ISSUE 12 APRIL 1993 £3.95

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ATARI ST REVIEW

WHAT'S NEW, WHAT TO BUY, WHAT TO PAY

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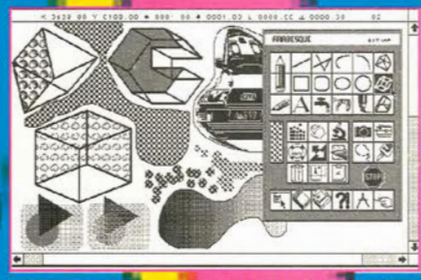

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The classic arcade games have spawned whole generations of clones – but how good are they? We take a look at some hits and near misses starting on page 22.

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APRIL 1993

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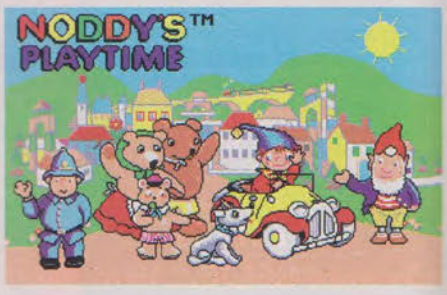
Dino Dini's latest soccer extravaganza is well on its way, and we talk to the man himself on page 44. Noddy makes a comeback too this month – see page 34.



ON THIS MONTH'S COVERDISK

THREE EXCLUSIVE PROGRAMS FROM THE USA!

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A superb, easy-to-use video titler. With a total of 32 effects including fades, dissolves, wipes, scrolls, merges and lots of special effects, ***PC1QUENCE*** is an absolute gem to use. All you need are some compressed Degas Elite files (.PC1) to build a sequence of up to 100 frames - we've even included 10 action-packed pics and a couple of instant demos to get you started...

KID KONG & BUGS UK

Excellent versions of the classic arcade games all the way from the other side of the Atlantic. In conjunction with the Screen Gems special in this issue, ***KID KONG*** and ***BUGS UK*** show just how well the spirit of the arcade game can be transferred to the ST.

ALSO ON THIS MONTH'S DISK

SCRIBE – A full, shareware text editor for reformatting and modifying files created in a word processor.
LINE_ART.FNT – Ever wanted to create a decent, large headline in Timeworks? Well you can now with our exclusive line art characters and when you see how it's done you're bound to create a font of your own.

FEATURES

WIN A SUITE OF COMMS PROGRAMS GET ON YOUR MODEM AND TURN TO PAGE 89 NOW!

14 THE PROFESSIONAL TOUCH
At last – a professional art package for the ST that combines the merits of both bitmap and vector techniques. Jack of both trades or master of neither? Read on for the answer...

17 A CERTAIN FLAIR
Is a document processor a cross between a desktop publishing program and a word processor? As that's what ***Word Flair*** purports to be, we'll let you judge for yourself after reading our full review...

22 SCREEN GEMS
Has the spirit of the coin-op disappeared? Not where the ST is concerned. We look at a series of comparisons between commercial arcade games and their public domain equivalents.

26 KODAK'S PRINTING OPPORTUNITY
The name of Kodak is usually associated with cameras but as a company it also manufacturers a fine range of printers. The Diconix 701, a portable inkjet printer, is the latest.

28 SPEEDY GONZALEZ!
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37 TASK SETTING
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6 NEWS
All the latest including a change in the Falcon design, special deals on bundled software and a couple of new laser printers from Rank Xerox.

12 COVERDISKS
Create your own video sequence with ***PC1Quence*** by following our starter's guide on page 13.

44 SCREEN SCENE
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56 PD ZONE
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68 PROBLEM SOLVED
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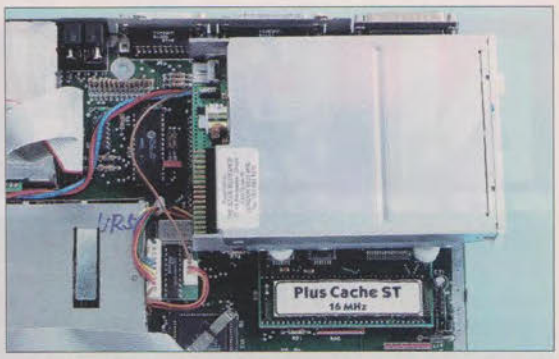
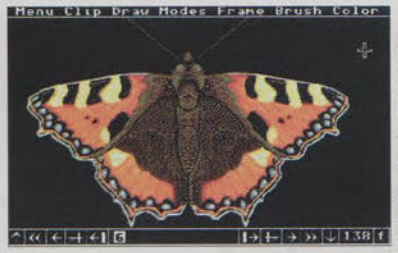
72 MIDI MONTHLY
Software-city this month! First there's ***John The Composer***, a rather novel music creation program followed by ***TONY***, a freebie editor for Yamaha's TG100 sound module. Then there's a look at a couple of serious MIDI song files from Heavenly Music and finally some advice on buying a multi-track recorder.



Speed up your ST with Plus Cache – we show you how.



Create your own animations using the Cyber series and our handy guide starting on page 38.

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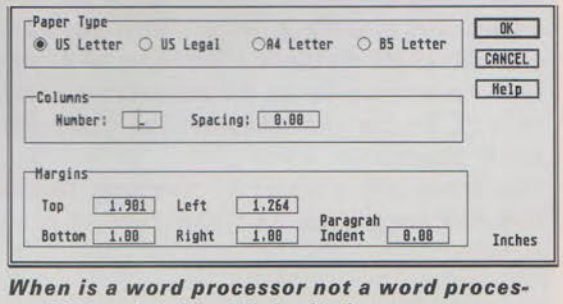


When is a word processor not a word processor? When it's Wordflair: find out more on page 17.

NEWS

Stop Press...
Atari ST Review has been taken over by Europress Publishing, the owners of Atari ST User. The magazine will continue with the same editorial team and be on sale at the usual date next month.

PAGES COME CHEAP AS PRICES FALL

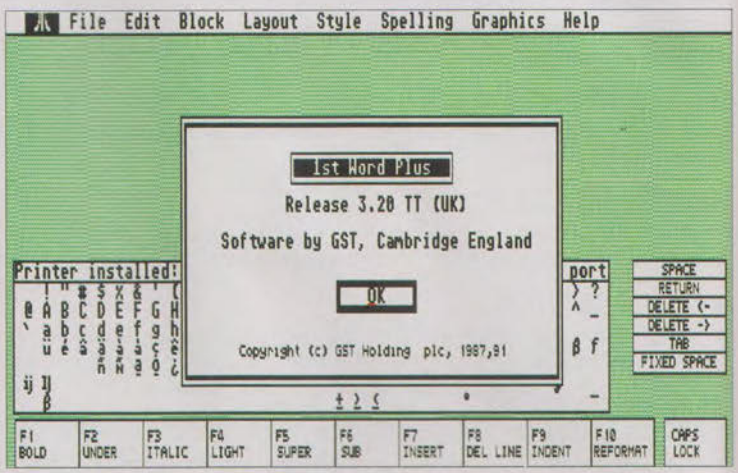
Two of the best-selling word processing and desktop publishing packages have been bundled together and reduced in price.

Until the end of April, ***Timeworks Publisher 2.0*** and the latest ***First Word Plus*** are available from Electric Distribution for just £99 including VAT, a saving of over £110 on the individual selling price.

These packages make a comprehensive addition to any one Megabyte ST and are an ideal start in the world of serious computing. ***First Word Plus*** is an easy-to-use word processor with a GEM interface and 40,000 word UK dictionary. ***Timeworks Publisher 2.0*** has all of the features that you need from a DTP package including text wrap round irregular objects, automatic text flow and custom page sizes.

Also from Electric Distribution is the latest update for ***Neodesk***. Version 3.03 works with MultiTOS and has improved file copying routines and other enhancements, including high-density disk drive support. ***Neodesk 3.03*** is available as a stand-alone package for £40.81 or as an upgrade for ***Neodesk 3*** for £4.95.

Neodesk 3.03 and the new double pack are available from Electric Distribution, Meadow Lane, St Ives, Cambs PE17 4LG, Tel: 0480 496666.



First Word Plus, part of the offer from Electric Distribution.

ATARI ON THE CASE

The new Falcon 030 will have a two-part design when the machine is released in its finished form.

The case is expected to be a 'pizza box' design, similar to the original Mega STs. This means that the machine will have a small footprint and a separate PC-style keyboard. The entry-level machine will have two Megabytes of RAM, and an IDE controller for an internal hard drive and the VME bus will be available as options.

The biggest news is the absence of a cartridge port, but, we are told, music software publishers have been informed of ways of using the DMA or the DSP ports for anti-piracy protection.

The projected price is £399, although with the falling pound, we'll have to wait and see. The first shipment is expected to arrive in the UK in April.

WIZARD P.D.

Wizard P.D. would like to assure our readers that it has no connection whatsoever with Wizard Games or Excalibur Software.

The P.D. company has been trading full-time since 1989 and has built up a name as a reputable dealer in public domain and shareware. Unfortunately, the latest on the other two companies is not so good. We recently received a letter from a reader who ordered games from them, paid them a visit and found the shop empty. We understand that the police and Trading Standards Office are looking into the situation.

Wizard P.D. can be contacted at 178 Waverley Road, Reading, Berks, RG3 2PZ, Tel: 0734 574685.

ENTRY-LEVEL LASERS FROM XEROX

Rank Xerox has launched two new entry-level laser printers. The Xerox 4010 II and III are designed for the small business and would suit the home user too.

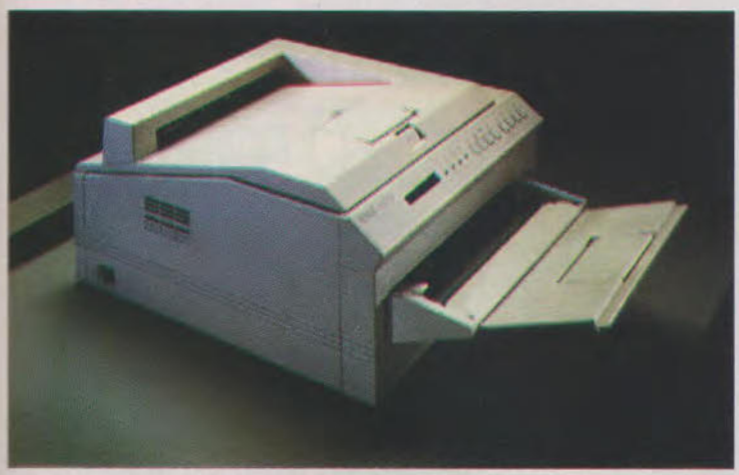
Both machines are capable of printing at a speed of four pages per minute, with a resolution of 300 dots per inch and they are designed to handle up to 5,000 pages per month. They have a 100-sheet paper tray and can also take envelopes, transparencies and other non-standard paper stock.

The 4010 II has 512k RAM, HP Laserjet II emulation, 11 resident fonts and a one-year on-site warranty. The retail price for this is £869 excluding VAT.

A little higher in price, but boasting 2.5 Megabytes of RAM, HP Laserjet III emulation, 15 resident fonts and a three-year warranty, the 4010 III sells for £1095.

Both printers can be upgraded to 4.5 Megabytes of RAM and an optional multi-emulation kit is also available.

For further details, contact Rank Xerox (UK) Ltd, Bridge House, Oxford Road, Uxbridge, Middlesex UB8 1HS, Tel: 0895 251133.



The new Xerox 4010 entry-level range of laser printers.

IDEAL GAMES AT IDEAL HOME

Are you planning to visit the Ideal Home Exhibition this year? If so, then a visit to the Ideal Electronic Games Show is called for.

The games show takes place in Earls Court 2 between 25-28th March and admission is included in the cost of the main Daily Mail show. Although the emphasis is on games, with the consoles being well covered, there should be plenty to keep the floppy disk user occupied.

The Daily Mail Ideal Home Exhibition runs from 18th March to 12th April from 10am to 8pm each day. Combined entry is £7 for adults and £4 for children and senior citizens.

MIDI BY EXAMPLE?

If you ever buy some music equipment for the ST, the chances are that you'll get home and sit there wondering how to put it all together. Well, now your worries are over: *MIDI Survival Guide*, published by PC Publishing, takes the hassle out of MIDI with practical advice from starting out to ending up with a correctly working system.

More than 40 diagrams show practically every conceivable way of connecting up synths, sound modules, sequencers, drum machines and multi-track recorders using MIDI Thru, Switch and Merge boxes. There are also chapters with advice on buying, budgeting and positioning equipment. All in all, this is an invaluable guide for all current and prospective MIDI users. The author is none other than our own Associate Editor, Vic Lennard, who also happens to be director of the United Kingdom MIDI Association. For more information contact PC Publishing on 0732 770893.

CLUB FOR CUBASE USERS

Now all you musicians can get together and discuss Take That's latest! An officially approved user group for Cubase has been launched in the UK.

Club Cubase UK is run by ST Review's Associate Editor, Vic Lennard, together with Ofir Gal and Brian Heywood and it offers a large range of benefits to members. These include discounts on many Steinberg products and special deals on promotional products and licensed disks.

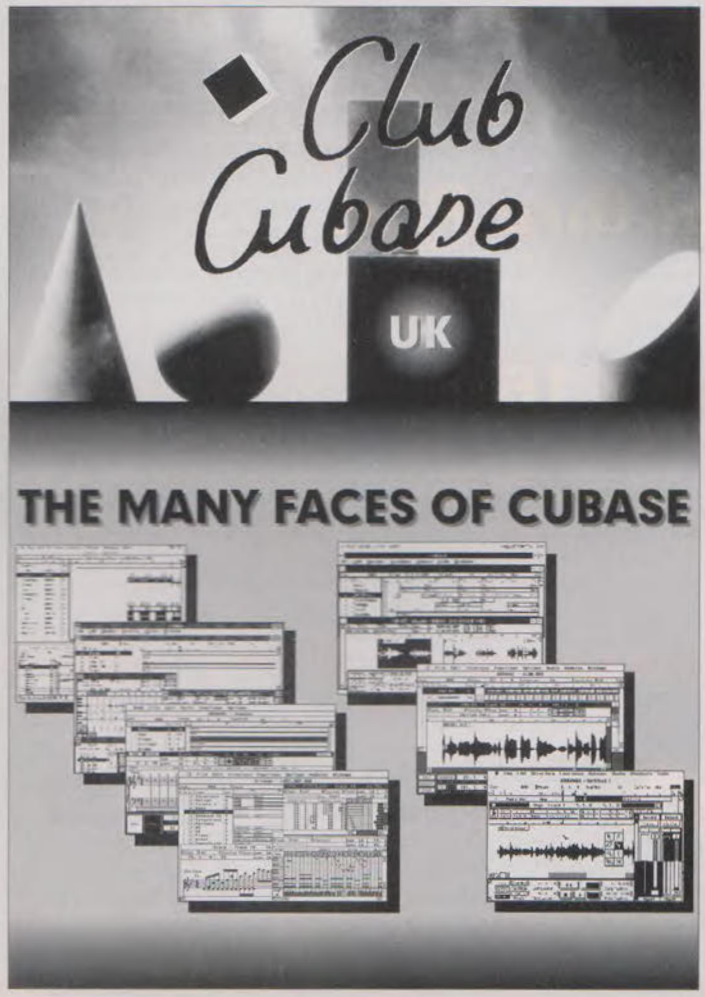
A bi-monthly magazine for members covers advance product information and basic, advanced and technical articles on all aspects of Cubase across all three computer platforms.

There is even a technical answers section which has been written by Naji Simaan from Harman Audio, the official UK distributor of Cubase for Steinberg Research. And if all this isn't enough to tempt you into parting with the membership fee straight away, there are also hints and tips, letters, advice and a general forum for all Cubase users.

If you've registered your copy of Cubase with Harman Audio, you will automatically receive the four-page glossy brochure (the front page of which is shown below), detailing all of the benefits of being a Club Cubase UK member.

"This is the first time that anyone has launched an official club for Cubase users," says Vic Lennard, "and we intend to offer members the kind of benefits which will more than justify the cost of their annual subscription. How far the club goes depends on the level of membership that it achieves."

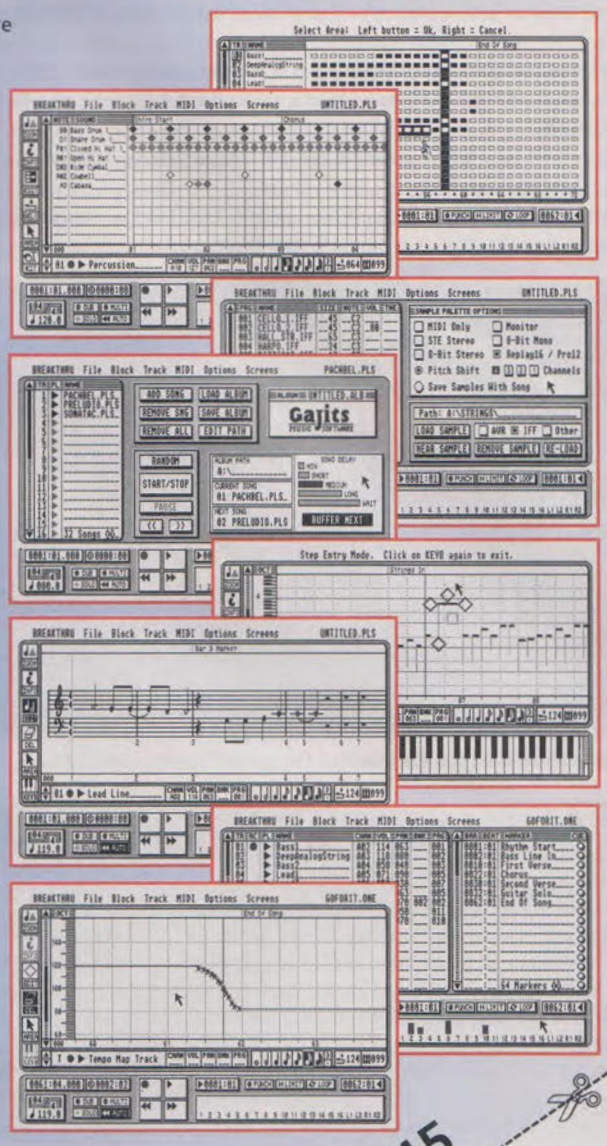
Membership costs just £14 per year. For more information, contact Club Cubase UK on 081 368 2245 or write to 26 Brunswick Park Gardens, New Southgate, London N11 1EJ.



BREAKTHRU

Q What should you expect to pay for a 16-bit sampler, advanced sample editing software, and a powerful 64 track sequencer?

New from Gajits and Audio Visual Research; a low cost 16-bit hardware and software combination for the Atari ST range. It could transform the way you make music...



Breakthru is a 64 track professional quality MIDI sequencer with a difference. At the same time as it plays your MIDI instruments, Breakthru will play back 16-bit samples through a Replay 16 sampler plugged into your Atari computer! (If you don't have Replay 16, Breakthru can play samples through your monitor or TV speaker, through the computers' DMA sound output sockets where available, or through the Microdeal range of 8-bit sample cartridges.)

In fact, Breakthru is a MIDI sequencer, a sample sequencer, or both at the same time! Add to that a host of highly graphical and user friendly editing screens, unique and innovative features like Gajits' Diamond Drag note editing system, and an ease of use which might surprise you if you've not used Gajits' software before, and you'll see why we called it Breakthru!

For Atari ST/STE/MegaST/MegaSTE/TT Computers • Mono and Colour Screen Modes Supported • Minimum 1 Mbyte RAM Required • Up to 4 Sample Channels With Stereo Output Where Supported by Hardware • Sample Output Via AVR Replay 16, Pro Series 12, Microdeal Mono & Stereo 8-Bit Cartridges (eg. Replay & Playback), Atari PSG Sound Chip, or Atari DMA Stereo Sound Chip • Real Time Pitch Shifting of Samples According to Note Value • 16 MIDI Channels (32 with Breakthru Plus) • VU Meter Style Channel Display • 64 Music Tracks Plus a Control Track • High Resolution Real Time Recording From MIDI Instruments (192 PPQN) • Loop Mode, Overdub & Punch-In/Out Recording • Simultaneous Multi-Track Recording • Auto Count-in Facility • MIDI or Audio Metronome • Step Time Recording of Music Over MIDI or Using Mouse Entry • Track & Cue Sheet Screen (64 Tracks/64 Cue Points) • Sample Palette Page (Loads AVR, IFF & Other File Formats) • Step Editor Screen with Diamond Drag Note Editing ("... by far the easiest grid edit system I've seen..." Ian Waugh, Music Technology review of Gajits' Sequencer One Plus) • Insert Program/Volume/Pan/Control Changes Graphically at Any Point • Score Editor Screen for Conventional Music Display • Drum Editor Screen for Easy Drum Programming • Song Arranger Page • Tempo Map Screen for Graphical Display of Tempo Changes • CD Juke Box Screen for Chaining of Separate Songs • Flexible Quantize Options to Improve or Fully Correct Timing • Many Different Types of "Global" Operations (eg. Transpose, Strip) • Sends & Responds to MIDI Clock & Song Pointers (External Sync) • MIDI Filtering & Re-Map Options • Imports & Exports Standard MIDI Files for File Exchange with Other Programs • MIDI System Exclusive (Sys Ex) Handling to Backup Instrument Memory • Undo Last Operation Facility • Keyboard Shortcuts for Many Options • Supplied with a Selection of Pre-recorded Samples & Demo Songs • Telephone Helpline Support Included

Breakthru Plus has all the features of Breakthru, but supports 32 MIDI channels instead of 16. Very handy if you have more than one MIDI instrument! A hardware interface is included with the package to provide an extra MIDI output socket. This simply plugs into the serial port of your computer.

If you are a registered user of Sequencer One Plus, you can obtain a substantial discount off the price of Breakthru or Breakthru Plus (see the order coupon).

Replay 16 from Audio Visual Research and Microdeal represents a giant step forward in sampling technology. It plugs into the cartridge port of your Atari, turning your computer into a 16-bit sampler and sample replay unit. Unlike dedicated samplers, Replay 16 makes use of your computer's built in RAM, so it costs considerably less than its nearest rival. Replay 16 comes with all the sampling and editing software you will need to record samples at rates of up to 48 kHz (higher than CD!). You can record samples direct from a CD player or other sound source and then edit them with the most versatile software you can buy. A phono output socket provides a standard connection to a wide range of sound systems.

"If MIDI and sampling's your thing, this is a must." Clive Parker, ST Format.

A See coupon or call the number below.

Gajits Music Software
I-Mex House,
40 Princess Street,
Manchester.
M1 6DE.

Access VISA AMERICAN EXPRESS

Prices include VAT & UK 1st class postage.
All trademarks acknowledged. Breakthru & Breakthru Plus UK release date 31.10.92.
Despatch normally within 3 working days, but allow up to 28 days. Credit cards are not charged until date of despatch. Products are sold subject to our standard licence agreement. E & OE.

ORDER LINE 061-236 2515

ORDER NOW! Send letter or coupon to Gajits, I-Mex House, 40 Princess St., Manchester M1 6DE.
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PLEASE CHARGE MY CARD NO _____
EXP. DATE _____

FM 3/93

MORE FROM THE WORKSHOP

Good looks is just one feature of the new fax/modem from Atari Workshop.

If you still can't find a mono monitor, Atari Workshop may have the answer. It has added a new mono monitor and also a modem to the range.

Those hard-to-get Atari mono monitors have prompted third party suppliers to produce their own. The new 14-inch mono monitor comes with or without a speaker, priced at £149.95 and £129.95 respectively. Both models support the Overscan ST upgrade which will give up to 752x480 pixels on screen. The normal maximum resolution is 640x400. Overscan is also available at a reduced price of £39.95.

The TKR 2400 is a full featured fax/modem that operates at 2400 baud. The very smart black anodised case gives elegant looks to this entry-level unit.

Recommended retail price is £199.95, but you can buy the TKR 2400 for £159.95 with ST software included.

Atari Workshop are at 17-19 Blackwater Street, East Dulwich, London SE22 8RS, telephone 081 693 1919.

GAMES CHARTS

The surprising leader of the pack this month is Renegade's Fire and Ice, while Streetfighter II has slipped a couple of places. Here's the complete chart...

1	Fire and Ice	Renegade	£25.99
2	F19 Stealth Fighter	Microprose	£30.64
3	Streetfighter II	US Gold	£27.99
4	Jimmy White's Snooker	Virgin	£29.99
5	Populous II	Electronic Arts	£29.99
6	Dizzy's Excellent Adventure	Codemasters	£7.99
7	Microprose Golf	Microprose	£34.99
8	Dungeon Master/Chaos Pack	Psygnosis	£29.99
9	WWF European Rampage	Ocean	£25.99
10	Gods	Mindscape	£25.99
11	CJ's Elephantantics	Codemasters	£7.99
12	A320 Airbus	Thalion	£35.99
13	Smash TV	Ocean	£25.99
14	Lemmings	Psygnosis	£25.99
15	James Pond	GBH	£7.99
16	Little Puff	Codemasters	£7.99
17	F15 Strike Eagle	Microprose	£34.99
18	Deliverance	21st Century	£25.99
19	Fantasy World Dizzy	Codemasters	£7.99
20	Seymour Goes To Hollywood	Codemasters	£7.99

Charts supplied by Silica Systems.

NO MORE OUT OF MEMORY HEADACHES

Remember when you upgraded to one Megabyte of memory? You may even have taken your ST to a massive four Megabytes. Now it is possible to add another eight Megs to your STE or Mega ST/E.

Marpet Developments have announced a new upgrade to give a total of 12Mb RAM. The new board is a solderless upgrade in the majority of STEs and all Mega ST/Es. A small AUTO program addresses the extra memory.

The STE version comes fully populated at less than £400; the unpopulated Mega version is £99.99 and the Mega STE version costs £109.99. Fully populated versions of these two are £349.99. The unit takes one Meg SIMMS.

For more details, contact Marpet Developments at Meadowfield Farm, Fellbeck, Pateley Bridge, HG3 5ET, tel: 0423 712600.

FALCON GETS FIRST PUBLIC SHOWING

The Falcon030 was shown to the public for the first time at the Seventh International Computer Show at Wembley.

A separate area was set up to show off the machine with question and answer sessions held by Atari's Darryl Still and Alistair Bodin. The main question asked was "When can I have one?"

Software developed by Compo and HiSoft for the Falcon were on display including Musicom, a high-quality sound processing program and True Paint, an art package. Hardware from Compo and Atari Workshop includes a PC emulator and an overscan enhancement giving a screen resolution of over 800x600 dpi.

Music and graphics demos were in abundance, including an amusing rolling demo of ***Humans*** from Mirage. Worldwide, there are currently over 150 software projects with many nearing completion.

The latest news from Atari is that the Falcon will be available in the ST case within the next few weeks with the new consumer case reaching us around June. Darryl Still commented, "Anyone wanting to buy Falcon is advised to wait for the consumer casing. The ST case was originally designed as a developer's machine."

THE 7th International COMPUTER SHOW

Incorporating the 16 Bit Computer Show

BEYOND CYBER STUDIO

Now you can take ***Cyber Studio*** a stage further with a new range of 3D animation programs.

16/32 Systems have secured the distribution rights to the Lexicor Software programs including ***Chronos 3D***, ***Prism Paint***, ***Prism Render 24***, ***Cyber Sculpt***, ***Chronos Lite***, ***Xenomorf***, ***Cyber Colour*** and ***Genesis***.

Each program is individually priced, or alternatively you can buy ***Chronos 3D***, ***Prism Paint***, ***Render 24*** and ***Cyber Sculpt*** as a package called ***Phase 4*** for £280.

For more details, contact 16/32 Systems, 173 High Street, Strood, Kent ME2 4TH, Tel: 0634 710788.

Over 140,000 people have joined Special Reserve - the Games Club with no obligation to buy.

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KICK OFF 2 8.99

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Make video sequences, improve your art work and just have fun with the games on the cover disk this month...

ON DISK T

VIDEO TITLER

PC1QUENCE • EXCLUSIVE UTILITY BY DAVE MUNSIE • LOW RES ONLY • 0.5 MB (1 MB RECOMMENDED)

Create your own picture sequences with this unique package from the USA

This great package takes ***Degas*** compressed files (with the extension .PC1) and turns them into a video sequence. You can vary the way that each frame changes to the next to create some superb results.

The program runs in low resolution only. Double click on PC1QUENC.PRG and a title screen will appear. Click the left mouse button to get to the main Video Sequence screen. Although the program will run with any memory configuration, the more you have, the more pictures you can load. If you have a 520 ST, you will only be able to load one picture, but you can still create a sequence of up to 100 frames. There are some examples of half Meg sequences on the cover disk. For example, when the tutorial asks you to load SPACE.PCS, look for SPACE512.PRG and you are provided with examples of what you can do. To load, simply click the left mouse button on the right-hand buffer screen. The file selector will appear and you can now choose one of the four pictures that we have placed on the disk for you. Using the right mouse button, drag the picture to one of the empty screens in the sequence area.

The effect that you use can be chosen from the 32 on the right of the screen. Just scroll through these and select the one that you want before moving the picture, then add more pictures and start building up your sequence – you can play it at any stage and save the completed sequence to disk.

We have provided you with four sequences on the disk. Two are for half Meg systems and two for one Meg and above. To see them, simply start the program and click in the LOAD box, open the folder called SEQUENCE.PCS and choose a file. The two half Meg sequences are identified by the 512 in the title.

BUGS UK

BUGS UK • EXCLUSIVE GAME BY DAVE MUNSIE • LOW RES • JOYSTICK • 0.5 MB

Prepare to destroy the environment in this version of the classic Centipede

Spray those bugs before they get you!

You need to be quick to avoid the fleas and spiders.

WHAT TO DO IF YOU HAVE PROBLEMS WITH YOUR COVER DISKS

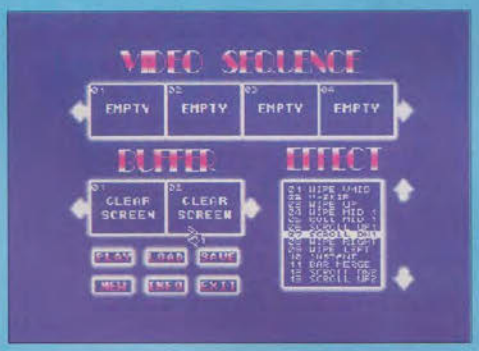
DON'T PANIC!

In the unlikely event that your cover disk won't load or gives you any other problems at all, remove all cartridges and peripherals and try again. Please note that to restart the computer, you must SWITCH IT OFF for at least five to 10 seconds to clear all traces of resident programs before continuing.

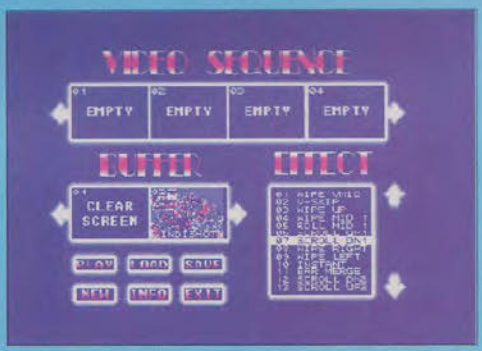
If this doesn't solve your problem, return your disk, with a brief note of the problem and a stamped addressed envelope to **P.C. Wise Ltd., Dowlais Top Business Park, Dowlais, Merthyr Tydfil, Mid Glamorgan, CF48 2YY**. PC Wise will test the disk and send a replacement as soon as possible. You can contact the PC Wise Helpline with any urgent problems. Please note that PC Wise will deal with faulty disks only and not general enquiries. PC Wise can be contacted by telephone on 0685 350505 between 10.30 and 12.30 on weekdays.

STEP BY STEP

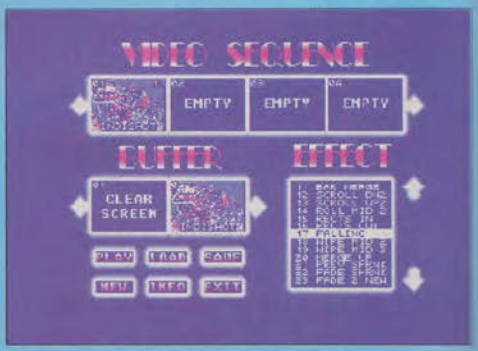
Here's a complete guide to creating a video sequence using the pictures on the disk



1 ***Click on buffer screen number two with the left mouse button and the file selector appears. Open the folder WESTERN.PIC and choose the file INDISHOT.PC1.***



2 ***You now have a representation of the picture in the buffer. If you have a one Meg machine, you can scroll the buffer along with the arrows and add more pictures.***



3 ***Scroll through the 30 effects until you come to FALLING. Use the right mouse button to grab the frame and move it to the first empty frame in the sequence line.***

HIS MONTH

Bugs UK is a version of ***Centipede*** and has all the elements that made it such a classic game. To load, double click on the program file BUGS_UK.TOS from medium or low resolution and the game will present you with a title screen.

Choose your level and start killing the Bugapedes and everything else that is thrown at you using your bug spray. Mushrooms take five hits to clear and, on later levels, the vine leaves take seven. Poisoned mushrooms cannot be destroyed. Try to hit as many bonuses as you can. Some double the points, others offer invincibility, extra lives and even a droid shooter. Kill the ladybirds before they can do any damage, but watch out for the spiders.

KID KONG

KID KONG • EXCLUSIVE GAME BY DAVE MUNSIE • LOW RES • JOYSTICK • 1 MB

Another classic game gets the Dave Munsie treatment

Kid Kong is the definitive ***Donkey Kong***. Many of you will recognise the main character as the Kid from ***Kid GP*** on issue nine's cover disk. His task is to rescue the fair maiden from the evil Kong – he's the one at the top throwing barrels at you. Avoid the barrels and the fire monsters and get to the top of the screen to progress to the second level.

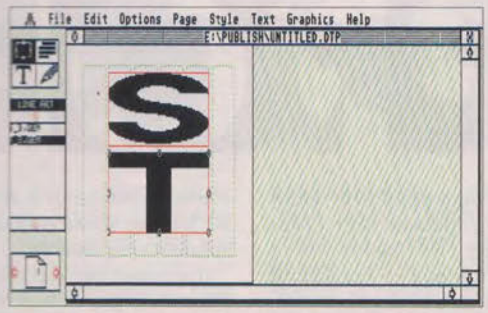
This game requires one Megabyte or more of RAM to run. You must make sure that you have no AUTO folder programs or accessories in memory or you will get a crash or a 'TOS ERROR 008' dialogue box.

Hooray, made it to the top. Now on to level two.

LINE ART FONT

LINE ART FONT • EXCLUSIVE ADD-ON BY K SELBY • FOR USE WITH TIMEWORKS DTP

An alternative large font for use with your Timeworks documents



The result – two new line art letters imported into Timeworks.

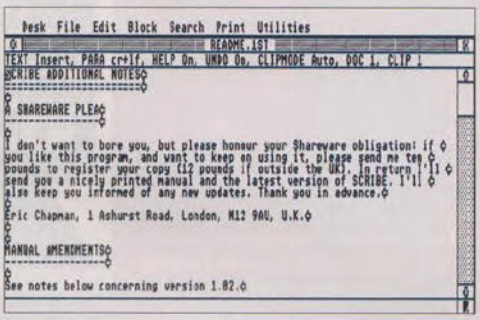
Here is a complete font for you to use when creating your ***Timeworks*** documents. Simply select Import Picture and then choose the EASY DRAW .GEM option for the file type.

The characters are easily identified by the first letter of the file name. Once it is saved in memory, you will be able to resize the letter by simply changing the box size.

SCRIBE

SCRIBE • SHAREWARE UTILITY • ANY RESOLUTION

This text editor is almost a full-blown word processor



Scribe is a fully-functioning text editor that is ideal for preparing text for DTP, creating program source code or modifying auxiliary files like ASSIGN.SYS or DESKTOP.INF.

There is a 56K manual provided on the disk and also full on-line help as you go along. More experienced users can start the program and load the file QUICKST.ART for a rundown of the basic functions.

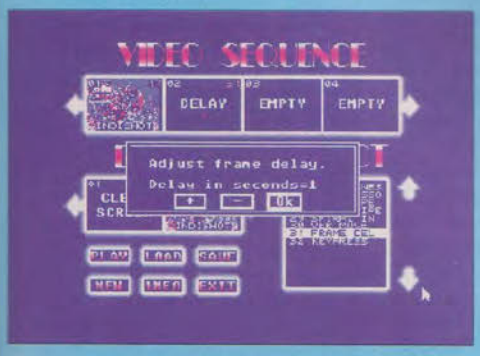
BASIC TUTORIAL

HISOFT BASIC * TUTORIAL * ALL RESOLUTIONS

The HiSoft BASIC tutorial concludes on page 81

Turn to page 81 for the final instalment of the ***HiSoft BASIC*** series. This last piece completes the jigsaw and will now give you all of the necessary files to help you continue your progress. Who knows? Soon you may be having your own programs published.

Thanks to Mike Goodman of Goodmans International for supplying the pictures included on the disk.

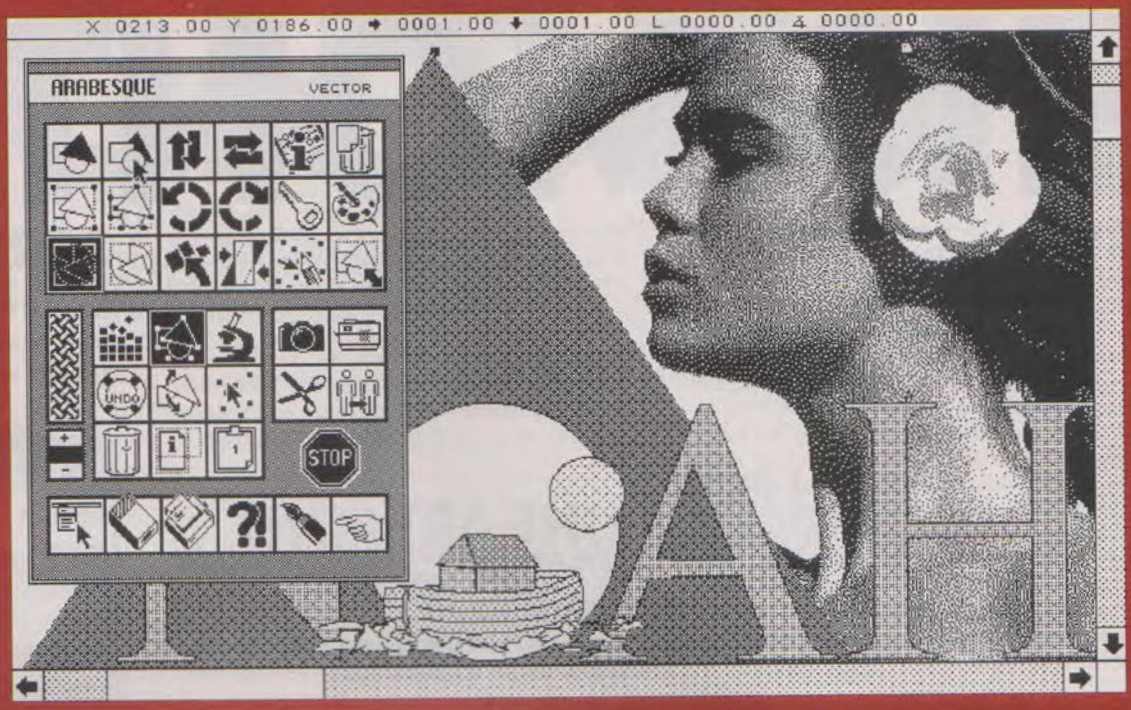


4 ***Select FRAME DEL from the effect menu and drag it to frame 02. Change the effect back to FALLING and drag a clear screen to frame 03.***

5 ***Continue to build up a sequence. Move the buffer screen and repeat the loading procedure, then add a new effect and picture to frame 04.***

6 ***Carry on adding different pictures and effects until you've built up a sequence. When you have finished, click on PLAY and watch your creation.***

Joe Connor investigates a new art package that offers that little bit more



Using special bitmap objects, such as the woman shown here, enables bitmap and vector images to co-exist.

THE PROFESSI

Art packages on the ST have come a long way since ***Degas*** and ***NeoChrome*** and it takes an exceptional package to hold the spotlight for more than a brief moment. A few are remembered for unusual features – ***Flair Paint*** ran as a desktop accessory and ***Quantum Paint*** displayed 4,096 colours on a standard ST. The increasing popularity of desktop publishing spawned a range of mono applications, some bitmap-based, like ***STAD***, ***Megapaint*** and ***Retouche,*** and others for creating vector images such as ***EasyDraw***, ***Didot Line Art*** and ***Avant Vector***. ***Arabesque Professional***, however, performs the neat trick of combining both vector and bitmap modules in a single application.

LATE CROSSING

Arabesque has been around in Germany since 1989 and has finally managed to hop the Channel, thanks to a marketing arrangement between Gribnif Software, a leading North American publisher, and Compo Software in the UK.

Arabesque abandons the GEM interface of windows and drop-down menus in favour of a custom interface consisting entirely of pop-up icon menus. Extensive use is made of both the right and left mouse buttons, although most commands can also be selected using keyboard shortcuts.

The major benefit of this approach is that vector and bitmap modules are made to work in a similar way, so it takes the user less time to get to grips with. Add to that the advantage of being able to combine bitmap and vector graphics on a single screen and ***Arabesque***'s power soon becomes apparent.

The program comes on a single floppy disk which isn't copy-protected. Installation is easy and even allows you to create a working disk. Using on-screen prompts, you can choose whether to install printer drivers, sample fonts and example artwork.

The number and size of the bitmap and vector screens available in ***Arabesque*** can be configured to make best use of available memory. A maximum of 20 bitmap screens and six vector screens are possible.

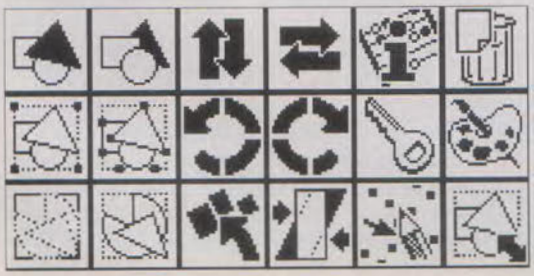
The use of pop-up menus leaves the drawing area free from clutter, and a display of co-ordinates across the top of the screen replaces the GEM menu bar. Both the vector and bitmap pop-up menus are divided into four areas – painting and drawing tools, special functions, block handling and general utilities.

Icons are selected with a single click of the left mouse button and any parameters associated with the icon are accessed by clicking on the same icon with the right mouse button.

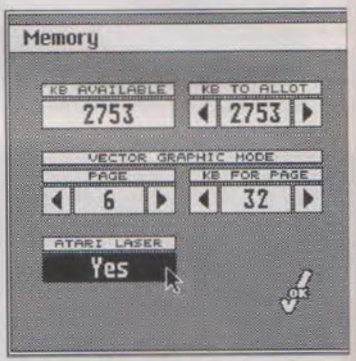
ZOOMING ALONG

All the usual tools are provided, along with some for generating pseudo 3D triangles, parallelograms and polygons. In most packages, a Zoom tool simply provides various levels of magnification to enable pixel editing. In ***Arabesque***, it offers up to x16 magnification, while keeping all the drawing tools available.

Flipping over to vector mode by selecting the vector icon, most of the drawing tools remain the same and function in a similar manner to the bitmap equivalents. The Bezier polygon tool aids construction of complex paths, joining together Bezier curves, straight lines and jump points, and allowing you to draw polygons inside polygons. Bezier polygons remain fully editable by double right mouse clicking on



The vector module block operations.

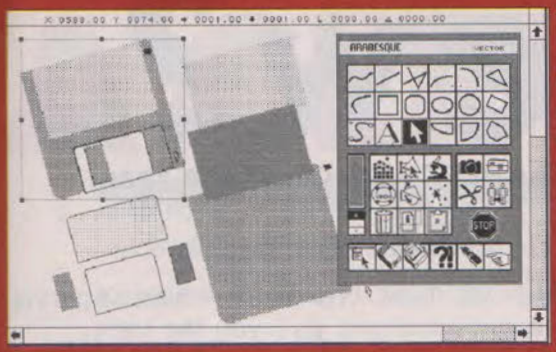


Full control over memory allocation is possible by holding down the Alternate key as Arabesque loads.

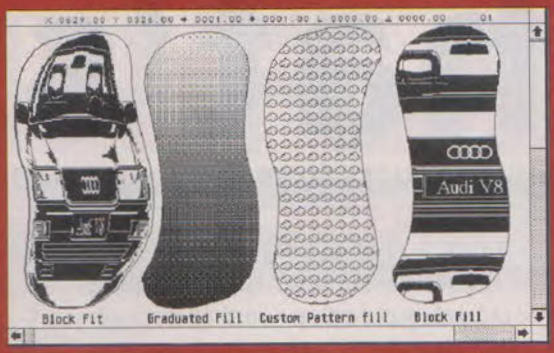
INSIDE INFO

Bitmap images are made up from individual pixels which can be individually placed or removed. Bitmaps are particularly suitable for handling scanned images, using dither patterns, and other special effects which require fine detail.

Vector images are defined in mathematical terms. An outline description of each part of the image is stored in an object list; this is used to calculate the image every time it is drawn to the screen or sent to the printer. Consequently, vector images will always be displayed or printed at the highest resolution available on the output device, giving smoother images without the jagged edges associated with bitmap images.

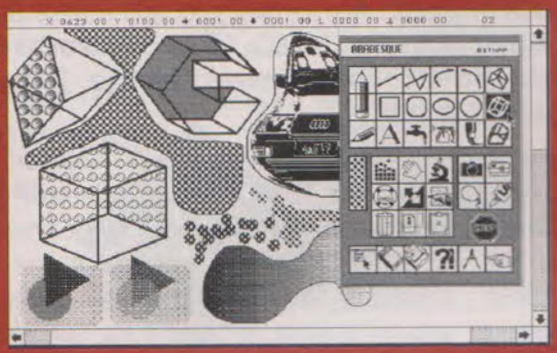


One advantage of vector graphics is the ease with which they can be edited. Here the disk has been dismantled into its constituent parts.



Fills can either be performed with the current pattern or using the contents of the block buffer.

The pseudo-3D bitmap tools provide a method of drawing these commonly used shapes rapidly.



This faded bitmap image has been imported into the vector module and is being manually vectorised by tracing the profile using the powerful Bezier Polygon tool.

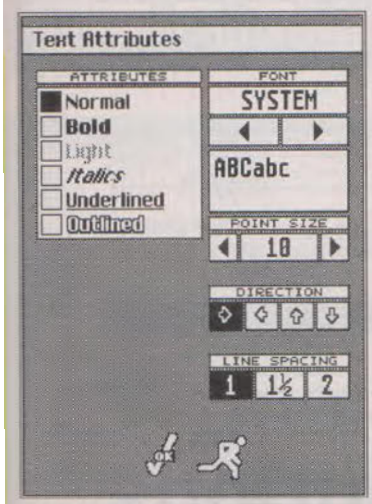
ONAL TOUCH

any point. An extensive range of block options enables objects to be selectively grouped, ungrouped, placed in the foreground or background, mirrored, rotated, rescaled, sheared, protected from further edits and given a new pattern or linestyle.

One of the major advantages of ***Arabesque*** is its ability to exchange and combine vector and bitmap images. A special bitmap object is created to handle bitmaps in vector mode and bitmap images are made available using the bitmap-to-vector icon. Moving over to vector mode and selecting the same icon places the bitmap on the screen; it can then be manipulated, to a limited extent, like any other vector object. The bitmap remains dynamically linked to its alter ego so that any changes made in bitmap mode immediately take effect in the vector copy.

Bitmap objects can be used as a tracing aid for manual vectorisation. ***Convector Professional*** is an external module, available separately, which enables full auto-tracing.

Vector objects can also be converted for use in the bitmap module but, once converted, they become true bitmaps and are not dynamically linked to the vector original.



If GDOS is loaded, as illustrated, the fonts listed in ASSIGN.SYS are automatically loaded, otherwise they can be manually loaded as required.

TEXT HANDLING

Text handling in ***Arabesque*** doesn't currently support vector fonts and instead uses bitmapped fonts in both bitmap and vector modules. Standard GDOS .FNT format fonts can be fully utilised in bitmap mode. In vector mode, fonts can also be fully utilised if the associated printer font is available. Using a separate utility, 'FONTMAKE.PRG', Signum fonts can be converted to GEM format and used with ***Arabesque*** and any GDOS application. ***Arabesque*** does not need GDOS but, if it is loaded, the fonts listed in the GDOS configuration file, ASSIGN.SYS, are automatically loaded.

Nearly every package insists on providing its own file formats but, in contrast to the myriad of other pointless formats washing around the Atari scene, these two are actually useful. The ***Arabesque*** .AOB vector format can store combined vector and bitmap images and the .ABM bit image format is capable of better compression than any other format.

