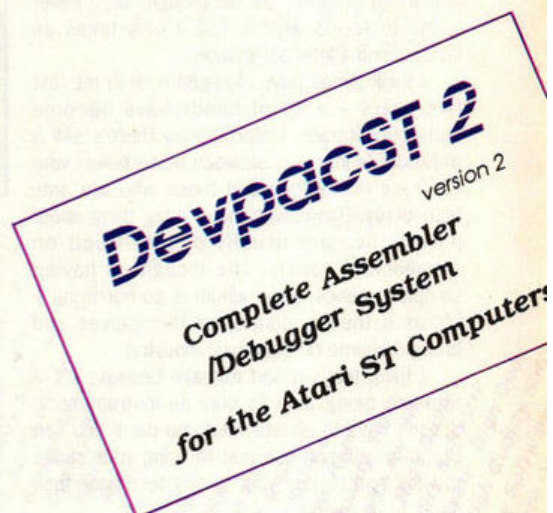
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You've been around for some time – and certainly longer than the ST. So at what point did you first come into contact with synthesisers, sequencers, samplers and MIDI?

We were a pretty successful band five years ago, headlining colleges and clubs, but we really didn't know a lot about technology. We came from that tradition of bands who play live; we just weren't interested in anything that couldn't be played on stage. In 1983 we'd just about heard of synthesizers but we'd never heard of sequencers or MIDI, so our grasp of technology was stone-age.

The usual scenario was that on the basis of a live gig a record company would invite us to record a demo. We'd go to the studio and play the way we did on stage, the way audiences seemed to enjoy it. Of course, we thought it sounded great, but it was always disappointing. We sounded so flat. If you take away the volume of a live gig, the music left behind actually sounds incredibly boring. None of the record companies were interested.

At that point we decided to get to grips with the technicalities involved. We made a conscious decision to learn how to make good recordings with the help of technology. We're not technicians or boffins – the first time we saw any of this stuff it scared us shitless. It looked so complicated we thought we'd never come to terms with it, but it only takes an interest and a little application.

I think things have changed a lot in the last five years – a lot of bands have become computer literate. Unfortunately there's still a great divide in music between those bands who embrace technology and those who are anti-technology. Bands who make a big thing about playing live are usually of the "I spit on sequencers" variety. The thought of having sampled sounds on an album is so horrifying – it's as if they've disgraced themselves and brought shame on the music industry!

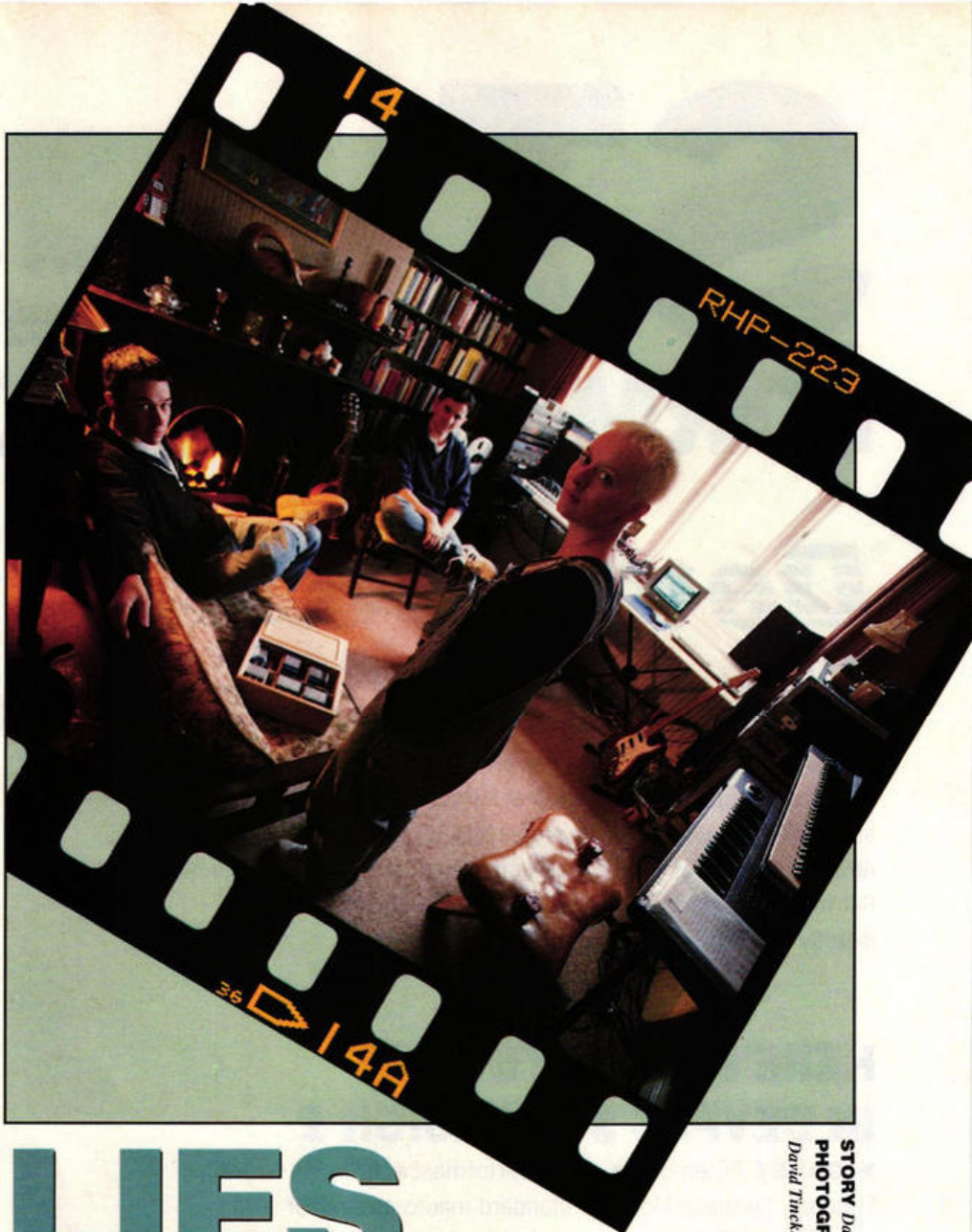
I think that's a sad mistake because it's a tool like being able to play an instrument. It doesn't have to dictate what you do. If you can program well and use that to bring your songs forward and perfect your writing technique then it has to be useful.

How long did it take for you to become "computer literate," and how has it change the way you work?

Well, it took us two years to get the studio together and be fully conversant with the way things worked. We were already using an incredibly archaic French sequencer when a friend came to help us with some drum programming. He was using an ST with Pro-24 and it just blew us away. So we got one! Then we followed the ST with a sampler, a keyboard, and the desk.

The first thing that changed was the format of the band. Previously we had a bass player and drummer, and now there's just the three of us. So right up until we get into the studio we don't have to rely on anyone else.

Once we became experienced using the hardware we could make a demo at home, with the ST, to such a high standard that on the basis of it we landed a major record deal. It's such a creative luxury to be able to do that at home. ➤



STORY David Collins
PHOTOGRAPHY
David Trickett

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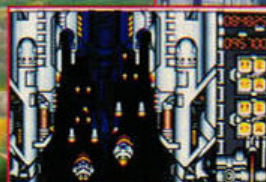
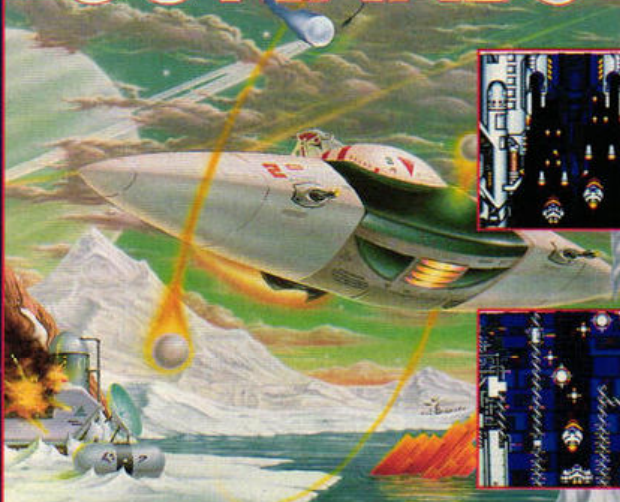
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■ Lies Damned Lies use the ST with Steinberg's Pro-24, Charlie Irvine (top) searches for that missing drum sample and adopts a ruminative pose before the desktop. Dot Reid (below) levels her gaze at the ST and tells how two years ago she used a French sequencer with foot pedals and bleeps that sounds suspiciously like a Singer sewing machine – well at least they're computer literate now!

We've become very self-contained, we no longer have to rely on studios or keep asking anyone's opinion. The ST gives us the liberty to do our own music our own way. We can fool around with rhythms and melodies for as long as we like. Trying things out in an unstressful environment is a great feeling. If you hire a studio for a day at enormous cost then your experimentation is kept to a minimum, you just can't afford to do it.

"Once we became experienced using the hardware, we could make a demo at home with the ST to such a high standard that on the basis of it we landed a major record deal."

Now we can listen to ourselves critically as well. We can check out how guitar or keyboards fit with vocals; if things mesh together; where the spaces are. When you play live you're not really listening in that way. You're concentrating on playing the next note correctly and all you can hear is what you're stood next to.

So at what stage do you take your songs to the studio?

At the writing stage it's only the three of us. The album we've just recorded was done like this; only the three of us involved until we actually got to the studio - then we collaborated with our producer and recorded with a bass player and drummer.

We start with a basic melody and lyric, the rough bones of a song. Then it's straight to the ST where we start to experiment with rhythms and get the tempo. We add some rough drums and percussion next and build the song around that infrastructure. Usually we'll spend two days on the ST before we do anything else, just to get the shape of a song. Then we'll go to the multitrack and put the guitar on.

The great thing about it is that right up until the last minute you can change your mind about the keyboard or drums. We don't put anything onto tape except vocals and guitar. When we're actually mixing, nothing that can be MIDI'd is on the multitrack - it's all running off the ST. We can even go to the studio with two or three versions of the same song, so nothing is finalised until the very last minute if we don't want it to be.

Recording demos like this meant we could communicate with our producer in the States before we got there by sending disks through the post and getting feedback on our progress. We used to go into the studio "cold" but when we got to the States to start recording this time we'd had the chance to plan it all in advance.

We took our demo disks with us, used them as the basis, and when everyone was happy, overplayed the bass and drum parts with session musicians. Only the keyboard parts remained the same so the final product wasn't heavily laden with programming. It's got a very human feel to it because ultimately it's people playing instruments, but behind that there's a whole level of sophistication that's hidden and which is all down to the ST and being able to

pre-programme our work.

Who are you working with currently?

Our producer is Stewart Levine, he's produced albums for Simply Red, Boy George, and Curiosity Killed the Cat, and has always used Macintoshes. He had no experience with Pro-24 or the ST. In the end he was quite sold on it - especially seeing how cheap it is -

- so the ST did actually save you lots of money?

Yeah, and using the ST for pre-production work saved us a lot of time. The whole album was

"The new album has a very human feel - but behind that there's a whole level of sophistication that's hidden and which is all down to the ST and being able to pre-programme our work"

recorded in only 25 days! We'd pre-programmed everything and it also meant we had options available if we decided to make changes. All the hard creative work had been done at home on the ST.

Finally, what about live. Do you use the STs, or would you consider using them?

We could go on the road with the ST but I don't think we will. It would definitely work but the drag would be switching between songs; there would be a couple of minutes break between them. Even when you have everything on the hard disk there's a memory problem of how much information you can store.

After going into the studio and replacing the programming with a live sound, we're sort of back full circle. If we played live we'd want to change songs, make them longer, or different, and to do that we'd need to re-program everything. It just wouldn't be flexible.

There's a limit to using the machine. As a process we take the technology as far as we want it to go, but there's no need to be dictated by it - there has to be a time to leave it behind and I think that's in front of a live audience. ■

THOSE LIES DAMNED LIES IN FULL

LDL are Steve Butler (vocals), Charlie Irvine (guitars) and Dot Reid (keyboards). Born and brought up in Scotland; currently living in Bristol, Lies Damned Lies have a recording contract with Siren Records and a publishing deal with Virgin. Their first album was recorded in the USA in August and the new single, "Say you won't forget me," is released a week before Christmas.

And their music? Well, it's the kind of Scot pop you'll know if you listen to a cross-section of Lloyd Cole, Simple Minds, Deacon Blue and so on, though rather better and less derivative than that suggests. They refuse to offer a description themselves, and insist that you need to "listen to the unique sound that is Lies Damned Lies for yourself."

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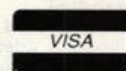
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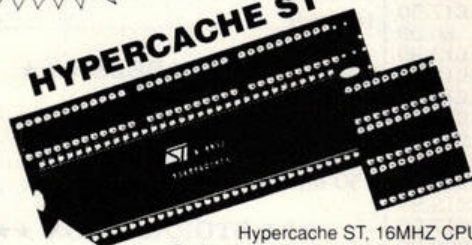
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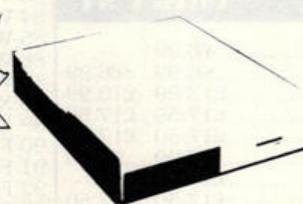
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Excluding minor software updates, *Replay Professional* is the third revision of 2-Bit's hugely successful sound sampling tool. While many companies have promised sampling sensations, only 2-Bit has delivered, and they've gone from strength to strength.

Although the *Replay* hardware that lets you grab "everyday" sounds looks like earlier incarnations, it has a definite edge over its predecessors and indeed any other package currently available. Sampling (recording) is still only possible in 8-bits – though the output (play-back) can be in 12-bits.

The *Replay* hardware plugs into the ST's cartridge port and can remain there even when other commercial software is run. A couple of phono sockets, one for input and the other for output, are the box's only distinguishing features. The input socket accepts amplified sound signals from your tape recorder, vinyl player or CD player. The output socket is used for replaying digitised sound through an amplifier and speakers. Digitised sound played through the cartridge is of far superior quality than digitised sound played through the ST's monitor speaker.

Packed onto three disks is the sampling editor (*Replay Professional*), software drum machine (*Drumbeat Professional*), keyboard emulator (*MIDIPlay Professional*) and countless digitised demos.

As with previous versions, the *Replay* software samples at the preset frequencies of 5.5, 8, 11, 16, 22, 32, 44 and 48KHz. All digitised sound can be replayed back through the monitor or cartridge except for the two highest sample rates, 44kHz and 48kHz, which can only be played back through the cartridge. It would be nice to have frequencies alterable in single kHz steps, but unfortunately the ST's internal timing sources are not that accurate.

You've got around 230K to play with in a 520 (which equates to around 17 seconds of digitised data at a frequency of 11kHz) and 750K in a 1040.

KEEP THOSE FREQUENCIES CLEAR

A large window at the top of the screen displays the sample in memory. All sample editing operations occur between the two main cursors in the sample window. A third cursor, the ghost cursor, acts simply as a position marker. For instance, when a sample is played back and stopped before reaching the end, the ghost cursor will mark the position at which the sample was stopped.

Features that can be performed on sample data includes fading in and out, zooming in to byte level, looping, increasing or decreasing vol-

ume, reversing, special effects (echo and reverb, for example), filtering, compression and various block manipulations.

Some of the most incredible facilities are to be found in the block operations. Along with overlaying (or merging) two samples, adding a gap anywhere in a sample and filling an area with whatever is in the buffer, it's possible to search for a specific block of data and loop the sample in memory using a very sophisticated editor.

