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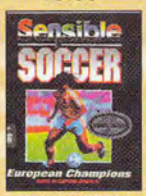
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SEPTEMBER 1993

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Deputy Editor: Tony Kaye
Art Editor: Liz Maddox
Designers: Alan Jones, Eddie Burke
Production Editor: Phil Morse
Games Editor: Richard Barton
PD Zone: Nial Grimes

Contributors:
Maurice Collins, Tony Dillon, Kevin Earley, Jon Ellis, Ofir Gal, Nial Grimes, Colin James, Dave Jones, Dave Munsie, Jane Plessey, Rob Redfurn, Stu Redman, Mike Robinson, Graeme Rutt, Andrew Wright

Photography: Ian Fox, Vic Lennard, Tony Kaye

Ad Manager: Simon Lees
Ad Production: Barbara Newall
Marketing Manager: Lucy Oliver

Production: Sandra Childs
Circulation Director: David Wren

Published by: Europress Enterprise Ltd, Europa House, Adlington Park, Macclesfield SK10 4NP
Tel: 0625 878888 Fax: 0625 850652

Chairman: Derek Meakin
Managing Director: Ian Bloomfield

Distribution: COMAG
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Subscriptions: MRM Promotional Services, PO Box 500, Leicester LE99 0AA
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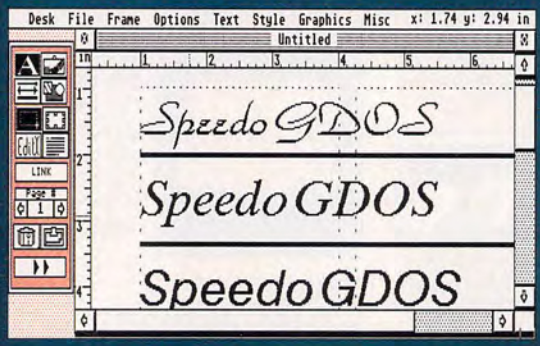
COVER FEATURES



SPEEDO GDOS

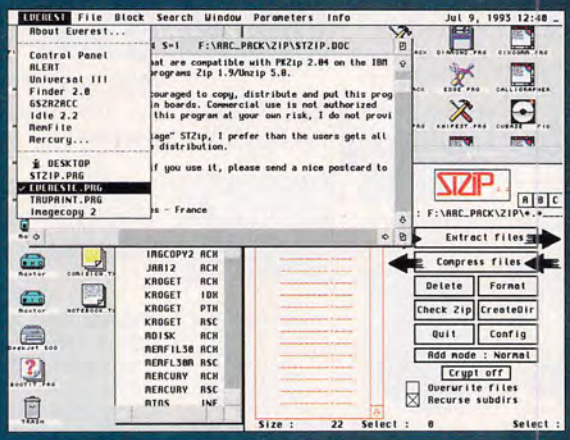
After years of suffering with the quirks of GDOS and the lack of a decent font system, the answer to our prayers appears to have arrived in the shape of SpeedoGDOS.

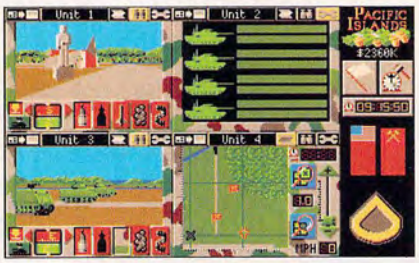
Does it deliver the goods? Will your software work with it? Turn to page 14 to find out...

MULTITOS

The long-awaited system upgrade for the Atari range of computers is finally here.

Has the wait been worthwhile? What difference will MultiTOS make to the way you work? Find out by turning to page 18 for our practical guide...

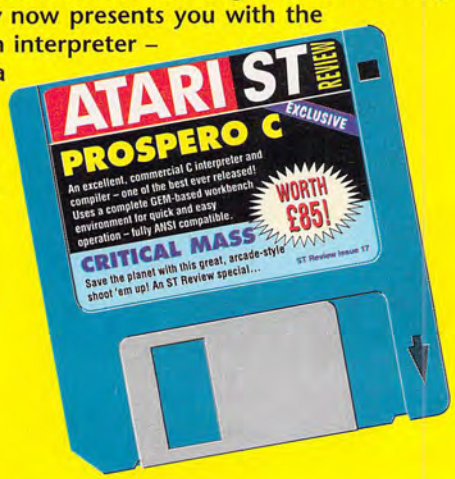




War In The Gulf (left) is given the full treatment while Kingmaker (right) receives its first airing...

ON THIS MONTH'S COVERDISK
PROSPERO C

... one of the finest C languages available for the ST. Following on from our long-term success with *HiSoft BASIC*, *ST Review* now presents you with the next logical step. *Prospero C* is not just an interpreter – it's also a compiler so that you can write a program, save it to disk and then run it from the desktop, just as you would any other program! To complement this, we're running a series of tutorials starting on page 10...



PLUS

SEE PAGE 13 FOR:
CRITICAL MASS: An exclusive game for *ST Review*!
WINLUPE: Excellent magnifying utility that can be used with any program.

NEXT MONTH
ON SALE SEPTEMBER 16TH

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10 ALL AT C!
Jon Ellis starts you on the road to fame and fortune with the first of his *Prospero C* tutorials.

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Hardware support for the Falcon is on the increase. Ofir Gal has a closer look...

25 SMALL AND NEAT
Interested in a small laser printer? Let Colin James show you the way with three of the latest...

30 SAY CHEESE!
Repro CD is one powerful image manipulation program. Nial Grimes puts it through its paces.

34 INSURING YOUR FUTURE
The first part of *In The Know*, a brand new series dedicated to imparting information on a host of interesting, peripheral topics. This month, Tony Kaye looks at insuring your computer equipment.

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WIN A HEWLETT-PACKARD LASERJET 4L – SEE PAGE 40!

INFORMAL

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ST SOURCE

A change in name perhaps, but not in nature. Welcome to ST Source – the source of all information! Here you'll find the best tutorials, your opinions in our Letters pages and answers to your questions...

74 SHORT CUTS
A brand new section dedicated to all those necessary little items such as books, shareware, budget software and small peripherals.

78 DATA DETAINER
No matter how you use your ST, you're bound to be inundated with information – names, addresses, money and so on. Andrew Wright looks at how to handle all kinds of data in the latest *In At The Cheap End*.

82 STRONG WORDS
Know your headers from your footers? Or a sheet of A4 from A5? No? Then welcome to our latest series, *Strong Words*. Tony Kaye will take you through every possible feature of your word processor starting with general layout.

86 COMMS COACHING
Comms Coaching finishes its current lease of life by looking at setting up and using *Connect*, the latest comms program for the ST. But don't worry – Graeme Rutt will be back next month with a new Comms series.

87 BASIC TUTORIAL
Continuing with last month's colour theme, Ofir Gal helps you to write a program to display and edit colour pictures with *HiSoft BASIC*.

90 CONCERTO TUTORIAL
Kevin Earley shows you how to get professional results from *Concerto*, our cover disk program from the last issue.

92 ASK THE EXPERTS
Questions, questions... but who can supply the answers? *ST Review*'s panel of experts of course!

96 LETTERS
Want to express a point of view for all the ST world to read? Drop *ST Review* a line and see your letter appear on our pages...

98 BACK ISSUES
Missed any of our issues? Get 'em now – before we run out...

MOVING FORWARDS

Have you noticed any changes in ST Review over the last few issues? You should have. "Through The Keyhole", "One Man & His ST" and "Comms Coaching" have been introduced and followed up with four regular columns, written by journalists who really know their particular field. We've also tried to strike the right balance between serious reviews and features on the one hand, and the more fun sections such as PD Zone and Screen Scene on the other. Our growth in readership seems to bear out these decisions.

This issue continues in a similar vein with the introduction of three new features. "In The Know" is an informative guide to topics that affect every ST owner starting with the thorny issue of insurance – is your computer equipment properly covered? Check out our sound advice on page 34. "Strong Words", also commencing this issue, covers every conceivable aspect of word processing, building into a superb reference guide.

Perhaps the most important addition is "Short Cuts", a section dedicated to reviews of all those important little items such as books, shareware, budget software and small peripherals. With this and the strength of our tutorial coverage, the blue section has been renamed ST Source. Use it as the source of all information!

This issue's cover disk contains one of the best programming languages ever given away with an ST magazine – in fact, the best since HiSoft BASIC over a year ago. Prospero C has been used to write many professional programs; now it's your turn with the help of Jon Ellis, an excellent C programmer. His tutorials will take you from absolute beginner through to any level you wish to achieve.

More has been said about MultiTOS and SpeedoGDOS than practically any other ST system enhancement. But how accurate have the comments been? How do you really find out what benefit these can be to you? Rely on ST Review. Our experts have prepared six pages of practical guides that tell you all you need to know, starting from page 14.

Over 5,000 of you have ordered from our Readers' Offers pages in the last eight issues, and have been duly rewarded with quality items at fair prices. This issue sees the start of a brand new ST Review campaign to help you upgrade your computer to as much memory as you need. Turn to page 58 for more information but be warned; your pen is likely to make a bee-line for your cheque book...

And once you've read this issue, it's your turn. Write to our experts for replies to your questions, or drop me a line in the Letters page. Keep in close contact with us, especially if you have an idea for an article or feature...

Until next issue,

Vic Lennard
Editor

STOP PRESS – EXCLUSIVE! • STOP PRESS – EX

SILICA

In a bold move, Silica have slashed £100 off the prices of their 1040STE packs. At the new price point of £199, the Family Curriculum II and Music Master products represent outstandingly good value for money.

Family Curriculum II comes complete with *Play And Learn, Junior School, GCSE, Hyper Paint, Music Maker II, First BASIC* and *Ani ST* while Music Master incorporates Steinberg's *Pro 24 III* sequencer. Both packages include the TenStar games pack and Silica's own Productivity pack with *1st Word, Spell It* and *ST BASIC*. The additional software alone is worth far in excess of £199!

Andy Leaning, PR manager for Silica commented: "The ST is still one of the best value home computers available. These new low prices from Silica are intended to spur on the ST and bring it back to the forefront of the home computer market."

In the light of such a price tag, the 520STFM at £159 appears to be over-priced. Darryl Still, marketing manager at Atari UK, said: "While Atari were not immediately planning any price cuts, these prices offer tremendous value for money. End users would be silly not to take advantage of them."

> ***"These prices offer tremendous value for money. End users would be silly not to take advantage of them." Darryl Still, Atari UK.***

In addition, Silica have landed another coup. Some years ago, there was the intention of launching an ST with four megabytes of RAM but the idea never came to fruition. Silica have taken a standard STE, upgraded the RAM and secured supplies of a "4160" badge to release an official 4160STE. With a price of just £299, many of the memory upgrade companies will have to look carefully at their current pricing structures.

IBM AND TIME WARNER BACK JAGUAR

When the Jaguar was announced on 3rd June, Sam Tramiel, president of Atari Corporation, said of the new machine, "our entry into the multimedia entertainment category will be fully made in America". At the time this sounded somewhat strange, since Atari computers are normally manufactured in Taiwan. Further details have recently emerged and none other than IBM are to manufacture the Jaguar for Atari!

IBM's Charlotte plant in North Carolina has landed the contract, worth around $500 million. Sam Tramiel said: "Because the Jaguar will feature such an array of visual and audio special effects, we wanted to work with a company that we are confident can manufacture the quality product we have developed." In addition to assembling the Jaguar, IBM will handle the sourcing of components, quality testing, packaging and distribution of the product. IBM's Herbert L. Watkins said of the deal, "Everyone expects IBM to manufacture complex information technology products, and with this, we'll show that we can competitively build a sophisticated consumer product". The immediate effect of the announcement on Atari's shares on the New York stock

Sam Tramiel, president of Atari Corporation: "We wanted to work with a company that we are confident can manufacture the quality product we have developed."

SIVE! • STOP PRESS – EXCLUSIVE! • STOP PRESS – EXCLUSIVE!• STOP PRESS – EXCLUSIVE!

SLASH ST PRICES!

1040STE Music Master pack – now just £199 at Silica.

exchange was a massive rise from under $1 per share to just over $3!

A further boost to the Jaguar is the announcement that Atari and its third party developers are to have access to Time Warner's enormous library of video clips. Sam Tramiel said, "With 64-bit technology, the Jaguar will allow for new heights in software experiences, and the association with Time Warner will add to the reality of the software". Atari are still insisting that the Jaguar will sell at "approximately $200". Don't expect to see it in the shops here until at least this time next year.

LE'ST GET SERIOUS SHOW!

Details were received shortly before going to press of an innovative new show. Organised by Ray Cross, Neal O'nions and David Encill of CGS, Compo and Titan Designs respectively, the "Le'ST Get Serious Show" is dedicated to all serious aspects of the Atari range of computers.

As the show is being held on August 14th at the Novotel Centre, West London, you will be reading this after it has taken place. However, watch this space in the next issue for the show report.

HEAVENLY GIFT

Heavenly Music have just finished converting their entire Megga Tracks MIDI Song File Library to MIDI File Format 0. A program for converting MIDI File Format 1 to MIDI File Format 0 is also available at £12.95 for those who have access to format 1 files and are currently unable to use them. A starter pack of format 0 files is available for just £3.00. This is refundable upon purchase of three or more of their titles.

Also released is 'The Essential JARRE Collection', a set of nine tracks on one disk for £19.95. Postage on all orders is £1.50 UK (£3.00 overseas). For further details contact Heavenly Music, 39 Garden Road, Jaywick Village, Clacton on Sea, Essex, CO15 2RT. Tel/Fax: 0255 434217.

DOUBLE-SIDED LASER

Rank Xerox have just launched the Xerox 4213-II, a double sided desktop laser printer. Running at 13 pages per minute, it has a resolution of 300dpi and can handle up to 45,000 copies per month. It comes with two standard paper trays that hold 500 sheets and an optional high capacity feeder is available that takes 1500 sheets. Envelopes, transparencies and labels can also be accommodated by way of an optional multimedia automatic feeder.

The 4213-II offers Postscript and HP LaserJet compatibility and can be fitted with Ethernet, Token Ring or Apple Talk for networking purposes. Two unique features of this model are the ability to print edge to edge and to change emulation mode by means of software. The Xerox 4213-II starts at £3,325 (depending on configuration) and comes with a three year on-site warranty.

FLICKER-FREE FALCON

Philips have recently added three autoscan VGA monitors to their range. Although primarily introduced to service the Macintosh and PC markets, the three are ideal for use with the Falcon, supporting all modes except 80 column true colour. They are flicker free and non-interlaced, with the added advantage of stereo sound, something not normally available on VGA monitors. With additional hardware such as Compo's ScreenBlaster, they can handle resolutions up to 1024 pixels by 768 pixels.

The range operate at horizontal scanning frequencies of 30 – 58kHz and vertical frequencies of 50 – 100Hz. All controls (including horizontal and vertical size) are conveniently located at the front of the monitor. The 4CM4270 and 4CM8270 are 14" and 15" models, each having a 0.28 dot pitch and retailing at £349.99 and £479.99 respectively. The 4CM4770 is a 17" model with a 0.31 dot pitch and retails at £699.99. All models come with a one year on-site warranty. For further details contact Mathieu Thomas Ltd, 8 Westminster Palace Gardens, Artillery Row, London, SW1P 1RL. Tel: 071-222 0833.

SECOND GAMES CHAMPIONSHIPS

The Future Entertainment Show is yet again to stage the final of the National Computer Games Championships. Both preliminary heats and regional finals will be held in Virgin Games Centres and Megastores from 25th – 29th October (18th – 22nd October in Scotland). This year East Anglia, Yorkshire, Northern Ireland and the Republic of Ireland are to be added to the list of regional finals, making ten in all.

A total of 26 stores are participating so there should be one within travelling distance of everyone wishing to participate. Regional finalists will win three games machines to help them polish up their skills for the final. They will then compete against each other at the Future Entertainment Show from 11th – 14th November at Olympia, London. The overall winner will get £10,000 in prize money, with £4,000 going to the runner-up. Details about how to enter should be appearing in your local press about now. If you have difficulty finding out about your area heat, contact Mike Cowley of Cape Associates on 061-480 9811.

NEWS

THE BUSINESS SERIES

The Business Series from Star Micronics has come about as a result of the success of the highly popular LC-10. It consists of eight printers with varying features, tailored to different requirements and various budgets.

The base model is the 9-pin LC-20 at £222.08, which features 180cps in draft mode and 45cps in NLQ. It comes with a 4K buffer and paper parking with push feed tractor. Eight resident fonts are built-in as well as a 'Quiet' and 'Panel Lock' modes.

The LC-100 Colour at £233.83 has all the features of the LC-20 except that the buffer is about half the size. In addition, it can function as a colour or mono printer, has auto emulation selection and electronic DIP switches.

The top of the range 9-pin printer is the LC-200 at £304.33. In addition to the features of the LC-100 Colour, it has a high speed draft facility of 225cps, a 16K buffer and advanced paper parking with a sheet feeder installed. Mono and colour ribbons are included as standard along with a swivel selectable push or pull tractor feed and a multi-part mode for making up to three copies.

Also on offer from Star are three 24-pin models, all of which operate in mono or colour. The base model retailing at £280.83 is the LC24-100. It prints at speeds of 192cps in draft mode and 64cps in letter quality. It has a 16K buffer and paper parking with push feed tractor. Electronic DIP switches, a 'Quiet' mode, a 'Panel Lock' and 10 built-in fonts complete the package.

The next step up is the LC24-20 II at £351.33. As well as offering everything the LC24-100 has, it is slightly faster at 200cps in draft mode and 67cps in letter quality, with a high speed draft option at 210 cps. The buffer is a massive 39K (expandable to 71K).

The top of the range 24-pin model is the LC24-200 Colour at £391.28. Printing speed is the same as the LC24-20 II, except for a small increase in performance when using high speed draft. The buffer is 30K (expandable to 62K) and it features a swivel selectable push or pull tractor feed. The same 10 built-in fonts are present as is advanced paper parking. Optional font cards are available for this model.

Last but not least are the LC-15 and LC24-15, wide carriage versions of the LC-10 and LC24-10 respectively. The former at £351.33 offers 180cps in draft mode and 45cps in NLQ, the latter (at £468.83) prints at 200cps in draft mode and 67cps in letter quality. The buffers are 16K (expandable to 144K) and 11K (expandable to 171K) respectively. Both offer a 'Panel Lock' mode, paper parking, 8 built-in fonts and the option of a plug in 8K serial interface. The LC24-15 also allows the use of additional font cards. For further details of Star's Business Series contact your local Star stockist or Star Micronics on 0494 471111.

PRIZEWINNERS!

We've finally caught up with all the competitions we've been running! Following are the names of the prizewinners...

FALCON COMPETITION
Main Winner:
C. Bailley, Wrington, Bristol

Mr Bailley will be invited up to the *ST Review* offices to be presented with his prize.

True Paint:
T. Daw, Chelmsford, Essex
G. Smith, Dewsbury, W. Yorkshire
R. Hilton, Runcorn, Cheshire
P. Young, Winchester, Hants

Subscriptions:
D. Bell, Rotherhithe, London
M. Kearney, Bristol
R. Johnson, Chelmsford, Essex
R. Glen-Doendenning, Morton Clay, N. Yorks
S. Gine, Belfast, N. Ireland
T. Kanpesh, Hayes, Middlesex
R. Leggett, Coulsdon, Surrey
T. Bradley, Warrington, Cheshire
D. Wiggins, Newark, Notts
M. Bartlett, Chatham, Kent
R. Ridgeway, Stourbridge, W. Midlands
P. Murphy, Widnes, Cheshire

MARPET 8MB RAM BOARD
Populated Upgrade:
P. Bell, Brandon, Suffolk

Unpopulated Upgrade:
S. Terry, Houghton-le-Spring, Tyne and Wear
M. Lyons, Carshalton, Surrey
R. Baines, Amesbury, Wilts
S. Waller, Nelson
S. Pearson, Rainworth, Notts

KIXX XL
A set of 10 Kixx XL games:
M. Bryant, Fremington, Devon
T. Holder, Kinver, W. Midlands
I. Bradshaw, Whitstable, Kent

AMERICAN PIE

I can't Believe who's going to Manufacture the Jaguar...

The most startling news to report on this month is Atari's recent announcement that IBM will be in charge of production, distribution and packaging of their new entertainment console, the Jaguar! Not only did this fuel some much needed exposure of Atari (like actually being mentioned on CNN headline news) but it also gave Atari stocks a desperately needed jolt. Investors take note – do it now if you have the money!

What exactly does this mean for us Atari supporters? Well, with IBM's manufacturing ability it should mean that we might see Jaguars arrive on schedule. It could also mean that Atari may be able to free up other resources for the further development and manufacturing of the Falcon line. While initially I was a little confused, to say the least, after further research I must say that this pairing up might actually help the entire Atari product line. In a recent conference on GENIE™, Bob Brodie, Communications Director for Atari Corporation, even stated the possibility of IBM building Falcons at some point!

Which sadly brings me to another point. Recently another UK ST magazine proudly ran an article about Atari re-releasing the 520STFM to compete against the consoles, dollar for dollar. Something like 150,000 units were predicted to be sold. As a developer and supporter of this line I personally was in love with the idea. But Bob Brodie stated on a conference on GENIE™ that he laughed when he heard about that article. I was lucky enough to be a part of that conference to confirm this with a direct question:

"Bob, as a writer for a European magazine (ST Review) I have to clarify this. When you said you laughed about the ST Format article about the re-release of the STFMs, are you going on record as saying there is no truth to that article whatsoever? A lot of people in the media in the UK seem to think it's true. Thanks."

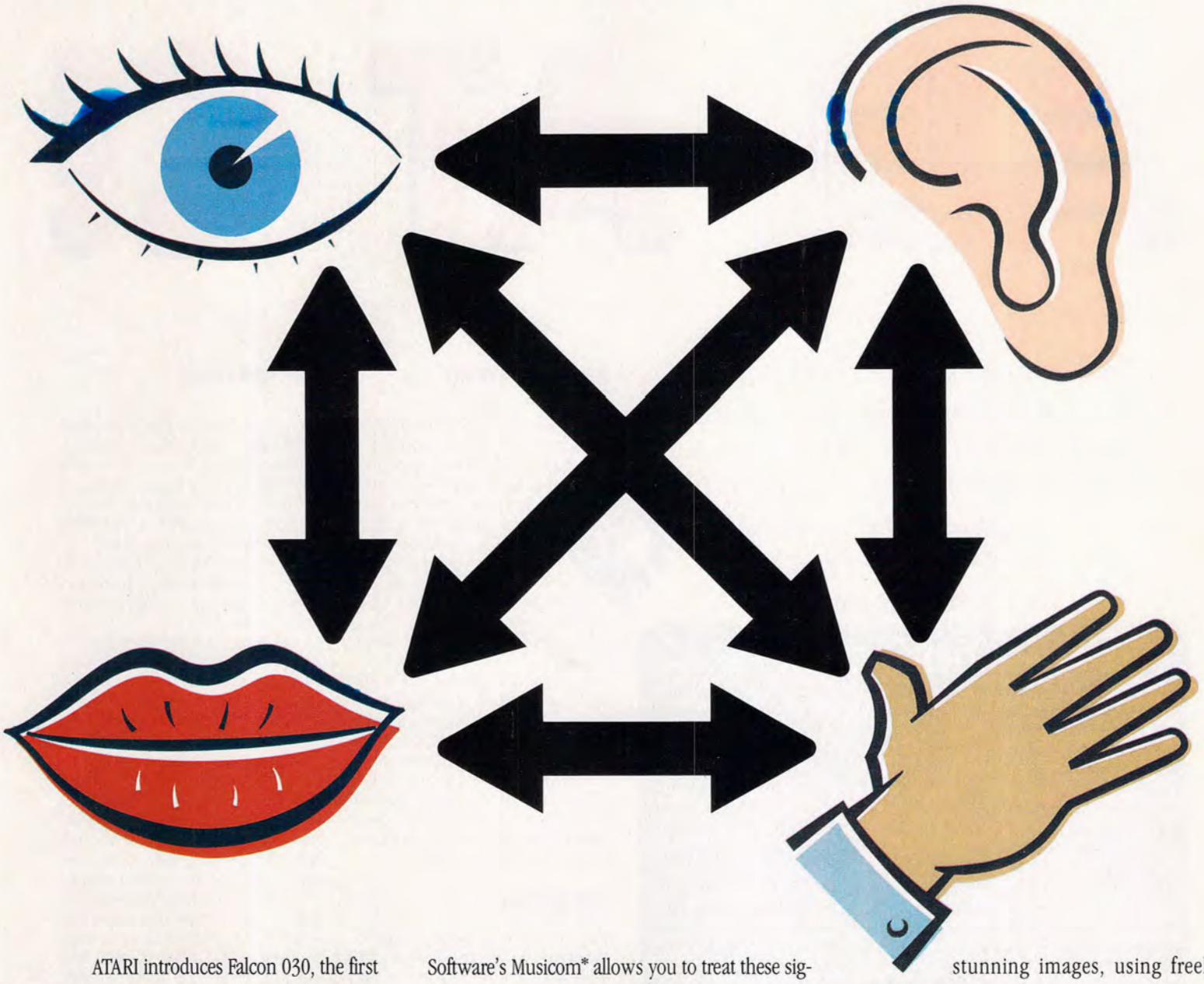
Bob Brodie's reply was that he had asked his immediate superior Garry Tramiel, who is well informed of the company's plans worldwide, and that he had indicated that this was not true. However, it appears that neither Bob or Garry are aware of Atari UK's plans as the 520STFM is now being sold in the UK! Come on Atari Corporation – get your act together!

On a more pleasant note, Dave Small of Spectre GCR made a public appearance recently. He wants all of the loyal Spectre GCR users to know that he is back in full force and is currently working on updates and a possible Falcon version. There is even a hint (ever so lightly) of color Mac emulation in a newer version.

On a final note, Gribnif Software just announced a competitor for *MultiTOS* called *Geneva*, said to provide better compatibility and more features than Atari's system. This one sounds nice, with 3D buttons and tear-down menus. More on this one next month. Till then, in time-honored British fashion – cheers!

Dave Munsie, is rapidly becoming known as *the* Atari guru in the USA. If he continues to writes columns like this one, given another six months he won't be able to walk down the street safely...

If you understand this, you understand the Falcon.



ATARI introduces Falcon 030, the first ever micro computer which instantly communicates with all your current and future audio-video equipment. Now, TV, Monitor, HiFi, CD, CDV, R-DAT, DCC, VHS, telephone, synthetizer, photo CD, camcorder, printer, modem, ... communicate with each other, allowing you to get the most out of each piece of equipment. A true technological revolution, Falcon 030 is operated by a 68030 processor working in parallel with a DSP, which is able to treat digital data at a very high speed.

Falcon Audio, the universe of Direct to Disk: Falcon 030** offers, as standard, "Direct-to-Disk" recording, from a microphone (voice or instrumentation), a Walkman or a HiFi, via a simple stereo plug and also through its MIDI interface. Compo Software's Musicom* allows you to treat these signals at better than CD quality: equalizer, Digital Delay (echo), harmonizer, flanger or even karaoke.

Falcon Video, manipulating images: Falcon 030 can be connected to almost any video source. With OverScan's Overlay* and Genlock* you can add titles, animations, sound to your videos and generate presentations combining a slide show with sound. **Falcon Graphic, a choice of 65,536 colours per pixel:** With Hisoft's True Paint*, you can produce stunning images, using freehand drawing, lines, shapes, patterns, perspective, colours, and even create animations which can be stored on video. **Falcon Photo, a personal computer studio:** Thanks to Studio Photo* from Euro-Soft, the Falcon 030 treats digital photos in all formats, including Kodak CD, allowing special effects and retouching. **Falcon Software:** Falcon 030 already benefits from a wide range of innovative software and now, using Falcon Speed* from Sack Electronics you can run MS-DOS programs on your Falcon 030. For more information write to: ATARI Corp. Ltd, Railway Terrace SLOUGH - BERKSHIRE·ENGLAND SL2 5BZ. Software by Compo, Euro-Soft, OverScan Sack Tel. : 0480 891819, by Hisoft Tel. : 0525 718181.

FALCON 030

ATARI

Now, all that communicates communicates.

ALL AT C!

Welcome to a major new initiative. Following on from our success with HiSoft BASIC, ST Review have scored another first – a complete commercial C compiler. Jon Ellis starts you on the programming path to glory...

FIRST THINGS FIRST...

Before you can do anything useful with your new C compiler, it must be set up properly. The package can't be run directly from the cover disk, because there isn't enough space but making a working set-up of the system is very easy.

● Make a copy of the cover disk using STRBAKUP.PRG and remove all files from this copy except for the PROSPERO folder and DESKTOP.INF. If you have a hard disk, create a folder called PROSPERO on one of your partitions.

● With a working copy of the compiler system, configure it to suit your requirements. Double-click the C workbench program C-BENCH.PRG, and click on the "Set drive/path names" item in the "Options" menu. The resulting dialogue box should be edited so that it appears as in Figure 1. If you are running the system from a hard disk, the contents of the box should be similar, except that it will refer to the folder and partition that you copied the files to.

Figure 1. Edit the dialogue box to look like this.

● C programmers use the tab key a lot to lay out their programs neatly. Click on the "Tab width" item from the "Options" menu, and enter a new value of 4 into the tab width dialogue box.

● To complete the configuration process, select "Save configuration" from the "Options" menu. When the file selector appears, simply press <Return>. When the workbench finishes writing to the disk, return to the desktop by clicking on "Quit" from the "File" menu. Your new compiler is now ready for use.

STARTING WITH C

Forget all your misconceptions about C. It isn't impossible to understand and it's not just a language for academics or red-hot hackers. C is a simple and powerful language that puts the programmer in control. It's a particularly good language in which to program your ST, because much of the ST's operating system was written in C, and is designed to interface with C programs.

On with the tutorial. We're not going to start with a Mickey-Mouse program that prints a line of text on the screen, as this won't teach you anything. Our first program is actually going to do some computation. In fact, it's going to do some simple arithmetic. You don't need to know any maths – just some snooker, and a little BASIC!

THE DESIGN

Our program is a memory-jogger for snooker players. Think about the following situation: you are playing snooker with a friend. He has just finished a break that has put him 55 points ahead. There are four red balls left on the table, along with the colours. Can you win by potting all the balls, or must you play to snooker him?

To help answer this question, we'll use a little program written in C. Before writing any code at all, we need to think a little further about what the program is going to do. We want to know the maximum number of points available for any number of reds left on the table. The full set of colours is worth 27 points (from yellow worth 2 points, up to 7 points for the black) and each red is worth a maximum of 8 points (1 point for the red ball itself, and up to 7 for the following colour).

So if there are "n" reds on the table, the maximum number of points will be 8 x n + 27 (and that's the only equation, I promise!). To make things comprehensive, we'll have our program print a table of possible totals, for every number of reds between 0 and 15 (the number at the start).

THE PROGRAM

If we were writing the program in BASIC, we'd use a FOR-NEXT loop to do the counting from 0 to 15. The calculation could be put inside the loop, or a subroutine used with GOSUB, together with a few PRINT statements to output the results.

It's just as easy in C. Look at the listing to the right. Now is probably a good time to read through the numbered explanations...

The program starts by telling the compiler about all the functions it's going to use. The library function declarations are brought in by *#include <stdio.h>*, and the functions that the program defines (**main()** and **score()**) are declared explicitly.

In the program, the first defined function is **main()** (it is conventional to put a pair of brackets after a function name, to show it is a function and not a variable). Every C program must have a function called **main()**, as this is where the program begins when it is double-clicked. As the program runs, control moves through **main()**, doing what it says, and when it reaches the end of **main()**, the program finishes.

The first thing that happens in this program's **main()** is that it calls another function, **printf()** to print some text. **printf()** is a library function, as is **getchar()** which appears at the bottom of **main()**.

The main part of the function is the C equivalent of a FOR-NEXT loop. This is set up by the line:

```
for (f=0; f<=15; f=f+1)
```

which means "set the loop counter variable (in this case f) to 0 to start with; while f is 15 or less, do the loop; at the end of each pass round the loop, add one to f". In BASIC, this would be FOR F=0 TO 15 STEP 1. The statements to be done in the loop are those enclosed in the curly brackets that follow the **for** statement. See the Library Functions box for more details of what these functions do.

On each pass round the loop, the **score()** function is called with the value of f as input, calculates the number of points available on the snooker table, and returns the

```
/*
** A simple C program to print out
** a table of possible snooker scores,
** depending on the number of red balls in play.
** See the main text for more details.
**
** Written on 8th July 1993
*/


#include <stdio.h>                /* Read library function declarations */


/*
** Declare the functions defined by the program
*/


void main(void);
int score(int);


/*
** The program starts here...
*/


void main(void)

{
     int f, result;               /* Define two integer variables */

     printf("Snooker score calculator\n\n");
     for (f=0; f<=15; f=f+1)      /* FOR-NEXT loop from 0 to 15 */
          {
          result = score(f);      /* Work out the answer, then print it */
          printf("With %d red balls in play, you can score %d points\n",f,result);
          }
   printf("\nPress RETURN to exit: ");
   getchar();
}                                 /* The program ends here */


/*
** Function to calculate the possible score given
** a number of red balls in play.
*/

int score(reds)

int reds;

{
     int total;                   /* Declare two integer variables */
     int colours;

     colours = 27;
     total = reds * 8 + colours;  /* Do calculation of total */
     return (total);              /*Return the answer */
}
```

PUTTING A C PROGRAM TOGETHER

C listings look a little odd; no line numbers, funny indenting patterns, odd symbols and punctuation – but they are actually very simple to understand. Let's look at the important features of our snooker score program.

1 *SPACING:* The key point to remember is that, most of the time, C compilers are not particularly bothered about spaces, or even about ends of lines. This indifference allows C programmers to lay out their programs according to their own taste. The best layout is the one which makes the meaning of the code clearest.

Blank lines are often used in C programs to define groups of instructions that belong together, a little like spaces between paragraphs of text. All the programs that you will come across in these C tutorials will be laid out according to a fairly standard style, but you should not be surprised if you find public domain C programs formatted differently.

2 *LOWER-CASE LETTERS*: Rules for characters are strict as the compiler only recognises the C keywords in lower case. Upper case letters are used for user variables sometimes but "THREE" is not the same as "three".

3 *CHARACTER PAIRS:* A backslash tells the compiler that a special character is to be made, followed by a letter indicating what type. The character pair *\n* is translated into a new-line, *\t* into a tab, ** into a single backslash, and ** into a quote.

4 *COMMENTS:* A comment (like REM in BASIC) is started by a /* pair of characters, and ended by */. These are ignored by the compiler and the comment can straddle several lines.

5 *SEMI-COLONS:* In BASIC, the interpreter or compiler knows when it has finished processing an instruction because there is a carriage return at the end of the line. Because C allows us to put new-lines where we want, the compiler has to have some other way of spotting the gaps between instructions. This is the use of the semicolon – it separates instructions. Pay careful attention to the semicolon in listings, because there are some cases when there shouldn't be a semicolon at the end of the line (and if you put one in by mistake, you'll cause problems !).

6 *CURLY BRACKETS:* Curly brackets (called braces) define groups of instructions that belong together. Wherever one C statement is expected you can put several statements, enclosed within curly brackets.

7 *INDENTING:* A striking feature is the use of indenting. Just like blank lines, indents visually group instructions together and is used to help you read a listing – the compiler looks for sets of curly brackets.

8 *VARIABLES:* A variable must be "declared" before using it. Name it and tell the compiler what type of information it holds. Here, the variable called "total" contains integers (whole numbers).

9 *FUNCTION DECLARATION:* Functions are the building blocks of C programs, like subroutines in BASIC. To allow functions to work together, you pass data into a function and receive a result back from it.

Like variables, these must be described. Here, a function called *score* takes one piece of input data, which is an integer, and gives back one piece of output data, which is also an integer.

10 *FUNCTION DEFINITION:* The type of data a function returns must be shown along with the name of the function and a list of variable names in brackets. When the function is used, the input values are copied into these variables. There is no semicolon at the end of a function definition line – take note!

After the name comes declarations for the input variables, and then the instructions that define what the function does, enclosed within curly brackets. It's easier to do than to describe! If you want to use any variables within the function, their declarations follow the opening curly bracket.

11 *CALLING A FUNCTION:* To use a function you have to "call" it; the name is followed by the input data in brackets. If there are several bits of input data, they are separated by commas. Results are assigned to a variable. Here, *score()* is called with the value of the variable "f" as input; the output is placed in the variable called "result"

12 *RETURNING A RESULT FROM A FUNCTION:* The *return* statement hands a result back to the caller of a function.

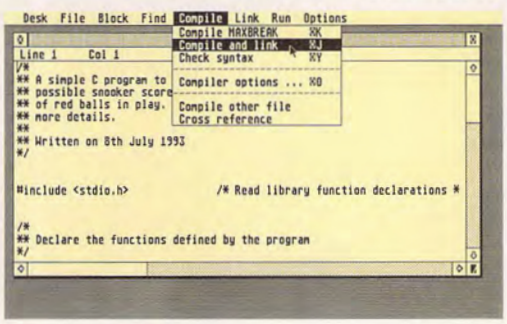
Now go back and read it all again!

answer, which is then printed. When the loop is done, the program waits for <Return> to be pressed, and exits.

The **score()** function receives the number of reds on the table and calculates the possible score, which it returns as its result.

GO AHEAD – TRY IT!

To prove that this program works, you'll have to run it for yourself. Double-click on the C workbench *C-BENCH.PRG*. Select "Edit .C file" from the File menu, and use the file selector to locate *MAXBREAK.C* in the tutorial folder. The workbench will load the file, and open a window that allows you to edit the code



The listing for MAXBREAK.C.

From the Compile menu, click on the 'Compile and link' item, and sit back. The workbench will now feed your program to the compiler and linker in turn, and create an executable file on disk. To run the compiled program, simply choose 'Run MAXBREAK' from the Run menu. You should end up with a list of possible scores on the screen.

As it stands, the output from the program is a little untidy. It would be nice if all the columns of figures lined up. We can do this by bringing another **printf()** facility into play. A while ago, we saw that wherever **printf()** saw "%d" in its control string, it replaced it with a number. We can tell **printf()** how much space to allow for that number by putting a field width command in the control string. To make a number occupy at least 3 spaces, we replace "%d" with "%3d".

To see this work, move the editing cursor down the listing until you reach the **printf()** line. Now, change the line from:

```
printf("With %d red balls in play, you
can score %d points\n",f,result);
```

to

```
printf("With %2d red balls in play,
you can score %3d points\n",f,result);
```

Since we have made a change to the program, it will have to be recompiled before we can see the effect of our change. Select "Compile and link" again, and then run the program. You should find that the result is a little neater.

Finally, quit the workbench, and have a look at the files on your programming disk. You should find two files that weren't there before: *MAXBREAK.BIN* and *MAXBREAK.PRG*. The first of these is the object code for our program, and the second is the fully-finished, stand-alone program. To run it from the desktop, it should be renamed to *MAXBREAK.TOS*, and then double-clicked.

THE LAST BIT

In this first tutorial you've learnt an enormous amount. You've seen how C compilers work and how listings are put together. We have looked at a simple problem, and seen how it can be solved easily in C. On a practical level, you've set up a C development system, and used it to compile and run a program. Hopefully, you should be convinced that not only is C nothing to be in awe of, but it's also rather easy. By the way, the answer to the question posed at the start of this article is that with four red balls in play you can just about beat your friend at snooker!

Until the next instalment of the C tutorial, here's a challenge. *MAXBREAK.C* prints the list of possible scores in ascending order. Can you alter it to print the list in descending order? A hint – you can do it all just by fiddling with the **for** statement.

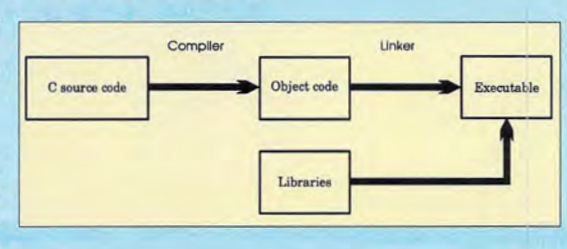
NEW LIBRARY FUNCTIONS

printf(): printf() is a library function that prints text on the screen. It's rather unusual in that it can take variable amounts of data as input. The first item in the input list is a string. What printf() does is to scan along the string, printing each character as it goes, until it finds a formatting command. Formatting commands are introduced by a "%" character. The "%d" command used in the Listing means "take the next variable from the input list, and print its value in decimal".

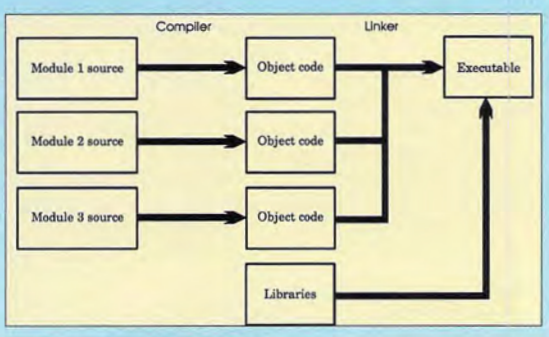
getchar(): This library function reads a character from the keyboard. However, the input code waits until a whole line of data has been entered before returning. We are making use of this property to wait until the user presses <Return> before ending the program.

HOW C COMPILERS WORK

A C program starts life as a simple text file written by the programmer. This file, known as the source code, could be produced on a word processor like *1st Word Plus*, or on a proper text editor, or indeed on any program that can output an ASCII text file.



The final program is a file of machine code instructions for the ST's microprocessor to execute. The task of turning our source code into a .PRG file is performed in two stages. The source code is converted into an intermediate object file by the C compiler and the process is completed by the linker which reads in the object file and combines it with the library files to create the final executable file.



One of the advantages of C is that it allows you to write programs in a modular fashion and has the great advantage that if you make a change to one area of a program you don't need to recompile the whole program. Simply recompile the changed module, and then relink all the modules together.

How does this relate to the *Prospero C* package? The core of the system is the C workbench *C-BENCH.PRG*. This is the text editor where you will write your C program source code. It's actually much more than this, because it also handles feeding your program to the compiler and then the linker. This is very useful, because talking directly to the compiler and linker from the desktop is rather fiddly. C packages with programs like the workbench are often called integrated development environments.

The compiler is made up of two files, *C1.OVL* and *C2.OVL*, together with a support file *C.ERR*. The linker is *PROLINK.OVL*. The .OVL extension indicates that these files are in a special format which means they can only be run from the workbench, not from the desktop. The files with .BIN extensions are object code files and libraries ready for processing by the linker.

LIBRARY FUNCTIONS CONTAINED IN THE PROSPERO C PACKAGE

One of the differences between C and other languages lies in the use of header files and libraries. This is due to the simplicity of the language – there is no built-in support for printing or getting user input. C programs need to be able to use the screen and other peripherals, so how is this done?

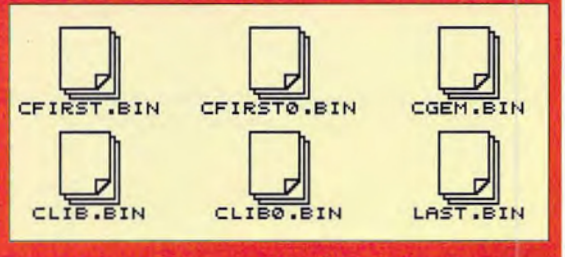
Well, it is provided by the program itself. Thankfully, we don't have to worry about writing code to do all the basic input and output, because it's already been done for us. As part of every C compiler package, there are files called libraries.

These are collections of C functions that provide all the facilities that we need. They are supplied ready-compiled, all we need to do is to merge our code with the library to produce a self-contained program. This task is performed by the *linker* – see the *How C Compilers Work* box for more details.

To make moving programs from one C compiler to another easier, the American National Standards Institute (ANSI) has defined a minimum set of functions providing fundamental services like input and output. This collection is called the ANSI C library. These functions have fixed names, arguments and operations. This means that if we use ANSI library functions in our program, it should work correctly if recompiled with an ANSI library on a PC, or a Mac or an Amiga.

There is nothing magic about library functions. If we could see the source code for these functions, they would look just like the functions we write in our programs. They must be declared before use, just like our own functions.

The Prospero C package contains two large libraries. One of these is the ANSI C library that provides all the fundamental facilities needed to write C programs. The other library provides functions to access all of the special facilities of the ST, such as GEM and so on. This is known as the GEM or graphics library.



HEADER FILES

Before a function can be called, we have to give notice to the compiler that we will be using it. This is done by the function declaration. Because library functions are used so often, it would be a pain to have to declare each one in every program. The short cut is to put the library function declarations in a list, and tell the compiler to read the list in before trying to compile the program.

This list of declarations is known as a header file (also sometimes called an include file), and the instruction to the compiler to read it is:

```
#include <filename.h>
```

Since there are so many library functions, it makes sense to divide them up amongst smaller lists. The example in the tutorial snooker program tells the compiler to read the header file called STDIO.H, which contains declarations for the ANSI basic input/output functions. When we come on to writing GEM programs in C, we'll use other header files that declare the GEM library functions.

LET'S 'C' WHAT ELSE IS ON THE DISK...

Even with Prospero C on this month's cover disk, we still managed to squeeze on a few extras...

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Save the planet in this exclusive shoot 'em up...

Guide the remote-controlled repair droid around the nuclear reactor and collect the parts to make deactivation rods. You do this by connecting to computer terminals around the site. These terminals give you vital information as well.

Watch out for the security droids – although they can't fire, they drain your power if you touch them. You have the ability to fire at them but your ammo is limited, so don't just shoot at everything.

There are six levels to explore and each one has up to three sub-levels. These can be reached by pressing your fire button when you are over a transporter pad.

Collect the entry cards to open the security doors. Once these are open, they won't close again. Automatic doors will open when you approach and close after you are clear. This is a good way of getting rid of the security droids as they can get trapped in them.

For the tecnical, the game was written in 68000 assembler using HiSoft's *Devpac* and runs at 25 frames per second. Nippy, eh!

WINLUPE

UTILITY • FREEWARE BY CHRISTIAN GRUNENBURG • ANY RESOLUTION

Put your artwork under the microscope with this utility.

Winlupe can be run from the desktop or as an accessory by changing the extender from .APP to .ACC. It magnifies the area around the mouse to give you control for detailed work. The Setup screen lets you choose the magnification factor and other options.

A full English manual is provided on disk and a help option can be called from the secondary menu. Good drawing!

IF YOU HAVE PROBLEMS WITH YOUR COVER DISKS...

DON'T PANIC!

In the unlikely event that your cover disk won't load or gives you any other problems at all, remove any peripherals and try again. To restart your computer, SWITCH IT OFF for at least 20 seconds to clear all traces of resident programs before continuing.

If this doesn't solve your problem, return your disk, with a stamped addressed envelope to **P.C. Wise Ltd., Dowlais Top Business Park, Dowlais, Merthyr Tydfil, Mid Glamorgan, CF48 2YY.**

PC Wise will test the disk and send a replacement as soon as possible. You can contact the PC Wise Helpline with any urgent problems concerning faulty disks. PC Wise can be contacted by telephone on 0685 350505 between 10.30 and 12.30 on weekdays.

PROSPERO OFFERS

Prospero C is one of the best C languages for the ST – and our tutorial has probably given you a taster for programming with it!

To help you make rapid improvements, *ST Review* has various manuals and disks on offer. The *Utilities Disk* contains a debugger, librarian, command line versions of the Compiler and Linker, and a Cross Reference Generator. The *Developer's Kit* has Resource Editor, Command Line Interpreter, Assembler and a Make utility.

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FULL SPEED AHEAD!

It's been a long wait, but the ST finally has a world-beating font system. Nial Grimes scales the dizzy heights of SpeedoGDOS and discovers how it performs with three top packages...

From desktop publishers to spreadsheets, fonts play an important part in everything you do on your ST. But wouldn't it be nice if every application you use could offer exactly the same selection of fonts at just the size you need? That's the flexibility promised by Atari's latest font system, SpeedoGDOS.

Speedo is not a software application in itself – it expands your ST's ability to use different typefaces. Just as a small program in the operating system will let a programmer use GEM menus, Speedo will let him use fonts. Unlike earlier versions of GDOS, Speedo is based on outline fonts, which means that they can be scaled to any conceivable size without loss of quality.

So much for the bold claims. Let's take a look at the system from the top – installation through to compatibility with all of the major GDOS applications.

By playing with the custom options it's possible to make device drivers memory-resident, saving time when it comes to printing your work.

READY, STEADY, GO!

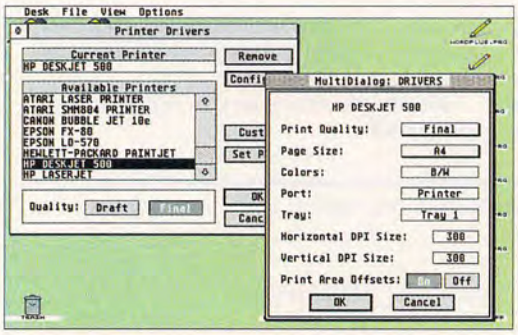
In common with all of the latest generation of Atari-badged software, installing Speedo is a breeze. If you own a hard disk it's just a case of running the installation program and answering a few simple questions. Setting up on floppies is a bit more tricky, particularly with a single drive, but the manual is very good in explaining exactly what you need to do.