Most popular bitmap formats can be loaded and Degas, .IMG, STAD and .IFF formats can also be exported. Vector image files can be loaded and exported in either Calamus .CVG or GEM/3 Metafile format. Imported colour files can be either dithered or converted to grey scales.

Arabesque comes with a 174-page, ring-bound manual, with a useful, quick tour around the main functions and a logical run through each icon command.

COMING UP TO DATE

Arabesque is the ideal upgrade from an outdated bitmap or vector package: both modules offer a range of features similar to the best dedicated packages.

Learning the icons would probably be quicker with an on-screen help line or dialogue, but most of the functions are self-explanatory and don't take long to master.

Output from ***Arabesque*** using an Atari Laser is excellent and most popular printers are supported. ***Arabesque*** is rock solid, even with a variety of hardware add-ons and software utilities.

Consistent user interface
Excellent output
Bitmap objects

PROS AND CONS

Quirky font handling
No on-line help

"A mature, full-featured, enjoyable application – two for the price of one"

NAME: ARABESQUE PROFESSIONAL
COMPANY: COMPO SOFTWARE LTD
CONTACT: 0480 891819

PRICE: £129.00
RELEASE DATE: OUT NOW
MIN MEMORY: 1 MB

EASE OF USE	★★★★★
DOCUMENTATION	★★★★★
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OVERALL 92%

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A CERTAIN FLAIR

HiSoft's new document processor – Jack of all trades, or the latest in multi-tasking wizardry? Ofir Gal investigates. .

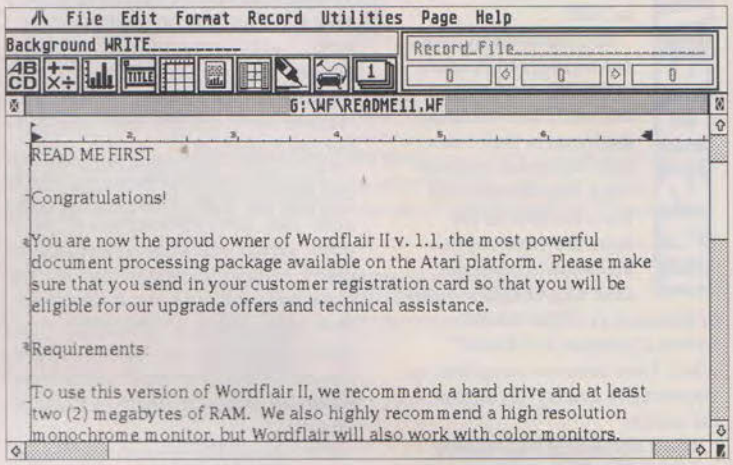
Wordflair is a unique program in the ST world - it tries to provide solutions to all the needs of the small business with one package. The concept is not a new one – PC users have had it with ***Lotus 1-2-3*** for a long time – but on the ST, the lack of such a program was probably one of the reasons the ST failed to establish itself as a 'business' computer.

Wordflair is a document processor with a built-in spreadsheet, database, mail-merge and graph generator which aims to fill this obvious gap.

INSTALLATION

Wordflair 2 comes with a manual, three program installation disks and three FSM and FontGDOS installation disks. Installing ***Wordflair*** is simply a case of copying the contents of the three program disks onto your hard disk. You can also run it from a floppy-based system, but this is not really recommended.

This may be unusual for an ST package, but it is pretty standard practice on the PC and Macintosh, and in future more ST programs are likely to require a hard disk for full functionality. FSMGDOS installation is made easy thanks to the install program supplied by Atari, which simply takes you through a sequence of dialogue boxes from which you can select the fonts, drive, printer driver, whether to install bit-mapped fonts as well as scalable fonts and other options. A user's guide to FSMGDOS is included in the manual and a help file can be found on the disk.



The main window. Wordflair enables you to access its main features quickly via the icons at the top of the screen.

Wordflair enables quick access to its main functions by displaying 10 icons at the top of the main window in addition to the standard menu items. This is a very handy feature when mastering the program but, once you are familiar with it, there is no option of removing the icons to give your document more space.

DOCUMENT PREPARATION

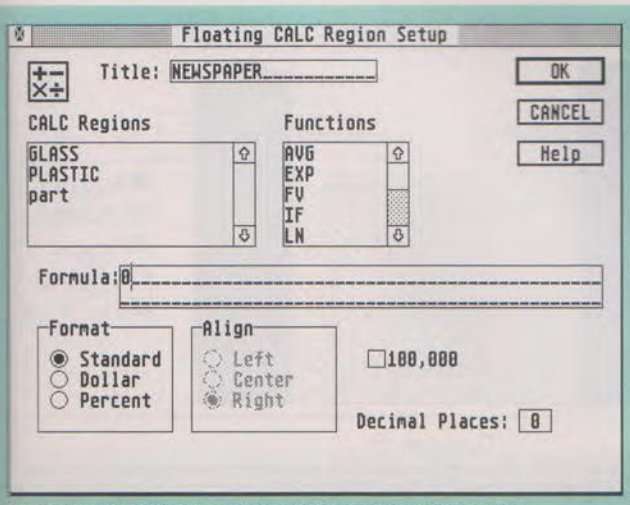
When preparing a document in ***Wordflair*** you have a choice of two approaches. If all you want is to produce a simple letter without any graphics, you can simply use the default background write region. If, however, you need to produce a more complex document, the package enables you to create an unlimited number of regions. Each can be one of three types: write regions can hold text; graph regions can display imported graphics or generate pie-charts and graphs: calc regions are designed to perform calculations with a wide variety of pre-defined mathematical functions.

Regions can be moved freely, copied and re-sized and can be set so they are fixed or floating, which means that they can be 'pushed' by other regions.

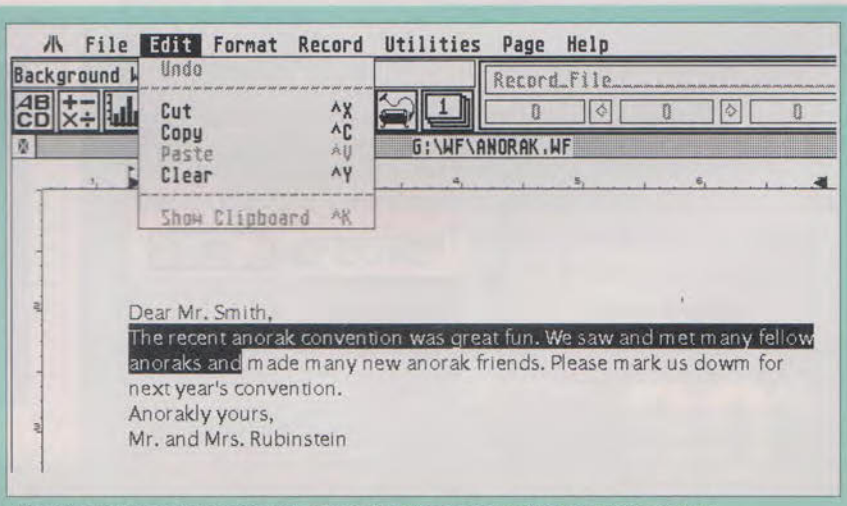
WORD PROCESSING

The main page in ***Wordflair*** displays the menu bar, icons and background write region. To write a standard document, you simply type directly into the background write region. Most standard word processing features are available, including cut, copy and paste, spell checking and a thesaurus. ***Wordflair*** can also import and export ASCII files. The horizontal ruler enables you to set indents and tabs, while the vertical ruler serves as a guide when designing the document. There is also a find and replace facility. As with all good document processors, it is possible to select text for further editing by clicking and dragging the mouse over the text.

Below: click on an icon to create a new region, draw with the pen, delete regions with the vacuum cleaner, preview a page or call up the help window.



The spreadsheet features of Wordflair are simple but useful.



The clipboard can be used to cut, copy and paste sections of text or whole regions.

INSIDE INFO

HiSoft was established way back in 1979 and has been developing and distributing software for both the ST and TT since the first ST was released in 1985.

Its programming tools are considered by many in the UK – and around the world too – as being the finest in their class. With reputable programmers Alex Kiernan and Dave Nutkins on the team the company has managed to come up with some excellent programs such as *HiSoft BASIC*, *Lattice C*, *Devpac* and *MonST* which have become recognised as standards to aim for throughout the world.

HiSoft distributes high-quality software like *Diamond Back* and *Diamond Edge*, *Knife ST*, *XBoot* and *Superbase Professional* and the company maintains a policy of high standards and quality control. The company's owner, David Link, defines a good piece of software as a program that has a friendly user interface and good documentation. First and foremost, he looks for extensive features and flexibility in a program, rather than a single-job utility.

The technical support offered by the company ranges from a telephone help-line to its own conference on CIX. HiSoft is busy developing new products for the Falcon as well as updating the existing range for Falcon and MultiTOS compatibility.

Goldleaf is based in America and headed by Lauren Sellers. The company started as a desktop publishing consultancy service and gradually broadened its activities into the software scene. While it remains committed to the ST, Goldleaf is also the author of similar packages for the NeXT range of computers.

ALTERED IMAGES

You can change the appearance of selected text through the character menu item. This presents you with a dialogue box from which you can select the font, point size and style attributes such as italic, bold, and underlined. If you choose to run FSMGDOS, there is no limit on font size: if a size you require isn't on the list, you can simply type it in.

The main drawback of using FSMGDOS is its speed. FSM creates the font characters in real time. When you start a new document, every character has to be built and this can be a bit slow. However, once a character has been used, it is automatically placed in the character cache and ***Wordflair*** will not need to build it again.

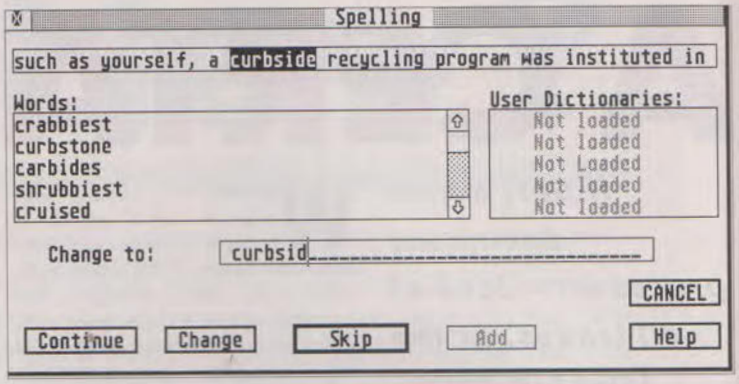
It is possible to create additional write regions by clicking on the appropriate icon. This enables you to use different ruler and text alignment settings. While ***Wordflair*** allows you to set line spacing, there is no provision for additional paragraph spacing.

Some features that are lacking are the ability to put a character into upper- or lower-case automatically and, although you can access the extended character set by holding down the Alt and Ctrl keys, a character set map of some description would certainly have been handy.

GRAPHICS

Wordflair sports a wide variety of graphics facilities. Graphics are always held in a graph region which is created by clicking the graph icon.

A graph region may contain an imported graphics file which can be moved and re-sized as necessary. Unfortunately, only IMGs and GEM metafiles are supported, but there are plenty of PD programs that enable you to convert any other file format to IMG. A useful option is preserve aspect ratio which does just that.



Like every decent word processor, Wordflair has a spell checking dictionary. Additional dictionaries can be defined by the user using the Add button.

Unlike any other ST document processors, the use of the graph region does not stop here. ***Wordflair*** can generate graphs and pie-charts based on user input. Additionally, a graph may be linked to several calc regions to display their contents graphically. You can also enter labels into the graph and, again, you can choose font and character size from the character menu.

The pen icon invokes a pen-like tool which can be used to draw freely onto the document. You are given the choice of straight lines or arrows in varying thicknesses. Anything you draw with the pen is printed utilising your printer's maximum resolution.

CALCULATIONS

The calc region is created by clicking on the calc icon at the top of the screen. Like other regions, you can freely position it on the page, and it's an ideal tool for creating invoices, order forms and other documents which require mathematical calculations. It works by entering values or item names into the formula editor; ***Wordflair*** then calculates the result and outputs it to the calc region. As with other regions, you can select a font and character size from the menu. A user-defined formula may include the standard arithmetic operations (+,-,*,/) and you may also select one or more of the pre-defined functions available. Output text can be formatted for currency purposes, but only the dollar symbol is supported – no UK pound!

Among the available functions are average calculations, investment and loan interest, rounding of figures and standard variance. A calc region may be linked to a graph region, enabling you to generate graphs from the calculation results automatically.

MORE CHOICES

Most word processors and DTP packages opt for one of two options when handling regions. A region is either fixed in its position and text flows around it or, as is the case with ***Calligrapher***, the region is pushed by the text.

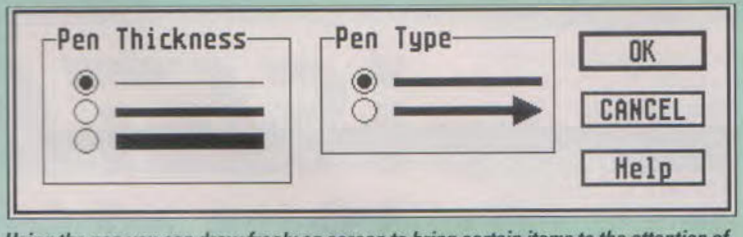
With ***Wordflair*** you have the choice of both options and you can float and unfloat a region at any time. Graph regions are always fixed, but can be moved manually if needed.

PREVIEW

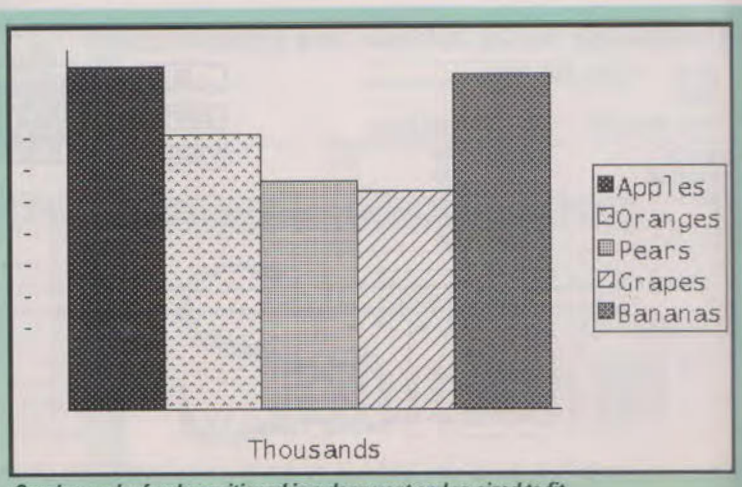
The preview mode is very fast and lets you judge the arrangement and look of your document prior to printing. There is a grid option to help you position the different regions as well as a snap-to-grid facility. You may also place a region within another region as long as their edges do not overlap.

SPEEDO

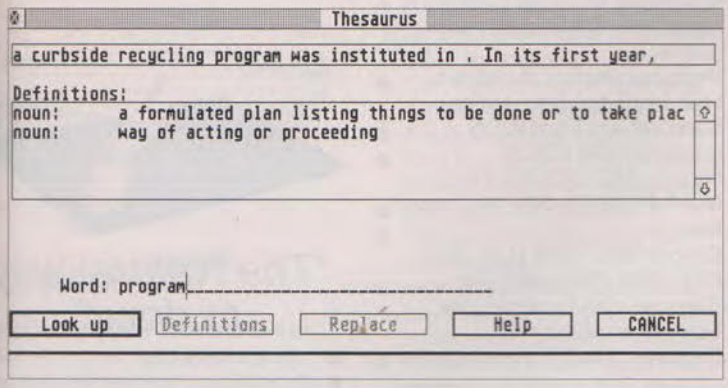
FSMGDOS is rather disappointing; it is slow and requires too much memory for what it does. It's no surprise that Atari has now dropped it in favour of ***Speedo***, which will be released shortly. This is much faster, more compatible and is not memory hungry, and when it is finally released should make ***Wordflair*** and other GDOS programs like ***Timeworks Publisher*** more attractive. Currently at test stage, ***Speedo*** sounds promising. Let's just hope we don't have to wait too long...

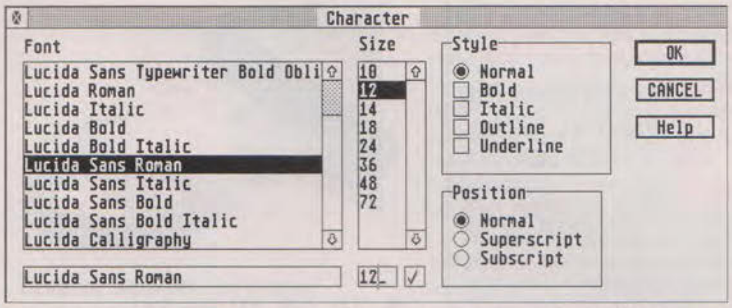


Using the pen you can draw freely on screen to bring certain items to the attention of the reader. You have a choice of straight lines or arrows with three degrees of thickness.



Graphs can be freely positioned in a document and re-sized to fit.





Wordflair can display and print using GDOS bit-mapped fonts or FSMGDOS scalable fonts. The character window is where you select the font, point size and text attribute. When using FSM, any font size can be created by typing in the new size.

On-line help is accessed via the help icon and is displayed in a scrollable window.

The thesaurus is a handy facility that helps you refine your document to perfection.

THE MANUAL

The manual is divided into three main sections. The first of these is a quick introduction to the package, the icons and the concept of regions. The second part is a three-stage tutorial which takes you from the very basics to setting up calc and graph regions and linking regions, while the third is a function reference, covering each menu item and function with a detailed explanation. The manual also includes three appendices covering keyboard shortcuts, templates and the FSMGDOS manual. An index is also provided.

IN USE

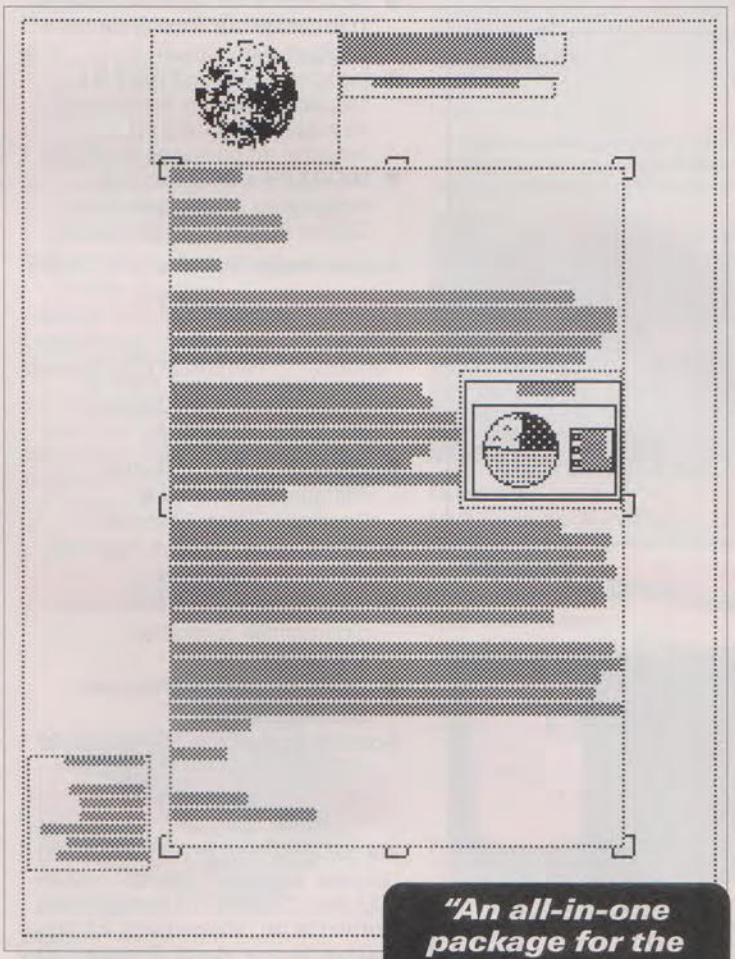
Wordflair is bundled with features which extend beyond the standard document processor. It aims to be an all-purpose tool for the home or small business and, in most respects, it does what it sets out to do. Its main problem is ***FSMGDOS*** which is very slow and requires too large a chunk of your computer's memory. ***Wordflair*** can work with ***FontGDOS***, which is included in the package, and performance is greatly improved with it. The drawback is that you lose the scalable fonts and you are restricted, yet again, to those fixed size GDOS fonts.

Wordflair is rather slow to scroll and update the screen and this may also be attributed to ***FSMGDOS***. It is not compatible with ***Warp 9*** or ***Quick ST***, but it works fine with ***NVDI***, ***Overscan*** and large monitors. It is not compatible with NVDIGDOS which is a shame, because this would give it the extra speed it needs. Owners of TOS 1.0 are urged in the manual to upgrade and there are likely to be problems with TOS 1.2 as well. Wordflair is not compatible with many desk accessories and AUTO programs but it is not clear where the fault for this lies.

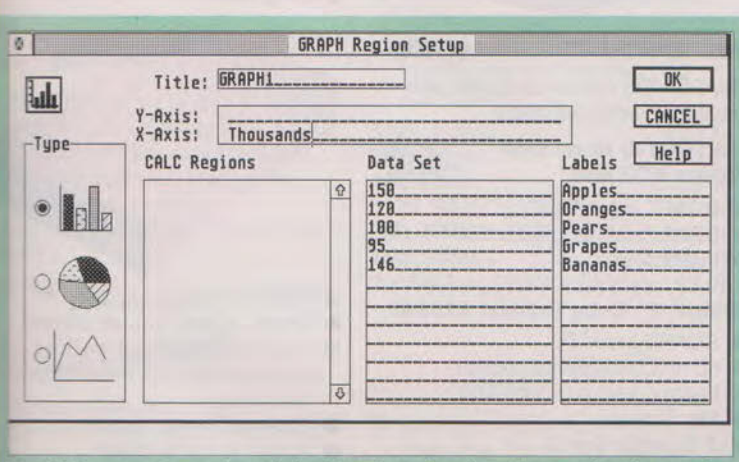
The record files provide a basic database facility which can be used in conjunction with both the calc regions and the mail-merge facility.

PRINTING

Surprisingly, printing with ***Wordflair*** is speedy in contrast to its slow screen display. The print quality is excellent and rivals, if not surpasses, that of ***Calligrapher*** or ***Calamus***. You are, however, limited to the set of FSM fonts that is provided. Print time with a Mega STE and a DeskJet is under two minutes for a one-page document containing several fonts and graphics. ***FSMGDOS*** does not handle large documents too well and the more pages you print, the longer it takes to print a page. Memory also becomes a problem with large documents and even two Megabytes are not enough.



The page preview mode lets you have a glimpse of the whole document, even if you don't have a large monitor.



Wordflair can create graphs and pie-charts based on direct input or data from a calc region. Data can be edited at any time and reflected in the resulting graph.

Cost-effective
Includes a basic graph generator, spreadsheet and database

PROS AND CONS

A little flaky in use
Slow display
Choice of fonts to use is limited

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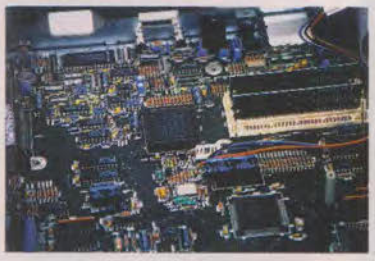

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SCREEN

Old they may be, but early 80s classics are the place to be for playability. Nial Grimes dusts off his disk box and steps back in time with five games that shaped the 80s

Look back at the graphics and sound of an early-80s coin-op and you'll find it hard to contain your laughter. Monotone sound effects and colour created with stick-on film were all too common and, with 10 plays costing almost a week's pocket money, the thrills didn't come cheap! So what was the attraction of games like ***Asteroids***, ***Defender*** and ***Pacman***? Why did we shovel them full of two-bob bits?

The answer is, quite simply, playability by the bucket load. With no custom hardware or flash graphics to grab attention, games had to be playable enough to attract players and addictive enough to make people come back for more, time and time again. Of course, today it's all too easy to dismiss classic concepts as old hat but, when you think about it, how many of even the latest releases are original? Well over half of modern games are just tastefully repackaged versions of concepts developed over a decade ago – and very often the originals were better! Take a quick look at the number of shoot-'em-ups, scrolling racers and cutesy collection games doing the rounds if you need any more convincing!

Progress means that we no longer have to suffer the suspect graphics of the original arcade efforts – powerful machines like the ST are quite capable of handling detailed screens and blistering gameplay without even breaking into a sweat! Some of the modern re-writes even use this power to combine several winning ideas into a single game: ***Cybernetix***, for example, takes elements from ***Invaders***, ***Defender*** and ***Asteroids*** and moulds them into a super-smooth game with playability equal to any coin-op! And for the old traditionalists amongst us, there are always plenty of pixel-perfect copies to keep you hooked into the small hours.

With most of the titles mentioned available as PD or on budget, there's never been a better time for an 80s arcade revival. So why not drop those prejudices for a few minutes, stick on a Duran Duran LP and join ***ST Review*** in a trip down memory lane?...

Asteroids fans should look no further than Megaroids – it's cheap, cheerful and just as addictive as the original.

ASTEROIDS

BLASTEROIDS

US Gold (Kixx) • £7.99 • Memory: 0.5MB • Tel: 021 6253311

Asteroids holds the dubious honour of being the very first arcade conversion. Although the coin-op was doing the rounds as early as 1979, most people will remember playing the Atari VCS version, popular in the early 80s. It was also unique in featuring (very basic) vector graphics.

Exactly the same concept rears its head in Tengen's ***Blasteroids*** – yet another attempt to improve on an original arcade concept by beefing up the graphics and adding a few power-ups. Does it work?

Well, kind of – but it isn't easy. This is at least partly due to the huge number of aliens and asteroids that need to be dealt with. Of course, the original game was no walkover, but at least you didn't have any technicolour backdrops to blame when you got mashed for the hundredth time in a row!

The controls are more or less faithful to the original, with 'forward' switching the thruster on, and 'left' and 'right' rotating the craft. You are now given a choice of three different ships with varying levels of defence and speed. These can be changed at will during the game by wrenching the joystick backwards and are named Speeder, Fighter and Warrior (and you wondered where the Gladiators got their names eh?). The red asteroids leave power crystals in their wake, and these restore your ever-plummeting energy – constant messages are displayed on screen to aid your progress. Clearing a sector of all nasties will open a portal to the next level, or 'warp'.

Blasteroids is fun for a few tries and the backdrops look delicious, but somehow the simplicity of the ***Asteroids*** concept has been lost in the conversion process. If every piece of software you buy must feature state-of-the-art graphics, then give ***Blasteroids*** a try; otherwise go for ***Megaroids*** – it's tons cheaper and just as much fun to play in the long run.

Authenticity: ✪✪✪✪
Overall: ✪✪✪

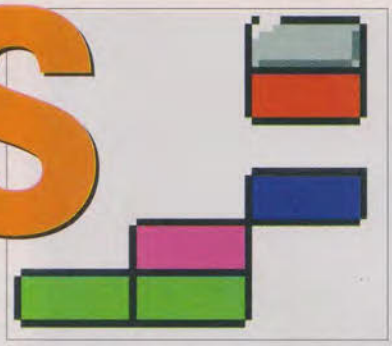
As pretty as it looks, Blasteroids' stylish backdrops and huge number of nasties spoil the sheer simplicity of the Asteroids concept.

MEGAROIDS

Solent Software • 53 Rufus Gardens, Totton, Hants, S04 3TSA • Disk No: GAME.22 • £2.00 • Memory: 0.5MB • Public Domain

As far as authentic conversions go, ***Megaroids*** is one of the very best. It soups up ***Asteroids***' basic graphics, but

GEMS



leaves the gameplay totally intact. A GEM menu heads up the program and, from here, the number of games can be adjusted as well as clearing the high scores and so on. The game is happy to run in ST medium and high resolutions and looks equally good in each.

As a bit of a pensioner of the public domain world, ***Megaroids*** doesn't support a joystick and all control is via the keyboard.

This is no bad thing, and once you slip back into the Z and X keys used for left and right, it's a lot more precise. The medium resolution game is the slower, and more playable, of the two – things are just a bit too hectic in high res.

The gameplay is identical to the 1976 original, with only the colour-shaded asteroids giving the game away. Sound effects are practically non-existent – apart from a weedy shot noise as you fire the cannon – but what's new (Jeff Minter productions excepted!)? ***Asteroids*** may not have been as engrossing as the likes of ***Pacman*** or ***Defender***, but if you're looking for a good version, look no further than ***Megaroids*** – it's fast, smooth and thoroughly addictive.

Authenticity: ✪✪✪✪✪
Overall: ✪✪✪✪

BREAKOUT
ARKANOID

Ocean • £7.99 • Memory: 0.5MB • Not STE • Tel: 061 8343939

ATARI ST BUDGET BUY

Breakout was one of the very earliest arcade games. It was yet another mid-70s Atari production and was developed by Steve Jobs and Steve Wosniak, before they left to set up Apple Computer! The coin-op was distinctive in using a wheel as opposed to the standard joystick.

Arkanoid takes the glittering prize of being one of the few sequels to improve on the original concept. The basic aim of the game remains the same – use your bat and ball to break through the bricks – but the addition of power-ups and aliens was inspirational. ***Arkanoid*** takes an idea that was showing its age and places it once again at the top of the pile.

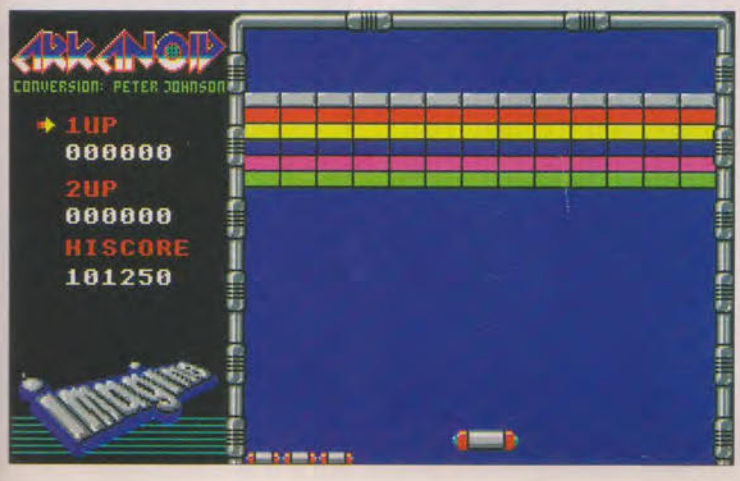
Power-ups include the laser cannon which lets you shoot your way through the blocks, slow-down which reduces the speed of the ball, and other pods which vary the size of the bat. Negative effects also fall from the sky and need to be avoided at all costs – a bat measuring less than one centimetre across is practically useless. It's a fast game of reflexes – sneaking across the play area to pick up that essential power-up could spell disaster as the ball goes hurtling past on the other side of the screen. And all this is before the aliens appear and start deflecting the ball at unpredictable angles.

Control is via the ST's mouse, which makes a more than adequate 'wheel' substitute and is very responsive. The graphics are superb and the sound effects above average, although certainly not world-class.

Very few sequels can claim to improve on the original, but that's just what ***Arkanoid*** does. It's unbelievably smooth and you really wouldn't be able to distinguish the arcade version from that on your ST's screen. Also worth looking out for is ***Revenge of Doh***, which isn't quite as slick as ***Arkanoid***, but is STE-compatible and well worth a spin.

Authenticity: ✪✪✪✪
Overall: ✪✪✪✪✪

Cute graphics often hide pedestrian playability, but not here – Arkanoid is even more addictive than its 1976 parent!



SUPER BREAKOUT

Floppyshop • PO Box 273, Aberdeen, AB9 8SJ • Disk No: GAM.159M • £2.50 • Memory: 0.5MB • High Resolution Monitor Required • Public Domain

ST owners without a colour monitor lead a sad life don't they? There's not a lot to recommend the old SM124 in the entertainment market – at least, that was until ***Super Breakout*** hit the shelves.

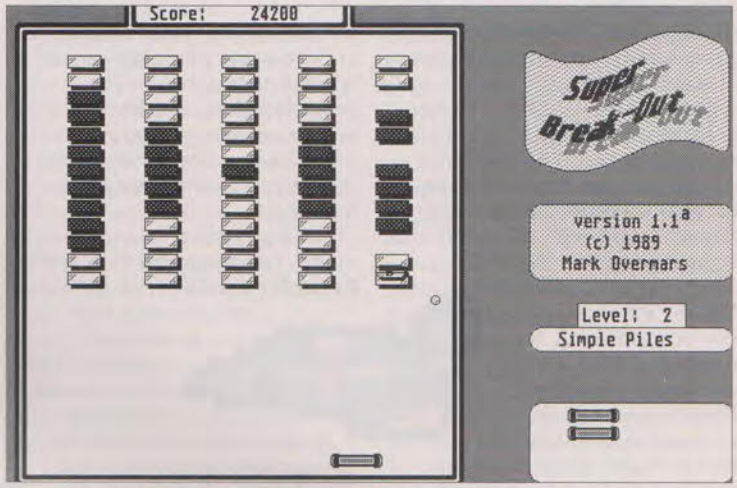
ATARI ST ESSENTIAL BUY

This game is, quite simply, brilliant – the number of power-ups beats even the hallowed ***Arkanoid*** and some of the ideas are truly inspired. Particularly good are the pods that add vertical movement to your bat and another which adds computer control – just sit back and watch your ST complete the level! Yet more thought can be witnessed in the game's ability to save your progress to disk, allowing you to restart the game on the level where you died by typing your name.

In most respects, the graphics are as good as you can expect them to be, given the mono limitation, although improvements could have been made in the aliens department. Sound consists of a few chippy bleeps, but it's unlikely that the SM124's tinny speaker would have done samples any justice. A mouse-driven level editor is also thrown in for good measure, making the game infinitely expandable.

Super Breakout is every bit as playable as ***Arkanoid*** and a good deal cheaper into the bargain! Atari's SM124 was made for this game.

Authenticity: ✪✪✪✪
Overall: ✪✪✪✪✪



If mono graphics don't deter you, try Super Breakout for size. It's infuriatingly addictive and comes complete with its own level editor.

Arkanoid can actually claim to improve on the original, Breakout.

DEFENDER

DEFENDER II

ARC Software • £19.99 • Memory: 0.5MB • Tel: 0753 533344

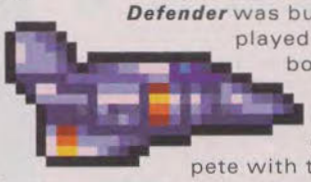
Defender hit the market in 1980 and has probably had more impact on modern games than any other arcade classic – after all, where would we be without the horizontally-scrolling shoot-'em-up? The game was written by the masters themselves, Williams, and is best known in its BBC guise which appeared in the mid-80s.

Defender II is Jeff Minter's homage to the original and, fortunately, the plot has escaped unscathed; simply guide your spaceship over the horizontally-scrolling landscape, blasting everything that moves and protecting the humanoids on the planet surface. It's a lot trickier than it sounds, because some of the nasties even spawn offspring as they're destroyed, making ***Defender II*** as much a game of strategy as it is one of action!

In addition to the standard game, you get two extras – ***Defender***, which is a pixel-perfect copy of the 80s original for die-hard traditionalists, and the no-holds-barred ***Stargate***, which unleashes the true power of your ST, without straying too far from the original concept. In play, all three are an audio-visual treat; from the psychedelic lasers to the explosions of pixels as your ship rams into an enemy craft, this is sheer class. The speed is blistering, with no hint of a slow-down even when the screen is crammed with baddies. Thunderous, arcade-style sampled sound is used throughout. The graphics vary, depending on which version you are playing, but you don't have time to notice them as the pace hots up!

If one criticism has to be made, it's the control system. ***Defender*** was built to be played on a keyboard and wiggling the ST's mouse can't compete with the feeling you get bashing away at a BBC Micro's keyboard. Having said that, once you get used to it, ***Defender II*** plays like a dream. Add a little grease to your monitor, fill the room with stale smoke and you could be there.

Authenticity: ✪✪✪✪✪
Overall: ✪✪✪✪



Decisions, decisions. Which will it be? The alarmingly traditional Defender mode or all-out thermonuclear mayhem in Stargate?

CYBERNETIX

Goodman Enterprises • 16 Conrad Close, Meir Hay Estate, Longton, Stoke-on-Trent, ST3 1SW • Disk No: GD.1645 • £2.75 • Memory: 0.5MB • Shareware

Cybernetix has a strong ***Defender*** theme, but it also contains many of the best elements from ***Asteroids***, ***Space Invaders*** and ***Xenon***. Control is by joystick and the screen is similar to the original, minus the landscape and humanoids (admit it, the game's appeal wasn't in saving them anyway!).

ATARI ST USER ESSENTIAL BUY

You start out with a fairly basic ship, then as more and more attack waves are destroyed, power-ups can be collected for extra artillery and defence. Each level comes with its own complement of asteroids which must be cleared before moving to the next level. But don't hang around too long – an 'assassin', intent on one of your five lives, is only ever a few seconds away. The gameplay is tough, but collision detection is very precise and the levels aren't long enough to become boring.

Jeff Minter's Defender II has been tweaked in all the right places and retains the frantic feel of the original coin-op.

Presentation is superb and some tasty commentary and explosion samples give the game that elusive arcade quality. The graphics are also of a high standard – particularly the light-shaded asteroids – and all move at an arcade speed of 50 frames a second. ***Cybernetix*** may lack a little of ***Defender II***'s authenticity, but it's every bit as playable and impeccably presented. Not only is this a great ***Defender*** variant, it's one of the best shareware games available!

Authenticity: ✪✪✪
Overall: ✪✪✪✪✪

SPACE INVADERS

ST REVIEW INVADERS

ST Review Cover Disk No 11 • £3.95 • Memory: 1MB

Ask anybody to name a classic arcade game and the chances are they will come up with ***Space Invaders***. Could it be the fear-inspiring cabinet, or maybe the colour screen, tastefully created with stick on film, that made it so popular? Who knows? Still, its mass appeal is undoubted. Released in 1978, you can thank – or curse! – ***Space Invaders*** for every single shoot-'em-up ever released!

ST Review Invaders is Dave Munsie's tribute to the game and was yours, completely free, on cover disk number 11.

Graphically, it's very similar to the original, with single-colour aliens and suitably 1980s sound effects from beginning to end. The objective also remains the same – Earth is in danger, you're the only hope, you must destroy the attack waves and save the planet. One major difference is the planet surface which has been given a roller-coaster, hilly appearance. It doesn't seem to serve any particular purpose – save, perhaps, helping you escape that last rogue alien – but at least it spices up the screen.

In play, the action is true to form, with only some trendy sine-distorted attack waves informing you you're in the 1990s. The fast pace, combined with the lack of barriers, makes this a game worthy of even the toughest ***Space Invaders*** freaks! At 50Hz, ***ST Review Invaders*** is good but, if your monitor can

A carefully sculpted landscape and smooth gameplay help make one of the best clones around.

AND THE REST...

A round-up like this only scratches the surface of the huge amount of immensely playable, but often forgotten, classic games that there are available on the market. When you find out just how addictive a good ***Defender*** or ***Pacman*** clone can be, you are going to be left wanting more – the following should certainly be high on your list of priorities.

For ***Defender*** fans, Jeff Minter comes up trumps again with ***Revenge of The Mutant Camels*** – a one- or two-player game, complete

Bugs.

Revenge of The Mutant Camels.

take it, switch up to 60, it improves the game no end! It's a lot smoother and generally more akin to the arcade game we all know and love. And that's about it – the waves get faster, the aliens get meaner and the graphics and sound fade away as you desperately try to make it to the next level.

ST Review Invaders is the best ***Space Invaders*** clone for the ST. Others may look a little more authentic, but the speed, collision detection and fluidity of this version give it a definite edge.

Authenticity: ✪✪✪✪
Overall: ✪✪✪✪

QUEST FOR GALAXIA

Floppyshop • PO Box 273, Aberdeen, AB9 8SJ • Disk No: BU.30 • £2.95 • Memory: 0.5MB • Licenceware

Following the huge success of ***Ace Invaders***, Gary Wheaton went on to write this infinitely better offering. In fact, it's not a clone of ***Space Invaders***, but of a variant known as ***Galaxian***.

The style of play is very reminiscent of the original, complete with a band of marauding aliens and your ship positioned at the bottom of the screen. At regular intervals, the nasties will swoop out of formation towards the surface, bombing you as they go. Plucking off one of these moving targets will net you a higher score – the closer the better!

A scrolling starfield behind the play area, and a well-defined ship, put the game quite high in the presentation stakes and the spectrum analyser on the title screen is a nice touch. It also plays well and the action is very smooth but, unfortunately, sound is limited to a few basic crashing and laser sounds.

Quest for Galaxia is basically a very good game, but with one tiny flaw – it's too easy. If you like soft-touch games, give this one a go, but take a tip and check out ***STR Invaders*** first.

Authenticity: ✪✪✪✪✪
Overall: ✪✪✪✪

Not quite as popular as Invaders, Galaxians was just as addictive. Budgie's version is a little on the easy side, though.

PACMAN
PACMANIA

Grandslam • £19.99 • Memory: 0.5MB • Tel: 071 247 6434

What classic arcade games round-up could possibly be complete without our yellow, pill-popping friend, ***Pacman***? The game was written by Atari in 1981 and is reckoned to be the best-selling coin-op ever. Much of this success must be down to its instant appeal and playability – few games are as easy to pick up or as hard to put down.

Pacmania is a conversion of an arcade game released by Namco in 1987. Our friend's standard, two-dimensional haunt is dumped in favour of an isometric maze and he is also given the power of flight, but only briefly. Still, the gameplay remains true to the 1981 original and is almost as playable.

The graphics have been revamped and enlarged and, as you move, the screen scrolls to reveal more of the 3D maze. This adds a whole new 'unknown' perspective to the game and requires a quite different style of play to the original. Unfortunately, a huge score panel occupies almost half of the screen, which spoils the effect a bit.

As the levels progress, the ghosts become more intelligent, trapping you in corners or protecting the last few pills, and this is where the jump button comes in handy. Time it right and you can hop over the baddies; but watch out – on later levels the ghosts can also spring into the air at will!

Sonically, as with many 80s ST games, ***Pacmania*** is a total let-down. But despite its limitations, ***Pacmania*** is an enjoyable romp and the re-worked concept makes a refreshing change. The half-screen play area detracts from the atmosphere, but not so much as to spoil the game completely. Better than the original? No, but how can you improve on perfection?

Authenticity: ✪✪✪
Overall: ✪✪✪✪

As far as redesigns go, they don't come much more radical than Pacmania. But despite its graphical differences, the gameplay remains unaffected.

MRS. MUNCHIE

Goodman Enterprises • 16 Conrad Close, Meir Hay Estate, Longton, Stoke-on-Trent, ST3 1SW • Disk No: GD.1667 • £2.75 • Memory: 0.5MB • Shareware

ATARI ST ESSENTIAL BUY

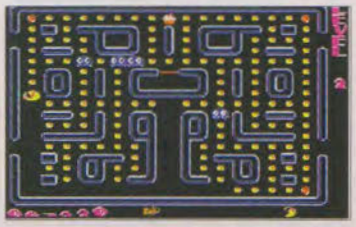
As ***Pacman*** sales rocketed, Atari naturally cashed in with a number of sequels. ***Mrs. Munchie*** takes one of these, ***Ms. Pacman***, as its inspiration and adds quite a few extra tricks of its own.

The pick-up-and-play aspect of the original hasn't been affected by additions, and once you get used to the slightly awkward control system, it's fun all the way! The main changes are in the power-pill department. No longer are they solely used for making the ghosts vulnerable; instead, they can add or remove ghosts, bring lightning bolts from the sky, and generally make your life a misery unless you know which colour has what effect. If all this sounds a bit too hectic, you can always opt for a traditional game by pressing 'O', but only in the registered version.

The graphics are quite authentic, with a couple of nice touches, such as the bouncing score, added for good measure. As for our hero (or should that be heroine?), the only difference appears to be a flower in the hair – well, each to their own! Sound effects consist of some atmospheric, arcadey sound samples.

Pacman fans look no further! ***Mrs. Munchie*** is superbly playable, sounds great, and is true to the original without turning your ST into a Spectrum clone. If you think you can make it through all 200 levels, get it – you won't be disappointed!

Authenticity: ✪✪✪✪
Overall: ✪✪✪✪✪



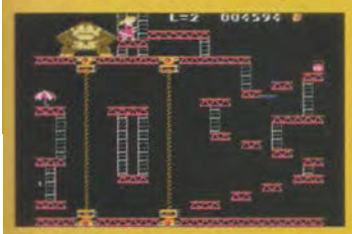
Severed heads, anabolic power-pills and ghosts.

with as many yaks, psychedelic power-ups and bonuses as you can handle in one sitting.

Some games we haven't even touched on here include ***Donkey Kong***, which sees you dashing from platform to platform, rescuing a damsel in distress. You'll find a superb, pixel-perfect version of this game, accurate right down to the characteristic blocky graphics, on this month's cover disk.

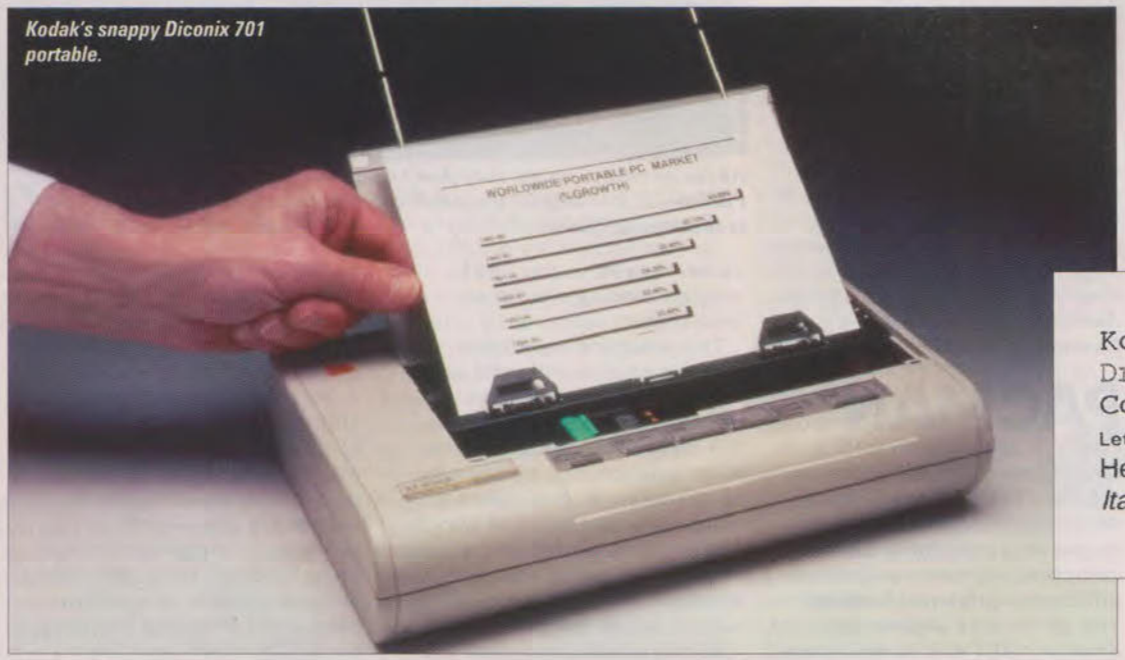
Jeff Minter's ***Llamatron*** captures the atmosphere of the most action-packed outing you will ever find, ***Robotron***. Summer 1981 saw the introduction of ***Centipede*** and you'll find that ***Bugs UK*** – also on this month's cover disk – does a great, if slow, job of capturing the magic of this often overlooked masterpiece.

Atari itself is a proverbial gold-mine when it comes to arcade classics. ***Battle Zone***, the definitive 3D combat game; ***Moon Patrol***, ***Joust***, weird and wacky one- or two-player action; and ***Crystal Castles***, a personal favourite, are all available on Atari's own software label.



Donkey Kong.

KODAK'S PRINTING OPPORTUNITY



Kodak's snappy Diconix 701 portable.

John Mallinson puts the new Diconix 701 portable printer through its paces

```
Kodak Diconix 701
Draft mode abcdefg
Courier abcdefg
Letter Gothic abcdefg
Hevta abcdefg
Italics, bold, underlined
```

The three fonts – suitable for most purposes.

Kodak is best known for little yellow boxes but, rather surprisingly, it was one of the first companies to produce a compact, portable inkjet printer. The most recent model, the 300dpi, thermal inkjet Diconix 701, has been developed with Mannesmann Tally which markets a very similar machine, the MT98/99.