The sample editor is just part of the fun. Once you've done all your sampling you can turn your ST into a drum machine with *Drumbeat*. Samples created in the editor can be loaded into any of *Drumbeat*'s 15 drum positions to make up a kit. Any four of the possible 15 samples can be played simultaneously through the cartridge – but, sadly, not the ST's monitor.

BEAT THAT DRUM

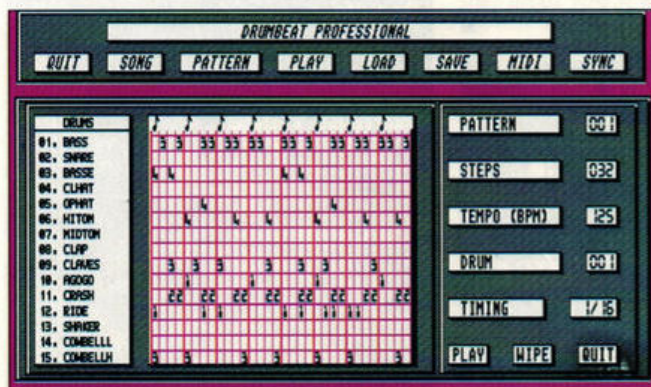
Drumbeat is similar to many commercial drum machines in that it uses a pattern and song structure to create sequences. Up to 50 patterns and 10 songs, each having up to 100 entries, can be held in memory. MIDI options allow you to externally synchronize the drum machine tempo or allow *Drumbeat* to be the system master clock. MIDI instructions can also be used to trigger external devices whenever a sample is played.

You won't believe the sounds coming from your ST when *Drumbeat* is in action. The quality is very close to professional drum machines costing several hundred pounds.

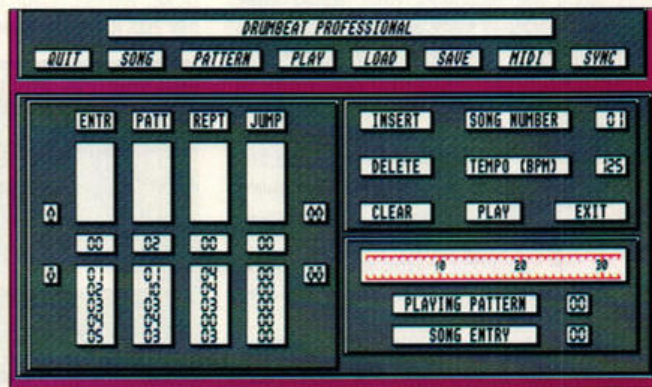
If you're into MIDI then all sorts of things are possible using *MIDIPlay*. The last of the major software programs included in the *Replay* package is a powerful keyboard emulation program, which takes samples recorded and edited using the *Replay* editing software, for replaying via a MIDI keyboard or sequencer. The MIDI keyboard need not be sophisticated as *MIDIPlay* does all the hard work.

MIDIPlay can cope with up to 128 different samples in RAM at once (memory permitting). This means every note in the MIDI key range can have a single sample assigned to it.

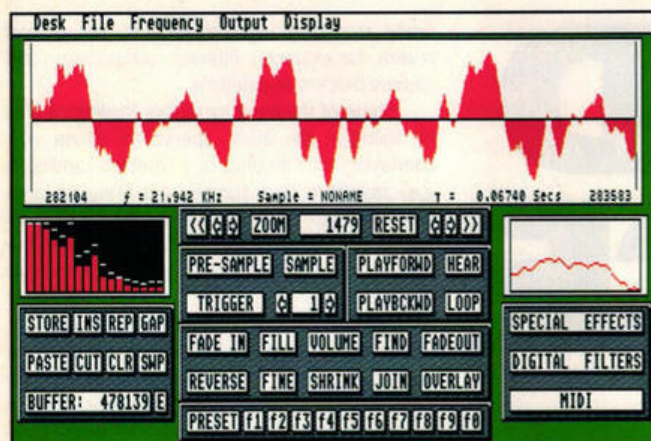
When a sample is loaded into *MIDIPlay* and assigned to a note, or range of notes on the keyboard, it is referred to as a voice. Up to four voices can be played simultaneously – the sound, again, being output through the *Replay* cartridge only. The four voices can be any combination of four notes of the same voice or one note of each of four different voices.



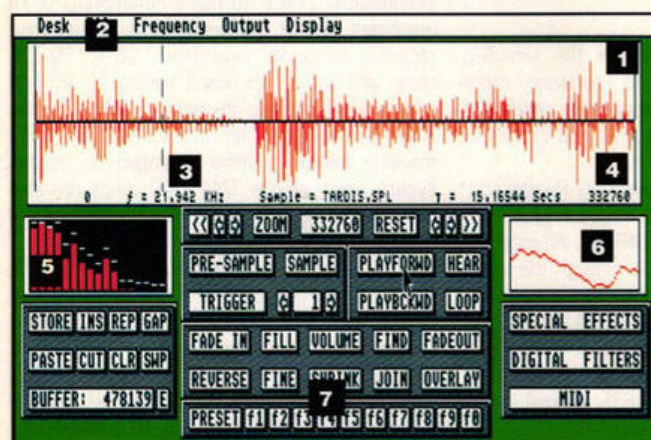
■ Sample replay tempo in *Drumbeat* is measured in beats per minute (BPM), and is adjustable from 40 to 239 BPM



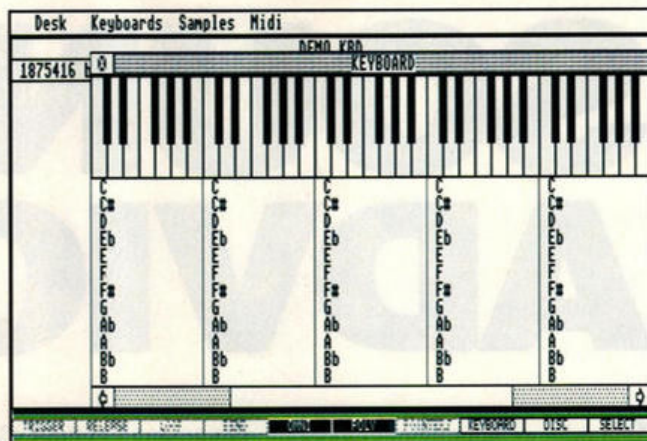
■ Up to 50 patterns can be constructed with *Drumbeat*. Each pattern can have up to 32 steps



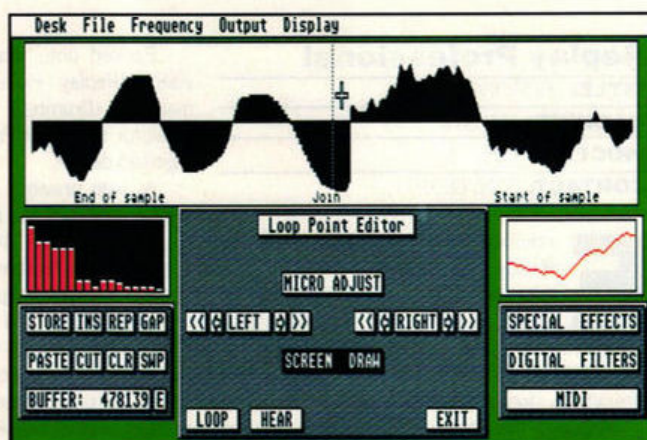
■ The MFP is used to generate the sampling and replaying interrupts for Replay. Consequently the replaying and sampling rates are identical; nothing the operating system does can interfere with these timings. Sampling and replaying frequencies could have been implemented that changed in single kHz steps – the trade off would have been accuracy



■ (1) Sample window showing digitised data in memory; (2) Sampling/replaying frequency selected here; (3) Ghost cursor; (4) Main editing cursor; (5) Frequency level graph; (6) Sound signal strength graph; (7) 10 sound samples can be stored and lengths and positions assigned to function keys



■ MIDIplay allows you to play samples from a MIDI keyboard. 128 samples can be loaded into memory and assigned to different parts or channels of your MIDI keyboard. Each sample can have adjustable pitch, volume and loop points. Every sample can be looped, bent, released or retriggered



■ The point at which a sample will loop can be determined from within the loop point editor. It's even possible to draw the shape of the sound wave where the sample loops. It's features like this that make composing songs on *Replay Professional* that much more accessible

THE 4-BIT DIFFERENCE

Without going into too much detail, an 8-bit sample is simply a number or measurement. Naturally, the larger the number of measurable levels the more accurate the sample. A ruler which measures in millimetres is obviously more accurate than one calibrated only in centimetres. Across a metre, the centimetre ruler would only offer 100 measurable levels while the millimetre ruler would offer 1000. A sample is more accurate if the steps between each measurement are small and there are a lot of them over a given area of sound wave.

An 8-bit sample has 256 measurable levels because only numbers between 0 and 255 can be represented by an 8-bit binary number. A 12-bit sample, however, has 4096 measurable levels.

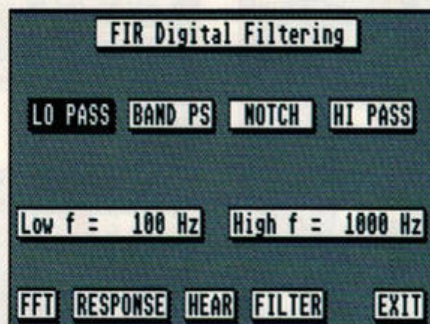
In real terms that means a 12-bit sample is an astonishing 16 times more accurate than an 8-bit sample.

Only by listening to 8-bit and 12-bit samples can you fully appreciate the difference in sample quality between the two.

FINAL COUNTDOWN

Each voice may have certain attributes assigned to it: pitch bend and looping, for instance. Any combination of attributes can be assigned to the voices, and altering attributes and assigning voices is as simple as clicking the mouse button.

Considering what you get for your money, *Replay Professional* is exceptional value. Sampling hardware, sample editor, drum machine and MIDI-controlled sample player in one – extraordinary! *Replay* really is a stunning piece of kit; without doubt the best 8-bit sound sampler has just got better.



■ FIR filtering gives complete control of frequencies

FORMAT RATINGS

Features 94%
Sample editor, drum machine software and MIDI instrument controller in one

Speed 85%
Sampling/replaying occurs between 5.5 and 48kHz. Output can be 8-bit or 12-bit resolution

Ease of Use 89%
Mostly point and click. Good manual. Plenty of examples on disk

Results 91%
Superb. Especially when four channel sequences are played from *Drumbeat*. Pity input resolution doesn't match output resolution

Format Value 90%
Considering everything that's in the package it's unbeatable. Shame no 12-bit samples are included

The Competition

Plenty: *Pro Sampler Studio* £59.99 from Datal (0782 744707); *Pro Sound Designer Gold* £49 from Power Computing (0234 273000); *Master-sound* £32.95 from Kempston (0234 841224); *IS Digitiser* £69.95 from Data Direct (0903 700804). But the quality of this hardware is unbeatable

THE COMPUTER GAMES ARE HERE!



THE EDGE

GARFIELD 1978 United Features Syndicate Inc

PEANUTS Characters: (c) 1958, 1965 United Feature Syndicate Inc.

The Edge, 36/38 Southampton Street, London WC2, England. Tel: 01-831 1801

Proscore

MACHINE: 1040, HIGH RES MONITOR

PRICE: £229

BY: COMUS/SOUNDBITS

CONTACT: 021 733 2063

Et bien, c'est l'approche de 1992. And so we have yet another French program on the test bench from the producers of *Track 24*, *Studio 24* and *Big Band*, all of which have made fairly extensive inroads into the lower budget end of MIDI sequencing.

ProScore is a sequencing and scoring package. Like all the programs from this company it is easy to come to terms with, and although it has a few idiosyncratic points it is nevertheless a competent package.

The sequencer allows you to record your music on up to 27 tracks. The basic forms of manipulation are available: you can cut, paste and insert blocks of music and any track can be copied to or merged with any other track, either in total or part.

I should explain that the program records on 27 tracks for pitched instruments (that is keyboards, bass, violins and so on). It then has four tracks dedicated to percussion and drums. The final track is a chord track which annotates and records chords – useful for knocking up chord charts. This makes the grand total of 32 tracks available for you to use, any one of which can be transposed on playback only without altering the actual data.

GOOD ON THE TRACKS

Recording itself is carried out either in real time – you play the instrument and the program stores the data as you do it – or in step time. The latter option is really for fixing up short sections, but is well thought through since you can do this from the QWERTY keyboard as well as the instrument.

The main sequencing screen is basic but functional. It lists all the tracks – and that's it, because there's no arrange option. The tracks can be named but for further information on MIDI channel a separate window has to be called up. In the bottom left-hand corner are the familiar cassette type icons for recording, playing back and fast wind.

Recording can be started and finished at any predetermined bar and a counter in the lower right hand corner runs out in bars and parts of bar elapsed. There is a preset two bar count-in.

All functions are menu driven using GEM, and include metronome options and MIDI Thru as well as access to all the other functions and the editing screen. Naturally you can load in files from the other Comus sequencers, but sensibly it also loads up MIDI file format (both old and new versions) which makes it a lot more compatible – most sequencers now contain this option. I am pleased to report that you can format disks without having to reboot.

Macro editing is via a window called BLOCKS. This is the equivalent of the cut and paste in a word processor and asks you to define which bar numbers you wish moved to where. You can also copy up to 99 times, insert, erase, transpose and generally move sections from track to track.

All Block functions are carried out in whole



So you can't write a note of music? Two packages might save you the bother of learning

bars – you can't define parts of a bar to be spliced or sliced.

FINDING BARS

The program also handles things like program and control changes – the changing of the synth sounds and other functions like sustain and volume via MIDI. You only seem able to insert these at the beginning of a track. The dynamic velocity can be altered too by up to 255% up or down.

Most action takes place on the Score page. The tunes are automatically scored out onto staves. Here they can be edited either by quantizing – rounding up the notes to the nearest preset value – or by inserting individual notes.

As far as accuracy goes, the programmers seem to have thought of pretty well every option, and I failed miserably to get it to display things incorrectly. There is a wide choice of clefs and the program updates the notes very rapidly when the clef is changed from, say, treble to bass.

Any staff can be dragged about to get its position correct, and key signatures are dialled up and put in. These conform to the normal practice of musical grammar when the keys are changed by changing the status of various sharps and flats within the music.

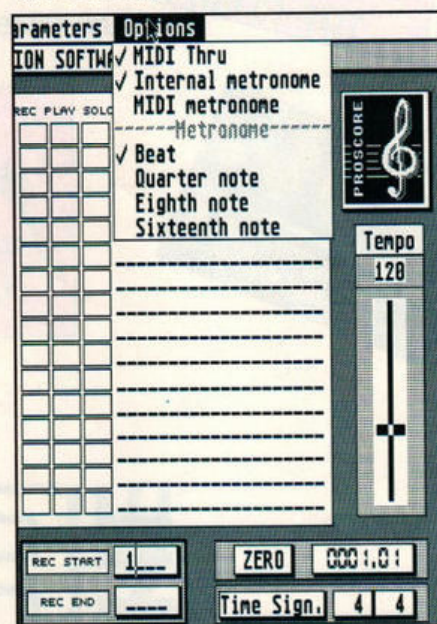
If editing by inserting individual notes, it automatically re-adjusts the note values in the rest of the bar, which is a labour saving routine. On inserting any note, a location window gives you an extremely accurate position within the bar – the resolution, techno buffs, is 96 pulses per quarter note.