The whole system is coordinated through two desk accessories, one for controlling the fonts you have installed and the other to look after your printer. From these it's also possible to change the current printer driver, add predefined point sizes (for compatibility with older versions of GDOS), and to generate width tables for use with MicroSoft *Write*. As for adding new fonts by hand, perhaps the manual describes the new philosophy best when it says "you should never need to look at or edit the ASSIGN.SYS file – just use the Speedo utilities". About time too!

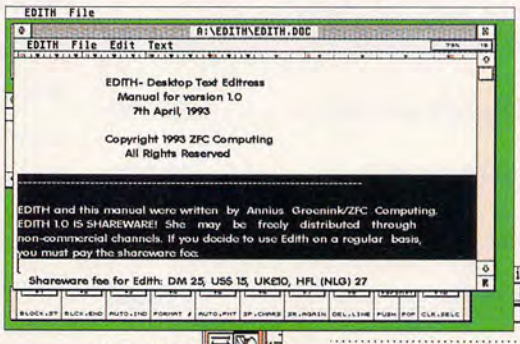
Perhaps the biggest advantage over older versions of GDOS is the caching which is used to hold only as many fonts in memory as need be. In this way, it's possible to have dozens of fonts installed, while still only using a relatively small amount of memory. Unfortunately, a nasty side-effect of this space-saving approach is the operational speed on floppy disks – "painfully slow" is the phrase that springs to mind, and believe me you have plenty of time to think about it!

SPARE A FONT...

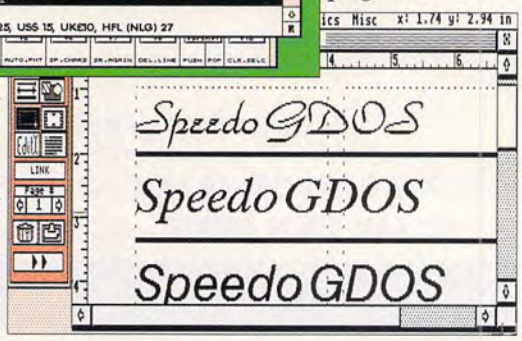
The selection of fonts included with the basic HiSoft Speedo pack is very balanced, but if you do want to boost your collection two extra sets are available. The first is titled "The Writer's Pack" and contains a collection of twenty-five very readable fonts such as Garamond, Futura and Humanist. The second, "The Designer's Pack", is a little more decorative. Both are available from the official Speedo distributor, HiSoft, at £59.95 each.



The Speedo software takes care of the paper size and print quality. Notice the driver for the colour HP PaintJet – now all we need is the software to use it!



Even some public domain programs are improved by Speedo. Shareware text editor Edith, and Gemini the replacement desktop, are both totally different programs!



Easy Text Professional turns into quite a flier under the new system. Watch out for the ten font limitation though – any more and you're in for serious printing problems.

INSIDE INFO

ARE YOU SITTING COMFORTABLY?

GDOS has been with us in some form or another since the very dawn of the ST. The initial release, version 1, was quickly superseded by a slightly less bugged 1.1, which has remained the standard until very recently. Amongst its many misdemeanours were the ability to slow the ST down by a third and lose graphics on a regular basis!

A usable version finally became available with the arrival of FontGDOS in 1992. But by this time, the entire computing world had moved on to outline fonts and most ST developers had given up supporting GDOS altogether! But rumours of a new system were emerging...

Far from being a bug-fixed version of the ill-fated FSMGDOS, as many people expected, Speedo is a complete rewrite and everything GDOS should have been from the very start.

The selection of typefaces included in the standard Speedo package is very balanced, although one or two more decorative fonts wouldn't go amiss.

ABOUT TIME TOO!

Timeworks Publisher 2 is probably the most famous GDOS application, and the one to which most people will be looking to test the new system out.

As with most of the packages here, installation is a bit hit and miss, because the program expects to find GDOS 1.1 and gets a little confused when it finds Speedo instead. This is confirmed when you run the *Font Widths* program, but ignore the warning dialogue box and everything works perfectly. A fringe benefit is that you can ditch the GEMSYS folder after installation, saving up to five megabytes of disk space!

Once up and running, the screen updates are lively and the quality of the printed page is just out of this world – easily comparable with *Calamus* or *PageStream 2*. As an "old" GDOS package it only supports predefined point sizes which can lead to some rather unusual "zoomed" screen displays. To reduce the problem to a minimum, it's a good idea to install a full range of sizes between 1 and 100 points.

The Speedo-generated width tables are of no use to *Timeworks*, so you have to run the *FONTWID* program each time you make any alterations with the *Outline* accessory. It also uses a rather unusual font handling system whereby each font you install gives you another double its size. Speedo doesn't agree with this technique entirely and you'll often find the maximum size listed in the *Timeworks* font box to be incorrectly spaced on screen.

Even with these problems though, *Timeworks 2* is probably more reliable under Speedo than it has ever been under GDOS 1.1. All images on a page are invariably printed (always an infuriating problem under older versions) and the quality of the Bitstream fonts is far superior to the *Timeworks* originals.

A FLAIR FOR WORDS

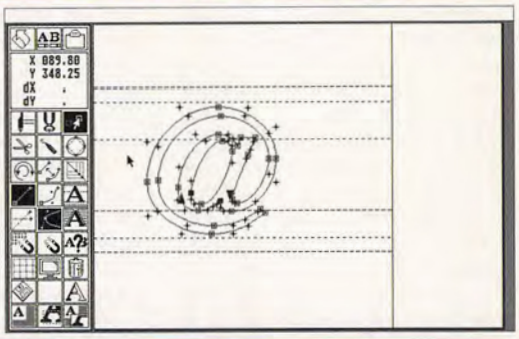
Wordflair 2 was written specifically to work with an outline font system – the now defunct FSMGDOS – so as you'd expect, it works to perfection with Speedo. Even the installation reflects the same degree of forward thinking – just copy the contents of all three floppies into a folder on your hard disk and the program will tailor itself to your Speedo set-up.

Font selection is through a scrollable dialogue box, so you can easily get at all of your new typefaces, and a number of preset point sizes are built in for convenience sake. If the size you need is not available, a custom alternative can be entered, up to the maximum 999 points supported by Speedo. You can also add an italic or bold style to the text, although these don't appear to be 100% reliable and it's far safer to select an italic font, rather than opt for the style. Whether this is a problem with Speedo or *Wordflair* is

GIVE ME A HINT

Loss of detail at small point sizes is a fundamental problem with all outline fonts – a mathematical description just can't account for every possible situation. The solution is a system called "hinting", which provides guidelines on how the font should be printed based on its size and the resolution of your printer. Of the three popular font formats currently in use on the ST, two – Compugraphic used by *PageStream 2* and the PostScript Type 1 used by Didot – support hinting.

As the name suggests, SpeedoGDOS uses Bitstream Speedo fonts, a format that will be familiar to Mac and PC users. The advantage of the modern Bitstream system is that it has the speed of Calamus fonts, while maintaining the hinting system offered by Postscript Type 1. In other words, you get the best of both worlds!

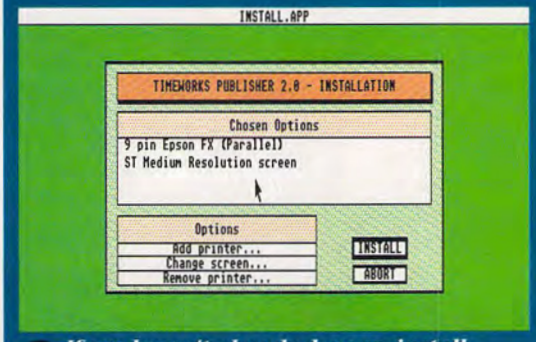


With the help of hinting, Speedo's Bitstream fonts can look their best at virtually any point size. They also stand head and shoulders above Postscript Type 1s in terms of speed!

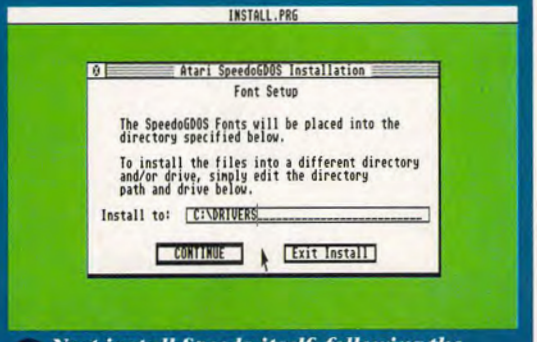
STEP BY STEP

PERFECT TIMING

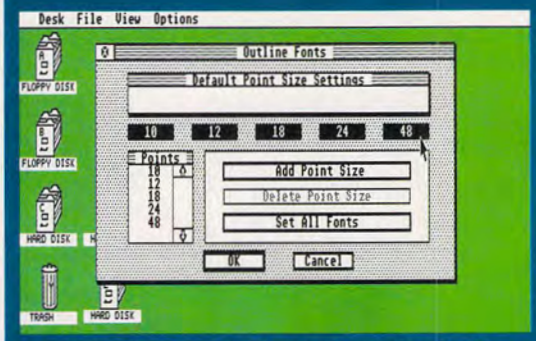
Timeworks Publisher 2 Gets The Speedo Treatment...



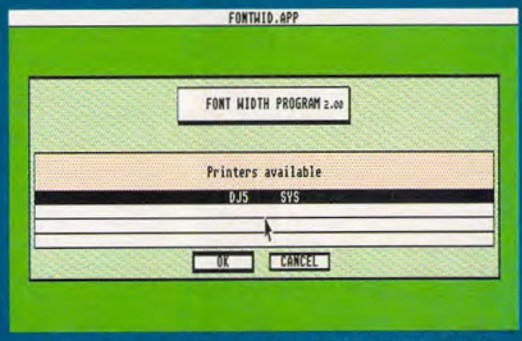
1 ***If you haven't already done so, install Timeworks 2. Choose the Epson FX driver, because this is quickest option and all printer support will be provided by Speedo anyway. Do not run the "Font Widths" program yet.***



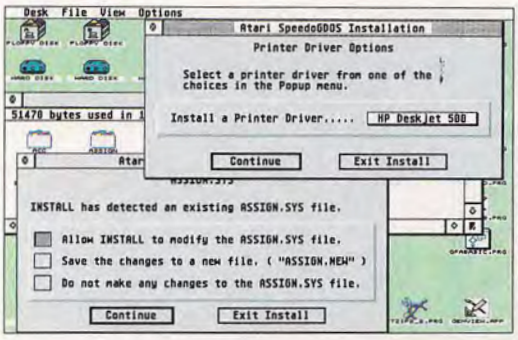
2 ***Next install Speedo itself, following the instructions in the manual. It's a good idea to keep a copy of the new ASSIGN.SYS file to avoid accidental erasure and remember to delete any old copies of GDOS from your AUTO folder before you start.***



3 ***Reboot your machine and run the Outline Fonts program. When the big dialogue box appears choose "Options" and then "Point Sizes". Highlight all of the default sizes (10, 12, 14, 24 & 48) and click on the "Set All Fonts" button.***



4 ***Finally delete the redundant GEMSYS folder and run the Timeworks "Font Widths" program. You are now ready to roll; just remember, you will need to repeat this step if you make any further changes to the point size settings.***



Installation couldn't be easier, and any bitmap fonts you don't want to lose can be preserved. Drivers are included to cover almost any printer on the market.

unknown.

The very first time you print a document, a GDOS error message pops up, but this never appears again (and in fact doesn't cause any problems on the sole occasion when it does). You'll be pleased to know that archaic width tables have been done away with completely, which speeds up loading – as far as SpeedoGDOS is concerned – and also means that new fonts can be installed or removed as often as you like with little hassle.

In fact, the only real problem with *Wordflair 2* is its medium resolution display – there just aren't enough pixels on the screen for Speedo to make an accurate representation of the characters. It isn't so much of a problem with a desktop publisher, but word processors really do need a crystal clear display, and that's only provided by ST hi-res or one of the new Falcon resolutions.

EASY PEASY!

Easy Text Professional is another GDOS 1.1 devotee, complete with width tables and a real bad attitude when it comes to dealing with lots of fonts. In short, it's not without its problems as far as Speedo is concerned.

By far the biggest headache is a peculiar ten font limitation. This means that by the time Swiss and Dutch are in there (in Normal, Italic, Bold and Bold Italic guises) you're left with only two slots for fancy fonts – not ideal by any means. You can sneak your way round the problem by using italic and bold styling, but they are not nearly as pretty as the real thing.

The *widths* program also makes a fuss if it detects more than ten fonts on the system, and be warned – ignore the doom-laden alert box and you'll face serious problems when it comes to printing out your work. Mind you, provided you keep the limitation in mind and make sure you have the same selection of fonts installed each time you use the package, you shouldn't encounter any problems.

The good news is that the tricky installation is definitely worth the effort – *Easy Text Professional* is totally transformed by Speedo.

Text literally rushes onto the screen and no longer do you have to wait aeons for dozens of fonts you haven't used to be loaded. The speed is mainly thanks to the Calamus-esque display system which pauses momentarily before updating the screen as you type. As with all of the packages on test here, using your old documents can mean readjusting the fonts a little, but believe me – it's worth the effort.

WHAT ABOUT THE REST?

This is just a small selection of the software that benefits from Speedo. There are countless more packages and utilities that take advantage of the system in one way or another – the *Gemini* replacement desktop and *Edith* (a rather nice new text editor) being two prime examples. And don't forget that GDOS is also responsible for looking after many of the ST's graphics operations, so programs like *Easy Draw 2* get an extra boost of speed.

Naturally, a limited number of applications aren't impressed at all. *Calligrapher Junior* refuses point-blank to run, and several others display various degrees of instability – the shareware spreadsheet *Opus* being one example. But be sure, there's very little that can't be persuaded to give in and co-operate in some way. Go ahead – surprise yourself!

AND THE WINNER IS... YOU!

You may think that it's hard to get excited about a font system, but try Speedo and you'll change your mind. It's faster, more flexible and easier to use than its predecessor while still maintaining a high degree of compatibility – quite an achievement.

Perhaps the biggest surprise is the speed. After the FSMGDOS fiasco, many people were expecting a system that would only be usable on a Falcon or TT, but nothing could be further from the truth; just take a look at the test results!

And today's GDOS programs are only a glimmer of what is to come in the future. Text rotation, distortion and colour are just three possibilities that the new Speedo system opens up. We can only hope that programmers make the most of it...

QUICK ON THE DRAW?

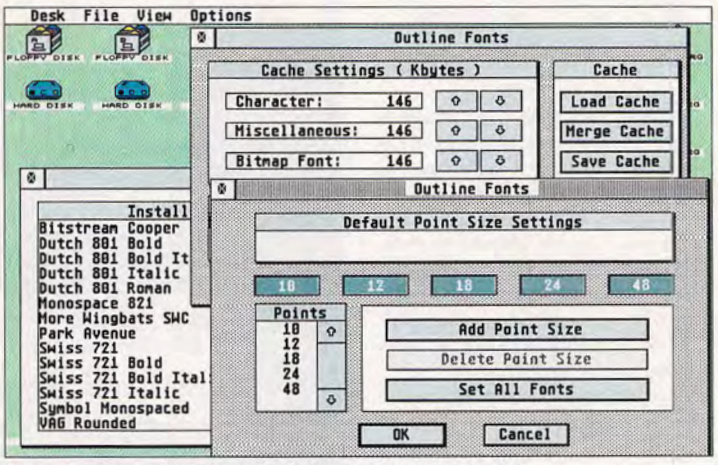
By now we know that Speedo is reliable and fast, but how does it compare with the custom-written competition? To find out we put it up against GDOS 1.1 and *PageStream 2* on both the Falcon and standard ST. The tests were as follows:

- Redraw a full, text-intensive page.
- Print an A4 page of text at 300dpi.
- Size a complex GEM metafile to fill an A4 page.
- Size a headline to 100 points.

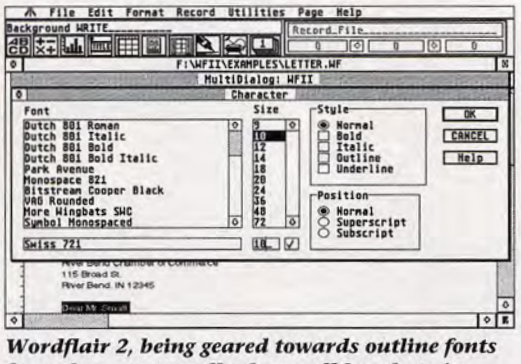
Test	Page Redraw	Print Page	Size Metafile	Scale Headline
ST with GDOS 1.1	2.8s	420s	6s	No
ST with Speedo	2.8s	124s	3.8s	2.8s
Falcon with Speedo	1.5s	105s	3.7s	1.5s
ST with PageStream 2	20.5s	142s	19.7s	3.4s
Falcon with PageStream 2	11.7s	190s	10s	1.5s

The test systems were a standard Falcon030 and 8MHz STE, both with 4 megabytes of RAM and running in ST high resolution. *Wordflair 2* was used as the Speedo test software and all print times, barring *PageStream 2* on the Falcon, were achieved with Frank Powlowski's *FPRINT* patch installed.

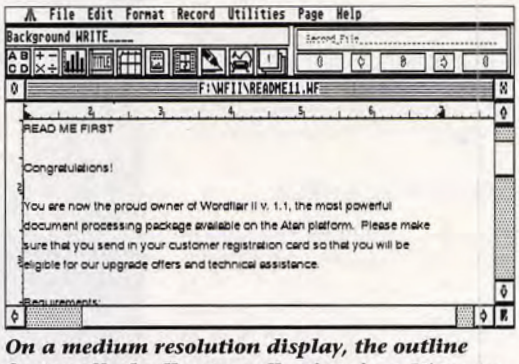
As you can see, Speedo outperforms both GDOS 1.1 and *PageStream 2* in almost all cases.



In order to maintain a high level of compatibility with older GDOS applications, the Outline accessory lets you install predefined point sizes.



Wordflair 2, being geared towards outline fonts from the outset, really shows off Speedo to its best advantage. The output quality is more than a match for any other ST document processor.



On a medium resolution display, the outline fonts suffer badly at small point sizes. It's not a major concern when using a desktop publisher, but word processing is a totally different matter.

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A FULL TOS!

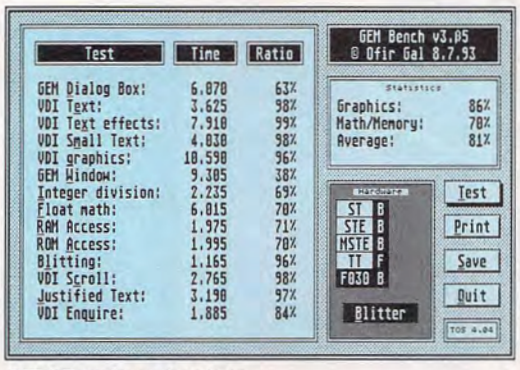
ST owners can now have a taste of a multi-tasking operating system – but how usable is it? Ofir Gal puts MultiTOS to task...

MultiTOS is now officially available at an attractive price and is also included with every Falcon free of charge. Much speculation has surrounded it in the last few months regarding its speed, compatibility and the question of how useful it is.

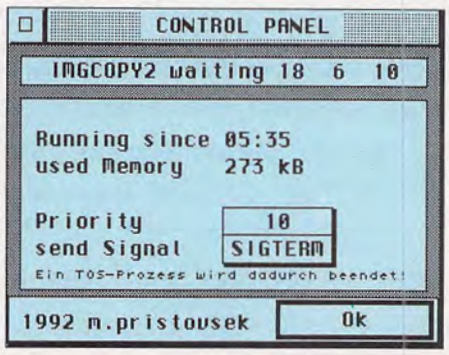
TO MULTI-TASK OR NOT TO MULTI-TASK?

Why would you wish to carry out more than one task at a time? Well, the simplest form of multi-tasking is called **task-switching** where several applications are loaded into memory and you can jump from one program to another without having to continuously quit and load. This can be useful in many situations – for instance, you might be writing a letter and need to have a quick look at your database for an address. Or while laying out a document in a DTP package, you might need to carry out a small edit to a picture.

With *MultiTOS* you can do this and more. Being a true multi-tasking system it can allow programs to share files so that edits to the picture in the above situation are automatically reflected in the copy of the image placed in the word processor. Modem users can use *MultiTOS* to send and receive files in the background. Printing no longer takes over the system – you can continue working while printing takes place.



GEM Bench makes it is possible to see how much the system is slowed down by MultiTOS. Surprisingly, graphics and text are hardly affected.



Various PD utilities are available for setting the priority of each current application and accessory. The immediate effect is very noticeable.

HOW DOES IT ALL WORK?

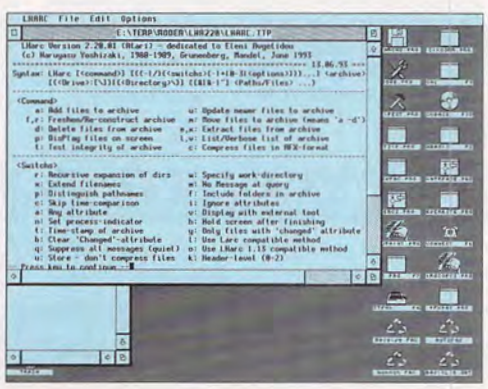
MultiTOS is designed to be as similar to current versions of TOS as possible. The package contains several files, the main two of which are *MINT.PRG*, which goes in the AUTO folder, and *GEM.SYS* which contains the new desktop and a multi-tasking version of GEM. After booting the system, you are presented with a desktop that supports all the features of TOS 2.06 along with the 3D icons of TOS 4. Desk accessories are also loaded in the normal manner and the Desk menu contains all the usual items plus a new entry named **Desktop**.

Programs are run as per usual, except that each program registers itself in the Desk menu, below the accessories and Desktop item. Clicking on the latter returns you to the desktop **without** quitting the program you're currently using. Desk accessories can also be loaded by a simple double-clicking – no more re-booting of the system just to get an accessory to run which makes programs like *MultiDesk* redundant.

The limit of six desk accessories has been removed allowing you to load as many accessories as you like as long as there is enough memory. It is also possible to remove an accessory by holding down <Control> while clicking on the accessory menu item. There is also no limit on the number of open windows as is the case with the usual TOS versions.

Multi-tasking works by constantly switching the processor's "attention" from one program to the next. This happens so rapidly that you don't really notice it although there is the downside of a marked slowdown in system performance. Unlike other multi-tasking systems such as System 7 on the Mac or Windows 3.1 on the PC, *MultiTOS* features "adaptive prioritisation" which allows you to give some applications, or **processes** as they are now referred to, more processor time than others. While not being built into the desktop, this feature is available from third-party programs or *control panel* CPX modules. Every process, be it a desk accessory or a standard application, gets "zero" priority by default. It is then possible to change its priority in the range of -20 to +20.

Every multi-tasking system has to tackle the problem of memory protection. If one of several current applications crashes, there is the very real risk of the entire system halting unless a limited portion of memory is allocated to each process and the result of attempting to corrupt protected memory is the immediate abort of that program. By doing this, a single program crash cannot affect



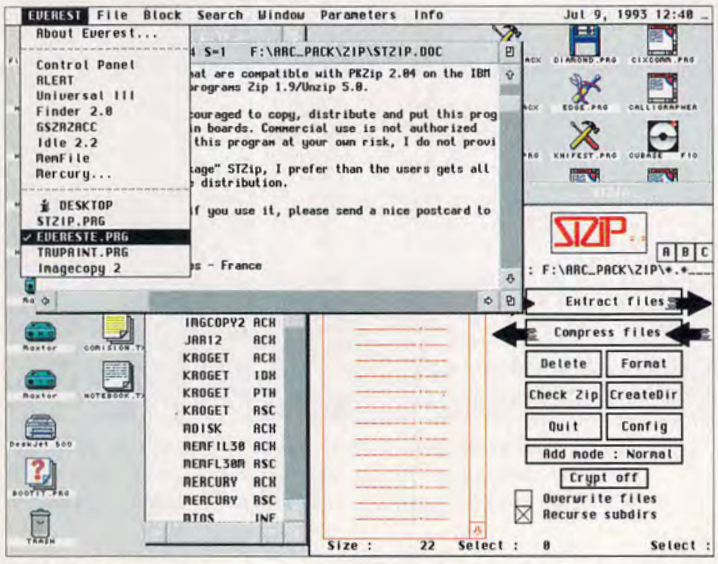
MiniWin enables TOS and TTP programs to run inside a window, so maintaining access to other applications.

INSIDE INFO

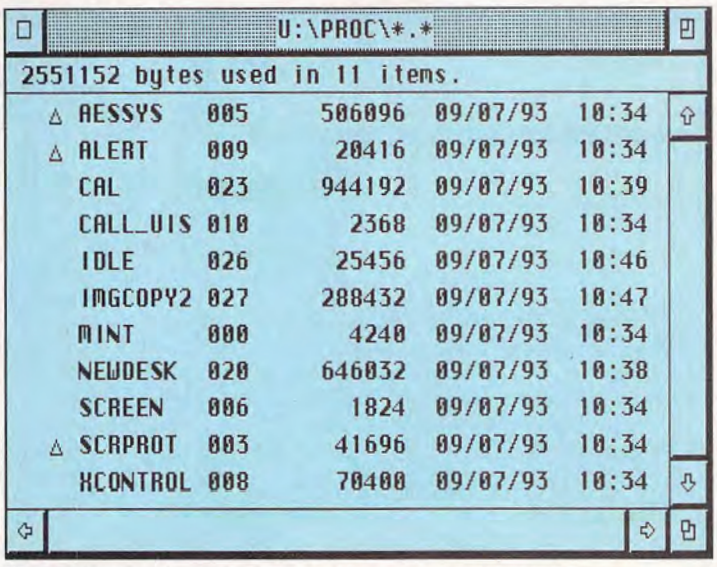
MultiTOS is based on *MiNT*, a public domain multi-tasking system that was developed by Eric Smith. After gaining popularity and winning the respect of many programmers, Atari decided to ask him to join forces with them and produce *MultiTOS*. *MiNT* is still at the heart of the system and the source code for *MiNT* is still available in the public domain. While *MiNT* used to be an acronym for "MiNT is Not TOS", it now means "MiNT is Now TOS"! (*How quaint... Ed*)

MultiGEM and *MAGiX* were previous attempts at providing a multi-tasking system for the ST. If you use MIDI software, you'll probably be familiar with Steinberg's *M•ROS* and EMagic's *SoftLink*. All these systems offer some form of multi-tasking but not to the extent of *MultiTOS*.

Two new multi-tasking systems under development are *Geneva* from Gribnif and *MAGiX 2*. Both claim to be faster and more compatible but the main disadvantage of such systems is that they are not recognised as standard by software developers in the way that *MultiTOS* is.



MultiTOS in all its glory with no less than eight desk accessories and four programs loaded on a 4MB Falcon. Screen resolution is enhanced using Falcon Screen, an excellent public domain utility which also provides a MultiTOS-friendly screen saver.



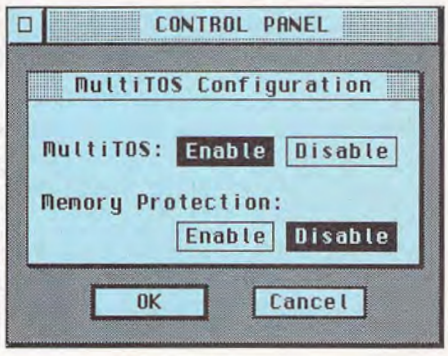
An additional feature of MultiTOS is the ability to view a virtual drive U: which displays a list of all current processes, how much memory they use and when they were first run.

the rest of the system. Unfortunately, memory protection is not possible with computers using 68000-based processors such as the ST and STe but when running *MultiTOS* on a TT or Falcon, memory protection is available by default and can be switched off globally or per process. Many programs will not operate correctly under memory protection, hence the need to turn it off.

SYSTEM REQUIREMENTS

MultiTOS is memory hungry – it needs at least two megabytes of RAM and a hard disk is highly recommended but not essential. The actual *MultiTOS* program needs almost one megabyte of memory to run in and two megabytes of disk space for the full installation. All TOS versions are compatible, but 1.04 or later is highly recommended for reliable operation.

Processor speed is another point to consider as *MultiTOS* certainly slows down the general running of the computer. While it is difficult to measure its performance, running the *GEM Bench* utility at zero priority shows a speed decrease of about thirty per cent in processor performance and a marginal loss of speed when drawing text and graphics to screen. Mouse button clicking on window gadgets is adversely affected and while there is no accurate way of measuring this, scrolling through a document by pressing the window arrows in programs like *1st Word* results in a speed reduction of at least a fifty per cent. Scrolling via the computer's cursor keys is not affected.



A control panel module for toggling memory protection is included with MultiTOS, and can also disable it, although this requires a reset to take effect.

ST owners with an 8MHz 68000 (STFM/STe/MegaST) should consider upgrading to a faster processor such as Plus Cache which runs at 16MHz and screen accelerators like *NVDI* also help offset the speed loss. The Falcon and TT are much faster models and so the speed reduction is less noticeable with the added benefit of memory protection.

Screen resolution becomes an important factor when running multiple applications – you need more screen space to see them! Falcon owners already have access to PD and commercial products that can stretch the screen resolution to 800 by 606 pixels and beyond. AutoSwitch OverScan or a graphics card is useful on the ST to increase available work space.

COMPATIBILITY

The big question. While every effort has been made to make *MultiTOS* compatible with previous versions of TOS, not all programs run with it installed. There are various reasons for this, but the most common problem is screen ownership. Under all previous versions of TOS, a programmer could assume that his application was the only one running and that no other program would share the screen area with it. Based on this assumption, many shortcuts were used to simplify programming and these generally make the program unfriendly in a multi-tasking environment.

Programs that follow the GEM guidelines are likely to run under *MultiTOS* and are quite easy to recognise. They use the menu bar, have windows that can be moved and resized, and allow access to desk accessories. As a simple test, open the *Control Panel* over a suspect program and move it around the screen. If the program redraws the screen as you move, it will probably behave itself under *MultiTOS*.

TOS and TTP programs use the full screen by default, but *MultiTOS* includes a simple and useful utility called *MiniWin*. This is automatically run whenever a TOS or TTP program is double-clicked resulting in the program being run inside a *MiniWin* window which follows the rules and

CONFIGURING MULTITOS

There are several features of *MultiTOS* that are not documented in the manual but can be very useful. The two configuration files are pure ASCII which can be edited with any text editor or word processor.

MINT.CNF is run first and tells *MiNT* where the *GEM.SYS* file is located. Several system variables can be set here before the GEM line. For instance, *MAXMEM* defines (in kilobytes) how much memory each application is allowed which can be useful with memory grabbing applications like *1st Word Plus* or *Calamus*. Another useful command is *exec* which loads programs as if they were run from the AUTO folder after *MiNT* has initialised. System patches like *FASTPRNT* can be loaded in this way. It is important to enter a carriage return at the end of each line (just type <Return>), including the last line.

A sample *MINT.CNF* file that limits applications to a maximum of one megabyte of RAM and also loads FASTPRNT would look like this:

```
MAXMEM=1024
exec C:\FASTPRNT.PRG
GEM=C:\MULTITOS\GEM.SYS
```

The second file is the GEM configuration file which is used to set the environment variables but can also run as many accessories and programs as you wish at start-up. For instance:

```
run C:\ACCS\XCONTROL.ACX
run F:\STFAX\STFAX.PRG
run F:\IMGCOPY2\IMGCOPY2.PRG
```

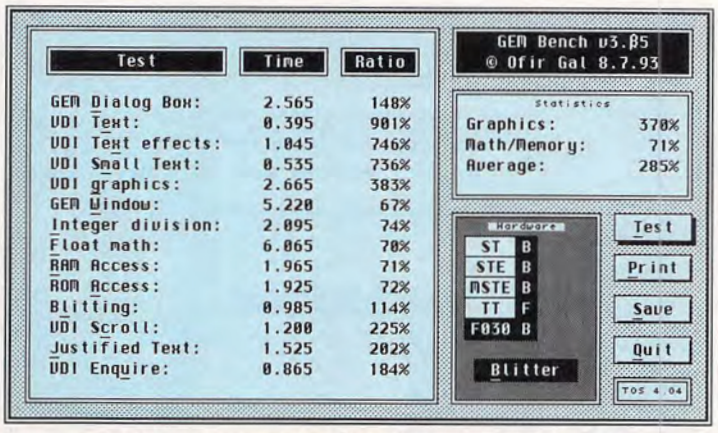
loads *STraight FAX* and *ImageCopy* automatically – ready to receive faxes and take snapshots or view image files.

STEP BY STEP

INSTALLATION

MultiTOS comes with an easy-to-use installation program – simply select the path and click on the Install button. The program then copies all the files to your hard disk. These are *MINT.PRG*, the multi-tasking kernel, *GEM.SYS*, which contains the new desktop and GEM, and *MULTITOS.CPX*, a simple control panel module that allows you to toggle memory protection on/off and disable *MultiTOS*.

Also included are the multi-tasking file viewer and print utilities, *MiniWin* and two demonstration programs. Two configuration files are installed into the designated folder; *MINT.CNF* and *GEM.CNF* which allow you to further tweak the setup to your requirements. *CHPROT.PRG* is a simple utility that can toggle the memory protection status of individual programs.



NVDI is an essential utility when using MultiTOS. It speeds up screen redraws and compensates for the speed loss which is a side effect of any multi-tasking operating system.

can be topped, resized and moved.

Most desk accessories run including many PD and shareware utilities such as calculators, screen savers, corner clocks and alternative control panels. Most software developers have had test versions of *MultiTOS* for over a year now and have taken steps to ensure their programs run happily under the new system. If you have programs that do not run, you can revert to good ol' TOS by re-booting and holding down the <Shift> key. Most games won't run under *MultiTOS* since they do not run in windows and normally take over the whole system.

Some AUTO folder programs do not install properly. These include *UIS* and *FASTPRNT* to name just two. However, there are ways around this problem courtesy of the *MultiTOS* configuration files. Programs like *1st Word Plus*, which insist on grabbing all available memory, can also be allocated a set amount of RAM using this file. *1st Word Plus* does have the advantage of being able to print in the background, though at a much slower speed than under standard TOS.

FEATURES

MultiTOS features an enhanced desktop modelled on the TOS 2.06 "NewDesk" but with many added facilities, most notably the ability to multi-task. Under *MultiTOS*, swapping between applications is as simple as selecting their menu item, much as you would with desk accessories under standard TOS, or by topping their window by a single click. The menu bar always shows that of the top application.

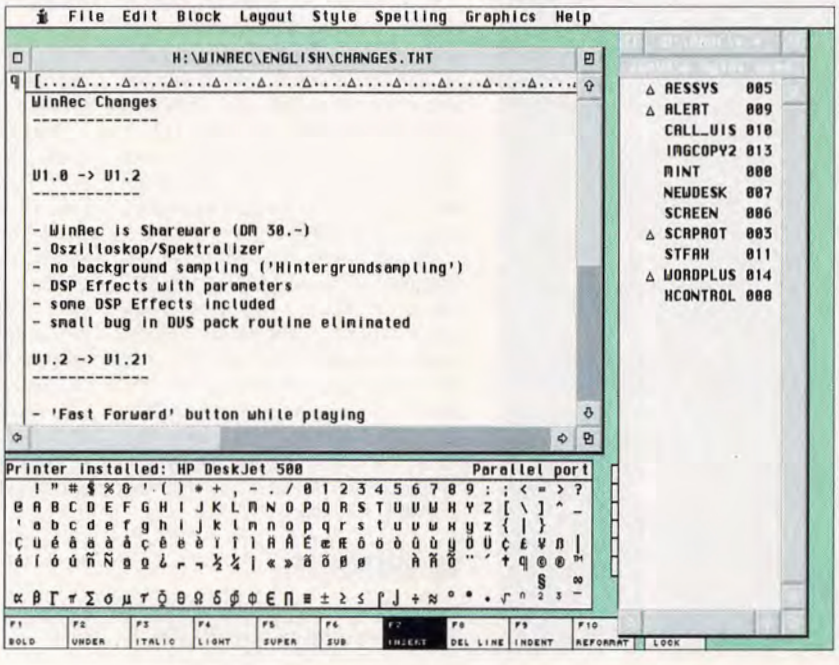
A multi-tasking printing utility is included with *MultiTOS* which runs automatically when printing files from the desktop. Similarly, showing files calls the *Viewer* utility which displays the file inside a window – useful for reading *readme*-style files while running a program.

Under *MultiTOS* you can scroll, move, close or resize a window without making it active. Files can be passed to programs by dragging and dropping them over a program icon and, unlike previous version of TOS, this can be done with multiple files. To print several files, select them as a group and then drag them over to the printer icon.

Files may also be loaded into a running application by dragging them over the application's window. *Connect*, for example, will automatically send the files to the modem. Applications may share a file – a picture file used by a word processor like *Calligrapher* can be edited in *True Paint* and any changes will be reflected back in *Calligrapher* as soon as the file is saved. This is still a far cry from the Mac System 7 "Publish and Subscribe" feature but the facility is there for developers to take up. The same applies to the GEM Clipboard facility, finally starting to gain popularity, which allows for the exchanging of data between programs. For example, a database can send an address to a word processor or a paint package can send a file to a DTP program.

Since the desktop is treated just like any other application, it is possible to simply quit it! This saves memory and allows you to run other applications. The desktop is replaced with a grey screen and a new menu item – **Load** – appears instead of the Desk menu and can be used to load more programs or re-install the desktop.

One of the many advantages of a multi-tasking system is constant access to the desktop.



CONCLUSION

MultiTOS is a very powerful package with many promising features and a relatively high degree of compatibility with existing products. The manual, however, is very disappointing, being only 18 pages long and while it covers the installation it offers very little information about the capabilities of the system and the enhanced desktop. It doesn't even mention the fact that it is possible to quit the desktop! Fortunately, HiSoft offer a free helpline for 30 days after purchasing the product.

Being a disk-based system, Atari are constantly updating and improving *MultiTOS*. If you can live with the decrease in speed, *MultiTOS* is well worth adding to your system.

MultiTOS is available from HiSoft
Tel: 0525 718181
Price: £49.95

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WPR09 LEXICON. A pure word list containing 46,209 words without slang, americanisms or other rubbish. Needs 1Mb to run with SPELLONE (spellchecker) also provided on this disk.

BRD05 AMERICAN FOOTBALL. DALEKS. STARTREK. DELTA 3. CELESTIAL CEASERS (versions 1 and 2). SPACE WARS. RED ALERT. MATCH. HANOI. OGRE. 11 Board and Strategy Games. SPLENDID SELECTION!!

ARC12 BELUM INTERACTUM – Good galaxians clone. BLOCKADE. HAUNTED HOUSE. AMORTRACK. BOING. INVADERS. MANIA. Another superb selection of arcade games.

ADV03 CONQUEST. Graphic adventure. Should take weeks to complete! (Shareware).

ADV06 BLACKDAWN. Good text adventure with excellent graphics. DUNGEON MASTER NEW LEVELS. Needs original DM disk to play.

UTL134 SAGROTAN. Must be the best virus killer around. V.KILLER v3.84. Another excellent virus killer. EXORCIST. The latest version of this V.Killer. HD RESTORE. Repairs hard drive boot sector. RIPPER and PROBE. Two programs to grab music and graphics from disks and more...

UTL120 ZX SPECTRUM EMULATOR. Needs 1Mb SPECTRUM to ST DOWNLOADER. Gives details on how to transfer Spectrum games from tape to disk for the above emulator. ZX81 EMULATOR and 89 PROGRAMS.

ARC15 CYBERTECHNICS Fast & furious arcade game. CRAZY ERBERT fast Q'bert clone. SLUG to fill the disk.

BRD09 MILE Excellent board game. D FISSION. Super Othello type game. TUNNEL VISION Excellent maze game. 3 jigsaw puzzle games. ST TIC TAC TOE, HIGH-LOW, BLACKJACK and more on this disk.

BRD12 TOWER POWER Super strategy game runs on 512K, 1Mb and 2Mb machine. Optional data disk available as BRD13.

ARC37 LLAMATRON and REVENGE OF THE MUTANT CAMELS. 2 superb games from Jeff Minter. These are a must for any game collection

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OPEN HOUSE

From the end of the world to your town...

Travel can be glamorous, but not necessarily when you work for *ST Review*!

Putting together the *Through The Keyhole* feature every month means getting out and visiting the companies featured. Because of the damage a bad report in the magazine could do, I generally get treated very well, although I try to look at the service offered to the customer. I get a good indication of this in my own way, a way that I can't reveal at risk of prospective companies finding out!

As yet, I haven't found a bad company, although some do tidy up for my visits. I tell them before I go that I want to see them "warts and all" and in their everyday surroundings. So far this has been true for all but two of the people visited who took me at my word. I promised I'd reveal the ones who didn't comply, so neither Karl at the Atari Workshop or Steve at Floppyshop can whinge, can you! So, read the pieces again and you can tell that Steve tidied his desk and anyone who's visited Karl will know that the showroom rarely looks quite that good!

Don't get me wrong, there's nothing to complain about with either company, but a public flogging is good for the soul don't you think? I feel that you would want to see what the companies are really like. While we all know how well a brochure can "pretty up" a firm's image, the idea of *Through The Keyhole* is not a sales promotion for the businesses featured. It is there to give you, the reader, an insight as to where your money is going and the kind of service you can expect. We won't be covering everyone. I can think of two firms in particular which are right at the bottom of the list and will never make the grade in my humble opinion. I can't name them for legal reasons, but rest assured, we don't recommend anyone who doesn't deserve it.

I'm looking forward to visiting the subject of next month's *Through The Keyhole*. You'll have to wait until next issue to find out who it is, but I promise to reveal all I find! (*oh hell – more money on solicitor's fees... Ed*)

Be seeing you...

Tony Kaye is deputy editor of Atari ST Review having originally joined as staff writer. In his spare time he used to actually play American Football for Chingford Centurions as Nose Tackle – and not many people know that...

The Falcon030 may have only been around for a few months, but specific products are starting to appear. Ofir Gal takes a brief look at some of the contenders...

FRUITFUL FALCON

WARNING

Tampering with your computer in any way will invalidate the warranty. *ST Review* strongly recommends that you speak with your supplier regarding any enhancements to your Falcon.

Most software manufacturers have already released updates to their products to utilise the new hardware – Steinberg, HiSoft, Compo and EMagic to name but a few. Hardware enhancements are also starting to appear in the form of Tower cases, accelerator boards and digital audio converters – and a DSP fax/modem is on the horizon.

But what's available now? Read on!

NUMBER CRUNCHING

The main processor in an ST or Falcon is incapable of handling floating point numbers – any calculation involving fractions takes much longer than a similar calculation using whole numbers. A Floating Point Unit (FPU), commonly called a maths co-processor, is a chip specially designed to handle such numbers with greater efficiency.

The Falcon has a maths co-processor slot for a Motorola 68882. This is designed to take the load off the main processor when handling non-integer calculations and thanks to built-in mathematical functions, the 68882 shows an astounding speed increase when processing such tasks. Unlike the MegaSTE, a co-processor on the Falcon is fully integrated with the main processor thus yielding higher processing speeds.

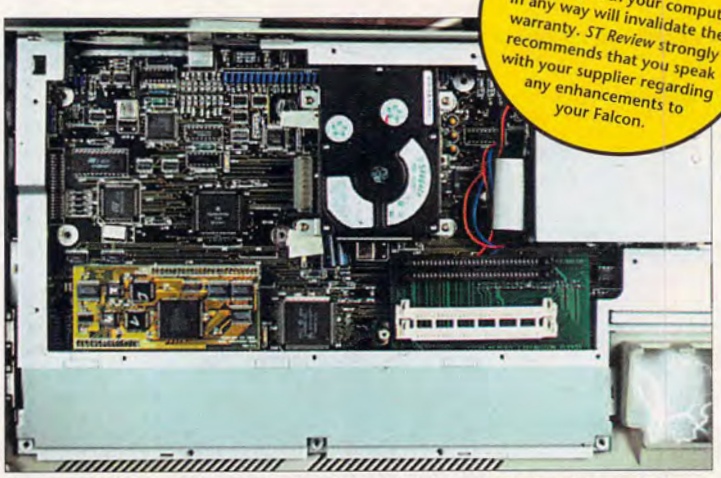
Unfortunately, only a handful of commercial programs offer support, but the list is growing. CAD and vector graphics packages, as well as fractal generators and scientific tools, are among such applications. *Shape*, a new graphics package from CGS, relies totally on a co-processor and will not work without one!

Installation is a doddle. Simply open the case and remove the power supply to reveal the socket. The chip then simply plugs in and is instantly ready to use. Applications that are programmed to make use of a co-processor will automatically detect it.

BLOW UP YOUR MONITOR!

The Falcon is also equipped with advanced video hardware and a built-in Overscan mode that can be used with RGB-type colour monitors such as the Atari SC1224. While an S-VGA monitor allows a wide range of resolutions, it excludes the Overscan mode. **BlowUp030** is a clever device giving resolutions of 880 dots by 608 dots on a standard S-VGA monitor and beyond this with a multi-scan variety.

BlowUp030 comes in three varieties. The software-only version can stretch resolution to around 756 dots by 544 dots while maintaining a 60Hz refresh rate. Higher resolutions are possible but the refresh rate drops below 60Hz so producing noticeable flicker.



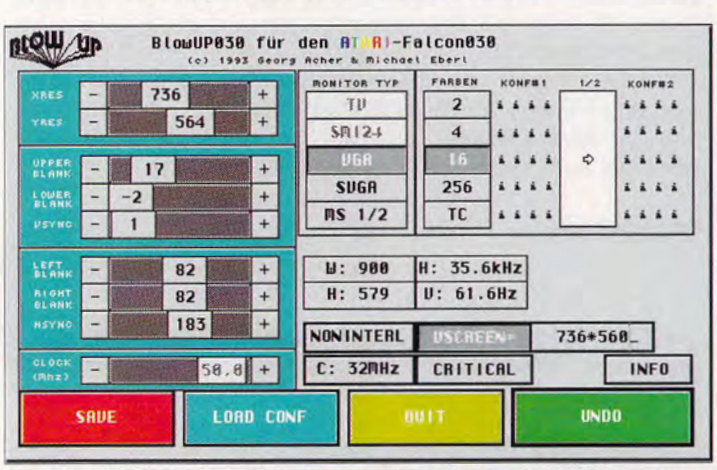
The three internal hardware add-ons: 286 emulator (bottom left), 68882 co-processor (just above the emulator) and SIMM board (bottom right)

Both hardware versions include a small metal adaptor that connects between the Falcon and the monitor. A short lead is connected to the second digital joystick port for control and the power supply.

The hardware consists of a variable frequency oscillator that is used to drive the video signal. This makes higher screen resolutions possible without degrading the refresh rate – you can achieve almost any resolution up to 1280 dots by 960 dots at refresh rates above 60Hz as long as your monitor supports the bandwidth. Even the old SM124 can be pushed to display 896 dots by 480 dots at 70Hz!

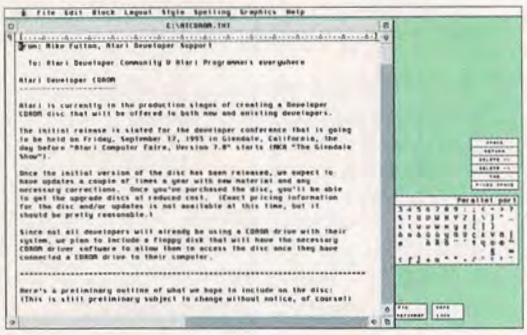
The configuration program includes several presets and supports a range of monitors from the SM124 to multiscan S-VGA monitors. Two configurations per colour mode can be saved and later selected via a desk accessory and once a suitable configuration is selected, you can fine-tune it. As a bonus, even an S-VGA monitor can use interlaced video modes – with the assistance of the external hardware, an interlace mode with a refresh rate of 119Hz is obtainable with hardly any flicker at all.

To set up a resolution, simply load the configuration program, select the monitor type, one of the possible presets and click on Save. This creates a small program file in the Auto folder. After a reset the screen work

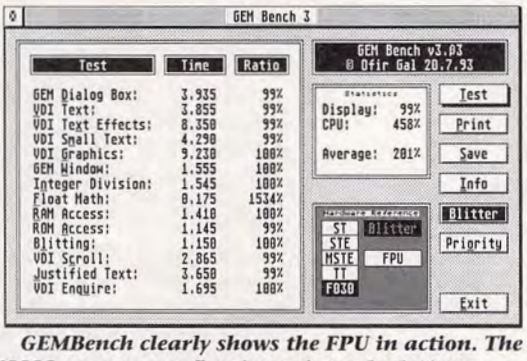


The BlowUp030 configuration program lets you fine tune all program parameters and achieve the highest possible resolution with your monitor.

The hardware for BlowUp30 plugs into the monitor socket and analogue joystick port.



The standard 640 by 480 VGA mode and the extended resolutions possible with BlowUp030. Word processing, graphics and DTP are all transformed thanks to the added workspace.