The Diconix is a small, neat printer which measures 2.4 by 11.7 by 7.7 inches and weighs 2.5kg. Power is from an external transformer or from an internal camcorder battery, which should print 100 pages after a four-and-a-half hour charge.

Printer operation is nice and simple. The control panel has an on/off switch, four clearly-labelled buttons and eight indicator lights. Ink cartridges (which incorporate the print head) are very easy to replace; the ink itself isn't waterproof, so will smudge when wet.

You use a printed-out menu system to arrange the usual defaults – page length, character set etc. This is also used for dictating whether the printer should work with HP DeskJet or IBM Proprinter commands. The DeskJet emulation makes it readily compatible with most software.

A rather odd collection of fonts is supplied with this machine: Courier, which prints in 10 and 20 point sizes, Hevta (Helvetica), in 10 point, and Gothic in seven point (for printing spreadsheets). You can use these in draft mode or letter-quality, in landscape as well as portrait orientation, proportionally spaced or mono-spaced. This font selection is fine for a portable, but not for a desktop machine.

Text-printing speed lies between the rather slow Canon BJ10ex and the quick HP DeskJet Portable. In our tests, the printing in graphics mode was pretty snail-like – about 6.5 minutes per page from a DTP program. Print quality was not quite up to the high standard found in the best of the current generation of inkjets – compared to some, the print was less black and character outlines less regular and well-defined.

The 701 is distinguished by having one of the least fussy sheet-feeding arrangements of any printer. You simply lift the lid, flip up a wire paper support, and drop 30 sheets of paper behind the platen (print roller). As they are printed, the pages stack up in front of the paper waiting to be fed in. This is beautiful simplicity compared to the complex mechanisms of the Canon BJ10ex or the HP DeskJet Portable, and it seems to work reliably.

This a very likeable printer – both as a portable and as a compact machine for home use – and it is the smallest printer with sheet feeder built in. But there are two 'buts'. First is the print quality, which is not as good as, say, that of the Canon BJ10ex. Second is the price: the Canon BJ10ex is a lot cheaper, even after buying a sheet feeder. As a portable for printing text, the Diconix can be recommended, but for overall value, it can't compete with other, cheaper inkjets.

"The least fussy sheet-feeding arrangement of any printer"

NAME: KODAK DICONIX 701
COMPANY: KODAK
CONTACT: 0800 243536
PRICE: £399 (EX VAT)

GRAPHICS	○○○○✪
SOUND	○○○○✪
VALUE FOR MONEY	○○○○✪
PLAYABILITY	○○○✪✪
OVERALL	80%

THE OPPOSITION

CITIZEN PN48
Thermal printer with 360dpi resolution, small and very portable, slow, good print quality, about £189.

TOSHIBA EXPRESSWRITER 201
Thermal printer with 180dpi resolution, similar box to Citizen PN48, slow, fair print quality, about £200.

SEIKOSHA LT20
Unusual 360dpi dot matrix printer with built-in sheet feeder, quite big and heavy, fair print quality, about £240.

BROTHER HJ100I, CANON BJ10EX, STAR SJ48
Similar machines (the Canon is the original), 360dpi inkjet, excellent print quality, optional sheet feeder, about £170.

CANON BJ20
Like the BJ10ex but with sheet feeder included, more fonts and better controls, about £245.

HP DESKJET PORTABLE
Quality portable/desktop printer, this is quite fast, but expensive at £425.

MANNESMANN TALLY MT98/99
Similar to the Diconix 701 apart from the case, can be found for rather less (about £269).

L.A.P.D

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'STR03'

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SPEEDY GONZA

Want to increase the speed of your ST? Tony Kaye shows you how to do it without paying a fortune

Sometimes you wish that your ST would move a little faster than it normally does. The clock speed (which governs the machine's performance) is 8MHz, a speed considered fast in 1985 when the fastest PC was 4.77 MHz. But in this age of information technology, a few nanoseconds can be too long for the average user to hang on, especially when waiting for the screen to update while using a DTP package. Everything has to move faster. The ST, barring enhancements and TOS improvements, was not designed to be upgradable. The Blitter chip was introduced to improve screen updates and software like ***NVDI***, ***TurboST*** and ***QuickST*** emerged, but these worked on a specific area of the ST, the screen. Third parties, such as Compo and Frontier, have made a healthy living out of supplying hardware accelerators, memory upgrades, PC emulators, new TOS versions and other system enhancements. To a large degree, these have been limited to business users and well-off enthusiasts because of the cost. Until now, that is.

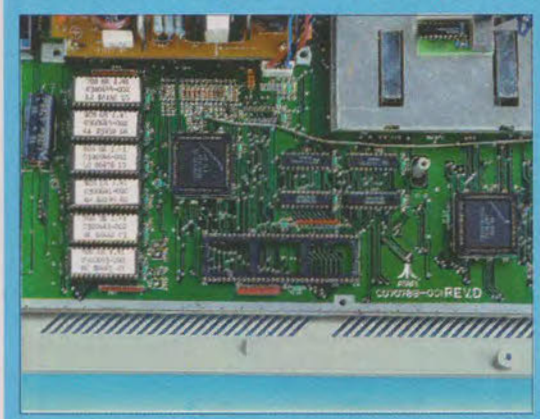
68000 CPU

The upgrade consists of a new CPU (Central Processing Unit) which is the heart of the computer. The new heart 'beats' twice as fast. The rest of the machine is designed to run at the slower speed, so extra circuitry is required. This keeps the internal clock running at the correct speed and stops the rest of the system from getting too confused.

YOUR ST

There are several different motherboards in the STFM. The one used here is an early machine (1987). The most common type is the one featured below.

The first picture shows the socket in place after the main processor chip has been removed. All that remains is to plug the accelerator in place and reassemble the machine.



The 68000 CPU has been removed using the technique shown in the main Step-By-Step guide, and a socket soldered in its place.

The Plus Cache board in place. The board must be set at an angle if it is to fit comfortably under the keyboard.

HOW MUCH FASTER?

The new CPU effectively doubles the speed of the ST. However, because the rest of the system runs at the slower speed, it is not as simple as that. When used with ***NVDI***, screen functions are greatly accelerated. For example, in our machine which has no Blitter chip but does have ***NVDI*** installed, moving text is now 14 times faster than with a standard machine. The difference is noticeable when using ***Timeworks***, for example. Screen re-draws are faster and even disk access times are reduced. The whole system just becomes easier to use.

EXTRA SPEED

Plus Cache is a 16 MHz accelerator board from the Atari Workshop that fits into your ST and increases its speed. Software accelerators like ***NVDI*** work on the screen side of operations, but use them in conjunction with a hardware accelerator and the difference is outstanding. The final product, when installed and running with ***NVDI***, runs at over 14 times the speed of a standard STFM for certain functions. With a Blitter chip, these figures are even more impressive.

AUTO PROGRAM

A small AUTO program called HOTKEY.PRG is supplied. This allows you to switch Plus Cache on or off 'on the fly' using the Alternate key with the '+' or '-' keys. A CPX is included which replaces the General Setup module. This gives you a new panel that shows you which speed the system is running at.

Unlike other products, Plus Cache is within reach price-wise. By buying raw materials competitively, Atari Workshop has been able to reduce the price from the recommended £199 to just £129.99 (excluding fitting).

Fitting the accelerator is a straightforward plug-in fit in the STE, but the main 68000 in the STFM is soldered onto the motherboard, so good soldering skills are a necessity. We recommend that you have the upgrade fitted by a professional unless you are very confident of your own abilities.

We took an STFM to the Atari Workshop and watched the module being fitted. The model being upgraded was an older machine, with the 68000 placed near the disk drive. The majority of STFMs have the processor at the front and are easier to fit, although you do need to angle the new board to keep it out of the way of the keyboard. These are the kinds of problems you could face when you do it yourself.

THANKS

We would like to express our thanks to Karl Brandt at the Atari Workshop for his help in compiling this feature. Atari Workshop offers the Plus Cache upgrade for £129.99 plus fitting (£35), and a full range of upgrades, system enhancements and software for the more serious user of the Atari range of computers. The address is Atari Workshop, 17-19 Blackwater Street, East Dulwich, London, SE22 8RS. Telephone: 081 693 1919.

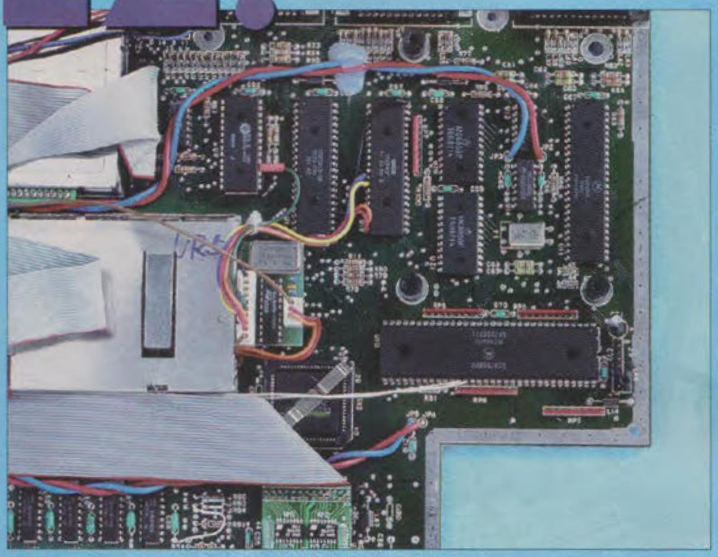
COMPATIBILITY

Plus Cache is fully compatible with all ST software. Because you can switch it on or off, there is nothing that will not run. E-Magic's ***Notator*** package can be tricked, for example, by loading it in 8MHz mode and switching the accelerator on once the program is running, giving you the advantage of the extra speed.

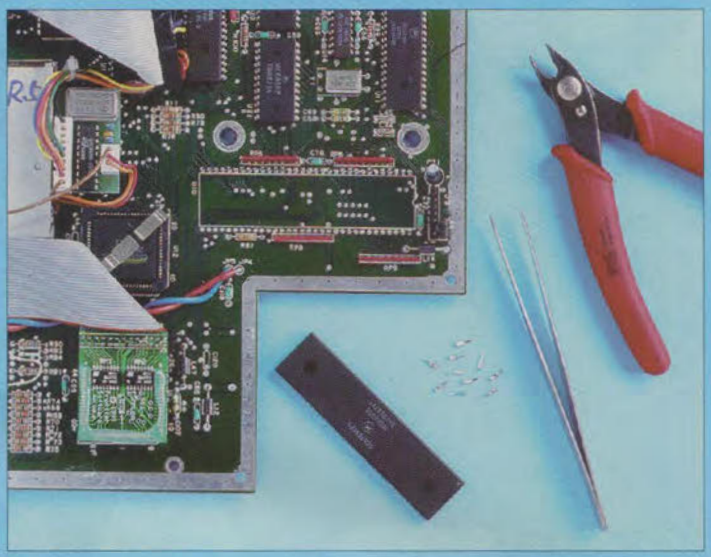
EZ!

Five steps to heaven. The Step-by-Step guide to fitting the Plus Cache.

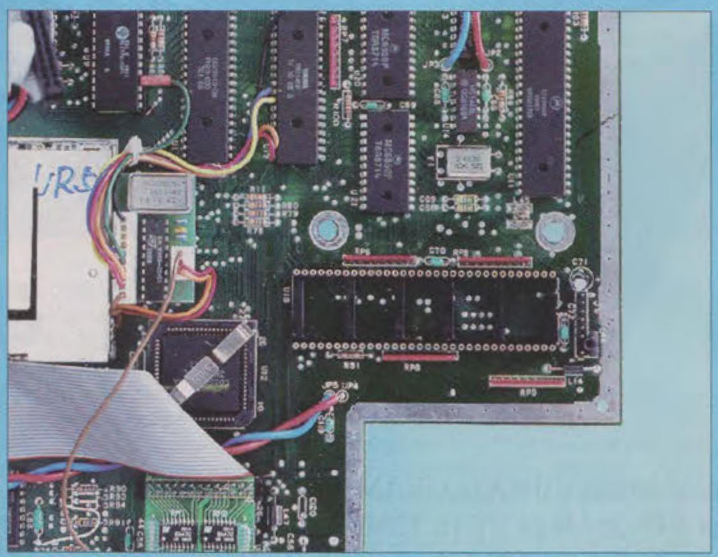
STEP BY STEP



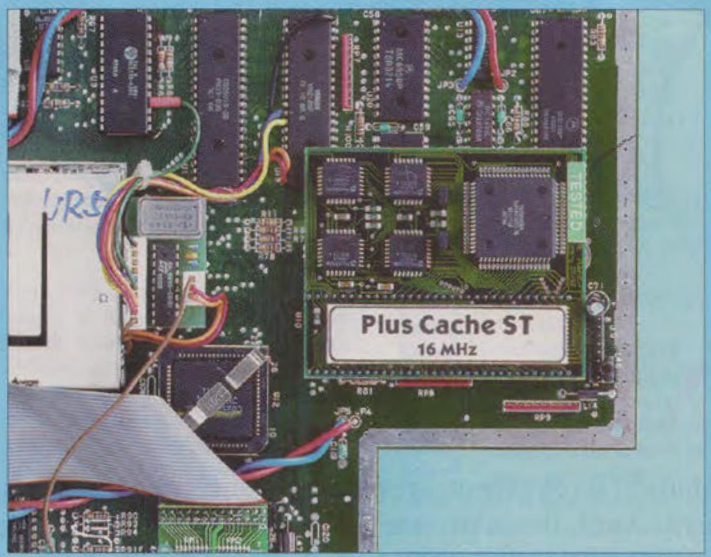
1 ***Locate the 68000 CPU chip, which on this model is on the right of the board near the mouse port and disk drive. The two white leads are from a TOS 2.06 upgrade and will be relocated.***



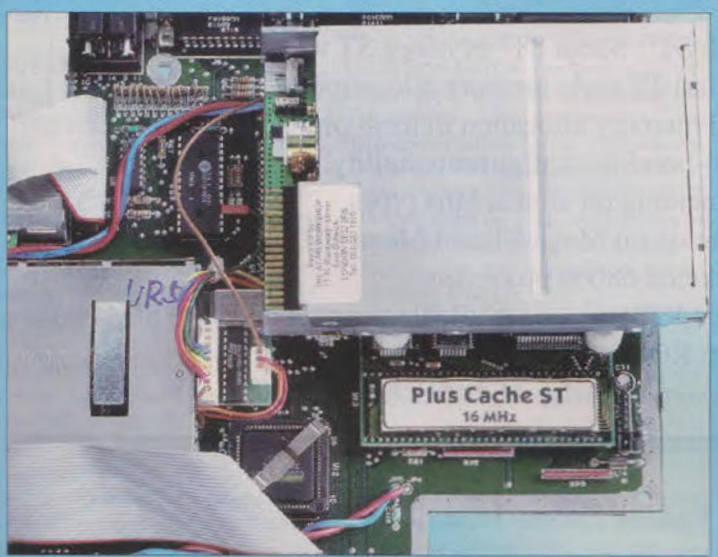
2 ***Using side cutters, cut the legs of the chip and remove it. The pins are now removed using a soldering iron and tweezers. The holes then have to be cleared using a solder sucker.***



3 ***Once the holes are clear, a socket is placed in the position of the chip, ready for the new circuit board. Two of the disk drive support holes will be covered, so new supports will be required.***



4 ***The Plus Cache board is now plugged in to the socket. The tricky part now is to reassemble the computer and find an alternative mount for the disk drive.***



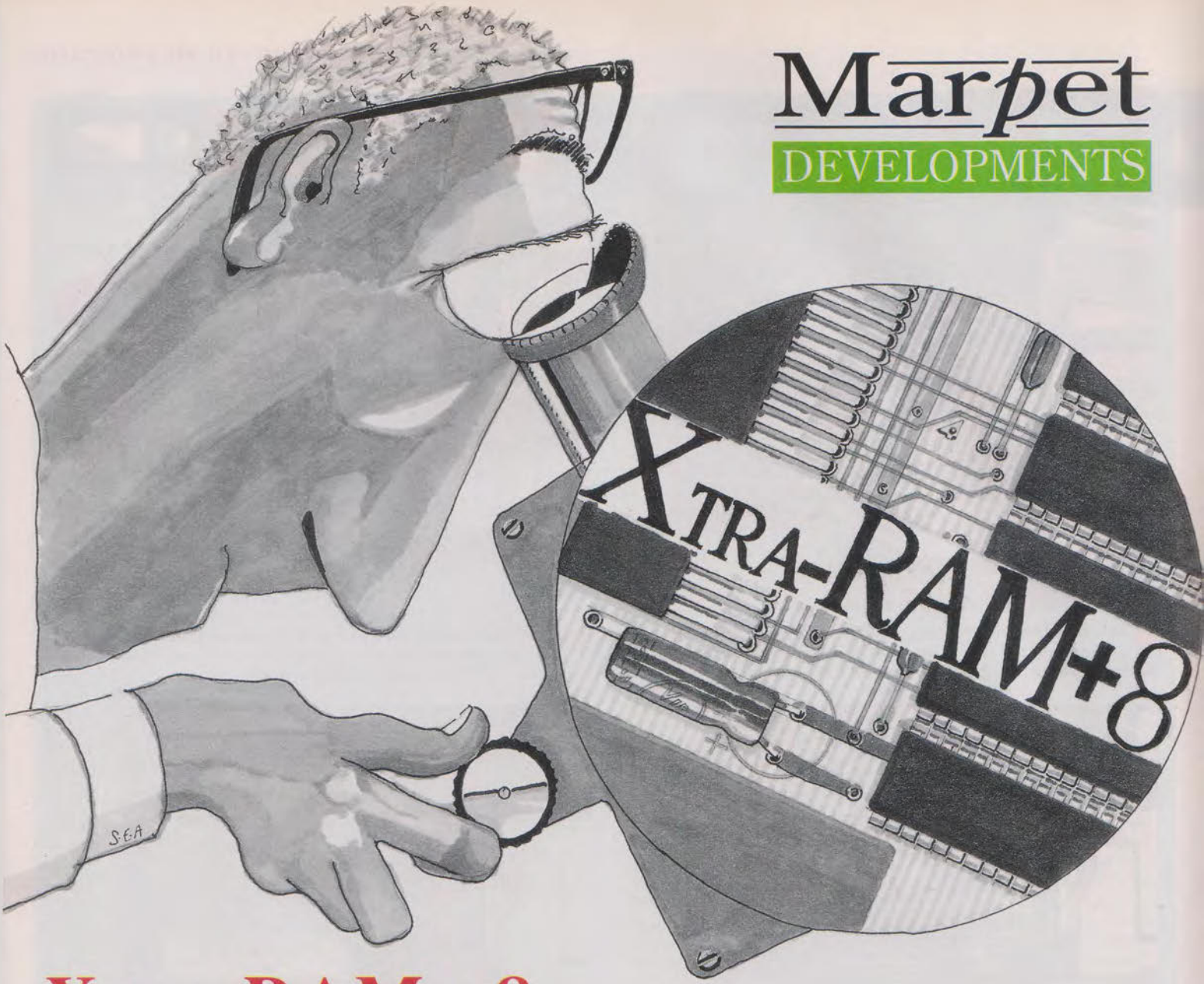
5 ***The two rear legs are utilised to screw the drive in place. The front leg is now internal as there's no hole in the case. A washer is used to hold the front of the drive, and rubber feet are glued on to provide support. The machine will now be sturdy when it is all put back together.***

DISCLAIMER

Plus Cache is a plug-in upgrade for the STE but you'll need a steady hand and good soldering skills when fitting it into the STFM. It is, therefore, our recommendation that you have the board fitted by a professional who has experience, rather than attempt this yourself.

If, however, you do decide to fit it yourself, ***Atari ST Review*** cannot be held responsible for any problems that may arise.

Marpet
DEVELOPMENTS



XTRA-RAM +8

Marpet Developments are pleased to announce their latest new product, the XTRA-RAM +8. Available mid March/ early April, this 8Mb board upgrades an Atari ST^{E}; Mega ST^{E} or Mega ST to 12Mb! Specially designed and manufactured here in England, the XTRA-RAM +8 represents a considerable investment in the Atari marketplace. Each unit carries a full 12 months warranty and, with participating dealers only, is supplied under a ten day money back offer. For further information contact Marpet Developments today!

Unopopulated (0Mb)

Mega ST	£ 99.99
Mega ST^{E}	£109.99

Inc. VAT @ 17.5%
P&P £5 extra.

Populated 8Mb

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Mega ST	£379.99
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- ❑ Upgrade your 4Mb ST^{E}; Mega ST^{E} or Mega ST to 12Mb!
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- ❑ Installs beneath shielding on all machine types.
- ❑ Solder free installation on Mega ST and Mega ST^{E} models; and ST^{E}s with socketed 68000 processor.
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- ❑ Requires TOS 2.06 ROMs (available on special offer).
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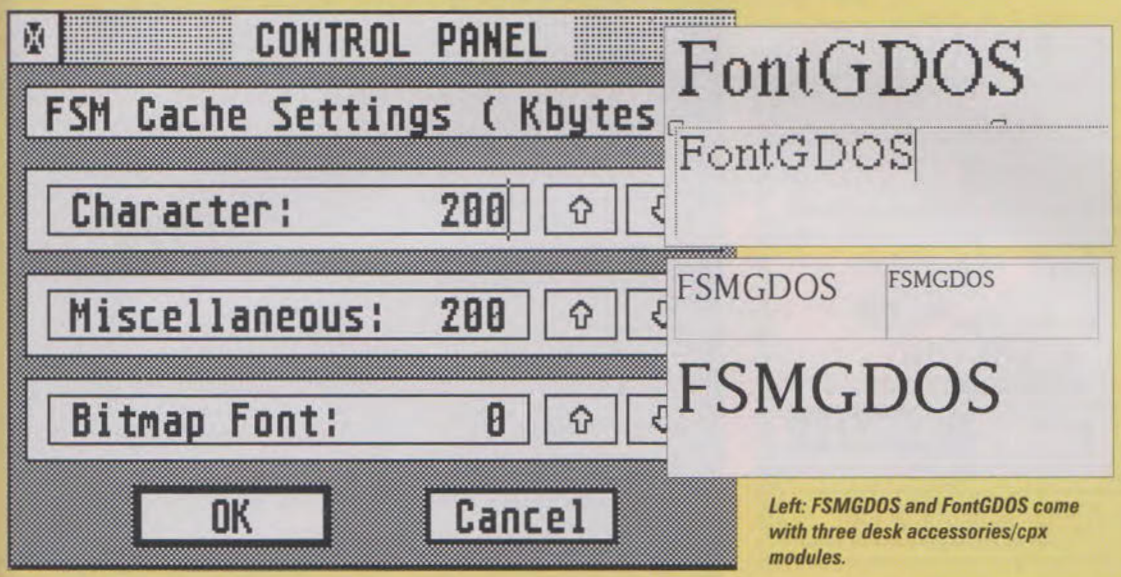
All prices subject to change with or without notice. **E&OE.** All goods subject to availability.

FULL SPEED AHEAD

Ofir Gal looks at two solutions to the speed problems of GDOS



Left: FSMGDOS and FontGDOS come with three desk accessories/cpx modules.

The screen shots on the left clearly demonstrate the difference between scalable fonts (FSMGDOS) and fixed-size fonts (FontGDOS).

GDOS, or to give it its full name, the Graphical Device Operating System, enables the use of bit-mapped fonts on the computer screen and the printer via software drivers. In a typical setup, you would have screen fonts to match your screen resolution and printer fonts for your printer's resolution.

You also need to make sure that you have device drivers for the screen and printer and while the first one is already installed in ROM, the printer driver must reside on disk with your fonts.

PROBLEMS

The main problem with GDOS is its speed; although Atari has been recommending its use by software developers, most programmers have opted to write their own systems to provide faster printing times and in some cases scalable fonts which remove the restriction of fixed-size fonts.

ALTERNATIVES

Other companies offer alternatives to GDOS, most notably G+Plus from Codehead and NVDIGDOS (included with NVDI) which remove some of its bugs and don't slow your computer down as much as GDOS does. Neither of these supports scalable fonts, but they do offer faster screen display and print times.

FONTGDOS

One of the problems with GDOS is that all fonts are loaded by the application when it starts and you must make sure that you have enough memory for both screen and printer fonts as well as the program itself. FontGDOS provides a simple solution - a font cache.

FontGDOS maintains a memory buffer where only fonts that are currently in use reside. When a font is needed it is loaded from disk and kept in the cache; when the cache is full unused fonts are discarded from memory to give space for other fonts. This allows you to have a large collection of fonts listed in your ASSIGN.SYS without having to worry about memory as long as you specify a font cache just large enough to hold the biggest font.

RELIABILITY

Additionally, FontGDOS offers faster printing and greater reliability than GDOS, so that a typical document may take 30 per cent less time to print.

The FontGDOS disk includes printer drivers for many printers that were previously unsupported, such as the Canon BJ series and HP DeskJet and LaserJet. Users of packages such as ***Timeworks Publisher*** who could not previously use it with the Bubble Jet can now install FontGDOS and the corresponding printer driver. This also applies to the DeskJet, although there are some problems with printing a multi-page document. Most other GDOS programs are compatible with FontGDOS.

The FontGDOS disk includes three desk accessories/cpx modules that enable you to set various GDOS parameters, add or remove fonts from your setup, select printer and set printer resolution as well as setting the font cache size. Drivers are included for the Canon BJ10, DeskJet, Epson FX80, LaserJet, NEC NB15 and P6, NX1000, PaintJet and the Atari laser printer.

The original Atari manual is also included, as well as additional text files giving you tips on how to set up FontGDOS for optimal operation. Since fonts are loaded from disk 'on the fly' you must have your font disk in the floppy drive so a second drive or a hard disk are strongly recommended but not essential.

FSMGDOS

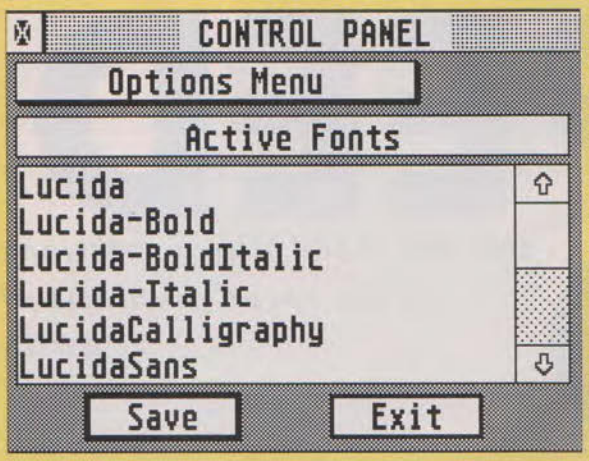
FSMGDOS has been the subject of much talk and speculation and

INSIDE INFO

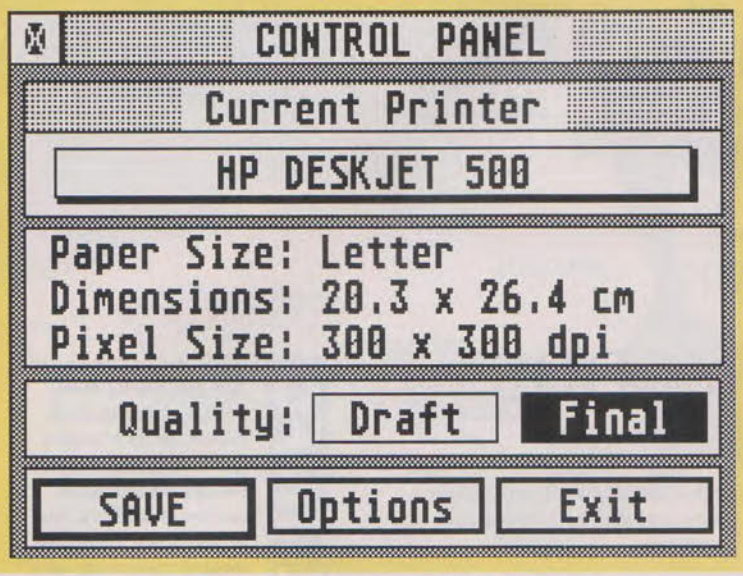
GDOS is an extension to TOS and should have been installed in ROM. Luckily for us it wasn't – luckily because it slows the system and is not needed unless you want to produce professional looking documents with a DTP application.

TOS provides three system fonts and a combination of two of these is used in any one resolution. Printing is possible but is limited to using the built-in fonts of your printer which is rather boring in most cases. When GDOS is installed many tricks are possible including graphics printing and screen display and printing of as many fonts as will fit on your disk and RAM.

Fonts are in fact a collection of tiny images made of single pixels. On a high-resolution monitor fonts are normally displayed in a resolution of 72 dots per inch (dpi) so a character that is a quarter of an inch tall will be 18 pixels high (72 divided by four). A printer on the other hand is much more accurate, modern printers such as the LaserJet 4 can print at 600 dpi and most printers currently support a resolution of 300 dpi. To print the same font on a 300 dpi printer, another set of images is required because 75 pixels can now be used to produce the same sized character utilising the higher resolution. This guarantees high-quality printouts but the drawback is that for each font size you need a screen font and a printer font that matches your printer resolution.



This menu enables you to install or remove fonts from your setup. Unlike previous versions of GDOS, only one font is required to provide all sizes. The same font will be used for screen display and printout on any printer, regardless of resolution.



The Printer Selector accessory is used to select the current printer and also to change print quality. Very useful if you need a quick draft copy of a document. The accessory works with both FSMGDOS and FontGDOS and there is no need to reboot the system for the new settings to take effect.

Atari has kept us waiting for it for almost two years.

FSMGDOS gives you all the benefits of FontGDOS with the addition of scalable fonts. Previous versions of GDOS limited the user to fixed font sizes. If you wanted to use several point sizes you would need to install a pair of fonts for each size, one for the screen, the other for the printer. Attempting to use a point size which you have not installed will only create ugly-looking jagged-edged characters, both on screen and when printed.

This happens because the fonts are in fact bit-mapped images which are optimised for a specific size and resolution. An alternative system is to describe the font in terms of points, lines and curves which are resolution independent. Instead of describing a line in terms of a sequence of pixels, it is now represented by two points which should be connected with a line.

When the program displays or prints the line, it calculates a pixellated image using the maximum available resolution.

This means that, although the final image is still made up of a collection of dots, there is now no longer any need to have separate screen and printer fonts. Instead, a single font is used to create whatever size you require and in any resolution.

NO MORE RESTRICTIONS

FSMGDOS uses this system to eliminate the size and resolution restrictions present in GDOS and FontGDOS. This advantage does, however, come at a price; as you type along, screen characters have to be created from scratch which slows down the display considerably.

To get around this little problem, FSMGDOS maintains an additional cache where the newly created character images are temporarily stored. Needless to say, the bigger that you set the cache, the quicker the system will be in operation.

When printing, FSMGDOS creates the characters again, but this time using the printer's resolution which requires an even larger cache. In reality, FSM is so inefficient in its memory usage that it is virtually impossible to use with less than two Megabytes of RAM and a hard disk.

When you compare the efficiency of programs such as ***Calamus*** and ***Calligrapher*** which use their own method of font scaling with great efficiency and speed, you can't help wondering what Atari had in mind when it was designing FSMGDOS.

THE FUTURE

We are now told by Atari that FSMGDOS has been dropped in favour of ***Speedo***; this is a similar system which will address the lack of speed and other problems of FSM.

To confuse matters, ***Wordflair 2*** has just been released and the package includes FSMGDOS. While it does work, it is slow and requires huge amounts of memory to do so.

What the ST, TT and Falcon need is a stable, fast and efficient font scaling system that will be so good that every program will use it. This will mean an end to having to keep several font formats and versions of GDOS and provide consistency of output regardless of the program. The PC world has it, the Mac has it, it's about time we had it too. Meanwhile, if you are using GDOS, you should give FontGDOS a try.

FontGDOS is available from the ST Club at £2.95. For more information, contact them on 0602 410241.

THE ASSIGN.SYS FILE

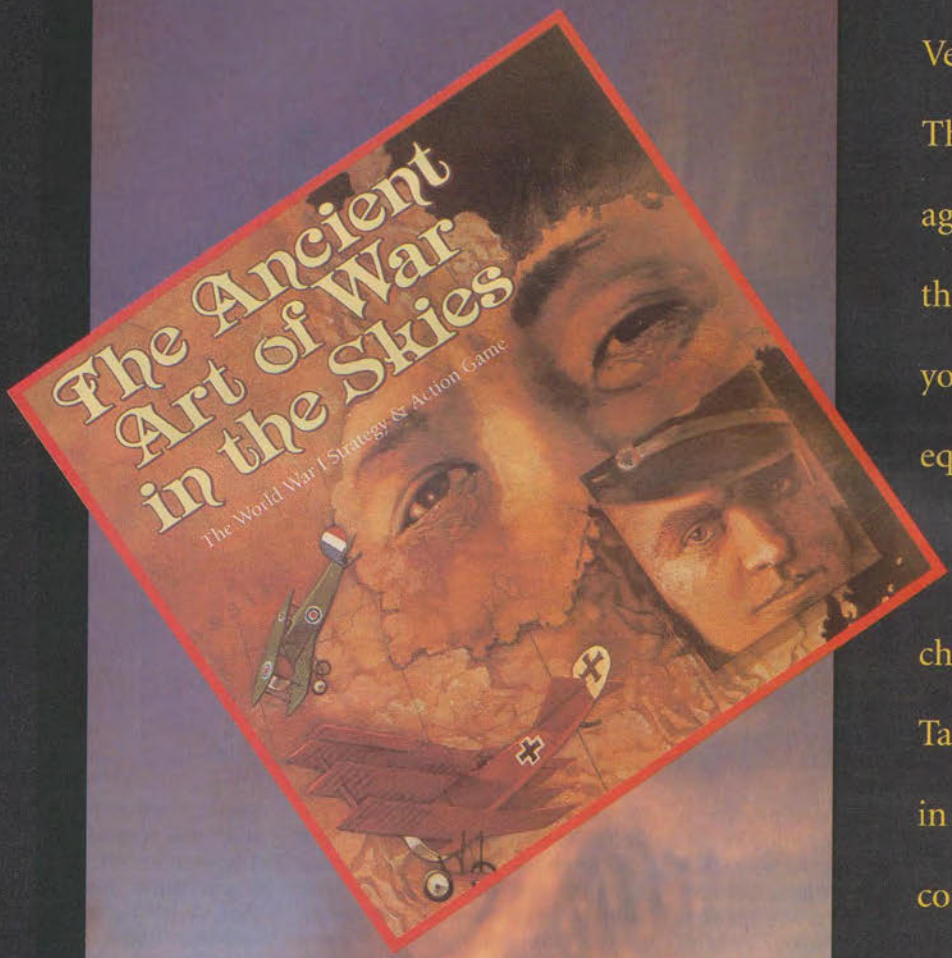
When GDOS or the new FontGDOS and FSMGDOS start from your AUTO folder they look for a file called Assign.Sys in the root directory of your boot disk, outside any folder. This file tells GDOS where your fonts are and which fonts and printer driver to load. GDOS does not load the fonts but simply sits there until your DTP program or word processor asks for them.

The Assign.Sys file is a standard ASCII file which you can view by double-clicking on it and selecting Show. You will see that the first line looks something like: PATH=A:\GEMSYS. This tells GDOS that the fonts and drivers are found on disk A inside a folder named GEMSYS. Next follows a list of fonts which is divided by lines like 01p SCREEN.SYS or similar. This tells GDOS which resolution the fonts below the line are for, devices two to four cover low, medium and high resolution respectively.

The last section normally covers the printer driver which is device 21. Sometimes you will find additional text preceded with a semi-colon (;), this tells GDOS to ignore the text following the semi-colon enabling you to enter comments into the file without confusing GDOS. Fortunately, the accessories bundled with FontGDOS enable you to select fonts and printers via dialogue boxes and menus, so editing the Assign.Sys by hand can normally be avoided. An additional file, Extend.Sys, is also created which tells FontGDOS and FSMGDOS how large the various font caches should be.

```
PATH=C:\FONTS ;path for fonts and drivers
1P SCREEN.SYS  ;resolution independent screen driver and fonts
ATTR10.FNT
ATTR12.FNT
ATTR18.FNT
ATTR24.FNT
2P SCREEN.SYS  ;low res driver and fonts
ATTR10.FNT
ATTR12.FNT
ATTR18.FNT
ATTR24.FNT
3P SCREEN.SYS  ;med-res driver and fonts
ATTR10CG.FNT
ATTR12CG.FNT
ATTR18CG.FNT
ATTR24CG.FNT
4P SCREEN.SYS  ;hi-res driver and fonts
ATTR10.FNT
ATTR12.FNT
ATTR18.FNT
ATTR24.FNT
5P SCREEN.SYS  ;reserved
6P SCREEN.SYS
7P SCREEN.SYS
8P SCREEN.SYS
9P SCREEN.SYS
21 BJ10.SYS    ;printer driver and fonts
ATTR10NP.FNT
ATTR12NP.FNT
ATTR18NP.FNT
ATTR24NP.FNT
```

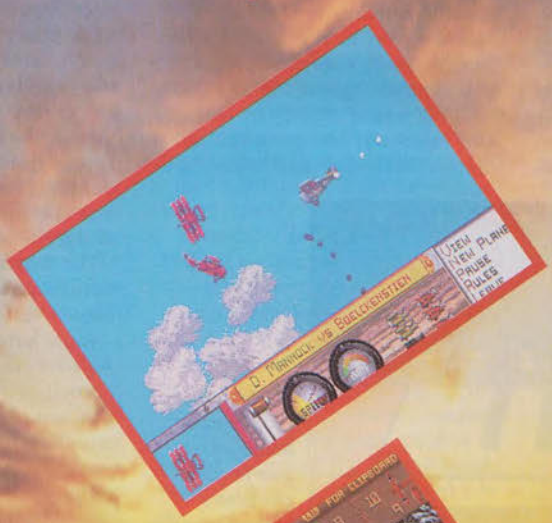
Time flies!



Venerable warlord Sun Tzu wrote The Ancient Art of War 2,500 years ago. Now it provides the theme for a thrilling action packed game to test your ingenuity and skill in equal measures.

You can choose historical characters and match wits with them. Take on enemy bombers and air aces in dogfights. Even change the very course of history. And enjoy more entertainment than you would think possible!

Let your imagination decide the tactics and strategy. The Ancient Art of War in the Skies is combat with a sense of fun. Don't miss it!



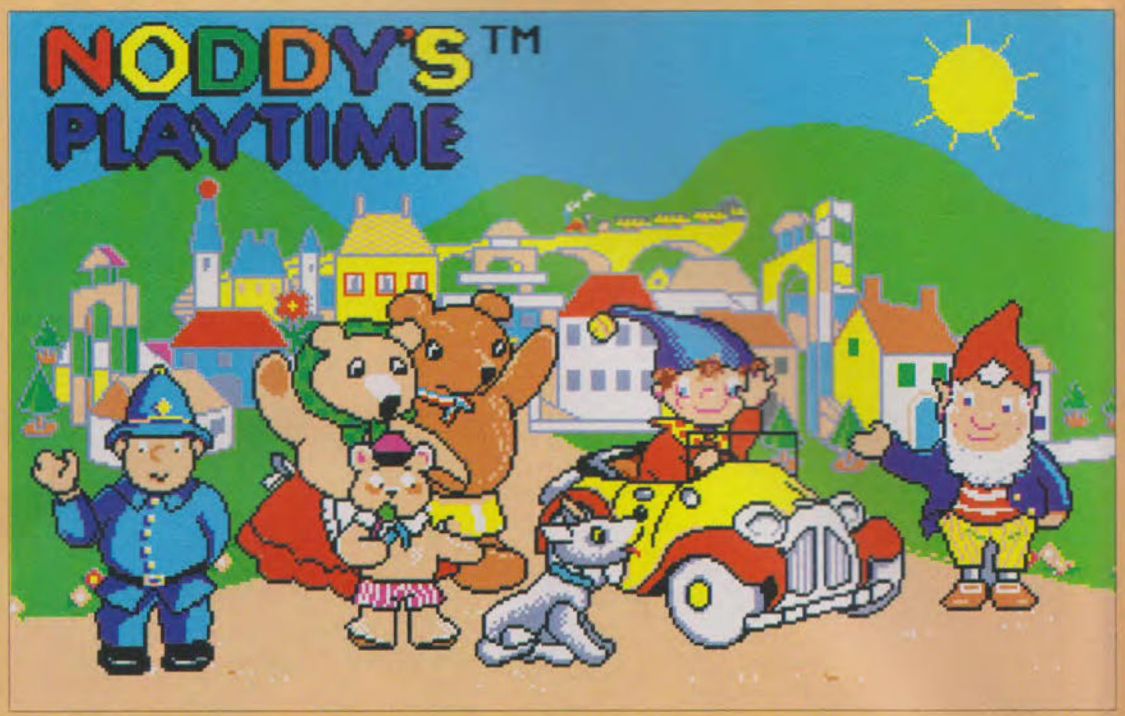
MICROPROSE®

Seriously Fun Software

For IBM PC Compatibles, Commodore Amiga and Atari ST

Forty years after he first appeared, Noddy now makes his ST debut in an educational package...

Set the level and go directly to a particular game from the Main Options screen. Alternatively, you can drive around Toy Town or go to the Paint Pot.



ATARI ST REVIEW
ESSENTIAL BUY

SECOND

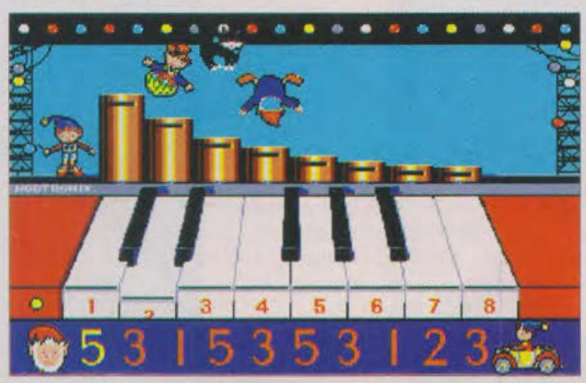
Software for young children needs to appeal to two sections of the population: the customer, who in this case is likely to be a parent-teacher or interested adult, and the end user, namely the child. After extensive research, the Jumping Bean Company has launched ***Noddy's Playtime***, a comprehensive educational program with a selection of games designed for different learning skills. A choice of levels ensures that ***Noddy's Playtime*** caters for children of varying ages and abilities. For the parent or teacher the program is an educational tool, incorporating a well-established character.

IT'S BIG EARS!

Designed for children between the ages of three and seven, ***Noddy's Playtime*** consists of eight games, each with three skill levels (easy, harder and hardest), along with a junior art package. On-screen instructions are kept to a minimum – most commands are icon-driven and the program comes complete with a keyboard overlay to facilitate this. Help is offered when an incorrect answer is given or can be requested at any time by a swift click on the picture of Big Ears.

The Main Options screen allows you to select the level at which the games are played and whether to drive Noddy around Toy Town or go directly to a chosen game. The driving section gives children the opportunity to master the control of Noddy's car, and when they toot the horn each of his friends react in a different way – Milkie even drops his bottles! An A3-sized colour map of Toy Town is included in the package and is well worth having laminated.

The manual is a work of art in itself. It contains a complete story of the trip around Toy Town, which you can read to your children, along with help and advice for the various games and a selection of pictures for colouring in.



Playing a tune at Four Chimney House makes your favourite characters emerge from the organ pipes.

PLAYING THE GAMES

Simply drive Noddy's car around the map of Toy Town and stop at a taxi parking space to enter one of the eight games.

At the railway station there's a memory game in which a train enters the station with characters sitting at each of the carriage windows. On both the easy and harder levels, the blinds go down and the children must remember where a particular character was sitting. At the hardest level, they're asked who was sitting at a specific window.

Moving on to the N&B (Noddy and Big Ears) Works, you'll find an observation game where you have to assist Noddy in locating and rejecting 'odd-ones-out' on a factory conveyer belt. Accompanied by squelching noises as the rejected items are pulped by the disintegrater, this game calls for some keen observation. At the highest level, you battle against the clock as you race to reject the odd ones out. As with the rest of the program, sounds are a convincing mixture of digitised recordings and the ST's internal sound chip.

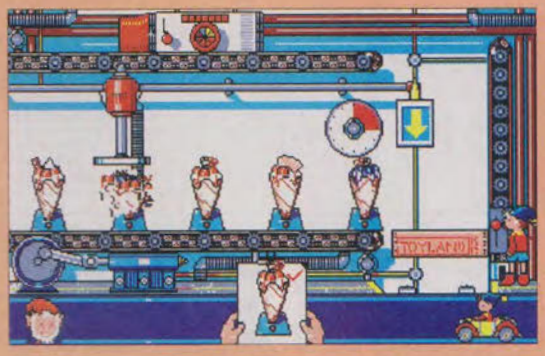
Children who are musically inclined will love Four Chimney House. At the easy level, children play any note and watch as Toy Town characters jump out of the organ pipes and perform back flips. At the higher levels, a tune is selected from a menu of 14 songs and played through once; the tune then has to be replayed correctly, using either numbers from the numeric pad on the ST or by using the mouse with the on-screen keyboard. Numbers on screen guide children through the harder level, but the ability to read a single line of notation is required at the hardest level.

The Noah's Ark section is a jigsaw puzzle where the number of pieces vary according to the level – four, nine and 16, respectively. As each puzzle is completed, the animal appears at the porthole of the ark. If the puzzle is not finished correctly, the pieces in the wrong places are automatically removed for a second try.

A similar method of learning is used in the Post Office section, which is a lesson in counting. The easy level may only involve feeding the letters into the letter boxes, but it does provide good practice in moving and working with a mouse or joystick. The higher levels require the child to match the numbers on the letters to those on the letter boxes.

Entering the Toy Town Market Place you begin the letter recognition game. The difficulty of the levels varies from simply having to select items by their initials to

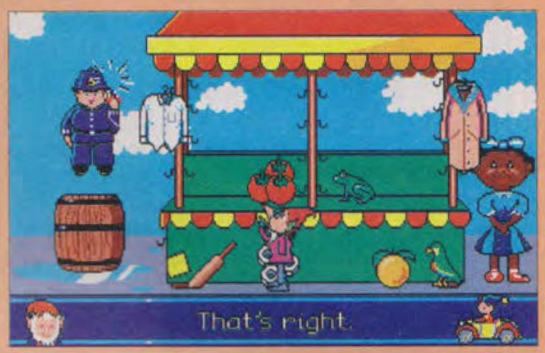
Post your letters into the boxes to keep the postman happy and watch Noddy climb up the ladder to receive a 'Well Done' message from the goblin.



Squidge time at the Noddy and Big Ears Works – you could end up selecting the wrong items simply to enjoy the graphics and sound effects.

Select a colour, point the paint pot and click to fill in the various areas – great for younger children.

In the Market Place, Mr Plod is about to take a bath courtesy of the naughty goblin and his pea-shooter...



CHILDHOOD

having to find three items on the stall with the same initial letter. As with all of the games, the graphics are excellent and it's good fun, too. Mr Plod is suspended above a water barrel by a number of balloons as a naughty goblin with a pea-shooter pops them as a reward for each correct answer. This leads, rather satisfactorily, to a rather watery end for our favourite member of the constabulary!

Down on the farm there seem to be some problems – the animals look rather strange because their fronts and backs don't match! To correct this, the appropriate halves have to be found and matched up in the first two levels. At the hardest level, you have to sort through a set of heads and tails to find the correct parts for your particular animal.

The Police Station game finds Noddy locked up – for tooting his horn at Mr Plod no doubt! Your task is to help him escape through the underground passages, with routes becoming progressively harder depending on the level. With a choice of 150 mazes, the child is unlikely to get bored quickly.

Finally, there's ***Noddy's Paint Pot***, an art package which can be loaded from the main screen or entered from any of the eight game locations. This is simple to use and yet complex enough to allow even the very young to produce colourful and detailed pictures. Children can choose to colour in one of the theme-based outline pictures using a paint pot, or they can create their own works of art from scratch.

This paint package should encourage creativity and the possibilities are endless, given the impressive array of tools – spray can, line drawing, box and circle outlines/fills and so on.

Pen sizes, shapes and pattern fills can also be altered and the selection of pre-drawn characters and items only adds to the fun. Masterpieces can be saved to disk as low-resolution Degas Elite files for further editing in another art program.

BYE GOLLY

Fashions come and go, but the Noddy books have continued to sell to such an extent that the BBC has obtained the rights to the character and his friends. Consequently, a TV program and a series of videos are on their way – in fact, a dedicated comic is already available.

Bearing in mind that the design of ***Noddy's Playtime*** follows the National Curriculum, one problem had to be ironed out, a bugbear which had led to the Noddy books being removed from the reading lists of many schools – all references to the 'naughty golly' have been taken out.

HOW GOOD IS IT?