Finding bars is very easy: either drag the slider at the base of the screen, key in the bar number or jump through a bar at a time. To determine which tracks are to be displayed and edited you flick to a Parameter page and choose the track and its corresponding display options.

ProScore can cope with up to 10 tracks at once. The program either beams the notes or leave them individual depending on what you require. Usually in music the tails of some note values such as quavers are joined together when they occur concurrently.

LYRICAL GIFT

The way they are grouped is determined by the number of beats in the bar and to have to do this manually is a real pain. The new version 1.1 has some very smart routines to cope with syn-copation display and also groups empty bars together with a repeat sign and number of repeats should you wish.



■ ProScore's simple but effective sequencing section. Like everything in this well-thought out package it's well done and as easy to understand as it's possible for a complex piece of software to be

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■ ProScore's music display – serious competition for music scoring with a commendably wide range of time-saving features

The direction that the stems could take was cunningly worked so that you could have up to four "voices," to quote the manual, on two staves. This means that, should you have a desire to print up a hymn book or Bach fugue with all the stems pointing the correct way for each separate voice, you can get cracking straightaway.

But seriously, folks, this is a well thought through automated help function which together with the wide choice of clefs make for a good scoring package.

ProScore also has a palette of the usual expression marks. These are inserted into the score by hand, as it were. Niceties here include the additional ability to insert text and lyrics and rehearsal marks. The lyrics naturally line up to the notes they are to be sung to, and there is a choice of typefaces and point size.

I mentioned that four of the tracks are dedicated to drums. From the main screen the drum page drops down and lets you assign each drum a name, a note number, the position in the staff that you wish it to occupy and also the correct notation symbol.

In short you can use four separate drum machines with their own individual note mapping. This is about the easiest way of coping with percussion scoring I have seen: other less straightforward notation packages seem to invoke long laborious keyboard mapping techniques.

The final track is for chords. This is a feature peculiar to the Comus suite of programs and comes from the concept of their *Big Band* program, which works out the harmonies you put on the chord track and applies them to other tracks as a form of auto harmonize – very much in the manner of many single keyboards, in fact.

MUSIC TO YOUR EYES

Chords can be handled either on a separate track or inserted above the score as it stands. This is done with a separate chord defining window that seems a little over complicated.

By the time you run through the many options to get the chord name absolutely correct (Gm11 aug 5, anyone?) you might as well have typed it in as text. ProScore works with pretty well any printer, including 48 pin dot matrix and laser.

You can configure your own printer driver (ho ho, hours of fun), and it comes with a set of most usual printer drivers. It does not, however, cover reverse pin printers.

You can print out either a master score or individual parts and define such things as starting and ending bars, page headers, note spacing, bar number display, instrument names. ProScore, as the name indicates, is much more a scoring than a sequencing program, and although the sequencing is adequate it plays a supporting role to the scoring side of things.

Since it loads up MIDI files it is quite a reasonable addition to any sequencing package that does not have the option to update to its

own scoring program.

The fact that sequencing is included, even if it is pretty basic, allows it to stand on its own. I make no apologies for diving into musical terminology above because to use this, or any other Comus program, requires you to read music. There is no other form of editing available – no data stream or graphic editing.

Music Publisher

MACHINE: 1040, HI RES MONITOR

PRICE: 383.50

BY: TAKE CONTROL

CONTACT: 021 706 6085

Cheap it ain't. So what do you get for over £300? Essentially this is a DTP-style music scoring program designed to produce high quality music scores. It is written in C (er, the language, that is: not the key) and uses GEM graphics.

The first thing to notice is that it's not a MIDI program and so all those notes have to be put in one by one. This on its own unfortunately puts the program straight into the minority interest group.

I can only imagine that music publishers, clued-up music societies, and people with time on their hands would consider such a program. Since professional music publishing programs cost much more than £300, let's not be too derisory and consider the program on its merits.

LOADS OF PROBLEMS

Open the neat documentation folder and read the installation instructions. It runs with several printers – FX80, 24 pin, and Atari Laser, none of them being mine. Can't make up my own driver and it would seem that the program will go away and sulk unless I run an "install" program every time I use it. Ho hum.

Actually it does run without the install routine, but now it asks me to insert disk B. Fumble, fumble.

Nothing is defined as disk B, so I guess it must be the printer disk. OK. We are up and running and yes, the program has many DTP-type facilities. Apart from a page template being in a different folder to that indicated in the documentation we are ready to go.

Boxes to the left of the screen have all the musical icons I need, arranged subtly in the order I don't need them. Let's write a piece in A major. That's three sharps on every staff. I can have the extreme pleasure of putting each sharp in individually on every staff since there is no key signature routine to put them in automatically.

WHAT A DRAG

The music typefaces are clear and definitely first class. Problems, however, start immediately. I find that it's easy to overprint things like key signatures and clefs – there should be a replace routine in the program at this point because it gets very messy.

It produces complex and sometimes invalid time signatures – although the complexities of really irregular timings are not possible.

Some of the outline's better boxes do not respond to the keyboard return button. Sensibly ➤

FORMAT RATINGS

Features	84%
Covers most notation facilities, with good options for setting up pages and headers. The auto scoring options are well done	
Speed	87%
Fast!	
Ease of Use	68%
Well documented, but what's what isn't immediately clear on screen	
Results	83%
Printouts are good	
Format Value	80%
Great for most applications – but useless if you can't read music	

The Competition

There's nothing else at this price that can offer these facilities: serious rival to C-Lab's Notator on the scoring front

WE'RE FIT, WE'RE ALIVE, BUT...

LOST PATROL



WE'RE NOT BACK HOME

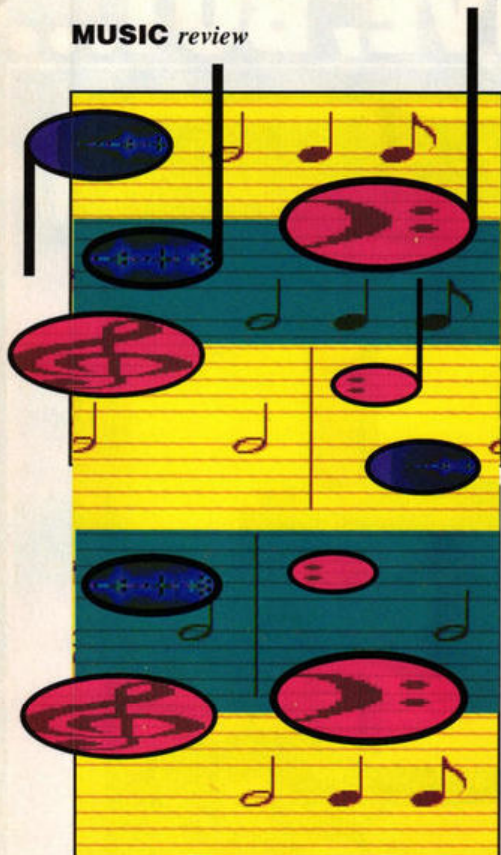


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ATARI ST



the type of note you are about to insert is written above the page. That is unless you decide to have a dotted note, which it fails to recognise.

Bar lines mean a change of part box – which is pretty short-sighted, since one is constantly needing to put in bar lines and it slows the process. It is a similar story with erasing notes – it fails to erase dots.

Removing unwanted notes means another yet dash to the part box (here we go again!) to fine the eraser icon. Why not have it on say the right hand mouse button or via an [ALT] and mouse function?

It would be helpful to have a display somewhere that told you what note you're entering – most notation packages do. Dragging notes into position causes them sometimes to copy without any reason, while moving defined blocks shifts the notes perfectly

■ **Music Publisher** is certainly a powerful music DTP package...

but totally ignores the bar lines. Ho hum. Several options either don't relate to the manual at all or fail to work, and the manual refers to "figure 5" when none of the illustrations is named or numbered.

Some facilities are very good. The screen redraw is very fast, and in true DTP style it puts up diminished size pages. Grouping is semi-automatic, but with a sensible "override" in case of special rhythms, performed in blocks rather than globally.

DISMAL DISAPPOINTMENT

I dislike the help in lining up bar lines and bar spacing. A set of dotted vertical lines appear and rather like pinning the tail to the donkey, you have the fun of moving the notes to hit these lines. Aargh!

Phrase marks and expression lines are a disaster. Lines shoot up and down every which

way except where they're supposed to go. Finally it crashes while trying to sort out this problem. It was at this point I gave up, and decided to pen the following memo...

Dear Total Control: I think your program has great possibilities – the typefaces and music display are very good indeed. But you should study the competition before you sell things to an unsuspecting public.

You should also spend time in sending test versions out, and realise that some of the routines are very user unfriendly and guaranteed to generate frustration. Finally, why won't it store in a picture file like Degas? It would mean that you could load sections or all of it into a DTP and fill text around it.

■ **Next month in ST Format Music** we take a long, critical look at universal editors, and present a jargon-killing explanation of all those horrible technical terms

■ **The end result** – when you get there – is very attractive. But it's just crying out for an update that will include MIDI compatibility

FORMAT RATINGS

Features 47%

Clear, good music display with all the bells and whistles. Overall architecture leaves much to be desired

Speed 60%

Screen redraw is fast

Ease of Use 27%

Dreadful: lack of MIDI compatibility is an enormous drawback

Results 75%

Good when you eventually get there

Format Value 46%

Wait for an update. The potential is there and we understand a MIDI version is on the cards. Only serious users of midnight oil need apply before then

The Competition

See ProScore review above

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DESKTOP

This month we continue our look at how graphic files are constructed and give you a (working) hardware modification to boot from drive B. All this and more GFA tips than you can possibly handle

GOING TECHNICOLOUR

Printing coloured text from within GFA Basic came under discussion several issues ago. Now **K.Walker** from Birmingham offers his own perspective on the problem.

By using the VT 52 control codes, colours can be changed using ordinary Print commands instead of reverting to the Dextext instructions.

For example:

```
PRINT CHR$(27)+"b"+CHR$(2); "ST
FORMAT"; CHR$(27)+"b"+CHR$(3);
"DESKTOP"; CHR$(27)+"b"+CHR$(4);
"HINTS AND TIPS"
```

This prints ST FORMAT in red, DESKTOP in green and HINTS AND TIPS in blue.

END SEQUENCE

On November's Cover Disk we included a program called ANIMATE4.PRG. **K.Ware-Lane** from Bucks has noticed that it can be used to play any .SEQ file. If you look on US Gold's Outrun game disk, you'll find a file called SEQUENCE.SEQ. Try running this through ANIMATE4 and you'll see the end sequence of the game with the function keys controlling the speed in the usual way.

FINDING PROGRAMS IN GFA

David Murphy from Cumbria has been having difficulty locating files from within GFA Basic. The problem is likely to be that the file is in a directory and the address is being specified

incorrectly. If you're trying to load a file in GFA Basic you should use the command **BLOAD** "A:\xxxx". Examples of filenames include: "B:\NAME.DOC" or "A:\LETTERS\NAME.DOC".

The A:\ specifies the drive to be used while LETTERS\ means look in the LETTERS directory. The final part, NAME.DOC is the filename.

Problems may occur, particularly with second drives, which can mean that your ST doesn't read the directory the next time you insert a disk and try loading something. Consequently, the file cannot be found when the **BLOAD** command is issued. This is another explanation for how David's file can apparently

PICASSO UNCOVERED

Continuing our look at the structure of graphic files, here's a complete look at Degas files, courtesy of the South West Software Library. In the following table, a word is 2 bytes and a long word is 4 bytes. Palette refers to the hardware colour palette - stored as 16 words. The first word is colour zero and the last is colour 15.

Each word is constructed as follows:

Bit: (MSB)

```
15 14 13 12 11 10 09 08 07 06 05 04 03 02 01 00
0 0 0 0 0 R2 R1 R0 0 G2 G1 G0 0 B2 B1 B0
```

R0 & R2 = LSB and MSB of red intensity
G0 & G2 = LSB and MSB of green intensity
B0 & B2 = LSB & MSB of blue intensity
Intensity ranges from 0 (color not present) to 7 (highest intensity). Eg: ired (7), green (3), blue (5) = 0735 (hex)

It's best to mask off the upper four bits of each palette entry, since a few programs store special information there (*Art Studio*).

1 word	resolution (0 = low res, 1 = medium res, 2 = high res. Other bits may be used in the future; use a simple bit test rather than checking for specific word values.)
16 words	palette
16000 words	picture data (screen memory)
32034 bytes	total

DEGAS Elite (Uncompressed)

1 word	resolution (0 = low res,
--------	--------------------------

16 words	palette
16000 words	picture data (screen memory)
4 words	left color animation limit table (starting color numbers)
4 words	right color animation limit table (ending color numbers)
4 words	animation channel direction flag (0 = left, 1 = off, 2 = right)
4 words	animation channel delay in 1/60's of a second. [0 - 128]
32066 bytes	total

DEGAS Elite (Compressed)

1 word	resolution (same as Degas, but high order bit is set; i.e., hex 8000 = low res, hex 8001 = medium res, hex 8002 = high res). Other bits may be used in the future; use a simple bit test rather than checking for specific word values.
16 words	palette < 32000 bytes control bytes
4 words	left colour animation limit table (starting color numbers)
4 words	right colour animation limit table (ending colour numbers)
4 words	animation channel direction flag (0 = left, 1 = off, 2 = right)
4 words	animation channel delay in 1/60's of a second. [0 - 128]
< 32066 bytes	total

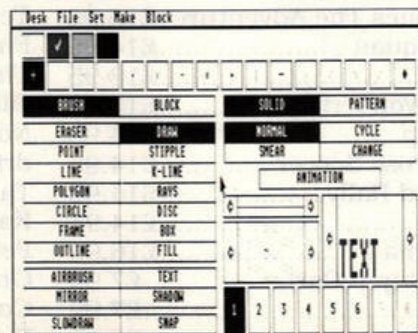
Control byte meanings:

For a given control byte, x:
 0 ≤ x ≤ 127 Use the next x + 1 bytes literally (no repetition)
 -127 ≤ x ≤ -1 Use the next byte -x + 1 times
 -128 No operation (ignore)

COMPRESSION METHOD

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be lost. The way around this is to use a **DIR** or **FILES** command at the beginning of your program which usually forces the disk directory to be read into memory.

UNDER THE CHOPPER

GFA Basic possesses the ability to load up other programs and execute them from within a program written by you. When the second program terminates, it returns you to the main host program.

There are a host of possibilities in this set-up. You could, for example, create a main menu program which executes options as other programs, or you could run other stand-alone routines during the main program code.

The method used causes a lot of problems, because it involves shifting memory pointers on and off the stack. The host program has to shift pointers to load the other into memory, but if the second program also shifts pointers this can cause so much confusion that you won't return to the host program and may even crash altogether. This is the reason you can't always execute commercial software in this way.

The first line of your code should include a **Reserve** statement to set aside memory. For example **Reserve 190000**. When the time comes to execute the second program you should first try and clear as much memory as possible, which means losing any big arrays that you don't need - **Erase A\$** kills array **A\$**. Now include the following code:

```
Reserve 100
Chdir C$
```

```
Showm
Cls
Exec 0,B$, "", ""
Reserve 190000
```

The currently active directory is changed using **Chdir C\$**. It's better to change the directory this way rather than making the filename, **B\$**,

include the active directory name. As a result, the program may access data within the same folder without specifying a folder name. **Reserve 100** ensures that the smallest possible amount of memory, in this case 100 bytes, is reserved for the host program, leaving plenty free for the new program. **Exec** is where

B-BOOT

Two months ago we printed a diagram on how to modify your ST to boot from drive B. The diagram was slightly incorrect, as **Mark Rogers** from Middlesex has pointed out. Two extra wires have to be added to the two PCB tracks - otherwise the circuit is not completed. Simply bending the two sound chip pins up from the board leaves the tracks

totally isolated if two wires are not taken back to the holes left by the pins.