GEMBench clearly shows the FPU in action. The 68882 can process floating point calculations over 15 times faster than the basic 68030. Programs that rely heavily on these calculations include CAD packages, raytracers and fractal generators.

space is transformed but, unlike Overscan, the physical image size doesn't change. Instead, each pixel size is reduced, enabling more pixels to be squeezed in. As a result, all icons and text appear smaller. A set of sliders can be used to fine-tune the configuration but, as the manual warns, permanent damage to your monitor is possible as there is no way for the program to know which scan rates it is capable of...

To maintain compatibility with awkward programs, BlowUp can be disabled without having to re-boot.

MORE MEMORY PLEASE!

At last, a RAM upgrade module is available for the Falcon. The **SIMM RAM** module consists of a board with SIMM slots and is easy to install as no soldering is involved – it simply plugs into the existing memory module slot. Four slots are available; two vertical and two angled.

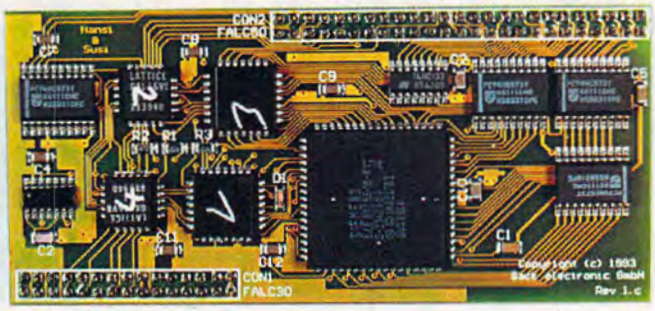
The module is well made and comes with an installation sheet. Fitting the SIMM modules requires cutting the metal shield which should cause no problems as far as electrical interference goes.

The Falcon is capable of addressing only four memory configurations; one, four, eight and sixteen megabytes although only 14.3 megabytes of the latter is actually available due to the Falcon's operating system.

MultiTOS and prospective *Cubase Audio* users will require this extra memory – *Cubase Audio* incorporates a built-in MIDI sampler that requires more than four megabytes...

A PC IN DISGUISE

Included within the Falcon is a special slot for emulators. The first to arrive is the *Sack Falcon Speed* 286 board which, unlike previous boards, is capable of running windows at a decent speed and in 16 colours. Sack have a good track record starting with *PC Speed*, which had a Norton factor (a measure of speed) of 4, and *AT Speed*. The new Falcon Speed has a Norton factor of 12 and is the most flexible board Sack have produced to date.



The Sack 286 emulator on a simple, easy-to-fit board

The board fits easily into the slot, requiring no soldering or prior knowledge of electronics. If in doubt, the manual takes you through the installation in detail. A disk is also included, containing the installation software and configuration program.

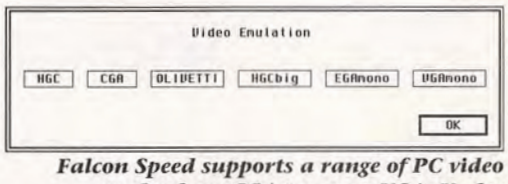
The 286 is clocked at 16MHz and integrates with the Falcon video hardware to produce various video modes including VGA. Falcon Speed works with any kind of monitor including the SM124 and SC1224 but requires a colour VGA monitor to run windows in colour. Minimum memory is one megabyte and a hard disk is recommended although not essential.

The configuration program lets you select from various video modes including CGA, EGA and VGA. You can also use a MicroSoft mouse and even an Atari laser printer. When running Falcon Speed, any memory over one megabyte is automatically configured as extended memory.

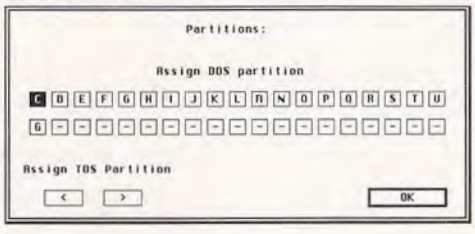
The hard disk partitions can be remapped so that drive E: for example can be MS-DOS drive C:. In addition, Falcon Speed can boot DOS and Windows from the hard disk. Both the printer and serial port are active and available to MS-DOS or Windows programs but MS-DOS and Windows are not included in the package and must be purchased separately.

A program is included to activate the emulation mode. Booting from hard disk is very fast and from this point the system behaves like a 286 system in every way. Even pressing the <Alt><Control><> combination lets you reset the system as usual. A handy feature is available by renaming the install program as a desk accessory and resetting. A new entry, *FALSPEED*, appears in the desk menu and selecting this activates the emulator and boots DOS. It is then possible to return to TOS and the Atari desktop by pressing <Alt> <Control><> and then hitting escape. You can, of course, return to the emulation mode by selecting the menu item again; this mode requires at least one megabyte of free memory.

Surprisingly, the system is very fast considering it is only running at 16MHz. That said, running *Word For Windows* on a 286 is pushing it a bit although DOS-based programs like *Excel* run at a very acceptable speed. If you need the occasional access to MS-DOS and Windows, Falcon Speed is ideal. If, however, you require a PC for several hours a day then emulation is not the solution.



Falcon Speed supports a range of PC video modes from CGA to mono VGA. Under Windows, it can also display 16 colours when used with a colour VGA monitor.



The configuration program lets you assign any TOS hard disk partition to any DOS partition so that a hard disk can contain a mixture of both types.

FUTURE PRODUCTS

More hardware enhancements will be available soon:

- LightHouse tower cases which have space for several floppy and hard drives as well as graphics cards and memory boards.
- A hardware accelerator running at 33MHz will also be available shortly.
- A mounting kit for installing two 2.5" IDE hard disks inside the Falcon as well as 240MB internal drives.
- ScreenBlaster, a screen enhancer similar to BlowUp030.
- VRAM from Overscan for using a hard disk partition as virtual memory – up to 2 Gigabytes! Overscan are also busy putting the final touches to their Genlock video titling software and hardware kit.
- A DSP fax/modem is also in development which can act as an answerphone as well.

Watch this space...

PRICES

68882 FPU: around £70 from various computer suppliers.

Falcon030 SIMM RAM: £81. CGS 081-686 8121

Falcon Speed: £229. Compo 0480 891819

BlowUp030:
Software-only version – £14.95;
Hardware version 1 – £49.95;
Hardware version 2 – £59.95.
System Solutions 081-693 3355

System Solutions

News

Coming Soon...
Kodak Photo CD Software.
32Mhz Falcon Accelerator for less than £300.
Phone for details.

NEW Here Now...
Falcon030 Starter Packs:
1Mb, SM14f Monitor Only £689
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NEW **falconWING**
The 14Mb memory expansion.
Takes 1Mb or 4Mb SIMM.
Price £59.95

Come to our London Showroom to see the composer's dream: a computer system that displays the FULL score sheet.

FLY LIKE THE WIND...

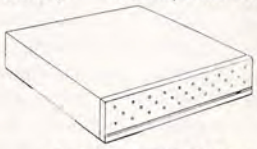
NVDI replaces the Atari display routines. Screen updates with NVDI are 3-10 times faster. Works with all TOS versions on all Atari ST, MegaST, TT and for the Falcon.

"Scrolling through a long text file in 1st Word Plus took half the time ... Calamus, Calligrapher and Wordflair also showed a marked improvement ... Compatibility is remarkable and we have yet to find a program that is not compatible with NVDI. ... a must for all ST and Falcon owners"
ST Review Issue 16, August 1993.

NVDI Version 2.5 - £49.95

Hard Drives

"Extremely nice looking..." Professional Quality SCSI Hard Drives Systems, 40 -2600 Megabytes from £299. "This is the fastest of the drives reviewed and is superbly engineered, not to mention great value for money." ST User, Issue 90, August 1993.



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- ★ Fully supported by TOS 2.06
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- ★ A perfect replacement floppy drive!
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(August only) **Fitted price: £89.95**

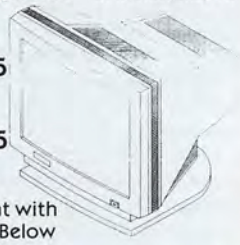
High Res Monitors

The SM14s is a perfect replacement for the Atari SM124/5 monochrome monitors, exceeding the original specifications. The 14" Philips high resolution paperwhite FST gives a perfectly centred, crisp and sharp image without blurring at the edges.

On/Off switch, Volume and Brightness at the front; Vertical Size, Horizontal Phase, Contrast and Focus at the back. The tilt and swivel base and a monitor cable with the correct connector are standard.

An amazing 40% extra workspace can be gained with OverScan ST. The SM14 is a totally plug-in-and-go unit.

"Essential Buy, 90%" ST Review, May 93



without audio
SM14 £149.95

with audio
SM14s £169.95

Special Price when bought with OverScan ST. See Below

Crossing the Border

EVER fancied the idea of a larger monitor, but not the price that goes with it?? Well now you can, with OverScan ST. This little board fits inside your Atari ST(FM) or Mega ST (not STe's) allowing you to use the black borders as an extended working area. In practice this means that you will get up to 40% extra screen in high resolution, and up to 60% in colour.

OverScan ST
Kit £39.95
Fitted £69.95

SM14 Monitor and OverScan - £169.95
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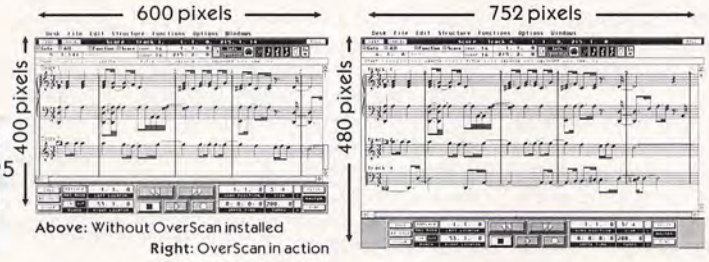

Above: Without OverScan installed
Right: OverScan in action

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ATARI WORKSHOP

SMALL AND NEAT

Entry-level laser printers now cost less than £600, but just how good are they? Colin James takes a close look at three of the contenders...

If you're one of the many who waited for laser printer prices to tumble from over £1,000 to around half of that before taking the plunge, your day has arrived.

With street prices of, in many cases, between £500 and £600, *including* VAT, compact "personal page printers", though usually slower and with fewer features than their big brothers and sisters, are amazing value for money and mostly capable of first class results. Here, we check out three of the main contenders...

HP LASERJET 4L

Hewlett Packard's LaserJet sets a standard for laser printers. This "baby" of the range, slower than its sisters with 4 pages per minute (PPM) output, has complete HP LaserJet functionality and is packed with features.

It's an attractive and compact machine, ideal for the home or business desktop. It has a parallel interface only and the paper tray, which supports A4, letter, legal and executive sizes, slots in underneath the unit. This is great for space-saving once it's loaded, but slotting the HP's tray back in required practice.

The control panel, on the top of the unit at front left, simply has a single button, the pressing of which has a different effect according to which of four status lights are on or blinking. There is no message window – options are chosen from your computer software.

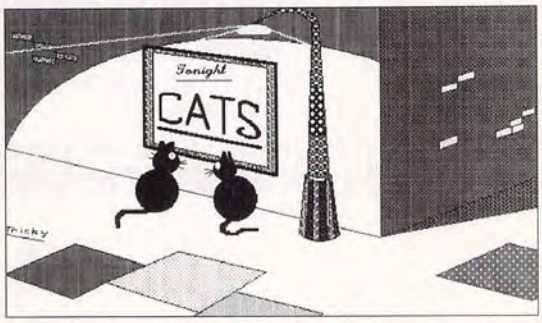
Instead of a power switch, the 4L has Intelligent On-Off sensing. It goes to sleep or, as HP say, into "Intelligent Off" mode after 15 minutes of inactivity, and turns on instantly again when the font panel button is touched, a print job is sent from your computer, the top door is opened or paper is inserted.

There are 26 scalable fonts which, with the enhanced PCL 5 printer language, in effect allows you to create thousands of different fonts.

The toner cartridge, which includes the drum as well, is claimed to be good for 3,000 pages of average use, but there's also an "EconoMode" which can increase toner life by up to 50 per cent. This mode is fine for the likes of drafts and internal correspondence. Another useful feature is MEt (Memory Enhancement technology) which effectively doubles the 4L's 1 megabyte standard memory, so you can print full-page 300dpi graphics and large fonts without necessarily adding more memory, though you can double the memory if your pocket will stretch to it.

The paper route from the printer can be altered at the touch of a switch, so that envelope, transparency and label printing jobs are delivered from the back rather than the top-output tray, thus avoiding curl.

The 4L has Resolution Enhancement technology (REt) which, in tandem with HP's "Microfine" toner, does give first class print quality as far as text is concerned – even italics. Although its text printing was clearly the best of the three machines on test, ragged edges virtually eliminated, graphics capability on this test model, at least, did leave something to be desired. Light and dark streaky lines appeared in some tonal areas. So although it scores four out of five for print quality, that's really an average based on three for graphics and five for text.



Sadly, at least as far as the test machine was concerned, the LaserJet 4L's graphics capabilities were disappointing.

- ✔ Economy mode
- ✔ Superb text output
- ✔ Memory management

PROS AND CONS

- ✘ Poor graphics printing
- ✘ Tricky paper cassette

"A well-designed printer, flexible in use and with lots of features."

NAME: HP LASERJET 4L
COMPANY: HEWLETT PACKARD
CONTACT: 0344 369222
RRP: £727.33
STREET PRICE: £600
TONER/DRUM CART: £66 RRP

CONSTRUCTION	★★★★★
PRINT QUALITY	★★★★★
FLEXIBILITY	★★★★★
VALUE FOR MONEY	★★★★★

OVERALL 85%

Resolution and memory enhancement make the HP LaserJet 4L an attractive option.

The HP LaserJet 4L was tops for text output, with the sharpest of resolution even on italics.

OKI OL400E

This is the smallest overall and, in many ways, the most versatile of the trio. It's the only one of the three using LED, as opposed to laser beam, technology. The print quality as far as text is concerned is good, though noticeably more ragged compared with the HP, while its graphics capability is excellent.

As standard, the Oki has 42 bitmapped fonts, many of which are weight and style variations of the same faces – Courier, Swiss, Dutch and Line Printer. But one area where this petite, pretty little printer really scores is in its extra font options. A very neat font card slot with a hinged cover is provided to take any one of a range of 7 JEIDA font cards.

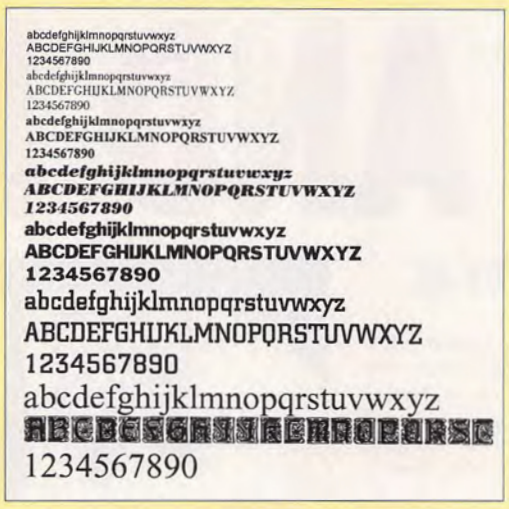
A manual feed tray, which includes adjustable guides for the various sizes of paper, envelopes and label sheets, pulls out and hinges down from the front of the unit. The Oki's top delivery tray can take up to 100 pages, while the pull-out rear tray takes 50. Pulling out the rear tray automatically selects rear delivery. Paper sizes supported apart from A4 are B5, A5, A6, letter, executive and legal 13/14. The neat control panel at top rear of the unit, with eight membrane buttons and a message window, allows for great flexibility in font selection and general control, as opposed to relying on the computer's software, as the HP does.

Parallel and RS-232C serial ports are provided as standard, with automatic switching from one to the other. The Oki comes with 512 kilobytes of RAM, which can be expanded to a very useful 4.5 megabytes, making it capable of handling some very complex pages. Future memory and PostScript upgrades are also allowed for.

Toner replacement is recommended after 2,000 pages and while the 400e toner cartridge is relatively cheap at £17.99 RRP, replacement of the drum cartridge is a whopping £145. Fortunately this only comes around once every 20,000 pages...

Oki plan to make a PostScript level 2 card available at the end of this year. Oki product manager Steve Hodgson has stated that the PostScript card will include Appletalk, which should be of interest to ST users running, or planning to run, a Macintosh emulation. It will, however, be "quite an expensive upgrade".

Oki have also recently signed an agreement with Direk Tek, who are using a modified version, calling it the 400a, and bundling it with a special printer driver disk and an interface cable that enables the printer to be put onto an Apple system.



The Oki's text output is good but slightly ragged, especially on italic type.

Plenty of good things come in small sizes – including Oki's budget-priced all-rounder, the 400e.

ATARI ST REVIEW
ESSENTIAL BUY

✔ Small size
✔ Upgrade options
✔ Versatilility

PROS AND CONS

✘ Drum replacement cost
✘ Paper curl from top tray

"A small, versatile printer with amazing upgrade possibilities."

NAME: OL400e
COMPANY: OKI SYSTEMS (UK) LTD
CONTACT: 0800 525585
RRP: £586.33
STREET PRICE: £525
TONER/DRUM CART: £145 RRP

CONSTRUCTION	✪✪✪✪✪
PRINT QUALITY	✪✪✪✪✪
FLEXIBILTY	✪✪✪✪✪
VALUE FOR MONEY	✪✪✪✪✪

OVERALL 90%

STAR LS-5

Although it has a small footprint in keeping with the other two in the test, the LS-5 is the bulkiest of the trio due to its considerably greater height. It comes with 14 resident bitmap fonts and a plug-in cartridge slot which provides the option of many more fonts to suit most requirements.

The Star is the only one of the three with a dual bin facility. The 250-sheet universal paper cassette slots in beneath the unit, and there's a second feed tray for up to 50 sheets, with adjustable guides, that neatly clips onto the front, so you can load a different size of paper in each and select accordingly. Paper sizes supported are letter, A4, executive, and B5, and the printer also handles COM-10, Monarch, DL/C5 envelopes, A4/letter label sheets and A4/letter transparencies. There is only one paper delivery tray, which holds 150 pages, on the top of the unit, the printed job arriving face down.

The inclined control panel, very conveniently placed at the top of the front panel, features eight push buttons and a small message window, allowing complete programming at the printer itself when required.

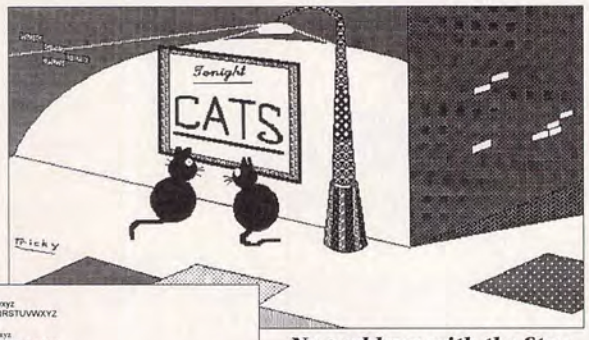
As far as emulation is concerned, the Star is a little more flexible than the other two under test, providing HP LaserJet IIP and Epson FX-286 compatibility. Parallel and serial ports are provided, so that two computers can be connected, with free sharing of the printer between each.

If you produce complex pages, the 512 kilobytes of standard RAM will probably be somewhat limiting, but it's easily expandable to 4 megabytes. Like the HP, the LS-5 uses a combined toner and drum cartridge which is easy to fit. Star say the cartridge is good for 8,000 pages at 2.8 per cent print duty.

The Star's extra speed of printing compared with the HP and the Oki is immediately noticeable and print quality is excellent, though the text results are not as sharp as those of the HP LaserJet 4L. But I was particularly impressed by the Star's lack of paper curl – output from the other two test machines did tend to curl at the ends. Could it be that the LS-5's greater height, although perhaps a disadvantage in one respect, results in less distorting of the paper as it passed through? It's definitely a point in the Star's favour.

Overall, I found the Star competent but not remarkable. Being the most expensive of the trio, it perhaps needs more features to be truly competitive and although small compared with higher specification lasers, its height and weight may be slightly off-putting for home and small business users where space is at a premium.

Overall a fair bit bigger than the other two but the Star LC-5 is faster and has the advantage of dual bin paper feeders.



No problems with the Star LS-5's reproduction of graphics.

abcdefghijklmnopqrstuvwxyz
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1234567890
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ABCDEFGHIJKLMNOPQRSTUVWXYZ
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The Star's text output is good, but a slight lack of sharpness is noticeable.

- ✔ Virtually no paper curl
- ✔ Two emulations
- ✔ Fast printing

PROS AND CONS

- ✘ Quite bulky

"An attractive, well-designed printer, flexible in use and with lots of features."

NAME: HP LASERJET 4L
COMPANY: HEWLETT PACKARD
CONTACT: 0344 369222
RRP: £727.33
STREET PRICE: £600
TONER/DRUM CART: £66 RRP

CONSTRUCTION	★★★★☆
PRINT QUALITY	★★★★☆
FLEXIBILITY	★★★★☆
VALUE FOR MONEY	★★★★★

OVERALL 85%

VERDICT

The HP LaserJet 4L's resolution enhancement and scalable fonts, together with the excellent reputation of Hewlett Packard, make it a highly competitive machine with much that will appeal, particularly to those interested mainly in text output.

The Star LS-5 is a competent workhorse which lacks outstanding features. Its price is slightly higher than the HP in street terms, but it does have the Epson FX emulation facility – useful for an ST owner.

But the Oki 400e is a definite all-round winner. While its text print quality is not quite up to the HP's standard, its low price, small size and amazing upgrade possibilities represent remarkable value for money.

HOW DO I DECIDE?

Before you place a small ad to sell your dot matrix or inkjet and upgrade to the ultimate in desktop printing, there are one or two important points to bear in mind.

- Do you need to print full-page graphics? The standard memory provided with the cheaper lasers is usually either 512 kilobytes or 1 megabyte. Lasers use a full-page display language which means the whole page has to be created in memory before it prints, rather than receiving a flow of data during printing and so one megabyte is sometimes insufficient for full-page graphics and complex DTP pages. On these occasions, only part of the image is printed, or the printer outputs it in two parts, on separate sheets, which is hardly of much use. Make sure you have enough memory for your needs, and add in this extra cost when you do your sums.
- Check the cost of replacement toner and drum cartridges. The prices can vary a great deal and if you do a lot of printing, it all adds up. Two of the trio on test have combined toner/drum cartridges, which means that when the toner runs out, you have to replace the drum as well, even though the latter may have more life left in it. I thought the Oki OL 400e may have had the advantage with its separate toner and drum cartridges, until I discovered the recommended price of a new drum cartridge was £145! But then, the drum is reckoned to be good for 20,000 pages, so there's little or no cost difference at the end of the day.
- Another point to watch is the type of emulations the printer is capable of, if any. If you want to run your printer from existing software, check that you have, or can obtain, a driver that's compatible with the machine.
- If you want to make use of the sophisticated PostScript language which will give you greater flexibility than PCL (Printer Command Language) then you're out of luck so far as the HP and the Star are concerned. Neither is capable of handling PostScript – there isn't even an option to upgrade to it by means of a card.

Printer	Type	RRP	Street Price	Size in mm (wxdxh)	Weight	Typefaces	Scalable?	Memory (Max)	Speed (PPM)	Capacity	Enhancement?	Emulations
HP LaserJet 4L	Laser beam	£727.33	£600	362x353x164	7kg	26	26	1Mb (2Mb)	4	100	Yes	(PCL5)
OL 400e	LED array	£586.33	£525	320x360x160	8kg	42(1)	0	512K (4.5Mb)	4	100(3)	No	HPLJ IIP
Star LS-5	Laser beam	£997.58	£620	352x393.5x253	12kg	14(2)	0	512K (4Mb)	5	250	No	HP LJ IIP/Epson FX286

(1) Oki has 7 JEIDA compatible IC card fonts available as optional extras
(2) Star has various font cards available as optional extras
(3) 250 sheet second input tray available as optional extra
All prices include VAT.

★ Amazing New Product ★ ★ Amazing New Product ★

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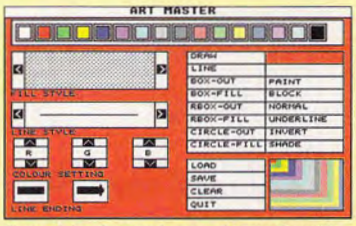

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Chapter 15 shows how to produce a complete game entitled Bonk the Gonk with on-screen animation

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Stone Cold Sober

Stone Cold Sober is a graphic adventure for the Atari ST, STE, TT and Falcon. It runs on colour or mono displays (without the location graphics in mono) and is ideally suited to the novice adventurer. As the name suggests, you start your quest in a pub. Your journey will take many weeks to complete and will involve a considerable amount of thought and a lot of luck. There's an element of the supernatural in this one so beware! The program is entirely mouse driven and involves almost no keyboard input at all. Stone Cold Sober was written by Simon Brown, one of the best adventure game authors of recent years and it promises to keep you glued to your screen for weeks (months perhaps)! To order your copy of Stone Cold Sober, send a cheque or postal order for £9.95 to the address below. UK postage free, please add £1.00 for Europe or £2 for the rest of the world.

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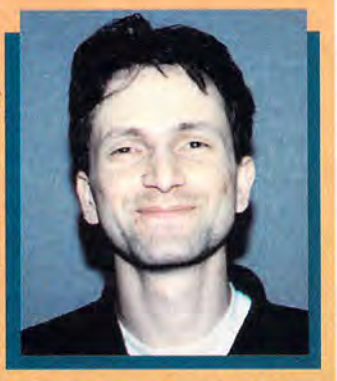
TECH TALK

Lies, damn lies and... bulletin boards!



The Atari scene is rife with rumours about anything and everything. There was a rumour that Atari have stopped making the TT. This is untrue. Then we heard two conflicting stories about a new Falcon. One story was that there was a consumer version with a small Amiga 500-like keyboard and without a cartridge port. The second tale described a Falcon with a separate keyboard. Both were, of course, untrue.

No matter where these rumours start from, one thing is certain; there are plenty more. How about this one: Atari have given up on the home computer market and are going back to being a games-only manufacturer. True? Of course not. Or the Falcon audio quality is not as good as the PC Soundblaster card? The truth is that the Falcon is much better.

Another one was that hardly any ST programs run on the Falcon. This we now know to be untrue. In fact, compatibility is surprisingly good. Yet another false rumour is that there will not be a one megabyte Falcon. Atari have announced that they are starting to ship this from the factory.

The worst story I heard was that 50% of all Falcons were returned to Atari as faulty. I spoke to two major suppliers in the UK – one said that so far they had experienced one faulty machine. The other supplier estimated the failure rate at less than 5%.

Logging on to Internet (International Computer Network) and reading the messages, it is easy to see how these stories start. Normally it goes something like this: First someone says that he can't find any one megabyte Falcons, only four megabyte systems with a hard disk. Pretty innocent. Then someone answers by saying that he was told by a dealer that the one megabyte Falcons are being delayed. Someone else adds that when Atari say delay, they probably mean never. Finally, a newcomer to the network reads only the last message and asks: "Is it true that there will be no one megabyte Falcons?" Since nobody is sure, the replies go something like: "It sure looks like it..." What you have just witnessed is the birth of a rumour, and two months later it appears in print in a respectable Atari magazine...

So here are some true stories for a change. The Jaguar is a 64-bit games machine which is going to be manufactured by IBM in the US. It was developed by Atari and looks like it's going to be successful. The TT is still being made and is still selling, although in small quantities (*and at a lower price... Ed*). There is no Falcon 040 and no separate case – not this year at any rate. Added to which, Atari shares are going strong in the US.

Life on Mars? Definitely not – and I don't care what David Bowie or the tabloids say!

Ofir Gal is a technical journalist of some note and a regular contributor to *ST Review*. His expertise has led to companies commissioning him to write various manuals – which probably means that his deadline-keeping will get even worse...

If a picture says a thousand words, Repro CD speaks volumes. Nial Grimes gets to grips with a photo-realistic ST sensation...

SAY CHEESE!

Colour desktop publishing is finally a reality on your ST thanks to packages like *PageStream 2* and *Calamus SL*, but without some adjustment, even professionally-taken photos can look seriously tacky in print.

Image editors are the easy answer. They combine the power of a digital darkroom with a top-flight paint package and have the ability to turn any average photo into a veritable work of art. In fact, many effects that would be impossible to achieve traditionally are just a few minutes' work to a package like *Repro CD*.

THE BRAIN DRAIN

As with most heavyweight German packages, *Repro* is designed to work on a TT. The manual suggests at least 8 megabytes of memory and a 200 megabyte hard drive, although this is slightly misleading because it runs perfectly on any ST with 4 megabytes of RAM. However you will need a colour display card, such as Crazy Dots, or a Falcon to view the results of all your efforts.

The system is designed to work with two monitors – one for the work screen and another to display the image itself. Failing that one colour monitor can be used, and pressing both mouse buttons will toggle you between each display. Drivers are supplied for Falcon resolutions and for most popular ST and TT colour cards.

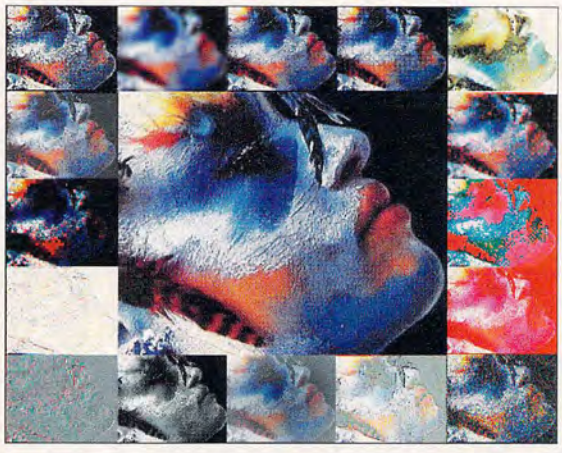
The interface is a GEM derivative and most of the control is through a sea of pop-up menus littered throughout the screen. In theory this is quite easy to use although in practice it's not very intuitive and you tend to spend far too much time searching through the manual trying to find out how to perform relatively simple tasks (oh, that's what the right mouse button is for!).

Loading and saving is in TIFF format, and it seems to be compatible with most variations, so you can expect few problems if you intend to use PC or Mac-sourced images. More modern formats such as JPEG are not supported, so you're faced with a situation of needing gratuitous amounts of disk space as well as RAM. Virtual memory also eats its way through your hard disk in no time!

DRAWN TO DISTRACTION

Repro can be split into two distinct parts – editing and effects. The editing side of things is a little like a posh paint package, although the tools are far more advanced. At the basic level you have the pencil, chalk, paintbrush, stamper and spray, all of which can be used with a varying size brush. Step up the ladder a little to the image processing tools and you can begin to blur, smudge, sharpen or randomise any section of the image. In addition, tools can be limited to "vector paths", for pinpoint accuracy.

Clicking the right mouse button over any of the tool icons will allow you to adjust its settings. In this way you can force tools to fade-in, fade-out or only affect certain colours, and adjustment of how much "pressure" will be applied is also on offer. All editing can take place at a zoom level of up to 1600% and if you don't get on with the tricky CMY (Cyan, Magenta, Yellow) colour model you can opt for the more familiar RGB (Red, Green, Blue) system. Perhaps one of the most powerful features as far as editing is concerned is the Undo buffer. This stores any changes you make to the image (including effects) and can restore it to a given point at any time. There's an individual buffer for each image and you can choose to have it stored on disk if memory is a bit tight.



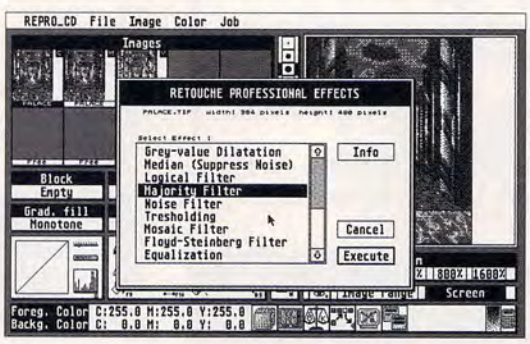
Just a small sample of Repro's many effects. And don't forget each is adjustable, giving almost limitless subtle variations.

THE MAIN ATTRACTION

The fun really begins when you start to use *Repro*'s effects. Included in the program are ten effects ranging from Sharpen which enhances detail, to Blur, which merges the colours of adjacent pixels to soften the overall image. As with the tools, clicking the right button lets you alter the intensity of the effects and how it will affect certain colours on the page.

Essential to using effects are blocks and masks. By laying down a block, you can limit the effects to a specific area. Masks on the other hand will let you protect certain areas of an image from any manipulation. Moving up a level you can cut a block and relay it over the original image applying an effect as you do so – now that's clever!

Also supplied to boost the effects range further is the *Repro FX* desk accessory. This contains a far more flexible (but more difficult to use) range of filters including mosaic, sobel, convolve, Floyd Steinberg, strip bitplane and many others.



This little accessory isn't mentioned in the manual, but it puts Repro in the big time as far as effects are concerned!

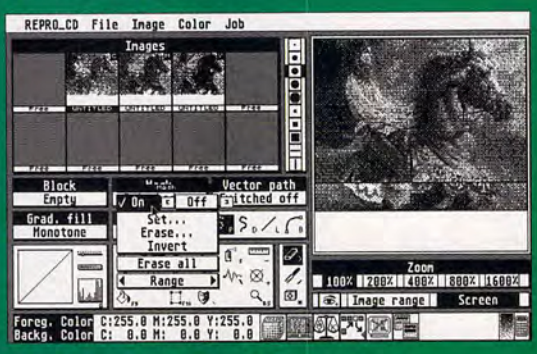
INSIDE INFO

In order to print a full colour page using as few inks as possible, a system called "colour separation" is used. This splits each page into Cyan, Magenta, Yellow and Black parts, positioning different coloured dots closely together to create the illusion of thousands of shades. Just take a close look at one of the colour screen grabs on this page and you'll see how effective the technique can be.

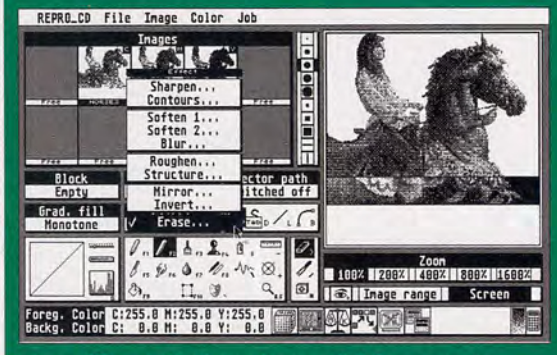
***Repro* is capable of saving pictures "as is" for use with desktop publishers that can handle colour separation themselves, or as ready separated TIFF files.**

PIXEL PERFECTION

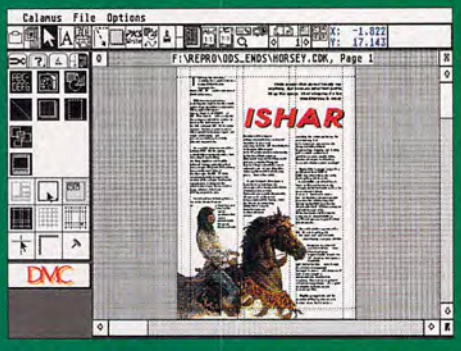
Masks are one of Repro's most powerful tools and the problem that needs tackling with this picture is an unwanted background. Although it would be possible to erase the sky by hand, it's ten times easier to let Repro do the work for you.



First select the block tool, move to the image screen and drag a square in front of the horse. Now use Repro's "Mask by Related Colours" option to cover all areas similar in colour to the selected area. Repeat the process above the horse's head and behind the rider.



You will now find you have a fairly accurate mask of the sky, so click "invert" to protect the horse and rider instead. Next set the foreground and background colours to white and use the "Erase" effect.



The finished artwork can be used with almost any desktop publisher. Another option would be to reduce the brightness of the original image to lay it beneath the text as a very subtle background – the possibilities are endless!

Double clicking on an entry will let you toy with the effect, although no documentation is included for this particular accessory at present, so it's a case of trial and error.

PARTNERS IN CRIME

In addition to the *FX* accessory, several others are supplied with the package. Perhaps the most useful is the *Output* module, which lets you proof your work on most popular lasers and inkjets (including colour) and is also capable of saving a PostScript file.

Also included are several scanning accessories that allow you to bring images directly into *Repro*. These include support for all of the Epson GT range, right up to the maximum colour resolution of 800dpi offered by the GT8000. As with the *FX* accessory, the documentation is quite vague on these accessories.

Generally, it has to be said that the manual isn't bad. Every single feature of the main package has its own step-by-step type tutorial, although it does assume you are *au fait* with general image-processing terminology – and the skimpy two page glossary can't really claim to be a whole lot of help in this department!

HOW MUCH? !!

Repro CD is the *crème de la crème* of ST software, and it's a crying shame that it's out of reach of the majority of ST users. If it was available as a £200 stand-alone package, it would sell like hot cakes and be well worth every single penny. As it stands, it's still worth the money, but you get a desktop publisher you probably don't need and feel a bit peeved at spending as much on an image editor as you did on *Calamus SL*.

Still, all is forgiven once you see what *Repro* is capable of doing. It remains the only widely available, professional image editor for the ST and the possibilities, given time, are absolutely limitless. Give it a try and you can't fail to agree...

WHO? WHERE? WHAT? WHY? – THE ST REVIEW GUIDE TO REPRO JARGON

JARGON JOGGER

Colour Model – The way in which colours are mixed by your software. Repro lets you work with CMY (Cyan, Magenta, Yellow), HSB (Hue, Saturation and Brightness) and the RGB (Red, Green, Blue) standards.

Vector Paths – Curves and lines laid on an image, to which any drawing operations will be limited.

Mask – The digital equivalent of masking tape. A mask hides a portion of the image from editing and effects.

Filter – Another name for a special effect, a filter is a mathematical formula applied to an image to change its appearance.

TIFF – The Tagged Image File Format is the standard for colour scans on the PC and Macintosh. *Repro*'s uncompressed TIFF files are compatible with both.

- ✓ Immensely powerful
- ✓ Falcon support
- ✓ Speed

PROS AND CONS

- × System requirements
- × Complexity
- × Price

"The ultimate image retouching software for the ST. Literally, a darkroom on your desktop!"

NAME: REPRO CD
COMPANY: CGS COMPUTERBILD
CONTACT: 081-686 8121
PRICE: £499 (INCLUDES DIDOT PRO CD)
MIN MEMORY: 4MB
MIN MEMORY: FALCON OR ST WITH GRAPHICS

EASE OF USE	✪✪✪✪✪
DOCUMENTATION	✪✪✪✪✪
EFFECTIVENESS	✪✪✪✪✪
VALUE FOR MONEY	✪✪✪✪✪

OVERALL 84%

REPRO PD!

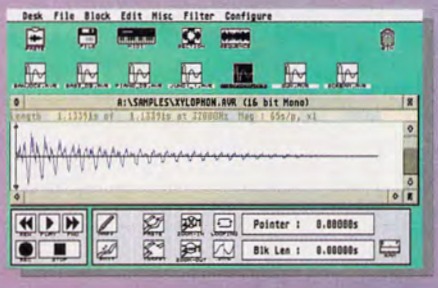
If you are desperate for Repro-style effects, but can't quite scrape together enough cash for the real thing, you need the *Atari Image Manager*. This package was written by students at the University of Delft and is almost unbeatable in terms of special effects. What's more, it's free!

The two-disk AIM set is available from the ST Club (0602 410241) on disk numbers GRA.174 and GRA.173 for an all-in price of £3.40.

High Quality Sound Samplers for all Atari Computers

Atari ST

REPLAY



Replay 16 samples in 16 bit mono, at rates up to 48khz and includes a host of useful software.

The Editor is the heart of the system - load 8 bit, 12 bit or 16 bit samples and convert between them, edit using cut/paste, overlay, loop, join, cross-fade, reverse & much more. Effects include echo, reverb, flange plus digital filtering, FFT etc. etc.

Many Utilities are supplied including a Sample Track Sequencer, a MIDI Sample Dump, A Drum Sequencer which plays up to 4 samples simultaneously and a complete MidiPlay package for extensive MIDI programming.

Both Replay 16 (£129.95) and Clarity 16 (£129.95) are available from all good music and computer stores. Please call for more information.

Falcon030

clarity

Clarity 16 is our new Falcon-enhanced stereo sampler/editor software package which includes hardware to generate extra sampling rates: 16KHz, 22.05KHz, 44.1KHz (CD) and 48.0KHz (DAT).

Extra Features over Replay 16 include stereo direct to hard disk sampling and editing, direct from hard disk stereo playback, MIDI sample file transfer, an enhanced MidiPlay program that allows up to 4 different sample maps in memory & complex keyboard maps (up to 128 samples) plus a new multi-voice drum machine with high sample rates and stereo image output.

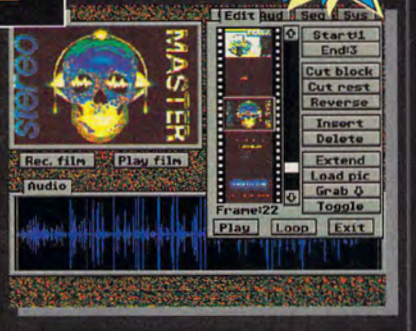
Atari ST

VIDEOMASTER

£69.95

Falcon030

£99.95 inc TruePaint



Integrated Multimedia Video & Audio Sampler for your Atari ST/Ste/TT/Falcon030 Computer

VideoMaster combines the beauty of a video digitiser, the fun of a sound sampler and some superb software to create a truly revolutionary package that is great value for money.

Digitise monochrome video clips, quarter screen, from a video recorder or camera at up to 25 frames/sec and save the film to disk. Produce greyscale stills or colour stills using the filters provided.

Add Audio using the built-in sound sampler and editing software or use an external sampler such as Replay 16, StereoMaster, Megalosound etc.

Make your own Movies by using the built-in video sequencer to combine video clips with recorded or imported sounds and then build up movies as a sequence of clips with an audio soundtrack. Additional playback modes include a picture-in-picture facility.

Falcon VideoMaster takes advantage of many of the features of this new, exciting machine to give you a video digitiser which offers an un-rivalled set of features at an amazing price.

Additional Features over the standard Videomaster include 64 level greyscale digitising, 25/30 frames per sec (real-time, quarter screen mono) with 16 bit stereo soundtrack, an enhanced sequencer with 256 colours per frame & 16 bit stereo audio and an enhanced VidiPlay program.

Superb Stills are available by using a camera/camcorder & the colour filters provided to produce true colour or 256 colour pictures in resolutions from 320x200 up to 640x480. Or use our new RGB splitter and a video recorder. Then save the stills in TruePaint format.

Videomaster Falcon will carry a distinctive Falcon-enhanced sticker.

microdeal

The Old School, Greenfield,
Bedford MK45 5DE UK
Tel: +44 (0) 525 713671
Fax: +44 (0) 525 713716

NEXT MONTH

DOUBLE HEADER!

Next month's cover disk brings you not one, but two exclusive programs!

- First, there's a commercial, personal finance program for you to work out your bank account and credit card balances – or simply your pocket money! An easy-to-use, intuitive program that will have you balancing your credits and debits with such ease that you'll wonder how you ever managed before!
- Second, you'll get a superb doodling program that will have your artistic juices flowing in no time at all.

Needless to say, both will be backed up by *ST Review*'s superb tutorials...

BORN YESTERDAY

Have you wondered how many ST programs have been created and released over the past eight years? Next issue, *ST Review* dedicates a 16-page section to the best of the best. Our writers look at every area of the ST and pick their selection from amongst the thousands of offerings: Art, DTP, games, graphics, hardware, music, utilities, word processors... there's even a piece on the old Atari 8-bit machines! And we won't mention the page of quotes from magazines through the past eight years that is bound to embarrass all and sundry!

ST REVIEW BRINGS YOU THE BEST...

- Reviews of new products, covered from a practical angle.
- Tutorials on how to get the best from your computer.
- Cover disks, including quality commercial software.
- Features on all aspects of the ST and Falcon.

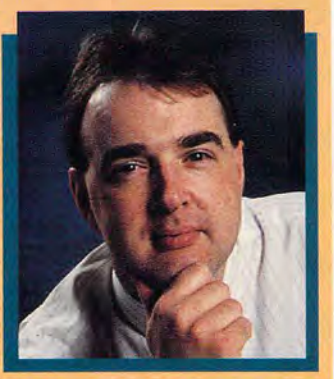
***ST REVIEW* BRINGS YOU THE BEST EDITORIAL COVERAGE OF ANY ATARI MAGAZINE – ESSENTIAL READING FOR ALL ST OWNERS!**

ON SALE SEPTEMBER 16

PLACE YOUR ORDER NOW!

WRIGHT ISSUES

Indicators and interfaces...



Have you ever wondered just where we're all going? Are we in the ST market or the Atari market? I've started using that phrase to cover the Falcon but is the Falcon something radically new or is it just a souped up ST? I'm afraid I don't know the answer – but I do know one thing. We need a collective sense of direction for our beloved machines, whether they're STs, STEs, TTs or Falcons. And there's only one place it can come from – the software developers.

Take keyboard shortcuts. Why did the Mac shoot to fame and glory when the ST was at least its equal at one time? The most obvious reason is the standardised user interface from program to program – you can press Command-X to cut, Command-C to copy and Command-V to paste, whatever program you're running at the time.

With a standard way of doing things, everyone's happy. For instance, I drive two cars, my own and my wife's. Most days I drive along quite happily, indicating sensibly when I turn corners and wiping the rain away with the windscreen wipers. Logical isn't it? But when I drive my wife's car, the whole picture changes – every time it rains I end up signalling like a demented Christmas tree because the indicator stalk and the windscreen wiper stalks are on the wrong side of the steering wheel. And I've forgotten just how many times I've tried to persuade other drivers that I'm turning left by waving my windscreen wipers at them...

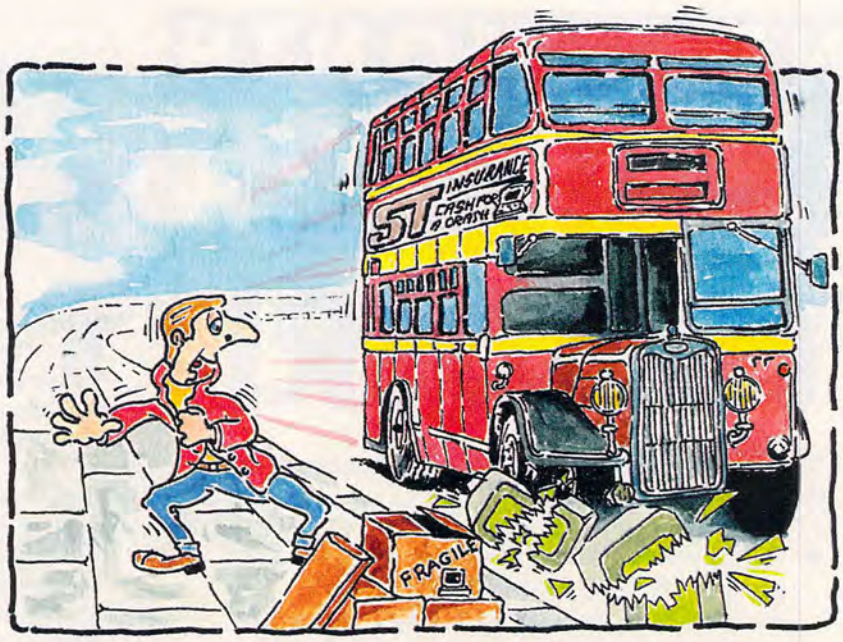
Likewise, when I'm using my ST, I'm fed up with having to remember half a dozen different keyboard shortcuts to do the same thing in different programs. *Pagestream* uses the same character keys together with the Alternate key, so Alternate-C means copy. Press Alternate-C in *Touchup* and you clear the screen (granted there's a warning dialogue but in the heat of the moment, the temptation to hit the <Return> key can be overwhelming). Perhaps a little competition might be in order to see who comes up with the most horrendous shortcut conflicts between programs? A software prize awaits the best answer...

Just as irritating are programs that don't make use of the keys that are already there. How many programs use the <Delete> key, for example? If you highlight a block of text and press <Delete>, shouldn't it be deleted? Of course, it should.

So come on all you developers and shareware authors. Let's have a common GEM interface with common keyboard shortcuts before we all start signalling like mad – with our fingers.

Andrew Wright is a freelance contributor to *ST Review* and has been since its inception. His in-depth knowledge of the ST and DTP worlds is matched only by the vociferous manner in which he puts his point across...

In the first of a new series that gives you an insight into areas concerning your computer, Tony Kaye looks at insurance for your equipment.



INSURING

How many of you know whether your computer is insured or not? Not very many I bet. And for those of you who answer "yes", if I went on to ask you what type of cover you have, how much you'd get if you claimed, what you can claim for and so on, the numbers would diminish quite considerably.

Whatever computer you have, it is nice to know that it is safe from harm as far as insurance is concerned. In this feature, I'll be showing you what type of cover is required and where to get it.

WHO NEEDS INSURANCE?

The simple answer to the above question is – you do! We all need some kind of cover against unforeseen circumstances. You never know what's round the corner.