There's little doubt that ***Noddy's Playtime*** can provide hours of endless enjoyment for children between the ages of three and seven. Younger children with a short attention span can go back to driving Noddy around Toy Town again and again, especially as the positions of onlookers and pedestrians do change – for the under fives, spotting the changes is a game in itself. While some older children may not gain any new skills from the program, it will do much to enhance, in a fun way, many of the skills they are learning at school.

Parental involvement is important in ***Noddy's Playtime***. The program comes on two disks, and while following the on-screen prompts is simple enough, it is not something that a young child can be expected to do. Although some of the games can be played without supervision, younger children, in particular, will gain far more if an attentive adult is on hand to point out details that would otherwise be missed.

Based on an appealing character
Bright, clear graphics
Good use of sound effects
Educationally supportive and stimulating

PROS AND CONS

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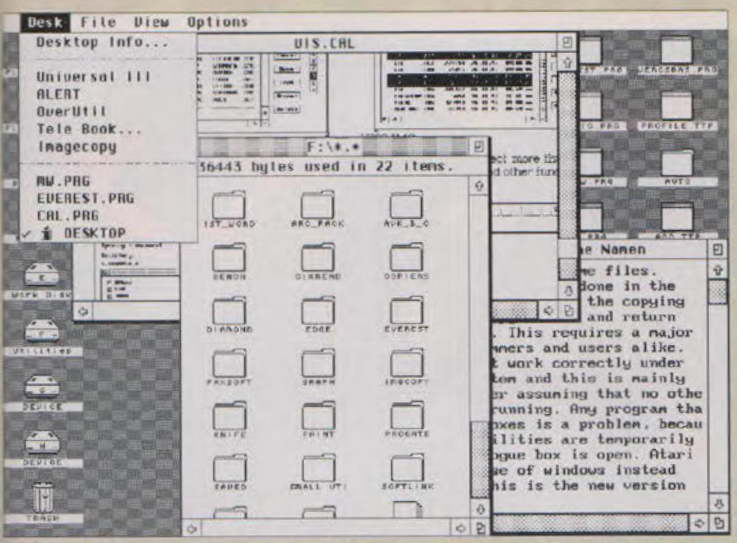
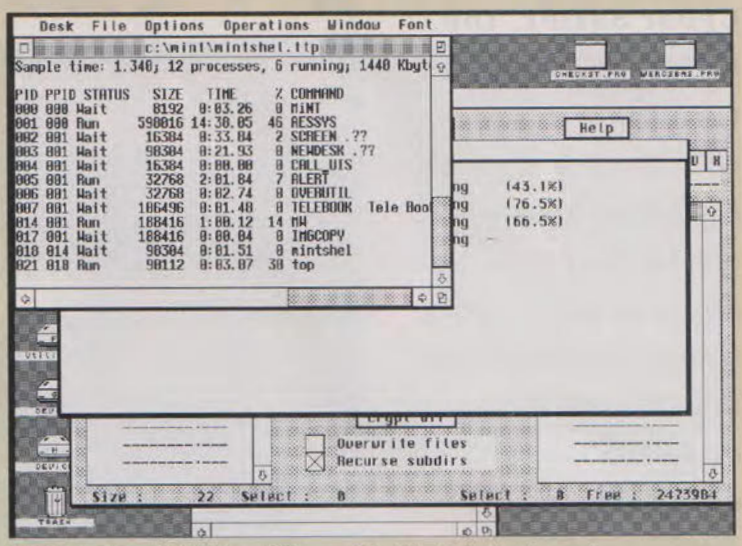


Calligrapher, Everest and the desktop all running together quite happily. The Desk menu enables access to all programs, desk accessories and the desktop.



MiNT Windows with STZip quietly crunching files in the background.

Ofir Gal takes a sneak look at Atari's latest, and perhaps greatest, operating system...

The Tramiel Operating System, or TOS, has gone through a great many changes since its arrival in 1985. In its latest guise, it looks set to revolutionise the way you use your ST.

The story begins a few years back when Eric Smith, a Canadian mathematician and ST user, devised a TOS add-on which enabled him to run several non-GEM programs at the same time. He called it ***MiNT*** and released it into the public domain, where it won the support of a small group of enthusiasts. It didn't go unnoticed by Atari either, who consequently employed Eric to write a full multi-tasking operating system for the ST. The result is MultiTOS.

MultiTOS will be very similar to TOS as we know it. There will still be AUTO programs and desk accessories, but there will also be a new TOS 2 desktop, which will be similar to the original but with a few cosmetic changes. The main difference will become apparent when you load a program. The desk menu now lists the program and the desktop in addition to the desk accessories and you can go back to the desktop without clicking on it. It works by drawing the desktop over the current program, leaving you free to perform any desktop operations such as copying files, creating folders and even starting another program, which will be added to the desk menu. You can use the desk menu to go back to the first program, the second or to the desktop where you can start another program.

MULTI-TASKING

Simply being able to switch from one application to another does not constitute a true multi-tasking system, so MultiTOS takes this a few steps further. When you have several programs, or processes as they are now called, running together, you can resize windows to display two applications on screen, or cut text from a text editor and paste it to a DTP package. You can also switch to the desktop, copy some files from a hard disk to a floppy and return immediately to your word processor. You do not have to sit there and wait until the files are copied as this process is happening in the background. Many more advantages will become apparent once programmers start to develop software specifically with MultiTOS in mind.

We tried to push MultiTOS to its limits by running ***Calligrapher***, ***ST Zip*** and ***WERCS*** together. ***ST Zip*** was set to compress a long list of files while the contents of drive C were being copied to drive F on the desktop.

To top this, ***Calligrapher*** was printing out a multi-page document at the same time. All of this worked well, although selecting a program from the menu became more difficult as more tasks were being performed, and it sometimes took a second or two for the menu to appear.

Another useful feature of MultiTOS is its ability to load accessories at any time and even remove them if you need the extra memory. Programs can be aborted in the normal way or by clicking on their menu entry while holding down the Control key.

COMPATIBILITY

Most programs should run under MultiTOS but only a few will work perfectly. There are several reasons why a program misbehaves in a multi-tasking environment. Some programs grab all the available memory when loaded, as is the case with ***First Word Plus***, so no other program can be loaded. To get around this, you must load ***FWP*** last. Other problems are to do with what programmers call screen ownership, where a program assumes it is the only one to access the screen. Only properly written GEM applications which run inside a window are likely to work correctly under MultiTOS. Many ST programmers are busy modifying their programs so they can be used with MultiTOS.

To provide compatibility with .TOS and .TTP programs, Atari supplies a program called ***Mint Windows*** which enables non-GEM applications to run inside a window. It can open several windows at once, so you can run several TOS/TTP programs at any time and it works extremely well.

THE FUTURE

If the Falcon becomes a popular machine, MultiTOS is bound to catch on. It's a huge advantage not having to quit a program just because you forgot to copy a file before you started. MultiTOS provides extremely flexible pipeline facilities which programs could use to send and receive data. It is possible for DTP, text editing and paint applications to send picture and text files back and forth without needing to access the disk or the desktop. Almost every user will benefit from at least some of the features of MultiTOS so long as Atari manages to get it running fast and reliably.

MULTITOS AND THE ST

MultiTOS and the Falcon are two separate projects. You can run MultiTOS on any ST or TT, although there are several drawbacks to running MultiTOS on an ST – for a start it slows down the system considerably, so it's not recommended for an 8MHz computer.

The new Falcon features the Motorola 68030 which, among other things, provides memory protection. In layman's terms, this means that if one program crashes it doesn't mean the whole system will. The minimum memory requirement is 2MB and the more the better. STs are of course limited to 4MB of memory while the Falcon can have up to 14 MB of RAM.

MAKING

On the cover disks of issues eight, nine and 10 we gave away the Cyber Series, the ultimate graphical tool for the ST. In this month's step-by-step tutorials we look at how you can use all three Cyber packages to create professional quality animations...

One of the first things that you should do before you make a start with your animation on your computer is to create a story board. This entails putting your design ideas down onto paper and placing them in logical order and it will be helpful to you later on – it's a good way of organising your thoughts and ideas so that you don't waste too much time or memory once you actually get started.

DIMENSIONS

One of your first decisions should be whether your animation is going to be two dimensional, three dimensional or a combination of both – this will determine what ***Cyber*** packages you need to use. You will need all three packages for our example animation shown on these pages.

After planning your movie you'll need to create the objects and backgrounds to go in it.

MAKING COLOURS SMOOTH

Remember that the backgrounds and objects should use similar colour palettes. If they don't then you will find that the colour will not be very smooth.

The tutorial on these pages looks at an example movie from post production to final screen and it also gives you some helpful advice on how to create your own home-grown animations.

We've used some digitised pictures as backgrounds, although it's just as easy to create your own in ***Cyber Paint***.

STEP BY STEP

1 *A rough story board is used to help with the creation of our animated movie. It is basically a rough plan of our animation ideas.*

2 *The next step is to create the title sequence. Cyber Paint is the best package for this job. Use 'Set Font' to create an appropriate text title.*

3 *Select a range of eight shades, and working from lightest to darkest use the 'Edge In' command under the 'Pixel F/X' menu to build up the text edges.*

4 *An opening screen is now needed. This one was created with the use of a scanner and snapshot program on a mono hi-res monitor.*

5 *'Degas Elite' was used to convert the picture to four-colour medium resolution.*

6 *Next it was converted to low resolution. This background picture only uses five of the available 16 colours which leaves plenty spare.*

7 *The picture was then loaded into Cyber Paint and the greys are changed to a more suitable colour range using the 'separate' and 'palette' adjusters.*

8 *When you've created your background the next step is to design the flat picture objects.*

9 *Any picture or object overlays contain the same five colours in their palette as the background picture. Use 'Clip' and 'Fit Colours' to make converting them easier.*

10 *The butterfly, from a previous tutorial, needs at least two frames of animation. Use 'Stretch' under the 'Clip.' menu to create the illusion of movement. Test the animation with the left and right cursor keys.*

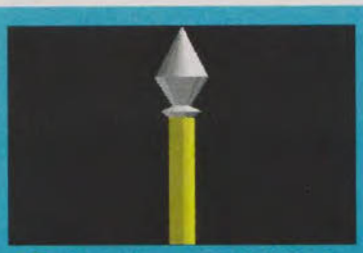
11 *This castle scene was scanned in and retouched. The seagulls will be animated later.*

12 *The door scene was created in the same way. It's best to go slowly from one scene to another to help create more interest.*

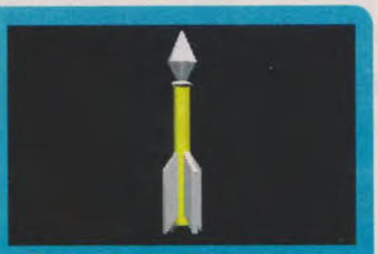
MOVIES

13 Create a background scene for the hall. The brown, orange, yellow colour range makes it look more dynamic than just greys.

17 Use 'Edge In' from 'Pixel F/X' under 'Menu' and select a dark colour. Cut and paste the knight over the hall background to test its colour integration.

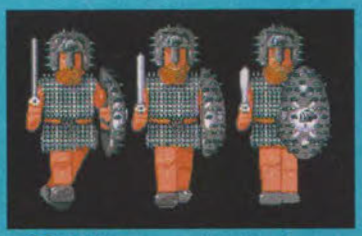


21 Draw the arrow shaft in the same way but with different colours. Position it so that it cuts neatly into the arrowhead.

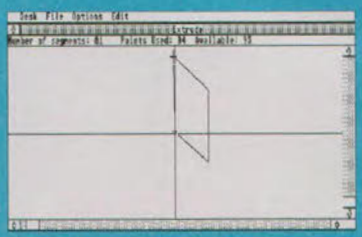


25 Reducing the 'Zoom' level to fit all of the arrow in the camera window, double-click on 'Superview' and check the integration of the design in 'final view'.

14 Create a small knight in zoom mode. It's a bit on the small side at the moment, but we'll rectify that.



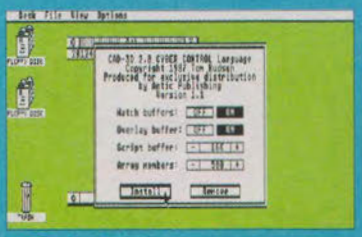
18 Add more animation frames to your object by copying each one and altering it slightly. Redraw and stretch certain parts of his body to make it look like he's moving.



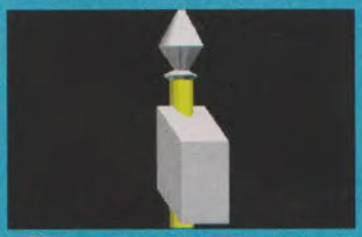
22 Draw a tail piece using CAD3D2's 'Extrude' tool. Start from the top-right and draw all the points in a clockwise direction. Use the 'Do Extrude' command to execute the design.

26 Switch on 'background' from the superview dialogue box and load the frame which you want your animation to be lined up with. Use a background as a guide to save on guesswork.

15 Enlarge the knight by selecting 'clip' from the clip menu, and then 'stretch'. Pull on the bottom right corner to extend him proportionally.



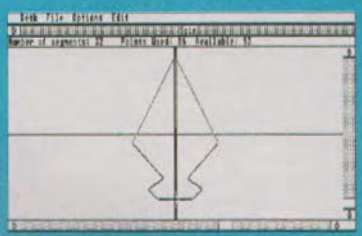
19 Quit Cyber Paint and re-load Cyber Control. Click on watch and overlay buffer then load CAD3D2.



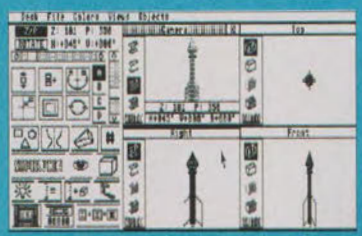
23 At the moment the tail is too wide. Select it and the 'top' window, then reduce the tail's vertical scale 'V' to shrink it.

27 Load up Cyber Paint to work on your final screen. Create the carnation separately from the tombstone, and x-ray it on top.

16 Use the enlarged image as a template and redraw it in detail using Cyber Paint's zoom mode. Cut and paste in the spikes and chain-mail.



20 Click on 'Spin' and draw a symmetrical arrow head. Select 'Do Spin' to execute the template. Reduce its size to make it easier to position the other objects.



24 Make three copies of the tail and individually select and rotate them. Use the selected frame movement feature (Icon 4) to make it easier to position them.

28 Use the edge in command around the text and the stonework to give it a polished marble effect.

THE FINAL COUNT

When you've got your basic design, the next step is putting it all together...

It's now time to put your work together to form your finished animated movie. This can be a lengthy process, but it's still an extremely rewarding one for the would-be movie director.

Before you get going, make sure that you have learned the following two golden rules off by heart, and that you put them into practice: you should remember to keep a few spare formatted disks handy and always save your work before making any major changes to it.

MEMORY MATTERS

Obviously, the more memory that you have available in your machine the more complex and smoother your animations are likely to be.

A hard drive is a particularly useful device if you're using a two or four Megabyte machine as it can be used to load large files much faster. It can also be used to chain files together using the 'animator4' program which comes with ***Cyber Paint***.

PUTTING IT ON FILM

A video recorder is another piece of equipment which will come in very handy. You could, for instance, save long sequences or give a friend a copy.

If your final production is going to be played through a composite colour device such as a video, for example, you will most certainly be better off creating your animation on a TV and not an RGB monitor, as this will guarantee more accurate colouring.

OTHER USES OF THE CYBER SERIES

The Cyber range provides you with a wide variety of possibilities. All you really need is a fertile imagination and a bit of practice.

You might like to try out some of the following ideas:

- Producing a public domain demo
- A cartoon sequence
- An animated logo
- A story book
- Animated adverts
- A corporate video

For other suggestions and some practical tips, see our Practical Advice section on page 42.

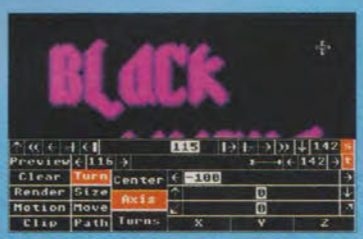
STEP BY STEP

1 *Load your woodland background and x-ray your title text over it. X-ray always uses the first colour in the selected palette.*

5 *If it fades too fast add 24 blank frames at the start and 48 normal ones at the end.*

9 *Place the butterfly with the folded wings over the same amount of frames with the same 'Ado Fx' settings. Use some of these frames for wing movement.*

2 *Copy this frame 24 times and set the frame mode to sequence. Set it to run from 25 to one.*



6 *Insert 26 blank frames and add the 'black knight' text. From the 'Ado Fx' menu set 'turns' to 180 degrees and the x-axis to -100.*

10 *Select fade from the 'colour' menu under 'palette'. Use fade in the same way as before to create a lightning effect.*

3 *Open the colour palette edit box and move the cycle bar to encompass all colours, with black being the chosen colour for the next stage.*

7 *Copy the wood scene background the rotated frames using the segment frame mode. You will need to add an additional 130 background frames to complete the opening scene.*

11 *Fade into the next frame in a similar way. Apart from a smooth-looking effect, fade also takes less memory than some of the other Cyber Paint commands.*

4 *From 'colour f/x' under the 'colour' menu select 'fade' and change 'Tint' to 100%. Next you need to render the sequence.*

8 *Clip the butterfly picture and enter the 'Ado Fx' editor. Set the part turns to -90, Axis Z, Centre default, size 1, and draw a sampled path.*

12 *Erase the background and clip one seagull. Move it with the 'Ado Fx' menu and render it over the background picture sequence.*

DOWN

13 Remember, the larger the area you clip the more memory it takes up. Large clips will also slow your machine down.

17 For the death sequence create a mask of him and fade this, leaving the background intact. X-ray the mask on top of the knight.

21 By loading in any background with the 'superview' you obtain that picture's colour palette.

25 Use a fine black edge around the arrow to help keep the colours separate and their edges distinct.

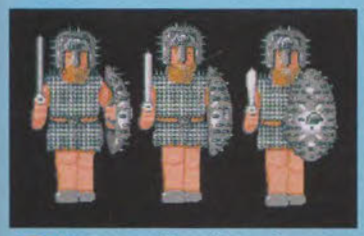
14 For best results with the fade feature keep the sequence to a very short number of frames. Eight is usually the optimum as there are only eight contrast levels.

```
view wire:draft
zoom 600:perspec 350
WATCH ON
for ZM=1 to 29
CHGZOOM -20
xlate 0,0,10
rotate-1,0,0
SUPERVIEW
NEXT ZM
END
```

18 Load up Cyber Control. Turn on the 'watch' and 'overlay' buffers then load CAD-3D2. Load the arrow 3D2 data and enter the above listing.

22 Quit CAD-3D2 and load Cyber Paint. Load the arrow DLT file. Change the yellow and gold colours with the 'separate' command.

26 Check your ST's memory with the 'status' menu. About 970K is used here, but by saving this as a SEQ. file you can save about 300K.



15 Draw another three frames for the knight. The same leg graphics were used for each of these.

19 Watch your sequence in 'wire' and 'draft' modes to see how the final animation will proceed. This lets you fine-tune the arrow movement with the knight.

23 Select 'segment frame mode' and enter 'Pixel f/x' from the menu. Use 'Edge in' and the darkest colour for this but not the first black, which is used for x-raying.

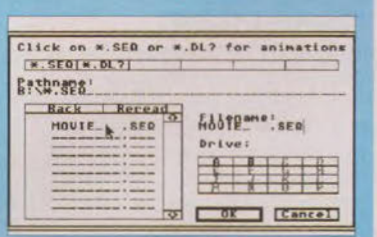
27 The final frame is the Credits page and any number of other effects can be utilised from the 'Pixel Fx' and 'Ado Fx' menus.

16 Use cut and paste to build up the knight's movement. Select a speed of four from the 'Time' menu which will require two frames for each movement.

```
view solid:final
zoom 600:perspec 350
WATCH ON
RSTART"A:\ARROWMOV",M
for ZM=1 to 29
CHGZOOM -20
xlate 0,0,10
rotate-1,0,0
SUPERVIEW
RECORD
NEXT ZM
END
```

20 Turn off the background picture when the arrow is lined up with it. Use 'Rstart' and 'record' to save the movement in 'solid' and 'final' modes.

24 Re-save the animation as a sequence file and load in your movie animation. Then merge the arrow animation over this.



28 Cyber Paint takes about 140K so if you have a one Megabyte machine or less you will find that by using the 'Animate 4 PRG' you can fit more frames in any animation display.

PRACTICAL ADVICE

On this page we take a look at how to create professional looking animations and give you some ideas for using the Cyber range

The key to creating a good animation is planning. To get yourself on the right path you need to look at your requirements.

Having first decided on your story board, then built both your foreground and background objects, you need to work out how to cram it all into your ST.

Obviously the larger the memory of your computer, the more frames you will be able to use for your animation. If you find yourself running out of memory, try splitting your animation over several disks.

TIMING

Remember to use the 'time' function to help speed up your animations. An STE does seem a lot quicker on fastest movement rate compared to an STFM with no blitter chip. Keep in mind that the faster your animation speed the more frames you will need per second for smooth movement.

GLOSSARY

ANTI-ALIASING

A method of making jaggies less prominent by the insertion of one or more intermediate colours between the edges of your boundary and object.

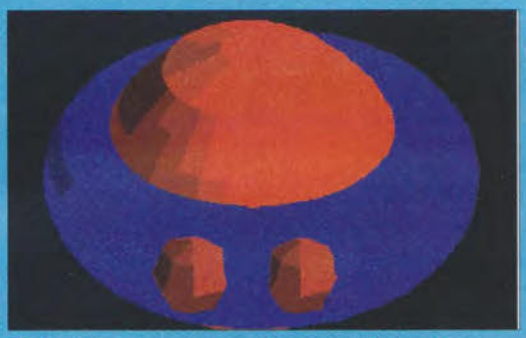
COLOUR CYCLING

This is used to create the illusion of movement or flow without the need for moving the actual flow in question but by changing the colours contained in your palette instead. This palette normally being shifted over a number of frames to create this effective illusion.

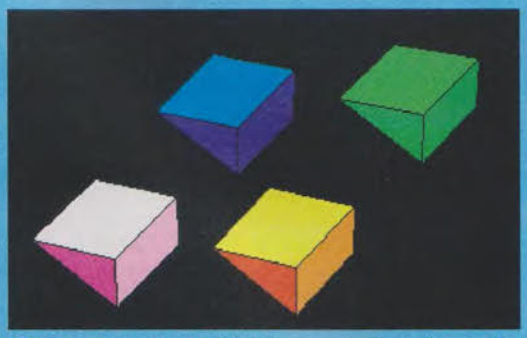
JAGGIES

The visible stepping in any line which occurs when a line or edge of your drawing is other than a vertical or horizontal line.

STEP BY STEP



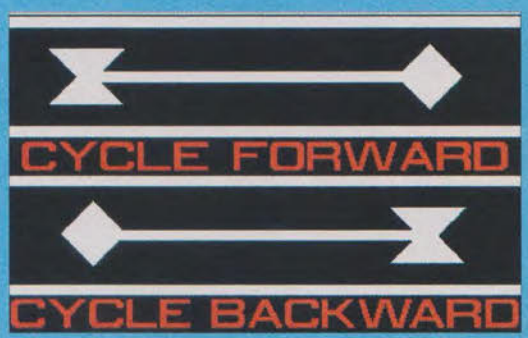
1 *Red stands out more than any other colour, while blue provides a good contrast to it. Together they make a good 3D effect.*



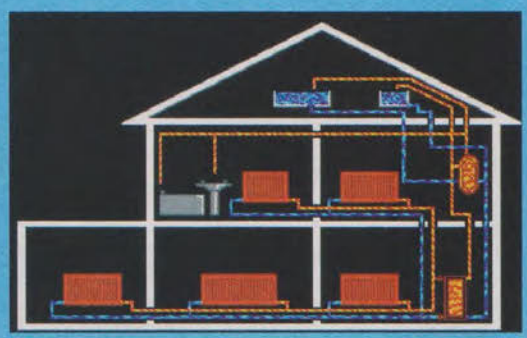
2 *Experiment with lighting or shades of two distinct colours. This gives the impression that you're using more colours than you actually are.*

3 *Jaggies can be a problem when using a high-contrast object with your background.*

4 *The solution is to use Cyber Paint. Select 'Antialias' on a single frame or whole sequence.*



5 *The cycle bar can be used to reverse a frame sequence by simply switching the cross and diamond positions. Use frame mode and set the segment from the time menu.*



6 *'CYCLE', which is under the 'Colour' menu, can be used for anything you wish to make flow. It was used above to show the flow direction of a central heating system!*

7 *With the Cyber range you could use your ST for advertising at trade shows. Your computer could become an electronic notice board.*

8 *Business graphs are handy, but with the Cyber range you can animate them and make them look even more interesting in full colour.*

FREE! FROM SILICA

When you buy your new Atari 520 or 1040ST-E computer from Silica Systems, we will give you an additional £324.75 worth of software FREE OF CHARGE, including some great entertainment and productivity programs. Plus, with every ST and TT, we will give you 16 nights holiday hotel accommodation for you and your family to enjoy a break.

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SKWEEK	£19.99
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PRODUCTIVITY PACK:

1st WORD*	£59.99
Word processing package from GST	
SPELL IT	£19.99
Spelling checker to complement 1st Word	
ST BASIC	£24.99
Basic programming language with tutorial	
TOTAL VALUE:	£324.75

WORTH NEARLY £325!

HARDWARE:

1Mb RAM 520ST-E	£249.99
8MHz 16-Bit 68000 CPU, 512K RAM, Mouse, TV Modulator, Internal PSU, 1Mb Disk Drive	

SOFTWARE - ARCADE GAMES:

Final Fight - Street fighting game	£25.99
9 Lives - Help save Claudette	£24.99
Robot Monsters - Arcade Shoot Up	£19.99
Sim City - Control your own city	£29.95

SOFTWARE - PRODUCTIVITY:

Neochrome - Art package	£29.99
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FirST BASIC - Programming lang	£49.99
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Total Value:	£785.59
Less Pack Saving:	£536.59
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½Mb RAM 520ST-E

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ATARI ST MORE THAN JUST GREAT GAMES!

ATARI TT

- 32MHz 32-Bit 68030 Processor
- 3½" 1.44Mb Double Sided Disk Drive
- 2/4/8Mb RAM Versions
- Stereo 8-Bit PCM Sound Output
- 4096 Colour Palette
- Built-in 68882 Maths Co-Processor
- Up to 1280 x 960 Resolution
- VME + SCSI Expansion Ports
- Expandable to 36Mb RAM
- Hard Drive Expansion Options
- *FREE* 16 Nights Holiday accommodation

2Mb RAM	4Mb RAM	8Mb RAM
£999	£1299	£1599
INC VAT - STC 8926	INC VAT - STC 8939	INC VAT - STC 8977

NEW! ATARI FALCON

The new Atari Falcon 030 is expected into stock soon. It is a powerful, versatile, multipurpose home computer, offering unmatched performance for its price. Included in its advanced specification are multiple co-processors for sound and graphics, true colour displays from a pallet of over a quarter of a million colours and 16-bit stereo sound input for speech recognition and sound sampling. These all combine to provide a new computer capable of running unrivalled sound, graphics and multimedia applications. The Falcon is an ideal upgrade for Atari ST owners who are looking for a more powerful model, as it is compatible with the majority of ST application software. Call for details of availability.

- 16MHz 32-bit 68030 Processor
- 32MHz Motorola DSP and BLITTER co-processors
- DSP capabilities for voice recognition, speech synthesis and numerous audio special effects
- True colour display: 768 x 480
- 65,000+ colours on screen at once
- Record 8 channel, 16-Bit stereo sound and play back 4 channel, 16-bit stereo simultaneously
- SCSI II, DMA, MIDI IN & MIDI OUT, Stereo audio & microphone ports
- 1.44Mb Floppy Disk
- 1, 4 or 14Mb RAM Configurations
- Optional 65Mb Hard Disk
- Built-in ADC & DAC convertors

ATARI FALCON 030
16MHz 32-Bit 68030 CPU, 1Mb RAM, 3½", 1.44Mb FDD

HARDWARE:

SOFTWARE:
CALAPPT - Personal Information Manager - Enhanced version calendar allowing import/export & printing
PROCALC - Calculator
SYSTEM-AUDIO-MANAGER - An Auto Folder/ Desk Accessory combination that allows the user to record sounds from a microphone and assign various system functions
TALKING CLOCK - Announces time at preset intervals
AUDIO FUN MACHINE - A revolutionary audio program using DSP
LANDMINES & BREAKOUT - Two fully featured games

1Mb RAM - 0Mb HD	4Mb RAM - 0Mb HD	4Mb RAM - 65Mb HD
£499	£699	£899
INC VAT - STC 7000	INC VAT - STC 7040	INC VAT - STC 7046

ATARI 1040ST-E

MUSIC MASTER

This pack combines the 1040ST-E with the renowned MIDI package PRO 24 III to provide a perfect environment for novice and professional alike. Using any MIDI keyboard, PRO 24 offers the ability to write and compose music to a very high standard. You can record up to 24 tracks simultaneously, and then apply real time editing.

HARDWARE:

1040ST-E COMPUTER	£299.99
8MHz 16-Bit 68000 CPU, 1Mb RAM, Mouse, TV Modulator, Internal PSU, 1Mb Disk Drive	

SOFTWARE:

PRO 24 III	£150.00

PLUS! FREE FROM SILICA:

Silica Productivity Pack	£104.97
TenStar Games Pack	£219.78
Total Value:	£774.74
Less Pack Saving:	£475.74
SILICA PRICE:	£299.00

£299
Inc VAT - Ref: STC 1261

FAMILY CURRICULUM II

HARDWARE:

1040ST-E COMPUTER	£299.99
8MHz 16-Bit 68000 CPU, 1Mb RAM, Mouse, TV Modulator, Internal PSU, 1Mb Disk Drive	

SOFTWARE MODULES:

PLAY AND LEARN - A Game with Words and Sentences	£76.59
JUNIOR SCHOOL - Spelling, Primary Maths, Answer Back/General Knowledge Quiz	£58.54
GCSE - Micro Maths, French, and Geography Quiz	£55.54
HYPER PAINT - Full Colour Paint Package	£39.99
MUSIC MAKER II - Music Creation Software	£49.99
FIRST BASIC - Powerful Programming Language	£49.99
1st WORD - Very easy-to-use Word Processor	£59.99
ANI ST - Animation Package	£29.95

GAMES

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PRINCE - Do battle in this tenth century game of warfare	£24.95

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Less Pack Saving:	£736.27
SILICA PRICE:	£299.00

£299
Inc VAT - Ref: STC 1272

NEW! 12" MONITOR FOR ST OWNERS

- 12" Greyscale Monitor
- Represents Colour in unlimited Shades of Grey
- Works in Low (320 x 200) + Medium (640 x 200) Resolution ST Modes
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- Stereo Speakers Built-in
- Small Footprint
- Case Colour Compliments ST Housing
- Tilt & Swivel Base Available (Ref: MOA 5500 - £15.99)
- Easy Access to Controls for: Volume, Brightness, Contrast

The ViewTek VT12 12" Monitors offers high quality monitor output at an affordable price. It is ideal for text applications using the free high resolution emulation software supplied. It can also be used in low and medium resolution mode to produce stunning greyscale graphics for entertainment software. At only £69 (ref: MON 3012) the ViewTek VT12 offers exceptional value for money. And, when you buy a ViewTek monitor from Silica, we will give you a cable to connect it to your Atari ST FREE OF CHARGE! When ordering, please specify whether you have a ST-FM or an ST-E computer, so that the correct cable can be included free with your monitor.

FREE CABLE
Please Specify
STFM - Mono CAB 5912
or
ST-E - Stereo CAB 5920

£69
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Penalty! That player obviously got fed up with having to tackle from in front and just went for the slide.

Dino Dini has nearly finished the unofficial successor to Anco's Kick Off 2. Tony Dillon finds out if three into one really does go...

GOAL!

Dino Dini is undoubtedly a very successful man. After a slow start in the programming field, he created the ultimate in computer football, ***Kick Off***. Panned by the critics and loved by the public, ***Kick Off*** was the most realistic and arguably the most entertaining football game ever to grace our screens. Then came ***Kick Off 2, Player Manager*** (a management variation) and a myriad of spin-off disks. Over two years passed, and everyone held their breath. Then it came – news of the inevitable ***Kick Off 3***. It was going to be bigger. It was going to be better.

It wasn't going to happen. Trouble flared and Dino quietly split from Anco, leaving the ***Kick Off*** name and an army of fans. But all was not lost, for no sooner had he gone than he returned under Virgin's wing with ***Goal***, containing all the code and plans from ***Kick Off 3***.

You might be thinking that Dino must be struggling by now to think of something different to put into a football game. If you were one of the countless millions who thought that, then shame on you – he's come up with loads of great ideas.

REALISM

The ***Kick Off/Goal*** series of games are based primarily on realism. To play ***Goal***, you need to really know how to heft a ball around. For example, didn't it always gall you how players could turn direction instantly, even when they were running full pelt? A crime even Mr Dini is guilty of. In ***Goal***, players will have a 'turning circle' – they turn in a small arc, which grows in relation to their speed.

Hang on, did I say speed? Yes, also gone from 'those previous games' are the '30 miles an hour from a standing start' team mates, and instead you have a more realistic acceleration and deceleration factor. As you push and hold the joystick in a particular direction, the player runs faster and faster. The benefits of running faster are, of course, getting from one end of the pitch to the other in shorter time. The downside is that the ball is far harder to control at speed, just as it is in real life.

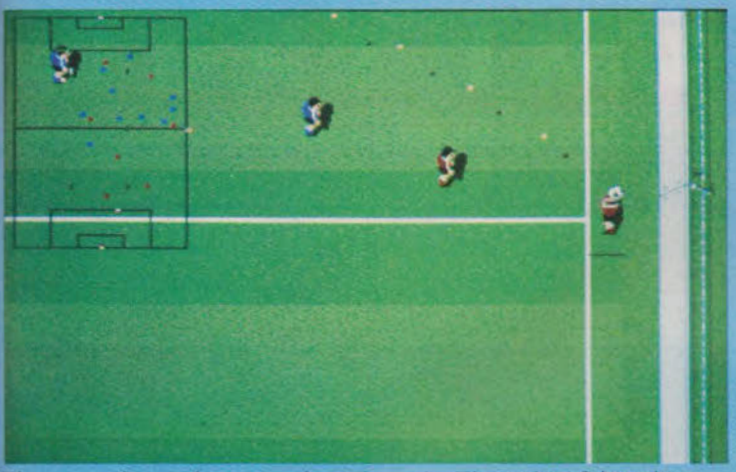
Also gone is the ability to tackle someone from behind. If you were one of the many who found it infuriating that the computer players would walk up behind you and steal the ball through your legs, then your prayers have been answered. Now, if you want to take the ball, you have to take it from in front of the players. By way of demonstration, Dino took possession of the ball, and waited to be tackled. Sure enough, the computer player ran up behind the player with the ball, and then ran around him to tackle. Dino turned in a circle, leaving the computer player running rings. In the end, he gave up and fouled. Apparently, this is what the more temperamental players will do!

Set pieces will be improved too. No more of the nine-direction selection box that ***Kick Off*** players are used to. Instead you have a series of four dots which show direction, strength (depending on how far apart they are) and height. This will be a far better way of taking a corner than the original system, or at least that's the way it looks so far.

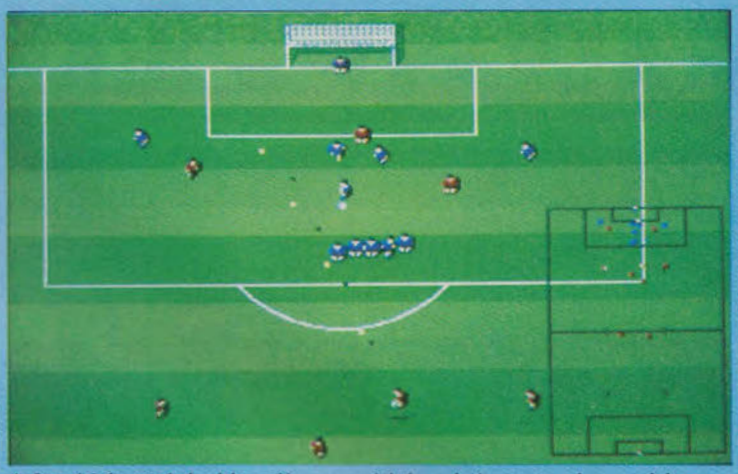
THE HUMAN TOUCH

The goalkeeper will be given more of a human touch. Instead of making a bee-line for the ball the second it enters the box, the keeper stays on his line a lot more of the time. He will also sidestep between the posts and, what's more, he's fallible.

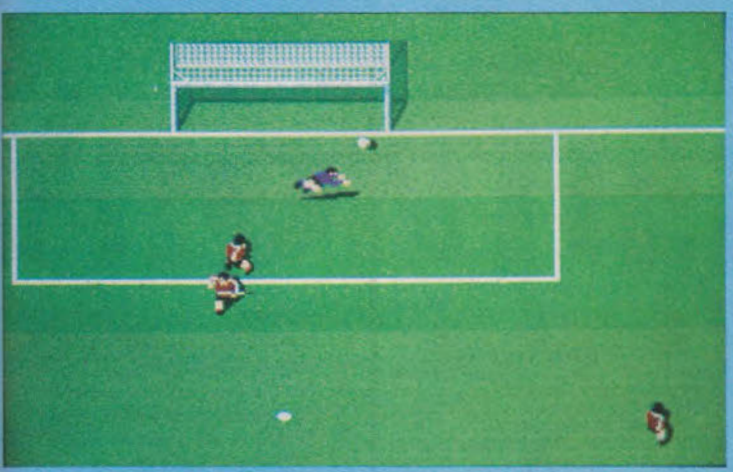
One of the biggest complaints about ***Kick Off*** was the size of the sprites. Of course, the smaller the sprites were, the more of the pitch you could show. Needless to say, these complaints didn't stop Sensible Software coming up with ***Sensible Soccer*** with even smaller sprites, but that's a different story. One novel idea that Dino has come up with is the Screen Switcher. With a tap of the space bar you can switch between the original size ***Kick Off*** sprites, or change to ones twice the size, for a close-up view. This works fine if you stay in one mode or the other, but the computer can be set



The new, advanced way to take a throw-in. The series of dots show the direction along with the force of your throw.



A free kick, and the blues line up with hands in protective positions. Just one of the many set pieces included.



...and it's past the keeper! The keepers now have a series of statistics that affect their overall performance.

The game viewed in the smallest scale. You can see a lot more of the pitch, but less detail.

to change at its own points, which can be seriously disorientating.

GOING SIDEWAYS

If all that isn't quite enough to whet your appetite, the game also features a horizontally-scrolling pitch.

Using the same scale as the vertical pitches, this shows a lot more information about the pitch. For example, from the goal mouth you can see the edge of the centre circle.

Dino is a man who listens to his public, and at its demand, he has also subtly altered the control method.

Along with the acceleration controls, the method of shooting and passing has been changed for the better. Before, all you needed to do to shoot was to release the fire button while selecting a direction. Now, a quick tap is needed. This stops accidental shooting and passing, and aims to make the game just that bit more playable (as if it needed it!).

OUT SOON!

At the time of writing, the gameplay is all there and the rest of the game is fairly close to completion, so the release date of late March looks quite realistic. With all its new features, it can claim to be the most realistic football game around. But whether it will be the best is quite another matter. It might not actually be called ***Kick Off***, but it is undeniably ***Kick Off 3***. Now all that remains to be seen is if Dino has finally managed to create the standard for computer football.

DINO DINI – THE MAN WITH NO NAME

Or at least, the man with two very similar sounding names. We all know who Dino, 27, is, and what he's done, but if you are one of those people who want to know more, then read on.

It all started, believe it or not, in his head.

"I started programming in theory, because I didn't have a computer at the time. I was thinking in 6800 machine code when I was 13, so I guess you could say that's when I started. I read a lot of books, and would write by looking up mnemonics and the numbers in the back of books. I got an Acorn System 1 when I was 15, which was like a sandwich. You had a board underneath and a board on top, with a calculator keypad and a calculator display. I wrote some games there, but there wasn't much of a market.

"I went to the Acorn Atom after that, and wrote a couple of games which did get published, but through a very small company. The first important thing I did was for the BBC Micro – it was called ***Astrotracker*** and it was published by a company named Beebug. But really, the first thing I got serious with was ***Kick Off***."

Strangely enough, ***Kick Off*** wasn't his idea at all: "I was looking for a publisher, and I found Anco who said 'We want a football game', so I wrote a football game."

So the plans were laid for the first burst. Was it hard to come up with ideas?

"I designed it to be realistic – that was the philosophy behind it. I had seen some other games, and what struck me about them was the fact that the pitch was so small. The first thing that I programmed in was the ball routine. I wanted it to be as realistic as possible, and the arc the ball follows is mathematically accurate."

Sensible Software has made no secret of the fact that ***Sensible Soccer*** has taken its inspiration from the ***Kick Off*** games. Dino certainly doesn't have a problem with that:

"Imitation is the sincerest form of flattery. At the time it was released, ***Kick Off 2*** was two years old, so they've copied a two-year-old game. By the time ***Goal*** is released, ***Kick Off*** will be a three-year-old game, so I don't see a problem there."

So how does Dino think ***Goal*** will match up against ***Kick Off 2***?

"***Kick Off 2*** was great for its time, but this is the new model."

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FIRST IMPRESSIONS

One of the new craft showing the glorious attention to hull detail.

The starmaps have been updated drastically.

FRONTIER - ELITE 2

Our intrepid space cadet, Tony Dillon, goes in search of the new Frontier...

It's been almost five years since the release of the ST version of ***Elite***, one of the most ground-breaking computer games ever, and a sequel, ***Frontier***, is finally on its way. The game has been in production for over four years, and has been written solely by David Braben, as Ian Bell, ***Elite***'s co-programmer, has long since left the fold. ***Frontier***'s game style will have a lot in common with ***Elite***, but Braben stresses that there will be a lot more to it than that.

TASK FORCE

You are once again thrust into the cockpit of a spacecraft in the far-flung future and given the opportunity to do whatever you want and go wherever you like.

In the original this meant that you could start trading wherever you liked, or shoot as many pirates as you wanted, but ***Frontier*** goes a lot further. For example, you might find yourself fighting as part of a military operation, or doing all sorts of tasks for people, such as ferrying and taxiing. This should add a lot of depth to the game, giving it a far more varied feel.

One of the biggest steps forward in terms of gameplay has to be the ultimate purchase – a new ship. One major criticism of ***Elite*** was that not being able to upgrade your ship limited the gameplay. In ***Frontier*** you can, so if you like the look of a lumbering Python, why not save up and get one?

The code is a technical miracle. Informed guesses and scientific thinking have allowed Braben to set the game in our galaxy rather than the small, imaginary ones of ***Elite***. The difference? Well, instead of having just 2,000 planets, ***Frontier*** has over 100,000 million.

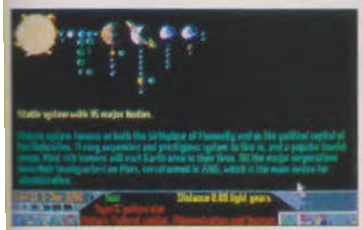
Docking at one of Earth's starbases. Looks a lot better than the dodecahedron from the first game, doesn't it?

VISUAL BRILLIANCE

One of the most exciting aspects of this game has to be the graphics. A lot of effort has gone into making it look right; it features very detailed starbases and planets and the starmaps are astronomically correct, complete with full light-source shading taken from the nearest star!

With all these calculations, you might worry that it will be a little slow. To get around this, ***Frontier*** uses a new graphic system that tests the distance between you and an object and then shows the minimum amount of polygons necessary. Take the back of the Cobra, for example. If you were tailing it in space, you might see a small red dot between the two engines. If you came in a little closer, you might see that it's a sign. If you came in close enough to burn your hair, you'd see that the sign reads 'Engine Radiation – Please Wear Protective Clothing'!

Frontier will be on the shelves towards the end of April and should be the biggest space opera this side of ***Star Wars***.



The game's phenomenal detail is seen here in our solar system.

The list of improvements outdoes the Homebase catalogue.

Flying at over 6,000 kilometres per hour causes a trail effect.

The Moon is carefully detailed with craters and bumps.

AMBERMOON

Sequel mania appears to have set in this month – we look at Thalion's precipitous follow-up to Amberstar. . .

There are a large variety of worlds for you to travel through, like this very alien and very pink desert scape.

Unlike ***Elite***, the original ***Amberstar*** didn't set the games-playing world alight. Although a solid RPG, it lacked that certain something, and the German programmers immediately relaunched their search for it.

Ambermoon takes over where the first game left off. Rather than restrict you to one country, it will be set on a series of different worlds, although the exact number has yet to be determined. The first part of the game will follow the familiar format of collecting and returning objects. And beyond that? Thalion won't give much more away at the moment.

Amberstar's biggest problem was its graphics. Most of the game was played from a top-view, which worked well, so it's been kept for the sequel. In map mode, the game plays like the ***Ultima*** series: you can only see objects on a line of sight, so rooms behind closed doors don't become visible until you actually walk through the door.

DINGY DUNGEONS

The problem was in fact the dungeon scenes. The compass-viewpoint viewing system, that only allowed you to move forward in huge jumps, as used in ***Bard's Tale***, ***Dungeon Master*** and ***AD&D***, was extremely old hat – even more so, thanks to the advent of the excellent texture mapping in ***Legends Of Valour***. With this in mind, plus the fact that right at the end of coding, ***Amberstar*** coder Michael Bittner accidentally came up with a new way of doing texture mapping, the dungeon sections have been completely redesigned.

Texture mapping is a system that allows you to take a two-dimensional image and paste it onto a three-dimensional polygon. For example, your two-dimensional image could be a three-colour brickwork pattern, and your three-dimensional polygon could be representing a wall. Stick the two together, and you've got some realistic pointing. Because the 2D image is rescaled and redrawn every time the 3D polygon is, you end up with the most realistic 3D effect yet possible on a home machine. It also means that you have the freedom of movement you would normally find in a polygon-based game, but with the graphics of a sprite-based one.

The biggest difference between this and Amberstar is the use of texture mapping. Just look at those walls!

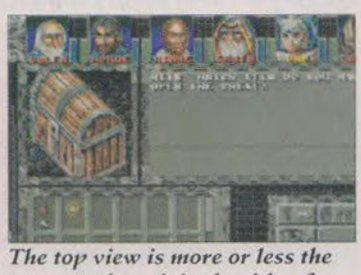
EASY TO USE

The control system has also been given a complete overhaul. The original, with all its icon-clicking and menus, was a little unwieldy for modern games, although it would have been fine a couple of years back. Now all object manipulation and movement is done directly with the mouse. If you want to pick up an object, you just click on it and then drag it to the inventory window. Much nicer.

It looks like a lot of work has gone into ***Ambermoon***, and Thalion's programmers have obviously taken in a fair bit of the advice given to them, but will it be as good as it promises to be? Judge for yourself when ***Ambermoon*** hits the shelves in May.

The inventory screen has been given a massive overhaul, and is now a matter of point and click.

Naturally, there is stacks of treasure to be found, but watch out for the traps!



The top view is more or less the same as the original, with a few refinements to the graphics.

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GAMES TIPS

There's been an absence of tips and cheats in your favourite magazine lately, so we've collected some to keep you going...

DUNGEON MASTER

Monster killing can be easier with the right weapons. Look on level 3 for the Sling, level 7 for the Sceptre Of Light, level 10 for the Speedbow and level 11 for the Bolt Blade.

Find the right weapons and the monsters are easier to kill.

BART VS. THE SPACE MUTANTS

To get infinite lives, type COWABUNGA on the second title screen. You can also press F or type EAT-MYSHORTS during the game to skip levels.

SHADOW OF THE BEAST

Don't you always run out of life points when you need them? Press Enter on the numeric keypad followed by F5, then repeat the sequence any time during the game and you'll get 30 extra life points each time you do it.

OH NO! MORE LEMMINGS

Here are the level codes for the tame section:

1 No code
2 IHRTDLCCAR
3 LRTDLCADAO
4 RTDLCILEAH
5 TDLCAHVFAQ
6 DLCIHVTDAJ
7 LCALVTDHAG
8 CILVTDLIAP
9 CAIPUDLIAQ
10 IHRUDLCKAK
11 LRUDLCALAH
12 RUDLCILMAQ
13 UDLCAHVNAJ
14 DLCIHVUOAS
15 LCALVUDPAP
16 CILVUDLQAI
17 CAHRTFLBBL
18 IHRTFLCCBE
19 LRTFLCABBR
20 RTFLCILEBK

TERMINATOR 2

Even Arnie needs a little help now and again. Skipping levels is as easy as pressing F1 to F10 in order. Then press Escape to advance.