After this operation, the external drive is recognised as drive A while the internal one is drive B. Booting takes place from the second drive so games can be loaded okay. The ST's sound capabilities are not affected by the modification.

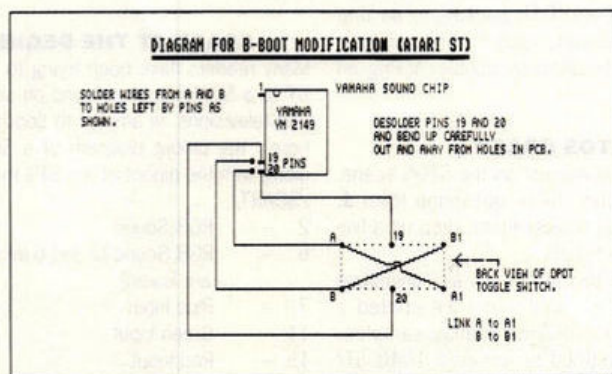





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HINTS AND TIPS

the second program is loaded into memory and executed. After leaving it, you're returned to the Reserve command, which now makes use of your ST's memory for data.

DOUBLE-CLICK

David Murphy also wants to know how you run a program with a .GFA extension from the Desktop. What you need to do is set up your DESKTOP.INF file to recognise GFA extensions as a cue to load first GFA Basic and then your .GFA program file. This sounds complicated, but is an easy trick. Click on the main GFA Basic program (with a .PRG extension) and now just go to the Option drop-down menu on the Desktop and choose "Select Application." Under the sub-heading DOCUMENT TYPE, enter GFA. Every time you boot up with this disk you can click on any .GFA program file and GFA Basic is loaded up, followed by your own program.

This same method can often be applied to word processing and DTP packages, so that you can automatically load the file of your choice from the Desktop by double-clicking on it.

STOS CRAZY

As a way to stir up interest on the STOS scene, we're throwing open three questions from J. Haines. If you can answer them, drop us a line and we'll print the results.

Is it possible to run *Cyber Paint* animation from STOS? A few months ago we printed a STOS program for playing *Replay* samples. How must it be altered to run on a 1040 ST?

How can you get more memory banks on a 1040 in STOS?

AUTOBOOTING GEM

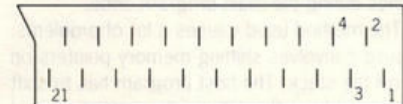
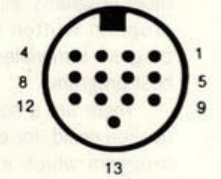
If you want to auto-boot GEM programs then you've probably found out by now that it's not possible. Auto-booting TOS programs is no problem – just stick them in an AUTO folder, re-boot and away you go. But try doing this with a .PRG program and you've had it. If you want to auto-boot a PRG file then don't despair. The South West Software library are selling a disk with three PD Programs – STARTGEM, GEMBOOT and HEDSTART. There have been problems with different ROM versions which is the reason for there being three programs, but HEDSTART is the most reliable. It's unlikely that these work with TOS 1.4 when we get to see it in the STE. But that's not a problem because TOS 1.4 has its own way of auto-booting a GEM program.

SCART AT THE BEGINNING

Many readers have been trying to connect your ST to a SCART socket found on some monitors and televisions. In answer to floods of enquiries here's the pinout diagram of a SCART socket along with the pinout of the ST's monitor port.

/SCART/	
2	RGB Sound
6	RGB Sound (2 and 6 inputs are linked)
7	Blue Input
11	Green Input
15	Red Input

20	RGB Sync (V Sync and H Sync from ST)
21	Chassis Screen (Ground)
/ST/	
1	Audio Out
2	Composite Sync
4	Monochrome Detect
5	Audio In
6	Green Input
7	Red Input
8	+12v pull up
9	Horizontal Sync
10	Blue Input
12	Vertical Sync
13	Ground



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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 then send them immediately to: Desktop, ST Format, Beauford Court, 30 Monmouth Street, Bath, BA1 2AP. Each month we give away £30 for our favourite tip so if you're looking for some extra dosh, get writing. CRAIG DONALD from Scotland wins this month's coveted prize for his STOS advice.

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SPELLING IT OUT

STORY
Mike Gerrard
SCREENGRABBING
David Collins

If some parents are confused about the importance of spelling, that's hardly surprising. Older people have gone through the Friday afternoon spelling test ritual at school, when being able to spell properly was, almost literally, beaten into you. Younger people, however, have probably been subject to the more liberal attitudes of the '60s and '70s, when correcting a child's spelling was regarded as "stifling their creativity."

Now as we head into the '90s with the New Curriculum, the importance of being able to spell correctly is once again being clearly... well, spelt out.

Play-Spell

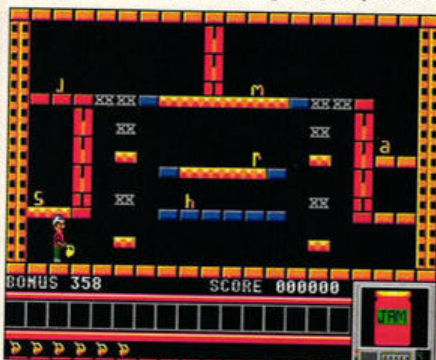
MACHINE: ALL STs
PRICE: £14.95
FROM: B.BYTES COMPUTER SYSTEMS
CONTACT: 0455 613377

Aimed at the over-sevens *Play-Spell* tries to improve a child's spelling by using a platforms-and-ladders game format.

For those who don't venture into the games pages, a platforms-and-ladders game involves moving a character around the screen, jumping over obstacles, climbing ladders, leaping onto moving platforms, and collecting objects along the way. Imagine an SAS assault course crossed with a Tesco's shopping spree. In *Play-Spell* you collect letters, spelling out a particular word.

It's done with great style, and the introductory music on the title screen is a very pleasing soft-shoe shuffle that's a cut above the average micro music.

You need a joystick to play the game, which will appeal to children – though this emphasises



■ Learning can be fun – but things get sticky later on

*So Janet and John bored you speechless?
We check out some fun software spelling aids
– and half the team fail to make the grade*

its nature as a game rather than an educational exercise.

An arcade-style screen appears which has a TV set in the bottom right-hand corner. The interference on this gradually disappears, and in its place appears the object the child has to spell. The first is a jar of jam.

The player then has to move the character round the screen to collect the letters J-A-M in the right order, and if you get one wrong there's a lovely malicious chuckle and you have to start again.

There are 20 screens in all, and the arcade element gets harder in line with the spelling. From "jam," "car" and "bus" you progress to words like "feather."

This program is terrific fun, there's no doubt about that: the doubts in my mind are over its educational value.

Trumpet and Dragon

MACHINE: ALL STs
PRICE: £9.95
FROM: B.BYTES COMPUTER SYSTEMS
CONTACT: 0455 613377

There are additional data disks available with new games based around specific subjects, such as birds and animals, although you'll need the original *Play-Spell* master disk to use them.

I thoroughly enjoyed playing the games, and I'm sure any child from seven through to teenage would as well. They're all extremely attractive, well-designed and have good sound and chunky graphics.

The problem is that they're not really that educational. I bet any child will spend hours playing them, but at the end of that time they will, at the most, have mastered 20 disparate words.

You do have to be able to spell the particular word concerned in order to get through the level and on to the next one, but even games addicts will have their abilities tested on the later levels.

The "game" isn't pixel-perfect, and frustration can set in, especially for younger children. At this rate of learning, you'd be dead before you'd acquired a decent vocabulary.

Let's spell at the shops

MACHINE: ALL STs
PRICE: £14.99
FROM: CHILDRENS LEARNING SOFTWARE
CONTACT: 01 878 8761

As we're on the subject of spelling, shouldn't it be Children's Learning Software? After all, there's no such word as "childrens" without a possessive apostrophe.

Ignoring that, the program itself is extremely good and has been put together with a great deal of thought. It covers the teaching of spelling from six through to the age of eleven, which sounds quite a wide net to cast but it does it by including different options in the program.

After the bad start with the company name, the program got into my good books straight-away by allowing you to give the main character an instant sex-change by a simple press of the right mouse button.

The character, male or female, is shown at the start surrounded by shops, and you can go into one of eight shops by moving to the front door and left-clicking the mouse.

Another thoughtful addition is a "ping" whenever the character is in position over the door, so there's no need for mad frustrated clicking as you try to get in the right spot.

The shops include a grocery shop, pet shop, toys, clothes, general store, DIY, music and butcher. When you move inside each shop you see the various goods laid out on the counter before you.

The graphics have been carefully done: the pet shop, for instance, has a cat closely watching a goldfish. Each shop has a dozen or more objects inside, so in all there are well over 100 words covered.

Each object also "pings" when the pointer is over it, telling you when to press the mouse button to select it. Choose the lizards in the pet shop or the spuds at the grocer, and your choice is displayed larger than life on a new screen, with the child invited to spell the word.

Younger children can click on a small teddy bear for assistance, and it's then a case of >

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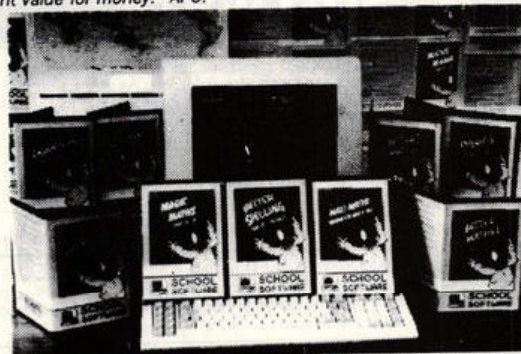
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copying the word, letter by letter. Older children are expected to do without teddy's help.

If you're really stuck, the easiest option of all is to click on the third bear, which is just a large face, and then the word is not only spelt out but read out a letter at a time with the help of a digitised voice.

The use of sound adds a lot to this program which, incidentally, has been written in STOS Basic. There are cheery hellos and good-byes as you come and go, tunes as rewards and the occasional "well done" to encourage you. All very welcome, though I doubt its suitability for older children who should be pronouncing letters properly as "a," "b" and "c," and not as this program does, which is the simplified "ah," "buh," "ker" and so on. I also wish the full word were pronounced at the end, though there's obviously a limit to what can be done, both in terms of the ST's sound chip and the available memory.

A refinement at the finish offers you a list of the words you have learned during that session, and an option to print them out if you wish.

An excellent program: fun and valuable. New data disks are also being prepared, to add to its scope. Well worth the money for any parent who can't drag a child to a text-book or away from the ST.

Let's spell at the shops in French

FROM: CHILDRENS LEARNING S'WARE

MACHINE: ALL STs

PRICE: £14.99

CONTACT: 01 878 8761

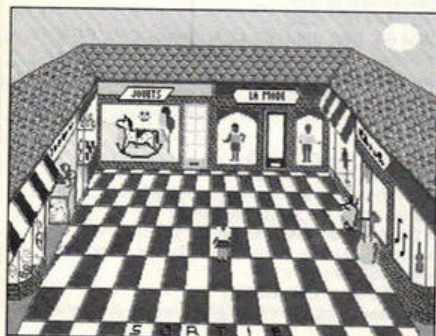
A companion program to the above, this has all the same features, all the same graphics, and covers the same 100 words - but in French. The invisible tutor chips in this time with "regardez," "encore" and "bonjour" amongst

other things, and the pronunciation of the words is, naturally, done in French.

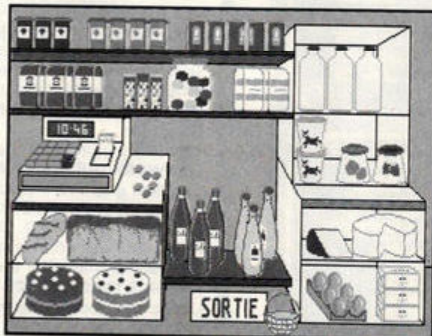
Good for both the spelling of French words and improving your vocabulary: I feel confident now that I could march into a pet shop anywhere in France and buy "un hamster" or even "un serpent," though hopefully not taking them home in the same box.

Packaging is minimal with both these products, but does include the helpful suggestion that parents of young children may well like to use the programs in a picture-book way, asking the child to identify the objects on-screen (fortunately the graphics are good enough to allow this), before moving on, as the child grows competent, to the spelling of the objects.

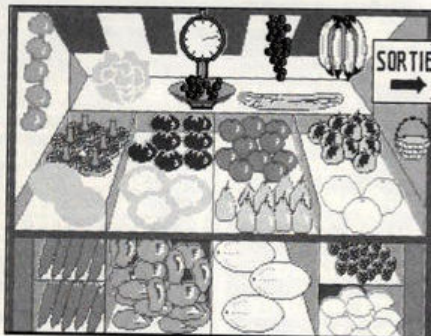
The only restriction is that you can't modify or add to the word-bank, unless you're prepared to re-write the entire program; but what you do get is well done and will hold any child's attention for more than just a short spell (sorry). ■



■ Instant androgeny available at the shopping mall



■ Choose an item and spell it out - ask the teddy bear if you're having trouble



■ Colourful graphics and, of course, the obligatory string of garlic

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Outline Art**MACHINE:** 1040s WITH CALAMUS**PRICE:** £172.50**FROM:** SIGNA PUBLISHING**CONTACT:** 0252 341600

Calamus is the best desktop publishing package available for the Atari ST. It contains almost all of the features necessary to create professional quality documents. Unfortunately, apart from the geometric shapes and the range of text functions such as outline and shadow that are supplied with it, the program has no method of creating stylised graphic or text displays. If you want to design an eye-catching logo for a poster or magazine, or have expansive ideas for text presentation then you must use a proprietary drawing/painting program and import the resultant graphic into Calamus.

That is, until now. Calamus' distributors Signa Publishing have just released an amazing art package specially designed for use with Calamus, which enables users to produce stunning effects simply and without the need for drawing skills.

EUCLID WOULD BE PROUD

Outline Art (aka O-Line) is, as its name implies, an art program which manipulates vector graphics in order to produce text and image effects.

The graphics created using most of the art packages available for the ST are of the bit-mapped variety. Each graphic consists of many tiny dots which make up the image that you see. If you enlarge or change the perspective of the image, you often end up with an item which has ragged, blocky edges. This is because you're viewing the image's dots in a way they were never meant to be seen.

Outline Art uses vector co-ordinates to describe the position and outline of graphics

that you've created. If you re-scale a graphic, the outline vectors simply enlarge relative to each other, so you never lose the resolution of an image.

Using these vector co-ordinates you can achieve unbelievable effects with the minimum of effort. All the equations necessary for graphic manipulation are built into the program. You don't need to know what's happening to get the most from O-Line.

Calamus too, uses vectors to describe fonts on-screen. Enlarge characters and their outlines remain smooth. And it's because Calamus can handle vector – or object-orientated – images that O-Line is potentially very powerful. Import your cover design into Calamus and make your magazine leap off the newstands with stunning text designs that fight for your attention.