Without worrying you, anyone can be the target of a burglar or could come home to find that a fire has started in the home and destroyed equipment. While this is not a plug for general insurance, all that extra electrical equipment around the house means an increase in risk.

WHERE DO I START?

When considering insurance, the first thing to do is to work out the value of the equipment. What you need to decide is how much it would cost to replace the equipment – not what you paid for it. For example, you may have paid £700 for an original 520 STFM, but now, although it's been upgraded to 2.5 megabytes and has TOS 2.06 and a 16MHz accelerator in it, a replacement STE with all thesefeatures may only cost £500 new. On the other hand, the TV that cost £120 in the sale may now cost £200 to replace.

However, when you calculate the value of your equipment, don't forget to allow full retail prices for all of your software, too.

You will be surprised when you add it all up! I did this with my set-up at home and came up with a figure of well over £2,000 in hardware alone! It may well pay you to use up a couple of photographs at the end of the reel from your holiday snaps to record the details of your set-up.

Once you've sorted out the cost, you need to consider what type of cover you require.

No insurance policy that is widely available or commercially viable will cover repairs, but a lot will cover accidental damage – like little Sam playing football with it while you're at work!

The type of cover required is generally Home Contents insurance as most policies cover every item in the home up to a value of £30,000. The cost of such a policy will vary depending on where you live.

Some areas and types of building are a higher risk than others; a ground floor flat on a South Manchester council housing estate is likely to be viewed as a higher risk than a three bedroomed semi in Clacton-on-Sea!

See the Costs box for an indication of the premiums involved.

> ***'Insurance is based on trust but insurance fraud, the largest contributing factor to the increase in premium costs, is on the increase. Don't be tempted...'***

WHAT IS COVERED?

According to the type of insurance and the level taken, different amounts of cover are available. Nearly all of these offer "new for old" policies, which means that you will get the value of a brand new product to replace the old one. It is important to get the right kind of cover as it will be too late when something goes wrong. That is when insurance companies usually get an undeserved bad reputation, so a little care when taking out the policy may save a headache later on. Most basic policies cover electrical goods like televisions, video recorders and so on for accidental damage, so if you manage to spill a cup of steaming coffee down the back of your new Hitachi, you can make a claim. Again, with a lot of companies, this cover will include computers and consoles, so your basic equipment is covered. It is worth mentioning the fact that you own this kind of equipment when you take out the policy and ask specific questions.

Maybe the policy cost will increase slightly, but to make sure you're safe, it's worth it. Individual items are limited to a maximum value, usually £1,500, without having to be itemised separately. With the modular nature of the ST (add-on hard drives, monitors, and so on), very few people will have a problem with this restriction.

There are different levels of cover, too. Some policies will just cover your equipment in your home or you can cover all of your goods for accidental damage in or away from the home or other specific risks. I won't go into detail on anything that is not computer related. Remember, though, if you often take your computer with you when you visit a friend, it may well pay you to get the higher cover.

JARGON JOGGER

Accidental Damage **– Any cause other than gradual deterioration or wear and tear.**
All Risks **– An All Risks policy covers loss or damage to equipment when not in your home.**
Discount **– A reduction in the premium charged due to a favourable situation – like extra security or a burglar alarm.**
Excess **– The amount you are liable for when you make a claim.**
No Claim Bonus **– Premiums may be reduced if no claims are made during the preceding year(s).**
Policy **– Details of coverage and exclusions are written in your policy document, the agreement between you and the insurance company.**
Premium **– The amount you pay to the insurance company for providing the cover stated.**

COSTS

Mr. and Mrs Average live in a three-bedroom semi-detached house and have one child. They have adequate security and are members of a neighbourhood watch scheme. Cover is for £30,000 and the policy carries a £50 excess. The same details were entered in the computer for different addresses to show the variation in costs.

These are samples. For a more accurate quotation, contact an insurance company directly.

AREA	HOUSEHOLD CONTENTS COVER	HOUSEHOLD CONTENTS COVER PLUS ALL RISKS EXTENSION
EXETER EX15	£67.08	£110.04
ABERDEEN AB4	£76.37	£119.33
BRADFORD BD16	£111.94	£168.32
CARDIFF CF6	£116.05	£165.73
BOLTON BL8	£126.60	£192.84
BIRMINGHAM B14	£159.74	£216.12
NEWCASTLE NE7	£200.72	£258.17
GLASGOW G2	£234.32	£315.57
LONDON E1	£368.50	£411.46
LIVERPOOL L15	£412.14	£455.10

ST REVIEW ADVICE

- Check with the householder that the house is covered and how much for. If you live with your parents, check their cover. You should not need any further cover if they have a contents policy, but it pays to make sure.
- If you have to make a small claim, check on the difference it will make to your premiums and how much of excess you'll have to pay. Then decide if it's worth making the claim.
- Keep receipts where possible. Put them in a safe place. If you don't have them, take a photograph of your work station. Anything that can help identify the equipment could help if you have to make a claim.
- Check the discount qualifications. You could get a substantial reduction in your premium if you meet certain requirements. Don't get fooled into thinking you're getting a good deal if you get offered a high discount. Check the price you are asked to pay. Discounts are all very well, but they can be taken away if you claim making next year's renewal much more expensive.
- Ring round for a quotation. Prices can vary quite considerably. Many companies offer a Freephone telephone number, too.
- Be honest when claiming. Don't turn your STE into a TT. If you get found out, you'll not only lose your claim, but you could end up in prison!

YOUR FUTURE

VOLUNTARY EXCESS

To keep the costs down, most companies impose a voluntary excess on the policy. This means that you are responsible for the first part of any claim, usually £50 or £100. You can increase or decrease your payments by making this figure higher or lower, but reducing it too much could substantially alter the amount you pay.

The excess is also designed to reduce claims. For example, if you have an accident and damage your external disk drive, a replacement will cost around £60. Paying an excess of £50, it's not worth claiming from the insurance company for a tenner. This sounds small, but multiply it throughout the community and it would have a profound effect on your next premium!

DISCOUNTS AND PREMIUMS

You can reduce your payments, wherever you live, if you can meet certain criteria laid out by the insurance company. Reducing your payments can be achieved by, for example, belonging to a local official Neighbourhood Watch scheme, having the right window and door locks and even fitting an approved alarm. You can even get a "No-Claims Discount" from some companies.

This means that if you have been insured for a period of time, you may be entitled to a discount if you haven't made a claim. The AA will give a 20% reduction after one claim-free year.

FACT OR FICTION?

FACT OR FICTION

"I've lost my receipts for the goods, but I can still claim."

True. In practice, it is always best to keep receipts safe, but in reality, insurance companies accept that this is not possible.

If you can keep receipts, do so, especially for anything unusual. If the item was bought recently, the shop may have a record of the sale, or even the bank or credit card company if you paid by cheque or card. Failing this, in the event of a claim, a photograph illustrating the equipment or even word of mouth can be sufficient.

FACT OR FICTION?

FACT OR FICTION

"I use my computer for work at home, but I've got contents insurance, so I'm covered."

Generally not true. You need to inform the insurance company and arrange separate cover for the equipment.

This is a very important point for programmers and freelance journalists, or anyone who runs a small business from home. Remember, if an insurance company can find a reason not to pay a claim, they won't. If you're not sure about your circumstances, ask the company.

FOR FURTHER INFORMATION...

We would like to thank Eric Sydenham of the AA Insurance Service, and Norwich Union for their help in compiling this feature.

If you require any more information, contact them directly:

AA Insurance Service
0800 900 888 (Freephone)
Norwich Union – 0603 686111

Ladbroke Computing

33 Ormskirk Road
Preston
Lancashire
PR1 2QP

Quality Data Storage

Telephone:
(0772) 203166
Fax:
(0772) 561071

Data Pulse Plus

Hard Drives

floptical

Data Pulse Plus is a range of High Quality, High Density, Data Storage Devices, developed exclusively by Ladbroke Computing International.

The Data Pulse Plus range consists of various high density, high speed SCSI storage mechanisms based on the Data Pulse Plus Sub-System. This Sub System has been extensively developed to reduce noise and maximise ease of use and reliability.

"Well constructed and designed for ease of use utilising highest quality mechanisms"–
Darren Evans, ST User

The Data Pulse Plus Sub System features a custom designed case of dimensions: 300mm x 295mm x 51mm (wdh). The power supply unit is housed internally providing a reliable power source for drive mechanism, host adaptor and Fan (Floptical & Floptical combinations only) without placing extra strain on the ST's PSU. The full metal case fully shields the internals from interference and surrounding equipment from radiation. It is also ideal for use as a monitor stand.

The ON/OFF switch is mounted on the front of the case along with the SCSI device number selector and a bi-colour LED which displays power on and 'Drive Busy' status.

All Data Pulse Plus ST Drives include the acclaimed ICD SCSI host adaptors. Full manuals are also included detailing hardware specification, setup and trouble shooting.

To ensure the highest possible reliability, the drives are tested at every stage of assembly by skilled technicians. We also format, partition and install a bootable driver as part of the test procedure to ensure that the drive is ready to 'Plug in and Go' when you receive it. When you first boot up your hard drive you will find a wealth of Public Domain Utilities which have been selected by our support staff as particularly useful.

All Data Pulse Plus drives include 12 months warranty and free phone advice and support by genuine Data Pulse Plus users.

The entire range of Data Pulse Plus Hard Drives are based on the highest quality mechanisms available. Quantum, Maxtor, Fujitsu, Insite, mechanisms are used, each of which feature a MTBF (Mean time between failures, measured in Power On Hours) in excess of 30,000 hours. All SCSI mechanisms used are 3.5" wide and just 1" high and are chosen for their performance and low power consumption.

The Low power consumption of these mechanisms means that they can operate well within their safe operational temperature ranges without the need for Fan cooling. This coupled with the design of the case results in probably the quietest Hard Drive range available for the ST.

All Hard drives are Autoparking, reducing the risk of head crash or damage during transit. All drives also come configured to be Autobooting.

All Data Pulse Plus drives for the ST now include the ICD LINK host adaptor. This external adaptor plugs into the SCSI port at the back of the drive. This configuration allows the drive to be used with any computer you may upgrade to in the future such as the Falcon 030.

Floptical Drives are capable of storing over 20Mb of un-compressed data on a single 3.5" Floptical disk. The Floptical disks store data magnetically just like a normal floppy disk but the positioning of the read/write heads is far more accurate due to an Optical positioning system. The Floptical Drive positions its heads using ultra fine guide tracks embedded in the Floptical disk surface. Using this positioning system, the Floptical Drive is able to store data on up to 1240 tracks per inch, compared to the 135 tracks per inch of a normal 3.5" floppy disk.

The Floptical Disk Drive combined with specially Up-dated ICD software can access the 21Mb on a Floptical disk and also Read and Write 720K and 144Mb 3.5" Floppy disks.

"Data Pulse is astonishingly fast"–
Andrew Wright, ST User

The Drive has an average access time of 65ms and a data transfer rate of 200K per second (6 times faster than Floppy disk).

The Floptical Drive is available as a stand alone unit, an upgrade for existing Data Pulse and Data Pulse Plus owners or as a combination unit coupled with any capacity of Data Pulse Plus Hard Drive.

Each Floptical drive includes one 21Mb Floptical disk. As many extra Floptical Disks as you require are available at a very low £ per Mb rate.

The Floptical drive is an ideal backup device for large hard drives. Coupled with a backup utility such as Diamond Back II which features compression you can back up more than 30Mb of data per Floptical Disk.

The Datapulse Plus Re-Writeable 128Mb Optical drive is a new addition to the Data Pulse Plus range. This drive features 30ms access time, 600K per second data transfer rate and 128Mb of data stored on one 3.5" Optical disk.

The disk rotates at 3600RPM giving hard drive performance with replaceable media flexibility. As with all Data Pulse Plus drives the mechanism is low power and does not require a fan. Data Pulse Plus Optical is fully compatible with the LINK and the FALCON 030 using ICD PRO utilities (ideal for direct to disk recording). Each Optical disk gives very high £ per Mb value.

All Data Pulse Plus Falcon drives come complete with SCSI 2 cable and cost £50 LESS than the prices quoted below. All Data Pulse Plus hard drive/floptical combinations for the Falcon come complete with SCSI 2 cable and the ICD PRO Utilities and cost £10 LESS than the prices quoted below (Phone for latest prices).

Data Pulse +85Mb	**£349.99**	**85Mb with Floptical**	**£629.99**
Data Pulse +127Mb	**£389.99**	**127Mb with Floptical**	**£699.99**
Data Pulse +170Mb	**£429.99**	**170Mb with Floptical**	**£769.99**
Data Pulse +240Mb	**£499.99**	**240Mb with Floptical**	**£839.99**
Data Pulse +345Mb	**£649.99**	**345Mb with Floptical**	**£999.99**
Data Pulse +1Gb	**£1099.99**	**ICD PRO Utilities**	**£39.99**
D/P +21Mb Floptical	**£399.99**	**Falcon SCSI II Cable**	**£39.99**
D/P +128Mb Optical	**£989.99**	**ICD LINK**	**£89.99**
128Mb Optical Disk	**£35.00**	**21Mb Floptical Disk**	**£22.00**

Falcon 030

- 16MHz 32 bit 68030 Central Processor, 16MHz Blitter, 32MHz 56001 Digital Signal Processor
- 1.44Mb 3.5" Floppy, up to 14Mb RAM. Displays 65536 colours from 262144 palette at 768 x 480 resolution
- 8 Channel 16 bit, higher than CD quality. Stereo sound sampling

FALCON 4Mb 65Mb HD	**£959.00**
FALCON 4Mb No HD	**£779.00**
FALCON 4Mb 120Mb HD	**£999.00**

STE

520 ST/FM Discovery Pack	**£149.00**
1Mb STE	**£199.00**
2Mb STE	**£255.00**
4Mb STE	**£309.00**

Software

Scanlite Accessory	**£20.00**
Image CAT	**£24.99**
1st WordPlus	**£39.99**

ST GAMES SOFTWARE IN STOCK – PHONE FOR DETAILS

Midistudio Master

240 PPQ Midi Standard file format compatible. 100 tracks. Phrase arrangement. Very easy to use.

£19.99

Marpet Upgrades

Marpet upgrades for the ST are "plug in" and require no soldering. They are compatible with most motherboard layouts and come with full fitting instructions. These boards accept SIMM boards and are upgradeable at a later date.

½Mb STFM	**£34.99**
2Mb STFM	**£84.99**
4Mb STFM	**£129.99**

Please phone for further details

Aries Upgrades

- Will fit any ST(F)(M) or Mega ST
- Extremely compact in house designed Multi-layer circuit board smaller than a credit card
- Upgradeable in stages from the base 512K to 2Mb then 4Mb
- Solder in design for greater reliability (requires some technical knowledge)
- Fully tested prior to despatch
- All Aries RAM upgrade boards come packaged in a 10 capacity disk box, complete with full fitting instructions/test disk.

512K Board	**£39.99**
2Mb Board	**£79.99**
4Mb Board	**£129.99**
512K SIMM's STE	**£6.99**
2Mb SIMM's STE	**£59.99**
4Mb SIMM's	**£114.99**
2 x SIPP to SIMM adaptors	**£3.00**

Monitors

Dataview Mono Monitor £139.99
Dataview 14" SVGA Monitor with ST adaptor (includes sound). Fully compatible with all ST Hi-Res Programmes.

Philips 8833 MkII £199.99
Includes 12 Months on-site warranty (Mainland UK) and free Lotus Turbo Challenge II game.

Atari SC1435 Col Mon £169.99
Includes tilt/swivel stand and cable for STFM/STE

Dataview SVGA Col Mon £239.99
High quality Colour SVGA Monitor .28 dot pitch. Includes Falcon adaptor.

Falcon VGA Adaptor	**£9.99**
Falcon ST Monitor Adaptor	**£9.99**
Philips SCART to ST/STE	**£9.99**
8833 MkII to ST/STE	**£9.99**

Repair Services

The only Atari authorised service centre in the UK

Our Service department can repair ST's in minimum time at competitive rates. We can arrange for fully insured, courier pickup and return delivery of your machine to ensure its safety. We even have a same day service which will ensure your machine is given priority and subject to fault, completed the same day.

We can fit memory upgrades, PC Emulators, Security devices, ROM upgrades, hard drives to Mega STE's etc.

We offer a Quotation service for £15 for which we will examine your machine and report back with an exact price for repair. If you do not wish to go ahead with the repairs then just pay the £15. However if you do go ahead then the charge is included in the minimum charge.

Please note: The minimum charge covers labour, any extra parts are chargeable.

Quotation	**£15.00**
Minimum repair charge	**£35.25**
Same day service	**£15.00**
STFM(E) PSU	**£34.99**
1Mb internal drive	**£39.99**
A/B Boot switch	**£4.99**
TOS 2.06 + Switch STFM	**£65.00**
TOS 2.06 + Switch STE	**£65.00**
Courier Pickup	**£11.00**
Courier Return	**£7.00**

Phone for price and availability of ST spares

Hand Scanner

- 100,200,300,400 Dpi Resolution
- 1 letter mode, 3 photo modes
- 105mm scanning head
- Includes Cartridge through port with switch box
- Compatible with Touch Up 18
- Supplied with Scanlite Accessory. Compatible with any graphics package which supports accessories. Allows scanning directly into compatible packages, such as Silhouette and Megapaint II
- Supplied with Silhouette V14. Autotracing vector package (mono monitor only). Scan directly into Silouette via Scanlite or Import IMG, DEGAS, TINY, MacPaint, GEM and SGF bit image files. Exports IMG, GEM (13), SGF, DXF, EPS (Postscript) vector files.

Hand Scanner + Scanlite/Silhouette

£119.99

DataNet Network

Datanet Network Hardware

- Cartridge based high speed network solution
- Compatible with ST (F)(M), Mega ST, STE, Mega STE

Powernet Network Software

- MultiTasking Network software allows applications to run on the server while drive and printer accesses take place in the background
- Allows the mixing of Network types, ie DataNet, LanNet and MidNet devices
- Full Falcon compatibility using LanNet device

DataNet with PowerNet	**£69.99**
LanNet with PowerNet	**£59.99**
MidiNet with PowerNet	**£49.99**

Prices quoted are for 1 Node. Each computer attached to a Network requires 1 Node.

PC Emulators

- Run PC Software on your ST
- Full installation instructions
- XT or AT Emulation

PC Speed STFM or STE (XT)	**£55.00**
AT Speed STFM (8MHz)	**£139.00**
AT Speed C16 STFM	**£199.00**

Printers

Star

Star LC100 Colour	**£165.00**
Star LC20	**£124.00**
Star LC24/100 Mono	**£179.00**
Starjet SJ48 Bubblejet	**£210.00**
SJ48 Sheet Feeder	**£55.00**
SJ48 Ink Cartridge	**£19.00**

Citizen

Citizen Swift 240 Colour	**£270.00**
Citizen Swift 90 Colour	**£175.00**

Hewlett Packard

HP Deskjet 510	**£329.00**
HP Deskjet 550 Colour	**£669.00**

Lasers

Seikosha OP104 £549.00

- 512K RAM (Exp to 2.5Mb)
- HP Laserjet IIP emulation
- 14 resident fonts
- Centronics/RS232C/RS422
- 12 months on-site warranty

Seikosha 512k RAM upgrade	**£69.00**
Seikosha Toner (2 units)	**£19.00**
Seikosha Drum Unit	**£79.00**
Ricoh LP1200	**£759.00**

Add £3 for Centronics cable and £7 for next working day courier delivery

Ladbroke Computing

33 Ormskirk Rd, Preston, Lancs, PR1 2QP

Ladbroke Computing International are one of the longest established home computer dealers in the U.K. We have developed an extensive customer service policy which involves testing of all hardware prior to despatch to ensure that goods arrive in working order, offering free advice and support over the phone and keeping customers informed. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup.

All prices are correct at copy date 29/7/93 (while stocks last), and are subject to change without prior notice. All prices include VAT but exclude delivery.

How to Pay
You can order by mail Cheques/Postal Orders made payable to Ladbroke Computing. Or give your credit card details over the phone.

Delivery
Postal delivery is available on small items under £40 (Normally £3, phone for details). Add £7 for courier delivery. Next working day delivery on mainland UK subject to stock (£11 for Saturday delivery).

Open Mon-Sat 9.30am to 5.00pm.
Ladbroke Computing Ltd trading as Ladbroke Computing International.

Fax: (0772) 561071
Tel: 9.00am-5.30pm (5 Lines)
(0772) 203166

This month, Tony Kaye travels to Stoke-on-Trent and Aberdeen to give you an insight into how two leading public domain libraries operate...

THROUGH

Alan Woodcock runs a BBS, but he also helps Mike and is involved in a joint design and print venture with two others.

GOODMAN INTERNATIONAL

Nestling in Longton, Stoke-on-Trent, is Mike Goodman's house. His garage is converted into an office, which is where I found him beavering away.

Goodman International has been running since the early 80s and started with Spectrum software. The first disk-based software that he dealt with was for the Opus computer – remember them?

A fascination for computers led to him playing around with programming and when the ST came out in 1985 it didn't take him long to buy an original 520STM and an external disk drive. "In the very early days, no public domain or shareware was being sourced by libraries. It all originated from the BBS system", he remembers. "I was into communications and people were taking copies from me. My 'phone bills were astronomical, so I thought I'd better cover my costs and the PD library was born! It wasn't until I noticed a few adverts in other magazines that I realised that other people were doing the same thing!"

£10 PER DISK!

Some libraries were charging £10 a disk in the early days. Even allowing for the higher disk prices, this still represented a considerable profit. Mike set his charges at a reasonable level, part of the reason why he is still around while most of the others have fallen by the wayside.

Projecting a professional image has always been important. A quality catalogue has always been provided, printed on a 9-pin printer at first. Nowadays, the library offers a loose-leaf A5 catalogue at a cost of £2.95. "People were calling and ordering my catalogue only to buy the products from other libraries. I charge for my catalogue to encourage people to order from me and, so far, it works."

THE SHAREWARE ARGUMENT

Once again, the subject of shareware rears its head. "About five per cent of the people who use a shareware program actually pay for it", says Mike. "We do all we can to encourage the customer to pay for the software, but a lot of them don't. This is a shame, because if the good programmers don't get any feedback, they'll stop programming altogether.

"If you don't agree with the value the programmer has set for his program, send what you think it's worth or even just a letter explaining your feelings. Everyone needs to feel that what they are doing is wanted by someone or there is no point in carrying on."

Mike is a member of the ASP (Association of Shareware Professionals), whose aim is to promote the medium and give it a more serious image. Some computer markets have a new breed of dealer appearing. Known as "Shareware Agents", they sell shareware and include the registration fee, which is then forwarded to the authors. Perhaps it is too late for this type of agent with the ST, but the Falcon may see this type of marketing.

We talked about some of the old programs that have disappeared and would be ripe for releasing as PD, shareware or even budget titles – *Printmaster*, *Certificate Maker*, *Degas Elite* and all of the old Epyx titles came to mind. Some of the old Mirrorsoft programs that have disappeared without a trace would also sell well today.

NEW DISKS

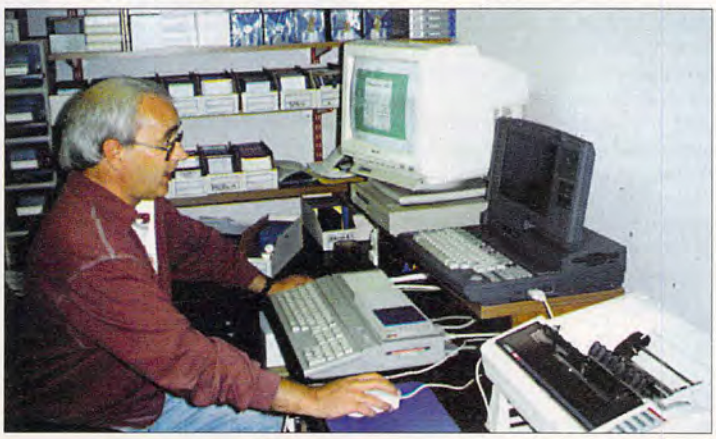
Mike doesn't just add disks to the library for the sake of it. He personally decides which will be added and which will not. "I won't just add, say, a new disk formatter, unless it offers something different.

"Most of my customers now trust my judgement and will accept what I do as being in their interest."

The library has about 1500 disks at the moment, including high density disks for the Falcon. Single sided disks are no longer supported and the numbers are kept to a manageable level by selective "pruning".

"The only criteria for us stocking a disk is if it's good. Some of the programs have a limited appeal like *Class*, a database and spreadsheet for teachers and *Treasurer*, a program for church treasurers. We actually have a cropping and paddock record-keeping program from Australia in the collection! It's very limited in its appeal, but one day..."

The operations area of Goodman. Note the Atari Megafile 44 removable hard disk drive!



Mike Goodman at the helm of Goodman International.

THE KEYHOLE

FLOPPYSHOP

Some time age, Steve Delaney started a User Group with a monthly newsletter and progressed from there. PD was limited at that time and the original library contained 88 disks but he's currently adding 80 disks every couple of months! At the time, Steve was unemployed, but the group was started as a non-profit making service with the hope of turning it into a business concern later on. Floppyshop really took off once he started advertising in the ST press which led to a fully operational PD library.

NEWSLETTER

Issue two of the newsletter was runner-up in the First Annual Desktop Publishing Awards, but Steve wouldn't let me see a copy! He still feels that particular issue was one of the worst. It was designed using an early version of *Publishing Partner* (later to become *PageStream*) which he replaced with *Fleet Street Publisher* for two years when *Calamus 1.09N* took over. The newsletter continued for a while and developed into a small magazine at which point it was taking up more of Steve's time than profits would allow. It eventually faded into history as the PD library took over. "The newsletter was taking up 60 per cent of my time for about 20 per cent of the profits, so it had to go," says Steve.

Starting a PD library is not easy. Many people have tried and failed, so I asked Steve why he thinks he survived; "I think you need to start with low overheads, initially on a part-time basis. Companies that put too much in have to earn that much more just to meet their costs, which can be their downfall."

PERSONNEL

Apart from Steve, his mother, Irene, is a partner in Floppyshop. She is responsible for processing orders on a daily basis, while Steve deals with telephone enquiries, sourcing new material and the general running of the company. When life gets really hectic, it's "all hands on deck" and Steve's wife, Eileen, and Dad, Jim, all lend a hand to make sure that orders are fulfilled.

Steve's Mum, Irene, runs the order processing and database operations for Floppyshop.

Being of more "mature" years, I asked Irene how she gets on with the computers. "When I first started, I was terribly confused and I still don't know very much. I can answer some of the simple questions, but anything technical, I pass on to Steve. My own interest in computers is in connection with art, so I can't wait to get my hands on *Chroma 24*!"

"You'll also be wanting your own Falcon!", added Steve, with the kind of tone that suggested that the company and the profits come first, "...and you're not having mine!"

Steve Delaney fronts Floppyshop from his home in Aberdeen.

A melting face is just one of the effects you can expect from Chroma 24, the new art package due around Christmas.

PRODUCTS ON OFFER

Both Goodman International and Floppyshop offer exclusive commercial software apart from the PD and Shareware service. Goodman offer the *Monulator* mono monitor emulator, a video titling program called *Video Supreme*, *Degas Art*, a tutorial package for *Degas Elite* and others.

Floppyshop are happy to offer you *Stone Cold Sober*, an adventure game, *Professional Virus Killer III*, which will kill virii and repair disks. *Chroma 24*, a superb art package for the Falcon, is due for release around Christmas time.

YOUR CHANCE TO VOTE IN THE

FIRST ANNUAL ATARI ST REVIEW AWARDS

AND WIN AN £850 LASER PRINTER TOO!

Here's your chance to vote in the first annual Atari ST Review Awards – and you could win a Hewlett-Packard LaserJet 4L printer...

The Hewlett-Packard LaserJet 4L printer – one of you lucky readers must win this...

Here at *ST Review* we feel that it's time for the industry to be told by you, our readers, what you think of their products. That is why we've devised the *ST Review* Awards.

The industry has to take notice of the people who buy their products to avoid becoming Jurassic – extinct! Who better than *ST Review* – after all, we are the most respected glossy ST magazine and the one that gets read by the people that matter.

Awards can only work if you cast your vote as it's numbers that matter. To help you decide whether to fill in the form or not, one lucky reader will win a Hewlett-Packard LaserJet 4L laser printer, complete with a three year on-site warranty and printer lead – total value £850. And all you have to do is fill in a form...

The name drawn from all of the completed forms after the closing date will win the printer. You have until 30th September to get them back to us.

THE PRIZE

Hewlett-Packard, one of the most respected name in the printer market, have produced a small but perfectly formed, laser printer for small business and home use. Its advanced features make it the perfect addition for your ST. It even has an automatic switch-off feature and instantly ready toner fuser so you don't have to use an on-off switch!

Advanced memory management is coupled with a toner saving draft mode that uses up to 50% less than other printers in its class. Print quality is excellent with a resolution of 300dpi and it will print up to four pages per minute. There are 26 built-in scalable fonts and one megabyte of memory with enhanced memory features that allow a full page of graphics to be printed without any problems.

Our winner will receive an HP LaserJet 4L printer complete with a three year on-site warranty, ready to run. We will even supply the printer lead!

The draw will be made after the closing date 30th September 1993 and the winner will be the first voting form drawn regardless of results of the poll.

The editor's decision is final and no correspondence will be entered into.

HEWLETT PACKARD

CAST YOUR VOTE HERE

All you need to do to cast your vote is fill in the name of the product, company or software title where requested. You can only nominate one item in each category but you don't have to fill them all in – if you don't have a favourite in a particular area, just leave it blank.

Don't forget to put in your name and address at the end of the form. All the results will be published in the Christmas issue of *Atari ST Review*. The winner of each award will receive a "Lennie" award that can be used in the promotional material for the product. This will be your assurance that the product has been tested and rated by the people that matter – YOU!

SERIOUS SOFTWARE

WORD PROCESSOR_____

DESKTOP PUBLISHING_____

BUSINESS PROGRAM_____

ART PACKAGE_____

GRAPHICS PACKAGE_____

MUSIC_____

UTILITY_____

PD/SHAREWARE (NON-GAME)_____

AUTO FOLDER APPLICATION_____

DESK ACCESSORY_____

HARDWARE

HARD DISK DRIVE_____

MONITOR_____

PRINTER_____

SCANNER_____

SYNTH (MUSICAL)_____

UPGRADES

HARDWARE UPGRADE_____

SOFTWARE UPGRADE_____

GAMES

GRAPHICS_____

SOUND_____

PLAYABILITY_____

VALUE FOR MONEY_____

OVERALL

PRODUCT OF THE YEAR_____

COMPANY OF THE YEAR_____

GAME OF THE YEAR_____

SOFTWARE HOUSE OF THE YEAR_____

BBS OF THE YEAR_____

SPECIAL AWARDS

GOLDEN TURKEY AWARD FOR THE WORST ST PRODUCT_____

BRITISH RAIL AWARD FOR THE GREATEST NO-SHOW OF 1993_____

SKODA AWARD FOR THE BEST CHEAP 'N' CHEERFUL PRODUCT_____

Now fill in your name and address and post the completed form to *Atari ST Review* Awards, Europress Enterprise, Europa House, Adlington Park, Macclesfield SK10 4NP to reach us no later than 30th September 1993.

NAME.....

ADDRESS.....

.....

.....

.....

POSTCODE.....

All forms will be entered into the prize draw regardless of voting. The winner will be drawn after the closing date of 30th September 1993. No multiple entries. If you don't want to cut your copy of *Atari ST Review*, you may photocopy the form, but only one entry will be allowed. The editor's decision is final and no correspondence will be entered into. There is no cash alternative to the prize on offer.

PLAYBACK

Want the latest single as a song file? Or perhaps a complete album? Just leave it to Playback...

DANGEROUS

HEAVENLY MUSIC ● £34.50 ● 0255 434217

To say that Michael Jackson's follow up to the BAD album has been a big seller is an understatement. It also happens to have spawned half a dozen huge singles such as *Heal The World, Black Or White* and, of course, *Jam.* This makes it the perfect album to convert to MIDI File – in full.

Not many song file creators would be up to this task, especially not in the UK. Apart from having to recreate the various drum and percussion styles, the creator needs to be a hot keyboard player to reproduce the keyboard parts and also understand string and brass arrangements.

Enter Heavenly Music. Joe and Pauly Ortiz are professional musicians who could quite happily go out and play this style of music live so recreating it with a sequencer presents few problems.

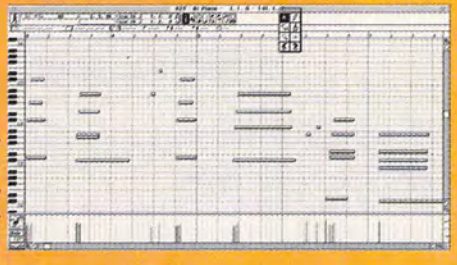
As a taster, *ST Review* was presented with a couple of the completed files from this project, namely *Jam* and *Heal The World.*

There's only one way to judge a MIDI File, and that's to connect it up to a multi-timbral synth (a General MIDI-compatible one if possible) and listen to it.

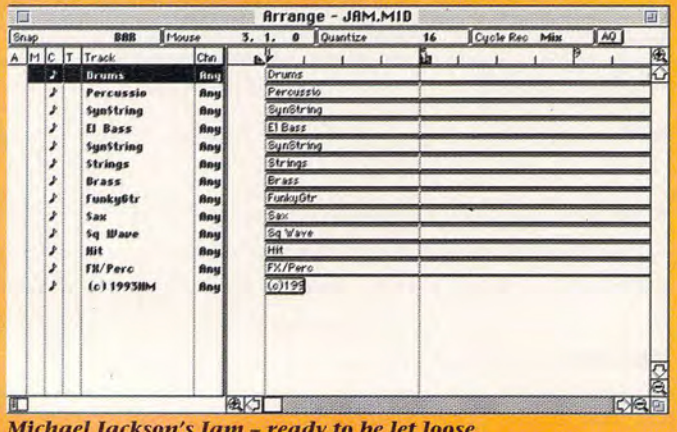
Now while I'm not exactly a Michael Jackson fan, from the moment you hear the opening bars of *Jam* you have to respect Joe and Pauly. They've not only managed to capture a high degree of accuracy notes-wise, but have also got inside the feel of it – all that's missing is the sampled voices at the start and Michael's squeaky voice. Even then, the sax line that plays the notes for the lead voice includes many of the vocal inflections!

Heal The World is a marvellous example of good programming. A quick look at the acoustic guitar part shows that note lengths and velocities are left as played – the main reason why the song has so much innate feel.

I can thoroughly recommend the result of this project – keep MIDI live I say!



Heal The World starts with a really nice real time piano part...



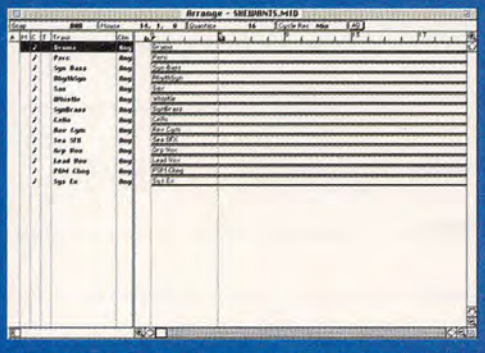
Michael Jackson's Jam – ready to be let loose on an unsuspecting world!

ALL THAT SHE WANTS

HANDS ON MIDI SOFTWARE

● £6.25 (Min. three songs) ● 0705 221162

One of the most difficult tasks for a MIDI File library is to keep its offerings up to date. Hands On MIDI Software are one of the better companies for this, making sure that a fair proportion of the top ten is covered all the time.



Hands On have a separate track for program changes – useful for quickly adjusting instruments.

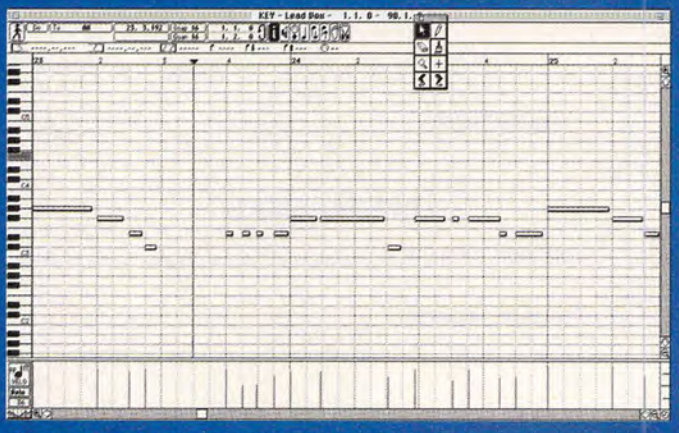
All That She Wants, by Ace Of Bass spent some time in the top ten and the Hands On rendition is very good – not surprising as it was programmed by Kevin Earley who wrote the Concerto tutorials for *ST Review.*

There is one sure sign of a good MIDI File – the feel of the instrument playing the lead vocal. Admittedly most musicians bin this pretty quickly, but it's nice to hear the vocal line played with a touch of pitch bend and modulation to at least approximate the inflections of a human.

The instruments sit nicely in the mix, with the amounts of reverb and chorus on playback from a Roland Sound Canvas being just about right. Even the seashore effects on the intro and the reverse cymbals through the song are duplicated, another sign of a musically-aware programmer who has taken care in the creation of a song.

Hands On were the first company that I was aware of to embed the correct set-up data into their files. It's nice to see them keeping up with the times – they now include the special message that resets tuning and pitch bend on the Sound Canvas to their default values. They also include all relevant documentation with each file; lyrics, song structure and all track information.

If you use MIDI Files for backing and you're looking for top ten hits, give Hands On a call – you won't be disappointed.



The lead vocal line is played free 'n' easy – and it has a distinctly saxy sound...

IN TUNE!

ATARI ST REVIEW EXCLUSIVE

Yamaha's CBX-T3 – the sound module part of the Hello! Music! package.

Yamaha have a fine reputation where synths are concerned. So how good is the CBX-T3, the sound module for their Hello! Music! package?

Yamaha's latest offering is part of the *Hello! Music!* bundle, an all-in-one sound module, connectors and software package.

Yamaha have certainly gone for a futuristic-looking device – something akin to a miniature lighthouse although some of you may equate it to a Christmas tree because of the 16 MIDI channel lights! With the integrated plastic stand, the CBX-T3 sits comfortably next to a computer and so takes up very little space.

Performance-wise, it's virtually identical to the TG-100; 192 sounds, with the first 128 conforming to the General MIDI standard, and 10 drum kits, the first of which is also GM-compatible.

As many of you will be aware, Roland have made most of the running in the GM stakes with their Sound Canvas range of synths and modules. Roland's 'GS' is an extension to General MIDI, giving more than the basic 128 sounds and 47 percussion instruments.

In consequence, most MIDI File writers make their songs GS-compatible rather than GM and make use of these extra sounds. In keeping with this, Yamaha have ensured that the sounds used by the extra nine drum kits are in keeping with their Sound Canvas equivalents – if a GS song file calls for the Sound Canvas electronic drum kit, the CBX-T3 will also deliver it.

As with the TG100, up to 16 instruments can play at the same time with a maximum of 28 notes – enough for an entire orchestra.

WHAT DOES IT SOUND LIKE?

The immediate comparison has to be with Roland's Sound Canvas and on the face of it this is rather disappointing. CBX-T3 sounds are generally toppy and frequently grainy. Instruments such as the electric pianos and clean guitars cry out for a chorus effect which the CBX-T3 doesn't have – and here, the Sound Canvas scores highly.

On playing through the various sounds, a few stand out as being very good. The glockenspiel, marimba and xylophone have a very nice tone to them, and the basses have substantial 'oomph'. Solo violin is sweet and accurate as are the pizzicato strings and oboe, but individual brass sounds are poor – the trumpet, for instance, is completely lacking the attack portion of its sound, and our ears usually recognise an instrument by this characteristic. The acoustic piano, also a commonly-used indicator for a sound module, is too tinny on the CBX-T3 but eminently usable on Sound Canvas. Most of the bell-like sounds are good, due to the enhanced top end, including many of the pad and synth sounds where the Sound Canvas variants lack character.

So why do I say disappointing on the face of it and not just disappointing in total? Well, listening to sounds such as these in isolation is unfair – you have to consider them in a mix. Switching between Sound Canvas and the CBX-T3, it's like listening via two different pairs of loudspeakers. Sound Canvas is sweet, appealing and 'middly' in nature, but the CBX-T3 has a far greater dynamic range; drums and bass thunder out while instruments that generally sounded too toppy when solo'd suddenly cut through in a mix. So judgement depends on the intended use.

EASY TO EDIT?

In a word, no as it requires the use of System Exclusive, an awkward part of the MIDI protocol to work with. Yamaha would have been better off using what are called Non-Registered Parameter Numbers as many sequencers give you easy access to these. That said, at least sounds *can* be edited and quite seriously so.

Eight types of reverb and delay allow you to enhance the overall sound of the CBX-T3 quite significantly. From Concert Hall to Stereo Delay, you can select an effect and then decide how much is used for each of the 16 instruments. Again, editing is via the ubiquitous SysEx.

VERDICT

The overall sound is quite raucous, and if you like this you'll like the CBX-T3, especially where the drums and bass sounds are concerned. If you have chance to hear one, listen to it in the context of a MIDI song file playback, not as a bunch of instruments in isolation.

The only fly in the ointment at the moment is the lack of an ST-specific package although discussions are currently underway between Yamaha and Steinberg.

INSIDE INFO

HELLO! MUSIC!

Yamaha's idea of presenting a package with everything you need outside of your computer is a great one. Both the Mac and PC versions come complete with a Steinberg sequencer and MIDI File player, 20 MIDI Files on a song disk, all necessary cables and adaptors, and a host of literature. The CBX-T3 also has a miniature 8-pin DIN socket for direct connection to a Mac or PC, so saving the cost of a MIDI interface.

Unfortunately, there isn't an ST-specific package yet but as talks are currently underway between Steinberg and Yamaha, I'd be surprised if there isn't an Atari pack shortly...

PROS AND CONS

✔ Space-saving design
✔ Beefy bottom end

✘ No chorus effect
✘ Awkward editing

"Lots of instruments and percussive sounds makes this a tasty option if you like the timbral quality"

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COMPANY: YAMAHA-KEMBLE
CONTACT: 0908 366700
PRICE: £359
MIN MEMORY: N/A

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The Variations program breaks the space into an inner and outer zone with movement affecting the melody and rhythm. Even the Elmcourt School teachers join in

THE

You draw instant conclusions about a man who has a plaque with 'Ring Both Bells And Knock!' by his front door; here is someone who believes in grasping life with both hands – and then some!

The name of Rolf Gehlhaar will be virtually unknown to you – unless you have followed Stockhausen, the brilliant electronic composer of the 1960s. Rolf spent four years touring and working with him, culminating in a decision to go his own way in 1970 and to experiment with sound environments from that point. The ultimate result is Sound=Space, a phenomenal invention.

Imagine a child who has limited control over his or her movements, but who is suddenly capable of creating music through movement; or someone who only has a 12cm range of head movement yet can effectively play a two-octave keyboard.

Or a dancer creating music through movement and then reacting to create further musical changes – real time composition if you like. Sound=Space is capable of this and much more.

INSIDE INFO

Rolf Gehlhaar was born in West Germany in 1943. After the war, his father, a rocket scientist, was recruited by the USA and so Rolf grew up in America. In 1962, while at Yale University studying Physics and Philosophy, he heard a recording by Stockhausen and completely redirected his life. After completing his degree at Yale in 1965, he went on to take a Music degree at Berkeley College where, in 1966, he met Stockhausen as a guest professor. After various meetings between the two men, Gehlhaar was offered a job in Germany as Stockhausen's assistant during which time he also became a member of the famous ensemble.

He left in 1970 to continue his own development in both instrumental and electronic music.

THE BEGINNING

So how did Rolf become involved with such technology?

"Since 1971," he began, "I've tried to make environments into which people enter and by entering and moving around they affect the sound. In 1976 I started using computers to compose – to generate structures usually in numbers of pitches, orderings of notes, rhythmic structures and so on.

"My first computer was an Apple which I bought in 1979 and I started writing software. It wasn't real time, but could generate numbers, lists of durations, graphics or notes. In the course of writing those programs, I put in some real time influences by joystick. I could alter at least two parameters that affected what these chords looked like – interval, number of notes, register...

"This set off something in my mind which said 'wouldn't it be nice if anyone could do this, hook this up to a synthesiser and drive it in real time with a joystick. You could influence the structure of music in real time – you don't have to know anything about it but you can play with it."

Did you actually create a device like this? "No", laughed Rolf, "It's not interesting to give someone a joystick sitting in front of a computer. What I needed was a way to give people control without touching, where they could be free without the intimidation of a joystick or keyboard. A lot of people play with coloured pens and water colours – you never see them do that with synthesisers because they have keyboards on them. Yet all these fantastic sounds that are available to them are lost.

"So I thought Sound=Space is a way one could do this. One could make a space in which all people would have to do is move. They wouldn't need to know anything about music – just move in interesting ways that they feel comfortable; dancing, hopping, standing still, moving their arms about, whatever."

Needless to say, such a system did not exist and neither did the technology to create it. Photo cells and infra red hardware were too inaccurate to act as sensors and so an impasse was reached – until an advert appeared in Scientific America in 1984. Polaroid had developed ultrasonic sensors for auto-focusing on their cameras and were now selling an experimenter's kit.

"I looked at the specs and said 'this is it. All I have to do now is design a system'."

THE DESIGN STAGE

Where did the first support come from – the UK?

"No. I designed a system on paper and contacted IRCAM (the French Institution for Acoustics) who said that the New National Museum of France would be interested. It was just being created at La Villette so, in 1985, they commissioned me for the first Sound=Space. I knew I couldn't make it over here and then install it in France so I got in touch with a friend of mine who had a small computer music studio in the South of France.

> ***'Sound=Space is, for me, one of the most exciting musical breakthroughs, possibly in the history of music...'***
>
> *Desmond Wilcox, BBC TV producer*

"It was built according to my specs with his 128-channel synthesiser. It was very flexible but quite expensive. Then I started to write the programs about what would actually happen when people moved!"

The first program had each ranging unit, as Rolf refers to the sensors, behaving as if it were a keyboard. Being in its path and moving creates an effect like walking on an invisible keyboard. Notes are triggered with a time span, or duration, and loudness.

The space resembles a mesh with four or five ranging units along two adjacent sides so that they cross each other. On entering that space, you often step through the conjunction of two sensors and so trigger two keyboards simultaneously.

"Triggering a single note is OK", smiled Rolf, "but after the 'ah-hah' effect, comes the 'so what?' effect. If you're walking around the space and always either raising the pitch and increasing the tempo or lowering the pitch and decreasing the tempo of two notes it almost sounds like music."

BACK IN THE UK

In 1987, Rolf returned to the UK to further his work. Determined to continue in the same vein, he needed a computer that gave the most for the least money – the Atari ST! The in-built MIDI interface saved further expense and was used to connect the external processor, that measures and converts the ultrasonic information, to the ST.

The ranging units are simple boxes, each containing an ultrasonic

Answering questions is all part of the service; note the small sensor in the centre of the picture

Rolf Gehlhaar, the inventor of Sound=Space

FINAL FRONTIER...

...Space – or should that be Sound=Space? Vic Lennard interviews the man behind the technology...

transducer, and connect to the processor, a larger box with 16 inputs and a control for the number of 'snapshots' per second.

"The measuring system doesn't measure position – it measures the amount of movement," explains Rolf. "It takes a snapshot of where everyone is in the space and repeats this, say, a tenth of a second later. It compares the two, takes the difference, does a few calculations and comes out with a value that simply corresponds to the amount of movement that has taken place in that tenth of a second."

The hardware was built in the UK by Zingaro Design Ltd while the software was programmed in a mixture of C and Assembler by Per Hartman, a Norwegian resident in England.

FIVE DIFFERENT PROGRAMS

Keyboards, as mentioned above, uses movement to trigger notes on up to 16 'invisible' keyboards while *Variations* uses two control zones; movement in the inner zone affects the pitches of notes; the outer zone changes the rhythm.

Melodies is a sequencer and also has two control zones. Activity in one zone plays the melody forwards and in the other zone, backwards; the level of activity determines the speed of play-back. *Muzix* is also a sequencer with positional control of forwards and backwards play-back, tempo and repeat.

Possibly the most interesting is *Improvisation* where movement in the left and right zones changes the melody and tempo respectively.

By using numerically-based text files to set up the parameters of Sound=Space, Rolf has easy and effective control over the performance of each program.

PERFORMING WITH SOUND=SPACE

The first Sound=Space was opened at the *Centres Georges Pompidou*, Paris, in 1985 and ran for five months. The next two years saw Rolf travelling around France, West Germany and Portugal and included the *Festival de Danse* (Montpelier, July 1986), and *Espace Nord* (Paris, May 1987) where the Sound=Space measured 600 square metres for a performance by dancers.

With the ST-based system, Rolf has visited Canada and Australia since 1988; the original system at La Villette was only dismantled at the end of last year.