Advance with Arnie! Level skipping made easy.

BLUES BROTHERS

Jake and Elwood die a lot in this game. For infinite lives, type HOULQ on the character screen and press 1 to 6 to skip levels.

SUPERCARS

A great little racing game this, but very frustrating if you can't win enough money to upgrade your car. To start the game with £50,000, type your name in as POOR and you can start with a better one and progress further.

Money is the root of all racing. Win with more cash.

ROBOCOD

A fishy little tip for you. Collect the bonus items in this order:- CAKE, HAMMER, EARTH, APPLE, TAP. This 'cod' help you as you become invincible. The initial letters of the objects spell CHEAT.

Fish around without fear of becoming battered!

MICROPROSE GOLF

Fed up with the ball slicing every time you hit it? Try moving the cursor to the left of the screen, hit the ball as hard as possible and let the snap guide fall all the way to the bottom. The slice should then work to your advantage.

RODLAND

For infinite lives, pause the game and press the Help key five times. Your lives will still decrease, but when you reach zero, you can carry on playing. Press the space bar to go to the next level.

TREASURE ISLAND DIZZY

A nice little trick to give Dizzy some wings. Type ICANFLY during the game and you can now take off.

XENON II

Want to get past the end-of-level monsters? To skip levels, just pause the game and type RUSSIANAIR. When you restart, pressing N will allow you to move up.

PUSHOVER

The domino effect hits the ST! Here's every level code for the entire game.

1 00512	26 11782	51 21534	76 21631
2 01536	27 11270	52 23582	77 22143
3 01024	28 09222	53 24094	78 21247
4 03072	29 09734	54 23070	79 20735
5 03584	30 08718	55 22558	80 28927
6 02560	31 08206	56 18494	81 29439
7 02048	32 24590	57 19006	82 30463
8 06144	33 25102	58 20030	83 29951
9 06656	34 26126	59 19518	84 31999
10 07680	35 25614	60 17470	85 32511
11 07168	36 27662	61 17982	86 31487
12 05122	37 28174	62 16958	87 30975
13 05634	38 27150	63 16510	88 26879
14 04610	39 26638	64 16511	89 27647
15 04098	40 30734	65 17023	90 28671
16 12290	41 31246	66 18047	91 28159
17 12802	42 32270	67 17535	92 26111
18 13826	43 31758	68 19583	93 26623
19 13314	44 29726	69 20095	94 25599
20 15362	45 30238	70 19071	95 25087
21 15878	46 29214	71 18559	96 08703
22 14854	47 28702	72 22655	97 09215
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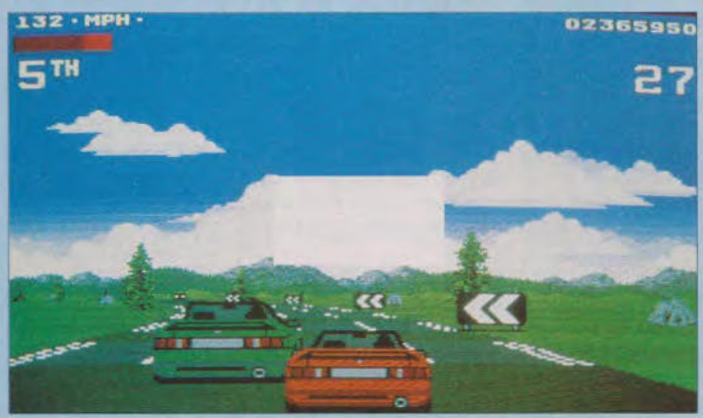

You've got a red car, a full tank of gas and you're wearing sunglasses... It's time to pass greenie and move up to fourth place.

IN BRIEF: ***Lotus Esprit Turbo Challenge*** is best remembered for its innovative two-player mode, incorporating a superb split-screen system which allowed simultaneous yet independent racing for both competitors. It was a classic and, as we all know, classic games demand sequels – which often turn out to be poor re-hashes of the original. Gremlin's ***Lotus Turbo Challenge 2*** was the exception that proved the rule. All the essential areas were improved – graphics, speed, realism and, of course, the multi-player mode. The biggest innovation was the ability to link up two machines, giving the option of a four-player competition. The range of cars also increased, with the addition of the Elan and, with eight levels across America providing the added difficulties (or bonuses depending on how you look at it) of ice, fog, rain and dust, ***Challenge 2*** proved unbeatable.

ST REVIEW COMMENT: "Sequels can often be a disappointment, but the ***Lotus*** series of games from Gremlin was (and still is) a genre leader. Incredibly, when everyone thought Gremlin had got it just right with the first one, the company brought out this sequel and blew the earlier model, and the competition, off the road. The stunningly fast, multi-player action has to be seen to be believed, as do the graphics and general gameplay."

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ATARI ST REVIEW BUDGET BUY

IN BRIEF: Based on the ***Dungeons And Dragons*** concept, ***Heroquest*** involves up to five players taking part in large-scale adventures through mazes, dungeons and caverns in search of fame and fortune. The five main characters are a Barbarian, an Elf, a Dwarf, a Wizard and the Dungeon Master equivalent, the evil Morcar. The computer plays the part of Morcar and you and your friends take on the roles of the good guys.

Each character has special strengths and skills and these can all be improved upon as the game progresses through its 14 different levels. You can buy spells and weapons with your gold and get extra life points, saving your improved character after each level then re-loading him into the next – all shiny and new, with extra powers. The dungeons are full of enemies, traps and puzzles, so there's plenty to keep you busy. Each player takes a turn in which they can move once, fire once, cast spells and so on. Then, finally, Morcar makes his move and the next round begins.

ST REVIEW COMMENT: "The forerunner to ***Space Crusade***, ***Heroquest*** is the second best board game conversion on the ST. It sticks firmly to the spirit and rules of the original board bash – everything is decided by the roll of the die, each player moves in turn, etc. And, because of its superb graphics, the feel of the game is enhanced as you actually watch your characters moving and fighting (almost in 3D). ***Heroquest*** is not an all-action game, but even if you're not an adventurer you should enjoy this one – especially if you like playing with a few friends."

✪✪✪✪✪

Knock knock. Who's there? It's the Ork Twins! It looks as though our warrior could have a fight on his hands.

Search each and every room but watch out for traps and enemies. Check out the goodies on that table!

VIDEOKID

GBH GOLD • £9.99 • 0742 768581

IN BRIEF: Have you ever fancied going completely mad in a cartoon world where all sorts of monsters and madmen are out to stop you getting back to your nice, comfortable living-room in which, only a few moments earlier, you were watching the video? Such are the problems faced by Videokid, a child sucked into a sinister cartoon world with five different time zones and 20 levels of action. Even more incredible, this child is now a wizard who can summon up (and collect) a wide variety of weapons, including arrows, flame balls and lasers to see him through his difficult task.

A platform shoot-'em-up through and through, ***Videokid*** has colourful graphics and plenty of fast action. Sprite movement is smooth and the game has plenty of different scenarios including medieval, western, gangster and space.

ST REVIEW COMMENT: "This is a very enjoyable title and you're bound to laugh at some of the characters and situations, but I can't help feeling less and less enthusiastic every time I play this sort of game. If you're a true platform addict, however, it'll be money well spent as you bounce around shooting dragons, gangsters and snakes."

✪✪✪

Videokid encounters a video nasty. Luckily he brought a few lethal 'fast forward' indicators to throw at the enemy.

It's a strange world. And it's even stranger inside a video recorder – especially when everyone's trying to stop you getting out in time for tea!

TERMINATOR 2

HIT SQUAD • £7.99 • 061 832 6633

In Terminator 2 you have eight different levels incorporating several different styles of play.

In the one-on-one fighting sequences each Terminator can use either guns or fists. Close up fisticuffs is most effective.

IN BRIEF: This game roughly follows the plot of the film – unlike most platform licences. The first level finds the T101 (you) battling against the T1000 in a shoot- and beat-'em-up bout. You then continue in an obstacle-beating race against time in a storm gully, riding your Harley Davidson. A few puzzles, more boxing action, van racing antics and a shoot-'em-up level, round off an extremely unusual eight-level game. The graphics and animation are very well executed and there are some lovely digitised ***Terminator*** images in the intro sequences.

ST REVIEW COMMENT: "The problem with ***T2*** lies in the complete lack of playability on certain levels. The puzzles are OK, the chase scenes are good enough fun, but the one-on-one fighting scenes (of which there are three) are dismally boring and slow. This is a good-looking curiosity game, but not one for the serious player."

✪✪

RBI 2 BASEBALL

HIT SQUAD • £7.99 • 061 832 6633

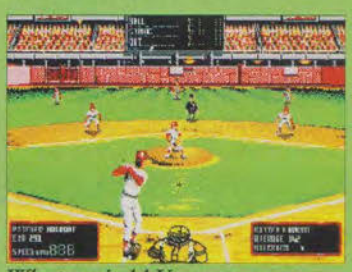
IN BRIEF: Originally released by Domark two years ago, ***RBI*** is graphically the best baseball sim available. Baseball can be a trifle confusing to people this side of the Pond, so luckily the manual is more in-depth in its explanations than the usual Hit Squad scrap of paper. You can select any baseball team from across the USA and compete in single games, or in a world series, against the computer or a human opponent. Two-player mode is actually great fun. Once you've chosen your team, you must then select your pitchers and the line-up of your team. The game is simple enough – someone pitches the ball and another guy hits it – but as you scramble about for outfield balls, and try to knock out the batsmen with expert throws, it becomes extremely absorbing.

ST REVIEW COMMENT: "Excellent graphics and realism make this game both educational and good fun – you'll learn a lot about baseball. Against the computer or a friend, it's easy to get completely struck by ***RBI 2 Baseball*** as you battle through the leagues. Well worth pitching for."

✪✪✪✪

From the title screen onwards, quality is guaranteed.

Smile, you're on TV. Baseball means big business in the USA.



What a pitch! You can go over 100mph with a good pitcher.

A full view of the 'diamond' as the outfielders race for the ball.

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RRP	£269
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- Colour Option Available
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PD ZONE

SWAP TILES

FLOPPYSHOP • DISK NO: GAM.3349 • £2.50 • MEMORY: 0.5MB • PUBLIC DOMAIN

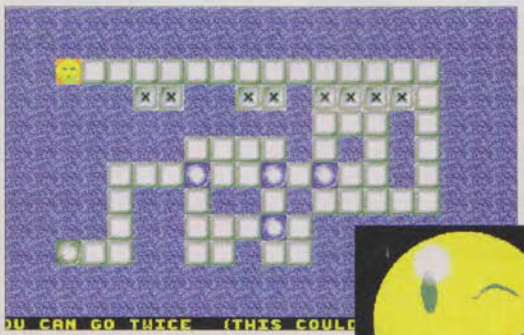
ATARI ST REVIEW ESSENTIAL BUY

IN BRIEF: Every once in a while, a game comes along that has such astounding addictiveness that you have to drop everything and play it until you can take no more. ***Swap Tiles*** is one of these games and it should be approached only if you have several days spare in your schedule!

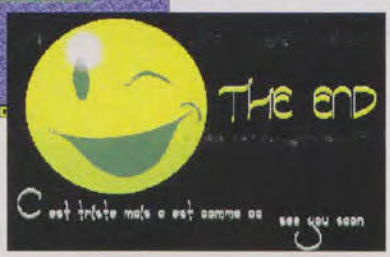
Simple gameplay is the order of the day and the idea is to guide a little yellow 'pacman' over a grid, changing the colour of every single tile. This is far more difficult than it sounds: it's all too easy to get yourself trapped, at which point your blob will do a death spin and sink through the floor. To make matters worse, the tiles can only support your weight for a short length of time. Music is standard demo issue material – annoying, but thankfully it changes with each level.

ST REVIEW COMMENT: "How can such a simple game be so thoroughly engrossing? Somebody, please format the disk so I can get some work done!"

✪✪✪✪✪



Just steer your little character over every square on this grid and you'll move onto the next level – easy, when you know how.

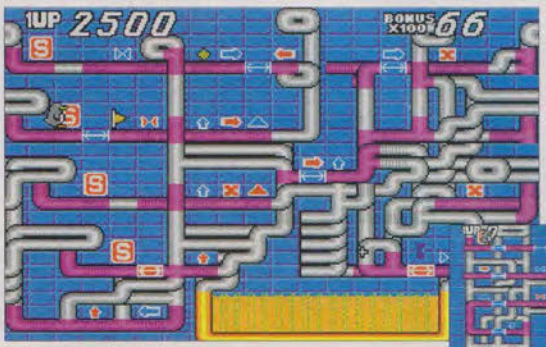


If you think you can spare the time, Swap Tiles is worth its weight in Falcons!

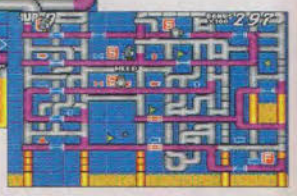
PENGUINS

TUMBLEVANE PDL • DISK NO: GM.042 • £1.50 • MEMORY: 0.5MB • SHAREWARE

ATARI ST REVIEW ESSENTIAL BUY



Just move one penguin from the top to the bottom of the screen – simple, eh?



With four penguins on screen, the action really begins to hot up.

IN BRIEF: ***Penguins*** is yet another commercial-quality game that's thrown off its £20 price tag and dived into the public domain. The concept is very similar to ***Lemmings***' – your mission is to guide a suicidal band of the Antarctic perishers through 20 levels to safety – which is no mean feat!

You can control either one or two penguins simultaneously. Directing them along the right path is a matter of moving small 'action' icons in front of them. These can have good effects, such as putting a penguin to sleep, or bad effects, like killing him. When all are safely guided to the exit door, the next level appears.

The woeful lack of instructions is a major down-point. It's not that it's difficult to play, but seeing your penguin go hurtling to its death for the tenth time in a row is a little frustrating.

ST REVIEW COMMENT: "Once you've managed to work out how to play it, ***Penguins*** is extremely addictive. The control method is uncomplicated and the digitised sound superb. Worth a fiver of anyone's money!"

✪✪✪✪✪

SWISS MEGADEMO

NEW AGE PDL • DISK NO: DEMO.168 • £1.50 • MEMORY: 0.5MB • PUBLIC DOMAIN

IN BRIEF: As demo programmers run out of ideas on the technical front, it's reached the stage where more and more ploys are needed to tempt people into buying their efforts. The ***Swiss MegaDemo***'s claim to fame is a fully-playable game for a main menu and fans of the old Commodore 64 titles ***Head Over Heels*** and ***Batman*** are going to love this! In common with those classics, the graphics are isometric and the game is made up of 10, or so, connecting rooms. Each one contains a puzzle made up from moveable objects and several obstacles. The idea is to reach the strategically-placed 'golden-pool' and be rewarded with a demo screen.

The game is as smooth as silk, and although the demos themselves are nothing to write home about, having to work for them makes all the difference. Should you get fed up, you can always view the demos by pressing the function keys, but that would rather spoil the object, wouldn't it?

ST REVIEW COMMENT: "This is a superb game which is slightly limited by its demo roots. The graphics are excellent, as is the soundtrack, but you are left wanting more!"

✪✪✪✪

Gorgeous graphics line the Swiss Megademo's game-style menu – a dozen or so extra levels, and we'd be talking five-star material.

Put aside the game and you're left with a bog-standard demo – what did you expect, a good game AND an original demo?

SCOTT KING GAMES COMPILATION 1

GOODMAN INTERNATIONAL • DISK NO: GD.1836 • £2.75 • MEMORY: 0.5MB • SHAREWARE

IN BRIEF: The ***Scott King Games Compilation*** is a collection of three games, penned by the man himself over the last year. They have been written in ***STOS BASIC*** and are all based on very familiar game concepts.

The compilation kicks off with ***Dotman*** which is, you guessed it, a ***Pacman*** clone. The game is very faithful to the original, right down to the ghost's eyes, and ghosts float back to the centre of the screen for regeneration. Next up is ***Mr. Marble***, which sees you leaping from platform to platform, collecting marbles. It's a game of skill and timing, and is probably the best of the bunch. Last, but not least, is ***Dam Town***, the aim of which is to stop a band of marauding aliens who just happen to be in the neighbourhood from destroying the dam which protects your city and home. All classic games at an affordable price.

ST REVIEW COMMENT: "All three games are well executed, but originality is severely lacking. Having said that, three games for under three quid is great value for money."

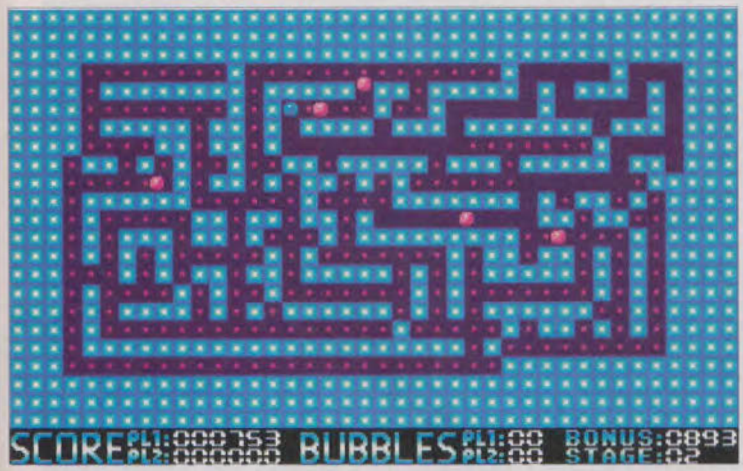
✪✪✪

Bomb the bad guys before they destroy your dam, and then start all over again. Fun for a few tries, but thrill-packed entertainment, Dam Town is not!

Mr. Marble is by far the most original of Scott King's games. Can you deposit three marbles at the collection point before your time runs out?

BUBBLE TROUBLE

NEW AGE PDL • DISK NO: GAME.100 • £1.50 • MEMORY: 0.5MB • PUBLIC DOMAIN



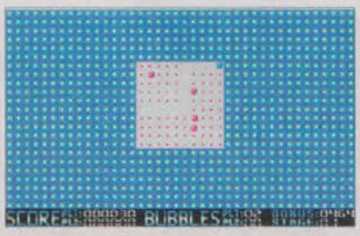
Yes, this really is an ST game! The graphics may be a little on the dull side, but Bubble Trouble's sound is spot-on.

IN BRIEF: Take ***Pacman***, replace the ghosts and the guy himself with a few blobs, shake well and you have ***Bubble Trouble***. The aim of the game is to clear a maze of anabolic 'power-pills' without being nobbled by a ghost. Manage that lot, and you'll be transported to the next, incredibly similar, level.

It's old and hackneyed, but somehow it's still strangely addictive. Quite how blobs are an improvement over the original sprites is a mystery, but the game plays very well and it's very fast. The sound is also good, consisting of a smart, digitised intro tune and the odd crisp spot-effect. As ***Pacman*** clones go, ***Bubble Trouble*** isn't bad at all.

ST REVIEW COMMENT: "***Bubble Trouble*** is an interesting variation on the ***Pacman*** theme, but doesn't have enough originality to cut it. A bit more colour would also improve matters – still, at least it has playability on its side."

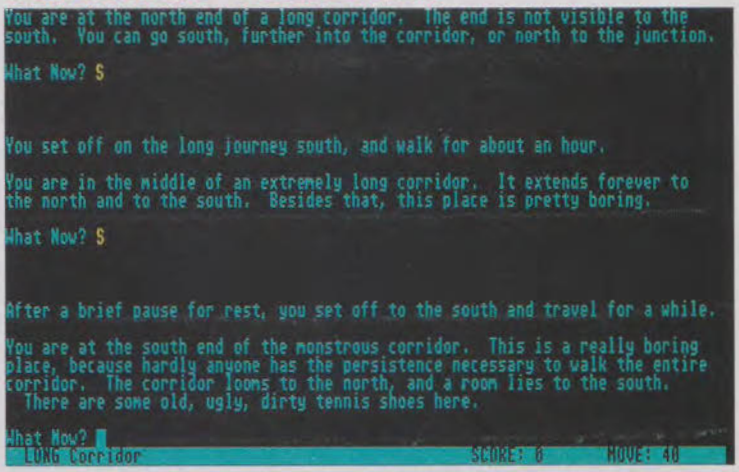
✪✪✪



The gameplay may be great, but a bit of animation and originality wouldn't go amiss.

PORK 1 & 2

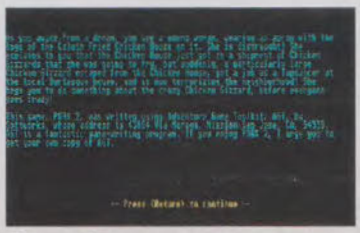
GOODMAN INTERNATIONAL • DISK NO: GD.1718 • £2.75 • MEMORY: 0.5MB • PUBLIC DOMAIN



Don't let the text-only interface put you off – Pork 1 & 2 have a good deal more atmosphere and humour than many graphical offerings!

IN BRIEF: The computing pensioners among you may remember the ***Zork*** series of text adventures, released on the unsuspecting world in the early 1980s. ***Pork 1 & 2*** parody these games, combining the cunning puzzle element of the original Infocom productions with a far-out sense of humour.

Both games are text-only – graphical niceties were not available in the early 80s and the new games carry on the tradition. Don't think for a minute that this limits the appeal of the games, though – once you get used to a text-based interface again, your imagination goes into overdrive and the games just ooze atmosphere. The difficulty level isn't too high and the programmer offers a complete solution should you get stuck.



Sense of humour included! Dare you battle the sumo wrestler and flower-power hippie?

ST REVIEW COMMENT: "The atmosphere is amazing and the game's warped sense of humour more than makes up for the lack of graphics. Two of the best adventures in the public domain."

✪✪✪✪

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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 forgottten 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 vers. available.
GEN-16 60 asstd Samples (SPL format) 'D'
GEN-20 Firstbase DB +7 more good progs '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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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'
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BUS-06 Opus (Professional Spreadsheet) 'D'
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STE-07 Fantasia (not Tos 1.62/1 meg) +3more 'D'
STE-08 Boing STE + Mini-Movie 'D'
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MIDI-17 Recording Studio Utilities 'S'
Keep track of your tracks with these exceptionally good Studio Utilities.
MIDI-12 Henry Cosh Sequencer 'S'
MIDI-14 Name That Tune (111 midi files) 'S'
MIDI-01 PSS special (just for PSS k'boards)'D'
If you own one of YAMAHA's PSS series keyboards YOU NEED THIS DISK . . . . . .
MIDI-03 Create an album from 43 SNG files'S'
MIDI-04 42 SNG files with CZ101 player 'S'
MIDI-05 to 08 each disk has 40 SNG files 'S'
MIDI-10 CZ & DX editors & librarians 'S'
MIDI-11 Picture show with 10 midi songs 'S'
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

COM-02 Galactic Empire..Great on-line game . . You will need two ST's & null modem cable 'S'
COM-03 Vanterm 4.0 (best PD comms prog)'S'
Still the best PD TERM program !!
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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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 Painthx (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 (! Meg min.).
GRA-27 Mono Pictures (43 high-res pics) 'D'
GRA-10 Colourburst II (+ 5 other progs) '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'
This is another program that started life as a commercial package now released as Shareware by Jeff Minter Create your own colour & light show Turn up the music, sit back and be amazed.
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 progams & pictures for Mono users
GRA-1 Picswitch 7.0 (needs 1 Meg !) 'D'
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5 outstanding amiga converted mods
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GAMES

GAM-79	VIOLENCE (brill shoot-em-up)	'D'
No. 4 in December's STR PD Game TOP TEN		
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	Klaxrtrix/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'
GAM-62	Bermuda Races/Geoquiz + 2 more	'D'
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GAM-74	Chess Nut +over 90 game cheats	'D'
GAM-76	Midimaze 2 + 2 more	'D'
GAM-83	S.T.A.C. Adventure Writer Demo	'D'
GAM-84	Tetris/Drachen +4 (MONO games)	'D'
GAM-85	Mutant Camel/Llamatron (1 meg)	'D'
GAM-88	Odeuss & Sir Ramic Hobbs (adv.)	'D'
GAM-93	Mars Maze	'S'
GAM-95	Lazerbasll/Lazer Racer + 3 more	'D'
GAM-23	Go-Up/Nova/Target	'S'
GAM-30	Mix & Match + Plumb Crazy	'S'

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MXB-16	15 asst'd utils inc. Goodies/Fontrix	'D'
MXB-04	12 asst'd utils inc. Codefind/Arc Inc. Archive prog, Assembler to GFA STD code finder, Format prog, HD-Utility, Data Salvage & more	'S'
MXB-25	Miscellaneous STOS upgrade (to any ST), Dual - Column printer, Fastprint utility Spell Checker & Artprint - a way to keep graphic track of your piccy's and Clip Art	'D'

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UTIL-30	Address book/V.kill/Packer + 12	'D'
UTIL-32	MINT (unix type system)	'D'
UTIL-33	Superboot 7.2 +7 others	'D'
UTIL-04	Disk cataloger & Labeler + 1 more	'S'
UTIL-06	Formater/Ramdisk + 12 more	'S'
UTIL-10	Gemini, alternative, Desktop	'S'
UTIL-11	18 asst'd desk accessories	'S'
UTIL-16	17 asst'd desk accessories	'S'
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MUS-22 to 27	Peeks & Pokes 1 to 6 All these tracks are of the same quality as Hi-Fidelity Dreams (MUS-21)	'D'
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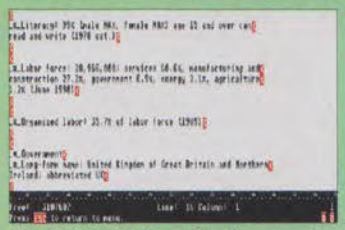
CIA WORLD FACT BOOK 1991

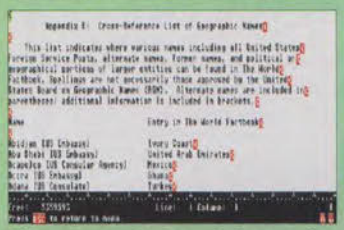
TUMBLEVANE PDL • DISK NO: EAC.21 (FOUR DISKS) • £4.50 ALL IN • MEMORY: 1MB • PUBLIC DOMAIN

IN BRIEF: Every year, the American Central Intelligence Agency (CIA) produces a book of world facts. Thanks to the freedom of information act, this book is now available in ASCII format through public domain channels for anybody to use. Two hundred and forty seven countries are listed with almost all the statistics you could ever hope to find, including military expenditure, literacy, agriculture and so on.

Each entry is broken down into several sections and all can be easily located by using the 'search' facilities of your word processor. A unique reference system ensures you get the heading you need when searching. Unfortunately, the ***Revenge*** display program supplied with the book seems to fall over on the larger text files, so you may be better off using a word processor.



Each World Fact Book entry is marked with a special character to make location simple.



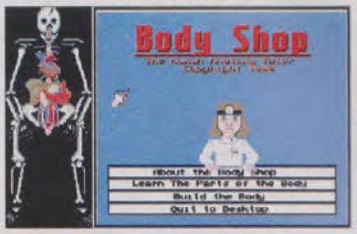
The vast majority of the statistics may be useless, but many may still be of interest.

ST REVIEW COMMENT: "The ***CIA World Fact Book*** is packed with information and is ideally suited to school projects, lectures or any other research."

✪✪✪✪

BODY SHOP

MERLIN PD • DISK NO: MPD.1167 • 99P • MEMORY: 0.5MB • PUBLIC DOMAIN



Body Shop is fun to play, even if you're not a biology student.

Learn your bones and build your own body.

IN BRIEF: "The hip bone's connected to the thigh bone; the thigh bone's connected to the knee bone..." – you all know the tune, but do you know the words? ***Body Shop*** aims to brush up your knowledge of the human skeleton and vital organs through an easy-to-use graphic interface.

The program is broken down into two sections – learn the body and build the body. Once you've made your choice here, you can either choose to go by the common names (eg collar bone), or the medical terms (eg clavicle). Each lesson places the bones one by one on screen until the whole body is built, naming them as it goes along. When you feel confident enough, the 'build body' section shows you a bone and it's your job to choose the correct name from a list. The graphics are well drawn and distinct enough to avoid any confusion.

ST REVIEW COMMENT: "A very polished piece of software. Building a body from the bones is very entertaining. Just what the doctor ordered!"

✪✪✪✪

EARLY LEARNING MATHS 2

NEW AGE PDL • DISK NO: BUPRO.27 • £3.95 • MEMORY: 0.5MB • LICENCEWARE

Be prepared to scrape Dizzy up with a spatula if your maths isn't up to scratch!

IN BRIEF: Dizzy is in mortal danger! The 'meanies' have captured everybody's favourite fluffy software star and only your maths knowledge can save him. Calculators at the ready!

You have four scenarios to choose from, each putting Dizzy and a meanie in a precarious position. Answering a question correctly moves our hero one step closer to safety, while getting an answer wrong results in the screen switching to a classroom, where Dizzy runs through the solution. An ***Operation Wolf***-style bonus game makes sure that little minds don't get too bored.

The starting level is completely flexible and answers are entered via a calculator-style keypad, using the mouse. The graphics, as with all Dizzy Lizzy games, are superb, although more could be done in the way of rewards for correct answers.

ST REVIEW COMMENT: "A sickeningly cute main character, incredibly corny music and plenty of meanies to despise – what more could you want? Neat graphics and a good range of ability levels make ***Early Learning Maths 2*** one to watch out for."

✪✪✪✪

Give your brain a brief rest from the maths with the meanie blaster bonus game.

MINI MAGIC STORYBOOK

GOODMAN INTERNATIONAL • DISK NO: GD.1772 • £2.75 • MEMORY: 0.5MB • SHAREWARE

ATARI ST REVIEW ESSENTIAL BUY

Just position the characters where you need them and click the button to animate – there is life after Fuzzy Felt!

IN BRIEF: ***Mini Magic Storybook*** is to educational software what ***Deluxe Paint*** is to art. Why didn't somebody think of it before?

Basically, it allows you to combine pictures, sound, animation and text in a professional-looking story; it's a little like educational hypermedia. All editing can be carried out from within the program, using the mouse, and another nice touch is that the child's name can be used instead of the hero's.

Considering the power of the program, it's relatively easy to use, although a parent will probably need to be on hand to help out. One or two features are disabled in this shareware release, but the full version only costs £10, so it's hardly likely to break the bank.

ST REVIEW COMMENT: "It makes a real change to find some educational software that takes advantage of the huge potential of the home micro. The on-disk manual is a little flaky, but registration brings a vastly improved printed version."

✪✪✪✪✪

SHOESTRING COMPILATION 1

SHOESTRING SOFTWARE • DISK NO: COMPILATION.1 • £3.95 • MEMORY: 0.5MB • NOT TOS 2.0+ • LICENCEWARE

Waste the letters to spell a word and make it to the next level; fail and the aliens will return fire, depleting your energy.

IN BRIEF: Two games for the price of one can mean one of two things – twice the value, or twice the pain. Fortunately, Shoestring's first compilation falls firmly into the first category. First up is ***Moon Letters*** which is an educational shoot-'em-up. The aim is to blast the letters that form a word – hit any by mistake and an alien fires back, depleting your energy.

The second game, ***Robot Words***, is an out-and-out ***Hangman*** clone with a robot who, if built, will destroy the earth! As each game ends, the screen switches to a newsroom which gives an animation based on your success or failure. Finally, you get an editor capable of changing or expanding the words used by both programs.

ST REVIEW COMMENT: "***Robot Words*** and ***Moon Letters*** may lack ***Magic Storybook***'s professional graphics, but both are great fun to play and, when you consider the word editor, very good value for money."

✪✪✪✪

Spell the word and save the planet. Robot Words makes learning fun.

DIZZY FUNTIME

NEW AGE PDL • DISK NO:BUPRO.18 • £3.95 • MEMORY: 0.5MB • LICENCEWARE

Superb graphics are Funtime's main attraction.

Funtime's icon-driven interface is easy for young children.

IN BRIEF: Dizzy makes a second appearance this month in ***Funtime***, a program for the three-to-six-year-old age group. Two programs are included on the disk, each containing four games ranging from a simple 'Match-it' to the more educational 'Clock' and 'Coins'. While of educational value, the focus seems to be more on making the games fun to play or watch – the 'Seasons' screen, for example, is just a series of humorous animations of the seasons of the year.

The graphics in most of the games are wonderful and the large picture-driven menu screen should be a breeze even for very young children. A little more suspect is the interface which seems to occasionally miss mouse clicks.

ST REVIEW COMMENT: "Simple gameplay and delicious cartoon-style graphics make ***Dizzy Funtime*** ideal for young children. The interface does have one or two little quirks, but there's nothing serious enough to spoil a very effective piece of software."

✪✪✪✪

TOP TEN EDUCATIONAL PACKAGES

1 MINI MAGIC STORYBOOK • GOODMAN INTERNATIONAL • DISK NO: GD.1772 • £2.75 • MEMORY: 0.5MB • SHAREWARE

When it comes to educational software, ***Mini Magic Storybook*** is in a class of its own. The concept is a breath of fresh air and its commercial roots are evident in the superb graphics and sound.

2 LET'S SPELL 500 • GOODMAN INTERNATIONAL • DISK NO: GD.1771 • £2.75 • MEMORY: 1MB • SHAREWARE

This program is based around common scenes – such as at the greengrocer or in the bathroom – where the child must spell common words.

3 FUN WITH WORDS • THE ST CLUB • DISK NO: GAM.183 • £1.45 • MEMORY: 0.5MB • HIGH RESOLUTION MONITOR REQUIRED • PUBLIC DOMAIN

A collection of mono programs written by David Becker of ***DB Writer*** fame. Included are: ***ABC Jumble***, a program designed to help young children learn the alphabet, three puzzle-generation programs and a name generator.

4 EARLY LEARNING MATHS 2 • NEW AGE PDL • DISK NO: BUPRO.27 • £3.95 • MEMORY: 0.5MB • LICENCEWARE

The forces of good and evil clash in Dizzy Lizzy's second educational outing. Using your mathematical skills, it's up to you to take on the 'meanies' in a nine-level confrontation. Cute animation and an all-action meanie-blaster bonus game make ***ELM 2*** stand out from the crowd.

5 DIZZY FUNTIME • NEW AGE PDL • DISK NO: BUPRO.18 • £3.95 • MEMORY: 0.5MB • LICENCEWARE

One of the few programs the public domain has on offer for very young children. Eight mini-games and animations are included and, once again, most feature our fluffy friend, Dizzy.

6 BODY SHOP • MERLIN PD • DISK NO: MPD.1167 • 99P • MEMORY: 0.5MB • PUBLIC DOMAIN

Get to know your way around the bone structure of the human body with this unusual package. Medical and common names can be learned and the program includes a 'build the body' option to make sure all of the names and positions have sunk in.

7 MINI JUMBLE • SHOESTRING SOFTWARE • DISK NO: BY NAME • £2.95 • MEMORY: 0.5MB • LICENCEWARE

A digital version of the 'word square' puzzle to be found in most newspapers. Look at the square, type some words and try desperately to get your name in the high score table. Granted, it may sound boring, but start playing and you'll find it hard to put down!

8 CIA WORLD FACT BOOK • TUMBLEVANE PDL • DISK NO: EAC.21 (FOUR DISKS) • £4.50 ALL IN • MEMORY: 1MB • PUBLIC DOMAIN

All of the information and statistics you could ever hope to find on the world's 247 major nations. An excellent reference system is used which makes finding the information you need as simple as possible.

9 MATCH MAKER • CALEDONIA PDL • DISK NO: GM.138 • £2.50 • MEMORY: 0.5MB - SHAREWARE

A variation on the classic 'match-the-tiles' theme. This version puts you up against a tight time limit and is much more enjoyable than the pedestrian-paced original.

10 STATES AND COUNTIES 1.3 • NEW AGE PDL • DISK NO:BUGAM.98 • £2.95 • MEMORY: 0.5MB • LICENCEWARE

An upgrade to this popular package, designed to help you learn place names. It now includes the United Kingdom, Ireland, USA and Africa and takes the form of a 'type the name of the highlighted county' test. Featuring superb graphics, this is one of the best-looking educational programs around.

PD ZONE

Get Misty-eyed and check out the latest inexpensive, handy utilities in our monthly round-up

MISTY

FLOPPYSHOP • DISK NO: DEM.3474 • £2.50 • MEMORY: 0.5MB • SHAREWARE

Wobbly bars, vector text, bitmap mania and an ultra-fast scroller. All are written with STOS and the shareware Misty extension.

IN BRIEF: Nobody can deny the power of ***STOS BASIC*** for creating demos and games, but push it hard and your program can end up running slower than a tortoise with a broken leg! ***Misty*** aims to solve this problem by replacing some of ***STOS***' slower commands with suicidally fast routines that also have the advantage of being more flexible!

A total of 21 extra commands are included and most are designed to speed up screen operations. Some are direct replacements for existing ***STOS*** commands while others are completely new. To give you an idea of the power of these new commands, 'SKOPY' is a loose replacement for the SCREEN COPY command, but is twice as fast and also enables you to copy individual bit-planes!

The extension is distributed as part of the ***Misty Demos*** which really show off the power of the new commands. Registering for a measly £5 buys you extra extensions for border-busting and raster interrupts!

Installation is housed in the Misty Demos, all of which show the true power of the extension. If you think you can cope with the complexity, don't miss Misty!

ST REVIEW COMMENT: "***Misty*** is hugely powerful, but you do have to understand the structure of an ST screen to make the most of it."

★★★★

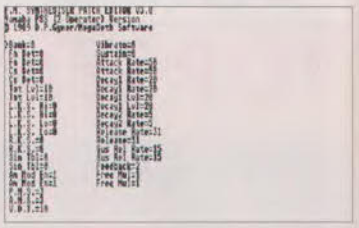
PSS UTILITIES

TUMBLEVANE PDL • DISK NO: MWM.046 •£1.50 • MEMORY: 0.5MB • PUBLIC DOMAIN

Let your Yamaha flex a few of its muscles with some upbeat demo tunes, courtesy of the PSS Utilities disk.

IN BRIEF: For entry-level MIDI, the Yamaha PSS range is extremely hard to beat. Around £180 buys you a 16-part multi-timbral, 28-key polyphonic synth, but at the expense of some flexibility. Editing patches from the synth is a no-no and the non-standard instrument arrangement also makes most sequencer demo tunes sound awful unless you know what you're doing.

This disk solves the problem nicely; firstly, by the inclusion of a basic patch editor. It certainly isn't award-winning material, but it does get the job done in a relatively painless way. A selection of demo tunes, written specifically with the PSS instruments in mind, also help you to test out your newly created sounds. A system-exclusive librarian (to save your PSS's memory bank to disk) is also to be found on the disk along with a drum machine.



Powerful and easy to use? No, but faced with the choice between this and nothing, I'll take the PSS Patch Editor every time!

ST REVIEW COMMENT: "The demo tunes are quite nice, but the text-based interface used by the editors falls a little short of today's standards. On the other hand, at only £1.50 to try, who's complaining?"

★★★

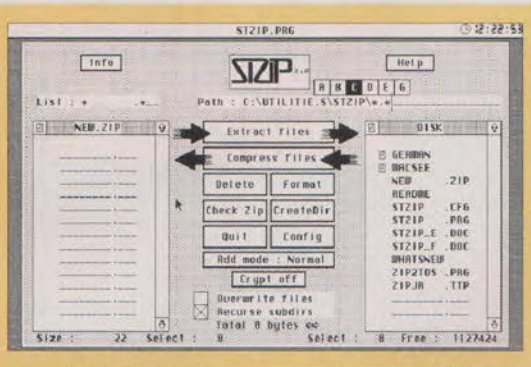
ST ZIP 2.0

THE ST CLUB • DISK NO: DMG.32 • £1.45 • MEMORY: 0.5MB • POSTCARDWARE

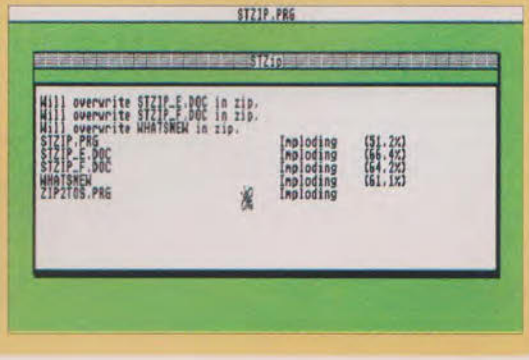
ATARI ST REVIEW ESSENTIAL BUY

IN BRIEF: Archivers are traditionally hell to use, but that's all set to change. Thanks to ***ST Zip***'s clever use of GEM, you can forget PC-esque command lines and switches forever!

On loading, you're presented with a dialogue box containing two windows. The first represents the 'ZIP' file and shows a list of the files it contains, while the second is a directory of the disk. Two large buttons control extraction and compression and it's just a case of selecting the files you need and clicking the corresponding button. The speed of the program is blistering and a constant progress report is given on screen. You even get a separate utility capable of creating self-extracting archives! ***ST Zip 2.0*** comes compressed on the ST Club's Disk Mag 32 along with over 1.4 Megabytes of other top quality utilities.



Not only is ST Zip's superb GEM interface streets ahead of the competition, the compression rates put ARC to shame!



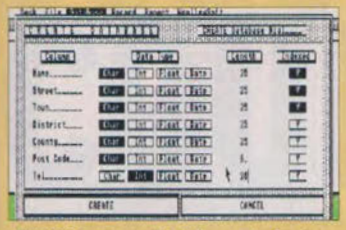
A constant report of Zip's progress is given on screen, which helps you to see just how much space you are saving.

ST REVIEW COMMENT: "***ST Zip 2.0*** is one utility you just have to have. The compression rate is superb, frequently up to 80 per cent, and the program is fully compatible with the PC version."

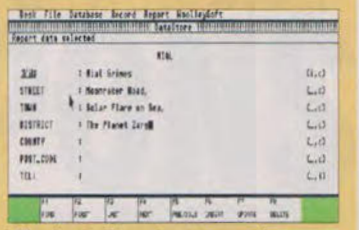
★★★★★

DATASTORE

CALEDONIA PDL • DISK NO: AU-106 • £2.50 • MEMORY: 0.5MB • SHAREWARE



Setting up a database is just a case of filling out this dialogue. Make a mistake and Datastore will helpfully clear the lot!



The interface is uncannily similar to First Word and has the same level of user friendliness – unfortunately at the expense of power.

IN BRIEF: From the firm that brought you ***The Guru*** comes ***Datastore*** – an application that will allegedly do for databases what ***First Word*** did for word processors!

The ***First Word*** influence is immediately apparent when you boot up with a panel of buttons along the bottom of the screen and a standard GEM menu and window in the centre. Creating a file is straightforward, as long as you've used a database before. The limitations come in the form of restricted search facilities and the fact that you can only have one file open at any one time. Some problems were encountered while setting up, but deleting the 'SYSTEM' files and letting the program generate new ones seemed to solve these.

ST REVIEW COMMENT: "***Datastore*** is not terribly powerful, but it does have its interface on its side. The documentation is fairly good and the simple approach might be just what you need."

✪✪✪

SMOOTH DRAW

THE ST CLUB • DISK NO: DRG.56 • £1.45 • MEMORY: 0.5MB • SHAREWARE

IN BRIEF: Yet another art package hits an already bulging market. ***Smooth Draw*** is very similar to ***Degas*** in many ways, although it uses a custom interface as opposed to GEM.

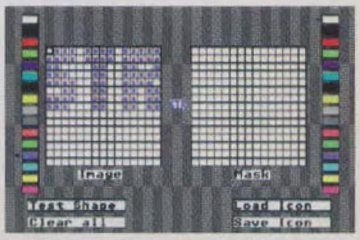
Feature-wise, there's nothing stunning on offer. You get a selection of all the standard drawing tools and not a lot else. Non-standard screen sizes are not supported, but the program is quite happy to run in ST low, medium and high resolution modes. GDOS fonts can be used in your drawings if you have any loaded and the mouse pointer can also be redesigned thanks to the built-in editor.

There are no major complaints. The program is stable and works well, although the fact that the picture colours are used on the menu screen is a little annoying. The documentation is good and the registration fee of $15 is reasonable.

ST REVIEW COMMENT: "***Smooth Draw*** is not a world-class package, but at least it runs in all three ST resolution modes. If you don't hanker after the many effects offered by ***Crack Art*** and the like, then this is worth a look."

✪✪✪

Smooth Draw is not the epitome of power, but if running in all three resolutions is a requirement, it's worth a go.



Selecting the mouse pointer editor brings you to this screen – it's simple to use and you can even change the colour.

TOP TEN UTILITIES

1 ST ZIP 2.0 • THE ST CLUB • DISK NO: DMG.32 • £1.45 • MEMORY: 0.5MB • POSTCARDWARE

Archiving is now painless thanks to ***ST Zip***'s superb GEM interface. The compression rates are arguably the best of any ST archiver and the files are fully compatible with ***PK-Zip*** on the PC.

2 MISTY • FLOPPYSHOP • DISK NO: DEM.3474 • £2.50 • MEMORY: 0.5MB • SHAREWARE

STOS makes it to the big time at last with the release of the ***Misty Extension***. Some stunning effects can be achieved with a little knowledge of the ST's video architecture, as the built-in demos are only too pleased to demonstrate!

3 DB WRITER & SUPPORT DISK • DISK NO: GD.1672 & GD.1673 • £5.50 • MEMORY: 1MB • HIGH RESOLUTION MONITOR REQUIRED • SHAREWARE

It may be old, but ***DB Writer*** is still one of the best word processors in the public domain. Now it comes complete with a support disk, containing supplementary dictionaries for the medical, computing and mathematical fields.

4 BJ-CHROME • CALEDONIA PDL • DISK NO: AU.202 • £2.50 • MEMORY: 0.5MB • SHAREWARE

Canon bubblejet owners can now see their artwork in full colour with the help of this, the BJ version of ***HP Chrome***! Once again, the program is fully GEM-driven and pictures can be sized, cropped and tweaked before being separated and output in four passes.

5 STE STRETCH • CALEDONIA PDL • DISK NO: AU.205 • £2.50 • MEMORY: 1MB • STE ONLY • PD

This is an excellent virtual screen driver that allows you to specify the size of the screen you need at boot-up time. No instructions are included, but pop the program in your AUTO folder and it all becomes self-evident.

6 VDOS PROQUEUE • CALEDONIA PDL • DISK NO: AU.176 • £2.50 • MEMORY: 0.5MB • SHAREWARE

VDOS Proqueue is a nifty program launcher that makes searching through dozens of folders for a buried utility a thing of the past. The program falls short of the ***Superboot*** standard in terms of power, but the trendy user interface gives it an edge in the usability stakes.

7 DRUGS DATABASE • THE ST CLUB • DISK NO: UTI.243 • £1.45 • MEMORY: 0.5MB • SHAREWARE

Ever wondered exactly what the doc is giving you in those pills he prescribes? If so, you might find this database useful – just enter the drug concerned and up will pop a simple explanation of its use! ***SuperCard*** is included, so you can be up and running in seconds.

8 PAGESTREAM UTILITIES • FLOPPYSHOP • DISK NO: UTL.3429 • £2.50 • MEMORY: 1MB • SHAREWARE

Demo documents, fonts, colour lists and many more utilities that will prove invaluable for any serious ***PageStream*** user. A tutorial by Atari itself on creating special effects with the use of macros also makes interesting reading. Use with ***PageStream 2*** is recommended.

9 MOUSE TRICKS SUPPORT DISK • THE ST CLUB • DISK NO: UTI.204 • £1.45 • MEMORY: 0.5MB • PD

This collection of utilities will come in handy for ***Multiprint*** or ***Mouse Tricks*** users. It includes ***Big Screen***, a virtual screen driver for pre-STE machines; the ***MaxiDisk*** reset survivable RAM disk; ***Chameleon***, an on-the-fly accessory loader; TOS bug fixes, and much more!

10 FORMDOIT • NEW AGE PDL • DISK NO: UTIL.39 • £1.50 • MEMORY: 0.5MB • PD

This program replaces GEM's 'Formdo' call with its own turbo-charged dialogue handling routine: all dialogue buttons have keyboard equivalents, special characters can be entered into text fields and moving from field to field is made easier by the use of the <RETURN> key. A very simple and effective program.

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"Certainly more than you'll ever need, unless you manage to trace your relatives back to Fred and Wilma Flintstone." -**Atari ST User.**

"All in all, the best genealogy program available for the ST and well worth the money if you are considering tracing your family." -**ST Format.**

To order your copy of Family Roots, send a cheque or postal order for £24.95 to the address below. A disk with useable demos of Family Roots, Around The World and Professional Virus Killer is available for £1.00.

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Floppyshop are pleased to announce the release of their first commercial game. Around The World is an arcade adventure in which assume the role of Phineas as he negotiates his way through 40 taxing levels of sheer enjoyment and addiction.