GRAPHIC OUTLINE

*Eye-catching
stylised graphics are now
available on your ST.*

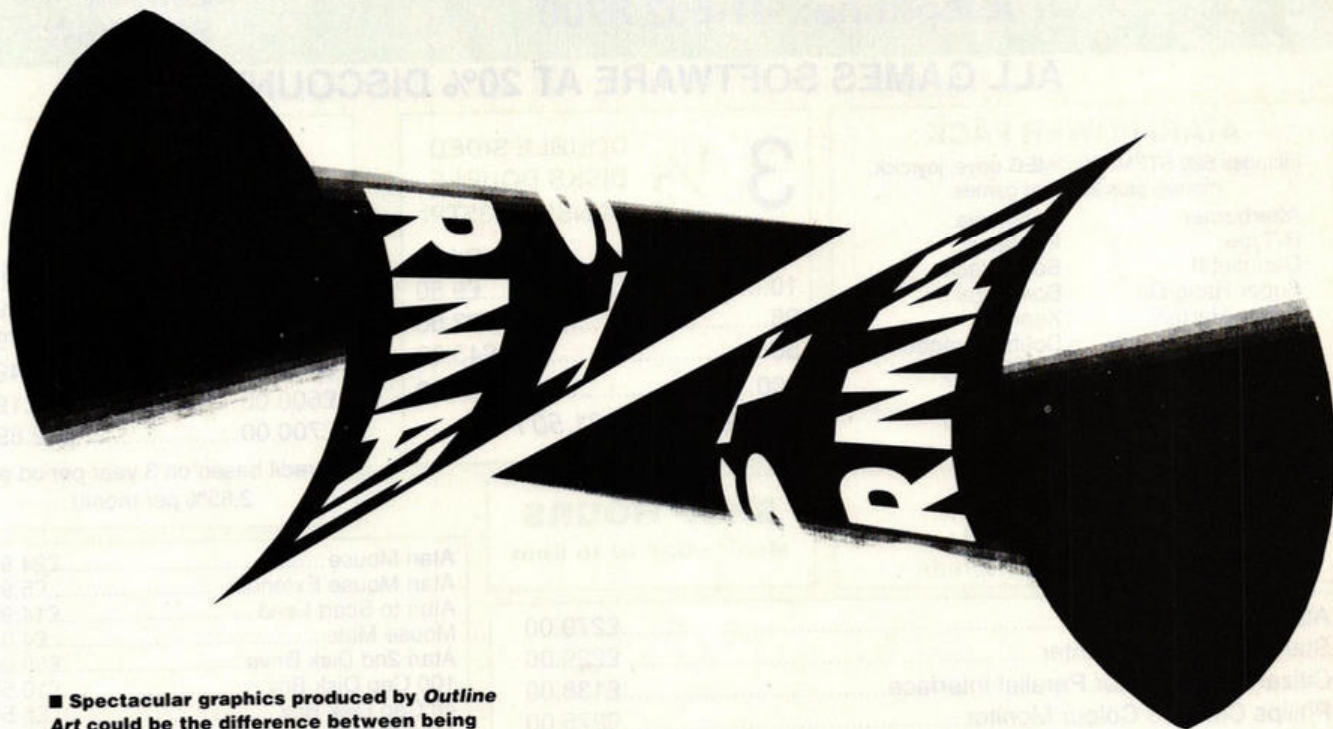
*We put Signa's new
Calamus bolt-on through
its visually stunning paces*

ICON-AMANIA

Was it sale day at the icon store? Like Calamus, approximately a third of O-Line's opening screen is given over to a spectacular display of icons. Like Calamus, these icons and buttons are daunting to the novice but are easily assimilated with a little use. You'll soon be navigating through the many functions without too many problems.

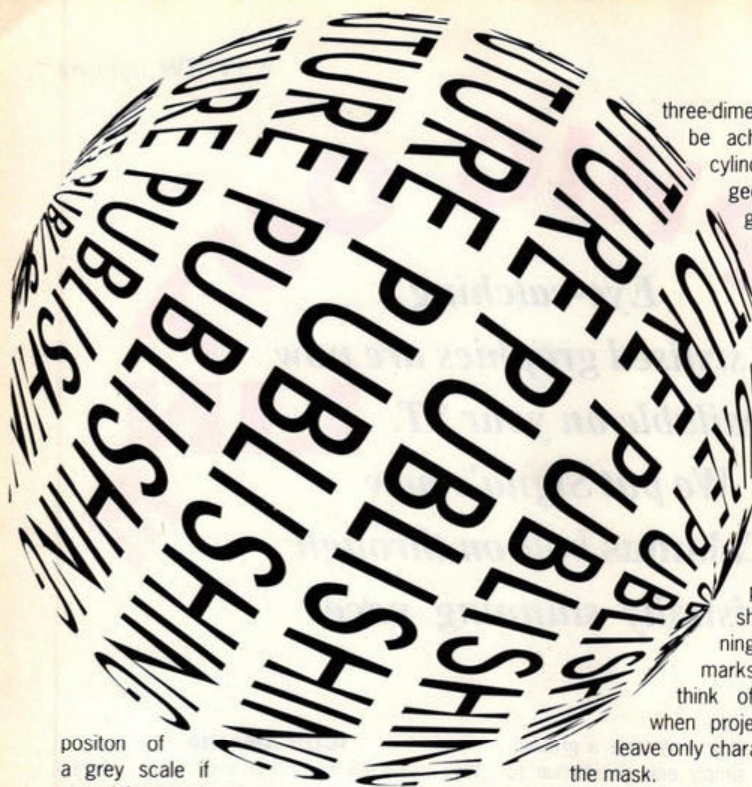
The process of graphic creation begins with you marking the basic points that make up the logo on-screen. After mapping out some of these points you'll be regaled with a menu where you can input the text (or part of it) that constitutes the logo, banner or whatever it is that you're designing.

From the menu you can load fonts, decide whether the text should be left, right, aligned or centre justified and choose the intensity and



■ Spectacular graphics produced by Outline Art could be the difference between being noticed and being ignored.

The whole ST Format team have donned this trendy headgear and are now standing on stools in the corner



position of a grey scale if you wish to apply one.

The menu offers X-Y co-ordinates so that you can position text at any point on screen, and there's an angle of rotation option enabling you to form text into a circle or make it lie at any angle.

Grey scales are a graduated series of greys which range from almost black to almost white. Used sparingly, they enable you to imbue images with astonishing depth. Remarkable

three-dimensional effects can be achieved by combining cylinders, cones and other geometric shapes with grey scales.

Flow text around these geometric shapes and throw in a grey scale or two – and you've got a punchy display without even trying.

And for really spectacular displays, you can stretch and compress text, or use shapes such as lighting bolts, exclamation marks, or anything you can think of as masks which, when projected over the text, leave only characters in the shape of the mask.

PROGRAM SPECIFIC

Oddly, *O-Line* can only be used with *Calamus*. There's no printing function within the program and no fonts. Typefaces must be selected from those supplied with *Calamus*, although if you're a registered owner of the DTP program you can buy extra fonts from Signa Publishing and use them with both applications.

Considering the potential of *O-Line*, there'll

be a virgin area of the DTP/art market which could, but won't, be exploited – strange indeed! However, for *Calamus* users, *O-Line* is a bolt-on which endows that program with abilities not found anywhere else in the DTP field.

Calamus users need *O-Line*. Costing an expensive £172.50 it excludes all but serious users – but then if you're using *Calamus* you already fall into that category.

FORMAT RATINGS

Features 90%

Absolutely packed with the tools necessary to produce spectacular effects

Speed 90%

Screen updates are very fast considering the complexity of the application

Ease of Use 85%

Although first impressions are overwhelming, once the icons become familiar, graphic manipulation is a breeze

Results 99%

Endless opportunity for creative design – limited only by your own imagination

Format Value 95%

Sure it's expensive, but then it has all the tools necessary for the task in hand

The Competition

No competition in remotely the same class as *Outline Art*

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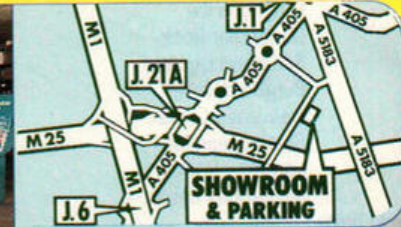
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GAMEBUSTERS!

P. W. Smith is my kinda guy. Supremely underhand and stupendously successful cheating-wise, s/he has managed to compile the definitive guide to Electronic Arts' notoriously difficult game *Populous*. Take it away P. W...

To get to any level in the game choose New Game and type one of the following lands:

Level	Name of Land Type
0	Genesis Grass
3	Timuslug Grass
5	Swaver Desert
10	Moringill Ice
14	Weavhipham Ice
18	Hobditory Rock
23	Sadwillow Ice
26	Verymeend Rock
31	Dousick Grass
36	Calozboy Desert
41	Burmpall Ice
44	Bilador Ice
53	Coroport Grass
59	Mingbdon Ice
63	Douperbar Rock
69	Scomphill Desert
73	Burgbord Desert
78	Weavead Grass
84	Shadkopen Ice
88	Lowinlow Rock
94	Suzogoboy desert

General hints

■ If the computer has the option of flooding, build at least two sections above the water level.

■ Small encampments create people faster – useful when building on ice or in the desert as the landscape can take its toll on your walkers by killing them before they have a chance to settle.

■ Computer knights can be killed easily when

Downright disgusting! Take a deep breath and follow our step by step guide to sheer dishonest opportunism

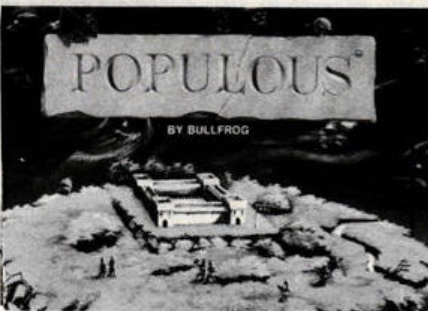
POPULOUS

the computer's reactions are slow. Wait until a knight is attacking then lower the four blocks around him down to water level. He should then drown.

■ When using your knights and the option of building around people, let your knight move into an enemy area and while he's fighting, disrupt as much land as you can by lowering and raising land around the enemy settlements.

■ If you have difficulty getting your people to settle, flatten a large area of land and move the papal magnet to the centre of the area and select the option Move The Papal Magnet. When a follower appears select the Settle option.

■ If the enemy's Papal Magnet appears in your



camp, either place your Papal Magnet on the same spot or surround it with a swamp.

■ Watch out for a large green monster on levels 15+. It moves around leaving a trail of swamps approximately two to three squares wide.

■ To get walkers out of a building, click approximately one square away to reduce the size of the building, and after a while a walker should emerge. Simply replace the block you took out.

■ When in the Settle mode, follow a walker and build land around him. He should then move to the nearest space and settle.

■ When raising the water level make sure you will still be high and dry after it's risen!

■ Always take note of what options are available to the computer player and base your game on this.

■ Edge towards enemy camps by moving the Papal Magnet, drawing all your walkers around it and then using the Fight and Settle option to create encampments. Turn these into castles then move the Papal Magnet again.

■ Keep the computer constantly on the move with earthquakes, swamps and volcanoes.

■ Use swamps to isolate Papal Magnets or enemy leaders.

XENON II

Fed up with the thousands of devilish teasers limiting your progress in *Xenon II*? Want to see the end, but like all good cheats, you can't be bothered to expend any effort? Your problems are at an end because **Little Timmy Hodges of Peterborough** has submitted the complete solution – that's right kids, cheat's heaven! And here we go...

Stage 1: Collect all weapons, speed-ups etc. In the shop buy health only if needed. Blast the Nautilus shellfish in the eye. Back in the shop buy double shot. Sell rear cannon. Buy two side cannons (and health if really needed).

Stage 2: Big Boy: fly up one side and destroy the eye. Fly over the top and blast the other eye. Allow the screen to scroll down and blast the front eye. In the shop buy health if necessary. Blast the spider in the head. Shoot from the bottom of the screen in order to collect the cash easily when it's destroyed. Go to the shop and sell the side cannons. Buy two lasers, health and power-up if you can afford it.

Stage 3: Collect both rear cannons. Blast both eyes of the large beast. Buy power-up, health and a second laser from the shop. Fly backwards through the maze-like surroundings. Remain at the bottom of the screen and blast the big baddie in the head. Sell rear cannons. Buy two side cannons, power-up, laser and health if needed.

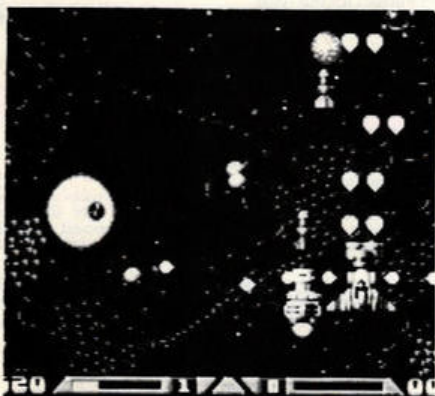
Stage 4: Halfway through the first half, stay to the left and move up and down to dodge fire. Fire forwards to destroy the aliens coming towards you on the wall. Fly up the side of the dragon and blast the heads, then shoot the tail. Fly down and shoot the major head. Sell the side cannons. Buy power-up, health and one rear cannon. Stay at the bottom of the screen and collect the cash, then fly past the butterflies, staying in the centre of the screen. Repeat this to get past each wave. Blast the eyes of Mr Whiplash. Once the eyes are destroyed blast the head. Buy third laser, health, two side cannons, power-up and a drone if you really want to.

Stage 5: Blast the Super Tank's turret and collect the money and heatseekers. Buy health and power-up. Fly to one side of the super ship

and destroy all cannons with your side cannons, then fly to the bottom and shoot up the centre of it. Collect the money.

And that's it! You'll see a white dot on a black screen. This is supposed to be your monitor/TV turning itself off.

Well done, Tim. A suitably sneaky prize will be winging its way to you in the very near future (just as soon as I can steal one from somewhere...).



BLOODWYCH

Beating your brains out against the unsolvable *Bloodwych*? Want to see what the rest of us are enjoying without the effort of overcoming the puzzles? Read on, because **Simon and Nick of Biggin Hill** have won through and would like to share the fruits of their labours with you. Nice guys, huh?

Recruiting

As soon as you see possible recruits to your party, exchange greetings and ask them their trade. Then Name Self and ask Who Art Thou? Let them answer and press Recruit. They will always say yes. This system of recruitment is totally fail proof.

Recruit each and every character. Take all their food, weapons, money and keys. When your players sacks start to get full, start discarding the food into a place where you can get to it quickly. After you take all their equipment

kill them. This stops you picking them again and also gives your fighters some practise. You will come to a human who will buy all the weapons you have taken. Look to see who has the highest charisma and sell the weapons. Make the person with the highest charisma the leader. That way, he is the one who has to do all the taking. Another very good idea is to cast the odd beguile-spell. Both this and having a leader with a high charisma will make the humans sell items to you for more. After you have sold everything, go back and pick up all the food you have left behind.

There's a difference between humans and shopkeepers. The owners of the shop will not attack you without provocation. After selling everything you plan on selling kill the shop owner and you are usually rewarded with eight elf arrows. You can also buy things from the shopkeeper. A list of his goods and prices can be found next to the door behind which he is standing.

Spells & Fighting

Even after you get 100% on cast percentage the more points you spend the more strength the spell has. When fighting a very tough opponent get a good attacking spell, put it on full cast then run back and find somewhere safe to sleep. Recharge your spell points and cast the spell at full strength.

Don't bother buying fighters spells at the

beginning of the game. You get no further and your images don't really need new spells. It does however, make good sense to get the odd fireball for your fighters.