He also spends much time working with disabled people throughout the UK. Ofir Gal and I had the honour of seeing him work with a group of children at Elmcourt School in South-East London recently. Although the room was small, fifteen children had a fantastic time creating music through their movements under instructions from Rolf; the use of bell-like and percussive timbres from a pair of Yamaha TX81Z sound modules made for an interesting sound. He even joined in with them and ensured that he shook the hand of every child at the end of the session.

In this rather financially-directed era, it is most refreshing to find someone with strong enough beliefs to want to follow them through without the financial incentive to do so. In this respect, Rolf Gehlhaar is part of a very small, dedicated minority; I only hope that someone reads this and puts forward the kind of support that such a man deserves.

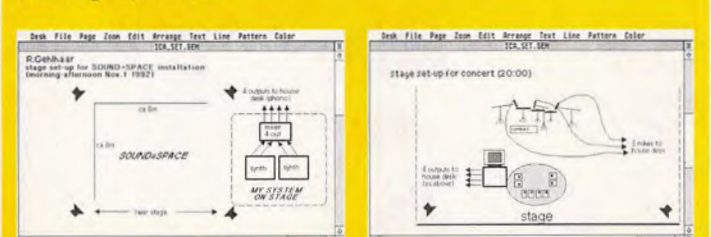
WHICH ST?

Rolf's basic set-up is a 1040 STF, purchased in 1987, and original in all respects – apart from a new power supply. He still uses an Atari-style mouse, although he's currently on his fourth one, and works with an SM125 mono monitor.

While the 1040 is due for replacement, Rolf has a problem; the Sound=Space program will only run under TOS 1.00! Looks like he's going to have to get one of Atari UK's 520STFMs and have the memory upgraded...

OTHER ST PROGRAMS

The ST is used exclusively for all of Rolf's work, from music composition through to the design of the Sound=Space environments. *1st Word* is adequate for letter and document writing while *Masterplan* handles the financial side of his operation. He custom-creates the TX81Z sounds with Steinberg's *Synthworks*.



Rolf uses Easy Draw 2 to design his Sound=Space layouts

For music composition, Rolf is an EMagic *Notator* fan, using an HP DeskJet to print out complex scores. But perhaps most interesting of all is the use of Migraph's *Easy Draw 2* for the system designs. Rolf had been trying to get hold of *Easy Tools* but without success – until I turned up at Elmcourt School with a copy of issue 15 of *ST Review* for him!

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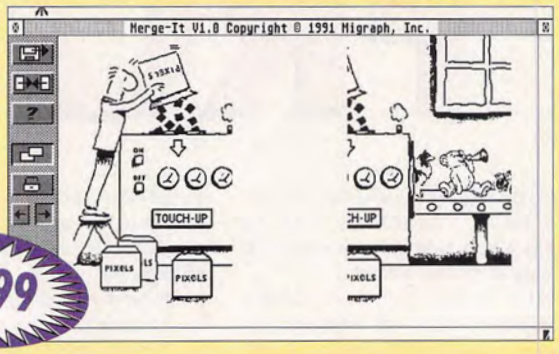

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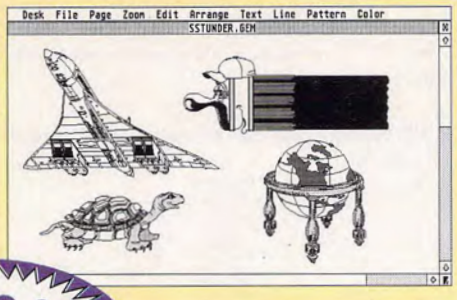

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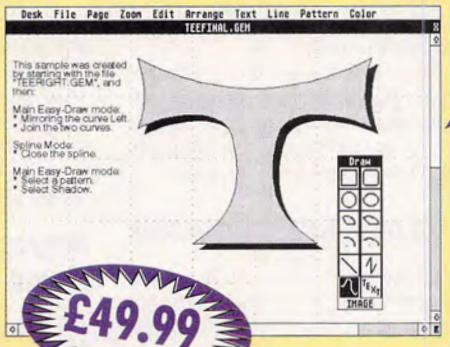

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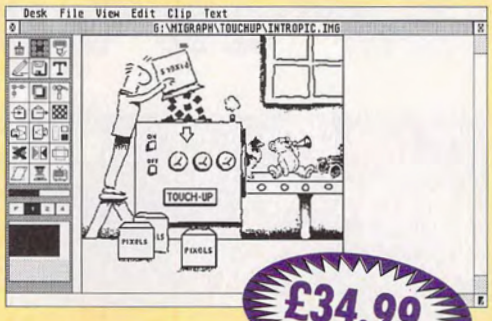

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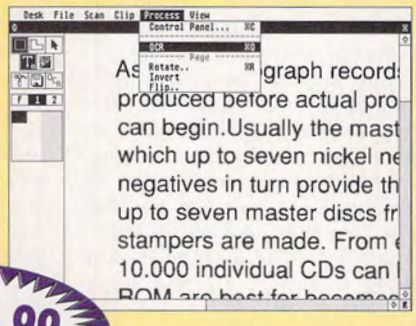

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FIRST IMPRESSIONS

Just one of the extremely attractive animated sequences that appear throughout the game. Unfortunately this is a PC shot, but the 32 colour ST pix are just as nice.

The Campaign rages on. Note the digitised map adding a touch of realism to the event.

KINGMAKER

US Gold are the latest software house to take a popular board-game and try to repeat its success on screen. Tony Dillon asks: Are you ready for battle?

Strategy games have come along a lot further in the last couple of years than people seem to have realised. Mention a war game to someone, and instantly they'll think of hexagons, small graphics and pages of figures and statistics. Being honest, though, how long has it been since we actually *saw* a game like that? The war game is dead – long live the war game.

Over the last eighteen months, Graham Lillee and Kevin Bulmer have been busying themselves with the product that they hope will finally drive the last nail into the coffin that states that wargames are dull. Following in the footsteps of *D&D*, *Heroquest* and *Space Crusade*, *Kingmaker* is the computer version of the board-game of the same name, and if you haven't seen the board-game, we're very surprised. For those who have surprised us, *Kingmaker* is a strategic little thing that re-enacts the War Of The Roses, and sees each player trying desperately to make their nobleman the king of the realm, by attacking the other armies of the land and generally trying to recreate the chaos and confusion that was the Tudor Wars.

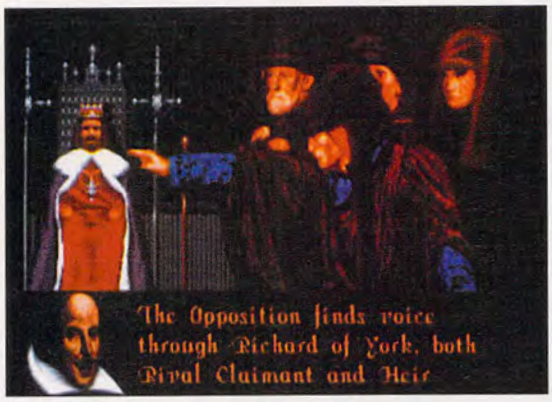
If you like, you can overview the whole country to see how things are moving on.

The board game has been a massive success from the off, selling strongly since 1974, and massing a huge army of fans through the years. Thanks to its simplistic gameplay mixed with addictive strategies, the game pulls in novices and pros alike. The computer version will go one step further, offering an on-line help facility to aid new users in their battles and campaigns. Not quite sure what to do in the middle of battle? Ask the computer!

The historical aspects of the game have been heavily researched by the team, creating a truly authentic backdrop for the game. In the box you'll find a 120 page manual with over 80 pages of historic information giving the entire story of the war, along with a myriad of graphic treats within the game. For example, each important action will be accompanied by a short animated sequence, complete with voice over and sound effects.

The game-board itself is a digitised picture of the United Kingdom with playing pieces taken from the actual heraldic shields of the nobles themselves. Both men behind the game, of which the PC version is pictured here as ST shots aren't available at time of going to press, will already be familiar with the strategy fanatics out there. Graham Lillee was the man responsible for the AD&D titles *Heroes Of The Lance* and *Shadow Sorcerer*, while Kevin Bulmer is a man who needs no introduction thanks to the likes of *Corporation* and *Legends Of Valour*, so you're already promised something a little special.

As you can tell from the screen shots here, the game already looks fairly stunning, thanks to Kev Bulmer's superb artwork, but loads of strategy titles have had nice graphics. The thing that's being stressed about this game is the artificial intelligence. Over the last year and a half, Graham has designed and tweaked the opposition to the point where you actually feel like you're playing another human player. If all goes well, this is going to be one hell of a game.



For some reason, William Shakespeare is the person to break the news about the new King. Still, at least someone won!

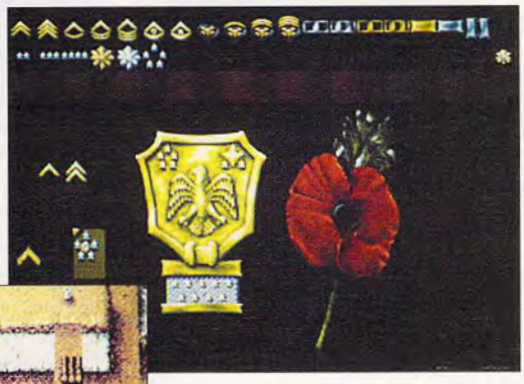
Virgin Games link arms with Sensible Software and gets ready to blow the opposition away.

CANNON FODDER

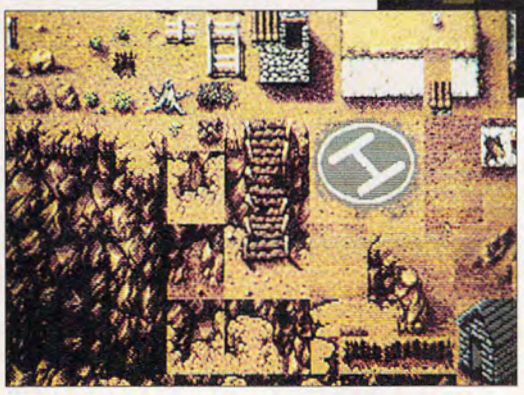
Sensible Software seem to have a thing about drawing cute looking little characters. First you had *Megalomania*, their own interpretation of a God game featuring the maddest professor ever, followed by the incredible *Sensible Soccer* of course. Now we are about to be treated to Cannon Fodder – *Sensisoccer* meets *Rambo*!

The game will work in a *Lemmings*-style vein. You have around 300 soldiers at your disposal, who you'll have to take through a selection of 24 different missions over land, snow, deserts and other such treacherous terrain. Three hundred soldiers might seem like plenty of room to manoeuvre, but to get to each mission you need to have enough soldiers to enter that level. That, plus the fact that remaining soldiers get promoted so making them stronger and harder, gives more than enough reason to be careful and not turn your platoon into "Cannon Fodder".

The missions generally follow along the lines of find and recover, although you will get the chance to kill certain people and destroy installations later on. As the missions get more difficult, you'll need to divide the platoon into small teams, and this is where you'll appreciate the mouse control that Sensisoft have opted for. Both mouse buttons are used, and to great effect. Click on the man you want to move, and use the left mouse button to control the direction he walks or runs in. The right mouse button is used to control his weapons, and together you have maximum control with a minimum of fuss.



Each soldier who survives a mission receives medals and commendations – even promotion if they're lucky!



Fighting in the mountains can be tricky – make sure you don't run your men to ground.

At the moment the game looks absolutely brilliant, as you can see here. Small, but excellent graphics and some very promising gameplay. This could be hot!

GOAL!

Dino Dini's latest and greatest is almost upon the ST public. Is it as good as everyone hopes it will be? It looks like it!

Kick Off was brilliant, no doubt about it. Yes, we know everyone in the computer press slated it and said how unplayable it all was, and we've all apologised for that a million times. But *Kick Off 2* knocked it into a hat so cocked it might as well have been facing the other way! Everyone's been holding their breath for *Kick Off 3*, and the sad news is that Dino isn't writing it. What he has been working on, however, is this little gem, known to the world as *Goal!*. I can say with all honesty that it is his best, but that's only because I've spent so long playing the Amiga version. Essentially, if you like *Kick Off* then this will be the game for you!

There's no point in going into any great detail of the game, as you already know the format if you've played either of the previous games.

He dives! He saves! The goalkeepers have been improved yet again, so let's see you get one past 'em.

New points, though, include a unique zoom mode that allows you to view important action close up, such as penalties and general goal mouth action.

The gameplay has been tweaked somewhat, too. To add a little more realism to the player control, Dino has added acceleration to the players. Now, instead of racing to maximum speed instantly, the increase is gradual and based on the strength and stamina of the individual players. At first play, this does make it a little trickier to control, but once you get the hang it adds a lot to the game.

After seeing the Amiga version, I can already spout on about how wonderful it is. Knowing Dino's track record, the ST version should be just as good. Watch out for a full review very soon.

GAME PLAY

WAR IN THE GULF

Another say, another dollar into the account of a battle weary Stu Redman...

Imagine this. It's Poland, September 3, 1939, and one Adolf Hitler arrives with his suitcases for an extended vacation. The Poles are none too pleased about this, and suspect the short moustachioed German of having ideas going far beyond sporadic sunbathing and tours of the shipyards – due largely to the fact that he pulled up in a tank and now claims to be in charge of the country.

Where would we be without wars? Imagine the limitation of war game titles available had Hitler actually been an overly ambitious but mild-mannered dictator-in-waiting.

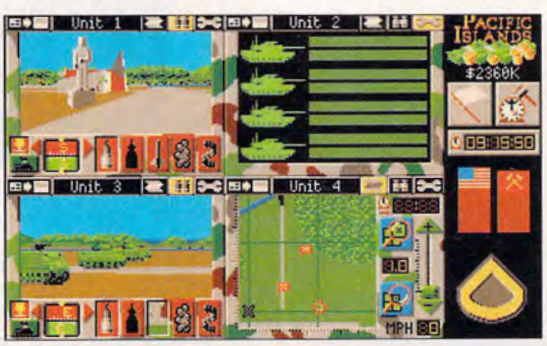
It's getting on for 50 years since the end of the war, and in all probability, software houses were beginning to struggle for new (or even not so new) related material. Luckily for them, though, the planet has more than it's share of megalomaniacal lunatics, and with one such person – Saddam Hussein, no less – grabbing the headlines in the 1990 Gulf Conflict, we find ourselves armed to the teeth once again...

Empire, not known for their reluctance to enter into the war arena with titles such as *Team Yankee*, *Pacific Islands* and *Campaign* to their name, once more take to the battlefields with what is effectively the third game in the *Team Yankee* trilogy.

Strictly speaking, *War In The Gulf* isn't a Gulf War simulation. At least, it isn't intended to represent the Gulf War of three years ago. It's set in 1995 (a favourite year of Empire's it seems), when the Iraqi Republican Guard have overrun the oilfields of Kuwait, and there's no mention of the infamous Saddam anywhere. Basically, this serves two purposes; it's a token moral gesture for those who decry the use of war as a marketing tool, and it means that the game doesn't need to be 100 per cent historically accurate, no bad thing since "game" is the operative word here.

As the Commander of Team Kuwait, and under the employ of the ultra wealthy Emir of Kuwait, the responsibility for the cleansing of the tiny country lies firmly on your shoulders.

Those familiar with Empire products will immediately recognise just about every feature of this effort. Each team comprises four tanks, and assuming you have enough money (the Emir is a very generous man when things are going well), the most modern, awe-inspiring vehicles in the world are at your disposal.



All four teams can be controlled from the screen at once.

Troops armed and ready to fight, it's now a matter of embarking upon one of the couple of dozen missions that you have been set. Like a real commander (I should imagine), it's no good deploying troops left, right and centre and hoping for a win. The team who put this package together are no novices, and unless you employ a careful strategy, the campaign will be over before you have time to batten down the hatches!

As you can see from the screenshots, all four teams are controlled simultaneously, through either the split screen option – which condenses detail too much for my liking – or a close up of each team in turn.

This isn't *WWII*, and the tanks under your control have everything you could possibly imagine to make the job that little bit easier. The turret rotates through 360 degrees, which comes in very handy when ambushed or attacked from behind; and the laser range finder renders standing atop a tank with a pair of binoculars a thing of the past.

Graphics and sound are too reminiscent of previous efforts for me to believe this is an entirely new product.With its familiar blend of strategy and action, *War In The Gulf* is deeply engrossing and a real long term project. A word of warning to *Team Yankee* veterans though; the Value For Money column below shows a rating of four out of five, which for first time buyers is true. Knock this down to two out of five though if you fall into the above category, because although *WITG* is an excellent tank simulation – the best yet from Empire – it still doesn't offer enough new features for it to be seen as more than a data disk by those familiar with its wares.

Plan your missions carefully as the Iraqis are not known for their hospitality...

✓ Packed to the hilt with realism

PROS AND CONS

✗ Yankee and Pacific fans have seen it all before

"The best of its kind yet from Empire"

NAME: WAR IN THE GULF
COMPANY: EMPIRE
CONTACT: 081-343 9143
PRICE: £29.99
RELEASE DATE: OUT NOW
MIN MEMORY: 0.5MB

GRAPHICS	★★★★★
SOUND	★★★★★
VFM	★★★★★
PLAYABILITY	★★★★★
OVERALL	85%

GAME PLAY

McDONALD LAND™

It's finally happened. Not content with being in every High Street and on telly every five minutes, Ronald™ has now invaded our computers! Richard Barton munches his way through...

Guide Mick or Mack around and collect puzzle cards and Golden Arches

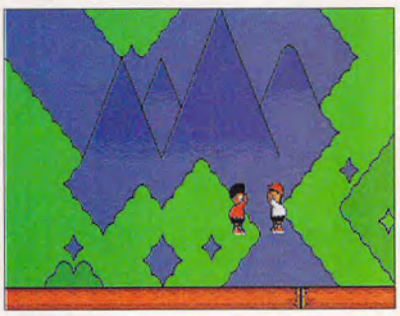
Yes, those master purveyors of the superscript ™ strike again. Every time you mention Ronald™, or any of the other characters like Mick™ or Mack™, you have to put these little symbols in. With apologies to McDonalds™, please take it as read that the trade marks are respected and recognised before I go out of my mind typing them in!

McDonaldland is a platform game based on, obviously, the characters from McDonalds Corporation. The premise is that the Hamburglar appeared and ran off with Ronald's Magic Bag while he was performing tricks at a picnic in the meadow. Mick and Mack, the MC Kids (that's pronounced "EmCee Kids", by the way, as the manual tells us!) are on hand to help him look for the missing case.

When the game is loaded, a short animation sequence appears showing the basic story outlined above. You are then presented with a map screen, showing the route you need to take. This takes you through Ronald's Clubhouse, Birdie's Treehouse, Grimace's Highlands, Professor's Workshop, CosMc's Retreat and finally, Hamburglar's Hideout. On each level, there are between three and six stages with puzzle cards and Golden Arches to collect. One hundred of the latter will take you on to a bonus level. The object of the game is to collect the puzzle cards on each level – you don't need all 42, but a bonus is awarded if this is achieved. The six lands are very different, which is more than can be said for the gameplay. There are a host of different characters that can get in your way, all described in rhyme in the manual, but they do little to add much interest to the challenge.

It's difficult to see who *McDonaldland* is aimed at. If it's for kids, then the game is too difficult to play; if it's intended to capture the imagination of the older gamer, then the manual is too patronising (with headings like "Mick 'n' Mack's Groovy Moves"!).

Overall, I can find little to recommend this game, although it is nice to see a game that looks for extra memory to save on disk access. However, it couldn't even fit into the 'Education' category. I have already seen one of the console versions being sold for 75% off, so obviously others think the way I do. Come on, Virgin, you could have done a lot better than this...



A "high five" from your partner is the reward for completing a stage.

✓ None

PROS AND CONS

- ✗ Poor ideas
- ✗ Bad gameplay
- ✗ Difficult control

"One of the worst games of all time. An unashamed plug for a burger company that comes across as having no thought for the player."

NAME: McDONALDLAND
COMPANY: VIRGIN
CONTACT: 081-960 2255
PRICE: £25.99
RELEASE DATE: OUT NOW
MIN MEMORY: 0.5MB

GRAPHICS	★★☆☆☆
SOUND	★★☆☆☆
VALUE FOR MONEY	★☆☆☆☆
PLAYABILITY	☆☆☆☆☆

OVERALL 22%

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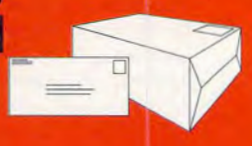

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VFM

Dave "Short Arms And Long Pockets" Jones takes another look at some programs that won't break the bank...

LOOM

KIXX XL • £14.99 • 021 356 3388

IN BRIEF: Fantasy worlds have always been a favourite way of passing the time with a computer. Usually, they involve killing trolls, monsters and other assorted nasties.

Loom is different, being a series of puzzles with an element of role-playing thrown in to provide a unique mix. It's designed to be completed and not just half-played and discarded to the bottom of the disk box.

You play the part of Bobbin Threadbare, a youngster with some knowledge of magic in a world on the edge of destruction. The object is to roam through this fantasy world, making friends, solving puzzles and generally improving the environment. Bobbin is a new member of the Guild of Weavers and still has to learn how to use his powers. Spells are cast through a series of musical notes that are added to as the game progresses – but these can be difficult to grasp if you are tone deaf like I am!

ST REVIEW COMMENT: The interface is nice, if rather slow, but the whole game is let down by the kind of graphics you'd find on a Spectrum! As the game revolves around colour, this is a big shame. In addition, if it wasn't for the suggestions in the manual of how to start, I'd still be floundering around without having really begun! ✪✪✪

A great idea let down by prehistoric graphics.

BULLY'S SPORTING DARTS

ALTERNATIVE SOFTWARE • £9.99 • 0977 797777

IN BRIEF: I'll avoid the obvious "great, smashing, super" Jim Bowen references here and look at the game. *Bully's Sporting Darts* is a darts simulation with good graphics and reasonable gameplay. It has a selection of different dart-based games including 501, round the clock, football, cricket, tennis and snooker. Don't be fooled into thinking that this is several simulations in one, though. The other games are simply darts variations.

You can choose up to six players for each game but I suspect that the team games are better with a crowd than played alone. They can get tedious, even though there is the computer to play against.

ST REVIEW COMMENT: Shades of *Heimdall* as the hand shakes in front of the board, but it is quite controllable when you get used to it. A good simulation if you like darts, but tends to have limited appeal unless you have a group of friends round – perhaps with a few cans of Diet Coke or, err, some other beverage. *Bully's Sporting Darts* doesn't like systems with over one megabyte of memory or TOS 2.06, and the music can get tedious. Still, you can always turn it down! ✪✪✪✪

You can't beat a bit of Bully!

STONE COLD SOBER

FLOPPYSHOP • £9.99 • 0224 5862080

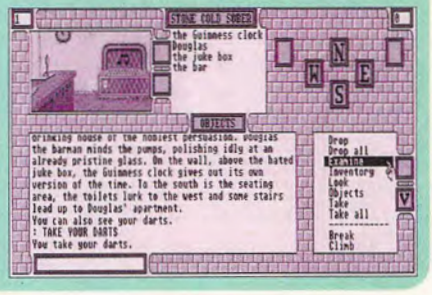
IN BRIEF: It's always difficult to decide whether these games should be reviewed here or in the PD section, but as it is officially a commercial release, here it is.

Stone Cold Sober is a classic adventure that runs in medium or high resolution. A unique user interface makes it easy to play, although not easy to solve!

You have to play *Stone Cold Sober* to find out exactly what you have to do, so I'm not going to spoil it here. You start, however, in The Flying Fish public house with a set of darts in your hand. While there's plenty to do here, there are many other locations for you to visit and, indeed, will have to if you are to save the day.

Wandering aroung the streets of Brentford is a far cry from the usual "other worlds" adventures. You progress through a series of events that will have you thinking "I can imagine that happening to me". Altogether a rare piece. Not the best game in the world by a long way, but an enjoyable way to pass a few hours in front of the computer.

ST REVIEW COMMENT: Simon Brown shows potential with this adventure and it shows that you can have fun for under a tenner. The user interface is easy to use and the manual along with the help and map programs on the disk make this a comprehensive package worth adding to your collection.
✪✪✪✪



A good interface and storyline make this a very playable adventure.

PD SCENE

Games for little more than the price of a blank disk? Your wish is our command – with Nial Grimes doing a passable impersonation of a genie!

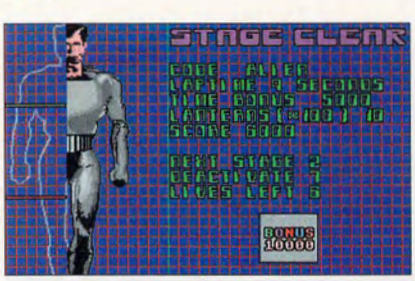
LASERCHASE

MERLIN PD • DISK NO: MPD.1347 • £0.99 • MEMORY: 1MB • EXCLUSIVEWARE

IN BRIEF: *Laserchase* is a futuristic sports racing game. The idea is to steer your car around a multi-ringed circuit gathering lanterns and avoiding the enemy in the blue car. When a set number of lanterns have been collected, an exit route opens in the centre of the screen and it's on to the next level. To complicate things further, there are plenty of obstacles to hinder your progress and a tight time limit to stick to.

It's not the most challenging game on earth, but any small quibbles about the gameplay are easily forgiven thanks to the superb visuals. From the nicely drawn car on the title screen to the Robocop-style view of your metallic body on the bonus screen, *Laserchase* really is a joy to look at. The sound effects aren't quite as inspiring, but they're adequate and you can always turn down the volume.

ST REVIEW COMMENT: "*Laserchase* is a very simple game concept, but the graphics make it feel like much more. The controls are a touch under-responsive at times, but not enough to spoil the game."
✪✪✪✪



The relatively simple gameplay is pepped up no end by some well drawn Robocop-style graphics.

QUIZ MASTER

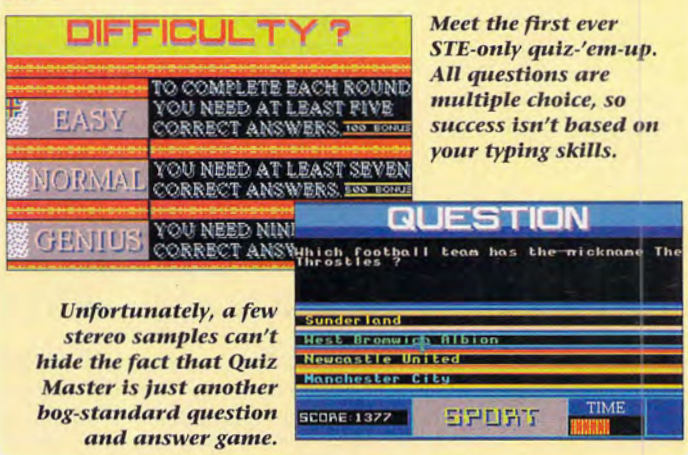
LAPD • DISK NO: G.269 • £1.50 • MEMORY: 1MB • SHAREWARE • STE ONLY

IN BRIEF: General knowledge programs are favourite for public domain programmers, but *Quiz Master* is the first to make use of the STE's enhanced specification. What this boils down to is a fairly standard question and answer game with a few well placed, very clear samples.

Unlike most of its competitors the game splits its questions into categories, and for a change they are set at a reasonable level – none of that "who won the Blacksmith Of The Year contest in 1066?" lark! Each round consists of ten questions and depending on which level you choose, you must get five, seven or nine correct within a time limit to move on. The only attempt at an incentive to continue is the high score table.

Mouse control is the order of the day and it's admittedly very well polished, but how exciting can yet another quiz game be?

ST REVIEW COMMENT: "As quiz-'em-ups go, *Quiz Master* isn't bad. The Pursuits-style categories and clear samples lift it well clear of the competition and it's certainly cheaper than nipping down the local for a go on the coin-op."
✪✪✪✪



Meet the first ever STE-only quiz-'em-up. All questions are multiple choice, so success isn't based on your typing skills.

Unfortunately, a few stereo samples can't hide the fact that Quiz Master is just another bog-standard question and answer game.

INSECTROID

CALEDONIA PDL • DISK NO: GM.163 • £2.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE WITH *MAGIC BOOT*

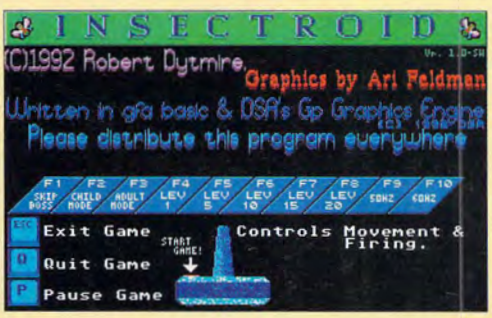
IN BRIEF: When it comes to eighties arcade clones there are two clear schools of thought: 1) they ought to have stayed in the eighties and 2) they make life worth living. If you hold to the latter view then *Insectroid* is one game that you will not want to miss.

It's a faithful remake of the classic *Galaxians* and in common with the original, the idea is to blast everything in sight. Your ship has free reign over the bottom third of the screen and every inch of that space is needed to avoid the nasties as they break formation and come plummeting towards you. Needless to say, there's an endless number of levels and the best way to describe the audio side of the game is explosive! Bonus levels are plentiful and when the "boss-o-meter" reaches critical mass, a mega-alien comes along to break the monotony.

ST REVIEW COMMENT: "It's fast, it's mean and it's lethally addictive – *Insectroid* is the best *Galaxians* clone to hit the ST thus far. Not a hint of originality in sight, but does there need to be?"
✪✪✪✪

If only all things in life were this simple. Insectroid is easy to grasp and difficult to master, but if originality is what you're after look elsewhere.

Don't worry if you've never played Galaxians – a beginner's mode is included to break you in gently.

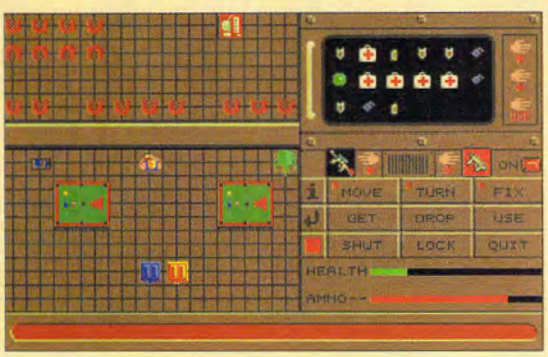


BUGHUNT 2

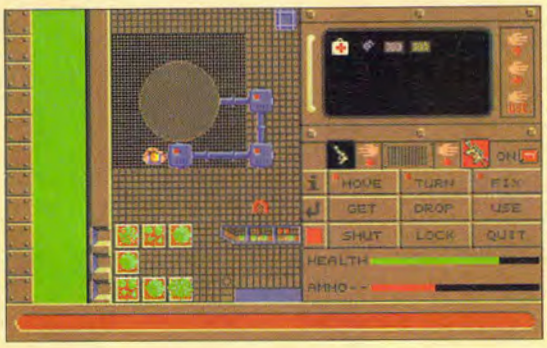
CALEDONIA PDL • DISK NO: GM.152 • £2.50 • MEMORY: 1MB • SHAREWARE

IN BRIEF: Yep, it's time to save the earth again and this time the thoroughly predictable task set before you is to rid the planet of a nasty alien infestation (yawn!). Perhaps more unexpected is the fact that the game is an arcade adventure and in addition to wasting everything in sight you also need to perform a number of brain teasing tasks. It's a bit like a cross between *Operation Garfield* and *FateMaster*. Your character is joystick controlled, and as you move the screen shifts to reveal more of the play area. The scrolling isn't fluid by any means, but it's fast enough to keep the game lively and doesn't detract from the action.

All backdrops are nicely detailed with computers, futuristic cars and snooker tables liberally sprinkled throughout each complex.



Admittedly the scrolling is a bit dodgy, but once you get down to the job of rescuing captives and collecting goodies, you hardly notice.



A very Alien'esque plot backs up what must be one of the best arcade adventures in the public domain. If only the baddies didn't blend in with the backgrounds!

ST REVIEW COMMENT: "*Bughunt* is a nice mixture of action and adventure. My only criticism is that the aliens occasionally blend in with the grass backgrounds, but it's not a major problem and at five quid you've got no worries on the registration front."

✪✪✪✪

FALCON OXYD

ATARI ST REVIEWS BUDGET BUY

THE SHAREWARE COMPANY • DISK NO: BY NAME • £1.75 • MEMORY: 1MB • SHAREWARE • FALCON (VGA) ONLY

IN BRIEF: No sooner do we recover from the gobsmacking playability of the ST version of *Oxyd*, when along comes the Falcon version to bowl us over yet again!

In case you missed the original, the aim of the game is to steer a mouse-controlled marble around a set of rooms matching "oxyds" by bumping into them. It's a skillful blend of action, fine control and mix 'n' match which works remarkably well.

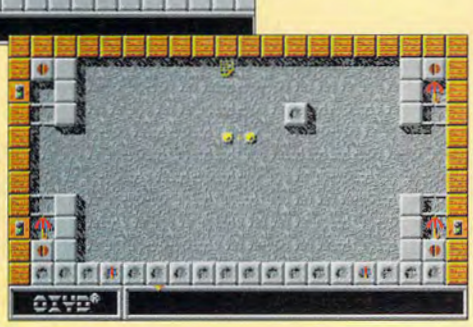
The Falcon version has naturally had its graphics beefed up to 256 colours and they benefit well from the higher 640 by 480 pixel screen resolution. As you'd expect the sound is terrific, with beautifully clear samples sprinkled liberally throughout the game and it also plays a shade faster.

Don't expect huge changes though. It's better to look at and a little more refined, but not drastically improved – and let's face it, it didn't need to be.

ST REVIEW COMMENT: "Playability by the bucketload and now graphics and sound effects to match – this is simply the best shareware game money can buy. Registration is still a bit steep though."

✪✪✪✪✪

Arguably the best ST shareware game can now be bought for your Falcon, complete with high quality stereo sound and souped-up graphics.



Later levels are a little more brain taxing. Much further than this and you have to cough up the £20 registration fee.

DARKLYTE

LAPD • DISK NO: G.288 • £1.50 • MEMORY: 1MB • SHAREWARE

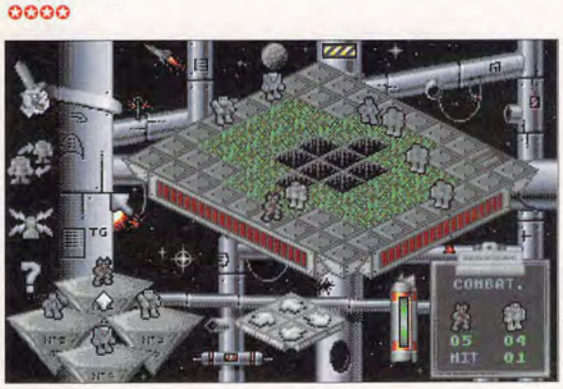
IN BRIEF: *Darklyte* is an unusual cross between chess and *Hero Quest*. The game is played on a three dimensional board and under your command you have four standard-issue "crispy flakes" style characters. The objective is simple – destroy the opposing droids. Each turn gives you a set number of moves which can either be spent in battle (providing you are close enough to the enemy) or travelling around looking to pick a fight.

There's no doubting the superb quality of the graphics, but Darklyte's gameplay could do with a bit of attention.

The digital sound effects and 3D graphics are both easily up to commercial standards and the mouse driven control system is an absolute delight. Where *Darklyte* really struggles though, is in the gameplay department – it's just not deep enough. After twenty minutes you're ready to move on to something else, which is a shame because it could have been so much more.

ST REVIEW COMMENT: "*Darklyte* has commercial quality presentation, but unfortunately lacks the gameplay to back it up. It's not a bad game by any means, but there's just not enough here to keep die-hard role-playing freaks busy for long."

✪✪✪✪



Combat scenes are limited to repeatedly clicking an icon and hoping for the best – gripping or wot?

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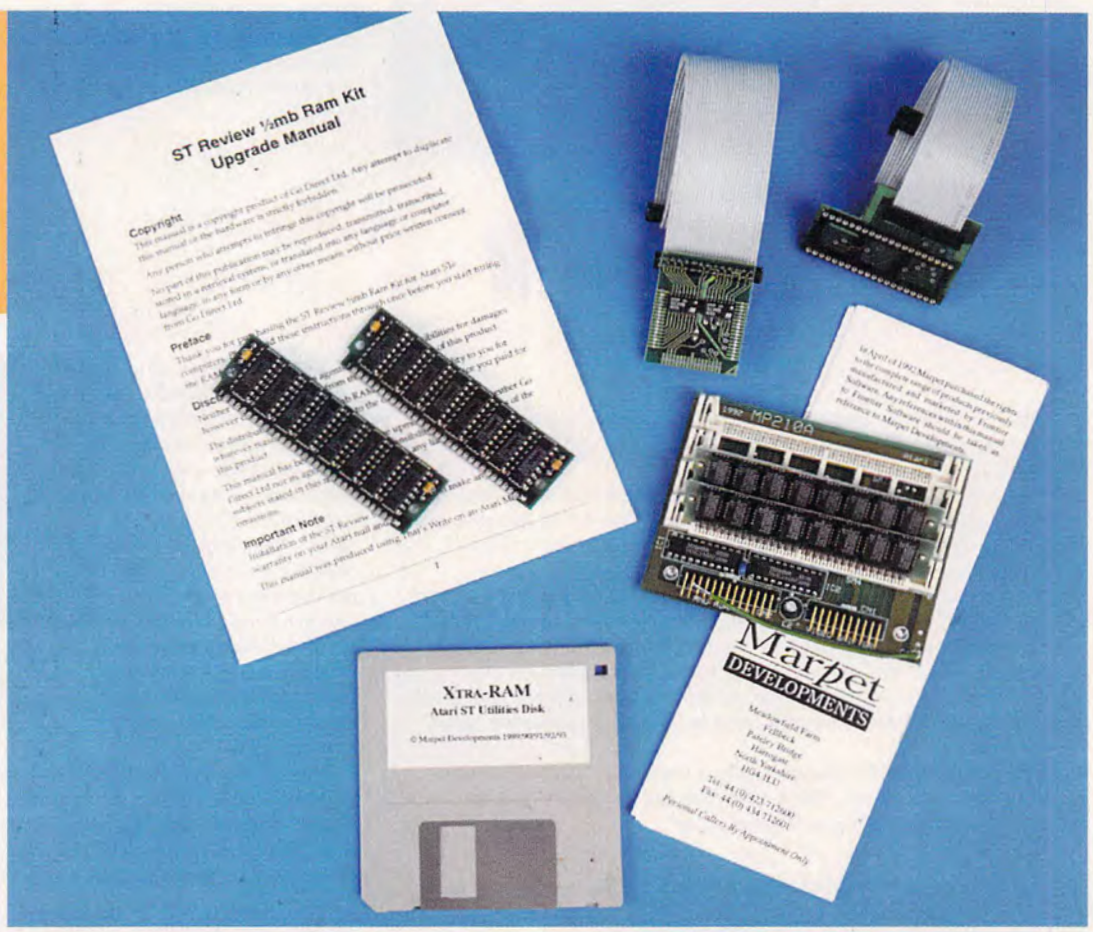

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A 520 STe is usually supplied with two 256K SIMMs and has sockets to plug in two more – it's that easy! A few do not have sockets in which case you will need a pair of adaptors. These may need soldering; if this is the case, we will supply the sockets at no extra cost – that's service!

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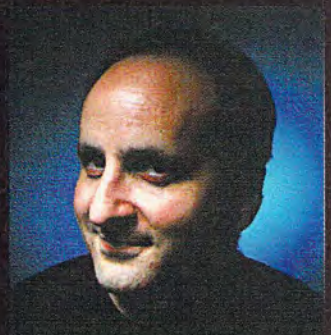

...to our new look readers' offers. This month sees the launch of two new memory upgrades designed and built in the UK exclusively for ST Review – never has it been so affordable to upgrade an STFM to 2MB or even 4MB.

How can we be so cheap? Thanks to the huge success of our 12-month old campaign to upgrade all STs to 1MB we have unique buying power. Also, because so many of our readers buy upgrades we can use the very latest manufacturing technology to produce our new STFM upgrades – and so give you exceptional value.

Why upgrade your memory? Because a memory upgrade is the most versatile enhancement you can make to your ST. Apart from the fact that you need it to run the more powerful ST software, much of which has been on our cover disks such as Timeworks, Cyber Paint and Easy Draw 2, there are many extra benefits too. You can use some of it as a RAMdisk – just like a superfast extra floppy drive. This means you can avoid the cost of a second floppy disk or hard disk. Even better, some software that claims to need a hard disk will run on your ST from a RAMdisk. A print spooler can save you time waiting for your printer to finish printing before you can carry on working – use your new RAM instead of upgrading your printer or buying an expensive buffer.

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SEE THE PREVIOUS PAGE FOR OUR SENSATIONAL NEW MEMORY UPGRADE OFFERS!

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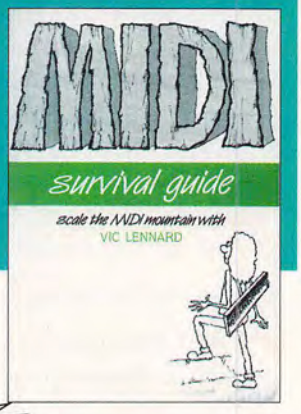

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PD ZONE

SALES CONTROLLER

ATARI ST REVIEW BUDGET BUY

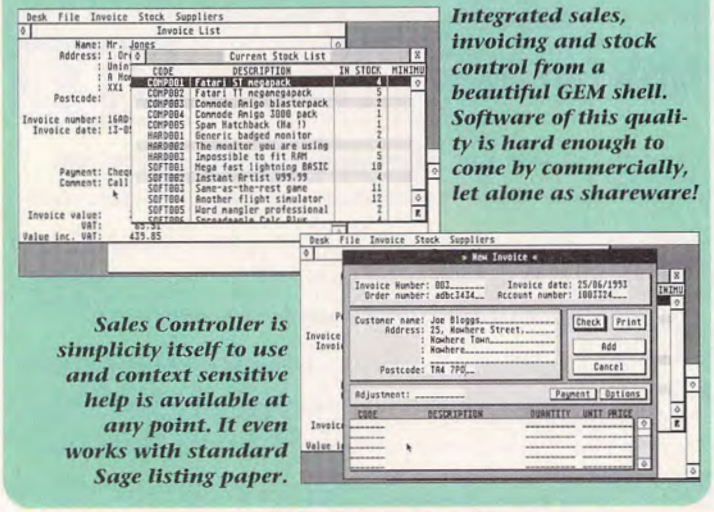
CALEDONIA PDL • DISK NO: AU-83 • £2.50 • MEMORY: 0.5MB • SHAREWARE • HI-RES ONLY • FALCON-COMPATIBLE

IN BRIEF: There's certainly no shortage of invoicing programs for the ST, but look around and you'll find that virtually all of them are an integrated part of complex accounts packages. Not ideal if you just want to automate the sales side of your business without getting involved in a full accounts system.

Sales Controller has been written by Andrew Brown, of *FastBase* fame, to fill just this niche in the market. In common with his previous offerings it sports a multi-windowed GEM environment and is a model of what ST software should look like. The program takes care of suppliers, stock control and can also issue free-form, "quick" invoices on request. Context sensitive Help guides you from start to finish, which is just as well because there isn't a manual!

ST REVIEW COMMENT: "The ST has been waiting for a utility like *Sales Controller* – every small business should have a copy. However be warned, this is more a demo than shareware; you do need to splash out the £30 registration before you can use it properly."

★★★★★



Integrated sales, invoicing and stock control from a beautiful GEM shell. Software of this quality is hard enough to come by commercially, let alone as shareware!

Sales Controller is simplicity itself to use and context sensitive help is available at any point. It even works with standard Sage listing paper.

GRIN CLIP ART

THE ST CLUB • DISK NO: SSM.101 • £1.45 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

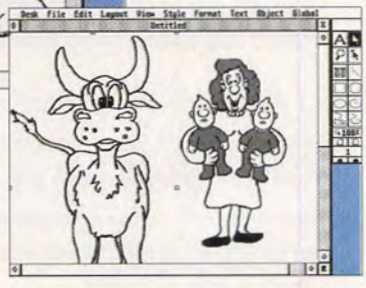
IN BRIEF: There's nothing like a good caricature with a witty caption to brighten up a relentless page of text, but finding images that appear to have been drawn by someone over five can be difficult. This range of cartoony style images characterise everything from Frankenstein to pets, and all are stored in the standard GEM IMG format. Over seventy images are included in all and the registration is quite reasonable at $15.

Of course, the huge number of files does mean the images are of a fairly low resolution. To give you some idea, at 150dpi most average at about 10cm by 8cm – fine on a dot matrix printer, but you can quarter that size if you plan to use a laser or inkjet. On the bright side, they do trace quite well thanks to their cartoony style.

ST REVIEW COMMENT: "A caricature for every occasion! The quality of the Grin images is good enough to brighten up amateur publications, but the resolution could do with being a bit higher."

★★★★

Everybody from the mother in law to Santa Claus is given the Grin treatment and the quality of the images is of quite a high standard.



As the name suggests, most of the images are light-hearted, and as they're in standard IMG format, you won't have problems using them with any desktop publisher.

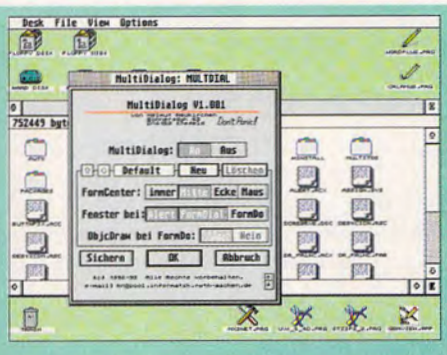
MULTI DIALOGUE

FLOPPYSHOP • DISK NO: UTL.3698 • £2.50 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

IN BRIEF: *MultiTOS* is great! – that is, until you find out that it's impossible to switch tasks with a dialogue box on screen. It's without a doubt the biggest problem with the system and one which is fortunately easily solved with *Multi Dialogue*.

This neat little utility pushes all dialogue boxes and alerts into an easily manageable window which can be moved, sent to the background, or topped exactly like any other. Of course, the main advantage is that you still have access to the GEM menu bar, allowing you to use desk accessories and switch tasks while the dialogue is on screen.

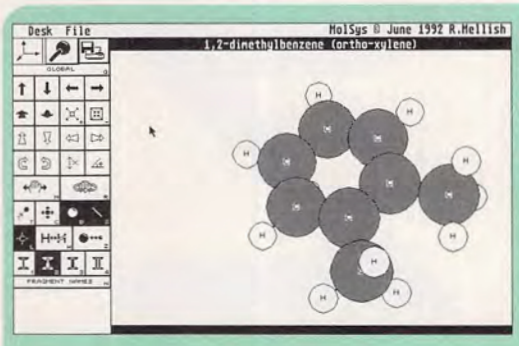
At least ninety percent of GEM applications have no problem dealing with the utility – the only exceptions being those that use their own dialogue routines such as *Calamus SL* – and it's quite happy to run from the AUTO folder or the desktop.



The supplied desk accessory lets you disable or adjust the dialogue parameters, although the default settings are fine for most purposes.

ST REVIEW COMMENT: "If you use *MultiTOS*, *Multi Dialogue* should be right at the top of your shopping list. Under normal TOS it's less useful, but can still be handy for looking at filenames or text behind an alert box."

★★★★



Ever wondered what a ortho-xylene molecule looks like? Nope, neither have I.

MOLSYS

CALEDONIA PDL • DISK NO: SC-1 • £2.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

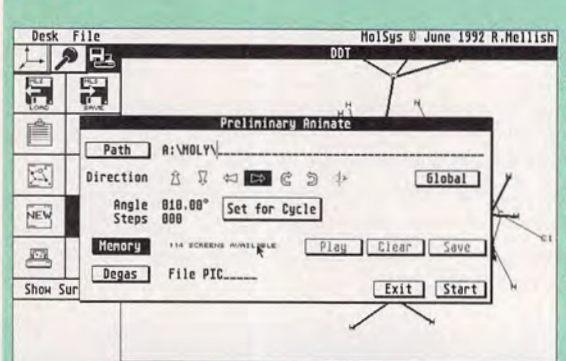
IN BRIEF: If Naomi Campbell is your idea of modelling, then *Molsys* is going to be of absolutely no interest to you. If, on the other hand, you find nothing more beautiful than a glucose or methane molecule, this one is going to be right up your street.

As you've probably guessed by now, *Molsys* helps in the creation of your very own three dimensional molecules. Once drawn, each model can be rotated, resized or even animated before being sent to disk as an IMG file for inclusion in your desktop publisher. Dozens of totally unpronounceable examples are included on disk to get you kicked off.

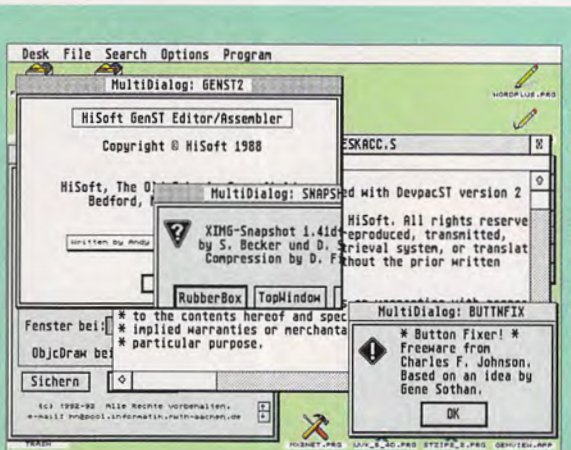
The modelling process itself is carried out through a *Calamus*-style control panel which sits to the right of the screen. There's no help text as such, but most of the icons are quite logically arranged, so it won't take you long to pick up.