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The game features a large playing area, devious puzzles, creeping fungus, rock falls, explosions, an original soundtrack, 50 entry high score table, 40 levels of increasing difficulty, over 40 colours on screen and much more!

Around The World was programmed over more than a year by The Pixel Shop, better known for their many Budgie UK titles under the name of The Happening Boiz.

To order your copy of Around The World, send a cheque or postal order for just £9.95 to the address below. UK postage free, please add £1.00 for Europe or £2.00 for the rest of the World. Credit card orders welcome. A disk with useable demos of Family Roots, Around The World and Professional Virus Killer is available for £1.00.

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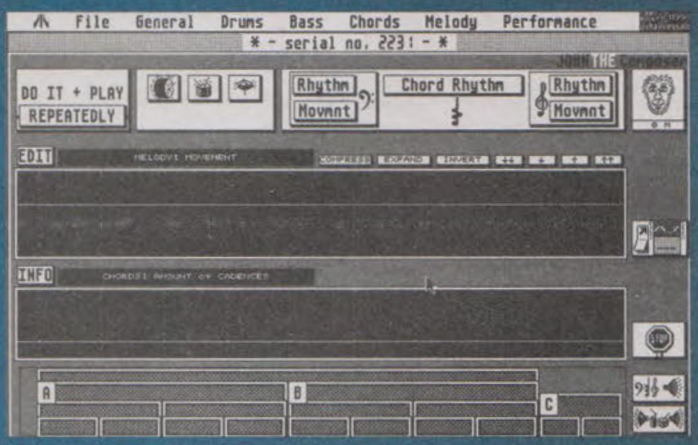
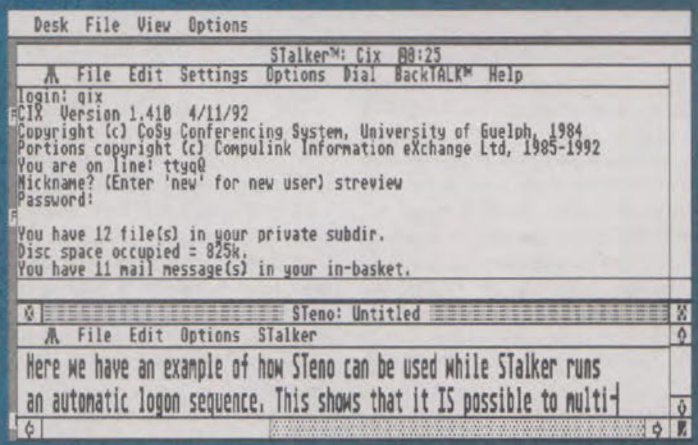
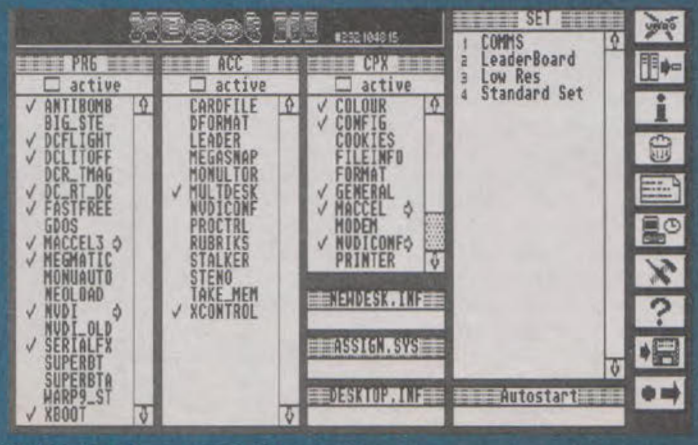


A novel and rather wacky musical program, John The Composer can create music in various different styles. Our review starts on page 72.



From the same stable as STalker which we looked at last month, STeno is a powerful, GEM-based text editor. Check out the review on page 88.



Is XBoot III up to HiSoft's usual high standards? Read the review on page 84.

Time for the Blues again – 32 pages filled with informative, useful facts to help you get the best from your ST.

Have you ever wondered whether you're using your disks as efficiently as possible? This month, Problem Solved takes a careful look at how to get the very best out of disks – a little theory and lots of practical advice.

For the musicians amongst you, MIDI Monthly investigates John The Composer, the excellent TONY TG-100 editor and a couple of Heavenly Music's superb MIDI song files. There's also some advice on buying a multi-track recorder.

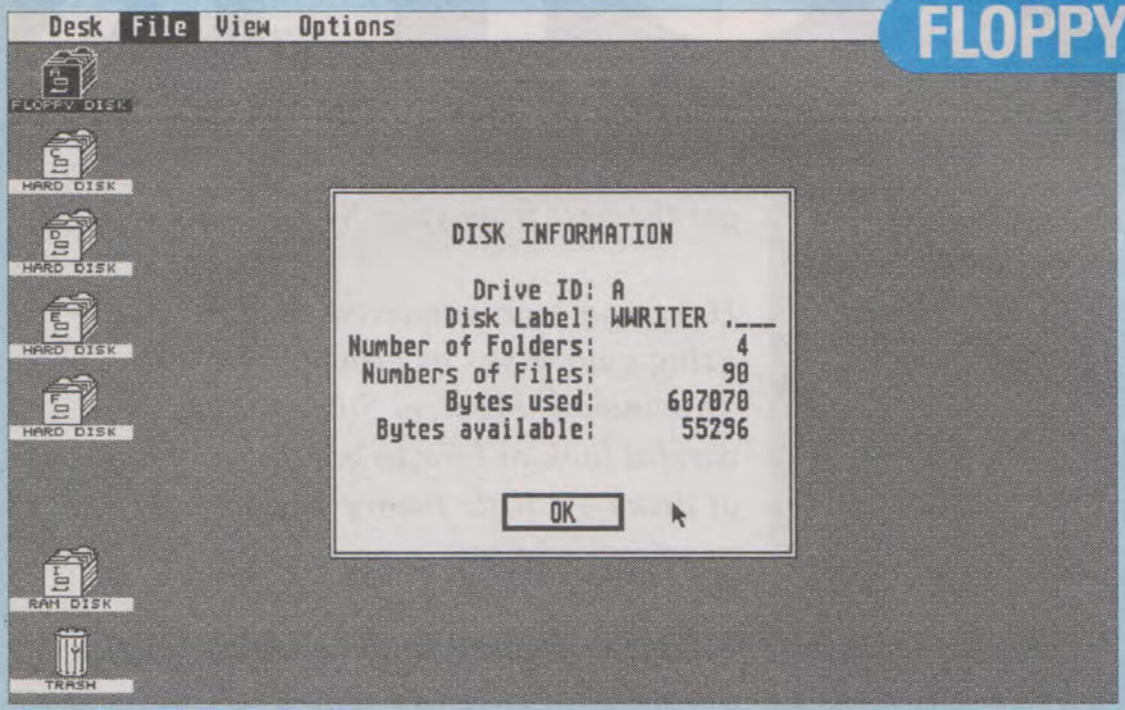
If you've been following our tutorials, there are the final parts of HiSoft BASIC on page 81 and Gajits' Breakthru, starting on page 78. And if you want to know more about the software you'll need to run your own business, have a look at the feature on page 86.

XBoot III, UIS, STeno and Cardfile 4 are all put through their paces this month; you can even win a copy of STalker, STeno and Cardfile 4 in our easy-to-enter competition on page 89.

Ask The Experts, Learn The Lingo, Letters and the Blitter End – all the regular features are here. So go on; turn over the page and be enlightened ...

PROBLEM SOLVED!

FLOPPY DISKS



Unless I'm mistaken these numbers don't add up to 726,016? What's going on?

Frightened of floppies? Confused about clusters? Andrew Wright delves into the disk dynamics as he gets to know his ST better

If it wasn't for floppy disks, we wouldn't be able to get programs into our STs. Without programs, the machines would be totally useless. This might sound pretty obvious to you, but it's really surprising how little most people know about one of the ST's most vital working parts.

Whichever type of ST you've got, you'll find that knowing more about how floppies work will help you get more out of your machine. The original STs were equipped with single-sided disk drives but there aren't many around now. If you still have one and haven't upgraded, extended formatting will give you a lot more disk space.

Newer models have double-sided 720K disk drives (also known as one Megabyte drives) while some models such as the Mega STE, TT and Falcon have 1.44 MB, high-density drives.

You can buy replacement high-density drives for your ST which involves a small hardware modification. There are two main advantages – an increase in storage capacity and faster data transfer rates.

DISK STRUCTURE

When you buy a new floppy disk, it has no structure on it. That is left for the computer's operating system to sort out. GEMDOS, the part of the ST's operating system that handles disks, formats a disk so that it has 80 tracks, each consisting of nine sectors. The tracks are arranged concentrically, with track 0 being on the outside and track 79 the inside.

A double-sided disk thus has 80 x 9 sectors on each side, which is a total of 1,440. As 512 bytes of information can be stored in each sector, this would seem to give us a storage capacity of 737,280 bytes. However, some of the disk is used for information about the layout of the disk itself. Track 0 on both sides is used for this, 18 sectors in all. The first sector is the boot sector and there are five sectors for each of the two File Allocation Tables (FATs) plus seven for the root directory. Subtracting these 18 sectors from 1,440 leaves us with 1,422 sectors or 728,064 bytes free for our data.

If we format a disk from the desktop, we get a message that 726,016 bytes are available. Where are the missing 2,048 bytes? Actually they're still there, but a small bug in TOS hides them from view and prevents software from reporting them as free space.

Occasionally, you will notice that

MS-DOS

The ST should have been able to write MS-DOS disks a long time ago but Atari kept getting it wrong. Early versions of TOS could read MS-DOS disks but PCs couldn't read ST ones. Quite often they couldn't read ones that had been anywhere near an ST.

With TOS 1.04, Atari nearly did it. The ST can now format disks that are compatible with many PCs – but not all! The different FAT structures don't seem to bother most PCs – the difference lies in the media descriptor byte which should be present in the FAT itself for MS-DOS to read the disk properly. TOS 1.04 doesn't put it in the right place. It should work for a good two-thirds of PCs, but for true compatibility you'll need a formatter that recognises the problem, such as ***Fastcopy Pro***, ***Diamond Format*** or even ***Maxifile III***.

MS-DOS boot sectors are increasingly common these days, even on disks supplied with commercial programs. It is a widely-held misconception that MS-DOS format disks can't be attacked by ST viruses. According to Richard Karsmakers, author of the ***Ultimate Virus Killer***, an ST virus can exist on an MS-DOS boot sector just as it can on an ST one. You do gain an extra 2K formatting it this way (the FATs are three sectors not five, releasing four sectors for data) but pay a price in speed as STs read and write MS-DOS disks more slowly (see the accompanying table on page 70).

the number of bytes used and the bytes available don't seem to add up to the formatted capacity. This is because the operating system deals in clusters (two sectors) as the smallest available unit. Each file is allocated as many clusters as it needs for storage but any space left over will be ignored by the operating system. For example, a file you know to be 3,500 bytes long will take up four 1,024 byte clusters leaving 596 bytes wasted (4,096 - 3,500 = 596 bytes). It doesn't amount to much but, statistically, you can expect each file you add to a disk to waste half a sector or 512 bytes. If you store around 50 files per disk, they will appear to take up 25K more than you would expect.

The directory area uses 16 bytes of information to store the details of each file on the disk. As there are seven sectors, this means that a standard disk can only contain 112 files or folders in the root directory (you can store many more in separate folders as the information on these is stored in the main data area). In practice, you are unlikely to store more than this on a single disk, but if you've had problems in the past with disks full of small files, this may well be the cause.

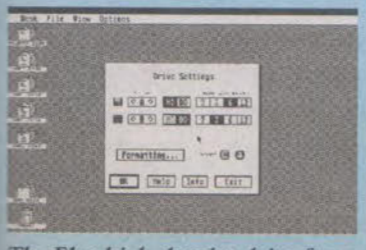
EXTENDED FORMATS

There are several ways of speeding up reading and writing operations on floppy disk drives. One way is to increase the number of tracks or sectors, or both. Some drives are reputedly able to format up to 86 tracks, each with 11 sectors, giving more than 970K of storage space.

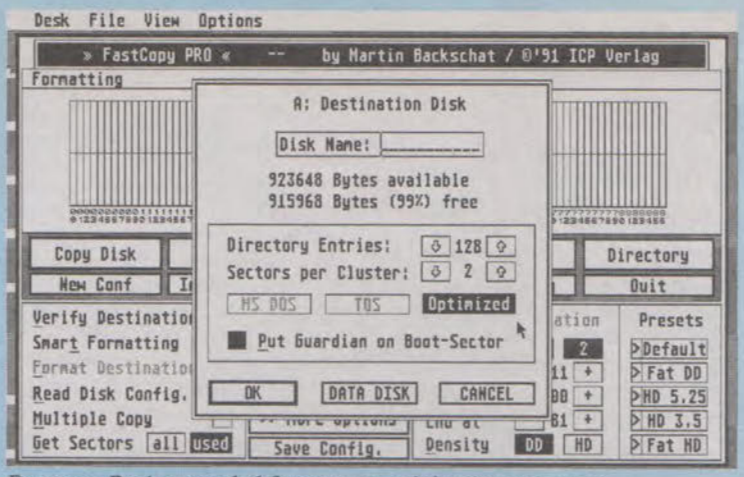
Repeated use of extended formats is not recommended – the disks are unreliable and should only be used for backups or archives. On the other hand, they are occasionally useful when transporting big files.

Another method is to cut down the size of the FATs or even the directory area. MS-DOS disks have only three sectors per FAT, saving 2K on each disk, so formatting disks in this way can gain a little. Intelligent formatters such as ***Fastcopy Pro*** will let you reduce directory space (and hence the number of entries permitted) to save even more.

The safest extended format is the standard 80 tracks, but with 10 sectors instead of nine. This gives a capacity of 812,032 bytes free for



The Elco high-density drive from System Solutions.



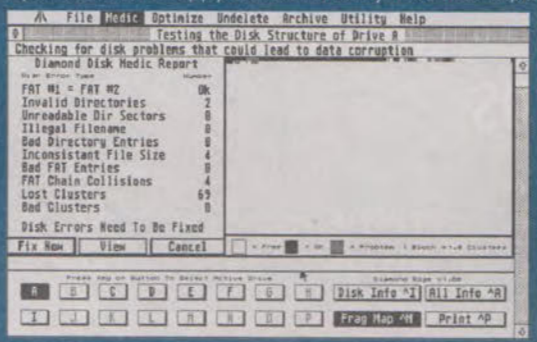
Fastcopy Pro's extended formats certainly give you more storage space.

little or no risk. Adding an extra track gives you 10K more, but there are some disk drives that won't read more than 80.

High-density disk drives are catching on fast. Data access times are at least 20 to 30 per cent higher, for a start, and although they cost twice as much, they can store twice the information. With extended formats, up to 1.75 MB can be stored quite safely on a single disk as the higher quality medium should support more sectors and tracks without the same risk of data loss.

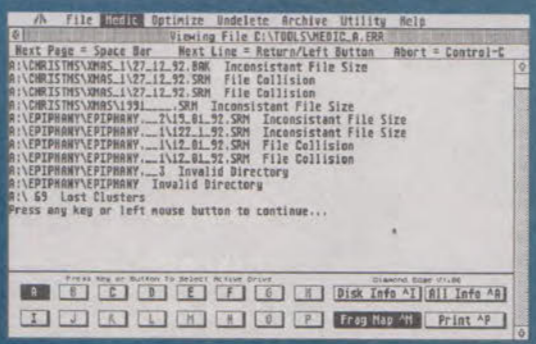
WHEN SOMETHING GOES WRONG

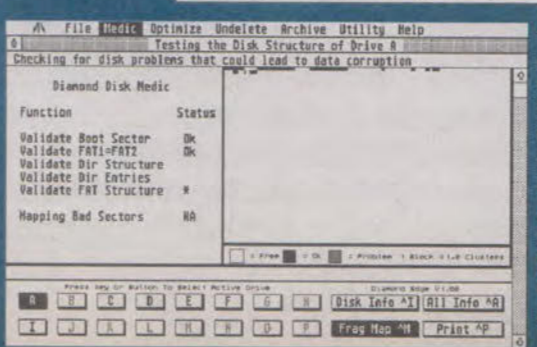
Disks do go wrong, no matter how careful you are. Two of the best tools for mending disks come from HiSoft. The first is ***Knife ST***, a disk editor that lets you look at the data directly on the disk to help rebuild files. The second is the newer ***Diamond Edge*** which can automatically repair hard and floppy disks with very little user input.



There are some serious problems on this disk.

The report shows the extent of the problem.





Fixing the errors with the Disk Medic. All the lost clusters are saved to disk in a file – if they're text files they can be retrieved and put together again.

HINTS AND TIPS

- If you need high-speed reading of data (for example to load overlay files from ***Timeworks*** or another disk-accessing program), stick to the standard format or consider a high-density drive.

- If you want to be able to write data quickly, a double-density disk formatted to one sector per cluster with ***Fastcopy Pro*** is a good bet. High-density disk owners might well consider disks formatted by a real PC though reading is much slower.

- If you need to store lots of small files on a disk (clip art or fonts for example) try breaking them up into groups and storing them in folders. This will avoid problems with the 112 entry limit. Better still, consider archiving them using ZIP, ARC or LZH and making two backups for good measure.

- To verify or not to verify? That is the question. Some formatting utilities let you switch off the verification so that data isn't checked once read from or written to a disk. It takes up to twice as long to format or copy using verify. The time savings that you will achieve are well worth the odd problem, but it is purely a personal decision.

- High-density drive owners should be aware that PCs format HD disks with just one sector per cluster. The result is that some PC-formatted disks aren't read properly by the ST but it does appear to make them faster at writing data.

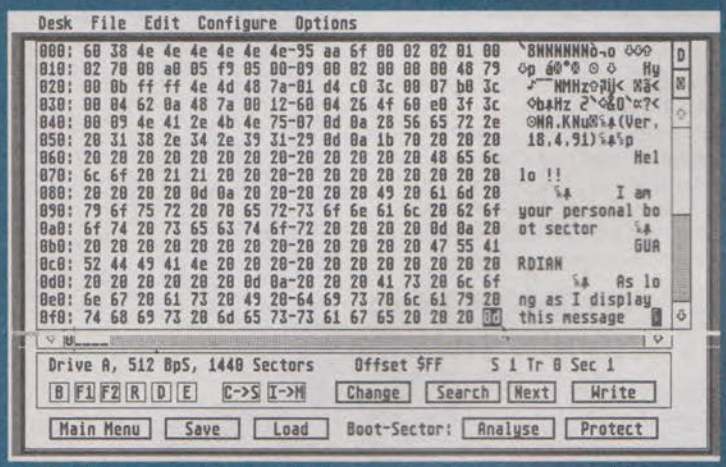
- Don't use the more exotic extended formats as data disks for your program to read and write to. Up to 82 tracks and 10 sectors is fine, but trying more sectors and tracks weakens the disk structure. Every time you read and write to it, files are fragmented and the chances of an error creeping in can rise dramatically.

- It's a good idea to keep defragmenting all your floppy disks every now and again – except your master disks of course. Do this by copying the contents of your disks into a RAM disk or a hard drive partition, reformatting the disk and copying them back again. That way, the files are written to adjacent clusters and data transfer is speeded up considerably – even a mildly fragmented disk proves to be 20 per cent slower in reading and writing.

GLOSSARY

In case you're still having trouble understanding some of the technical terms that have been used in this article, here's an explanation

Boot sector – The first sector on every disk or partition is the boot sector. On a standard floppy it is side 1, track 0. It contains important information about the structure of the disk and may also be executable due to it being a commercial game disk or, sadly, a virus.



Disk editors can display the boot sectors for you to examine – this is Fastcopy Pro's built-in editor.

Cluster – A cluster is the smallest memory unit understood by the operating system. Even if a file is only one byte long, it will take up a whole cluster (1,024 bytes) on the disk. Standard TOS disks have two sectors to a cluster.

Density – The standard ST uses double-density (DD) floppy disks. Mega STEs and TTs (as well as STs that have had high-density drives fitted) can use high-density (HD) disks. The two are essentially the same but the HD disks are manufactured to higher tolerances and can support a greater density of magnetic data. HD disks have an extra hole with no write-protect flap.

FAT – The File Allocation Table is used by TOS to determine where files are actually stored on the disk. Each cluster on the disk is represented by a 12-bit long item in the FAT and there are two FAT tables on every disk for file security.

Fragmentation – When a file is deleted from a disk, the clusters that it occupies are then freed for the operating system to use again. If a larger file is subsequently written to disk, those clusters will be used but the remainder of the file will be written in free clusters elsewhere on the disk. The file is thus stored in two separate locations on the disk. With every subsequent deletion, the disk gets more and more fragmented, eventually causing 'lost clusters' as the OS loses track of where it stored the data. While some fragmentation is unavoidable, it should be kept to a minimum.

GEMDOS – The GEM Disk Operating System is the part of the operating system that deals with reading and writing of files and disks.

Sector – Each track on a disk is divided into sectors, each of which stores up to 512 bytes of data. Standard formats use nine sectors but 10 and 11 sector disks are widely used too.

Track – A floppy disk is formatted in concentric rings called tracks. Normal disks have 80 tracks per side, numbered from 0 to 79 with 0 on the outside and 79 on the inside, but some floppy disk drives will support up to 86.

READ AND WRITE SPEEDS

Disk type and format	Free space (in k)	Time to read	Time to write
Standard TOS disk (80 tracks/9 sectors)	726,016	57	144
Extended format disk (80 tracks/10 sectors)	812,032	66	172
Extended format disk (82 tracks/11 sectors)	915,968	73	186
One sector per cluster (80 tracks/9 sectors)	728,064	61	88
MS-DOS disk (ST formatted)	730,112	59	150
MS-DOS disk (PC formatted)	730,112	82	191
HD disk (80 tracks/18 sectors)	1,462,272	40	295
Extended format HD disk (82 tracks/20 sectors)	1,666,560	42	293
MS-DOS disk (ST formatted)	1,457,664	42	294
MS-DOS disk (PC formatted)	1,456,640	55	127
One sector per cluster	1,461,248	45	238

The above tests were carried out three times (or more where the results were particularly puzzling) using the same floppy disk in each case (where possible). The figures show the time taken to read or write 28 files and a folder (just over 500K) to or from a RAM disk. The same high-density disk drive (courtesy of System Solutions) was used for all the tests though similar results were obtained when some tests were checked on a 720K disk drive.

One of the oddest results was the performance of HD disks formatted by a PC – they showed a marked superiority in writing speed which is rather hard to explain, especially as the PC-formatted DD disk is much slower.

The other noticeable result was the standard DD disk formatted with only one sector per cluster - it showed a significant improvement in writing speed for only a marginal decrease in reading speed.

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Our standard Roman fonts contain the full set of characters included in the ISO standard Latin 1 set, and can be used for a wide variety of Western European languages. Fonts covering all additional European languages and Vietnamese are available at extra cost.

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TYPEFACES

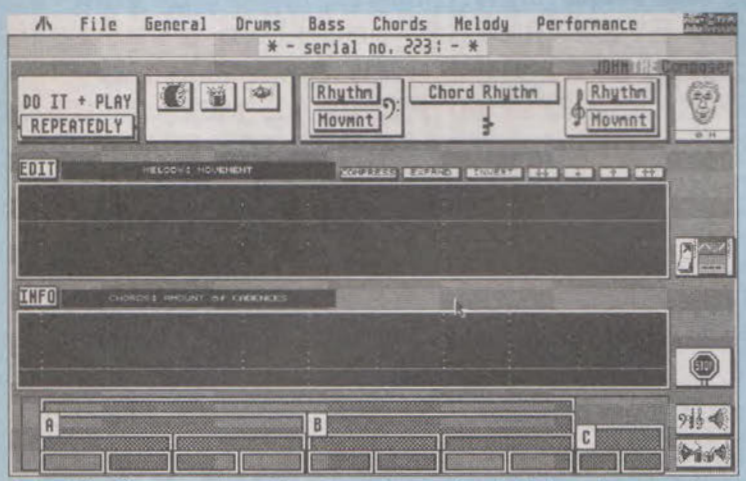
Gate Seven Computers Ltd

6A Gwendwr Road, London W14 9BG. Tel/Fax 071-602 5186

Prices exclude VAT and include carriage

HELLO JOHN, GOT A NEW SONG?

Meet John The Composer, a friendly-faced virtual musician who creates music with you



John The Composer's main screen. Immediately below the menu bar, the Play button, John's Inspiration Buttons and John himself. Underneath here is the Edit area where you can draw on the screen, and, below this, the INFO window. The nested boxes at the bottom of the screen show the song sections.

John makes up and plays new compositions in a flash. He helps you to design new styles of music and create your own songs. He does what you tell him and only helps you if you want him to. What a guy.

John The Composer resides in a very novel music package of the same name. He works in a totally unique fashion, enabling you to write music without ever having to specify particular notes or rhythms. All that's required of you is to make a series of choices about what you'd like to hear. This involves choosing menu items, moving graphic sliders, clicking on icons and drawing wiggly lines on the screen. John takes care of all the fiddly bits, analysing all of your actions and turning them into actual musical notes.

Despite John's obvious friendliness and eagerness to help, this program is no walkover and has a fairly steep learning curve. Although musical ability is not required, a little understanding of music is likely to go a long way. Getting results takes no time at all, but getting really good results takes a little longer. So, let's get in at the shallow end.

CHOOSING STYLES

The first thing that John asks you after loading the program is whether you'd like him to examine a folder on your disk. He's not being over-friendly here. One of the smartest things about John is that he can guess your taste in music by looking at all the saved files in a folder of your choice, so that the initial parameters won't be too far from where you want to go. Save all your work corresponding to one style of music in one folder, and, if asked, John will take a peek before coming up with what he considers a typical range of settings for that style of music. After listening to John's suggestion, you can either work on it straight away or you can select 'Change Towards' from a pull-down menu to get him to make it sound more like a particular file in the folder. All of this is optional – if you prefer, you can just let John set the musical mood according to his own taste.

The first thing you're likely to want to do is to make some decisions about the overall structure of the music. Each composition can have up to four sections known as I, A, B and C. These may correspond to Intro, Verse, Chorus and Outro – or anything you like. After assigning a length and time signature to each section, you can decide whether to allow triplets to be generated and, if so, at which points. These sections can now be made to play in a particular order by simply typing it in – for instance, IABABBC.

SCREEN LAYOUT

Your sections, and the bars they contain, are represented along the bottom of the main screen as a series of nested boxes. Above these are two large, black rectangles. The top one, labelled EDIT, is used for drawing information into the program with the mouse, and the bottom one is for displaying other information of your choice. Drawing with the mouse, you can specify the movement of melody lines, the different amounts of notes used by instruments, the levels of syncopation and various other things.

At the top left of the screen is the large Do It + Play button with its Repeatedly option and, to its right, several smaller buttons – some with icons, others with names. These are called John's Inspiration Buttons. They are used to tell John to make something up in accordance with the instructions you have been giving him. Click on the snare drum icon and John will instantly re-write the snare for the whole song. The Chord Rhythm button changes the rhythm of the chordal accompaniment. A pair of buttons, one labelled Rhythm and the other Movement, are used for both the bass guitar and the melody. They enable you to instruct John to invent either a new rhythm or a new set of pitches for that part. You can have a lot of fun using just one button – John will think up something new every time you press it.

JOHN'S POWER AND YOU

Just how influential the Inspiration Buttons are on the music depends on how much power you have given John for that particular function. This is expressed as a percentage. The more power John gets, the less closely he follows the lines which you draw on the screen. If John only has a little power, he will only affect the music slightly. Sometimes, he seems to make things more random – other times he behaves quite musically. He's unpredictable.

Well that's John. But what power do you have to influence proceedings? After defining your time

INSIDE INFO

The idea of getting your computer to write music for you is not new. Greek composer Iannis Xenakis was doing it on a mainframe in the 1950s and, since MIDI, there have been numerous commercially-available programs. For the Atari ST, Dr. T's *M* and Hybrid Arts' *Ludwig* were early ones and Steinberg's *Tango* much more recent. *Fractal Music* and *Fractal Music Composer* are two packages which use fractals as a basis for generating musical variety. PG Music's *Band In A Box* and JCD's *Feeling Partner* generate automatic song accompaniments and enable you to create your own styles. Creative Sounds' *Improviser* takes four-track accompaniments as input and generates instrumental solos over them.

signatures and part lengths, the next recommended step is to figure out some chords. Each part can be in a different key, and there's a window that lets you pick these. The Chord Selection window enables you to pick the chords you'd like to hear – they will be automatically transposed if the key changes. You don't need to specify an exact chord sequence – John will handle that – but you are required to give some indication of the relative levels of occurrence of each chord. For example, if you make C=1 and G=1 then there will be a 50 per cent likelihood of each chord being picked. C=2, G=2 and F=1 will give 40 per cent, 40 per cent and 20 per cent probabilities, respectively.

REPETIVITY

Now for an idea which can be difficult to grasp, whether you're a musician or not. It's a clever one, and is worth spending some time with. It's called Repetivity. Every instrument can have its own repetivity, which is controlled by its own bank of 12 repetivity sliders. The sliders are labelled in units of time which are progressively doubled up, from a sixteenth-note for the leftmost slider, then an eighth-note, quarter-note and so on to 64 bars and beyond.

Each slider may be set to any percentage value. The position of each slider represents the amount of rhythmic repetition that will tend to occur within that time period. To take a simple example: if all sliders are in a low position for all the time units of up to one bar, but are at 100 per cent for all time units of two bars or more, then the rhythm will tend to repeat exactly every two bars, but within a single two-bar chunk there will be little noticeable repetition. Raising the half-bar slider will increase the tendency for repetition for that time period – in other words, the second half of each bar will sound more similar to the first half. You can create repetivity which is just right for the music – on the one hand, you can prevent things from repeating too precisely and, on the other, you can stop the repetition from becoming meaninglessly random.

RHYTHM AND MELODY

Each instrument can have varying levels of syncopation and note amount. As mentioned earlier, these can be drawn onto the screen in graph form using the mouse. Take the case of the snare drum. Give it a high level of syncopation and a low amount of notes, and it will tend to play on the off-beat (beats two and four in a four-beat bar). Low syncopation and a low number of notes will create a tendency towards an on-beat (beats one and three). The program divides the bar into whole beats when the note amount specified is quite low, but divides it into smaller divisions when the note amount is high. So a high note amount may divide the bar into sixteenths. With low syncopation, this will cause the drum to play on the odd-numbered divisions, and high syncopation will force it onto the even-numbered ones. By drawing lines to change the note amount and syncopation levels gradually, you are controlling the rhythm to a high degree, without ever specifying individual notes.

The melody instrument can also have a line drawn for it which determines how the tune moves up and down in pitch. A separate Melody Movement window lets you specify other considerations of melody, such as the pitch range, average pitch, how closely the melody follows the chord underneath it and sticks to the notes of the scale that naturally occur in the song's key. Again, specific notes never have to be given.

Very novel idea
Excellent value for money
MIDI supported but not required

PROS AND CONS

Manual too brief on difficult concepts
Some patience required

"An original and highly interactive program which works on many levels"

NAME: JOHN THE COMPOSER
COMPANY: NEWTRONIC
CONTACT: 081 691 1087

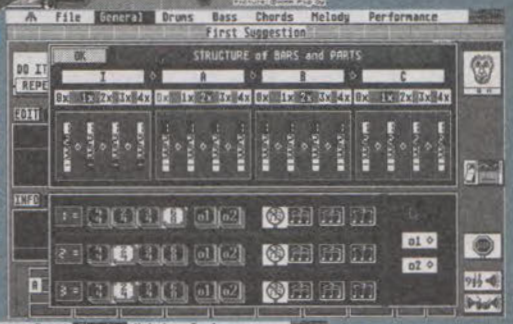
PRICE: £45.00
RELEASE DATE: OUT NOW
MIN MEMORY: 1MB

EASE OF USE	★★★☆☆
DOCUMENTATION	★★☆☆☆
EFFECTIVENESS	★★★★★
VALUE FOR MONEY	★★★★★

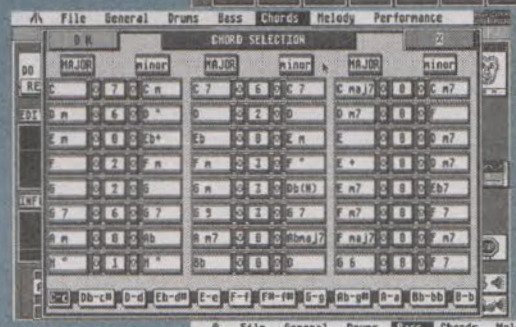
OVERALL **89%**

STEP BY STEP

1 *Load the program and John immediately asks you if you'd like him to examine your previous work to learn your taste in music.*



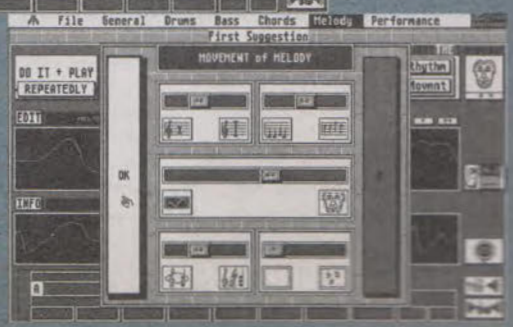
2 *Here's where you set your time signatures and number of bars for each section of the song. It's easier than it looks.*



3 *Selecting chords. These are the chords you can choose from in the key of C. Choose a different key and a fresh selection appears.*

4 *The repetivity sliders for the bass guitar. In these positions they'd create 100 per cent repetition every two bars.*

5 *The edit box shows a line drawn to create changes in the instrument's syncopation. The INFO box displays the melody movement line.*



6 *Influencing the melody movement – its pitch range, average pitch, dissonance levels and, in the centre, the amount of power John has to override your line.*

TONY THE EDITOR

ATARI ST ESSENTIAL BU

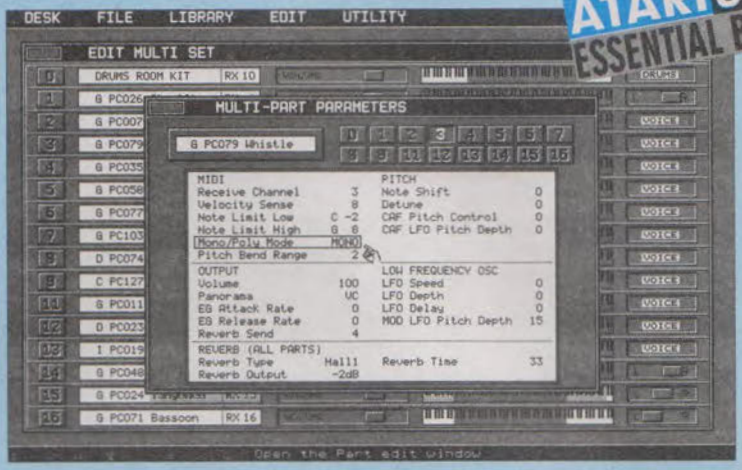
One thing that could make the Yamaha TG100 Tone Generator more popular is patch editing software. Steve Wright makes music with a new friend

We've just had ***John The Composer***, now here's a TG100 patch editor called ***Tony***. Where will it end? Wally the word processor? A spreadsheet called Sharon?

Tony is public domain software, so it's likely to be a bargain, however good it is. As with all patch editing software, the aim is to provide the best possible control over the sounds, and the management of those sounds, via the big screen.

Judging by first impressions, ***Tony*** is a pretty smooth character. The graphics are sophisticated, with windows and dialogue boxes that perform gentle fade-outs when closed. ***Tony*** is mostly mouse-operated, with the feel of a kind of up-market GEM – all the familiar GEM-like objects are there, but they're smarter and easier on the eye.

An on-line help facility flashes informative messages at the bottom of the screen every time the mouse pointer moves over a clickable object. This can be turned off, and it's also possible to save memory by renaming the help data file so that it doesn't get loaded.



The Multi Edit page, with a sub-window displaying the multi parameters of a selected part.

IN THE BANK

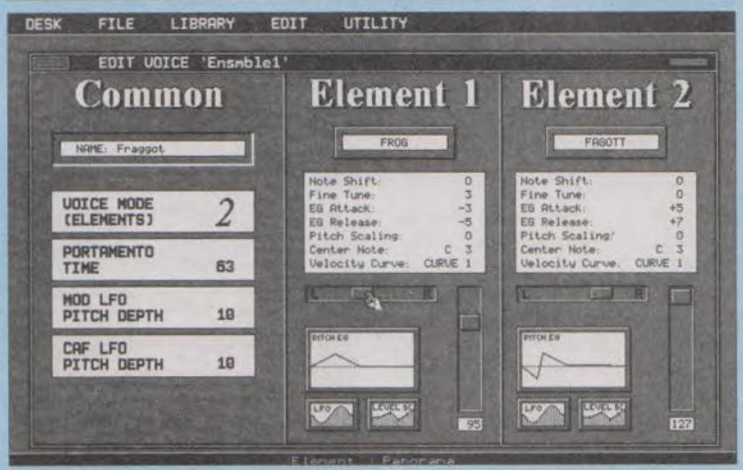
The main screen, the Manager page, shows a bank of 64 sounds and a library area. Although you can only see one 64-voice bank at a time, ***Tony*** is actually able to manage four banks at once. A bank is equivalent to the 64-voice internal memory area of the TG100. Flipping between banks requires a single click on a numbered button. Other buttons on this screen invoke more bank options: the list of voices can be printed, erased, sorted alphabetically or copied in bulk to the library area or to another bank. On top of this, voices may be individually auditioned or renamed.

Among ***Tony***'s most useful attributes are its five buffers, which can be accessed from various windows by clicking in a specially shaded area of the title bar. A menu drops down with the names of the voices currently held in the buffers. Each buffer holds one voice, so it's possible to work on several voices at a time and to switch between them without leaving the page. This feature is also handy for quick transfer of voices between banks.

Copying single voices to other locations in the bank or to the library is achieved by clicking and dragging with the right mouse button. The left button is for selecting voices. Once selected, a voice can be played from a MIDI keyboard or from ***Tony***'s own mouse keyboard. It is also ready to be edited.

The library enables attributes to be attached to any, or every, voice, so that they may be categorised in any way and then searched for by category. Printing and alphabetical sorting are available. There is also a function which deletes voices that are duplicated in the library. Libraries can be independently saved and loaded.

The TG100's voices can be constructed from one or two sample waveforms. ***Tony***'s Voice Editor page is vertically divided into three areas. The left area corresponds to the common parameters of the voice; the middle is for the first element and its parameters; and the right is for the second element and its parameters. Interactive graphic displays of envelope shapes are available for LFO, pitch EG and level scaling, and sliders are provided for volume and pan.



Tony's Voice Edit page. This particular sound is made up of two elements.

MULTI EDITOR

The Multi Editor page shows all 16 parts and gives numerical control of each part's volume level and channel, and graphical control of key window range and pan position. Clicking on the name of a part opens a sub-window which gives access to all of that part's multi parameters. A series of buttons is provided to enable parts to be selected without having to return to the Multi Editor main screen.

There are many more TG100 sound parameters available via ***Tony*** than those which you can get via the instrument's front panel. TG100 owners will be unable to resist creating and storing their own customised sounds. The inventive yet sensible design makes it a joy to use – which just helps to prove that the best things in life can be free.

INSIDE INFO

Tony was designed by Y-not Application Design, a breakaway group of Steinberg programmers. Y-not has produced a range of editors for various synths. Unlike *Tony*, these aren't PD, but can be bought from Newtronic Ltd.

Newtronic's current list includes editor/manager/librarians for Yamaha, Korg, Alesis and Roland devices. The Yamaha SY99 editor is called System 99 and costs £129.00. The Korg 01/W synth and 03R/W rackmount are serviced by editors called Shape and Aftershape, retailing at £89 and £59 respectively. Roland JV80/880 owners need Jive at £89. Alexis is the £49 Alesis D4 drum machine editor, while Edith is the £59 Yamaha SY55/TG55 editor. Newtronic can be contacted on 081 691 1087.

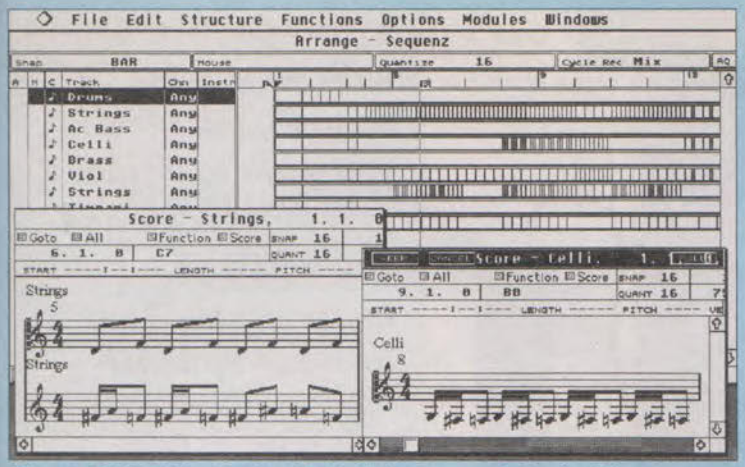
"Although public domain, Tony is a very high quality TG100 editor"

NAME: TONY
COMPANY: YAMAHA
CONTACT: 0908 366700

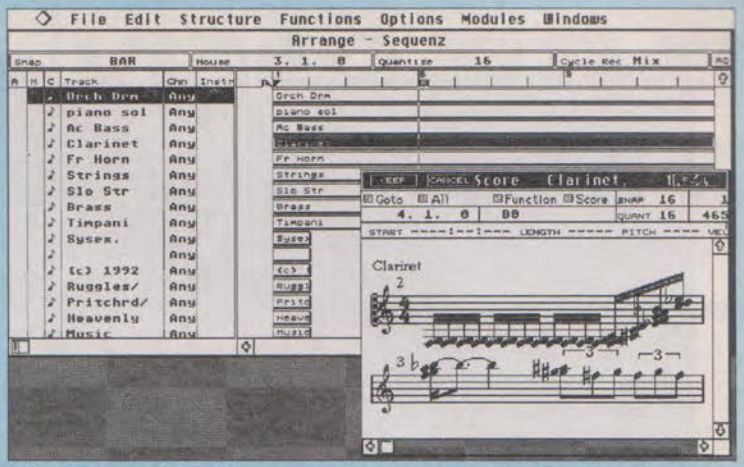
PRICE: N/A
RELEASE DATE: OUT NOW
MIN MEMORY: N/A

EASE OF USE
DOCUMENTATION
EFFECTIVENESS
VALUE FOR MONEY N/A

OVERALL 96%



The 13 MIDI Files for Psycho include the music for the Theme, as shown above in Cubase, and the dreaded bathroom scene.



All of Rhapsody In Blue's nuances are captured, including the opening clarinet solo. There is even a solo piano MIDI File.

BREAKING THE MOULD

George Gershwin's Rhapsody In Blue and Bernard Herrmann's film score for Alfred Hitchcock's Psycho are two uniquely fascinating works, now available as Standard MIDI Files

What's the point of having the MIDI File of a composition if you can just go out and buy the CD? One answer is that MIDI Files enable you to explore the music in a way that would not otherwise be possible. Once loaded into a sequencer, it's possible to start playing around with the music – you can turn instruments up, down or off, change them to different instruments, change the tempo, create your own dynamics – even change the notes, if you like. With the right software, you can even see the score and print it out.

All this is only really worthwhile if the music is worthy of investigation in the first place. Heavenly Music's decision to release ***Psycho*** and ***Rhapsody In Blue*** in Standard MIDI File format is a brave one. These are works which don't fit easily into any obvious category – they're neither pop nor classical – and that's partly what makes them interesting. More to the point, both are astounding compositions which broke the musical rules of their times.

PSYCHO

Most people remember the shower scene from ***Psycho*** – the shadowy figure of Norman Bates appearing behind the curtain, the thrusts of the knife, the girl's body sliding down the tiled wall, the smears of blood, the extreme close-up of her hand clutching the curtain. But just as memorable as these images is the music as the unspeakable horror of the act unfolds.

You may not have heard of Bernard Herrmann, but you'll certainly have heard his music. Apart from many classic Hitchcock films, he wrote the score to Scorsese's ***Taxi Driver*** and much of the music used in the TV series ***The Twilight Zone***. Herrmann's first feature film score, was for Orson Welles' ***Citizen Kane*** in 1940 which, even today, is regarded by many as the best film of all time.

Until Bernard Herrmann, film scores followed a particular style – traditional symphonic music. Herrmann realised that the extended melodies found in symphonies were not particularly well-suited to the medium of film which is, after all, often made of discontinuous, edited fragments. He took the bold step of rejecting melody, and devised a technique whereby he wrote short phrases – sometimes only a few notes long – which he treated as flexible musical modules that could be used to interact with dialogue, narration and the movements of actors. He was also unafraid of using non-orchestral instruments and felt no need to use a traditional orchestra unless the film demanded it.

For ***Pyscho***, he decided to reinforce Hitchcock's decision to film in black-and-white by scoring for strings only – monochromatic music, if you like.

RHAPSODY IN BLUE

George Gershwin began writing ***Rhapsody In Blue*** on January 7th, 1924. It had been orchestrated by Ferde Grofe by February 4th and, after hasty rehearsals, it had its first public performance on February 12th. It caused a storm. It received a rapturous welcome from the audience – but the critics weren't so enthusiastic.

Until ***Rhapsody In Blue***, Gershwin had never written anything for the concert hall, but he had built a solid reputation as a Broadway songwriter. His orginal version was scored for a jazz band, and there have been versions for many other types of ensemble since then, including solo piano, two pianos, two pianos and orchestra, eight pianos, solo harmonica, orchestra of harmonicas, mandolin orchestra, a cappella chorus, violin and orchestra, six saxophones, a Grecian ballet, a modern ballet and a tap dance.

As if this isn't enough, Ferde Grofe, re-orchestrated ***Rhapsody*** in 1926 and again in 1942 – so it seems that the work is destined to be played many different ways.

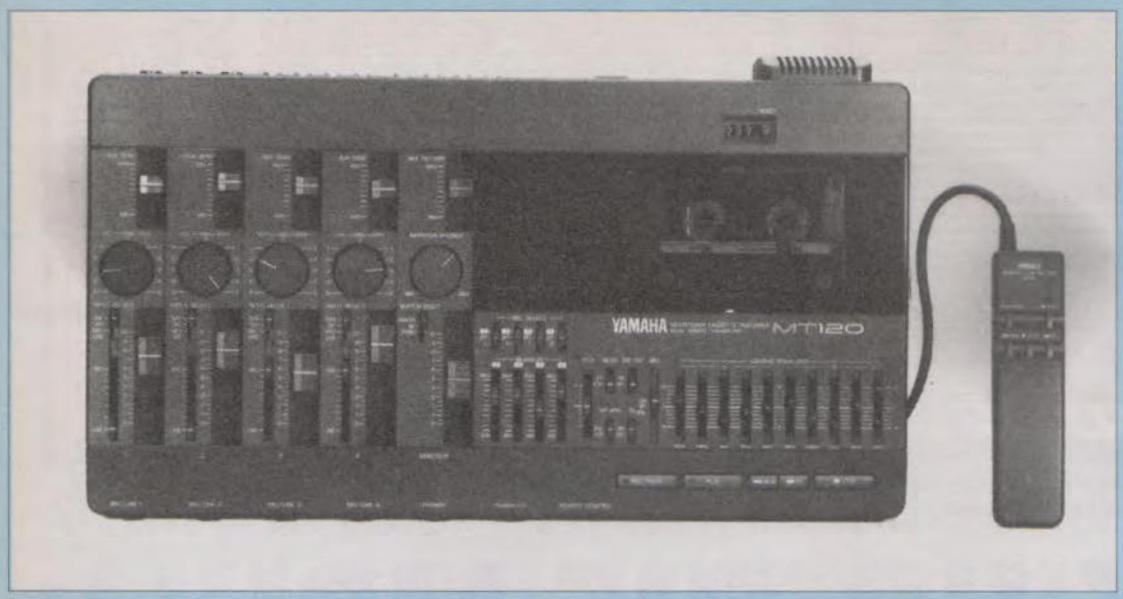
The release of this MIDI File version will continue the tradition by enabling users to try out their own instrumentation in the comfort of their own homes, but it should be noted that Heavenly Music is not the first to record it as a set of performance details – Gershwin himself once made a piano-roll recording of it.

One of the most fascinating moments of ***Rhapsody In Blue*** occurs in the first few bars. The piece opens with a clarinet trill which then turns into a rapidly ascending scale. The scale then turns into a single glissando note which slides up to the instrument's highest registers before the opening theme begins. The interesting thing is that the wailing glissando note did not appear on the original manuscript and was not even Gershwin's idea. It was done in fun by Ross Gorman, the clarinettist at the first rehearsals, but Gershwin liked it and later wrote it into the official version of the score.