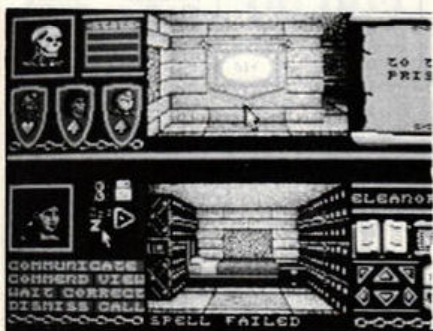
Don't be fooled by bad spells when you have the choice to buy them. Sometimes it's worth getting them just to get a better spell the next time you get to choose a new spell. If an image is red at the beginning of the game then let him choose red spells. When he gets all the red spells then start a new spell class.

Always fight monsters in the open air. As soon as the monster faces you, run around the side of him and start attacking. When he turns to face you, run around the other side etc. Using the keyboard you can keep running away from the monster and using the joystick you can go to the spell book and prepare to cast a new spell.

So whaddaya waiting for? Get out there and start fighting. And remember, if you can't fight fair and win, start using despicable trickery to get you that elusive victory. ■

SHARE YOUR SECRETS!

If you've found your way through that tough game, why not tell the rest of us? Send your cheats, hints and tips to: *Gamebusters!*, ST Format, Beauford Court, 30 Monmouth Street, Bath BA1 2AP. The best entry each month earns its author a whacking great mystery prize.



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		Field 5: Address 4
		Field 6: Address 5
		Field 7: Del Addr 1
		Field 8: Del Addr 2
		Field 9: Del Addr 3
		Field 10: Del Addr 4
		Field 11: Del Addr 5
		Field 12: Telephone
		Field 13: Fax
		Field 14: Contact
		Field 15: Invoice Number
DATE	Your Ref	Field 16: Quantity 1
????????????????		Field 17: description 1
		Field 18: Unit Cost 1

Top left = (8,8). Pos = (3,17). Length=28.
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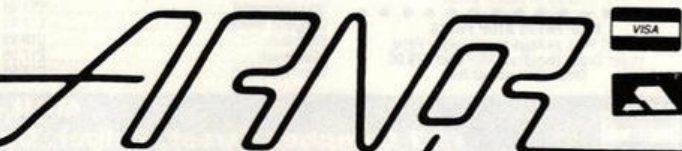
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We talk to Level 9's Pete Austin and get an exclusive look at the HUGE new range of adventures on the way

The decision was made a year ago that Scapeghost would be the last of Level 9's text adventures. Sales of each game were slipping and there was concern at falling income.

Do you think sales of Level 9 games have been falling because of their quality?

No, I think the games themselves have been getting better. There are three basic reasons why sales have been falling. One is piracy. Second is that new adventure games are competing against previous ones because they have a much longer shelf life than arcade games, and there are still a lot of Level 9 and Infocom games out there. The third reason is that the adventure market is fragmenting and there is a general movement towards arcade-style adventures. Initially it was all text games, now there's a greater variety and people can choose the style of game that suits them, whether it's D&D, Sierra-type games, RPG or whatever. Those people used to buy text adventures because that's all there was.



■ Level 9's next adventure *Champion of the Raj* gives you the chance to re-write colonial history

How do you measure up against your competitors in the adventure market?

We've been impressed by the numbers of games that Sierra have sold. I won't talk about the design, you can decide that for yourself, but technically they're not very clever. The compression of graphics on disk isn't very good; they only move very tiny central sprites with almost no background animation; and now they're designing games with over ten disks, and the first thing you do is spend half an hour loading them onto your hard disk because playing off ten different disks is hopeless.

So they're technically not that hot, but their games sell in very large numbers. We thought, right, we can do this stuff to our own designs and produce a technically much better product.

One of the things I don't like about Sierra is that you see the location in terms of pictures, but have a parser that requires you to deal with it in terms of words. You see a little blob on the floor and you have to try to guess what it is. We have the option of the system Lucasfilm uses, which is to move the cursor over the screen and be told the objects that are present – though at the moment we've gone for the pull-down menus that give you a list of all the objects.

I get the impression that Sierra draw each scene and compress each picture separately.

We thought, well, if you draw a forest scene you're not going to draw a hundred trees, you're going to draw three or four and move them about a bit. This makes it easy to do the 3-D stuff because the objects making up the scene are already separate objects so it's very easy for a man walking across the screen to pass behind certain objects and in front of others.

Can you tell us the story behind your new games system?

It's called, as you probably know, HUGE, which stands for Wholly Universal Games Engine. Not a perfect acronym, but never mind. Development started about 18 months ago, but we started intensively about a year ago when the decision to go in this direction was finally made. It's taken over 20,000 man hours of work, which is about ten man years if you assume people work civilised hours – which of course programmers never do!

We originate everything on the ST currently, though by the time this article appears it'll probably be about half ST and half IBM-PC. We wanted the system to be easily portable across machines, and it is, with the proviso that you have to write graphics drivers and so on. Our 3-D graphics editor, which we originally wrote on the ST, we ported that across to the PC and it was working perfectly within a couple of hours.

We did sit down at the start and decide exactly what we wanted, like digitised sound, control with the joystick, all this kind of thing, which is relatively easy. The difficult thing was to do 3-D graphics with the minimum of overheads and as much compaction as possible. We also needed 3-D graphics which ran very fast.

The main problems we've had have been deciding on the scope of the system. When we began we put certain limitations on it, which were later removed. At the start we decided we weren't going to have scrolling screens, it would just be one graphic per location, but we've now rewritten it so that we can have scrolling screens.

We went for a very flexible system which can do everything from the traditional text adventure to the Moviesoft type of game that Cinemaware and Ubisoft do, via virtually any RPG or Sierra type of game. We could currently do *Gauntlet* on our system, for example. In fact we could do *Gauntlet* a hell of a lot better.

There are only a few things that HUGE won't do, such as vector graphic games, flight simulators or chess programs, but from the point of view of the type of games that you're going to be writing about in your column, then I think we could pretty well do everything.

It was reported that you were doing a range of adult games, is this true?

No, it was mis-reported. When I was talking about the type of game we'd be doing, I happened to mention *Leisure Suit Larry*. I picked on that because some of the other Sierra games, like *King's Quest I*, are a bit childish for us. "Adult" isn't the word I used, it's the way it was reported.



STORY
Mike Gerrard

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From the games I've seen, "adult" usually means in poor taste and that they're juvenile – exactly the opposite of adult in fact. By "adult" games, we mean that the games aren't childish, that there's a certain amount of research involved. What I essentially want is to get games which have some of the ingredients of a good film or a good book. Something you're quite happy to show your friends. What I mean is that if you showed your friends *King's Quest I* they might wonder what you were doing spending your time playing kid's games.

What are the financial considerations behind launching a new game?

When we launched *Ingrid's Back* we did our sums and realised we had to release a lot of games like that just to keep the operation working. When you produce a game you have to invest about £20,000 up-front, and if you then find that the big distributors don't take it, that money is all down the drain.

There's a relatively big risk with each game: you might make £20,000, you might equally lose it. We thought this wasn't a particularly safe position to be in! With the market changing so much at the moment, we decided it was better to go for games which have the potential for large sales.

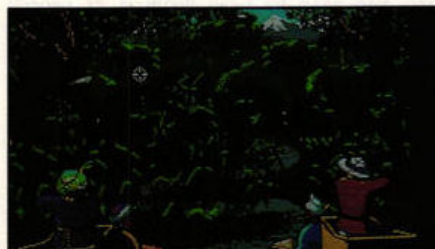
We've just signed a contract with a large software company to publish the first few games. I can't name them yet, I'm afraid. But we're also negotiating with another large publisher for other games. We feel it's unwise to have contracts with just one publisher, as we saw with the failure of Epyx, who just went down the tubes without warning, which caused a lot of problems for a number of British software houses who were working exclusively on products for them. We intend to spread the risks over a much larger area.



■ Our hero gazes pensively into the distance and thinks of Queen and country

How much of a concern is piracy to your new plans?

There are tapes and disks circulating that are full of pirated copies of our games. People send them to us, either anonymously boasting they've cracked the game, or because they've come across them and want to let us know about it.



■ The pith helmet and the turban come out of the closet for yet another sparring session

On the 8-bit machines you get the youngsters who want to be clever and show you they've hacked into your game, and I suppose for younger kids it is quite clever of them to be able to do that. I think the problem on 16-bit machines is more one of people giving copies to their friends, which they don't see as piracy. But if one person gives it to half a dozen friends, and each of those to half a dozen more, that's pretty soon a lot of illegal copies.

What can we expect from Level 9 in the future?

The graphics on the first game are done and the programming should be finished by the end of December, so it should be out by Easter. It's got more adventure-ish elements in it than the other games, but I can't say anything more about it.

The next one's working title is *Champion of the Raj*. We were going to call it *Defender of the Raj* but thought perhaps Cinemaware might not like it. We've done a third of the graphics and currently I'm working on trying to get the strategy side right. I can tell you about this because we haven't signed a contract so there's no-one telling me not to talk about it... yet.

It's set around 1800, which is when the British colonised India. It was possible at that time that other powers could have taken control instead: the Sikhs were developing their own empire in the North-West, and conceivably the Gurkhas could have expanded their empire if given more time and the Moghul Empire within India still wasn't dead. So there were these various power groups who could all have taken over India.

You choose to play one of them and see

whether you can do a better job than they did in history. You play both an individual character and the power block he represents, with the central screen of the game being your office. There's a military game within it, plus the usual arcade games that come into it, sporting games, the inevitable swordfight and so on, but in essence it's a strategy game.

We've done a lot of work on the 3-D graphics to create a sense of depth in them. There's a club scene where you're reclining having a smoke and someone comes in with a message for you. There are fans moving overhead and a cricket match taking place outside the window. On the loading screen there's a belly dancer gyrating in one corner and someone riding past on an elephant in another.

That should be out in the summer. We're currently working on two other projects, one being a Wild West adventure and the other will be a Celtic game of some kind. We aim to do four games a year and I don't think that's going to be a problem. They might seem to have more work involved in them than the old style of adventure, but so far we're finding there's less. They're much easier to test, you don't have to program in a response if someone tries to eat the dragon, all that kind of thing ■

ANIMATE YOURSELVES

Look around the room. Chances are that nothing much is moving. This is a problem facing Level 9 as they develop games on their new HUGE system. It can animate graphics beautifully in several planes. "We've done all the obvious things for indoors scenes," Pete told me, "such as grandfather clocks, goldfish in bowls. But there must be dozens of ideas we haven't thought of yet crying out to be done, and we'd like your readers to suggest some to us."

Readers can either send in a disk with the animation on it, or a still graphic, or they can send in a list of ideas. Any ideas used will be fully credited in the packaging and the best five ideas or graphics submitted will win a copy of one of Level 9's ST games. (Pete Austin also revealed that they're on the lookout for talented ST artists, so a good entry could win you more than a free game.)

Animate yourselves then, and send your disks or lists to ST Format Competition, 22 Darwin Road, Southampton SO1 5BY.

Scapeghost**MACHINE:** ALL STs**PRICE:** £19.95**BY:** LEVEL 9**CONTACT:** 0703 338969

The storyline for *Scapeghost* was devised in, of all places, Wigan. The Lancashire town noted for its pier is also the home of several adventure addicts who wrote *Scapeghost* and sold it to Level 9.

You might sometimes think you don't have a ghost of a chance, but in this game you are the ghost of a Chance: the ghost of Alan Chance, one-time policeman who was investigating a drugs gang and died on the job. You were homing in on the gang when your presence was betrayed and they fitted you out with a wooden overcoat. Rumours have gone around the Force, though, that it was your own carelessness that tipped off the gang.

Although you're now merely a ghost of your former self, you still want to clear your name by unmasking the criminals and unearthing the truth of the matter. You also need to rescue your colleague, Sarah, who is being held hostage by the gang. You have three nights in which to do this, one night for each part of the game. So clear your name, net the gang and rescue Sarah: that should raise your spirit level.

SLIPPERY FINGERS

What a great way to start an adventure – you're about to attend your own funeral. There you are, standing by the graveside, able to examine your own wreath and listen in on all the conversations to find out what people really thought of you. You might not like what you hear, of course, but if you use the FOLLOW command to latch on to your former colleagues you can overhear some interesting chat.



■ Too much light and you'll fade away – make sure you stick to the shadows

You also quickly discover that there are distinct drawbacks to being dead. Not only does it take ages to master the art of walking through walls, you can't even do simple things like pick up objects.

The fact that objects slip through your fingers when you go to pick them up could prove to be the death of the adventure game as we know it. Unable to GET KNOTTED HANKIE or DROP CLANGER? How on earth will you get through? Don't worry, you'll soon get the hang of things.

On this first night you spend all your time in the graveyard, meeting your neighbours and slowly learning new ghostly powers. Get the other ghosts on your side before dawn and you may find out something about the drugs gang and their stash of white powder. They all have problems that you can help them solve.

DEATH WARMED UP

STORY Mike Gerrard

Level 9's last text adventure is a shabby piece of work. Those boys embracing HUGE have messed up on the little things

I LIKE A LAUGH

You also need to avoid death in its various guises. Not the least of these is the death of a thousand quips, as no opportunity has been missed for a merry jest about graves, tombs, coffins, ghosts, spirits and other jolly topics. Some of these are good, some are so bad that they're almost good, and others would have been better left six-feet under.

In this first part you'll discover that if *Scapeghost* has been play-tested, it's been done by someone with a sheet over their head. The number of incorrect, inappropriate and just plain daft responses is unbelievable, as if Level 9 are too keen on their new system to worry about this last game written on the old.

Here are just a few examples, with input in capital letters, the program's response in italics:

JOE, DROP THE WREATH – *Joe Danby agreed. He couldn't have dropped the new wreath*

JOE, GET THE MATCHBOOK – *Joe Danby agreed*

On the second night you get out of the graveyard and into a nearby house, – the drug gang's old hideout.

The atmosphere is built up well, but the problems don't get any harder than they were in part one. I didn't quite get through to the end, thanks to the need to get into part three and write the review, but with a score of 377/600 after a couple of hours, I didn't think victory would be too far away. If I'd been given ten points for every bug I found, my score would have gone off the clock:

GET THE BERRIES – *The ivy refused to be moved*

GET THE LABEL – *I already had the briefcase*
REMOVE THE LABEL – *I removed the briefcase I dropped the briefcase.*

EXAMINE THE CLOCK – *It had been lovingly kept*

Even basic parsing faults occurred, the kind you wouldn't expect on an 8-bit adventure written by a teenager working alone, never mind the several-strong Level 9 team.

Your final night as a ghost has another very promising opening: this time you're back by your graveside about to have a priest sprinkle holy water all over you.

Hitch a lift in the gang's van which conveniently takes you to their new hideout in a lonely farmhouse. By this time you've tipped off the police, and if you can keep the gang at the hideout for long enough without alerting them, that should give the cops a chance to move in.

As Big John is on the look-out in the attic, your task is to distract him five times so he doesn't see the police approaching. This gets a bit tedious.



■ Eavesdropping at your own funeral raises some grave issues about your former colleagues' integrity

The game does get a smidgen tougher, but still not to the extent you'd expect. The parser doesn't get any better:

MOVE THE RUBBLE – *I can't find a verb in that sentence*

TOUCH THE CONNECTORS – *They was [sic] unmoved*

The program has all the latest text adventure requirements, like RAM SAVE, FOLLOW, UNDO, RUN TO and FIND commands, but there's little point in having sophistication if you get the basics wrong, which this does, too frequently to be ignored.

The idea's sound, the problems are different, if a bit simple, but the execution... well, the play-testers should be executed. It's highly priced, too, given the lack of a booklet or other goodies: a wee poster with instructions on it is all that you get. A grave disappointment, for Level 9's text adventure swansong.