ST REVIEW COMMENT: "Yet more proof that nothing is too unusual to appear in the public domain! Ideally, *Molsys* would support shading to give the molecules a more realistic, three-dimensional appearance, but it's still one very powerful piece of software."

★★★★



With a finished molecule in hand you can even create animations. "Molsys – The Movie" – I can hardly wait...



Unleash the true potential of MultiTOS with Multi Dialogue. Just think – never again will you be trapped out of the system by a stray alert box!

TOP TEN UTILITIES

1 SALES CONTROLLER • CALEDONIA PDL • DISK NO: AU-83 • £2.50 • MEMORY: 0.5MB • SHAREWARE • HI-RES ONLY • FALCON-COMPATIBLE

Sales, invoicing and stock control all wrapped up in a beautiful, multi-windowed GEM environment. It's extremely flexible in allowing stock or one-off invoices and registration is a snip at £30 (yes, it's that good!).

2 MONPACK • THE SHAREWARE COMPANY • DISK NO: BY NAME • £1.75 • MEMORY: 0.5MB • PUBLIC DOMAIN

A terrific little mono emulator that sits on the bootsector of any disk. Two versions are supplied, one for the standard ST and another for the STE (which makes use of the blitter to speed up screen redraws). The display is noticeably better shaded than many other PD offerings.

3 MULTI DIALOGUE • FLOPPYSHOP • DISK NO: UTL.3698 • £2.50 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

An essential companion to *MultiTOS* and *MultiGEM* which forces all dialogue boxes into standard windows. This allows you to switch applications and use other accessories with an alert on-screen. German prompts, but a full English manual is included on disk.

4 GERMAN TO ENGLISH • THE SHAREWARE COMPANY • DISK NO: GERMAN DISK #1 • £1.75 • MEMORY: 1MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

Having trouble using some of the latest shareware from Germany? This is the perfect solution: an automated translation utility. Unlike much of the competition, a huge dictionary – over 15,000 words – is included, so you can be up and running straight away.

5 FILETOOL • FLOPPYSHOP • DISK NO: UTL.3097 • £2.50 • MEMORY: 0.5MB • SHAREWARE

A novel replacement for the desktop's file handling functions. It employs a two window approach very similar to *ST Zip*'s and as a result is very easy to use. It may sound like a retrograde step, but it's often faster than dragging dozens of icons from window to window.

6 AUTORAIS • THE ST CLUB • DISK NO: DMG.35 • £1.45 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

A taste of *X-Windows* for the ST. This utility automatically tops the window under the mouse on the desktop and in any other GEM application. There's a small delay built in, so you don't have to wait for half a dozen redraws on the way to the menu bar and it's compatible with just about everything.

7 THE MISSING LINK • FLOPPYSHOP • DISK NO: £2.50 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

Another STOS extension for all you *Misty* fans. This one will see you shifting sprites faster than ever before and mapping virtual RPG worlds in a matter of minutes. Once again the command set is very logical and registering will buy you a whole sackful of extra goodies.

8 PAD • WIZARD PD • DISK NO: ART.02 • £1.75 • MEMORY: 1MB • PUBLIC DOMAIN • FALCON-COMPATIBLE

One of the best high resolution art packages on the market, featuring good block handling features and a powerful range of drawing tools. It loads most mono graphics formats with ease and is fully compatible with the Falcon. Documentation is in German, but it is very straightforward to use.

9 PICTURE HUNTER • RIVERDENE PDL • DISK NO: 1021ST • £2.50 • MEMORY: 0.5MB • PUBLIC DOMAIN

This reset-resident program sits in memory and will let you "borrow" graphics from most demos and games. It's slightly less flexible than *Probe* and will only work in ST low resolution, but a good utility nonetheless.

10 FORMATTERS COLLECTION • FLOPPYSHOP • DISK NO: UTL.424 • £2.50 • MEMORY: 0.5MB • SHAREWARE

If you're still using the limited formatter built into the GEM desktop, check out this collection from Floppyshop. Most of the classics find a spot on this jam-packed disk and all are accessible from a snazzy GEM shell. Some of the formatters themselves are Falcon, compatible but the packer used is not.

PD ZONE

BIRDS OF PREY INTRO

FLOPPYSHOP • DISK NO: DEM.3696 • £2.50 • MEMORY: 1MB • PUBLIC DOMAIN

IN BRIEF: It spent years in development and when it was finally ready, Electronic Arts decided not to release it for the ST. What game are we talking about? – *Birds of Prey* from Argonaut Software. Fortunately, the intro sequence wasn't scrapped and can now be picked up for a song from your favourite PD library.

Picture the scene: it's a calm day somewhere in the Middle East. Texture-mapped landscapes stretch as far as the eye can see and two friendly jets cruise peacefully at 10,000 feet. Suddenly out of nowhere, two enemy fighters swoop down to attack! Evasive manoeuvres follow and after a high speed chase, a shot is fired. You switch down under the plane to a missile's eye view and go charging towards the enemy. The screen explodes to reveal the Birds of Prey logo and it's all over. Phew!

ST REVIEW COMMENT: "It's over very quickly, but *Birds of Prey* is definitely one of the better animations on the market. The movement of the planes is very convincing and the sound effects back it up perfectly."
★★★★

Fast action, killer sound effects and beautiful graphics line the Birds of Prey Intro, but it's all over a bit too quickly.

With a colossal whoosh the F15s bank to the left and kick in the afterburners to engage the enemy. ST animations don't come much better than this.

French atmosphere abounds in the Lametrop Demo and the smooth-scrolling psychedelic effects just keep on coming.

THE LAMETROP DEMO

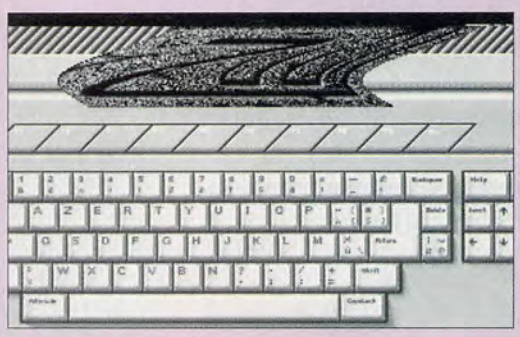
TOWER PD • DISK NO: DEM.561 • £1.50 • MEMORY: 1MB ONLY • PUBLIC DOMAIN

IN BRIEF: The French have developed an unrivalled reputation for producing downright weird software, and the *Lametrop Demo* does absolutely nothing to alter it.

Unlike most megademos, it possesses no menu and takes the form of a rolling show. The content isn't wildy original, but you see such a huge array of effects in a short time, that you can't help but be impressed. Raster bars, vector balls, splines, pixel explosions – they're all in there and unlike many demos they don't get displayed to death.

Each part of the show is explained before it's shown and techno babble about VBLs, bitshifts and matrix rotations is thankfully kept to a minimum. Maybe it's not to everybody's taste, but at least Lametrop's presentation is original enough to make it worth a look.

ST REVIEW COMMENT: "The best description you can give Lametrop is that it's French. It's not going to win any prizes, but compared to the current crop of megademos it's a breath of fresh air. Give it a go – you might like it!"
★★★★



Wibbly-wobbly, wibbly-wobbly. Lametrop is made up of fairly standard issue demo material, but the presentation is original enough to make it worth a look.

REALITY IS A LIE

TOWER PD • DISK NO: DEM.554 • £1.50 • MEMORY: 1MB • PUBLIC DOMAIN

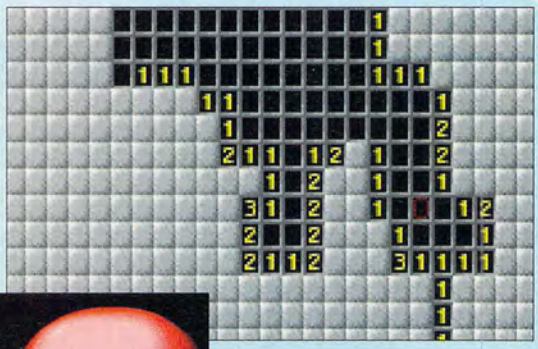
IN BRIEF: This megademo by Psychonomix features one of the most original main menus in a long time – a hamburger. Yes I kid you not, to enter one of the fifteen or so sub demos contained you have to scroll up and down the tallest Big Mac in history prodding space if you fancy taking a bite.

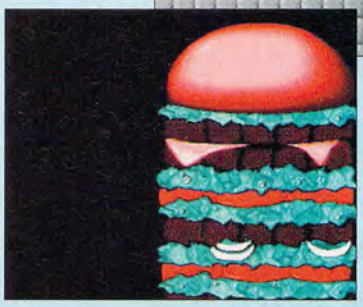
Beyond the front end though, the originality ends. It's the standard mixture of wibbly-wobbly scroll texts and most screens are about as entertaining as a night on the town with Noddy. Mind you, there is a rather good implementation of "minefields" built in, so it's not all bad. Also worthy of note are the nicely drawn "Aliens" style pictures which head up some screens.

All in all it's a wee bit too familiar, and you're unlikely to run it a second time, but collectors will no doubt find a place for it in their collection.

ST REVIEW COMMENT: "Well, there an awful lot of scrollers, starfields and are colourshocks in there, but *Reality is a Lie* does possess above average entertainment value. The built-in game is a nice bonus."
★★★

Fancy your chances in the minefield? Reality is a Lie is improved no end by the inclusion of a fully playable game.





Reality is a Lie will doubtless thrill demo collectors, but it's unlikely to appeal to most ST users (or vegetarians for that matter!).

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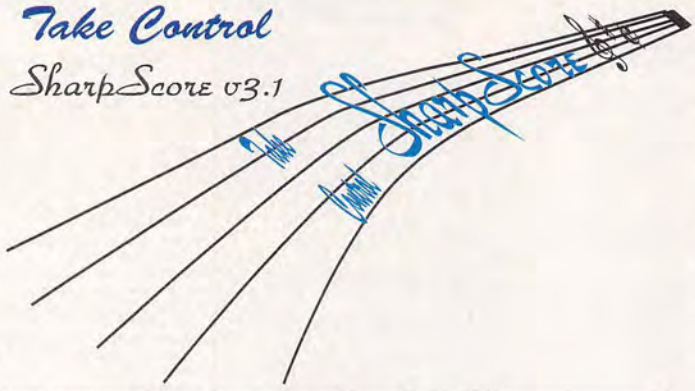
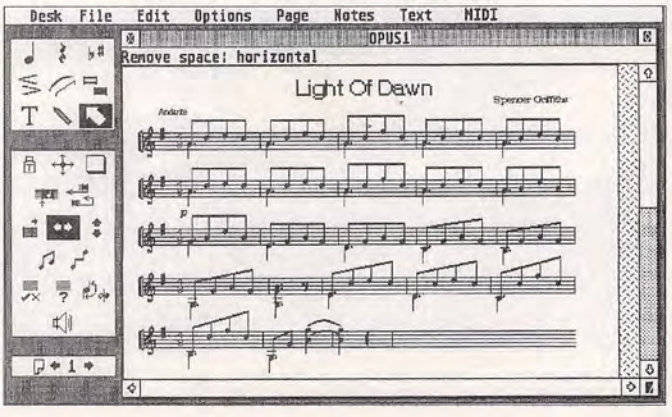
SharpScore v3.1





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ATARI ST REVIEW BUDGET BUY

WINREC 1.3

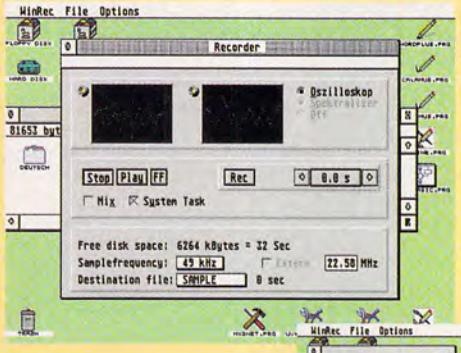
FLOPPYSHOP • DISK NO: UTI.3614 • £2.50 • MEMORY: 1MB • SHAREWARE • FALCON ONLY

IN BRIEF: Direct to disk recording is a music industry buzzword at the moment, and the Falcon with its unique SDMA hardware is the number one machine to own. *WinRec* puts you in direct control of this powerful hardware and is aimed squarely at the home market, allowing you to dabble in digital sound without breaking the bank.

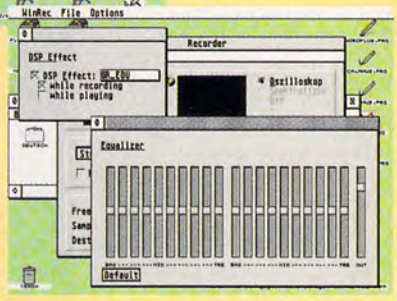
The latest version includes support for DSP effects in the standard "LOD" format and several examples, such as echo, pitch and borg are included for you to experiment with. Believe me, hearing the Little Angels sing through a "wind-tunnel" or pitch-bending a Brian May guitar solo is an experience not to be missed!

All operations are carried out through friendly, "windowed" GEM dialogue boxes and the program is perfectly happy to work as a background task under *MultiTOS*. A spectrum analyser keeps you informed as to the sound levels and all effects are heard in real-time through the Falcon's internal speaker.

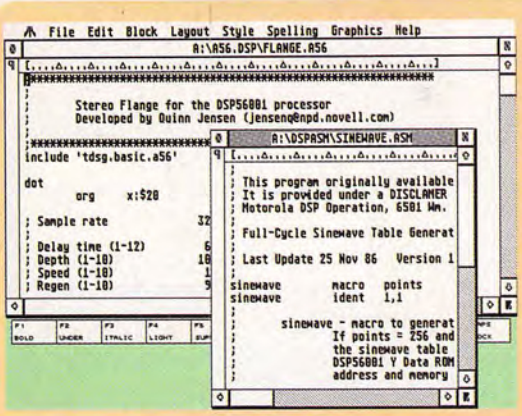
ST REVIEW COMMENT: "*WinRec* is one piece of software you just cannot afford to miss. Not only is it a superb demo of the Falcon's power, it's cracking good fun to use. Highly recommended."



Direct to disk sampling at 50kHz is as simple as clicking the record button with WinRec. Look man, no hardware!



The possibilities offered by WinRec's DSP support are unlimited. Here we have a ten band, software graphic equaliser.



Wanna add a few more effects to WinRec? A56 contains dozens of example files to ease you into DSP programming.

A56 DSP ASSEMBLER

FLOPPYSHOP • DISK NO: LAN.3611 • £2.50 • MEMORY: 1MB • PUBLIC DOMAIN

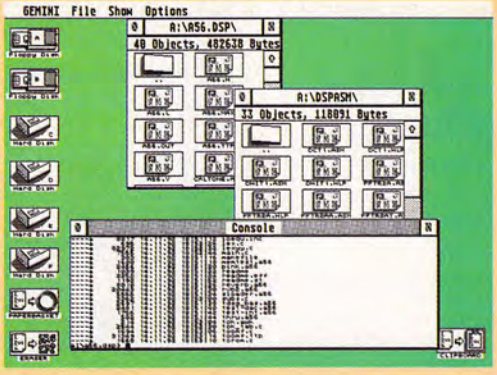
IN BRIEF: If you've been following the Atari publicity machine for any length of time you will no doubt of heard of the DSP56001, the Falcon's digital signal processor. This 32MHz beauty runs totally independently of the main CPU and therefore needs its very own assembler; enter *A56* from Floppyshop.

In common with many utilities of this type, it's a TTP program that takes ASCII source code prepared by a text editor and turns it into an assembly file which can be fed to the DSP through an XBIOS routine. It's best run from a command line interface and the only documentation supplied is in the form of scantily commented source code. Put bluntly – you're going to need a book on the subject.

Even those familiar with 68000 assembly language won't find the 56001 an easy nut to crack – digital signal processing is a new concept. Definitely not for the faint hearted!

ST REVIEW COMMENT: "If you're prepared for the fact that you'll need a book on digital signal processing, *A56* is worth getting hold of. The example programs will be invaluable for experimentation."

Command lines – don't you just love 'em? If you intend to use A56 seriously a good CLI, such as Mupfel is essential.



MAGIC BOOT

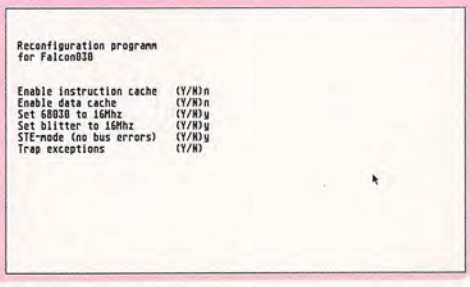
THE SHAREWARE COMPANY • DISK NO: BY NAME • £1.75 • MEMORY: 1MB • PUBLIC DOMAIN • FALCON ONLY

IN BRIEF: *Magic Boot* is a utility that claims to restore games collections across the land by fooling your Falcon into thinking it's really an ST. The installation procedure is very vague, but basically it amounts to running *MAGIBOOT* to install a special boot sector, resetting your machine and then executing the MAGI program itself. A menu will then appear allowing you to disable the processor cache, switch the CPU to 8MHz, enable bomb trapping and so on.

In practice, very, very few incompatible commercial games can be persuaded to run, but quite a few in the PD, such as *Cybernetix*, *Insectroid* and *Cudd Lee's Quest* work perfectly. And its usefulness isn't limited to games; even some incompatible business software can be persuaded to play ball. Take *PC-Ditto* for example, which runs at a staggering Norton SI rating of 0.6 on the Falcon! (*Oh wow... Ed*)

ST REVIEW COMMENT: "*Magic Boot* isn't a miracle cure for Falcon compatibility problems, but when combined with the *STOS* program updater reviewed last month, a surprising amount of public domain and shareware can be resurrected from the dead."

After several minutes' work you will reach this screen from which point you can kid your Falcon into becoming a reasonably accurate ST clone.



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BUS-03 EZ Text+ (Working DTP demo) 'S'
Working demo of excellent DTP program (Full Version Available) see ad for ZZ Soft

BUS-06 Opus (Professional Spreadsheet) 'D'
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BUS-26 Organiser/S'sheet/Word pro +7 others 'D'

BUS-27 ALICE... Excellent Text Editor 'S'

BUS-28 Publishing Partner Fonts (8 + editor) 'D'

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This is another one of those Amiga demos converted over to the ST and it does the job so much better!!

STE-06 STE Presentations (5 demo's) 'D'

STE-07 Fantasia (not Tos 1.62/1 meg) +3 more 'D'

STE-08 Boing STE + Mini-Movie 'D'

STE-09 Slime Balls + An Cool Demo's 'D'

STE-10 The Tobias Richter Art Show 'D'
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GENERAL

GEN-02 ST-Tour (Specially for beginners) 'S'

GEN-04 Your 2nd ST Manual (A MUST) 'S'
All the little things (and some not so little) that our friends at ATARI should have told you but didn't. This is the manual that should have been supplied with your computer (at least in our humble opinion).

GEN-05 Adventure Writer/Skymap + 4 more 'D'

GEN-06 Archive Suite (back-up in less space) 'S'

GEN-09 ZX-81 Emulator + lots of programs 'D'
Back to those halcyon days of the ZX-81 Emulate (if you must) this forgotten unit

GEN-12 Formfinder 2.1 (find a winner?) 'S'
If you like a flutter on the horses then maybe this program can help to make it profitable!
This is a Working Demo. Full version available

GEN-16 60 assorted samples (SPL Format) 'D'

GEN-20 Firstbase DB+7 more good programs 'D'

GEN-22 E-Plan (Electronic Circuit Designer) 'S'

GEN-24 Joke Database (Laugh with us!) 'D'

GEN-25 Quartet Samples II (730k of samples) 'D'

GEN-30 Film File Enquiry 'D'
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GEN-34 Sozobob 'C' (language) 'D'

GEN-35 Spectrum Emulator (with programs) 'S'
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DEM-88 Light Speed Demo 'D'

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DEM-97 KLF Demo (House hit + dancers) 'D'

DEM-98 Star Wars Rap 'D'

DEM-101 Spinning Dolls + Shiny Bubbles 'D'
This one takes a while to load but the end result is more than worth the wait

DEM-84 Things Not to Do (EXCELLENT) 'D'
Very Humorous, animated account of things not to do and the result if you do!

DEM-67 Fish & Chips (GET THIS ONE) 'D'
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DEM-43 Punish Your Machine(2 DISK SET £2.75)
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DEM-75 Dark Side of the Spoon 'D'

DEM-82 Wasted Years 'D'

DEM-70 Lifes a Bitch 'D'

DEM-54 Gateway to Hexland 'D'

DEM-48 Summoning the Spawn 'D'

DEM-100 The Run (animation from T. Richter) 'D'
This one is so much better than the original AMIGA version

DEM-55 Art Machine 'D'
Sit back and enjoy this stunning artwork

ART & GRAPHICS

GRA-26 Crackart 'D'
No.1 in STR's PD Top Ten! This prog will process your pics in ways you will not believe: Curve, Twist, Wave, Tube, Palette edit, Dither, Animation and far more. Uses Degas, Neo & Tny format

GRA-24 Paintlux (full feature paint/art prog) 'D'

GRA-20 Kozmic (needs 1 Meg) 'D'
Create fantastic, colourful psychedelic patterns on your ST & save to disk

GRA-17 PAD (Mono Art program) 'D'
Absolutely the best Mono art package we've seen to date, many commercial features and the ability to hold many screens in memory (1 Meg min)

GRA-27 Mono Pictures (43 high-res pics) 'D'

GRA-10 Colourburst II (+ 5 other programs) 'S'
A very good little Art/Paint prog also on the disk: MAC to Degas converter Fine Line: art prog using Bezier/Spline

GRA-11 A.I.M. (Atari Image Processor 'D'
Exactly what it says, if you can create an image on your Atari then you can process, add or alter it with A.I.M.

GRA-14 Ani-ST 'S'
Excellent Art & Animation package that started life as a commercial art program costing £89.95!!

GRA-31 Kid Publisher & Master Doodle 'D'
A DTP package + Art/Paint program both good starting points for the kids

GRA-32 Colourspace 'S'
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GRA-33 Sprite Works 'D'
Art Prog geared towards creation of Sprites for use in your own programs

GRA-28 Hi-res Art 'D'
4 programs & pictures for Mono users

GRA-1 Picswitch 7.0 (needs 1 Meg!) 'D'
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GRA-2 Play - IT 'D'
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MIDI-14 Name That Tune (111 midi files) 'S'

MIDI-01 PSS special (just for PSS k'boards) 'D'
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MIDI-04 42 SNG files with CZ101 player 'S'

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MIDI-14 Name That Tune + 111 midi files 'S'

MIDI-16 Sound Shifter... Yamaha PSS editor 'S'

MIDI-18 DX & FB01 editor & librarian 'S'

MIDI-21 Feeling Partner & EZ Track demo's 'D'
Working Demos of these two great commercial MIDI packages

MIDI-22 Super Conductor sequencer + utils 'D'

MIDI-09 32 Track Sequencer + utils 'S'

COMMS

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COM-03 Vanterm 4.0 (best PD comms prog) 'S'
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COM-04 Uniterm (Excellent terminal prog) 'D'

COM-07 Freeze Dried Terminal 'D'

COM-08 View D/L files when off-line + 4 'D'

COM-05 D-Term with Z-modem module 'S'

COM-06 Mo-Term Elite (for buffs) 'S'

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GAMES

GAM-79 VIOLENCE (brill shoot-em-up) 'D'
No. 4 in December's STR PD Game TOP 10
GAM-98 Bubbles McGee/Viking + 6 more 'D'
GAM-07 Clowns & Missile (8-bit clones) 'S'
GAM-22 AstroDodge/Subhunt + 10 more 'S'
GAM-28 Question of Snooker/Frogger + 1 'D'
GAM-34 X-word/Bugs/Warrior + 2 more 'D'
GAM-36 Klaxtrix/Entombed/Mr Dice + 2 'D'
GAM-38 Caves of Rigel/Froggy/Harris 'D'
GAM-45 Die Alien Blob (very addictive) 'S'
GAM-51 Battleships (with speech) + 2 more 'D'
GAM-59 Dungeonz/Gravity/Maze + 3 more 'D'
GAM-60 Armour/Haunted/Quizical + 3 'D'
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GAM-88 Odeuss & Sir Ramie Hobbs (adv) 'D'
GAM-93 Mars Maze 'S'
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MXB-12 Grammar check/Loan calc + 10 'S'
MXB-10 Diskmech/ST Init + 11 others 'S'
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MXB-04 12 asst'd utils inc. Codefind/Arc 'S'
Inc. Archive prog. Assembler to GFA STD code finder, Format prog. HD-Utility, Data Salvage & more
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UTIL-05 7 suites of various label progs 'S'
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UTIL-33 Superboot 7.2 + 7 others 'D'
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MUS-28 Hardcore Dancefloor (NOT STE) 'D'
MUS-21 Hi-Fidelity Dreams 'D'
As reviewed in March STR, you have just got to hear this! Better on an 'E', Amiga eat your heart out!!!
MUS-22 to 27 Peeks & Pokes 1 to 6 'D'
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Here are no less than 50 utilities for countless weird and wonderful uses. Best used with your ATARI ST/E.

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PD ZONE

LABEL CAD

ATARI ST REVIEW BUDGET BUY

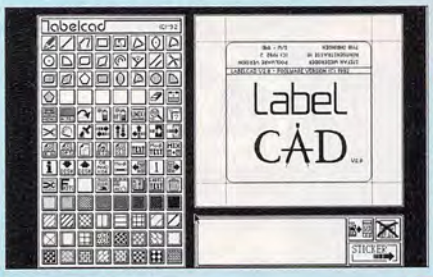
THE ST CLUB • DISK NO: UTI.316 • £1.45 • MEMORY: 1MB • SHAREWARE • HI-RES ONLY • FALCON-COMPATIBLE

IN BRIEF: A quick glance through your disk collection, with its scribbled out, blank and otherwise mutilated labels, should be enough to convince you that you need a disk labelling program. Once again, there are plenty to choose from in the public domain but the new kid on the block, *Label CAD*, beats them all.

A truly enormous control panel contains all of your drawing and text tools, with the label window positioned to the right of the screen. Unlike the competition, labels can either be of a standard layout, or totally free-form. This lets you design a one-off label for a shareware package, or dozens to contain C source code, for example. Printer support is limited to dot matrix models and prompts are in German, but it shouldn't cause any problems because the whole thing is 99.99% icon controlled.

ST REVIEW COMMENT: "Perfect down to the last detail, *Label CAD* is everything you could ever need from a disk labelling program. The lack of support for lasers and (sob!) inkjets is the only real fly in the ointment."

★★★★★



It may look a bit daunting at first, but Label Cad's icons are remarkably easy to get used to and the program is far more flexible than Sticker 3.

IDEALIST 3.3

ATARI ST REVIEW BUDGET BUY

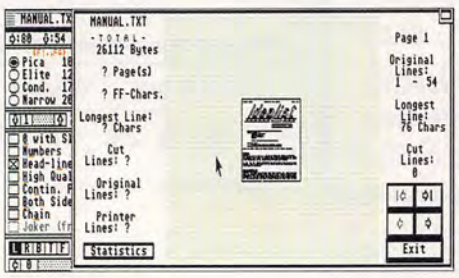
THE ST CLUB • DISK NO: UTI.209 • £1.45 • MEMORY: 1MB • SHAREWARE • FALCON-COMPATIBLE

IN BRIEF: *Idealist* occupies the middle ground between a word processor and a desktop publisher. It's designed to handle text in either *1st Word Plus* or ASCII format and allows you to liberate all of the internal fonts that most text crunchers won't let you use. Both program and desk accessory versions are provided so it's quite possible to use *Idealist* alongside your word processor, and the program runs happily as a task under *MultiTOS*.

New features for version 3.3 include support for the Atari clipboard, headers and printing to disk, which is ideal for producing good looking instruction files. Dozens of printer drivers are supplied, so it's unlikely that you'll need to write your own, but if you do, this is fully explained in the on-disk manual (prepared with *Idealist*, naturally). Pure quality.

ST REVIEW COMMENT: "*Idealist* is the perfect way to get the best from your printer without splashing out on a top-end word processor. The interface is an absolute joy to use and the improvement in the look of documents is very impressive."

★★★★★



If a desktop publisher is out of your reach, but word processed printouts just aren't good enough, Idealist is the perfect solution.

LABEL PRINTER

GOODMAN INTERNATIONAL • DISK NO: GD.1914 • £2.75 • MEMORY: 0.5MB • CHARITYWARE

IN BRIEF: If you're involved in direct mail marketing, then a good label printer is essential. The innovatively titled *Label Printer* is the latest solution to hit the scene and one which combines a powerful address database with flexible printing routines; it's a bit like a souped up card index really.

The interface is a bit on the tacky side, but Label Printer's support for internal fonts put it a cut above the competition.

The real ace up *Label Printer*'s sleeve though is its ability to control printers properly. Drivers are included for the HP DeskJet, IBM Proprinter and Epson LQ series, and any built-in font can be used on a label whether it be monospaced or proportional. The database functions are quite limited – basic searching and editing are about all you get – but it's adequate for the scope of the package.

The interface is a mixture of GEM and a custom alternative, which is fast, but can look a bit tacky when stood up against the likes of *FastBase 2* or *ADB*.

ST REVIEW COMMENT: "Address databases are ten a penny, but one that can handle printers properly is little more rare. A great piece of software, but it would be infinitely more useful as a desk accessory."

★★★

The database itself isn't very flexible, but it's just about adequate for names and addresses.

FIRST WORD PLUS DESKJET DRIVER

THE ST CLUB • DISK NO: DMG.35 • £1.45 • MEMORY: 0.5MB • SHAREWARE

IN BRIEF: Despite its age, *1st Word Plus* is still a fairly competent word processor – very little will touch it in terms of ease of use. The only real problem is its inability to print graphics to anything other than an Epson dot matrix.

Just pop DJ+FW+ onto your hard disk and forget about it. 1st Word Plus will then dump perfectly acceptable 100dpi graphics to your DeskJet.

This problem has now been solved. By popping the *FW+DJ+* program into your *Word Plus* folder and running it instead of the program, you will have a word processor capable of graphic printing to a DeskJet.

Problems are few and far between. Due to restrictions in *1st Word Plus*, graphics can only be printed at 75 or 100dpi, but it's definitely an improvement over the garbage it used to spit out when an image was encountered. Unfortunately it doesn't seem to want to play ball on the Falcon, but naturally it works just fine on a standard ST or STE.

ST REVIEW COMMENT: "It's taken about four years too long to arrive, but *Word Plus* now works properly with the DeskJet. Recommended."

★★★★

Don't forget to install the correct drivers from within Word Plus, otherwise the results will be unpredictable.

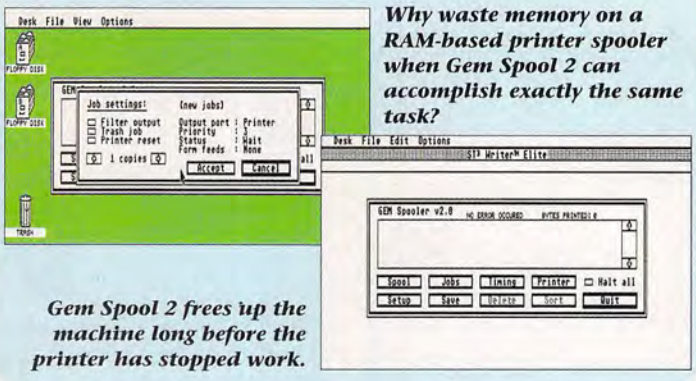
GEM SPOOL 2

THE ST CLUB • DISK NO: UTI.206 • £1.45 • MEMORY: 0.5MB AND HARD DISK RECOMMENDED • SHAREWARE

IN BRIEF: *Gem Spool 2* is printer spooler with a difference. Unlike all others it uses virtually no RAM, but instead stores any temporary data on disk. The advantages of this approach are many. For a start, a huge number of print jobs can be queued, and being as the data is going to disk anyway, you can opt to store the output file and print it at a later date.

Getting the thing up and running is very simple indeed – just copy the accessory to your boot partition and take a stab at the reset button. The only slightly tricky operation is creating a printer driver, although even here you can opt to convert a *Word Plus* CFG file if you have one. The manual is an ASCII work of art and covers everything from basic usage to the real nitty gritty of how *GEM Spool* works.

ST REVIEW COMMENT: "It's quite power hungry, but *GEM Spool 2* is one of those utilities you can really get addicted to. No longer does *1st Word Plus* printing slow to a crawl when you have a document open and you needn't even stop work to dump a text file from the desktop!"



Why waste memory on a RAM-based printer spooler when Gem Spool 2 can accomplish exactly the same task?

Gem Spool 2 frees up the machine long before the printer has stopped work.

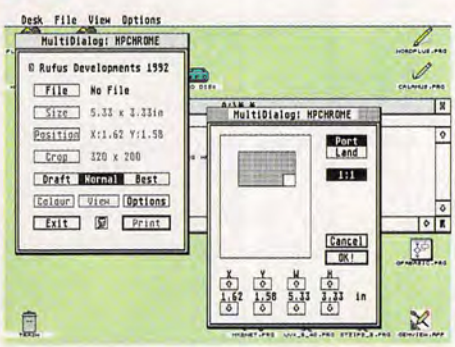
HP CHROME & BJ CHROME

GOODMAN INTERNATIONAL • DISK NO: GD.1827 • £2.75 • MEMORY: 0.5MB • SHAREWARE • FALCON-COMPATIBLE

IN BRIEF: *HP Chrome* and its twin brother *BJ Chrome* are designed to allow you to dump colour pictures to your mono DeskJet or Canon BJ printer. This seemingly impossible task is achieved by the use of four different coloured ink cartridges, which need to be switched at the end of each pass. In this way, by running the paper through the printer four time, a faithful colour image is built up.

Both Degas and NeoChrome pictures are supported and the position and size of the image on the page are both fully adjustable. The GEM shell used by both programs is superb and registering your copy for £5 will buy an accessory version that can be used from within Degas itself.

ST REVIEW COMMENT: "Aside from their deficiencies in the picture format department, both utilities are fast, efficient and very easy to use. But be warned, it's a lot of hassle for a few colour dumps."



Inky fingers aside, if you're looking for colour from your mono DeskJet, you won't find any better than HP Chrome.

TOP TEN PRINTING PROGRAMS

1 LABEL CAD • THE ST CLUB • DISK NO: UTI.316 • £1.45 • MEMORY: 1MB • SHAREWARE • HI-RES ONLY • FALCON-COMPATIBLE
The ultimate disk label designer. Layouts can be as regimented or free-form as you like and the whole process is co-ordinated through a large panel of friendly icons. Screen redraws are unfortunately a little reckless on the Falcon.

2 IDEALIST 3.3 • THE ST CLUB • DISK NO: UTI.209 • £1.45 • MEMORY: 1MB • SHAREWARE • FALCON-COMPATIBLE
If you're looking for classy hard copies without splashing out on a desktop publisher, *Idealist* could be your answer. As a desk accessory, it's the perfect companion to any GEM word processor and drivers are included for a huge range of popular dot-matrix and laser printers.

3 FONT MASTER 2 • FLOPPYSHOP • DISK NO: UTL.44M • £2.50 • MEMORY: 1MB • SHAREWARE
A shareware document processor which makes up for a rather clumsy interface with a superb range of fonts. It's dead simple to use and a print preview option means it's easy to wheedle out any last minute mistakes. Its output resolution restricts its usefulness to dot matrix printers.

4 ARTPRINT • GOODMAN INTERNATIONAL • DISK NO: GD.1821 • £2.75 • MEMORY: 0.5MB • PUBLIC DOMAIN • HI-RES ONLY • FALCON-COMPATIBLE
A powerful utility designed exclusively to print clip art images. It handles Degas, IMG, Tiny and Doodle formats and is just the job for hard-copy cataloguing of any sprawling art collections. Once again, only dot matrix printers are supported.

5 JC CALENDAR • GOODMAN INTERNATIONAL • DISK NO: GD.1887 • £2.75 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE
Save yourself a fortune by designing your very own office calendar. The process couldn't be simpler – just import a picture for each month, define a border and bundle the whole lot off to your eagerly awaiting printer.

6 GEM SPOOL 2 • THE ST CLUB • DISK NO: UTI.206 • £1.45 • MEMORY: 0.5MB AND HARD DISK RECOMMENDED • SHAREWARE
The definitive ST printer spooler that buffers data to disk instead of expensive RAM. A friendly GEM accessory fronts the whole thing and once installed print queueing is totally automatic. It's compatible with most GEM legal software.

7 OUTLINE ART & CALAMUS UTILITIES • THE ST CLUB • DISK NO: WPR.84 • £1.45 • MEMORY: 1MB • PUBLIC DOMAIN • FALCON-COMPATIBLE
Outline Art is a superb tool, but one that's decidedly tricky to use, even with the help of the manual. These tutorials were produced by the beta testers and cover topics such as grade filled spheres and object transformation.

8 FIRST WORD PLUS DESKJET DRIVER • THE ST CLUB • DISK NO: DMG.35 • £1.45 • MEMORY: 0.5MB • SHAREWARE
Fed up with watching *Word Plus* spew garbage to your DeskJet every time it encounters a picture? Then this is the utility to use. Once installed it's totally transparent and will happily print all graphics up to an acceptable 100dpi.

9 STANDARD LETTERS • GOODMAN INTERNATIONAL • DISK NO: GD.1677 • £2.75 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE
If awkward letters are not your forte, then this collection of standard compositions could be a lifesaver. Apologies, congratulations, they're all here and the American spellings are easily picked out by any good word processor.

10 TIMEWORKS BULLET FONTS • THE ST CLUB • DISK NO: FON.147 • £1.45 • MEMORY: 0.5MB • PUBLIC DOMAIN • FALCON-COMPATIBLE
This is a replacement for the *Timeworks 2* bullet font, which is incomplete on the distribution disks. It's been ported from a Calamus CFN file so the quality is top notch, and full instructions are included for installation. Printer fonts are of the 360dpi variety, for use with Canon BJs et al.

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L.48 DELUXE NOSTRAM (1Mb): Arcade platform action through 70 rooms. (£3.00).
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L.37 SUPER FUN: Excellent teaching program for youngsters. (£2.50).
L.31 THE CURSE OF AZRIEL: Fantasy trading/adventure game. (2 disks, £4).
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L.22 GRAND PRIX MANAGER: Grand Prix management simulation. Employ drivers, mechanics, etc., test cars, then race in a full grand prix season! (2 disks £4.00).
L.20 SUPER SPELL: Very good teaching program for 4 to 9 year olds by Lexisoft.
L.17 ADDRESS BOOK: Neat database for storing, sorting, etc. (£2.50)
L.18 CIRCUIT: Produce larger than screen electrical diagrams. 1Mb. (£2.50).
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AUTHORS

L.A.P.D. are always on the look-out for new material to be included in their comprehensive catalogue of P.D., shareware and licenceware titles. If you have produced anything that you consider worthy of release either as P.D., shareware or licenceware then get in touch to discuss it with us. We can guarantee you a worldwide exposure for your program if it makes the grade.

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CUSTOMERS WORLDWIDE ARE FINDING WE ARE THE ONES TO DEAL WITH FOR QUALITY AND SERVICE

Welcome to Short Cuts, a brand new section of ST Review. Each month, we'll be reviewing as many budget-priced products as we can squeeze into the pages...

SHORT CUTS

PRODUCT NAME	RATING
MONITOR SWITCH BOX	✪✪✪
BEGINNERS GUIDE TO STOS	✪✪✪
EVEREST	✪✪✪✪
VIEW II	✪✪✪✪
DATALUX MOUSE	✪
GSZRZ V3.4	✪✪✪

SCORING

All products in this section have a rating out of five stars. To give you an idea;

- ✪✪✪✪ = ***Get it now – sell your favourite disks if you have to!***
- ✪✪✪ = ***Very good – worth the money but it'll wait until pay day.***
- ✪✪✪ = ***Fair enough – but you could live without it.***
- ✪✪ = ***Not really – unless it tickles your fancy.***
- ✪ = ***Uh-uh – check out our PD instead...***

MONITOR SWITCHER BOX

By Tony Kaye

Switching from a serious program in hi-res to, say, a game on the ST requires a change of monitors unless you happen to use a multisync monitor.

This creates problems. It's not just the inconvenience of having to unplug one monitor and then plug another in, but also the wear and tear on the ST monitor socket and the plugs themselves. My recent feature on the costs and work involved in changing a tired mouse port highlights this. The answer? Add a Monitor Switcher Box. This is a simple device with a couple of input sockets and one output. To change resolution, you still have to reboot but now all you do is flick the switch.

The box is passive – no batteries to run out at awkward moments – and it's small enough to simply sit on top of, or underneath, your ST. A slightly longer lead would have been useful but that's just splitting hairs.

If you do use two monitors and swap between them frequently, it's well worth considering one of these.

PRODUCT:	MONITOR SWITCHER BOX
CONTACT:	FIRST COMPUTER CENTRE
TEL:	0532 319444
PRICE:	£17.99
RATING:	✪✪✪

If you work with two monitors, a switch box is well worth having...

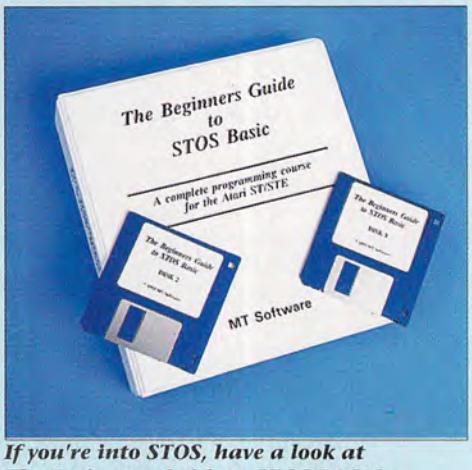
THE BEGINNERS GUIDE TO STOS

By Tony Kaye

Learning a programming language is one of the hardest things to do. We often receive letters from people who want to start writing their own software, asking us for advice on how to go about it.

The answer is to learn the language of your choice thoroughly before trying to be too adventurous. No-one is going to produce a game to rival *Lemmings* in just one day! *The Beginners Guide To STOS* is a complete course designed to take you from an absolute beginner to competent programmer.

It's a 612-page book and comes with two disks.



If you're into STOS, have a look at The Beginners Guide to STOS BASIC

The intention is to take you through the minefield of programming in STOS in easy stages using step-by-step techniques. Hands-on programming is important and this is reflected in the course, especially as there is no time limit. The idea is to work through at your own pace, learning and mastering each step before you move on to the next.

If you have absolutely no knowledge of programming and want to learn, then this course is for you. It starts right at the beginning and covers all aspects of programming from the classic:

10 PRINT "I AM YOUR FRIENDLY ST"

... all the way up to creating a simple database.

There are plenty of examples to follow and the two disks contain listings from the book. These illustrate useful features of the language and should give you enough of a grounding to either start learning to program in C or 68000 assembler – which is, admittedly, a lot more difficult than STOS – or give up completely. Many people think that just knowing the commands of a language makes them a programmer; this book shows you the truth.

Games programming is well covered, showing how to manipulate sprites and detect collisions. Some of the stages of the course are, perhaps, in the wrong order. For example, creating an art package is covered in chapter 16 whereas file management is not covered until chapter 22 – isn't it essential to be able to save and load pictures in an art package! This aside, *The Beginners Guide to STOS BASIC* offers a good introduction to the world of programming.

PRODUCT:	**THE BEGINNERS GUIDE TO STOS BASIC**
CONTACT:	**MT SOFTWARE**
TEL:	**0983 756056**
PRICE:	**£39.99**
RATING:	✪✪✪

ATARI ST REVIEW
ESSENTIAL BUY

EVEREST

By Mike Robinson

Everest is a fully-fledged GEM application, which means that it uses menus, movable dialogue boxes and multiple windows for loading, editing and saving text files. This approach allows *Everest* to run on any ST, TT or Falcon and, needless to say, it's *MultiTOS* compatible.

Originally designed as a programming tool, *Everest* now incorporates flexible text formatting, word wrap functions and up to 10 files can be loaded – it even accepts multiple file names as parameters, useful if run from a batch file. To make life easier, tab settings can be determined from the file name so that, for instance, assembler source files and text files can have different tab lengths. The standard search and replace, labels, cut, copy and paste with GEM clipboard support, block manipulation and file insertion functions are all there, accessible from menus or via keyboard shortcuts.

A rather useful feature is the ability to use mono-spaced GDOS fonts instead of the system font. Smaller point sizes enable you to squeeze as much text as possible into the window, a must when running *MultiTOS*. *Everest* supports insert and overwrite modes, indicated by the cursor shape. Block selection is by dragging the mouse over a section or via keyboard shortcuts while double-clicking on a word selects it and doing the same while holding the control key selects the whole paragraph.

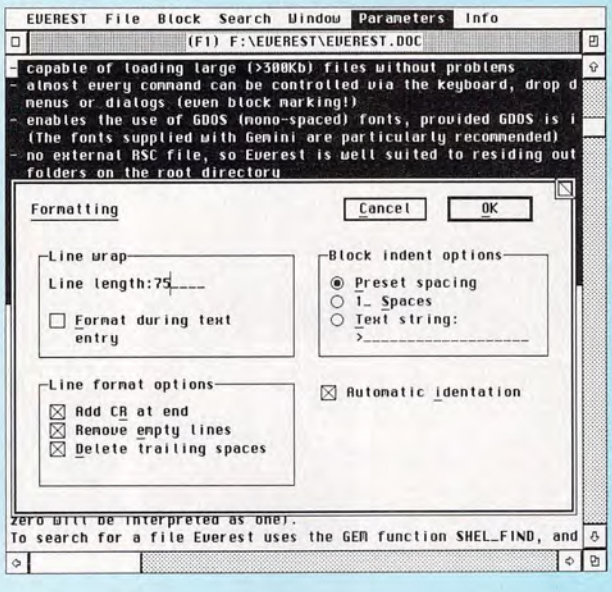
You can select a word and then use Search Selection to look for other occurrences of that word, using wildcards if needs be. Search direction can be set to forward or backward and is switched automatically when you reach the top or end of a file.

Text formatting features include line length, automatic indentation and removing trailing spaces at end of lines. There is currently no facility to send printer codes before printing, but it is possible to automatically send a form feed after a user-defined number of lines.

The File List is a clever feature that allows you to save a list of all open files. Whenever such a file list is loaded, all listed files are loaded automatically – very handy for loading all source modules in one go.

Everest is simply an excellent text editor. It is stable, well designed, fast and simple to use – perfect for programmers or for anyone who needs to edit or even just view text files in a friendly environment. It can be installed as a text editor with FAX programs such as *TeleOffice* and *STraight FAX* or as a text viewer under *MultiTOS*. Best of all, it's a shareware product costing less than £10 to register. Highly recommended.

PRODUCT:	**EVEREST 2.3**
CONTACT:	**JOE CONNOR**
TEL:	**0206 851488**
PRICE:	**20DM (ABOUT £8)**
RATING:	✪✪✪✪✪



Everest offers a good selection of formatting options. Mono-spaced GDOS fonts can also be used to display as much on-screen text as possible.

ATARI ST REVIEW
ESSENTIAL BUY

VIEW II

By Tony Kaye

Back in issue 10 (February 1993), a small utility called *View* appeared on our cover disk. *View II* is now available and to say that it has been updated is an understatement.

Written by Damien Jones, a talented and highly respected American programmer, *View II* uses some very clever code. Most of the TOS routines are intercepted and replaced, making this utility a pleasure to use.

Double-click on a text file and it is instantly displayed, with scrolling controlled by the up and down movement of the mouse. A click of the left button brings up a full help menu while the right button exits back to the desktop.

This is just the start. Click on a picture file of virtually any common format and it will be displayed in the proper resolution and with the correct colours – even a *Spectrum 512* picture! *View II* will play . AVR sound files simply by double-clicking on them and will extract .ARC and .LZH files in a similar way.

There are no AUTO folder programs or accessories to worry about. An installation program changes your DESKTOP.INF or NEWDESK.INF file permanently. If you are using *XBoot* or *Superboot*, you will need to write the information to each .INF file you use to take full advantage of *View II*.

To get the most from *View II*, a hard disk is recommended as the files need to be in an accessible folder. If you work with floppies, you have to leave this disk in your drive all the time, although *View II* works happily from a RAMdisk.

The installation program has also been improved. You can choose where to install the program files, but can also select the sound output, picture palette (ST or STE) and ARC/LZH program paths. There are even options to set the system clock, form feed after printing and install a RAMdisk and files on bootup. A "Smart Install" option will make best use of your system with *Neodesk* also being supported.

All in all, this package is a must for any serious ST owner. The facilities are priceless and I can't recommend this program highly enough.