The major significance of ***Rhapsody In Blue*** is that it encapsulates popular music in an orchestral form, and probably represents the coming-of-age of American music in the concert hall. For further information contact Heavenly Music on 0255 434217.

INSIDE INFO

Joe and Pauly Ortiz formed Heavenly Music when they were dealing with record companies with regard to their LP, *Dedication* and single *On An Angel's Wing*. Things didn't exactly go according to plan, so they decided to put their talent into creating MIDI Files. Their first release was called *Dr. Beat Volume One* – a collection of drum patterns and rhythms. Unfortunately, they didn't have any money to market it, so they decided to borrow £60 from a friend and use it to pay for an advert. The rest is history. Apart from the many MIDI files, Heavenly Music now also supplies conventional music software for the ST, including a range of patch editors.



You've got to grips with sequencing on your ST, but now you want to be able to record vocals and non-MIDI instruments. What are your options?

Yamaha's MT120.

TAKING ON TAPE

Adding multi-track tape to your existing MIDI setup opens up a whole new world of musical possibilities. It can be an expensive business, though, so it makes sense to consider your needs carefully before opening your wallet. As a computer-based musician who has yet to get hold of a multi-track tape recorder, you are part of an increasing target market for the manufacturers – a fact reflected in their ever-widening ranges of four- and eight-track recorders.

MAKING TRACKS

First you need to decide how many tracks you need. Can you make do with four? If you can, you'll save money, but first make sure that four will be enough. It's a huge advantage to have your tape machine synchronised to your ST, so that when you run it your sequencing software will start playing your MIDI equipment perfectly in time with it. This enables you, for example, to do some sequencing, record some vocals and then do more sequencing without ever having to put your sequenced instruments onto tape. It save lots of tracks, but is only possible if you use one track for timecode (you'll normally need to buy a separate sync box to generate and read the code). In brief, timecode uses up one tape track, but provides you with numerous sequencer tracks synchronised to the movement of the tape.

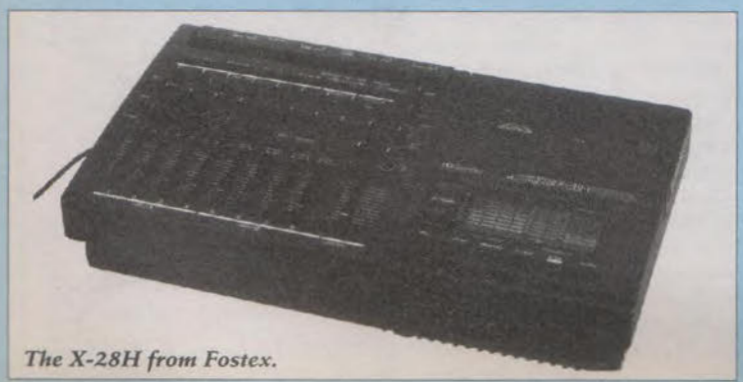
Tape tracks can be made to go further by 'ping-ponging' or 'bouncing' tracks. After recording two or more tracks, they can be mixed onto a new one, making the originals available once more. There are disadvantages – each time you bounce you record more tape noise, and therefore lose some sound quality. Worse still, once you have mixed two or more tracks together and recorded over the originals, you can't change your mind about the relative levels of the bounced music – if one instrument is drowning out another, it's too late to do anything about it without starting again.

INPUTS

Regardless of the number of tracks you opt for, you'll still need to work out how many audio input channels you'll need. Most four-track recorders come with a built-in mixer with anything from four to 16 inputs. Think about the kind of recording situations that are likely: for example, if you expect to record a performance involving a stereo drum machine, an acoustic guitar, a voice, a bass guitar and a stereo synthesiser all playing at once, you'll need two inputs for the drums, two for the microphones (one for guitar, one for voice), one for the bass guitar and two for the synth, a total of six. This doesn't necessarily mean that you'll need as many tracks – a track may take more than one input and the recording levels set before recording begins.

OPTIONS

Having decided on the minimum number of tracks and channels, you can start comparing other features of the various models. Most four-track machines and some eight-tracks use ordinary cassette tape. Some record and play at higher than normal speed, which increases the sound quality but means you get through cassettes twice as quickly. Equalisation (EQ) is an important consideration but is limited on four-tracks – the ideal situation, if you can afford it, is to have multi-band EQ on each channel. Built-in sychronisation is a bonus, removing the need to buy a separate sync box.



The X-28H from Fostex.

WHICH ONE?

The leading manufacturers are Tascam, Fostex and Yamaha – all make machines aimed at home-recording.

Tascam four-tracks start at £369 for the Porta 05 HS Ministudio, a high-speed recorder. Next come the Portastudios, ranging in price from £499 for the 424 (eight inputs, four tracks) to £1,299 for the 488 (12 inputs, eight tracks).

Fostex produces some inexpensive machines, notably the X-18 and the X-28, at £259 and £339 respectively. Both are normal speed four-tracks, with the X-28 offering eight inputs, synchronisation and limited stereo EQ. The X-28H is a high-speed version of the X-28, and costs £399. At £658, the Model 280 Multitracker has eight inputs, four-band EQ and two auxilliary sends (for effects) on each channel, and good audio specifications. The Fostex R8 is a reel-to-reel eight-track which in some setups enables you to operate its transport controls from your MIDI sequencer.

Yamaha's MT120 is a good value two-speed four-track with four inputs, five-band EQ and a sync option for £399. You can switch the EQ on and off and hear the difference between signals.

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BREAKING THR

Last month we gave you Breakthru on the cover disk. This month, in the second part of the tutorial, we take a trip around some of its functions

If you followed last month's tutorial, you should have been making some interesting rhythm tracks over the past month. With some MIDI equipment, you can take this further – even with the demo version from the cover disk.

All you need to use ***Breakthru*** with MIDI is a keyboard with sounds on-board or a master ('dummy') keyboard. This only sends MIDI information, and so has no sound module built-in. Figure 1 shows the connections for the latter. Don't worry about which MIDI channel your keyboard is sending MIDI info on, as ***Breakthru***'s 'soft thru' function handles this via the MIDI channel that you set per track.

THE SONG ARRANGER

Load up the MAPLERAG.BTD song from the ***Breakthru*** demo disk – you should see the Important Notes dialogue box appear (Figure 2). Go to the Song Arranger by pressing the F8 function key. Here you should see the three tracks that make up the song, along with comments about the different parts of the song along the top of the screen. These come from the Cue List on the right-hand side of the Track Screen.

The Song Arranger shows you 29 consecutive bars across 15 of the sequencer tracks. Each of the bars is shown as a small box which either has some MIDI information recorded in it (solid black) or is empty (white). So, from this screen you get a complete view of which bars have been played in for each track (Figure 3). The current bar is shown as a vertical, black strip which moves from left to right along the screen until it reaches the middle when the bars then move towards the left. The bar numbers are shown along the bottom of the editor and the current track number is inverted in the column down the left side of the editor.

The vertical, black strip always shows the current bar as indicated in the Song Position box of the Transport Control. This means that you can use the tape deck controls as usual, but the horizontal bar number display gives you other facilities as well. Clicking on a bar number makes that the current bar. If the bar number is greater than 15, it will automatically position itself in the centre of the window. If it's less than 15, the vertical strip will move itself to the position of the bar. This is the easiest way to change the current bar number.

WORKING WITH THE CLIPBOARD

With ***Breakthru*** you can grab part of a recorded track and either get rid of it, move it somewhere else in the song, or copy it and use that copy in other places. This is useful if, for instance, you have played in the drum part for a verse and want to use the

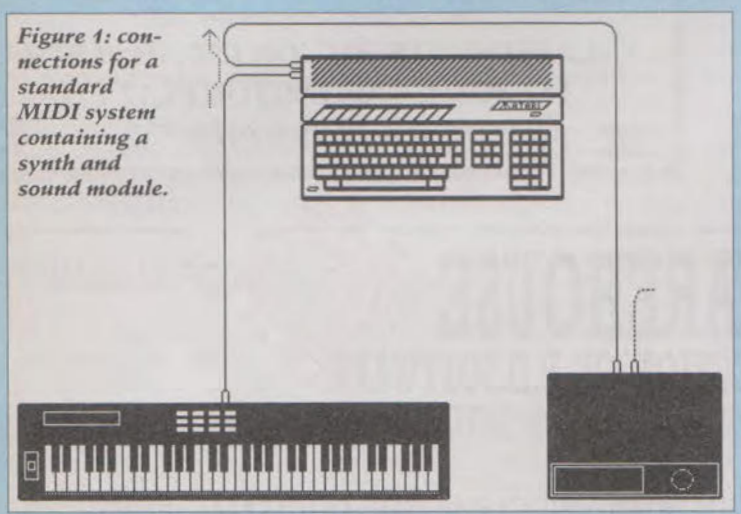


Figure 1: connections for a standard MIDI system containing a synth and sound module.

Figure 2: on loading a song, any information you saved with it will appear in the Important Notes dialogue box.

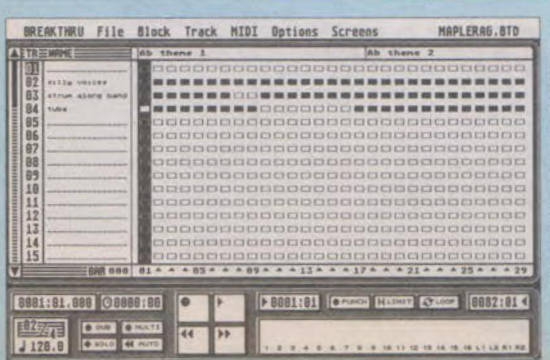
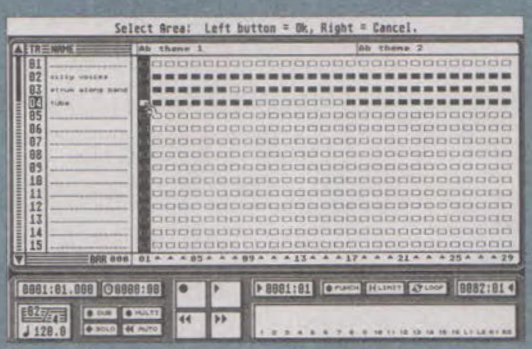
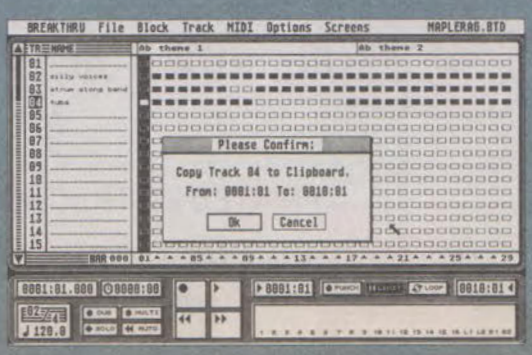


Figure 3: creating songs from parts such as a verse, chorus and intro is easy to accomplish by using the Song Arranger. Bars containing information are shown in black.

STEP BY STEP



1 *Select the track you want to copy from and left click on where you want to start from.*



3 *The Copy Confirm dialogue box appears. Click on OK if you're happy with your selection.*

OUGH

same part for all the verses. ***Breakthru*** has a 'clipboard' which works by placing something onto it and then allows you to decide what you want to do with it.

Once you have set the start and end points for a block, you can save it to the clipboard by using either Cut or Copy, both found in the Block menu. Cut removes the bars from the song, while Copy leaves them alone but saves a copy of them instead. You can then place them somewhere else in the song by using the Paste command, also found in the Block menu. This makes creating a song much faster and easier.

To work with a single track, go to the Block menu and make sure that the Select All option is unticked. Now decide which track you want to copy bars from and click on the first bar to be included. The top of the screen changes to the 'Select Area' message while the cursor becomes a hand. Move to the right and watch the colour of the bars invert. When you get to the end of the block that you wish to use, click on the left mouse button again. If you make a mistake, cancel it by simply clicking on the right button. The start and end bars are transferred to the Start and End position boxes.

Press Control-C on the ST and the selected bars will be saved to the clipboard; a dialogue box appears on screen to show this.

CUT, COPY AND PASTE

To copy some bars to another point in your song, first of all decide whether you want to copy the MIDI info from one bar or from all bars and set the Select All option (in the Block menu) accordingly. Now click on the first bar (the 'Select Area' message appears at the top of the screen again), click on the last bar, and go to the Copy option in the Block menu. Click on this and you get the Confirm box which you can 'OK' or cancel.

This leaves the original block intact on screen. If you want to move some bars, go through the same process but choose the Cut option from the Block menu. You can always go to the Block Info option to see what is currently saved to the clipboard.

Both Cut and Copy place the block in the clipboard. If you select Delete from the Block menu instead, it simply removes all MIDI info from that block. If you do this, all of the inverted black boxes in the Song Arranger subsequently change to white.

Once you have something saved to the clipboard, you can decide where you want to place it. If it's MIDI info for a single track, select the track that you want to place it in, and make the starting point the current bar by clicking on that bar in the bar number indicator. Now choose the Paste option – up comes the Confirm Paste box which tells you which track is going to be pasted to and at which bar, and you can then decide how many times. So, if you have a good, one-bar drum riff which you want to use throughout the song, simply set the number of copies to whatever your total number of bars is. You can even use the Save/Load Block options to save your favourite riff to disk and load it into another song at a later date.

If you have Select All ticked, when you come to use the Paste function you don't need to say which track is being pasted to. The Confirm Paste box still asks you how many times you want to paste this in, so you use this to copy an entire section. For example, you might have all the instrumentation the way that you want it for the eight bars of the first verse and decide that you wish to duplicate this for the second verse as well. Simply copy the eight bars to the clipboard, click on the bar number which is going to be the starting point and select Paste. Another situation where pasting all of the tracks would be useful is where you have a number of identical outro bars over which you are going to fade out the music. Copy, click on the bar number for the first outro bar and set, perhaps, five copies from this point.

Instead of always having to click on the first and last bars of a block, there is another method. If you have Limit selected, Cut, Copy or Delete will work on the bars between the Start and End markers. This is useful if you want to use the Paste facility on a section you have just recorded in Loop mode because the Start and End markers are already set.

WHAT HAVE I RECORDED?

Once you start recording a song, you often need to know more about what you have recorded – for example, you may want to find out whether you have used pitch bend or what was the last bar that you recorded on a particular track. Control-T brings up the Track Info box (Figure 4) which gives you details of the make-up of this track. The first things it notes you could see without this box; the track title, MIDI channel and Program Number.

It also tells you various other things; to the left are the Volume and Pan values which act in a similar way to the Patch Number; a special MIDI message is sent out at the start of a song to set the volume and stereo position of the instrument recorded on the MIDI channel for this track - a bit like an automatic mixing desk. These messages are automatically sent out when you first load an existing song.

The main box shows the other recorded aspects of MIDI on this track, which include pitch bend, patch changes and MIDI controllers such as sustain pedal or the modulation wheel. If you have recorded such MIDI info, the words will be in solid black, otherwise they will still be shaded grey. Do check this; for instance, it is quite easy to accidentally record patch changes and to find that the wrong sounds are being selected in the middle of playing back a song - most embarrassing.

Time to play ... good luck and have fun!

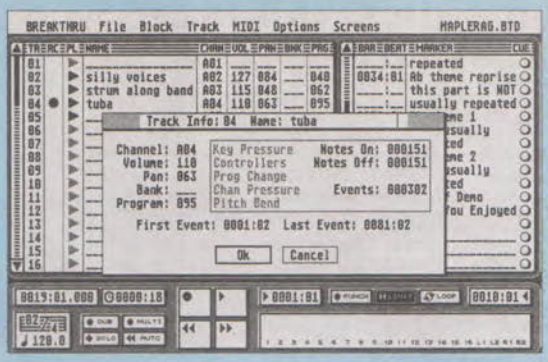
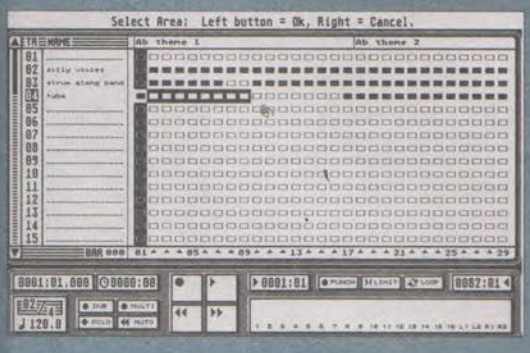
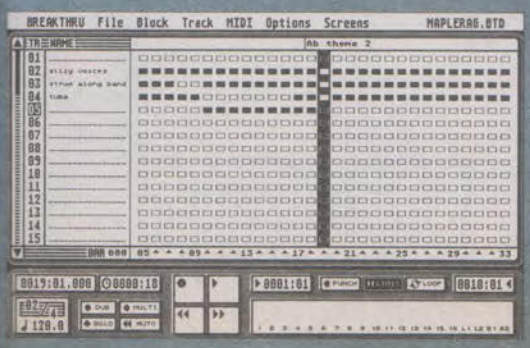


Figure 4: the Track Info box shows all the information contained in the current track, including the number of events and the start-up values for volume, pan and program change.

Breakthru has an excellent cut, copy and paste facility using the Clipboard



2 *Drag along to where you want to end. The selected bars invert in colour.*



4 *Select the track you wish to copy to and place the vertical line at the bar you wish to start from. On pasting from the clipboard, the previously copied bars appear on the selected track.*

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WORKING WITH HISOFT BASIC

At last! The final part of your HiSoft BASIC address book...

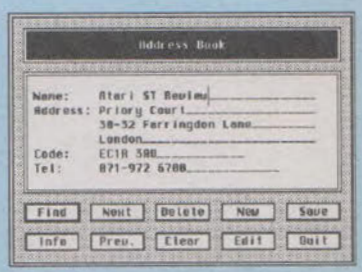
WRITE YOUR OWN ADDRESS BOOK – PART FIVE

This is the last in our series of ***HiSoft BASIC*** tutorials and this month we will complete the address book program. Last month you saw how to load a resource file and use FNform_do to access the objects it contains. Before we continue our voyage into the mysteries of the AES and GEM, there are a few things that need tidying up.

LEGALISING YOUR PROGRAMS

In technical terms, an illegal program is one that doesn't follow the GEM guidelines laid down by Digital Research (the developer of GEM) and Atari. While an illegal program may work, there's a good chance that it may turn out to be incompatible and crash. One example of an 'illegal' code already exists in our address book program. Whenever FNform_do is called on to draw an object, it should call the AES sub form_dial twice – once before you draw the objects and again when you have exited FNform_do and are about to redraw it or exit the program. In its full implementation, form_dial draws the grow and shrink boxes. These, however, are rather unnecessary and tend to slow the system down, so we've skipped past it. A stripped down version of the call is found in Listing 1, though don't forget, you need to include HGT.BAS and ADDRESS.BH. The purpose of these calls is rather complex, but, in a nutshell, they inform the AES about your program's activities, so that when it has finished, GEM can restore its internal variables. For instance, if your program opens a window over another window, the AES will inform the other program when it needs to redraw the 'stolen' portion of the screen.

Copy the files ADDRESS.RSC, ADDRESS.BH and HGT.BAS to your work disk before you run the program. These files have been modified to accommodate several new features. The resource free and system commands have moved out of sub-quit and into the main loop. It is not good practice to exit a program from within a sub. Instead, you should use a flag which is a common programming technique. Instead of just quitting the program, sub-quit will simply assign a value of one to the variable 'finished'. The main loop will then exit as it constantly checks for this (LOOP UNTIL finished). The new sub-quit is in Listing 2.



The final version of the address book program. Make sure you use the new resource and header files from this month's disk.

FINDING TEXT

Instead of using the INPUT command, you can enter the search string directly into the dialogue box. Since the box may already be displaying text, clicking on the Clear will delete the previous text. Another ***HGT*** routine is sette_ptext, the counterpart of gette_ptext. The sub sets the text in each line in the box and is used in exactly the same way as gette_ptext, passing two parameters. The first parameter is the object name and the second is the text string you want to display (which is a null string in this case). Listing 3 shows how the clear routine works in conjunction with the new version of sub-find. Remember, sette_ptext does not actually draws the text on screen, this is done by FNobjc_draw.

Whenever you want to find a name, or enter a new one, you will need to use the Clear button to call the sub. When the box is clear you can enter the text and click on New to store the new cell or click on Find to search for the text in the book. Since the old sub, find, used INPUT to get the search string, it will also need to be changed. All you have to do is change one line and add it to the program. The sub, find, calls sub show_cell to display the contents of the cell it locates.

DISPLAYING A CELL

Our original display routine, sub

LISTING 1

```
'a legal main loop for the address book
DO
   form_dial 0,0,0,0,0,x,y,w,h    'co-ordinates obtained
                                  'with form_center
   dum=FNobjc_draw(tree&,0,10,x,y,w,h)
   but=FNform_do(tree&,line1)
   deselect but                   'deselect using
   SELECT CASE but
      CASE=save_but
         CALL save_book
      CASE=quit_but
         CALL quit
      CASE=info_but
         CALL info
      CASE=new_but
         CALL new_name
   END SELECT
   form_dial 3,0,0,0,0,x,y,w,h    'second form_dial call
LOOP UNTIL finished               'see section about
                                  'quitting

junk=FNrsrc_free
SYSTEM
```

LISTING 2

```
'new quit routine works by setting a flag
SUB quit
STATIC a$,but
SHARED finished                                   'must share with main loop for it to work
a$="[2][ Save address book | before quitting? ][Save|Quit|Cancel]"
but=FNform_alert(1,a$)
SELECT CASE but
        CASE=3                                    'if cancel then exit sub
                EXIT SUB
        CASE=1
                CALL save_book
END SELECT
finished=1                                        'set the flag
END SUB
```

LISTING 3

```
SUB clear_box
STATIC a$
a$=""                          'a null string
sette_ptext line1,a$           'set text for each line
sette_ptext line2,a$
sette_ptext line3,a$
sette_ptext line4,a$
sette_ptext line5,a$
sette_ptext line6,a$
END SUB

SUB find
SHARED items,book$()
STATIC i,srch$,a$,b$,m$,dum
gette_ptext line1,srch$        'this gets the text from the
                               'first line and uses it as the
                               'search string
b$=UCASE$(srch$)               'the actual search routine
FOR i=0 to items STEP cell_size
      a$=UCASE$(book$(i))
      IF INSTR(a$,b$) THEN
            show_cell i
            EXIT SUB
      END IF
NEXT i
m$="[1][ Could not find name ][ OK ]"
dum=FNform_alert(1,m$)         'if reached this point then
                               'no match so let user know
END SUB

'add the following lines to the main loop
CASE=clear_but
      CALL clear_box
CASE=find_but
      CALL find
```

show_cell, is no longer needed as it used PRINT to display the text. Instead you need to use sette_ptext to display the contents of a cell in a dialogue box. The new sub is very simple and can be found in Listing 4. There's a small addition to the sub in the last line. The variable cur_item is used to tell the main loop in which the cell is actually displayed. This may seem odd at first, since common sense tells us that if something is shown on screen the program must know what it is, but a closer look tells a different story. When you click on Find, control is passed over to the subs find and show_cell. Once show_cell has done its job, it returns control to the main loop which is oblivious to what the call has placed on screen. The new variable cur_item is shared between the main loop and the sub and is used by show_cell to inform the main loop which cell is currently displayed. Why does the main loop need to know this?

DELETING A CELL

Generally, using a GEM interface makes programming more complex, although deleting a cell is greatly simplified by the flexibility of a dialogue box. To delete a cell, you must first clear the box by clicking on Clear, then enter a search string and click on Find to find and display the cell. Lastly, you must click on Delete to remove the cell from the address book. This is where the new variable cur_item comes into play. Since we now know which cell is displayed in the box, all we need to do to delete it is to call the original sub remove_cell and pass it the cur_item as the item to start deleting from. It's always a good idea to give the user a chance to cancel 'dangerous' operations and a friendly alert box is in order. You can copy the sub remove_cell from the original program and add an alert box which a cancel option before deleting.

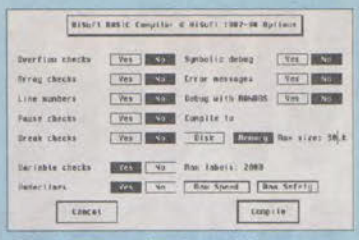
The new version of the sub is in Listing 5. Note the call to show_cell; this is necessary so that the deleted cell will be removed from the screen.

EDITING A CELL

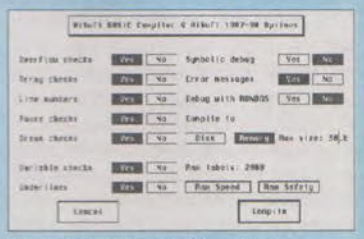
Another useful facility is being able to edit an existing cell. Again, the cell must be found using sub-find and displayed in the dialogue box. This lets you edit the text in the box, delete and add text. If you click on New, a new cell will be created and, as a result, the old and new versions are stored in the address book's memory. This is not ideal and what is required is a new sub which works very much like the sub new_name, but instead of adding items it changes existing ones. The cur_item variable comes in handy for this and can be passed to the new sub to indicate which cell should be updated. The sub edit_cell must share the main book$() array and gives the user a warning before changing the cell. Listing 6 shows how the sub works; you will see the similarity to sub new_name, but also notice the differences between them.

SCROLLING

Occasionally, you will need to scroll through the address book instead of just using Find. Two new buttons, Next and Previous, are provided to do just that. Before we go ahead and write more subs, let's go back to the main loop.



Clicking on the Speed button turns off all error checks and reduces the memory requirements of your programs as well as making them run faster. The trade-off is that any programming mistakes will result in a system crash.



The HiSoft BASIC compiler attempts to locate your mistakes and prevent system crashes.

When the program first runs, the variable cur_item is already set to zero. If we insert a call to show_cell just before the beginning of the loop, the program will automatically display the first cell (starting with item 0) when it starts. If we want to show the next cell, all we need to do is increment cur_item by six – which is the number of items in each cell – then call show_cell to set the text in the box. Similarly, to view the previous cell we do the opposite.

There is the possibility that the user will try to select the previous button while the first cell is displayed. This will cause the program to crash because an array cannot have negative elements. To solve this, we need to trap this possible error as well as the possibility of the user trying to scroll beyond the last cell which will result in an empty cell or a crash. The new subs – next_cell and prev_cell – are shown in Listing 7 along with the new main loop. See Listing 7.

LISTING 4

```
SUB show_cell(start)
SHARED book$(),cur_item
sette_ptext line1,book$(start)
sette_ptext line2,book$(start+1)
sette_ptext line3,book$(start+2)
sette_ptext line4,book$(start+3)
sette_ptext line5,book$(start+4)
sette_ptext line6,book$(start+5)
cur_item=start                 'tell the main loop which cell
                               'is on display
END SUB

                               'additional cases for the main loop
CASE=clear_but
      CALL clear_box
CASE=find_but
      CALL find
```

LISTING 5

```
SUB remove_cell(start_item)
SHARED book$(),items
STATIC i,but,a$                'but and a$ are for the alert
a$="[2][ Delete cell. | Are you sure? ][OK|Cancel]"
but=FNform_alert(2,a$)         '2 makes cancel the default
                               'button
IF but=2 THEN EXIT SUB         'if cancel then cancel delete
items=items-cell_size          'rest is the same as before
FOR i=start_item to items
   book$(i)=book$(i+cell_size)
NEXT i
show_cell start_item
END SUB

                               'add this to the main loop
CASE=delete_but
   remove_cell cur_item
```

FINAL TOUCHES

The ***HiSoft BASIC*** compiler is set by default to check for various programming errors and to warn you while compiling.

Some errors can escape, such as the possibility of scrolling beyond the bounds of an array. When such errors occur as your program is running, it will crash and return control to the ***BASIC*** editor. Such errors normally 'mess-up' the system and display those infamous bombs but, thanks to the compiler error trapping, serious crashes are normally prevented. This comes at a cost, though.

The complex process of error trapping uses memory and slows your program down. When you are sure that your program is working correctly, you can switch this off to make your program more compact and faster. These options are found in the compiler dialogue box and you can click on Safety to disable it. You may also disable Error Messages which reduces the memory requirements even further. You have to use these options carefully. Once disabled, even the slightest bug in your program can crash the computer and you will not get any information as to why this has happened, although you can re-compile the program with the Safety option to help you locate the errors.

Another useful option is the feature to suppress the default window. Whenever you compile a program the ***HiSoft BASIC*** default window is opened. This is required for statements like PRINT and for VDI calls. The address book program, however, does not need a window and is limited to a single dialogue box. It is possible to suppress this window by adding the line – REM $OPTION y at the beginning of the program.

The full source code and resource files are on the cover disk for your reference.

THE WAY FORWARD

If you've followed this series of articles for the last nine months, I am sure you would like to know more about GEM and programming in general. For a start, you should consider getting ***HiSoft BASIC 2*** if you haven't already. The new version includes ***WERCS***, the full ***HGT*** source and many other utilities. The 800-page manual will also go a long way to answering your questions. Additionally, you could get ***My First BASIC***, also from HiSoft, which is a book designed specifically for the novice programmer. With the imminent arrival of two exciting products, namely the Falcon and MultiTOS, HiSoft is busy working on new versions of its product range to accommodate the new features they offer.

LISTING 6

```
'editing a cell
SUB edit_cell(start_item)
SHARED book$(),items
LOCAL tmp$(5)
STATIC i,a$,dum,but
gette_ptext line1,tmp$(0)                    'get text from objects and
gette_ptext line2,tmp$(1)                    'store in the temporary text array
gette_ptext line3,tmp$(2)
gette_ptext line4,tmp$(3)
gette_ptext line5,tmp$(4)
gette_ptext line6,tmp$(5)
a$="[2][ Store edits. | Are you sure? ][Yes|No]"
but=FNform_alert(1,a$)
IF but=2 THEN EXIT SUB                       'if answer is no then exit sub
FOR i=0 to 5                                 'store temporary text in
      book$(i+start_item)=tmp$(i)            'the main array
NEXT i
BEEP
END SUB

                                             'add this to the main loop
CASE=edit_but
      edit_cell cur_item
```

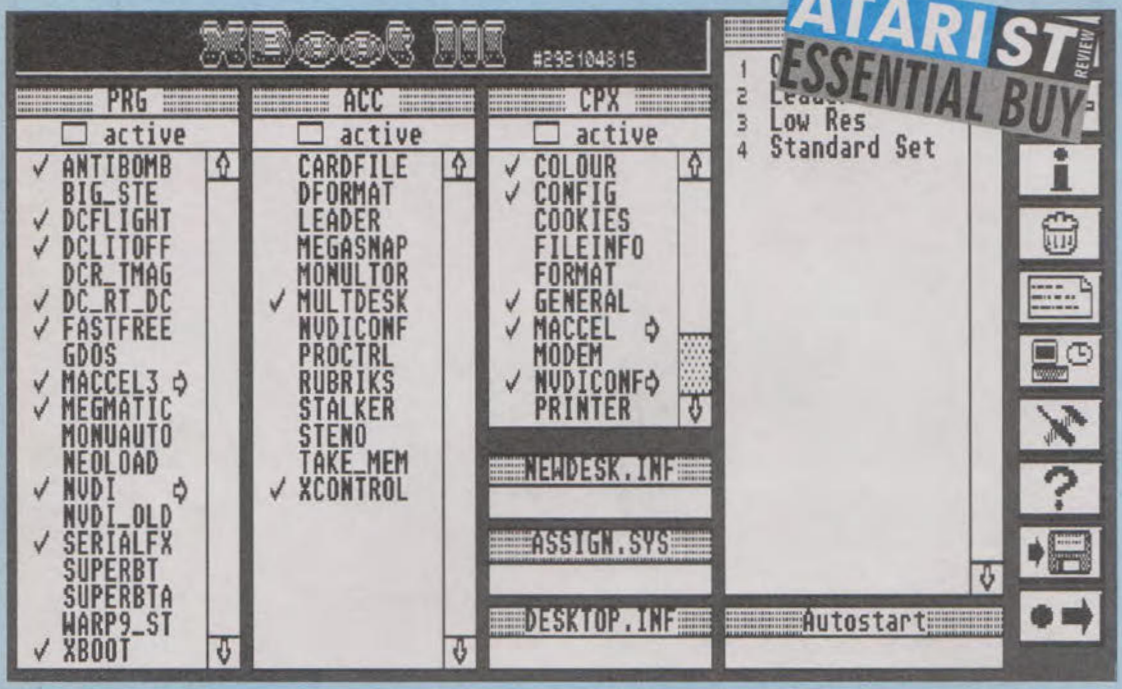
LISTING 7

```
show_cell cur_item
DO
      form_dial 0,0,0,0,0,x,y,w,h            'co-ordinates obtained with form_center
      dum=FNobjc_draw(tree5,0,10,x,y,w,h)
      but=FNform_do(tree5,line1)
      deselect but                           'deselect using
      SELECT CASE but
            CASE=save_but
                  CALL save_book
            CASE=quit_but
                  CALL quit
            CASE=info_but
                  CALL info
            CASE=new_but
                  CALL new_name
            CASE=clear_but
                  CALL clear_box
            CASE=find_but
                  CALL find
            CASE=edit_but
                  edit_cell cur_item
            CASE=delete_but
                  remove_cell cur_item
            CASE=prev_but
                  CALL prev_cell
            CASE=next_but
                  CALL next_cell
      END SELECT
      form_dial 3,0,0,0,0,x,y,w,h            'second form_dial call
LOOP UNTIL finished                          'see section about quitting

SUB prev_cell
SHARED cur_item
cur_item=cur_item-cell_size
IF cur_item<0 THEN cur_item=0                'cur_item cannot be negative
show_cell cur_item                           'set the text in the objects
END SUB

SUB next_cell
SHARED items,cur_item                        'needs to know total number of items
cur_item=cur_item+cell_size
IF cur_item>items-(cell_size) THEN           'stop scrolling beyond last cell
      cur_item=items-(cell_size)
END IF
show_cell cur_item                           'set text in objects
END SUB
```

PUT THE BOOT IN!



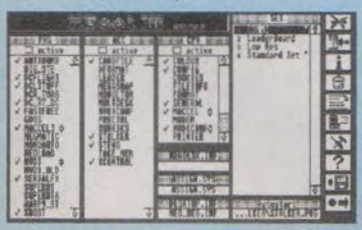
ATARI ST REVIEW ESSENTIAL BUY

Choosing AUTO programs and accessories can be awkward without a boot selector program. Tony Kaye looks at a package designed to help...

The main XBoot screen. The ticked programs are the ones that will be loaded.

When you first upgrade to a hard disk drive, the AUTO programs and accessories start to mount up. Each time you get a new PD disk, more programs seem to collect in the AUTO folder and the accessories proliferate in the root directory of your boot disk. This can, of course, lead to all sorts of problems with clashing accessories and shortage of memory. If you have a floppy drive based system, you can configure a set of disks with each one set up for the operation you need to run, but this is costly and takes up a lot of disks. The solution is a boot selector program, and the latest one to hit the market is ***XBoot III***.

Help is at hand, all of the right-hand buttons defined.



This screen shows the COMMS set including the terminal program set to start automatically.

The AUTO folder has a wide range of uses. There are various system patches like the one that enables early STEs to boot up in medium resolution, comms patches that solve data communication problems and system enhancements like clock setting programs, alternative file selectors and much more. These are loaded automatically when you switch on, so you don't have to worry about them. Loading programs in this way has a disadvantage in that they can't use any GEM functions, such as graphics screens or mouse control. ***XBoot*** provides these facilities using clever programming to create a GEM-like surrounding.

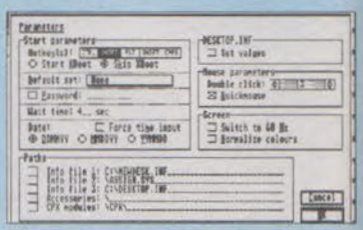
When the ST is switched on, it loads and executes all AUTO folder programs first, followed by all of the accessories in the root directory of your boot drive. ***XBoot*** is placed in the AUTO folder first. It then stops and presents you with an options screen, where you have the option to change the settings, by renaming .PRG files to .PRX, .ACC to .ACX and .CPX to .CPZ, making them invalid for loading. Of course, the process is reversed for activated programs. If no selection is made within a predefined time limit, ***XBoot*** continues to load a default set of instructions or a repeat of the last set used.

FEATURES

XBoot enables you to perform a few other tricks. It can link programs to CPX files if they go together. For example, ***MACCEL3***, Atari's mouse accelerator, can be linked to its control panel configuration file so that when you select one, the other is also activated. By selecting the Tools icon, a further range of utilities becomes available. These include facilities for setting preferences, de-activating all programs, accessories or CPXs and even determining the order in which the programs run. Information about the system and individual files is contained here along with an option to call up the file selector. Batch commands can be used to copy files into a RAMdisk and move them around as needed.

VERDICT

A good boot selector is essential and ***XBoot III*** is an excellent product. The range of features is impressive and, while there are no fancy loading screens, the program is extremely functional and user-friendly. There are other boot selectors available in the public domain or as shareware, but at the end of the day, the commercial package wins by a short head.



Set the paths and other options from the parameters screen.

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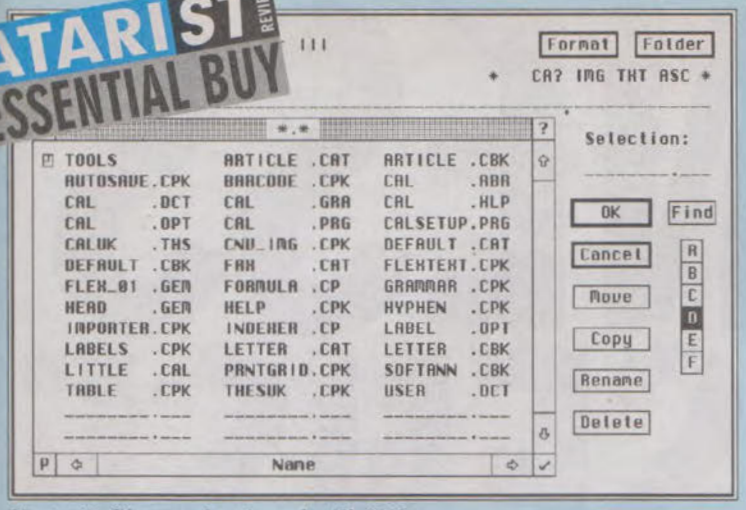
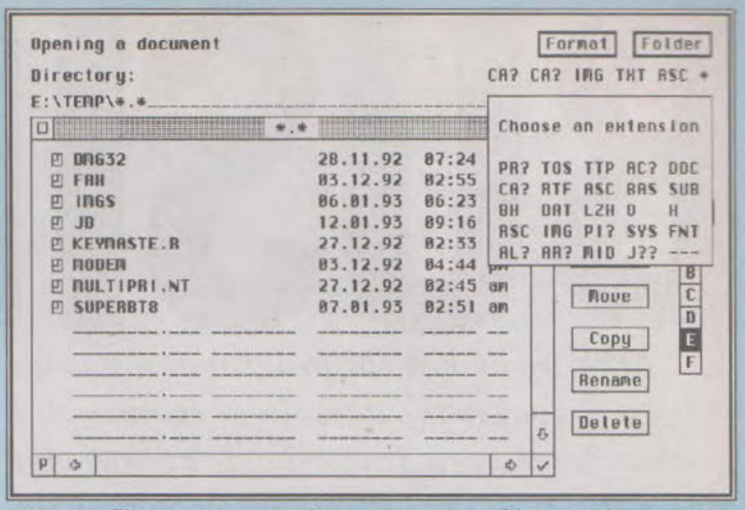
ATARI ST REVIEW
ESSENTIAL BUY



Up to 42 files can be viewed with UIS.



Up to 28 file extensions can be set up to make files search easier.

INSTANT ACCESS

Ofir Gal looks at a commercial alternative to the standard GEM file selector

Anyone who has owned their ST for four years or more will no doubt be aware of the frustrating inadequacies of the GEM file selector. The ***Universal Item Selector (UIS)*** is the only commercial product to do what the GEM file selector couldn't.

Before ***UIS*** can be used, the installation program must be run – this requires the user to type in his name and the serial number of the disk. There is only one file, UIS_III.PRG, which should be placed in the AUTO folder on the boot disk. An optional accessory is included, which can call the file selector.

Once installed, ***UIS*** will be displayed instead of the standard GEM file selector whenever you access the disk. Besides the usual drive buttons and scrolling file list, several additional buttons are available. These enable you, among other things, to format a disk, create a folder, delete, copy and even move files.

A WEALTH OF OPTIONS

The main uses of a file selector are, of course, to allow you to look through directories, locate a file and finally select a file to load or save. ***UIS*** does all this and more – 10 preset paths can be stored, and these can be called up using the function keys. ***UIS*** can even locate files – simply type the name of the file, wildcards allowed, select the drive to search and then click on find. The normal desktop sorts – by name, size, date and extension – are available, as well as no sort which displays files in their real order, which is useful for quickly checking the order of your auto programs. Twenty-eight preset file extensions can also be stored – these are used as masks so that only files with the specified extension are viewed.

The ***UIS*** display has three modes – 12, 12W and 36. The basic mode shows 12 files and is similar to the standard file selector, 12W shows 12 files and their size, date and time stamps, while 36 displays 36 file names on screen. ***UIS*** also employs a special technique to speed up screen redraw when it is closed. It is also possible to resize ***UIS*** so that it displays 14 or 42 file names at a time.

UIS stands out from other file selectors in the array of file manipulation features – format disk, create folder, copy, delete, move and rename. Uniquely, ***UIS*** allows multiple file selection for these operations: instead of going to the desktop to copy or delete more than one file, you simply hold down the shift key and click on the files. Even rubber-banding or 'lassoing' is possible. Whichever you select, dragging the file(s) to the button or simply clicking on the button will affect all files, but not before displaying an alert; it is all too easy to delete precious files, so UIS gives you a chance to quit.

Dragging a file or a group of files to the question mark in the top right-hand corner of the screen enables you to change file attributes such as hide files, set the archive bit or write protect. Dragging a folder gives information about the number of files it contains and their total size. Clicking on the question mark reveals how much disk space is used and how much is still available. Additionally, text files can be viewed or printed by being dragged to the 'P' button – a dialogue box will open, giving you the choice to print or show to screen.

Most ***UIS*** settings can be saved to disk so they are automatically set whenever you use the file selector. Having so many features in the file selector is a bonus, but it is not always convenient or even possible to access the file selector whenever you need it. To eliminate this problem, a tiny desk accessory is included which enables you to call ***UIS*** whenever you want to, as long as you have access to the menu bar.

IN USE

UIS takes a few minutes to get to grips with, but once in use, it's infinitely preferable to the default file selector. Moving between drives and directories is quick and easy. All the extra file facilities mean that you hardly ever need to quit your program and go back to the desktop, all functions are available from ***UIS*** except resolution change and save desktop.

There are a few imperfections which could be improved on. Many of ***UIS***'s buttons are border-less, so it is difficult to tell where they are at first and easy to miss them. Selection of file masks is awkward, requiring the user to click the left mouse button over one of these buttons while holding the right one down. The program cannot format high-density disks and the drive buttons are small.

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VALUE FOR MONEY	✪✪✪✪✪

OVERALL 90%

BUSINESS SENSE

Making money for programming is no longer the domain of commercial companies. Laura Taylor looks at how you can make a quick buck from the shareware market...

If you've been dabbling in programming but don't think that your work is up to commercial standards, it is still possible that you could make some money from your efforts if you release it as shareware.

The business side of the shareware industry is based very much on trust. If someone buys one of your disks you have to rely on them being honest enough to send you the registration fee. As always, you don't get something for nothing and in the case of shareware this means that in return for the fee sent to you you'll be expected to supply some kind of add-on or upgrade to send to registered users.

The other option is to produce a complete program and ask for one stand-alone fee. The disadvantage of this is that you don't offer the user any incentive to send you their money – and of course there's never a cast iron guarantee that they will.

The first step is to get a PD library interested in your work. If all goes well and they distribute your titles you could be in line for a tidy sum of money, depending on what the registration fee is and how many people actually pay it. Addresses and phone numbers of PD libraries are easy to come by – if you haven't already got a favourite that you use, try flicking through the advertising pages of this magazine for a few names.

TESTING

One of the most important things to do is test your work before you release it. It's usually best to get some friends round to test it for you, not only for bugs, but to decide whether or not they think it's actually any good. It's no use releasing your latest blockbuster just to find out a few days later that there are bugs in the program, and even worse that no-one wants to buy it.

MARKETING

When you are completely satisfied that your program is totally bug free, the next step is to get it released. In the case of games and leisure software it is probably best to put these into the PD market: you submit your work to a PD library, waive all copyright and the company then distributes it. There isn't any money to be made this way, but for some people the thought of having their software accepted is reward enough. If your particular program is going to have upgrades, for example a word processor or a database (you could offer manuals or extra facilities to people who register), then it is probably best to go for the shareware market.

DOCUMENTATION

One of the most important factors to consider when putting a program into the public domain or shareware is to make sure that it's well documented. You may be offering a full manual if someone registers their copy, but that's no reason to leave the basic instructions out in the first place. It's always best to write the instructions on a word processor and save them as an ASCII file.

The customer can then either load the document into their own word processor no matter what kind, or they can simply double click on the desktop and read it from there. It's no use writing it in something like ***Protext*** and saving it as a ***Protext*** file because your customers may not have the software to load it into.

RESPONSIBILITY

The instructions should always start with a disclaimer. This simply states that in the event of the program not working properly then you take no responsibility. But as you should already have checked your work for any bugs or quirks then it should work properly, shouldn't it!

The instructions themselves should be laid out in the order in which the customer is likely to need something or find something out. You don't need to go into too much detail, just the basics of how to use everything (this encourages them to register and get a manual). At the end you should mention that there is a registration fee and what they get for paying it. Don't forget to include your name and address.

Shareware is good way for anyone to lay their hands on utilities or applications to increase the versatility of their ST.

Because of the relative cheapness of registration fees, there will always be a demand for the software. And you never know, once you've got a few shareware releases under your belt you might attract the attention of a commercial producer.

WHAT SELLS, WHAT DOESN'T

Before you start programming your first shareware masterpiece, you need to come up with something that people will actually want to pay for. Games are usually only acceptable as PD, unless they're of a really outstanding quality.

Utilities and applications always go down best as people are always on the hunt for gadgets that will make their life easier.

For inspiration you could look at aspects of commercial software and possibly produce your own scaled-down version. They won't be as good as the original, but they might tide some cash-strapped ST user over until they can afford the real thing.

You should also take a look at what is already available. There's no point in writing something that could turn out to be a poorer version of a program that's already on release. Alternatively, you could pick up a few shareware disks, see what they do and try to produce an improved version of them.

Remember, there are thousands of ST owners out there, so there are bound to be those who could do with a program to log their bowling scores, or cross-reference text files.

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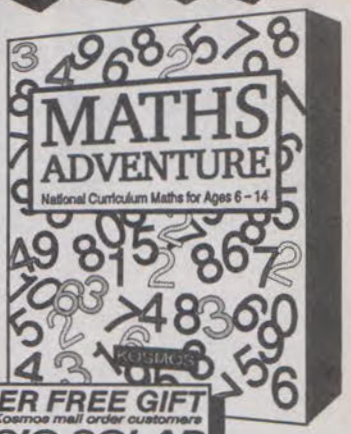

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Imagecopy is supplied as a desk accessory and as a stand-alone program. A fully illustrated manual is included.

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Alt-help keys	A
Image format	F
Image colours	L
Printer type	T
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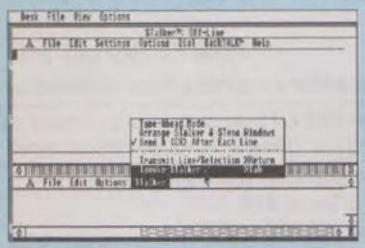
WRITE IT AND FILE IT!

Tony Kaye explores two new programs from the same stable as Neodesk and STalker

Two new packages from Gribnif Software look set to make life easier for you, your ST and your friends and business contacts. ***Cardfile 4*** and ***STeno*** are, respectively, an address file and a text editor which can both be used as accessories to simplify routine chores. The new software will appeal to comms users and to anyone who needs to access names and addresses or change text quickly during work sessions.

STENO

GRIBNIF/COMPO • £14.99 • 0480 891819



STalker is available from within STeno provided it is loaded first.

STeno is a powerful and easy-to-use, GEM-based text editor. As with ***Cardfile 4***, it can be run as an accessory or as a standalone program, allowing use from within any other GEM package. This becomes very handy when you want to read text instruction files while running a program.

Most of the features that you'd expect to find in a word processor are here, including editing functions and text formatting options, so it is ideal for writing small ASCII files to accompany programming notes or for compiling messages to send to a bulletin board over the telephone.