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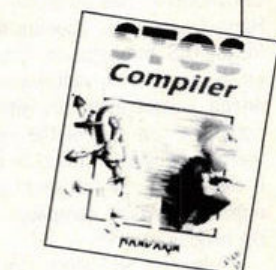
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AMERICAN SCENE

The latest news from our transatlantic correspondent

IT'S COOPERMAN

Commodore's new president of U.S. operations, Harry Cooperman, appears to be making a go for the U.S. marketplace. Commodore Business Machines, Pennsylvania-based makers of the Amiga, compete directly with Atari in the small computer segment of the industry. The recent flurry of publicity in the U.S. about Commodore is expected to be followed by a nationwide \$15 million advertising campaign, building up during the holiday season.

Television ads which star American celebrities such as astronaut Buzz Aldrin, Los Angeles Dodgers baseball team manager Tommy Lasorda, and former national House of Representatives Speaker Tip O'Neill, have already been announced.

Surprisingly the Pointer Sisters and blues guitarist B.B. King are scheduled to appear in the Amiga advertising campaign. Just last year, Atari counted these popular musicians among its supporters — both are featured in Atari's 1987 annual report!

Cooperman, who previously held management positions with Apple and IBM, must be trying to hit Atari where it hurts the most — in the music segment. In the meantime, Atari are concentrating their resources on the Portfolio handheld computer. What will be the outcome for the ST in the U.S.?

DELAYED ENTRY

As news continues to filter to the United States from the European ST community, it has become clear that the STE and TT will be available overseas long before shipments enter the U.S.

American ST users are expressing confusion, disbelief and outrage that Atari could announce so many new products at Dusseldorf in August, then virtually deny their existence to American audiences. The STE and TT will be officially announced to the U.S. at the Comdex show in November. Shipments, however, are not anticipated until 1990.

It is rumoured that Atari have a large backlog of ST computers in their warehouses. These will need to be sold into the already sluggish U.S. marketplace before room is made for the new machines. For this reason, the new MEGA1 computer, selling to the U.K. for some time, may never make it to American shores.

NEW MANAGEMENT AT ATARI

Atari Computer (U.S.) have announced the hiring of a new president. Mike Morand joined Atari in late September to manage operations, sales, marketing, and administration. Morand was formerly with AST Research, an American manufacturer of IBM-compatible personal computers.

Atari Computer have been without a chief since Vince Giammateo stepped down earlier this year and it fell under the direct leadership of Sam Tramiel and other Atari U.S. executives.

In late October, Morand announced Bill Crouch as new vice-president of sales. Crouch was previously V.P. of marketing at Televideo Corp., as well as president of Apricot Inc., overseeing the U.S. launch of their product line.

SOMETHING FOR EVERYONE

Comdex, the United States' biggest computer show, took place in November in Las Vegas, Nevada. Atari's booth contained 36 workstations, highlighting Atari's new products, the Portfolio, and the PC line. Desktop publishing, home and office, music, and engineering applications were also on display.

The theme, "A computer for everyone," was carried throughout the booth. Atari showed a complete line of hardware, "from palmtop to laptop to desktop."

Showcased products included the TT, STE, and Stacy, all shown to U.S. audiences for the first time running applications. The Atari ABC286/30 (the reduced-price MS-DOS compatible Atari Business Machine) and PC4-X were also shown for the first time in production con-

figurations, often in conjunction with the Atari Portfolio. Uploading and downloading files between the handheld and the desktop computer was demonstrated, illustrating file compatibility between spreadsheets and text processors on the different machines.

No major new software products were announced by third-party developers at the show. To show off the hardware, Atari relied on existing professional-level software such as ISD/Ditek's Calamus and Dynacadd, LDW Power, and Precision Software's Superbase Professional.

ROCKING YOUR POCKET

Atari U.S. continues to sell Portfolios at a strong rate, through direct sales in-house, and to a limited extent through its dealer network. Sales are reportedly keeping up with management estimates, rumoured to reach \$10 million from the U.S. alone by the year's end.

The largest Atari advertising campaign seen in years has appeared in newspapers and magazines throughout the country since late September.

Initial print advertisements showed a life-size photo of the Portfolio computer with the statement, "Actual Size" followed by "Actual Price \$399." A second series of advertisements told readers to "Put a rocket in your pocket," emphasizing the tremendous power and small size of the machine.

Popularity of the 128K RAM cards among American buyers has led to shortages of this accessory. The memory expansion unit and PC card reader are still expected to begin shipping by the end of November.

SOFTWARE DEVELOPERS UNITE

American commercial software developers have formed the Atari ST Developer Association (ASTDA). At a successful user group show held in Washington in October, several Atari developers organized the group. The Association was formed in order to disseminate information about programming the ST more effectively, and also to allow developers to work more effectively with Atari personnel.

EARTHQUAKE HITS ATARI HQ

An earthquake, measured at 7.0 on the Richter scale, rattled Atari Corporation headquarters in Sunnyvale, California in October. Atari headquarters is located about 25 miles from the quake's epicenter.

Although the quake did cause severe damage in Northern California, only a few minor cracks could be seen in the stucco finish of the Atari building at 1196 Borregas. Employees were evacuated immediately after the quake, but returned to work as normal the next day. No equipment was reported damaged.

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a) Nursing;
b) Watson, or
c) Mycroft?
2. In the Sherlock Holmes story, what was so surprising about the dog in the night:
a) it hunted mice;
b) it smoked a pipe;
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a) a seance;
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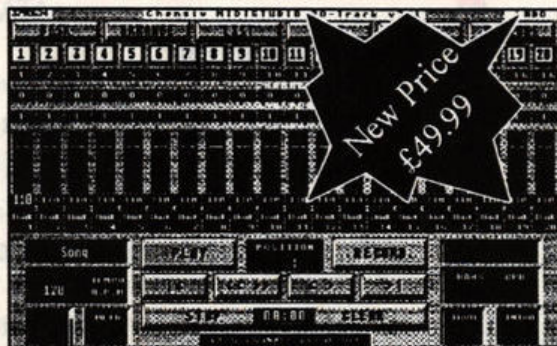
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The Editor presents your correspondence on the Cover Disk, advertising, overpricing from Public Domain libraries, racism in software and more

TALKBLACK

I'm writing about the letter you printed from Joseph Adjare last issue, complaining that black people are unfairly under-represented in games and computer advertisements. As you say, the majority of computer users are white males. Clearly the majority of programmers know this fact and are simply catering for the majority. They want to sell lots of their games, not just copies to black people (or females)!

How many white people will buy a game based on black life, culture or ideas? They just won't relate to it. Thus the lack of black people or females depicted in games.

Anyway, who cares what people are in a game? Think about it, Joe, what's your favourite game? You really think it's brilliant, don't you? If it contained black people would you enjoy it any better? I doubt it will make any difference.

By the way, my favourite game is *Dungeon Master* (if you haven't got it, do so!). You control four characters and there are several black characters and girls to choose from, so you can play the game with four black people if you want. There is even a black woman in it, which is rare indeed! But that is not the reason why I like the game: it's just brilliant.

Excluding adventures, most games are about space; then next comes movie tie-ins, beat-'em-ups, drive-'em-ups, and fight sims. Beat-'em-up type games sometimes have a lot of black characters, because in real life there are a lot of black boxers. If you asked someone the name of a boxer, I bet they'll name a black one.

How many black astronauts do you know? Racing drivers? Air pilots? (Although driving and flying games usually have no characters and most games are based in a fictional future where anything's possible.) Movie tie-ins usually have the hero as the central character and in the cinema world, as in games, they only use black characters if they really have to or want to. Programmers are also trying to be realistic and relate to a wide audience, like film makers.

Oh yes, I forgot to say, I'm black.

Paul Forbes
Tooting, London

■ I am writing in disagreement with Joseph Adjare who states no software house uses "black" people in their games.

Wrong! Michael Jackson is black, is he not? And US Gold have made a game on his *Moonwalker* film with him as the main character. Also the Rainbow Arts game *Day of the Pharaoh* has "black" people, and GST Gold has by your review of their genlock incorporated Prince of Purple Rain fame ("black") and Mr Robbie Coltrane ("black" sax player). Also, Domark's *Friday 13th* has "black" people in it.

All I can say is open your eyes and stop spouting this racism rubbish. Computers should be enjoyed and bring black, white and yellow together, so let's have less griping and more creative criticism please.

Yours, an annoyed newcomer to ST computing and ST Format,
D Plows Junior
Mildenhall, Suffolk

Your letter raises some interesting points. First, I don't understand why you put quotation marks around the word black. Second, Michael Jackson appears to be doing his surgical best to get rid of anything that shows him to be black, which I think is sad.

Thirdly, the pictures of Prince and John Coltrane (not Robbie - he's a large Scots comedian who borrowed Coltrane's surname, I think you'll find) were put into last month's issue by ourselves using the GST Gold genlock system.

Fourthly, I think it's more than a little unfair to accuse Joseph Adjare of "spouting this racism rubbish." His letter was at least careful and intelligent, and judging by this month's postbag it has prompted many readers to think about what he has to say.

■ I found the letter by Joseph Adjare of interest. While I do understand that each of us desires to create a representation of man in our own image, I feel Mr Adjare has not studied the endless possibilities to which his comments could lead. Scottish, Irish and Welsh readers have a greater claim of representation. Quite justifiably the Scottish reader could demand more red-haired, kilt wearing heroes, while the Welsh in addition

could demand more text in Welsh. I as a Jew could demand more characters with dark hair and big noses. I believe the software industry presents a fair and acceptable portrayal of the imagination and wishes of the majority of the British people, and I respect them for this.

Michael Jacobs
Bexley, Kent

Thank you Michael for a strong point put with good humour; and thanks too to all our readers who contributed to this debate. For the record, the letters printed here give a rough indication of the replies we received - mostly not agreeing with Joseph, though acknowledging the sincerity of his remarks.

C: WHAT YOU GET FOR ASKING

I think your Cover Disks are excellent: there is always something for everyone. I am not a great games fan myself, though I enjoy playing the demonstration versions. It enables you to see what they are like before you buy. Is there any chance of including a spreadsheet on a further Cover Disk?

Will you be doing a series on other languages such as C, Pascal or Fortran? I am keen to learn other languages other than BASIC, and I would like to sample them first before I spend a large amount of money. Keep up the good work!

Miss J. Lord
Selby, North Yorkshire

It's useful to have suggestions for what people want to appear on our Cover Disk - so useful, in fact, that we're bunging you £25 for the letter of the month. Yours is the first request I've had for a spreadsheet, and it seems an excellent idea. Does anyone have a particular PD favourite they'd recommend, or has anyone indeed written a neat spreadsheet we could use?

It would be a good way for ST users who've never seen one in action before to discover what they're all about. We're very keen to hear what kind of programs you'd like to find on what is, after all, your Cover Disk.

As for your enquiry about a language series, you'll be pleased

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to hear that we are just about to launch into an introduction to the mighty C language in our very next issue – so place your order with your friendly neighbourhood newsagent immediately! ST Format 7 is on sale on Thursday, 18th January 1990.

PRICES ALL OVER THE SHOP

I wonder how many readers have noticed the tremendous variation in the price of software between one mail order company and another. Looking through your magazine recently I compared the price of one game out of many from the various mail order companies.

The first company were charging £19.95 for the game; the next £16.95 and the last one a whopping £29.95. Surely if one can sell a game for £16.95, the one that is charging £29.95 is making a profit of £13 on each game sold?

I know these people need to make a living but surely if one company can sell a game for £16.95 then the rest must surely be able to do the same.

B E Grimes
St Dogmaels, Cardigan

You do seem to have found an extreme example of price variations. But unless there is strict price control on software – such as has been the cause of such controversy in the book trade, for instance – there are bound to be fluctuations.

The moral is to shop around and take a good look at the ads in ST Format before you decide who to give your business to. And if you find a company helpful, courteous and swift to respond you may feel, as I do, that it's worth a little (but probably not a tenner!) extra.

THIS ONE WILL DRAGON AND ON

I know you won't answer this question (you never have done before), but is *Dragon's Lair* out for the ST yet? If so, does it need 1MByte memory? And are they double-sided disks?

I have a double-sided drive, so would I be able to double two disks onto one disk to half the swapping of the disks, when I buy the game?

Hamish MacCallum
Harrogate, North Yorkshire

Well here we are, Hamish, answering your question just as you said we wouldn't: *Dragon's Lair* has not yet appeared on the ST. The second in the series, *Space*

Ace, is likely to appear before it. We were expecting to review it this issue, but it didn't arrive in time. Next month, we hope.

Finally we guess it's unlikely you'd be able to copy the disks. After all, how would they know that the copying would be for a genuine reason and not for piracy (boo?)?

THE BENEFITS OF ADVERTISING

In the fourth issue of ST Format I counted advertisements for 82 companies, and 11 of these companies advertised on more than one page. This means more than half of my favourite magazine is in fact adverts.

I know that making a colour magazine is costly and paying people to write it is too, but maybe if you cut down the adverts a little bit or have a couple more pages you can have articles such as the top 20 best selling games or features on hardware or software which interests readers.

For example Mr Joe Bloggs from Cardiff may want to know how a game is made, from idea right through to the selling and marketing of the product.

Jason Demant
Stanmore, Middx

As you point out, Jason, it's expensive to produce a magazine such as this one, and to be honest I think you're not being entirely fair to the advertisers. Look at it this way: this massive issue enables us to give you more pages on all subjects to do with the ST.

It means, for instance, that we can tell you about the 40 best games of 1989 (page 76), as well as giving you over 20 pages of games reviews and special sections on music and Desktop Publishing. We couldn't do all that if we only had 100 pages! Try looking at any big magazine and you'll soon discover that advertising is an important element in its success.

SHOPPING LIST

When I got my 520 STFM in February 1989, I made myself a list of the things that I wanted to get over the coming year.

I now have almost everything on the list, and some things that are not. Two things that remain for me to purchase are a good all round graphics package (not *Neochrome*, the printing is less than satisfactory), and a good software back up utility (one which you don't have to be a programmer to use, as I have heard is the case with *Multiface*

ST!).

My budget for each of these items is around £50. Could you please recommend some titles which fall into this category, and tell me where to get them from?

Tim Hale
Lydney, Glos

We reckon you could do worse than *Degas Elite* (£24.95 from *Electronic Arts*, 0753 49442), as used by many programmers and those in the know.

Secondly, I don't know where you got the idea that you have to be a programmer to use the *Multiface*. It's as simple and easy to use as such a device could be (we use it frequently to "grab" screens for importing onto pages). And because it has to be in place when you load a back up copy of a piece of software, I'm fairly confident it's not of much real use to software thieves (boo!).

A LITTLE BIT HIGHER NOW

I've recently bought a 520 STFM as an upgrade to my now aging ZX Spectrum, and now, having so much more power, I want to do more than just play games. I picked up how to do some programming in basic. I have also done a bit of programming in Assembly Language and that is what I have written about.

Could you please tell me where I could get the software and literature to be able to start programming in Assembly on my ST. And can the ST run peripherals as robots, turtles, and other types of sensors?

Ian Harris
Wigan

One book we'd recommend is *Programming in 68000*, published by *Abacus*. You may also be interested in our C series, which begins next month. And in case you missed it, we reviewed the fascinating *Robokit* in last month's issue (moral: never, under any circumstances, ever skip a copy of ST Format: you just don't know what you might miss).

PD=PERFECTLY DREADFUL?