PRODUCT:	**VIEW II**
CONTACT:	**ST CLUB**
TEL:	**0602 410241**
PRICE:	**£14.95**
RATING:	✪✪✪✪✪

DATALUX MOUSE

By Jane Plessey

A mouse is a mouse is a mouse, so what's unusual about this one? Well, you can see right through it – literally!

This is a fairly sturdy, see-through mouse with everything you'd expect a mouse to have – two buttons, a tail and a ball. The novelty of the Datalux mouse is that the case is made of clear plastic, allowing you to see inside the box and look at the workings. Once you've used it a few times and all of your friends have seen it, there's really nothing to warrant the idea. It certainly doesn't make the mouse perform any better. In fact, this is

You can see right through this mouse – in more ways than one...

not the smoothest and most receptive of mice – far from it. It feels heavy in use and the buttons are firm with too much travel for my liking.

The box quotes the DPI (Dots Per Inch) as being 100/200 but what matters is how far the cursor shifts on-screen when you move the mouse. To give you an idea, a one centimetre move of the Datalux mouse results in a three centimetre shift on-screen, which is respectable. By comparison, the It'sa Mouse! moves the pointer four centimetres and the Atari Mouse a pathetic 1.5 cm (*now you know why everyone tells you to upgrade from the Atari mouse... Ed).*

A mouse is probably your most important peripheral. For continued, serious use, there are far better alternatives than this – and most of them cost less money.

PRODUCT:	**DATALUX MOUSE**
CONTACT:	**FIRST COMPUTER CENTRE**
TEL:	**0532 319444**
PRICE:	**£19.99**
RATING:	✪

GSZRZ V3.4

By Ofir Gal

Most comms packages need external file transfer protocols to allow you to upload and download files from bulletin boards. Transferring files can be an expensive business and the efficiency of a transfer protocol can help reduce the telephone bill. *GSZRZ* is the latest file transfer program from Germany and has a few tricks up its sleeve. The most obvious advantage is its ability to run as an accessory so eliminating the delay caused by having to load a program from disk before each transfer. This makes a difference even with a hard disk-based set-up.

GSZRZ comes in two versions; ST and TT/Falcon, the latter being written in 68030-specific code for maximum efficiency. The programs are accompanied by *HSMODEM*, a serial patch for STs and STEs, and other serial port enhancers – all shareware. A manual is also included in the form of a long *readme* file that lists all functions and options both in German and English.

Like most German programs, *GSZRZ* follows the rules – it runs in a window that can be moved around the screen and closed as necessary. Consequently, it can run under *MultiTOS* and is capable of transferring in the background. To provide extra speed when running on an 8MHz ST, the mouse interrupts and multi-tasking can be temporarily disabled, causing the computer to stop tracking mouse movements for the duration of the transfer.

GSZRZ can also be run as a standard GEM application by renaming it as *GSZRZ.PRG* – any program can then use it. Running it as an accessory requires the comms program to recognise it and currently *Connect*, *Rufus* and *Cixcomm* all do so.

As its snappy name suggests, *GSZRZ* is primarily a ZMODEM file transfer program. It also supports several variations of XMODEM, YMODEM and YMODEM-G, and provides an exhaustive list of options. You can specify file buffer and serial buffer sizes, block size and whether 16- or 32-bit check sums are used. You can even use the MIDI port for fast transfer of files between two STs! Additionally, send and receive paths can be set.

Setting up *GSZRZ* in accessory mode is easy. The programs mentioned earlier recognise it and send the required parameters.

When run as an independent program, the comms program need only specify the commands "-sz" for sending and "-rz" for receiving although other parameters can be added to optimise *GSZRZ* for your set-up.

In use, the program delivers high speeds and is very reliable. It works extremely well in both accessory and program modes.

All in all, *GSZRZ* is yet another quality product from Germany which is currently enjoying an "industry standard" status at home.

PRODUCT:	**GSZRZ V3.4**
CONTACT:	**XENIA SOFTWARE**
TEL:	**010 49 89 460 2746**
PRICE:	**30DM (APPROX £12)**
RATING:	✪✪✪✪

SOUND ON SOUND

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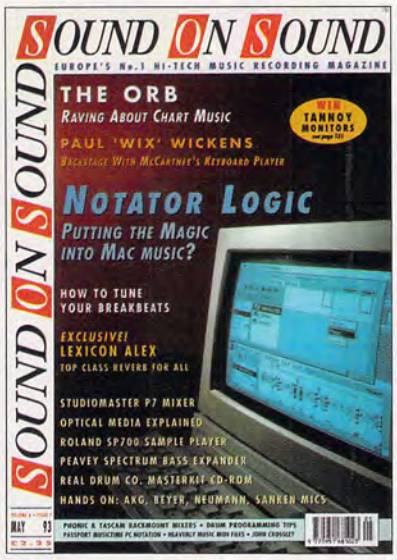
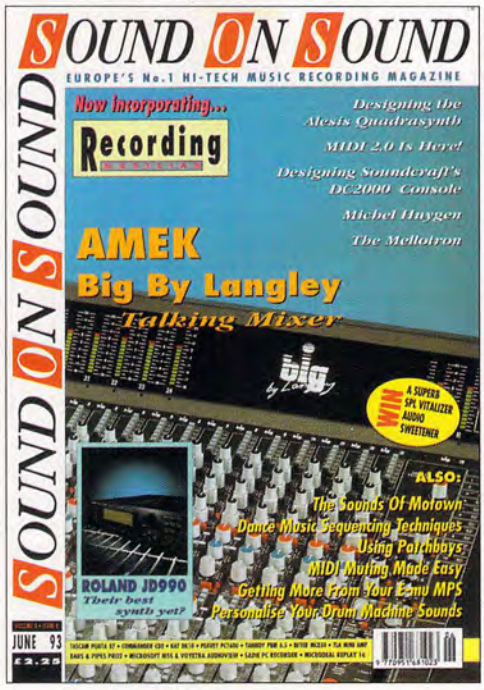
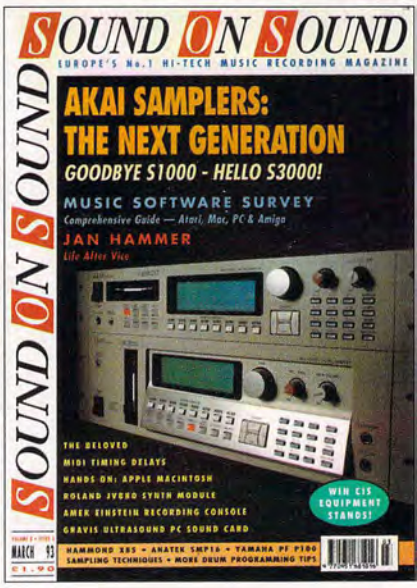


If you take your music making seriously and want to delve deeper into MIDI, synthesizers and recording, there's only one magazine you should be reading — *SOUND ON SOUND*, Europe's biggest and best hi-tech music recording monthly.

Wanna know how Depeche Mode recorded their last album or how Peter Gabriel does his thing live? *SOUND ON SOUND* tells you. Every month it's packed with practical articles to help you make more of your MIDI music gear, plus features on top musicians and producers, as well as the most in-depth, up-to-the-minute reviews of the very latest hot products — from music hardware to music software. In addition, our regular ATARI NOTES column brings you the latest music news for the ST, STE and Falcon.



Read by all the best people — including *ST REVIEW*'s very own editor Vic Lennard!



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Do you watch MTV? Then dial up page 210 of MTVtext for SOS Hi-tech Equipment News!

DATA DETAINER...

In this month's look at budget alternatives, Andrew Wright looks at ways of storing data and keeping those wayward finances on track....

Everyone talks about IT or Information Technology – it's even become a subject in its own right within secondary education – but the sad fact is that most of our own personal information uses very little technology at all. Let's face it – most of our own "data" is jotted down on scraps of paper and old envelopes with the odd telephone or address book thrown in for good measure. If you're really efficient you might even have a card index but you'll certainly be in the minority!

Take yourself, for instance. You might have a couple of hundred friends and relatives in your telephone book or the back of your diary (you will remember to transfer them before you throw it away, won't you?). You'll probably have a bank account with, perhaps, fifty transactions a month going through as well as savings and budget accounts and perhaps a few stocks and shares. The calendar on the back of the kitchen door will be chock-a-block with forthcoming engagements (depending on how popular you are, of course) and you might even have been lumbered with storing the membership details of the local Guinea Pig club into the bargain.

If you take a quick look around, you'll be surprised at just how much information you are storing. Now I'm not for a moment suggesting that you spend all weekend typing everything into your ST, but storing some information on computer is much more efficient. A little effort now can save a lot of tedious retyping or rewriting in future.

The main problem with storing information is the need to design a database. While most ST databases and spreadsheets are fairly easy to use, they do take time to set up. Happily, the chances are high that someone has already designed the database you need and written a program to take care of it, whether it's for running your bank account or keeping tabs on your record collection. Most of them are distributed as shareware or public domain software for others to use – if you need to get your diary dates sorted, your bank balance on the right track or just keep the addresses of your nearest and dearest close at hand, one of these cheap 'n' cheerful offerings might well be for you.

ADDRESSING THE PROBLEM

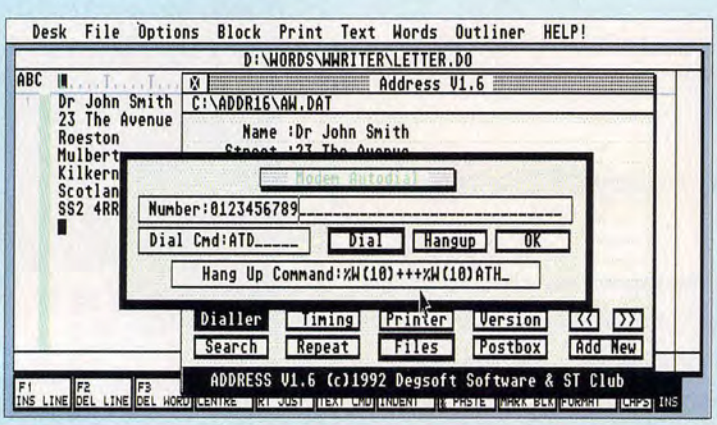
There are some big advantages in having your address book on computer. First of all your data can always be updated without unsightly scribblings in an address book. Secondly the database isn't likely to fall apart at the seams or become illegible due to crossings out. If you use the telephone regularly or write a lot of letters, it's also very handy having information on screen in front of you. There are address databases aplenty for the ST but one of the best has to be the ST Club's new product. *Address 1.6* is a dedicated address book-style database that includes a well-designed accessory allowing you to access names and addresses while writing a letter or doing your accounts. It will even copy addresses directly into your word processor!

Supplied on a single disk with two printed manuals, it is installed using a custom routine that adds your name to your copy of the program and accessory, and copies the files to your drive. *Address* works on any ST in medium or high resolution.

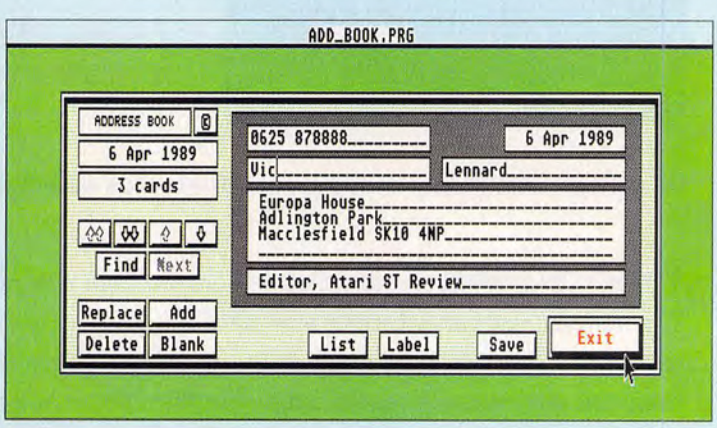
Address is designed to help you create address entries, edit and maintain them and then print out labels or lists. The accessory lets you search for and look up addresses from within other programs and there's even a modem dialling facility so you can get your ST to dial for you!

If you just want to try a few address programs without shelling out just yet, Goodmans PD library has a disk full of them on GD1374. One of the better ones is an old program called *ADD_BOOK* that also has an accessory version holding up to 256 entries, and a main program to store twice that number. It is very quick and easy to use and while it has very few frills, it can print out lists or single labels to an Epson compatible printer. It runs on any ST/STE in colour or monochrome.

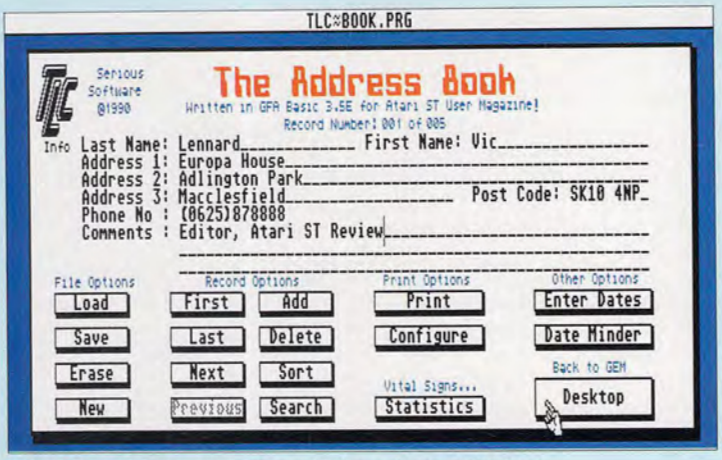
The *TLC Address Book*, a shareware program, takes a slightly different



Address 1.6 – slick and well-presented with modem dialling.



A very simple but effective address book.



The TLC address program – well worth registering.

approach. It stores dates as well as addresses and telephone numbers so you can keep track of anniversaries and birthdays. It's particularly useful if you've got a large family – or if you keep forgetting little whatsisname's birthday!

TLC runs on any ST in any resolution and store up to 500 names and 500 dates. The printer driver is fully configurable so if you know what you're doing, and you've got the manual, you can even set it up with your 1982 model Okidosha Toshetti 11 pin!

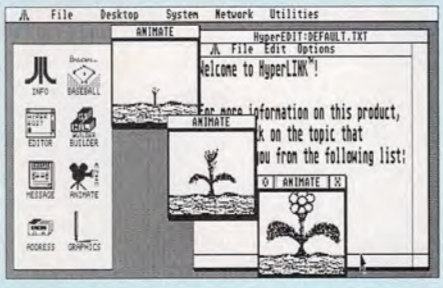
HYPER ACTIVE

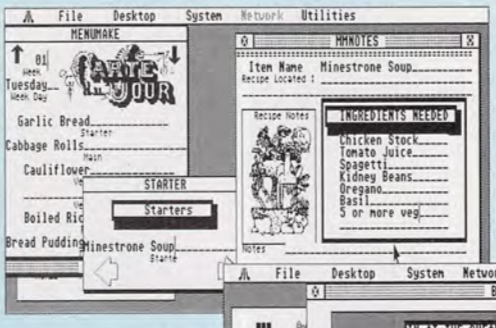
The Apple Mac's *Hypercard* application has spawned several ST versions though it isn't something that has really taken off. *Hypertext* is the generic name given to a particular type of database that uses graphics, text and even sound to present information on screen.

To succeed, a hypertext application has to be very easy to use and completely flexible in the way information can be displayed. The most widely used is the commercial *HyperLINK* program which is, as yet, unavailable in the UK although demos are widely available from PD sources and the full development version can be obtained direct from the Canadian authors.

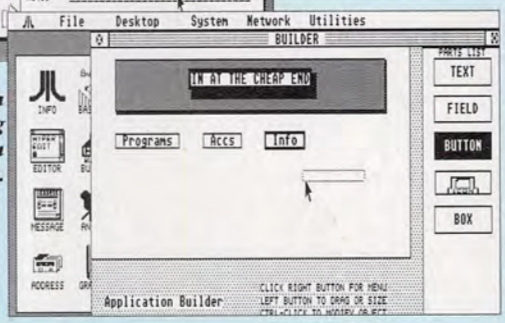
HyperLINK is a type of freestyle database retrieval program that lets you click on an icon or button on one screen to access further, more detailed screens relating to the original. As such, it is ideal for educational or promotional use as well as being handy for storing varied personal info that needs to be retrieved very quickly. The screens can contain both text and graphics and several ready made examples, known as HAPs, can be found in PD libraries or on Compuserve. One of the most interesting features of *HyperLINK* is its ability to run several animated sequences simultaneously, even in the background!

HyperLINK is great for displaying mixed text and graphics. The three small animations are different copies of the same HAP running at once!





The wine database in HyperLINK.



Creating a screen using the application builder.

KEEPING IT LEGAL

Storing details about other people on computers is something that is subject to quite strict regulations, administered and enforced by the Office of the Data Protection Registrar. In general, home users aren't affected but if you keep a mailing list of your clients or customers and actually carry out some form of business, it would be advisable to check that what you're doing is legal.

The DPR can be contacted on 0625 535777 and the address is Springfield House, Water Lane, Wilmslow, Cheshire. England SK9 5AX.

Pro Calendar – no frills, no cost.

MAKE IT A DATE

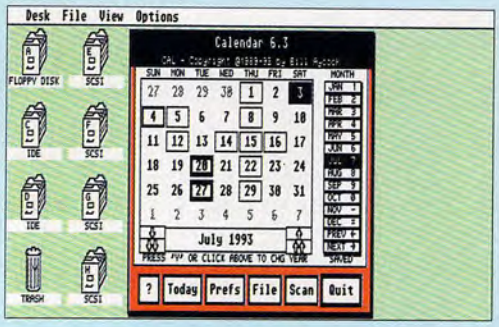
Personal organisers of one kind or another have taken off in the last few years. The introduction of the Filofax started it all and they were followed quickly by electronic organisers like the Psion hand-held. Most computers like the Mac and PC now have feature-packed personal information manager programs (PIMs) and the ST has one in the form of *Harlekin*, an impressive accessory that is about to reach version 3.

If cash is tight, though, there are several PD and shareware alternatives that ought to do the job for you. Some are accessories, so you can see at a glance what you're doing from inside other programs – quite handy if you're working and need to plan appointments over the telephone. Others are stand-alone programs and generally a little more comprehensive.

First out of the hat is one of the simplest, a freeware accessory called *PROCAL*. It takes up less than 30 kilobytes of RAM and displays a month at a time in traditional calendar format. Clicking on a particular day and selecting edit produces a dialogue box into which 9 lines of detailed text can be entered. There is also a 20 character label for each day so you can see things at a glance. If you need the basics, it's well worth trying out.

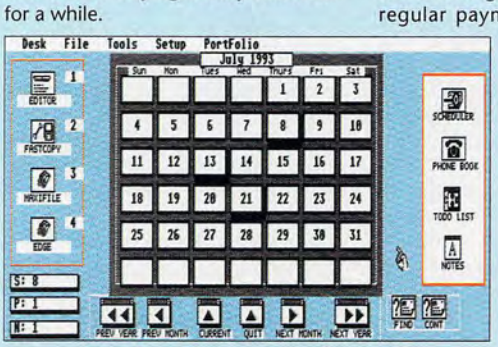
One of the most popular organisers is Bill Aycock's shareware *Calendar*, now at version 6.3. It is an accessory program that takes up around 100 kilobytes and it offers just about everything you could wish for in terms of appointment keeping. The list of features includes alarms, advance notice of scheduled events, priority levels, search/replace and an optional AUTO folder program that displays forthcoming events every time you boot up. While it's undeniably a cleverly programmed utility, I've never got on with the confusing interface and can't help thinking it should have been a full screen accessory. It also has a date calculator – if you're the sort of person who wants to know when Easter will be in the year 2099 or what the date will be 90 days from today, it might just come in useful.

Finally we come to *Make A Date*, another shareware offering from across the Pond. Not only is it a fully fledged appointment tracker and scheduler but it has sections for keep-



Calendar 6 – cramped menus but plenty of features.

ing telephone numbers, to do lists and notes. The program uses a custom graphical interface that consists of four buttons on the right for the four sections of the program and four on the left which act as program launchers. For example you can configure *Make A Date* to launch your text editor, disk copier or any other program. Along the bottom of the screen are several video style buttons for scrolling through days and months and there's an extensive set of menus under the GEM menu bar too. This is one little program that will be staying on my hard disk for a while.



Make A Date is a handy little organiser with room for notes and telephone numbers too.

CHEQUES AND BALANCES

Keeping track of your spending is difficult enough at the best of times – bank statements always seem to arrive the day after you sit down with pen and paper to work it out and there's always one cash withdrawal that slips through the net, making a total mess of your month's accounts.

The traditional way to chart money in and money out has always been to use a spreadsheet and while many are very user friendly, they're not everyone's cup of tea.

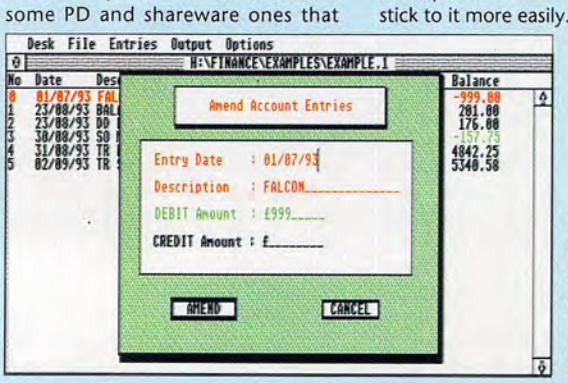
To make it a bit easier there are several excellent personal finance programs available on the ST. Commercial ones like Digita's *Home Accounts 2* and Michtron's *PFM* are excellent products but there are some PD and shareware ones that are worth looking at. *The Financier* used to be sold commercially by Caledonia PD library but it's now shareware. It hasn't the full range of features like recurring transactions such as standing orders but if you simply need to balance half a dozen accounts like credit cards and savings accounts, it's a useful tool with flexible printer support.

A much better bet is *Chekbook* – it has columns for the amount of each transaction, the real balance and the effective balance, which means you can see the effect of uncleared items at a glance. It also supports regular payments and has built-in support for Star and Epson printers though the driver is fully configurable for use with printers such as the Deskjet.

It also has a neat user interface despite the inability to cope properly with desk accessories.

If you can put up with non-GEM programs that use custom button-pushing interfaces, *Family Accountant* might be more up your street. You'll need a mono monitor as it only works in high resolution. It takes a lot of getting used to and you can more or less throw your mouse away but it covers all the necessary functions for running a home.

It records transactions in categories so you can plan an overall budget for things like computers, food, petrol and so on, and hopefully stick to it more easily. I wish...



For balancing bank accounts and credit cards, The Financier is well worth a look.

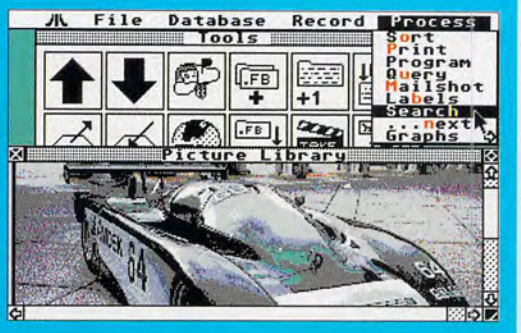
THE REAL THING

If you're determined to create your own database, there are scores on offer, from the simplest flatfile databases to complex semi-relational ones like *Fastbase 2.0* which is remarkably good for a shareware product.

The program has a GEM interface with an on-screen toolbox made up of somewhat awkward icons and a comprehensive menu bar. Some of the functions are hard to get at but there's no doubt about just how powerful the program is.

It can produce charts and graphs under GDOS or SpeedoGDOS, has password protection, and the ability to import external text and graphics files in Degas or IMG format. Up to 22 databases, each with up to 200 fields, can be stored in memory at once. It runs on any ST and even works in low resolution, allowing you to display colour images. As if that isn't enough, *Fastbase* has its own programming language called FBML, which is similar to *Superbase*'s DML.

Fastbase 2.0 – mixed text and graphics in a powerful database.



If you want something a little simpler or even easier to use, one database in particular has stood the test of time – *DB Master One*. While it isn't as flexible as the more powerful offerings like *Fastbase*, it is quick to get up and running and easy to customise. Reports are created very quickly and the whole process is largely mouse driven.

The program consists of two parts. First there's a design program for constructing screen-based forms using various text sizes and even colours in medium resolution. Fields are text-only but they can be placed anywhere on the screen and resized as necessary using the mouse. The second half of the program is the Manager which lets you scroll through records and produce reports based on up to three queries.

DB Master One in action.

WHERE TO GET THEM FROM...

All this month's PD disks are from Goodmans International PD library on 0782 335650
***Index/Add_Book*: GD1374**
***Address 1.6*: £12.95 from the ST Club (0602 410241)**
***Calendar 6.3*: GD1376**
***Chekbook*: GD1675**
***Family Accountant*: GD1907**
***Fastbase 2.0* demo: GD1631**
***HyperLINK* demo and HAPs: GD1733/4**
***Make A Date*: GD1737**
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The full version of *HyperLINK* is available from JMG Software, 892 Upper James Street, Hamilton, Ontario, Canada L9C 3A5. Telephone – 0101 416 575 3201 and fax – 0101 416 575 0283.

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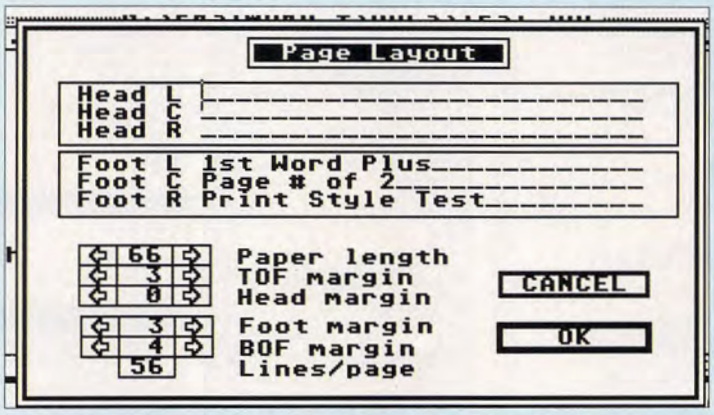
Would you like to find out what else your word processor can do besides printing letters to Auntie Ethel? Then Tony Kaye's guide is for you...

STRONG

PART ONE: PAGE LAYOUT

We all want to get the most out of our computers, don't we? Over the last year or so, *ST Review* has given away *1st Word Plus* and *Write ON!*, two very different packages that, at first glance, do the same job. Why give you both if they're the same? What's the difference between a PD word processing package and, say, *Calligrapher Gold*?

I hope to help answer some of these questions over the next few months, not by reviewing each package, but by illustrating how to use them to their full advantage. This month, we take a look at page layout.



1st Word Plus deducts the number of lines used in the margins to show how many lines are left for the page.

WHAT IS PAGE LAYOUT?

Look at any letter you receive; chances are that it will follow a standard format. At the top of the page will be a **header** – perhaps the name of the company or individual who have sent you the letter. At the bottom of the page, there may be some company information such as the directors, registered address and so on. This is called the **footer**. The positions of these will depend on the paper size which is often given as a number of lines.

Page Layout selection screens vary considerable from package to package but the main function of this option is to select the paper size and position of header and footer information for the entire document.

PAPER SIZE AND MEASUREMENTS

When you first set up your word processor to work with your printer, you need to set the paper size. This is important for two main reasons. The first and most obvious one is to ensure that what you write fits onto the size of paper you are using. The second is to save the annoying problem of having to re-align the paper after each single page of print. If you're producing a long document, perhaps a thesis or the start of a novel, this can be extremely annoying and lead to a lot of paper being wasted.

Printers offer either sheet-fed or tractor-fed paper handling and some do both. The paper used can differ in size, which is why it is necessary to set the correct size first. There are many different "standards" available – for example, fanfold paper can be European or International standard and cut-sheets can be A4, A5, B5, US letter, US legal, Foolscap and so on. There are even some custom sizes to add to the confusion. Some of the more common sizes are given in the Standard Paper Sizes box.

Each word processor has its own way of setting the paper size. *Write ON!* lets you create custom formats and save them for easy recall. This may be important if you change paper regularly, say for printing a draft copy to proof and then swapping to A4 for the final letter quality printout.

Measurement can be a confusing area. A centimetre is a centimetre and most of us are familiar with inches, but what's a Pica? The term "Pica" (pronounced PIKE-ER) comes from the old molten lead days of publishing and is equal to one-sixth of an inch. Some word processing packages still see fit to include it as an extra option, but picas tend to be used only in professional layout.

A page can also be measured in terms of lines, although such a measurement has little relevance for, say, margin size...

MARGINS

Once you've set the paper size, you need to decide what margins to leave around the outside of the page. Sometimes this will be dictated by the printer you're using; for example, tractor feed won't let you start printing until the fourth or fifth line from the top of the page. If you are using European Fanfold pap you have 66 lines available per page. *1st Word Plus* has space for Top Of File/Head margins and the same for the Foot/Bottom Of File (see Headers And Footers below). Entering the required number of lines for these subtracts them from the total, which is shown at the bottom of the box.

HEADERS AND FOOTERS

Words placed at the top or bottom of the page outside the actual document are called headers and footers. You may want to number your pages as you go. In this case, adding a footer will automatically do this for you. *1st Word Plus* lets you enter three different headers and footers on each document. In the example, which is the test document that comes with the disk, the footer is set up to say "1st Word Plus" on the left, "Page # of 2" in the middle and "Print Style Test" on the right. The # symbol tells the program to update this to the active page number. In other words, it will print the number of the current page here.

Write ON! has buttons for left/main headers and footers. Selecting the one you want takes you to the relevant part of the screen to let you see what the finished product will look like. With a program like *Calligrapher*, designed for longer documents, you can't have a header on the first page, but can decide whether to have them on all pages or just on even or odd pages, as in a book. This type of package is intended as a professional writing tool and, although it will still format a letter, it really comes into its own when you're producing a thesis or a book. A similar story applies to *Protext*, another more serious word processor, although it will allow headers on the first page.

PERMANENT CHANGES

Most of the changes made in the Page Layout options can be saved as default settings and loaded in automatically each time you begin a work session. Unless you're using different sized paper or are formatting the page differently, you shouldn't need to change them. Remember, though,

STANDARD PAPER SIZES

Here is a list of common paper sizes. If the size of your paper is not listed, then you will need the custom option in your word processor.

Paper name	Size (in mm)
A4 Letter	210 x 297
A5	148.5 x 210
Foolscap	203 x 332
US A4	216 x 279
US Quarto	210 x 279
80 column Fanfold	242 x 280
132 column Fanfold	280 x 369

WORDS

the style you use to write to Auntie Ethel may not be acceptable for the Inland Revenue! Save the default settings for your most common use and then save settings for special cases in a folder. This allows you to load in any style you require when you actually need it while still giving you your most common style at load up.

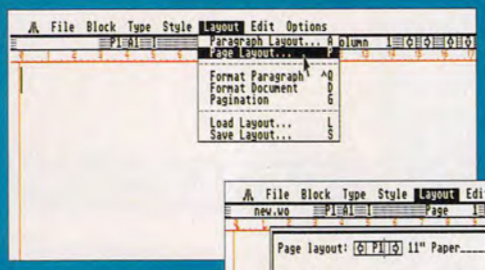
STANDARD A4?

Most people believe that their paper is normal A4. If you are using standard continuous listing paper in the home, chances are that this is not correct. Measure it and you'll probably find that the size is 11" x 9.5" (280 x 242mm) which is why, when folded, it never quite seems to fit into the envelope! It is possible to buy A4 continuous paper, but it's generally more expensive than the normal listing paper although it does fit into an envelope and looks better for those business-type letters.

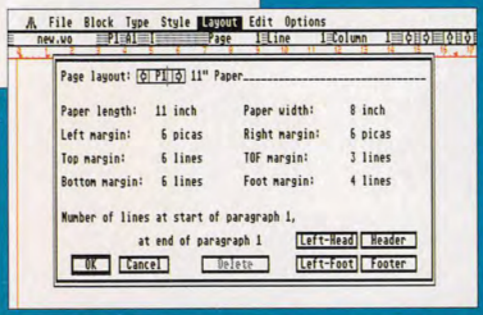
Check out the type that has micro perforations – you hardly see any roughness around the edges.

STEP BY STEP

WRITE ON!



Select Layout from the menu bar in Write ON! and then click on Page Layout...

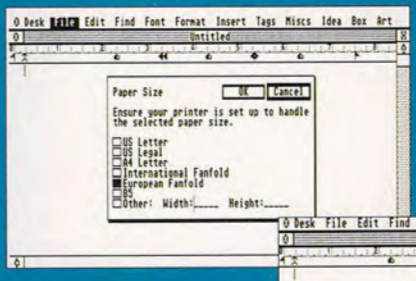


From here, you can create custom-tailored page layouts, ideal for varying paper sizes and different types of document.

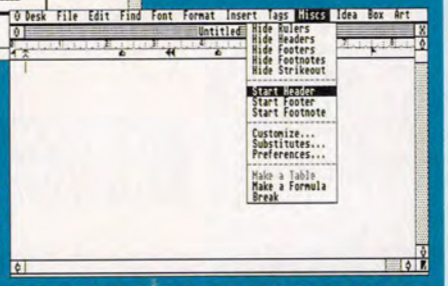
LAYING OUT A PAGE

Here is our guide to laying out a page using some of the major word processing packages...

CALLIGRAPHER GOLD

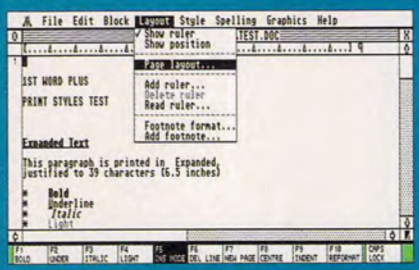


Selecting Set Paper Size from the file menu presents you with a selection of standard sizes along with a custom option.

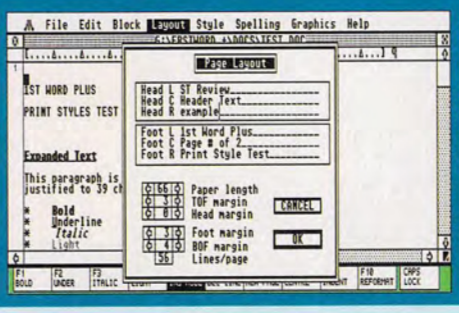


Headers, footers and footnotes are found under Miscs, further along the menu bar.

FIRST WORD PLUS



The Page Layout selection is found under the more general Layout heading.



Here you can add your headers and footers as per the example. Also the page size is measured in lines.

PROTEXT

Slightly more complicated. The menu bar only appears when you press the right mouse button. Go to the main editing menu via Edit Configuration and then to the Main Configuration menu.

From the Main Configuration menu, select Layout Options to get to the physical page layout. Space for inserting headers and footers is on the same screen.

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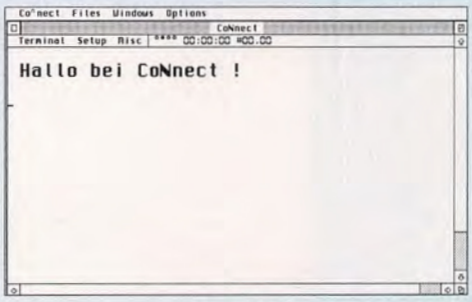
Time to have a look at the latest comms package – Connect. Enter the Comms Coacher himself, Graeme Rutt...

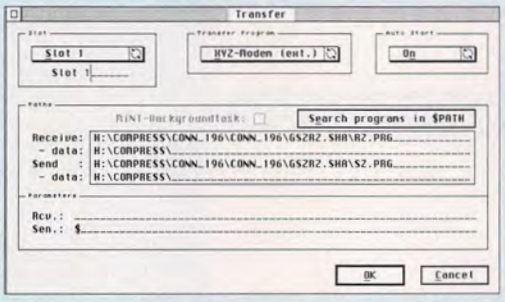
COMMS COACHING

Connect is a shareware program, of German origin, that offers features beyond the scope of any other PD terminal – and beats most commercial offerings into a pulp. I'd say it even shades STalker in features and functionality although it doesn't offer any kind of background operation. At least, not on a platform that isn't running MultiTos. It's so smooth in use and brimming with features that System Solutions (081-693 3355) have bought the UK rights and are currently working hard on an English translation of the manual. They are also running the English registration of the program, which costs a piffling £29.95 including p&p...

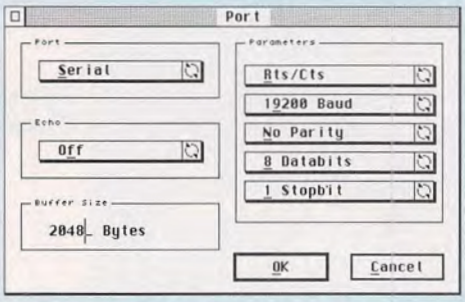
Remember, I can be contacted by sending email to sabbath if you're on CIX, or to sabbath@cix.compulink.co.uk from elsewhere.



No English manual? Well, I'm here to guide you through the basics from installation through to downloading a file. I'll let you into the good news first – it's extremely easy to install. First rename the German resource CONNECT.RSC to something else and rename CONNENG.RSC back to CONNECT.RSC. Boot up the program which will now be in English, "Okay" the file selector, close the dialogue window, "Okay" the alert box and you'll be ready to start installation. Select Open in the Window drop down menu and you should see a screen like the one above.

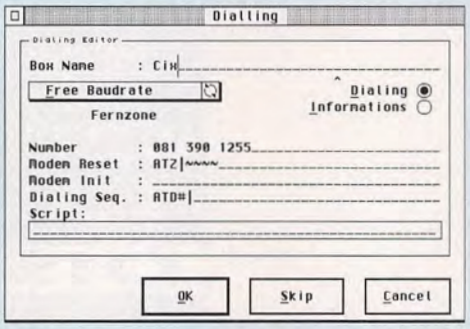


Select Transfer in the Terminal pull-down menu. Double-click on both the Receive and Send editable fields and use the file selector to find RZ.PRG and SZ.PRG which you should have received with Connect. If not then don't worry. Simply get a copy of both – or even the more common XYZ.TTP program – from the PD. Then double-click on the "- data" editable fields and select folders for files to be downloaded to and uploaded from. The "Rcv" and "Sen" fields will work fine with the RZ/SZ combination. If, you are intent on using XYZ.TTP then simply change the "Sen" field to "-u $". Finally, set the Auto Start option to "On".

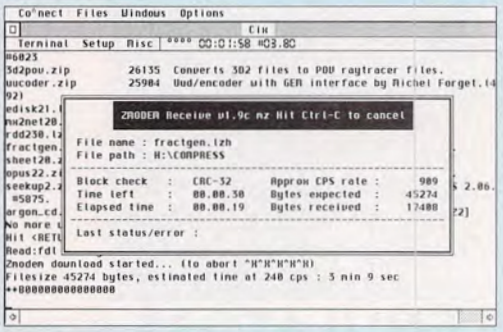


Now, select the Port item in the Select pull-down menu. Click and hold on the baud rate entry and select the fastest speed that your modem can handle. If you have a v32bis modem that goes up to 14.4 kilobaud then choose "19200 Baud". The rest of this dialogue can be quite safely left alone. Now we'll save the set-up: firstly select "Save Set-Up" under the Set-Up menu and click "Okay" on the file selector. Do the same for "Save Options" under Options.

All of the Connect packages I've seen have included in them a multitude of numbers for the German Mausnet network. This is very useful for our German friends but not so good if you're in another country. Select the "Dial" item in the Misc pull-down menu and we'll go about dumping the entries. Move the mouse to the upper left-hand corner of the Telephone Book then click and drag down to the bottom right. Pick up the selected numbers and drag them into the trash can – repeat until no more entries are shown.



Click on the edit icon (pen and ink) and type the bulletin board name and number into the appropriate boxes. Select the baud rate pop-up menu and choose the highest speed that both your modem and the bulletin board in question support. Alternatively, if your modem has a speed searching protocol like v42bis, leave this as "Free Baudrate". To save your dialler entries hit the save icon (floppy disk with arrow pointing towards it) and click "Okay" in the file selector. To dial, double-click on your new entry in the Telephone Book.



Once on-line, downloading a file is easy. Find the file area on the bulletin board and find a file to download. Choose "Zmodem" from the choice of transfer protocols your bulletin board will give you. Then sit back and wait for the file to be downloaded into the folder you selected earlier. The mark of a good program is if, after a well chosen initialisation, everything suddenly becomes a breeze – and Connect is certainly a good program. See you on-line...

DEGAS IMAGES AND BASIC

Want to incorporate Degas pictures into your BASIC programs? Ofir Gal shows you how...

Last month's tutorial covered some aspects of colour graphics programming. The colour theme continues this month with routines to load Degas image files and manipulate them on screen. This involves heavy use of the TOS libraries and provides the basis for a fully-featured paint program but, for the sake of simplicity, the listings assume ST low resolution and will not be compatible with graphic cards or overscan modes.

LOADING AN IMAGE FILE

There are many image file formats and most use some form of data compression. The simplest format is the non-compressed Degas type where files usually have the extension .PI1 for low res, .PI2 for medium and .PI3 for high resolution images. Compressed Degas files have the extensions .PC1, .PC2 and .PC3 respectively but are more difficult to deal with as the file has to be decompressed.

A Degas file contains a dump of the screen. This is simply an image of the screen stored as a file. In low resolution, each pixel is represented in memory by four bits so allowing for 16 bit combinations corresponding to the 16 available colours. So, screen memory is 32,000 bytes, each byte containing information about 2 pixels. The Degas file format contains a 34 byte header followed by 32,000 bytes which represent the screen memory. They also contain 32 additional bytes for animation purposes.

A simple routine to load a Degas file and display it is shown in listing 1. The XBIOS library call *FNlogbase&* is used to place the image directly into screen memory with the header information being ignored. *GEMDOS* shows its ability to load a file in user defined portions; the header is loaded first, then the image part of the file. You can find SAMPLE.PI1 on the cover disk, but you can use any other Degas (.PI1) file.

Listing 1

```
'a simple program to load a Degas image file

DEFINT a-z
LIBRARY "xbios","gemdos"

MOUSE -1                                              'hide the mouse

DIM hdr(16)                                           'set buffer for header

fhandle=FNfopen("SAMPLE.PI1",2)                       'open file and get handle
dum&=FNfread&(fhandle,34,VARPTR(hdr(0)))              'load header section
dum&=FNfread&(fhandle,32000,FNlogbase&)               'load image section
                                                      'into screen memory
dum=FNfclose(fhandle)                                 'close file

DO                                                    'wait until mouse is pressed
LOOP UNTIL MOUSE(2)

SYSTEM
```

WRONG COLOURS

The first two bytes of the header indicate the screen resolution the image is intended for. Value of 0, 1 and 2 show low, medium and high resolutions respectively. This is followed by 16 words with the palette information that the program in listing 1 ignores. This is why the colours were displayed incorrectly. The XBIOS provides a simple call to set the palette, appropriately named – *setpalette*. The call takes one parameter, an array that contains the palette settings. This is obtained by reading the first word of the Degas file into a separate buffer, then loading the palette into the array as shown in listing 2.

The program displays the image

Listing 2

```
'load a degas file and set the palette

DEFINT a-z
LIBRARY "xbios","gemdos"

MOUSE -1                                              'hide the mouse

DIM hdr(15)                                           'set buffer for palette
res=0                                                 'set a variable for first word

fhandle=FNfopen("SAMPLE.PI1",2)                       'open file
dum&=FNfread&(fhandle,2,VARPTR(res))                  'load first
word
IF res<>0 THEN                                        'if not zero let the user know
  PRINT "This is not a low res file"
  STOP                                                'and quit
END IF

dum&=FNfread&(fhandle,32,VARPTR(hdr(0)))              'load palette section
setpalette hdr()                                      'set the colour palette
dum&=FNfread&(fhandle,32000,FNlogbase&)               'load image section
dum=FNfclose(fhandle)                                 'close file

DO                                                    'wait until mouse is pressed
LOOP UNTIL MOUSE(2)

SYSTEM
```

correctly, but a new problem appears as soon as you quit the program – the palette settings remain in force. What is needed is a way of storing the palette settings prior to modifying them. Unfortunately, there is no simple TOS call to do the job, but TOS does provide a solution in the form of *FNsetcolor*. This function works in a similar way to *setpalette* but with a difference – each colour is set individually as shown in listing 3. The function returns the previous setting for the specified colour. Note how the whole array is defined as a parameter in sub-routine *xsetpalette*. The new routine works exactly like the XBIOS *setpalette* but offers the opportunity to store the previous palette settings. The old settings are saved into *oldpalette()* array and when the program exits, it can call *xsetpalette* again, passing it *oldpalette()* as a parameter. This resets the colour palette to the original settings. The fixed program is shown in listing 4.

Our captured friend here may be clowning around, but your final program can load him in and carry out some basic editing...

```
Listing 3

'a custom setpalette routine using
'setcolor 16 times and saving the
'previous settings to an array

DIM oldpalette(15)

SUB xsetpalette(pal())
STATIC i
SHARED oldpalette()
FOR i=0 to 15
  oldpalette(i)=FNsetcolor(i,pal(i))
NEXT i
END SUB
```

PICTURE EDITING

Now that the program loads the file and displays the image with the correct colours, it's time to look at adding some editing facilities. As you may recall from previous tutorials, such programs run in a loop, awaiting user actions. A loop already exists here in the form of *DO-LOOP UNTIL...*

There are many functions that can be added, but let's start with simple pen-like pixel drawing. The modified loop and start-up code is found in listing 5.

The change to the loop introduces drawing and "pick-a-colour" facilities and the start-up code is a little different to allow for correct mouse and window co-ordinates. The main loop checks the mouse position and state of its buttons, and stores the results in the variables *mx*, *my* and *mb*. The latter contains the mouse button state that is used in the *select case* structure. The *PSET* statement is used, if the left button is depressed, to draw a pixel at the mouse position. The colour of the pixel is determined by the value of *c*, initially zero.

A useful BASIC function is *POINT* which returns the colour of the pixel specified. So passing *POINT* the position of the mouse returns the colour of the pixel the mouse is pointing at. But there is a snag. The pixel the mouse points at is always white! This can be seen clearly if you move the mouse to a non-white area of the screen – the mouse arrow is surrounded by a white "halo" to make it visible over a black background. This problem can be solved easily by hiding the mouse prior to calling *POINT* as shown in listing 5. The variable *c* is then updated with a new colour that will be used the next time the left button is pressed. This feature is useful for re-touching colour images.

USER INPUT

There is nothing to stop you from loading other image files in different screen resolutions, but you have to make sure that the file resolution and current screen mode are compatible. This requires a slight modification to the loading routine – listing 6 incorporates resolution checks and user input.

The whole loading routine is now

```
Listing 4

'load and display a Degas image file

DEFINT a-z
LIBRARY "xbios","gemdos"

MOUSE -1

DIM hdr(15),oldpalette(15)

res=0

fhandle=FNfopen("SAMPLE.PI1",2)
dum&=FNfread&(fhandle,2,VARPTR(res))
IF res<>0 THEN
  PRINT "This is not a low res file"
  STOP
END IF
dum&=FNfread&(fhandle,32,VARPTR(hdr(0)))
xsetpalette hdr()                          'set palette
dum&=FNfread&(fhandle,32000,FNlogbase&)
dum=FNfclose(fhandle)


DO
LOOP UNTIL MOUSE(2)

xsetpalette oldpalette()                   'reset palette

SYSTEM

SUB xsetpalette(pal())
STATIC i
SHARED oldpalette()
FOR i=0 to 15
  oldpalette(i)=FNsetcolor(i,pal(i))
NEXT i
END SUB
```

```
Listing 5

'program start-up code

DEFINT a-z
LIBRARY "xbios"

WINDOW FULLW                       'full window mode
CLS                                'clear screen

'the main loop revised

MOUSE 0                            'make mouse visible for editing

DO
  mx=MOUSE(0)                      'get mouse x position
  my=MOUSE(1)                      'get mouse y position
  mb=MOUSE(2)                      'get mouse buttons state
  SELECT CASE mb
        CASE=1                     'left button
                PSET (mx,my),c     'draw a pixel
        CASE=2                     'right button
                MOUSE -1           'hide mouse
                c=POINT(mx,my)     'get pixel colour
                MOUSE 0            'show mouse
        CASE=3                     'both buttons
                EXIT LOOP          'exit loop and quit
  END SELECT
LOOP
```

enclosed within a sub-program that makes for a clearer layout of the code and is easier to expand. The sub-program takes the file name as a value parameter and shares the array *hdr()* and variable *res* with the rest of the program. It first checks if the file exists on disk by calling *FEXISTS* and then loads the first 2 bytes, compares the file resolution with the screen using *FNgetrez* and continues as before if they match.

MORE FEATURES

So far the program can load any non-compressed Degas file, display it on screen and allow you to pick a colour from the picture to draw with. To add more options, keyboard input must be added. *INKEY$* is a BASIC function that returns the key pressed. The most obvious option to add is a "save" function.

Saving the image is a similar process to loading. *FNfwrite&* simply takes the address in memory and the number of bytes, very much like *FNfwrite&*.

The main loop has to change to allow for keyboard input, and a new sub-program named *save* is also added. Listing 7 shows how this can be done. Note that the file is over-written as there is no facility to name it as yet and the double equal sign (==) is used to enable both upper and lower case input.