Software for the ST is expensive, and if you can't afford £50 and £100 for a word processor or a programming language, then the cheaper alternative is the public domain library. When you pay your money for the public domain disk(s), postage and advertising, however, you are not paying for the programs.

A PD library called *Softville* is charging £4 for just one feeble disk. I myself know that it does not cost £4 for the costs I listed above.

Another PD library called *Seven Disk* is only charging £1 per disk, which is far more reasonable. *Seven Disk* must still be making a profit, however small, because obviously nobody does anything for nothing. £3 is a big difference when you are buying more than one disk. I would like to hear a rational explanation from *Softville* (and others). This is where you draw the line between "free" software distributors and extortionists.

James Beswick
Westerham, Kent

I rang Carol Gearing at *Softville*, who told me that their normal price is £3, reducing to £1.50: £4 is for two disks crammed onto one, a price which also reduces as you buy more.

"All prices include the disk, postage, secure packaging in Jiffy bags and spare label – all usually sent same day," she told me. "And if you send your own disk it's £1 cheaper."

"We offer a complete service," she said, "we don't just sell PD disks, you know! We're here all day so you can 'phone for advice, ask questions and of course place orders – which, as I say, will be despatched same day. You may also pay by credit card; and you can even call in and talk to us!"

"We provide a 96 page, professionally printed catalogue containing hints/tips and full descriptions of the most popular programs."

"We collect/download software from around the world and this, together with all the factors mentioned above, means that our prices are what they are – and have been for four years. They're the same, you'll find, with

LETTERS, PRAY

Address your observations to: The Editor, ST Format, Beauford Court, 30 Monmouth St, Bath BA1 2AP (note the new address), marking the envelope "For Publication."

We give preference to short, sharp letters that make a point, rather than long, meandering efforts or lists of unconnected questions. And £25 is awarded to the best letter of the month.

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- TANGLEWOOD ADVENTURE ☐
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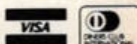
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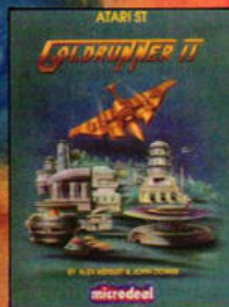
JUPITER PROBE
Vertically
scrolling shoot
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Bak.



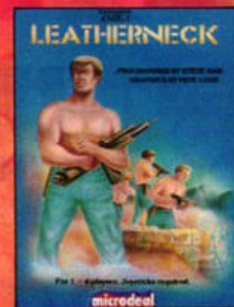
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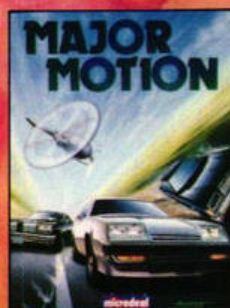
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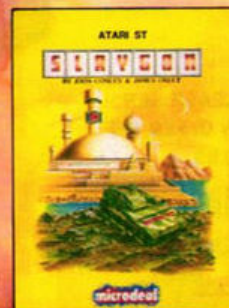
LEATHERNECK
Reviewed as the
best arcade war
game, program by
Steve Bak.



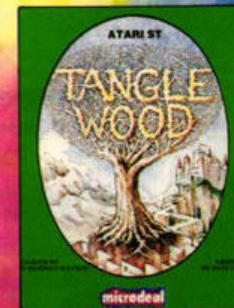
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graphic
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ADVENTURE**
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the best 16 bit
graphic
adventures.



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adventure, the
original ST Mega
game.



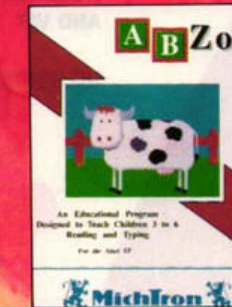
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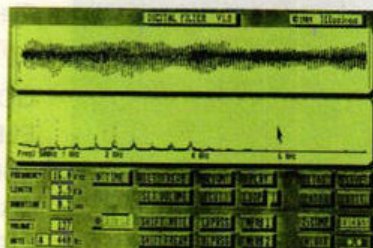
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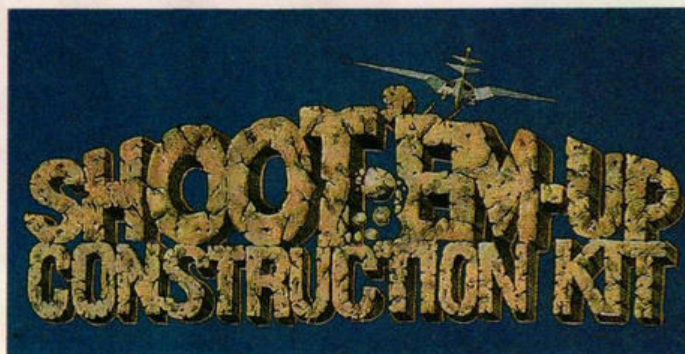
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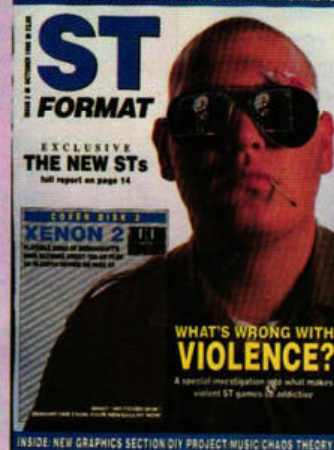


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Description	Price	Order No
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Description	Price	Order No
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SEND THIS FORM TO: Trevor Witt, ST Format, The Old Barn, Freepost, Somerton, Somerset, TA11 7PY
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COMPETITION

Photofile is a graphic digitising service for the ST whose customers include Bristol University's Department of Veterinary Medicine, NUPE, Guy's Hospital and Greenhead Department of University Technology. And they digitise graphics for software houses for incorporation into games, too.

If you haven't the technology to digitise for yourself – and colour digitising is only just arriving on the ST – it's the ideal solution.

In addition Photofile produce a seven disk collection of clip art that's been called "one of the wonders of the modern world."

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- Take pictures from ever so far away;
- Er, and... that's about it, really.

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To win it, all you have to do is to answer our fun quiz, and tell us in 25 words or less which historical event you wish you'd photographed and why.

Send your entry to Photofile Comp, ST Format, Beauford Court, 30 Monmouth St, Bath, Avon BA1 2AP before 31st January 1990 and you stand as good a chance as anyone of winning.

Finally, with your entry be sure to enclose an SAE, which will entitle you to a discount voucher off a Photofile order. It's worth £1 off orders over £12, and £2.50 off orders over £20 (see their advert in this issue for more information).

QUESTIONS

1. How many disks are there in Photofile's Clip Art set?

- a) 6
- b) 7
- c) 324

2. Zenith cameras come from which country?

- a) USSR
- b) USA
- c) UK

3) Why would it be a mistake to send your entry to 4 Queen St, Bath?

- a) Because we're moving offices

And finally: in 25 words or less, which historical event would you most like to have photographed, and why?

RULES

1. Entries must be received at our new address – Beauford Court, 30 Monmouth St, Bath, Avon BA1 2AP, by 31st January 1990.
2. Employees of Future Publishing and Photofile are not eligible to enter this competition.
3. The judge's decision is final and no correspondence or hate mail can be entered into. Entry implies acceptance of these rules.



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Batman The Movie	19.99	13.45
Bloodwych	24.99	16.45
Bloodwych Data Disk	14.99	10.45
Beverly Hills Cop	24.99	16.45
Beach Volley	19.99	13.45
Balance Of Power 1990	24.99	16.45
Cabal	19.99	13.45
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Dynamite Dux	24.95	16.45
Emperor Of The Mines	24.99	16.45
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 - ☐ Decorations (medals etc)
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 - ☐ Legal Status
 - ☐ Credits
 - ☐ Equipment
 - ☐ Cargo
 - ☐ Weaponry
 - ☐ Next mission to be played and countdown to it
 - ☐ Planet
 - ☐ Galaxy

Waiting around for a mission? Cut down the waiting time to mere seconds! Mission too tricky for you? Skip on to the next one! Lost your cargo to some Thargoid scumball. Get it all back for free! Cops after you? Change your legal status to clean! Outgunned by the pirates? Have a megablast at no charge! Stuck in the middle of nowhere? Jump to somewhere completely different without using a drop of fuel! A little strapped for Cash? Have LOADSAMONEY

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Plotter and Printer Drivers (CAD 3D VR1.0 Accessory)	24.95	18.48
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Video Tiling Design Disk (3D font and objects)	29.95	22.48
Sterotek (3D spectacles)	149.95	112.48
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3D Font 2 (3D font)	29.95	22.48
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1st Mail (Mailmerge for 1st word)	14.95	11.48
1st Word Plus (English wordprocessor)	79.95	59.48
1st Word Plus (French wordprocessor)	79.95	59.48
68000 Macro Assembler (editor/assembler/linker)	19.95	14.48
Fractal Generator (Educational /Entertainment)	19.95	14.48
GSTC (Introductory C compiler)	19.95	14.48
MIGRAPH		
Easy Draw 2 (Drawing program)	59.95	44.48
Supercharged Easy Draw 2 (draw/paint/import)	99.00	73.48
Easy Tools (Easy draw accessory pack)	39.95	29.48
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Partner ST (Desk accessory pack)	49.95	37.48
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ROBBERY
SEQUENCE CONTINUES...

"WITH THE SPLINTER
DESTROYED, CARROLL'S
BREAK-IN BEGAN TO
SHOW UP ON THE BANK
SECURITY PROGRAM."

"IN THE MEANTIME WE
HAD OBTAINED
CLEARANCE TO CARRY
OUT OUR OPERATION AS
ORIGINALLY PLANNED."

"NEVERTHELESS,
CARROLL WOULD HAVE
EXITED THE PROGRAM
AND ESCAPED INTO THE
PICTURE, IF NOT FOR
WHAT HAPPENED NEXT."

PERHAPS WE
COULD GET ON
WITH IT THEN...

22 [SET] GRAD



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With its massive issues packed with all kinds of ST-dedicated features and information, *ST Format* – first published in August of 1989 – has already established itself as the indispensable ST peripheral. But what's in this latest issue, and why should you upgrade your current January version?

■ As usual there's extensive coverage of all that's best in the games world for the ST, with definitive reviews of *Space Ace*, *Infestation*, *Austerlitz*, *North and South*, *Switchblade*, *Ghostbusters II* and many more.

■ One item without which *ST Format* would not be complete is the "ever delicious and scrumptious" (as they insist on calling it) Cover Disk, packed with demos, utilities, Public Domain and reader contributions. "It's the 800K," apparently, "that makes the Cover Disk what it is today" (oh dear).

■ February's fully playable game demo is *Xenomorph*, which – if it lives up to the claims being made for it – should be well worth catching.

■ Two new series begin: one on the mighty C programming language, and an excellent introduction to Desk Top Publishing on the ST.

■ There are special reports on the first full colour digitiser for the ST; and on two- and multi-player games: how do you set them up? And how are they programmed?

ST FORMAT VERSION 7.0

The February issue of ST Format is available all over the country on Thursday 18th, January 1990: but what's in it for you?

■ Serious reviews remain an important element in *Format*'s continued success, with coverage of a 2D CAD package, a new circuit maker, the ultimate in flying sims (something we were promised in *Format 6* but which had to be held over through lack of space), Arnor's impressive new database *Prodata*, the long and eagerly awaited *Condor Supercharger*, the new *Naksha* mouse and more.

■ And then there's Jon Bates' continuing comprehensive coverage of new releases in the ever-expanding world of ST music, as well as Mark "The Pix" Pickavance's *Cyber* tutorial, adventure reviews and round-ups of all that's best in PD and education software. And regulars such as *Desktop* and *Gamebusters* continue to put in their welcome appearance.

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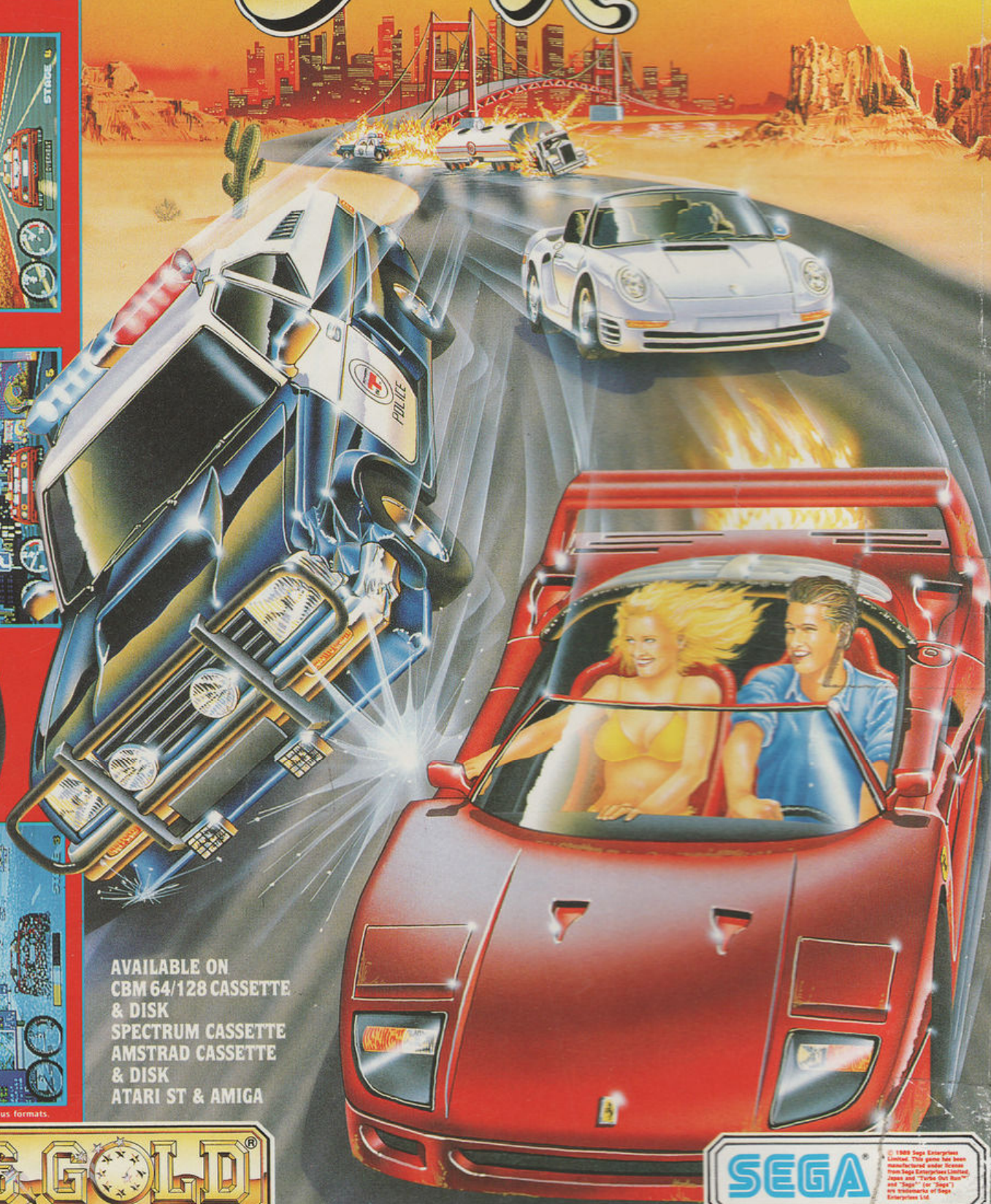
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