Next month I will show you how to rename the file and add more facilities to the program.

```
Listing 6

'modified loader to allow for all resolutions
'also enables user to select file

INPUT "Degas file to load";fi$            'prompt user for file to load

load fi$                                  'call the load routine

SUB load(VAL fi$)
SHARED hdr(),res
STATIC fhandle,dum&,dum
IF FEXISTS(fi$) THEN                      'check if file exists
  fhandle=FNfopen("SAMPLE.PI1",2)
  dum&=FNfread&(fhandle,2,VARPTR(res))
  IF res<>FNgetrez THEN  'terminate if file does not match res
        PRINT "This file does not match current screen resolution"
        STOP
  END IF
  dum&=FNfread&(fhandle,32,VARPTR(hdr(0)))
  xsetpalette hdr()
  dum&=FNfread&(fhandle,32000,FNlogbase&)
  dum=FNfclose(fhandle)
ELSE
  PRINT "File not found"
  STOP
END IF
END SUB
```

```
Listing 7

'adds keyboard input and save facility

'the main loop

MOUSE 0

DO
  mx=MOUSE(0)
  my=MOUSE(1)
  mb=MOUSE(2)
  k$=INKEY$                               'get key if pressed
  SELECT CASE mb
       CASE=1
                PSET (mx,my),c
       CASE=2
                MOUSE -1
                c=POINT(mx,my)
                MOUSE 0
       CASE=3
                EXIT LOOP
  END SELECT
  SELECT CASE k$
       CASE=="S"                          'if 'S' then save file
                save fi$
       CASE=="Q"                          if 'Q' then quit
                EXIT LOOP
  END SELECT
LOOP

SUB save(VAL fi$)
SHARED res,hdr()
STATIC fhandle,dum&,dum
MOUSE -1                                  'hide mouse
fhandle=FNfopen(fi$,2)                    'prepare file
dum&=FNfwrite&(fhandle,2,VARPTR(res))     'save resolution id
dum&=FNfwrite&(fhandle,32,VARPTR(hdr(0))) 'save header
dum&=FNfwrite&(fhandle,32000,FNlogbase&)  'save image
dum=FNfclose(fhandle)                     'close file
MOUSE 0                                   'show mouse
END SUB
```

NEW COMMANDS

***FEXISTS(fname$)*: Checks if a file exists. Returns 0 if file is not found.**

***FNfopen(fname$,2)*: A GEMDOS function to open a file. It returns a file handle which is used to read and write to the file.**

***FNfread&(fhandle,bytes,address&)*: This GEMDOS function loads bytes from an open file into the memory location specified in address&.**

***FNfwrite&(fhandle,bytes,address&)s*: The counterpart of FNfread&. Takes the same parameters and saves the data to a file.**

***FNfclose(fhandle)*: Used to close a file previously opened with FNfopen. A GEMDOS function.**

***VARPTR(variable)*: Returns the memory location of a variable.**

***FNlogbase&*: An XBIOS function. Returns the memory address of the screen.**

***setpalette array()*: An XBIOS call to set the hardware palette. Takes an array of 16 integers as parameters.**

***FNsetcolor(index,rgb)*: An XBIOS function. Sets the colour palette values for each colour specified in index giving it the value in rgb. The function returns the previous palette setting for the specified colour.**

***FNgetrez*: Another XBIOS function. Returns the current screen resolution; 0 for low resolution, 1 for medium and 2 for high.**

***PSET (x,y),index*: Draws a pixel at the meeting point of the co-ordinates specified in x and y. The colour is specified in *index*.**

***POINT(x,y)*: Returns the colour of the pixel specified by the co-ordinates x and y.**

***MOUSE(m)*: Returns various mouse states, depending on the value of m.**

- **m=0; the x co-ordinate of the cursor.**
- **m=1; the y co-ordinate of the cursor.**
- **m=2; the mouse button state – 1 for the left button, 2 for the right button, 3 if both buttons are down and 0 if neither are pressed.**
- **m=3; the state of the shift keys.**

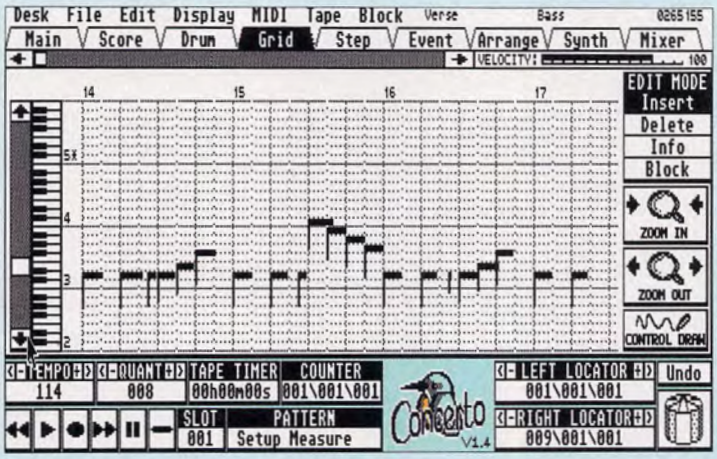
***VAL*: used in the definition of a sub program to indicate a value parameter. The default is to pass parameters by reference which means that the sub-program can modify the variable. Using the *VAL* statement prevents the sub from altering the contents of the variable.**

BITS 'N' BYTES

The most basic unit of computer memory is the *bit*. The status of a bit can be either set or clear, so representing two values – zero or one. A collection of 8 bits is called a *byte*. Each character on screen or on file occupies exactly one byte. A *word* is two bytes, or 16 bits, and is the standard unit when programming in BASIC. All integers are 16 bits by default and can cover a range of values from -32,768 to 32,767. For larger values, a *long* is used which is made up of four bytes or 32 bits. A less common unit is the *nibble* which is 4 bits or half a byte!

EDITING WITH

After last month's whistle stop tour of Concerto's main features, Kevin Earley takes a deeper look at how to achieve professional results...



The Grid Editor – easy viewing of song data.

Concerto's "Grid Editor" page is probably the most useful window for manipulating general song data in detail. If I could only have one edit window, this would be it. The keyboard is displayed vertically down the left hand side of the window, with the song position (in bar numbers) extending off to the right. Notes are displayed as horizontal black lines and have a "tail" that shows how loudly the note will play. The speed at which a note is struck usually dictates the loudness. Called the "note on velocity", this gives the length of the tail. The harder the hit – the longer the tail. This simple system gives an instant grasp of the relative loudness of adjacent notes, making it simple to spot mistakes such as your fingers accidentally touching the wrong keys.

BLOCK FUNCTIONS

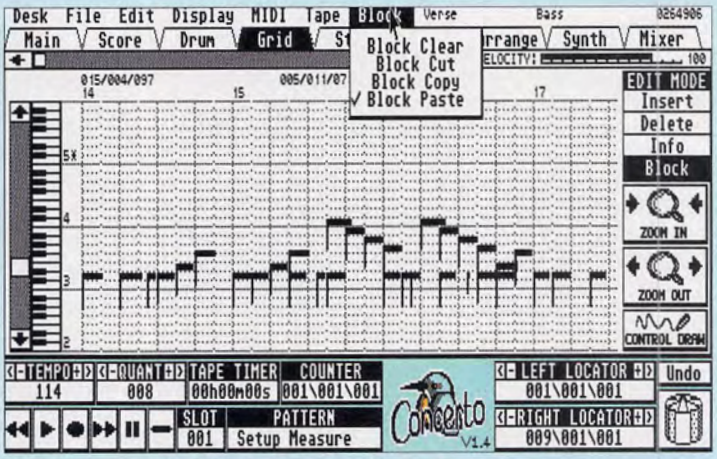
You can save valuable time when composing, by using **Copy** and **Paste** to re-use sections of music that repeat. For instance, verse two may use the same bassline as verse one, but with a few extra twiddly bits added to maintain interest. The **Block** command on the right of the screen, combined with the Block menu allows sections of notes to be moved and copied as whole blocks, while maintaining the relative positions of the notes within them. When you have perfected a section of music, select **Block Copy** from the menu. Click and hold the left mouse button to "drag" a box around all the notes you want to copy.

When you let go of the mouse button, the area of notes you chose will be copied into an area of memory called the **Paste Buffer**, ready to be placed where you need them. Any spaces at the start of the block are also pasted, so be careful.

To paste the notes into place, move to the area of the song where the notes are needed (usually another pattern on the same track), choose **Block Paste** from the menu and use the vertical part of the cross hair cursor to define where the pasting begins. Click the left mouse button and there they all are!

The pasted notes are always the same as those copied, including their pitch, so you may want to make some subtle changes. Golden rule – keep it simple at the start of the song, and add bits as you go along. This adds interest and helps the song to build.

It is possible to edit your Drum Track very effectively in Grid Edit using the **info** command. With this



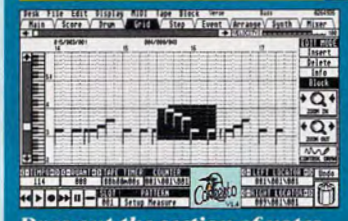
Block commands let you move sections of a song around.

MISSED THE AUGUST ISSUE COVER DISK WITH *CONCERTO*?

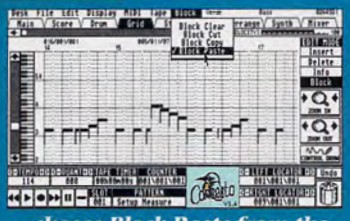
No problem – just turn to page 98 for information on how to order back issues...

STEP BY STEP

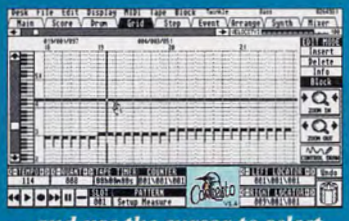
Copying a section of notes from one part of the song to another couldn't be easier. Just use Concerto's Block option.



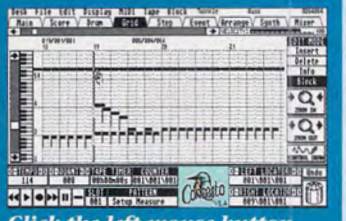
Drag out the section of notes you want to copy...



... choose Block Paste from the menu...



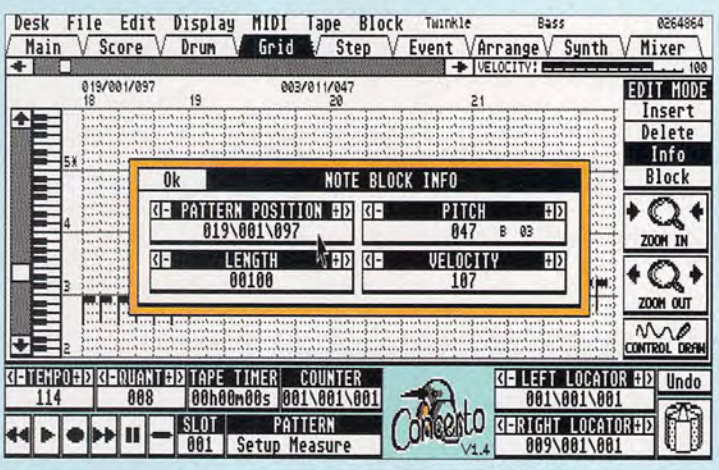
... and use the cursor to select the start point.



Click the left mouse button and voila!

CONCERTO

function selected, clicking on any note reveals its secrets. Try moving the snare drum's position around by small amounts within a pattern, and see how the "feel" of the whole song changes. Drum rolls can be made to sound realistic by altering the velocity of each note using the info window – a drummer will play different strokes with each hand, so vary the levels accordingly. Even if you can't play a note, it is possible to add that magical quality, feel, to a track with careful editing.



The info command shows all the attributes for a selected note.

MIX IT UP

Concerto's Mixer Page is a neat solution to the problem of real time control over MIDI events. "Mixing" the relative volume of each instrument in a song is very important for a polished result. In a pop/dance tune, the loudest instruments are usually the drums and bass (and the vocal of course), with all the others competing for third place. To get the mix right takes careful use of MIDI Volume messages – MIDI Controller #7.

The Mixer has 16 "virtual faders" that operate one MIDI Channel each, and can be assigned to control MIDI Volume, Pitch Bend, Program Change and many other MIDI Controllers.

To control the volume of an instrument, try a few practice runs with **Record Mix** switched off and then turn Record Mix on and play the song. Click once on the appropriate fader at the level you want. This will insert one MIDI Volume message into the track, and you can use the Event editor to fine-tune this later. To achieve a fade-in (or out), do the same thing but this time click and hold with the mouse to drag the fader slowly from 0 to 127 (or vice-versa) to input a stream of messages that slowly increase the level as the song is playing.

Almost *any* MIDI event can be created in this way except notes, making the Mixer a handy way of creating effects in a mix. How about assigning the reverb level of your synth to a MIDI Controller number and changing it during the song...

The other thing you need to get right is the choice of sounds when the song is played back. A pair of MIDI messages called Program Change and Bank Select are use to make sure the correct sound is always selected.

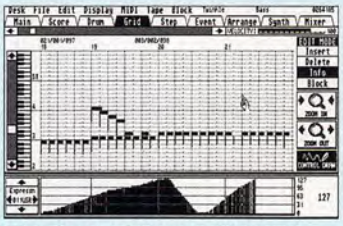
These two messages work in pairs – a bit like Cannon and Ball, only more interesting. The Bank Select message always comes first. By selecting "BankSel1" from the Control Change column the faders can be used to insert one Bank Select message, just like for Volume. Now assign the faders to "Instrument" and use them to put in a Program Change message in the same way as above; one per channel. Make sure that the Program Change always comes after Bank Select.

When you have placed these messages in the tracks, the value of the Bank Select will tell your synth which bank of sounds to choose from, while the Program Change message selects the sound patch from within that bank. While this is fine for Roland's Sound Canvas synth, you may find that only the Program Change message is required for your particular synth...

CONTROL FREAK

As if we haven't talked enough about MIDI Controllers, *Concerto* has another brilliant way of creating them. At the bottom right of the Grid Edit page is a small box labelled **Control Drawer**. A click on this adds another window to the bottom of the page where you can "draw" controller data with the mouse. The left hand box selects which type of data to input. If you need to create a swell (or fade-in), you can do it by clicking and dragging the mouse in the middle part of the window.

Pitch Bend can be drawn in the same way as above, allowing life to be breathed into otherwise boring solos, but remember that Pitch Bend, like most MIDI Controllers, must be returned to zero after use, or every note played after that will be horribly out of tune! You have been warned.



The Control Drawer lets you use the mouse to create control curves...

THE FINAL WORD

Try out *Concerto*'s many features on your own – it will take you a while! Considering the price, *Concerto* is brimming with features and while you may have to hunt around a bit for the best way to achieve the result you want, you may discover some interesting things on the way. Quirky? Yes. Boring? No.

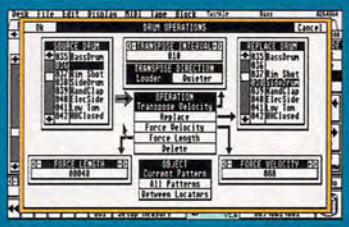
One last note. Remember to save your songs regularly! It's no good crying when you hit <Delete> by mistake and the last four hours' work go to that big song library in the sky...

Concerto's Mixer is great for real time control of MIDI information.

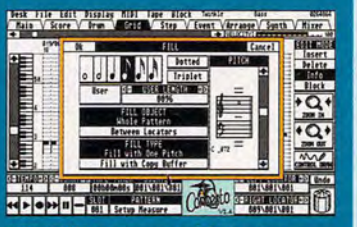
STEP BY STEP

For a budget sequencer, Concerto has a host of editing functions. Check out the Drum Options

The Edit menu has a host of useful functions. Drums can be very tricky to edit, but the Drum Operations function allows almost any changes to be made to the entire song with ease.



One drum can be converted into another, making tired rhythms sound new and interesting. Try setting all the note lengths to 16 ticks using Force Length, or select one drum note and make it louder or quieter. You can even try this kind of thing on non-drum tracks to add accents to certain notes, or delete them entirely.



The Fill command lets you insert regular patterns of one note (instant hihats!) or repeat the contents of the paste buffer. Useful for repeats of drum fills or "sequence" lines.

ASK THE EXPERTS

Once again, we wheel out our panel of experts, feed them on bread and water and put them back in their cells before they can do any harm! But before they go, here are the answers to your questions...

IMPROVED MEMORY?

I am writing to ask if there will be a great difference in my games if I upgrade my 1MB STE to a 3 or 4 MB machine. Will the game be faster or sound better? Last, but not least, are the games *Jaguar XJ220*, *Monestone*, *Eye of the Beholder 3*, *Chuck Rock 2*, *Armour Geddon 2*, and *Alien 3* coming out on the ST? I am also really fed up with the lack of games software on the ST.

Stuart Armitt,
Hamilton, Scotland

Upgrading memory futher than one megabyte will not improve the games in terms of speed or sound, and although some half megabyte games can spot whether you have one megabyte and load more levels into memory, so cutting down on the wait between them, we know of no games that treat memory beyond one megabyte in a similar way.

I'm afraid there are no plans to release the games you mention in the near future. However, it is not unknown for a software publisher to have a change of heart, as has happened with Zool from Gremlin. You never know...TK

Zool – a good example of a change of heart...

A VARIETY OF PROBLEMS

Several problems here:

1. I have been using *Write On* for quite a long time to do my correspondence for a parish council, charities and what have you. I bought a plug-in buffer for my KX-P1123 but in-so-much as *Write On* insists on inputting one page at a time whatever the buffer size it seems to have been a waste of time and money. How does one establish whether or not the buffer is active? How many pages should a 16K buffer hold, and can I overcome the paging process of *Write On*?

2. *Write On* again. I have the task of printing out a number of short agendas, and when formerly using my trusty old BBC with *Wordwise+*, it just used a program which gave me a number of copies I required and they were all printed out continuously incorporating the space between the agendas which I had put in. *Write On* won't do this, as using cut and paste to get, say, two or three agendas on a page, it insists on using its own paging technique with the result that I get a number of agendas and then a blank page, and so on. Very useful for paper manufacturers but not very economical for the parish council. I did register with Compo, but they don't have a clue!

3. *Diamond Edge*. Recently purchased, and at the first attempt to optimise partition F of my ICD hard drive, as purchased from Gasteiner, all it did was wipe out most of the programs. I know I should have backed up using *Diamond Edge II*, luckily they were only PD games for which I still have the original floppies but damned annoying.

HiSoft suggest that perhaps I have a faulty DMA chip per early STE but this has already been the subject of a

PRINTER PROMPTS

DRIVING THAT PRINTER

My daughter had an Atari 1040 STE for Christmas last year. She also acquired an aged but well looked after printer, namely a Star Delta 10. The manual says it is capable of graphic printing but most modern printer drivers do not include this model. Could you offer any solutions?

Also could you tell me whether it is possible to get back copies of *ST Review* as it has been really helpful and I would like some of the copies that we missed (before Christmas '92). Keep up the good work.

Hazel Goodwin,
Longton, Stoke-on-Trent

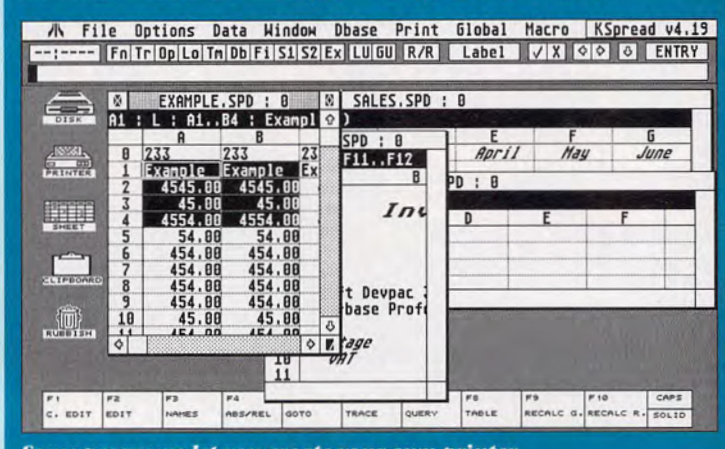
I'm sorry to be the bearer of bad tidings but it looks as though you're going to be on the acquisition trail again this Christmas – for a new printer.

The Star Delta 10 is a 9-pin dot matrix printer that was discontinued about seven years ago. It was the forerunner of the modern Star printers like the LC-10 but unlike these newer models it won't emulate either an Epson FX80 or an IBM Proprinter. This is the crucial point – most modern printers emulate one or the other and as a result, the Epson and Proprinter drivers supplied with most software will work with about 99% of all dot matrix printers on the market.

Some applications, like 1st Word Plus and K-Spread will let you make up your own printer driver by entering the correct codes and saving the resulting text file. You will need a manual, of course, and I dare say Star Micronics (0494 471111) might be able to help if you don't have one.

My advice is to forget it – you'll never be able to print from more than half a dozen programs, even if you do manage to make sense of the codes from the manual. You may even find yourself running into problems replacing the ribbons too. Look for a good Epson-compatible dot matrix printer and put the Delta down to experience.

With regard to the back issues, Issues 1, 4, 5, 6, 7 and 8 have sold out but the others are available in limited quantities from Europress Enterprise – see page 98. AW



Some programs let you create your own printer driver, including Kuma K-Spread.

replacement 4MB STE by Gasteiner and has given no further trouble. How old is early?

4. Whatever happened to *Legends of Valour*? I have had it on order since the write up months ago, in *ST Review*, but it still does not have a release date, and a competitor magazine has just issued a playable demo in their June issue.

R Moyes,
Eye, Suffolk

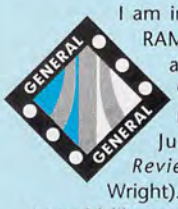
1. The amount of memory required for a page of text depends on the font used. For example, a page of pica or proportional text is about one kilobyte of information but a page of bitmapped font is about one megabyte! The way to check the speed of print is to output your page to disk and compare the time taken to the print time.

2. Your problem is almost certainly happening because the page length is set too long. If this is the case, the printer gets to the end of a page and ejects and then Write On reaches the end and does the same. Make sure that both are set to the same length and this problem should disappear.

3. It is unlikely that you have a faulty DMA chip. The problem is caused by the ICD hard disk driver software. There are large chunks of data being transferred during the Diamond Edge optimisation routine that the ICD cacheing will not handle properly. Switching off cacheing will improve the chances of success, but if you have the Atari Hard Disk driver (AHDI.PRG) and run it before the Diamond Edge program, your problems will be solved.

4. Legends Of Valour should now be in the shops... TK

RAMMING IT HOME



I am interested in using RAMdisks for various applications and was interested to read your article in June issue of *ST Review* (by Andrew Wright).

I would like to get a copy of the *SIRAM* RAMdisk but cannot find it in advertising anywhere. Please can you tell me from where I can obtain the program.

I would like to emulate a hard disk drive using a RAMdisk in order to be able to use the *Calligrapher* word publisher program with "Vector fonts" on screen – the program "switches off" the on-screen display of Vector fonts if the system is not connected to a hard disk drive.

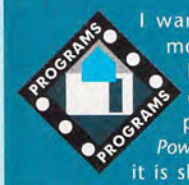
Is there a way around this using RAMdisks and avoiding an otherwise unnecessary expense of a hard disk drive ?

Clive Morgan,
Manchester

SIRAM is a shareware program that was used to promote the old US magazine, ST Informer. So far it has only been distributed alongside the ST Club's replacement file selector UIS III, which is how it entered my own collection. As a result of your interest, you will be pleased to know that it will soon be finding its way into the ST Club catalogue on disk TMP.14. Incidentally, the cut-down version, RAMBUFFR, is also available from the ST Club on disk UTI.275 along with a good number of others,

PROGRAMMING PROBLEMS

MOVING MICE



I want to scale the mouse movement by altering the data in the K/B processor (using *Power BASIC*) so that it is slower and gives more precise control for drawing purposes but I am not sure of the data, format or location to do it. Could you please help me with this. I have tried sending a command $OC and header $F6 with data bytes for the X and Y scaling using the out 4, data statement in BASIC but nothing seems to change.

I know there are plenty of programs available to speed up the mouse but I wish to do the opposite and preferably without all the "frills" that usually accompany these programs.

PJ Stokes,
Crosby, Liverpool

The XBIOS provides direct access to the Intelligent Keyboard via ikbdws. The call takes two parameters: the first is the number of bytes to write and the second, a string. If you wanted to disable the mouse for example, using ikbdws 1,chr$(&h12) will do the job. You should note that applications that use the VDI or AES require the mouse to be in relative mode where the scaling values have no effect.

The only way to write a mouse accelerator is in assembler since you have to hook into very low level system routines which are time critical. In any case, a mouse accelerator in not as simple as it may first look... OG

FAST OR SLOW?

Recently I spent a month or so laboriously translating a GEM-based financial program, which had originally been written in *HiSoft BASIC*, into C (using the *Lattice C* compiler and optimiser). When it was done, I sat back and waited to be blinded by the speed of the new version.

Instead, I was stunned to discover that the BASIC version ran faster than the compiled C version, although both appeared to be superficially identical in functionality.

After investigations, it became apparent that the problem lay with the handling of floating point routines. My program relies heavily on a series of repetitive calculations of floating points and, especially, of logarithms of floating point numbers.

This moved me to attempt some speed trials, involving a loop of 5,000 calculations, taking the loop counter and dividing it by 20 to give a floating point number and either summing the resulting numbers or summing their logarithms. This mimics, on an exaggerated scale, their use in my program.

The results are printed in the table:

Application	Single Float	Precision Log (float)	Double Float	Precision Log (float)
HiSoft Power Basic	1.1	4.2	2.7	129.0
Sozobon C*	3.2	8.8	N/A	N/A
Lattice C**	2.9	20.9***	2.1	20.2
Lattice C****	0.7	1.7	N/T	N/T

NOTES: Figures show time in seconds for 5,000 calculations. * Optimised "heat and serve" Sozobon PD compiler. ** Optimised Lattice C. *** Double precision logarithms taken. **** With maths co-processor installed. N/A Not available. N/T Not tested.

The problem appears to lie with the fact that *HiSoft BASIC* can use any convenient floating point algorithm, whereas C is constrained by the ANSI standard (used in *Lattice C*) to use double precision logarithmic calculations, even when all calculations are done in single precision. By contrast, *Sozobon C* sticks with single precision floating point calculations even when logarithms are included.

A maths co-processor looks attractive, but is not available to all ST users and is in any case additionally available to BASIC users in the new *HiSoft Basic 2*.

When I tested the same programs on an IBM PC, using Microsoft's >I>Quick Basic and *Quick C*, little difference was found between the BASIC and C versions, although BASIC was still marginally faster on logarithms.

This discovery has important implications. Just about every commercial spreadsheet for the Atari ST is written in C, although spreadsheets are widely used for floating point computations for which single precision arithmetic is nearly always sufficient.

Probably spreadsheets should be written in *HiSoft BASIC*, for which full library routines are available to handle GEM. But BASIC programs don't sell so well as those written in C – do they?

R. M Saltersh,
Reading, Berks.

Thank you for an interesting letter. You are right in saying that Lattice C uses double precision floats for logarithmic calculations in line with the ANSI standard. C, unlike BASIC, was written for powerful computers with hardware floating point support and this becomes a problem when compiling for less powerful machines like the ST. BASIC on the other hand is designed to compile for less powerful systems and indeed uses single precision floats when possible.

A maths co-processor (FPU) makes a big difference and while HiSoft BASIC can utilise one, you must use the TT version of the compiler. The resulting program will not run on a standard ST but only on FPU-equipped TTs and Falcons. Lattice C on the other hand can compile auto-detecting code which will run on any machine including MegaSTEs with I/O mapped FPU.

I personally do not believe that end users are concerned with the development tool, but with the ease of use, features and speed of the program they end up using. Just use whatever language you feel comfortable with and do your best to optimise the code. If speed is a major concern, it is always possible to write the processor intensive routines in assembler which can speed things up. While writing GEM Bench I did the same and found that some assembler routines are more than ten times faster than similar BASIC code! OG

including the similar Intersect RAM disk.

Unfortunately you won't be able to use a RAMdisk with Calligrapher to emulate a hard drive. Although it would probably speed things up if Calligrapher thinks a hard disk is present, it switches on all sorts of other things that eat up hard disk space. Working Title points out that the vector fonts are still used for output whether or not you have a hard drive.

Incidentally, Working Title have moved and are currently at 129, Woodstock Road, Yarnton, Kidlington OX5 1PT. Tel/fax: 0865 370175. They do point out that this address is not open to visitors – the terms of the lease expressly forbid callers. AW

TOS AND FIRST WORD PLUS

Ever since I tried the copy of *1st Word Plus* which was given away by *ST Review* in its September 1992 edition, I have been unable to get the program to work properly. Loading the supplied TEST.DOC document caused immediate crashes, as did calling up "Extra help" from the menu item and loading some, but not all, IMG picture files. Although it was possible to create new documents (and save and reload them), on first power up an irrelevant message about marking the beginning and end of block text came up (apparently from the HELP text file).

I tried loading directly from distribution disk, from my hard drive and from copies of the *1st Word* folder on old disks. I tried removing accessories, auto programs, memory – everything. My first reaction was that if this was the best GST (software authors) could do, they were lucky to sell anything. Then I thought that perhaps there were a subtle fault on my distribution disk.

Recently I found the answer. *ST Review* supplied the program in a folder marked "First Word.+ ". By simply renaming the folder "FirstWord", the problem disappears. Those with TOS versions which do not permit renaming of folders should copy the files within the folder to a new folder named "FirstWord".

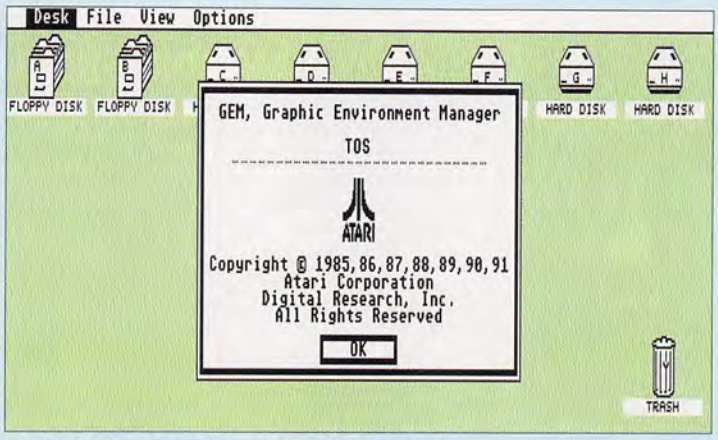
I hope you will publish this letter. There must be a lot of other readers who have found the same trouble – a rather subtle problem – and GST may have suffered as a consequence.

John White,
Wokingham, Berks

A very valid point and one that I hope we've redressed since issue five!

Indeed, the way in which I named files in the early days did lead to a minority of you having problems with the programs on the cover disks, which is why I stopped using that method of naming them. This is because some versions of TOS do not accept variations in folder and file names, so they will ignore anything they don't recognise. I tended to use lower case and the odd additional characters and can only apologise for the inconvenience it has caused any of you.

The solution is to change the name of the folder by clicking on it and then selecting "Show Info" from the File menu. Earlier versions of TOS do not allow you to change folder names in this way, so you need to create a new folder with the name you require and copy all of the files across. VL



TOS 2.06 has a variety of new features that make for a worthwhile upgrade.

TOS CONFUSION

I had an Atari 520 STFM which had TOS 1.09. I believe the year was 1987. I sent my computer off to a company for a new disk drive and a memory upgrade but, believe it or not, they lost it!

They sent me a second-hand replacement, but after checking the TOS version with a system checker, I found that I had version 1.04. As you know, there are several different versions of TOS; 1.00, 1.02, 1.04, 1.4, 1.06, 1.62, 1.09 and so on.

1. Are TOS 1.04 and 1.4 the same?
2. Is TOS 1.09 a later and/or a better version than 1.4 or 1.04?
3. Why is it that on a standard ST (non STE), you can only upgrade to TOS 1.04 without major modifications?
4. How come you never seem to hear of TOS 1.09?
5. Have I got myself a bargain with this TOS version or have I been ripped off?

R Hudson,
Pontefract, W. Yorkshire.

The question of TOS versions is one that crops up a lot, so let me clarify the position, which will answer questions 1, 2, and 4.

The original TOS was TOS 1.00. Version 1.2 was known as 1.02 and 1.09 while 1.4 is also known as 1.04. Both of these are improvements on the original version – take a look at the file selector, for a start!.

Versions 1.60 and 1.62 are found on the STE. The former had a major bug that wouldn't allow the STE to boot medium resolution while the latter fixed this.

There are other versions too; 2.06 (Mega STE), 3.06 (TT) and 4.02 (Falcon) are the latest on these respective machines.

To answer your other two questions, later versions of TOS use different memory addresses and need additional hardware to add them to the earlier STs and no, you haven't been "ripped off" – you've gained a valuable improvement to your machine. TK.

WHERE'S THE PROGRAM?

Please can you help me! I purchased the May issue of *Atari ST Review* because the coverdisk attracted me – *Write ON!*.

I have installed it as instructed. But I cannot find the *Write ON!* PRG on the disk. I have loaded the programs onto my hard disk.

F Attwell,
Ely, Cardiff

On installing, Write ON! places all files inside its folder except for the accessories (which need to be transferred to the root directory of drive C), the WRITE_ON.INF and the WRITE_ON.PRG files, which are all placed in the root of the drive you installed the program on to. Have you checked there? If it is not there, this may be because you do not have enough room in the partition. Try re-installing the program into a larger partition. TK

THANKS FOR THE MEMORY

I recently acquired an Atari 520 ST, but would like to access to more memory. Being a student I mainly use my ST as a word processor (thanks for the *Write On* coverdisk on the May edition). Please could you advise me of the cheapest, safest and best ways of upgrading my machine so I can write more extensive documents and get my hands on a dictionary program. If I upgrade my machine to 1MB, will I then be able to run 1MB games and utilities and my old 520 software?

Lee Hathway,
Newport, Gwent

Unfortunately, Lee, you don't say which model of ST you have, so I can't give you a specific answer. However, if you turn to page 58, you'll find some incredible deals on memory upgrades for most STs.

If you expand to four megabytes, you may find the odd program that doesn't like the extra free space and will not run, but this problem does not occur on a one megabyte machine. All of your current software should run fine. TK

OUR ESTEEMED PANEL...

VIC LENNARD *Editor*
Vic is the director of the UK MIDI Association and can help with all aspects of music and sequencing.

TONY KAYE *Deputy editor*
Our very own deputy editor. Tony can help with the ST's operation, hardware and software along with upgrades and consumer problems – a Tony of all trades, if you like...

OFIR GAL *Freelance writer*
Ofir is the expert on HiSoft BASIC. He's also a director of Club Cubase UK so he knows a thing or two about music.

ANDREW WRIGHT *Freelance writer*
A regular contributor to many ST and DTP magazines. If you need help with DTP or general printer problems, ask Andrew.

T.S.C.

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Everyone has something to say, be it a beef or a compliment. Drop a line to me, Vic Lennard, and a £25 cheque could be winging its way to you...

LETTERS

GOT SOMETHING TO SAY?

***ST Review* is your magazine and putting pen to paper gives you direct contact with us. As editor, I read every letter that you send and carefully select the ones for publication. If you want to have a rant, fine – but do bear in mind that mindless insults will not find their way into Letters.**

It may simply be that you have a constructive criticism about an article in *ST Review*, or that one of our columnists has inflamed you with his honesty. Whatever the reason, drop a line to me, Vic Lennard, at:
Points Of View,
Atari ST Review,
Europa House,
Adlington Park,
Macclesfield, SK10 4NP.

Please do not send stamped-addressed envelopes as personal replies will not be entered into. All mail received is considered for publication unless otherwise stated and we reserve the right to edit letters where necessary without altering the context.

ONCE AND FOR ALL...

When your magazine first came out, I was just starting to get to grips with my Atari. *ST Review* was a great help to me as it explained certain items in every day English.

Previous to your magazine I also bought *ST Format* and *ST User*, which at first was great, but for some unknown reason started to contain the same material as *ST Format*, which I thought was understandable since you can only report on certain items, or so I thought!. But your magazine knocked that on the head as I have not found anything repeating itself.

At this stage I was buying three magazines, not for long though as *ST User* then went over to being a magazine of hardware reviews and an ideal magazine for "Midi Boffs", so I cancelled my order.

To get to the point, I hope *ST Review* stays exactly the same as it is and doesn't go over to the same format as *ST User*, now that you are owned by the same family, as I don't want to be left with only one magazine a month.

Here's hoping that you don't change too much and become as boring as the others.

Neil McHenry, Gosport, Hants

Boring? ST Review? I hope not! We pack so much into the magazine that it's getting difficult to fit information on all of the articles into the Contents pages!

We are making some changes though. ST Source, formerly ST Buyer, now sports a series of short reviews in Short Cuts, a section that allows us to devote as much space to smaller products such as mice, joysticks and budget software as they warrant. Similarly, In The Know is a new series of articles that expose the hype behind areas that affect all of us such as insurance (in this issue), second-hand buying and inadvertent software piracy.

ST Review never copies or follows other magazines – with our team of freelance writers, we don't need to. But if you can think of topics you'd like us to cover, or have any constructive suggestions, don't hesitate to drop me a line.

WHERE'S MY MAG?

I buy your magazine every month and am very pleased with the quality of it. Thanks for *Timeworks* and *Write ON!*, which I have written this letter with.

The main reason I am writing this letter is the service of it. In the May issue I noticed that you said the next issue will be on sale on May 27th. However, none of the newsagents in my town have yet received it and I am about fed up to the teeth with it. I noticed that the *ST Format* is on sale a lot earlier than your magazine.

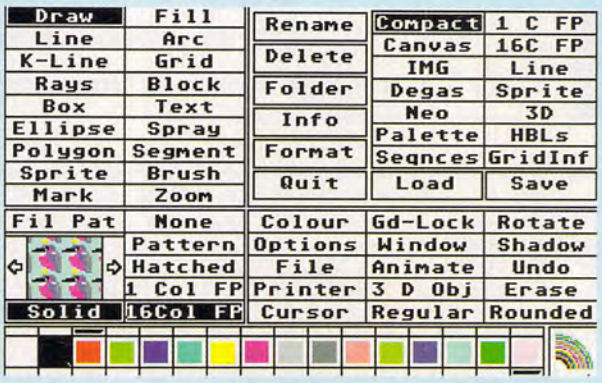
I am having second thoughts about buying your magazine now. You may think "Its only one customer, we're not bothered", but other people may think the same as me which may cost you. I am very disappointed about this. For your sake I'd speed up your delivery vans.

I hope next month's will arrive quicker.

Mr S Edwards,
Holywell, Clwyd

You like our mag? Good – then why don't you subscribe? This would help you twofold. It will save you money by taking advantage of our special offers, and will ensure that ST Review automatically drops onto your doormat each month – a week before it goes on sale to the rest of the public. And even if you don't want to take us up on such an offer, you can always place a regular order with your newsagent.

ST Review is no longer a monthly magazine – it comes out every four weeks which means that you get 13 issues a year. Consequently, we don't appear on the shelves the same date each month which is the case with most other mags. However, our Next Month column always informs you of the next issue date, and since being at Europress we have yet to miss a deadline...



Canvas – unfairly judged in issue 14?

ONE MAN'S MEAT...

I have an Atari 1040STE, an Acorn A3000 and a BBC "B" attached to a Brother electronic knitting machine. I consider the Atari to be the best value for money for home computing, in spite of its speed!

I am retired, after over 20 years in computing, including installing an IBM 1400 series in Littlewoods Pools in the early sixties to take care of their sophisticated selective mailings. Unfortunately due to a heart attack and a stroke I am not allowed to drive and therefore am virtually housebound. As a result I am spending most of my time writing games and semi-educational programs for my nine year old granddaughter and five year old grandson, both of whom have Atari computers. I use STOS because I consider it to be a lot better BASIC program that I have ever used – and I have used a lot.

The June issue of Atari ST Review is my first copy and I am impressed. I must however take up two issues:
1. Whoever wrote *Arty Facts* should think again – *Canvas* is an excellent art package and one I use exclusively as does my nine year old granddaughter.
2. *Easy Draw 2* is good, in spite of its lack of colours. *Quick On The Draw* and *Design A Pen* however, are not very helpful – possibly to support the manual and upgrade offers!

I must admit that I was a very bad operator, so much so that the other operators used to go pale when I entered the Computer Room and approached the Operational Console. They even asked the Operations Manager to bypass me into his office with the offer of a cup of tea and the ability to smoke my pipe...

Mr F Shaw, Leyland, Lancs

It's certainly nice to see your grandchildren being involved with

computers at a young age – my five year old son also uses an ST and is a whizz at making his way around Noddy's Playtime...

Your comments about Arty Facts in issue 14 is interesting but begs a question; have you tried any of the other art programs? For instance, I still use Degas Elite on occasions and might think that this is the bees knees if not for the fact that I am fortunate enough to have access to most art packages on the ST. But comparative reviews and round-ups are always subjective and I can certainly accept your point of view.

When Easy Draw 2 was released, it was way ahead of its time and even stands up well against today's competition, especially when combined with Easy Tools. Such a complex program requires a friendly, accurate set of tutorials and as your letter was written before the follow-up step-by-steps on designing a car and a table tennis-playing robot, I trust that you found these more to your liking.

As for being a poor operator in years gone by, it's nice to know that I'm not the only one who types with two fingers...

MAG ON A DISK

I am writing for two reasons, first of which is to congratulate you on writing a quality magazine that I get every month. You cover enough subject to keep everyone interested and I hope to see you still producing your quality mags in the year 2500, well... you know what I mean!

Right – enough sucking up to get this letter published as I would like to advertise my new disk mag. It is called *Power* and I'd like to think that all kinds of ST owners will be able to benefit from it. It covers all kinds of different topics and not all are to do with computers. There is news, reviews and all the usual stuff plus a few little extras. There are loads of PD games and utilities with every issue and basically I have produced an all round disk mag which caters for beginners up to programmers. I have done the first issue and the second is nearly complete. I am hoping to get a good response as I really want this to work. To obtain your copy, send a blank disk, stamped-addressed envelope and £1.25 to:

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Any articles or PD would be much appreciated. Please give me a chance and order a copy now!

James L Mathews,
Maidstone, Kent

And good luck to you – don't forget to send a copy to ST Review for our opinion...

£25 STAR LETTER

IN BLACK AND WHITE

I was most disappointed when I read the response to Paul Sharp and his problem with Cubase in your "Experts" page in issue 14. I know it must be extremely disheartening to find that there are one or two people in the ST world who do not know that Cubase only works in hi-res, but for you to brazenly accuse Mr Sharp of piracy was well out of order.

Why is it immediately assumed that there was a criminal reason behind Mr. Sharp's abortive attempts to run Cubase on a colour monitor? He might not have understood the manual when it specified "monochrome". There are still people who think "monochrome" means black and white when it is most certainly not. Maybe he spent all his money on MIDI gear and Cubase and could not afford a mono monitor, but assumed that there must be some way of running Cubase on a colour monitor. I was certainly in that position myself, but I had the sense to seek advice before I spent my money and now I run Cubase on a colour monitor perfectly well using a public domain mono emulator! Of course there is a possibility that Mr Sharp might have not read the manual properly!

Yes I realise that this is all speculation, but this is exactly what you have done in "inferring" Mr. Sharp to be a criminal! What gives you the right to do this, Mr Leonard? Have you any hard evidence that Mr Sharp has a pirate copy of Cubase? This would be especially interesting given that version 3 of Cubase uses a dongle and is therefore not easy to copy! What is more interesting is the fact that, to quote Mr. Sharp's letter, he has "run Cubase and OTHER (my capitals) sequencing programs (including ST Review's 1st track demo)". I suppose he must have pirated your coverdisk as well? Since you didn't mention the fact that he has tried other programs in your reply this tends to "infer" that you did not read Mr. Sharp's letter properly.

Even more worrying is your assertion that "people would rather copy a program and write to a magazine to find out how to run it". Why then do you have problem pages in your magazine? After all, if they bought legal software, then they've got manuals and hot-lines to help them! And while we're at it, scrap the games reviews! After all they give away the plot and the gameplay! Indeed, why stop there? What about all those games cheats sent into magazines? How do you think that people could just happen to find mysterious passwords for things like infinite levels, skip levels, etc.. These are often published within only a couple of months after their released of these games! Yet a lot of these games are often cracked very soon after their commercial release and include text files with these exact same cheat codes! Coincidence? Or perhaps we should send the names and addresses of contributors of cheats sections to FAST just in case? Of course not. As you might quite rightly argue, this is a betrayal of trust of readers, who, after all are the people who keep you in a job.

My sentiments exactly. Therefore I hope that I do not see any more examples of ST Review trying to police the ST world like this. There are appropriate law enforcement agencies for this job and moreover, they are more generally aware of the legal principle that one is presumed innocent until proven guilty.

Genie!, PB Diskmag

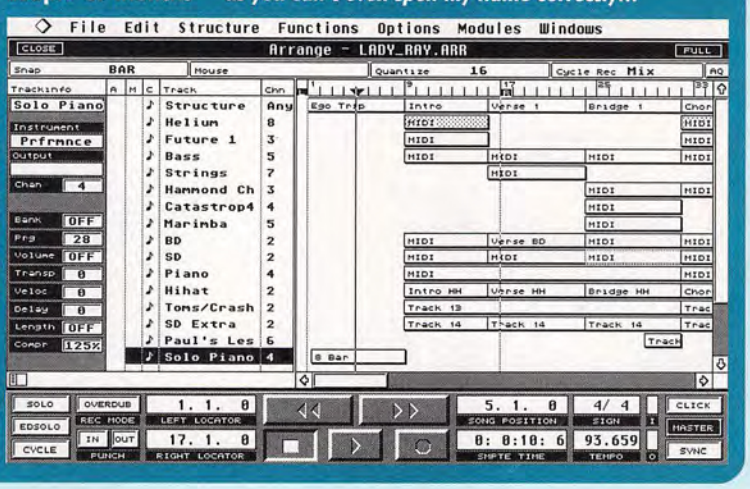
Let's deal in a few facts here. First, it's estimated that over 10,000 pirate copies of Cubase version two exist in the UK alone – and this was also protected by a dongle. Courtesy of a Dutch hacking team, Steinberg had to recall the familiar black dongle and replace it with a red one for version three. Second, I have had countless letters from Cubase users whose dogs and/or daughters have chewed or otherwise mutilated their manuals and require a replacement. Possible? Yes. Probable? No. Third, unscrupulous members of the public use question/answer pages of magazines to derive information about software they do not legally own. Welcome to the real world...

Did I brazenly accuse Mr Sharp of piracy? No. I simply stated that his question tended to infer that the software was other than original, which was certainly a fair comment. Steinberg Cubase has a superb helpline system via Harman Audio, the official distributors. Any registered user can pick up the telephone during a three hour period every weekday afternoon. Why hadn't Mr Sharp done so? Even a box-shifting retailer could have given an accurate answer to his problem. Why didn't he ask the shop he'd bought it from?

I read Mr Sharp's letter very carefully, but you certainly didn't! He did not say that he had "run Cubase and other sequencing programs", only that he had tried to – the 1st Track demo you mention also requires a mono monitor! And while it is possible to run Cubase on a colour monitor with a mono emulator, the inherent screen flicker makes it practically impossible to do so for any period of time – and if someone can afford £399 for the pukka program, why skimp on a £75 second-hand mono monitor?

As for your comments about games cheats, what absolute rubbish! The fact that someone has hacked a game and then shares information concerning short cuts or cheat modes does not make them a pirate. Yet according to you they should be treated as such.

It's a shame you didn't have the courage of your convictions to provide your real name as it's just cost you £25. Another donation to "Childline" – especially as you can't even spell my name correctly...



Cubase – the level of piracy in version two led to a new copy-protection dongle for version three.

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to ST Review Readers

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Feature	Lattice C ver 5.52	Prospero C ver 1.155
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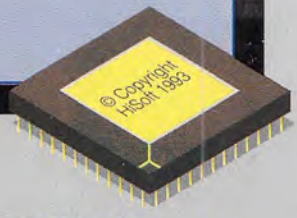
Installation	GEM Installation program plus Guide	None
Based on...	Actual ANSI Standard	Draft ANSI Standard
Tools Included	Resource Editor 680x0 Assembler Multi-file Project Manager	Single file Project Manager
Processor Support	68000-68040 support Native 6888x code for maths co-processors	68000 support Library support only for maths co-processors
Options	100+ Compiler Options	9 Compiler Options
Atari Support	Full GEM/AES plus CPX Support FontGDOS library etc	Only GEM/VDI Support
Compile/Link Speed	Drhystone in 8 secs	Dhrystone in 45 secs
Whetstone Runtime Speed	129,618/s standard 1,538,462/s optimised on 68882/68030	107,642/s standard
Errors	Full error control	None
Customer Support	Directly with the authors of the package	via Compo Software
The Future?	Version 5.60 will include full support for the Falcon, SpeedoGDOS, MultiTOS, Mint, Metados and NVDI 2.5	None



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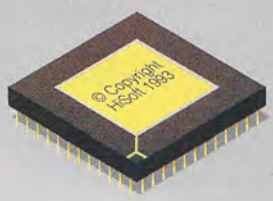

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