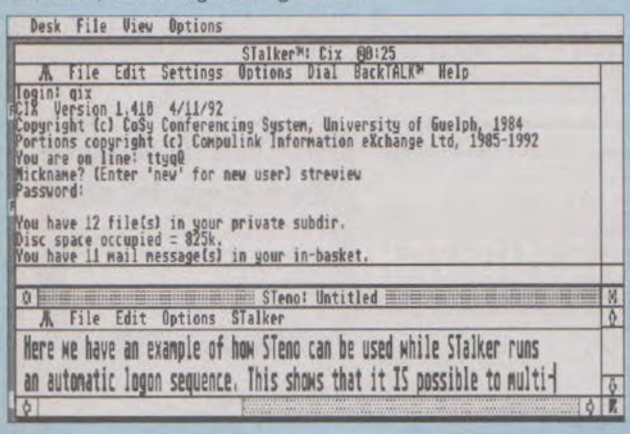
STeno automatically finds and communicates with ***STalker*** (the terminal program by the same author, reviewed here last month) if it is installed.

You can arrange the windows so that both are visible and even invoke a type-ahead mode for when you are talking to someone over a modem link.

By highlighting an area of text, you can send it at the appropriate time, allowing you to have the next response ready if you need to.

ST REVIEW COMMENT: "A useful and functional text editor, this package is ideal for many purposes."

★★★★



STeno is being used as a type-ahead buffer while STalker works quite happily in the background.

CARDFILE 4

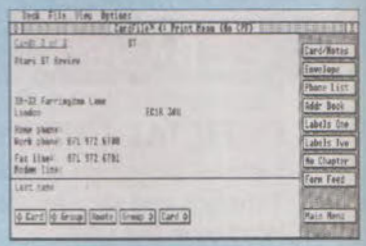
GRIBNIF/COMPO • £14.99 • 0480 891819

Cardfile is a lot more than just an address book; it's a personal information manager, and with it, you can store names, addresses, phone numbers, diary appointments and even dial calls using a modem.

The main card screen is kept clear and uncluttered – you see a large box for address and contact details. Boxes along the bottom of the card screen let you scroll through your contacts list and let you make notes on your contact cards. On the right of the main box is a row of buttons giving access to other menus for searching, editing and dialling as well as to the diary and agenda functions.

Everything you'd expect to find is here – file filters let you select all cards with certain information, like everyone living in London, for example. You can also send the details of a card directly to a word processing or DTP package.

On top of all these features, ***Cardfile 4*** is capable of acting as an appointments diary and an agenda. Records are updated automatically if you have a clock cartridge on the system.

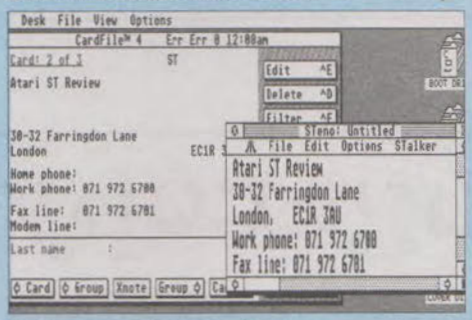


The print menu shows all the options.

Using the dial function, you can connect to a modem or fax machine, but you'll need a terminal or fax program to go further. Still, you can use ***Cardfile*** to dial and then disconnect the modem to talk to someone. All in all, this is a versatile package, worth adding to the collection.

ST REVIEW COMMENT: "A useful addition. This package is comprehensive and easy to use for storing names and addresses."

★★★★



Both accessories are able to communicate.

Cardfile 4 has an extensive range of functions.

DIALOGUE

An interesting and useful characteristic of these packages is their ability to communicate with each other. ***Cardfile*** will send a record to ***STeno*** and to ***STalker***. For example, you can add an address to your document and send the whole thing across to another user on a modem link. It's nice to see programs written with others in mind, so a complete suite can be built up to give all the functions you need. A word of warning, though: all three programs leave very little memory free in a one Megabyte ST. The more memory you have, the more use you can get from these packages, although each one will run quite happily in 512K.

NEODESK

Gribnif produces the replacement desktop package, ***Neodesk***. ***Cardfile 4*** and ***STeno*** work from within this shell along with ***STalker*** and, by setting up the ***Neodesk*** configuration files, combine to offer some advanced features.

For example, you can configure ***STeno*** so that when you drop a text file onto the icon on the desktop, the program runs and opens the chosen file. Again, memory is the only restriction. The latest update, version 3.03, is now available from HiSoft. The cost is £34.95 for the full package and £4.95 for an upgrade from version 3.02.

Compo Software is giving you the chance to win copies of STalker, Cardfile 4 and STeno, a complete package for comms, text editing and for keeping track of names and addresses

WIN STALKER, CARDFILE 4 AND STENO!!

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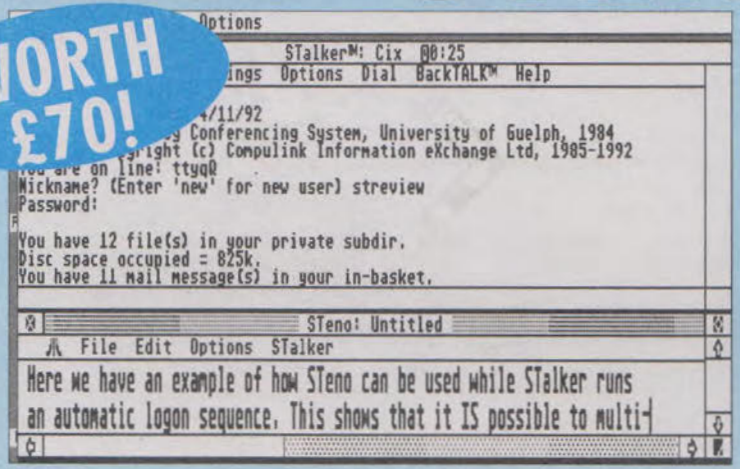
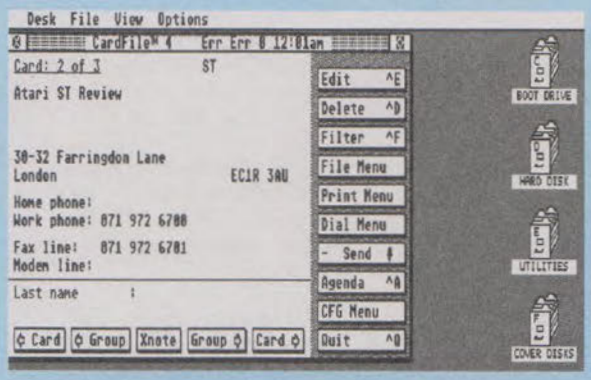




STeno and STalker in action connecting to CIX. Cardfile 4 can talk to the other two programs when needed.

Last month we reviewed ***STalker***, a new comms package from Gribnif Software, and this month we follow that up with a review of ***STeno*** and ***Cardfile 4***. Our winner will receive all three packages, courtesy of Compo Software.

STalker is a very flexible terminal program with many useful facilities. You can create logon procedures and even set scripts using its built-in scripting language, ***BackTALK***. Installed as a program or an accessory, ***STalker*** will communicate with other packages and send and receive data from ***STeno***. It works in the background, so you can carry on using your ST while uploading or downloading a file or while you are just waiting to log on.

STeno is a powerful text-editing package, written by the same author as ***STalker***. You can run the two at the same time, using the editor as a type-ahead buffer as well as a source for uploading files.

If you have more than one RS-232 port (as is the case on the TT, for example), you can use ***STeno*** to add a second copy of ***STalker*** for use on the other terminal.

Cardfile 4 will keep track of all your names and addresses and offers many other built-in functions, including dialling and exporting for mailings.

Our winner will receive all three packages, which together have a retail value of £70. With this wonderful prize, all you need to do is connect your ST to a modem for trouble-free comms.

GRIBNIF AND COMPO

Compo Software is an Atari specialist and distributes a range of products for the ST, Mega, TT and Falcon, including software like ***Write On!***, ***That's Write 2.0*** and ***Composcript***. It's the first company to offer an Atari authorised TOS 2.06 upgrade and also sells PC emulators and accelerators.

Recently, agreement has been reached to distribute and support a range of Gribnif products in the UK. These include ***Arabesque Professional***, ***Convector Professional*** and ***Neodesk Command Line Interpreter*** as well as the products offered on this page.

Compo provides full support to all of its customers. If you have problems with any of their products, help is available over the telephone.

Compo Software can be reached at 7 Vinegar Hill, Alconbury Weston, Huntingdon, PE17 5JA. Tel: 0480 891819.

HOW TO ENTER

To win this great Gribnif triple bill, all you need to do is answer the easy questions below. You'll find all the answers either above or in the reviews on the opposite page.

Send your answers on a postcard or on the back of a sealed envelope to the address below to reach us before April 14th 1993.

1. What is the name of Gribnif's replacement desktop?

2. Who is offering these Gribnif products in the UK?

3. Cardfile 4 is a PIM. What does PIM stand for?

Send your completed entry to **TALK TO THE WORLD COMPETITION, Atari ST Review, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.**

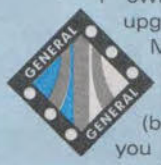
The closing date for entries is April 14th 1993 and the winning entry will be the first correct answer to be drawn out of the hat after that date.

Only one entry per household is permitted: multiple entries will be destroyed. The editor's decision is final and no correspondence will be entered into. There is no cash alternative to the prizes.

ASK THE EXPERTS

Once again our panel of experts gets to grips with your problems

RAMMING IT HOME



I own a 520 STFM upgraded to two Megabytes and use a copy of ***Timeworks 2*** (bought just before you included it on a cover disk). This program runs very well but is very slow and, with a double disk drive and no hard drive, the disk swapping is getting on my nerves. The solution, I thought, would be to put it all on RAMdisk which would solve all my problems. The only trouble is that all the RAMdisks I have from various different magazines are not big enough. I need one of at least one Megabyte, ideally 1.4 to hold all the data. What can I do?

The closest I came was with the programmable RAMdisk on issue nine, but that only gave 700K. Please advise.

Richard Young, Tisbury, Wiltshire

There are several RAMdisks in the public domain that would probably help you. We actually gave you one with issue five's cover disks called FASTRAMD.PRG. The program goes into an AUTO folder on your boot disk and a small file called RAMDISK.INF goes in the root directory of the same disk. You can alter the value of the .INF file (currently p250 to create a 250k RAMdisk) to the size you require.

If you don't have issue five, I'm afraid that there are none left in our back issues department now, but the program should be available from any PD library.

GAME LOADING PROBLEMS

I have a problem with my 520 STE. Sometimes when I load some of my games, the starter screen shows normally but I can't start the game with the mouse or the joystick. I am then forced to turn off and reload, after which, the game loads nine times out of ten.

This problem only occurs on four of my games including ***Pool*** and ***Jimmy White's Whirlwind Snooker***. On one occasion, a game loaded and ran, but there was no sound.

Please print my query as I am desperate for help before I consider repairs. As I said, the ST is fine except for the above problem.

Hywel Boylan, Maryport, Cumbria

Your problem is almost certainly not a fault with the computer. It sounds like you are not allowing the memory to clear before loading. If this happens, the processor is not correctly set up and the game will crash. The solution is to switch the computer off and wait for at least five seconds before loading the new game. This will allow all the memory pointers to reset before the next set of instructions is received.

ILLEGAL ENTRY?

I am writing with an enquiry about ***HiSoft BASIC*** that I hope you may be able to answer. How is it possible to produce an AUTO folder program with the compiler that does not cause the computer to lock up when run? Additionally, is it possible to prevent the machine from opening a window in a program with a .PRG extension? I am aware that it may be placed out of sight with the command WINDOW FULLW: C/S, but seeing the window appear and then jerk outwards seems rather unprofessional.

I have a theory that the answer to both of these queries may be the same, as the program trying to open a window from an AUTO folder is illegal and therefore does not run.

Hoping very much that you may be able to shed some light on these difficulties.

George MacKerran, Brighton, Sussex

AUTO folder programs are actually TOS programs which have had their extension changed to PRG. By default, when AUTO programs are loaded and run, GEM is not yet initialised and that is why it is impossible to open a window or access the file selector. You can ensure that your program is a TOS program by not using any graphics and avoiding the GEMVDI and GEMAES libraries. If you need to print anything to screen, you can use PRINT and similar commands. When you compile the program to disk, the compiler checks to see whether the program needs to be a GEM or a TOS application and names the program file accordingly. If it's a TOS program, change the extension to PRG and you could run the program from the AUTO folder.

The answer to the second question is yes, type in REM $OPTION y at the beginning of the program and BASIC will not open a window. However, you will not be able to use any screen output unless you are using a resource file, all other screen output must be inside a window.

AUTO LOADING TERADESK

On reading issue nine (January 1993) of ***Atari ST Review*** and using the cover disks, I found that ***Teradesk*** on disk two would not run automatically on my 520 STFM. With the aid of another computer magazine, I looked more closely and I noticed that my Install Applications does not have an AUTO/NORMAL selector. I wonder if you can explain why, as the computer is only three to four years old.

B.H. Lee, Stonebridge, London

There are many different versions of TOS in the ST. Yours probably has TOS 1.0 or 1.02. If this is the case, then you won't be able to load a program automatically unless it is capable of running from an AUTO folder. Teradesk cannot be run in this way, so you need one of the many programs available in the public domain such as Startgem or Headstart. The loading procedure is explained in the manual supplied on disk. These programs are public domain, so you should have no problems in obtaining one of them.

PRINTED PICTURES

On issue nine's cover disk, you gave us a picture printer and viewer. I enjoyed the program very much, but after a while, I ran out of pictures to print. I printed some of my own that I created with ***Cyber Paint***, but they are not as good as the ones drawn by other people as I'm no good at drawing.

Please could you tell me if there is a disk full of pictures and, if so, where I can get it from?

Stephen Plumb, Kingswinford, West Midlands

There are many disks of art available from various PD libraries. Try Goodmans International, 16 Conrad Close, Meir Hay Estate, Longton,

Stoke-on-Trent, Staffordshire ST3 1SW, telephone 0782 335650 or any other reputable PD supplier.

CHANGE OF DRIVE

I own an Atari 520 STE which I have upgraded to one Megabyte. Recently, however, the internal disk drive packed up. Having looked through your magazine, I notice in some adverts for replacement disk drives that there are two types.

I assume that the one Megabyte disk drive is better than the original, but would it affect the disks I have already?

Could you please advise me as to the best place to purchase a replacement from and which disk drive is the best?

Stephen Lloyd, Weobley, Herefordshire

The standard ST disk drive is double-sided and capable of storing around 720K of information. It has been called a one Megabyte drive from the early days of ST marketing. Most STs, apart from early ones which had single-sided units, have this. The advertisers are offering a direct replacement for this in their adverts, so any of them will be suitable, although some may require some surgery on the case of your ST to accommodate the eject button on the drive.

VIRUS DIFFICULTIES

I am a regular reader of your magazine and I find it an excellent read and very helpful. Unfortunately, after using the second cover disk of the January 1993 issue, I experienced a major problem. I opened the TWKS_BAK folder and loaded ***Fastcopy 3***. On the main menu, I clicked on the virus check box to check my original game disks and the program wiped out four of my games (***Microprose Formula One Grand Prix***, ***Robocod***, ***Supremacy*** and ***Speedball II***), two of which were on loan from a friend.

The virus check menu stated that it would heal a virus, not wipe out the complete disk!

These games were half of my entire collection as I am only just starting. As you can understand, I am very upset and at a considerable loss for a solution.

I definitely feel that some warning, or more thorough instructions, should have been given with this package and that the fault was with your program, not with me.

John McElligot, Co. Kerry, Ireland

If you read the manuals, most commercial programs do state that there is an executable bootsector on their disks and they should not be virus checked. Not everything in the bootsector is harmful, however, and programs such as Fastcopy may not be able to tell the difference between this and a virus, so it is always wise to follow some simple rules with commercial software:

- *Never leave the write-protect tab off, unless it is unavoidable.*
- *Never use a virus checker, unless it can identify the difference between a commercial bootsector and a virus (such as UVK).*
- *Never write anything to an original disk without making sure you know what you are doing.*
- *If in doubt, make sure that the computer is switched off before loading a new program. This will ensure that if a virus is present, it is not transferred.*
- *If you think you have a virus on a commercial disk, contact the software publisher concerned before attempting to alter the disk.*

Whilst we sympathise with you, the program was included as a method of backing up your disks and not as a virus checker. We suggest that you contact the original software houses and see if they will help. You may well find that they'll provide another copy of the

HISOFT DISK ROUTINES

Firstly, may I congratulate you on winning over at least one reader who was dedicated to a rival magazine - you know, the one that claims to be 'Britain's best selling ST magazine'.

It took a few issues to convince me (mainly due to some fuzzy-looking text and dodgy screenshots), but all things considered I prefer your approach. Your tutorials are understandable, your mix of games and serious software is just about right and your cover disks are excellent.

This brings me to the point of this letter. Since you gave us ***HiSoft BASIC***, I have been hooked on programming (I used to play around with ***GFA BASIC*** which came with the other mag. It's good, but where's the compiler?).

HiSoft BASIC is the bee's knees, though. I can't get enough of it and imagine I will soon be forced to upgrade to version two.

I have got a slight problem. I am working on a cover disk back-up program, similar to the one on each of ***ST Format***'s disks.

This is a huge improvement on the GEM copy routine, especially to newcomers to the ST - and I imagine there will be a lot of these this year.

My problem is formatting, or rather it is getting the ST to read a disk that I have formatted. I believe it's something to do with writing information to the boot-sector which tells the ST what format the disk is configured to, but I'm not sure.

Please help me. How do I format a disk using ***HiSoft BASIC***? I would like to be able to set different parameters like 80-82 tracks and 9-10 sectors. Can you tell me where I am going wrong?

Mike Fitzgerald, Spalding, Lincolnshire

To format a disk you need to use an XBIOS function called FNflopfmt which takes a long list of parameters. The first parameter is an address of an array which should be at least 9K (4608 elements), this is followed by a 0. The third parameter is the drive, 0=A, 1=B followed by the number of sectors per track (normally 9). The next parameters are the track number to format starting with 0 and the side (0 or 1). The last parameter is the interleave to use which should be 1. If you are copying a formatted disk, you don't have to worry about the boot sector as this will be copied from the source disk.

There are two calls that simply read and write data to and from a floppy disk and both take the same parameters. These are FNfloprd and FNflopwr and read/write up to one track per call.

The first parameter is the address of an array where data from disk is to be held, since each sector holds 512 bytes, a track holds 4608 (9 x 521), so you need an array with 2304 elements per track. The second parameter is the drive (0 or 1); the third is the sector to start reading from (normally 1 as sectors are numbered from 1 upwards).

The next parameter is the track number starting at 0, followed by the side (0 or 1). The last parameter is the number of sectors to read/write which should normally be 9. It is not a good idea to use extended formats because they are more prone to errors.

All three functions return 0 if they are successful or a negative number if failed. The number represents a TOS error code, -13 for example stands for destination disk is write-protected.

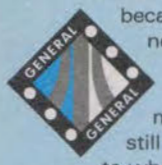
The following example reads from drive A, formats B and writes to it. Your program will have to allow for an ST with a single drive - you will need to read as many tracks as memory allows then write them to virtual drive B. If you don't, a single drive user will need to swap disks 160 times.

```
DEFINT a-z
LIBRARY "xbios"
CONST drva=0,drvb=1
DIM trkbuf(2303),frmtbuf(4607)                    'set up arrays
trkbufadd&=VARPTR(trkbuf(0))                      'get addresses
frmtbufadd&=VARPTR(frmtbuf(0))

PRINT "Track","Side"
FOR track=0 to 79
      FOR side=0 to 1
            PRINT track,side
            toserr=FNfloprd(trkbufadd&,drva,1,track,side,9)
            toserr=FNflopfmt(frmtbufadd&,0,drvb,9,track,side,1)
            toserr=FNflopwr(trkbufadd&,drvb,1,track,side,9)
      NEXT side
NEXT track
```

games you've lost when you return the originals.

BEGINNERS' HELP



I am writing to you because, believe me, I need help. I have owned my machine for four months and I am still none the wiser as to what it does.

The setup I am using is, I believe, fairly basic and consists of a 520 STE, Philips CM8833 Mk II colour monitor, second disk drive and a Star LC10-II printer. On the advice of a friend, I have upgraded the memory to one Megabyte. My problem is actually understanding what it is all about. There is talk of root directories, bootsectors, file extensions, fonts, .IMG, .IFF... I could go on and on. I read ***ST Review*** and ***ST Format*** and, quite frankly, get lost in it all very early on. To say that I know nothing is not strictly true as I am writing this letter using ***Protext***, one of the few programs I can use.

You may be wondering why I decided to buy this setup in the first place. The answer is that I saw my friend using ***Neochrome*** on his machine and I was very impressed. The manual that came with the machine really does nothing for me except make me more confused. The only game I play is ***Lemmings*** and although I would like to understand more about my ST, when it becomes too much, I play ***Lemmings*** and that's it.

So please, please can you tell me if there is a good book on the ST that I can buy that will take me through it all in a language I can understand and step by step?

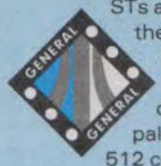
I set out trying to increase my understanding and have ended up feeling a right dunce. I am 41 years old and am going nowhere fast. I would be most grateful for any help you can give.

D.J. Jones, Chelmley Wood, Birmingham

There are several books on the ST available for beginners, and we cover basic terms in our Learn The Lingo pages, but the best thing you can do is join a local user group.

It appears from your letter that your problem is not one of understanding, but rather one of co-ordinating the information. A good club will go through what you don't understand step by step. The club will usually have someone who is familiar with these areas who can explain them to you in a way that makes sense. Additionally, there will be people there for you to exchange ideas with. If you still want a book, try Your Second ST Manual. Call Silica Systems on 081 309 1111 for more details.

SEEING DOUBLE



Is it true that the four 520 STs are the ST, the STF, the STFM and the STE and are they supposed to have different colour palettes? The ST has 512 colours and the STE has 4,096. How many colours do the other two have?

I worked out that if you double the palette of the ST which is 512, you get 1,024, which is in the STF and double it again to make 2,048 (STFM) and a final double to make 4,096 in the STE. Is this possible? If I am right, my 520 STFM has 2,048 colours.

Charlie Le, Victoria, Australia

The original machine was the 520 ST which needed an external disk drive and a monitor to operate. This was replaced by the STM, which had a modulator to enable connection to a television. The STF was only available as a 1040 with one Megabyte of memory. Then the STFM arrived with a built-in drive and modulator. Originally, this was single-sided and held 360K of information on a disk, but it was later replaced with the current double-sided drive.

The operating system was improved over the years, but the basic system remained the same until the STE was released. This was an enhanced version (hence the 'E') and, instead of eight shades of each colour being available, it had 16. This model had other updated features including two more joystick ports and stereo sound as well as a new version of TOS and a Blitter chip to improve graphics handling.

So, Charlie, I'm afraid you have a palette of 512 colours.

IMPORTING CLIP ART

I have tried in vain to get some of the clip art incorporated into my copy of ***Timeworks*** when selecting any of the following: XMASCLIP, MORCLIP and CLIPART ROMANTIC. I followed the text in issue eight, pages 106 to 109, but the only art that will come into play is the ***Timeworks Art*** that was on the disk with that issue. Could you please let me know how to get these packages to work?

Bill Gardner, Colchester, Essex

To import the pictures that you are having problems with, simply select the DEGAS option from the Picture Format menu. They have the extension .PI2, which you should then be able to import into your document with no problems.

FAULTY DISKS OR COMPUTER?

I have a problem which will either test your experts or make me look really stupid. Either way I need to know the answer and you seem to be my last hope (no offence intended).

About 10 months ago, I bought an Atari 1040 STE from Silica Systems. All was fine until about three months ago when the games that came with it would not load. To my horror, I found that some of them had been deleted from the disk completely while others just had the introduction screen without the sound and no game. At first I assumed that the disks were at fault as they were free from Silica until it happened with a game I bought recently from somewhere else.

At about the same time as this started happening, I started to get a reversal of the mouse movement in the vertical plane, that is, I move the mouse up and the pointer on the screen moves down.

This does not happen at any particular time or in any particular program, although it does not happen in games. The only way to revert it back to normal is to reboot the system.

Now the question. Am I just unlucky in that I've had a bad batch of games or is there something seriously wrong with my computer? If so, what? I've tried contacting Silica Systems but I always seem to get the one who's still asleep.

Please help as I'm almost at the stage where I dare not play any games in case they are lost forever.

A J Dunnett, Bicester, Oxfordshire

There are two problems here, not just one. The main one is that what is causing the mouse to move the wrong way is almost certainly a virus called Ghost.

Secondly, if this virus has managed to creep into your system, then there is a very strong chance that you have other viruses on your disks that are spreading themselves unchecked.

The safest solution open to you is to write-protect all of your disks by moving the tab on the back to the open position.

Remember that no disks should be put into your drive without this unless you specifically need to write to it.

Make sure that you switch the computer off between programs to help to avoid spreading the problem. Most importantly, you should invest in a virus checker straight away.

Remember, if you have a virus on a commercial disk, you should not attempt to kill it until you are sure that you can do so without destroying the program.

UVK has a file containing almost all known games and it can safely repair these, but you should read the manual first and make sure that you know exactly what you are doing.

TONY KAYE

Technical help and general problems

Our own Tony Kaye will look at any problems related to the day-to-day running of your ST. He can help with technical matters, disk drives and DIY projects.

OFIR GAL

HiSoft BASIC and general programming

What Ofir doesn't know about ***HiSoft BASIC*** Hisoft doesn't know itself! If you've got a problem with ***BASIC*** or 68000 programming, Ofir's your man.

VIC LENNARD

Music, MIDI and sound recording

Our very own Associate Editor is also Director of the UK MIDI Association. There's no-one more tuned in to the MIDI music scene than him.

LEARN THE LINGO

This month, we look at some of the terms that give you the most problems, judging from the letters we receive

ARCHIVE
Archiving is a method of storing files in a form that will take up less space. Popular methods have extensions like .LZH and .ARC. These files cannot be run on their own and must be restored first. It is a good way of storing program backups as it reduces the number of disks required considerably. LHARC was on the cover disks of issue 10 (February 1993).

BLITTER CHIP
The Block Image Transfer chip is found in the STE and later STFMs and controls the movement of the screen. As the name suggests, it moves images around in blocks to accelerate the routines that update the screen.

CLOCK/CALENDAR
The ST has an internal clock and calendar function but, unfortunately, it doesn't remember the time when the computer is switched off. This can be remedied by adding a battery-backed clock cartridge that will tell the computer the correct time when it is switched on. Mega STs and TTs have a battery-backed clock fitted as standard.

DONGLE
This is a small device that plugs in to the ST, usually via the cartridge port, as a form of protection against software piracy. The program looks for the dongle and will not work if it is not present. This allows programs to be installed onto a hard disk as the original disk doesn't need to be protected.

ERROR MESSAGES
Error messages occur when something is wrong in the system or you try an illegal procedure. They are not very well documented. An error message is not always a complete disaster and the problem often has an easy solution.

FUNCTION KEYS
There are 10 keys along the top of the ST marked F1 to F10. These are programmable and can be used from within a program for various purposes. Games use them for quitting, selecting levels and so on.

GEM
Stands for Graphics Environment Manager. This is the system of windows, icons and mouse pointer that is used with the ST.

HARD DISK
A hard disk drive is a fast, convenient method of storing programs and provides a reliable alternative to a floppy disk drive. It has a much larger capacity, but it is more expensive to buy and is less portable.

ICONS
The pictures that depict programs and files. These can be changed on the latest versions of the operating system, but on the STFM and STE you are stuck with the icons that come with it.

JOYSTICK
Most commonly used for playing games, the joystick is an alternative method of controlling movement on the screen.

KEY EQUIVALENTS
Some programs allow you to use keyboard shortcuts during operation. This means that instead of having to go to the menu bar with the mouse and then select an option, you could use a key, perhaps in conjunction with the Control or Alternate key to perform the function.

LICENCEWARE
Licenceware is one type of public domain software. It is usually free to pass around, but the author still holds the copyright and makes certain reservations on the distribution. For example, he or she may insist that the document file must accompany any copies you pass on.

MONITOR
The ST can be connected to a high-resolution monochrome monitor or an analogue RGB (Red, Green, Blue) colour monitor by using the monitor port on the back of the computer. The STFM and STE can also be connected to a television via the built-in modulator or, in more modern sets, using a SCART lead. The monitor option is easier on the eye and is essential if you are using the computer for word processing or other serious applications for any length of time. The image is sharper and clearer than on a standard TV.

NUMERIC KEYPAD
The numeric keypad is the extra set of keys situated on the right of the keyboard, initially designed to ease the inputting of numbers. It has a variety of uses in game and simulation controls.

OUTPUT
This is a term that is used to describe anything that leaves the computer. For example, the output is sent to the printer.

PUBLIC DOMAIN
This describes software that is basically free and can be copied and distributed without charge. Most PD software is written by users for users and it covers all aspects of the ST.

RAMDISK
This is an area of the ST's memory set aside to emulate the characteristics of a very fast disk drive. Anything stored in this manner will, however, be lost when the computer is switched off, so it's important to make sure that you save anything in it to disk before turning the power off.

ROOT DIRECTORY
The root directory is the list of files that is found in the first window opened on a disk. An AUTO folder and any accessories need to be in the root directory of the disk that you boot up with, otherwise they will not load.

SHAREWARE
This is another method of distributing software without incurring the costs associated with commercial products. Shareware progams are released into the public domain with the proviso that if you like and use a program, you send a donation to the author.

TRACKBALL
In simple terms, an upside-down mouse! This is a ball device used instead of a mouse for moving the pointer around the screen.

UTILITY
Programs that are designed to help you with other tasks are called utilities. These include such programs as RAMdisks, formatters, and many others.

VERSION
When programs are updated, they are given a new version number. This is usually available from the Desk menu. Later versions usually have improvements over the earlier examples.

WYSIWYG
This is an acronym for What You See Is What You Get. In other words, what appears on the screen is what will be printed.

X-CONTROL
Atari's new configurable Control Panel is called XControl. It allows you to edit the environment for comfort in terms of colour, mouse response, keyclicks, bell and other options. This panel is able to configure other programs using files called CPXs.

ACCELERATOR
It is possible to improve the speed of the ST by installing an accelerator. See page 28 for more details on upgrading your computer in this way. The process involves replacing the 68000 processor with a faster one, but allowing the original chip to be accessed to retain compatibility.

RAM AND ROM
There are two types of memory in your ST. RAM (Random Access Memory) is the main memory for programs and display use. This is what you add to when you install a memory upgrade. ROM stands for Read Only Memory and holds the operating system (TOS). This is fixed and cannot be changed in general use. The ROM chips in your computer control the actual working environment like the desktop itself, disk functions and many more operations that are not immediately apparent.

The ST Review mailbag has once again been bursting at the seams. Find out what's going on in the lives and minds of your fellow ST users here...

LETTERS

FOOLS RUSH IN

Like a total mug, I foolishly lent my cover disk copy of ***Paintpot*** to a so-called mate, only to discover that he's now moved out of the area.

You notice that I said ***total*** mug because I didn't even make a backup copy. I'm so ashamed. Upon 'phoning your back issues department, I was disappointed to learn that this particular issue (and most of 1992's) was completely sold out, so, as a last resort, I'm begging on bended knee.

Would you happen to have a spare copy hidden away in the depths of the ST Review offices? I'm prepared to pay, I'm not after a freebie. Alternatively, do you ever intend to re-issue this program in a later edition or reprint?

If the answer is no, could you please print my telephone number in the hope that some kind reader somewhere could contact me to arrange a copy? Perhaps this letter will serve as a reminder to anyone who might need it: always make a backup copy!

Dave Harris, Westbrook, Kent

An important reminder. With back issues selling out so fast, it's important that the first thing you do is back up your cover disks. We get a lot of letters from people who don't do this, or they run them without the write-protect tab on and delete data.

As we have said before, we don't keep many copies here, so we are unable to help you. If anybody else can help out, you can contact Dave on 0843 228423.

COMPACT CONFUSION

Firstly I would like to congratulate you on producing the finest ST magazine that I have ever come across, as it has everything an ST owner could possibly want or need to know. Anyway, what I would like to ask are a few relatively important points concerning the new Falcon.

They say the Falcon has one Megabyte of memory and that it can produce sound quality on music/sampler packages ranging from 8.2 KHz to 49.2KHz (of which the latter is of higher quality than CD sound). Well, isn't there something wrong here? On a one Meg ST, sound samples of up to 32KHz have to use up most or all of the available memory to sound as clear as possible, even though the result is still not as good as a CD. If this is correct, then how can the Falcon give out 49.2KHz of sample quality with just one Meg of memory – I have heard that just one second of CD-quality sound takes up a whole half Megabyte.

I would call it the hidden small print as they point out that the Falcon can produce higher than CD-quality sound, but what good is it if less than two seconds can be recorded on a standard Falcon?

I think that there should be a small message in the advertising saying that a minimum of four Megabytes is required, otherwise a lot of people are going to be disappointed when it comes to producing music sequences.

The graphics detail/resolution also applies to the limited memory. Isn't just one 768 x 480 true colour picture going to take up all the memory?

Andrew Ford, Waterlooville, Hants.

You will be able to do a variety of things with the standard Falcon besides recording sound and displaying pictures and there are many tricks you can use. Take a look at the music being produced using a 1040 in music studios. A lot of the hits that you hear in the charts are sequenced using a standard 1040 ST.

The home user will always have to compromise to a degree unless they realise the need for hard drives and memory expansions, but take a look at the VideoMaster package from Microdeal, reviewed last month – even a modest package can produce good results using clever routines and 'tricks'.

VIRAL PNEUMONIA

The subject of computer viruses is always timely and topical, and it was with great interest that I read Vic Lennard's article in your February issue. I tried out the demo version of the excellent anti-virus program ***The Ultimate Virus Killer***, which accompanied it on disk two and have already sent my cheque to Douglas Communications.

I have also recently obtained, from a bulletin board, a long but fascinating text file entitled ***The Known Viruses On The ST And Their Symptoms***. I believe the author will be well-known to Vic. This lists no fewer than 67 bootsector and five link viruses. Of the bootsector viruses, it seems as though four, or possibly five, can affect hard drives – C'T, Media Change, Bat, DJA and Ashton Nirvana – and presumably all of the link viruses could zap a hard drive. As far as I can ascertain, none of the link viruses can be immunised by ***UVK*** or any other program or procedure, and of the hard drive affecting viruses, the Bat and the Ashton Nirvana are also said to be immune.

It is bad enough to lose the entire contents of a floppy disk, less than one Megabyte, but imagine permanently losing the contents of a whole hard drive.

All this presses home the necessity of thoroughly checking all new disks which come into your possession and of making frequent and regular backups of your hard drive. Arising from this, can you say whether ***UVK*** will detect even those viruses that are immune?

When run, ***UVK*** will point out those programs which have been compressed, although it can't be sure that the data may not be infected after unpacking. Surely this means that a packed program could be a potentially undetectable way of introducing a computer virus into your software?

Your disks commonly include such programs, and they often unpack and run themselves without the user even being aware that they were compressed. Having checked my own hard drive, I was amazed to find how many programs of this sort I have collected without realising the fact. I would be grateful for any comments you or your other readers may wish to make on this subject.

Finally, Vic Lennard comments in his article that ***Atari ST Review*** is "the only one of the three main UK Atari magazines not to have released a virused cover disk". We all know the names of the other magazines, and I am aware of the notorious case of the Goblin virus sold to the general public by ***Atari ST User***, but I must have missed the one from ***ST Format***. Could you please let us know the number of the relevant issue?

Roy Dent, Harrow, Middlesex

The never-ending problem of viruses is always complex. There is no guaranteed way of being safe from them, but you can do everything in your power to avoid collecting, or worse, spreading them.

UVK is able to recognise the link viruses as well as the boot-sector variety and if you're not sure about a program, it does a complete system check and informs you if anything is amiss. There is obviously the danger that a new virus could emerge that has not been identified, which is why the program is updated so regularly.

Programs that have been compressed should have no greater risk than others. When running such a program, if you are unsure of it, switch your computer off and check the system thoroughly before continuing.

The rules for protecting your system from viruses have been laid down many times, so there is no need to repeat them, but it may help to consider some pointers for hard disk owners.

Set up the drive so that data is written to a different partition to the program files. Write protect the program file partition so that your programs are safe and back up the data partitions regularly. It is best to have two sets of backup disks that you rotate, so you should never lose too much data.

If you run a boot selector program such as XBoot or Superboot, you can't write protect your boot drive. This makes regular backups even more important. Keep this partition small and only keep the files you need in it.

The virus that appeared on ST Format a few months ago was caught before the magazine went on general sale. Only subscribers received infected disks, and they were all sent a virus killer, so you have nothing to worry about.

BOMBS AWAY

We have had an Atari 520 STE (two Megabytes) for nearly 18 months now and have looked at many publications in that time, but we have yet to see any article on the subject of the bombs that come up on our screen from time to time. We have had varying numbers and in what seem to be odd circumstances. Any chance of a full description?

Cyril Cowland, Sidmouth, Devon

Bombs have, for a long time, been a bit of an enigma on the ST. The system of reporting crashes has never been clearly explained as most people have decided that a crash is a crash. No matter how many bombs appear, the end result is the same, a reboot of the ST.

For an explanation of individual problems, a program like Antibomb (cover disk two, issue six, October 1992) will intercept the bombs and replace them with a dialogue box telling you the problem.

If you haven't got this issue, the program is available from all good PD suppliers.

HAD YOUR CHIPS?

May I use the columns of your magazine to express real concern as to the viable future of Atari.

My 520 STE broke down in July, one month after the guarantee ran out. There was no picture on the screen and no response from the disk drive. In your first edition, you gave a helpful list of firms that did Atari repairs and I was pleased and surprised to see that Dawsons in Warrington was mentioned.

I duly presented them with my ST for repair and was informed that the particular controller chip would need to be ordered from Atari, which would take six to eight weeks to come through. Yes, you guessed it, I'm still waiting.

I have been in regular contact with the engineer and he assures me that his hands are tied and that the problem is with Atari. Surely six months is an unreasonable length of time to wait for one miserable chip, even if it has to be posted from America.

Maybe my case is exceptional, but somehow I don't think so. If this is the typical standard of after-sales service that Atari offers, then the future for the Amiga must be looking very rosy. If only Atari could be as good as your magazine!

Andrew Lockwood, Warrington, Cheshire

It's nice to be able to give you some good news, Andrew. The chip has arrived and your computer should be sitting in front of you as you read this. We spoke to Gerry Davies, a Director of Dawsons, who assured us that he is very concerned about the delay that you've suffered. He has assured us that some form of recompense will be forthcoming.

We are led to believe that there are others in the same position, so we have informed the company of an alternative supplier for the chips and this kind of delay should not occur again.

THE SCIENCE OF SHAREWARE

I am a regular reader of your magazine and am doing a one-year degree course in Informatics. I wonder if you would be good enough to help me with a research programme that I am doing?

I am researching the subject of Shareware. Could you please let me know anything at all that you think may be of interest on subjects such as the history of this type of program, the magazine policy on it and information as to where you obtain the Shareware that you put on your cover disks.

A R Hamer, Irby, Wirral

This form of software distribution is as old as public domain itself. It started when people wanted to write for the ST, but didn't want to go through publishers and distributors, making their software too expensive. They also wanted the user to judge their work and decide for themselves if it was worth paying for. Two basic types of program were released, the complete packages and older versions, with the latest release being offered as incentive to register. This has, in the main, been successful, although there are users out there who are not sending money in. Our view is, if a program is useful to you, then pay for it. It not only encourages the writer to go on producing new products, but allows you to contact him for advice and updates. As for where we get the software we use, that would be telling.

ORGANISING ORGANISERS

Thank you for the ***Get Organised*** article in the December and January issues of ***Atari ST Review***. The number and variety of these devices on the market suggests that they do have serious uses for everyone and are far more than just yuppie toys.

I would make the comments that your article did not actually provide all the information a prospective buyer would need.

For example, specific details such as relative size and weight were not mentioned. Assumptions could be made on most but the sizes of some of the Sharp and Casio models were not obvious from the illustrations.

The second point, I feel much more important from an ST owner's point of view, was the lack of discussion of any possible methods of file transfer between hardware such as can a Notepad word processor or a Portfolio text document be imported into First ***Word Plus*** on an ST?

It appears that some hardware/software packages are now offered to enable such transfers to be made easily. Could a follow-up article be considered that reviews these offerings for reliability and ease of use?

In closing, thank you for an excellent magazine with a commendably mature style. The 'mine's better than yours' arguments don't achieve anything, and thanks for the genuinely useful cover disks.

Tom Fairhall, Brighton, E. Sussex

We tried to give an overall picture of the organisers in the reviews as opposed to an in-depth article. The idea was to give you a flavour for them and if you wanted to find out more, there are stores that will allow you to see them. Let's be honest, that's far more useful than a list of figures, isn't it?

As for covering interfacing, again we were looking at the organiser angle rather than anything else. You can import any text that is in ASCII format, so you could take information from the Notepad or the Portfolio.

PLOP! GOES THE WEASEL

After completing all 30 levels of the game ***Plop!*** that was on the cover disk of issue nine, I thought I would send in the level codes to help anyone finding it difficult.

1 none
2 AAKQSSQKAA
3 AAKELLEKAA
4 CHOOOOOOHC
5 UCCAKKACCU
6 YCCWGGWCCY
7 EFFFBBFFFE
8 AKCUOOUCKA
9 GUZMXXMZUG
10 GXKQQKCEGD
11 ANNNMQMNMO
12 PTUUAAUUTP
13 HAVOXXAJYE
14 YHNLPPGLHY
15 DJKOXXOKJD
16 QTNVWWVNTQ
17 CMWSFFSWMC
18 TLOPNQOFNT
19 VQPOQFHHFY
20 OOGIOKOQEC
21 AAQLMTMLQA
22 WVPOAEOOVC
23 BEDQTWQDEB
24 IORIJPPBROI
25 JONMLEWISM
26 SIMONMHALL
27 WELUVMUNGO
28 DIGITALLIS
29 SOOTHSAYER
30 STOSISW**K

Anthony Chant, Cowes, Isle of Wight

DON'T KNOCK ATARI

I am fed up with the people who don't know what they are talking about knocking Atari's marketing. Let's look at the facts: We all know they produce great machines and the Falcon is the latest in a long line. The ST was very well marketed and for the first four years of its life was the number one. Yes, it was overtaken by the Amiga, but what computer historically has ever lasted longer than five years on top?

"Why is Atari not advertising the Falcon?" people moan and in the next sentence complain that they want one and can't get it. Precisely. What would you do if you were let down by production and could not get enough

machines to supply demand? You certainly wouldn't waste good money advertising it and whipping up more demand that you cannot supply.

I suggest that when Atari has a quantity of the Falcon in the new consumer case, they will advertise it as much as they did in the early days of the ST.

Figures show that Atari spent more on advertising than any other computer related company in 1988 and 1989. Then watch it fly. In the meantime they will continue to sell all they can get in the old case to enthusiasts like myself.

What a move that is, eh? They either wait until the middle of this year to get any income from the Falcon or they sell so many thousands in an old case to people who can't wait. How to make money out of something that, in reality, is not finished. Far from being bad at marketing, this type of slick move shows me just why Atari are still in business almost 20 years after starting whilst hundreds of others have gone bust. I am a lecturer in marketing and would recommend that anybody look at the way Atari is run as a prime example of how to stay in business.

Derek Whitely, Cookham, Bucks.

There are different perspectives at play here. From a business point of view, you may well be right, but from a consumer's point, there are problems with this kind of strategy.

The public are not as fickle as they may have been a few years ago. Atari was the first company to market a 16-bit home computer so the technology had a big advantage. The Falcon may be the first 68030-based machine with a DSP, but it is by no means the first of its kind. There are alternatives available, albeit not so good technically. Acorn can tell you all about manufacturing a product that is technologically well advanced, but is an enthusiast's machine. Unless Atari does something soon, the Falcon is in danger of achieving cult status in the same way.

EVADING BOMBS

First of all, congratulations on a well written and very informative magazine. Keep it up!

I have had two problems with your cover disks. They concern the programs ***Evader*** and ***Kid GP***. Both games come up with two bombs and state that they can't find the .DAT file when they are both there on the disk. I have a 520 STFM with a colour screen and TOS 1.02. All other cover disk programs are fine. Can you help?

Brett Kakel, Maidstone, Kent

A few people have had this problem, Brett, and I'm afraid that the reason for it is that both programs actually require one Megabyte to run. Discussions with the author have revealed that Evader was an oversight on our part and Kid GP was missed by Dave himself. Please accept our apologies.

PRINTER LEADS

After reading your article on the Epson LQ-100 printer, I thought I would try some DTP. I bought the printer from Dixons for £180, but I found that there was only one lead for the power.

Could you please tell me where to get a lead for connecting the Epson top my Atari 520 STE?

J Wallis, Rochdale, Lancs.

The port on the back of your ST is a standard Centronics printer interface. Any parallel printer lead will work and this can be bought for around £10 or less from any computer dealer. Dixons may well be able to help – if not, try your local PC shop.

TIME FOR PRAISE

I am just writing to say that I like the clock that I got from your offers page. The only problem is that I couldn't set it up at first as my TOS does not outlawed a program with the extension .TOS, but only .PRG. It might be an idea to change the program name to AUTOCLOK.PRG so that all Ataris would then load it from an AUTO folder.

Keith Sutherland, Worthing, West Sussex

We're glad you like the clock. We have them on our machines in the office and wouldn't be without them. Your point has been noted and the new software disks that are sent with the clocks now have both versions of the program.

ARE WE WRONG TO JUDGE?

I am writing to complain about your review of the compilation ***Raving Mad*** in issue nine. I was surprised as I read the caption 'No-one above the age of 12 will find much long-term appeal in their innards'. Well, I certainly did and I'm 13. Many of my friends enjoy ***Raving Mad*** too.

I was also a little annoyed when you said that ***Rodland*** is simple stuff, in fact I find it rather difficult. Finally, I'd rate the package at 85%, otherwise I had a good read.

Grace Campbell, Camberwell, London SE5

Not everyone is going to agree with everything we print in our pages and one person's view of a game can be totally different from another's. That's why reviews exist, to give you one view of a game. If you like the look of what you see, you go to a dealer and have a closer look. We try to represent the majority of our readers. Research shows that their average age is mid-twenties, so our reviews tend to be pitched more towards that group, but we try not to exclude anyone.

HAPPY BIRTHDAY

I have been a reader of your magazine for a long time now and have in my possession every issue you have released. I would like to make a couple of points.

Firstly, I was sad to read in issue 10 of the untimely departure of the editor, Garth Sumpter. He and the rest of the team have between them built up a fine publication, and I hope that Vic Lennard can keep up with the trend and maintain the magazine's high reputation in the ST world.

Secondly, may I wish ST Review a very happy birthday. Throughout the last 12 months, it has kept me and the rest of the Atari using country up to date with what is happening and what is about to happen in the computing world.

Thirdly I read with worry some readers letters suggesting the omittance of the 'Screen Scene' section. Please do not get rid of this section. You have the perfect balance. Remember, all work and no play makes Jack a dull boy!

Lastly, the cover disks are outstanding. Keep up the good work.

Craig Morris, Hemsworth, West Yorkshire

Thanks for your support, Craig, and a big thank you to all our readers who have stuck with us for the last year. We're only sorry that we won't be celebrating any more time with you.

Despite opinions expressed in other parts of this issue, we do hope that the Falcon becomes the success it deserves, despite the marketing efforts of Atari themselves.

SERIOUS BUSINESS

I feel I would like to make a few points to help Mr Steven Pace who wrote to you in your February edition entitled 'Bad Advice'. I must re-iterate your opinion that his friend is talking rubbish. I consider myself to be a late starter in computing at 37 years of age (now 40!) with a daughter of 15. I help my husband to run a fair sized business in the entertainment industry but it was impossible to find a suitable accounts program due to the nature of the business. A friend of ours found someone to write the program for us which took about a year in all to complete, mainly because of his lack of knowledge of our business. We have now used his accounts package for two years and it makes work much more pleasurable. Anyway, I'm getting away from the points I wish to make, which are:

1. I use my accounts package on a 1040 STFM. I have another 1040 at home which is useful for entering data during school holidays or whenever I can't get to the office as often as normal.

2. Our staff use ***First Word Plus*** on a 520 STFM along with Printmaster for publicity, biographies, newsletters and so on. They also use Labelmaster.

3. I have a Star LC20 for all the printing and will probably replace this soon for something larger.

What I am trying to say is that we have have a large operation being run on the Atari with no complaints and certainly no enormous financial layout. I feel that Mr. Pace should have no qualms about buying Atari. He says he has a daughter approaching school age. I have three small nephews aged four, six and nine and keep a small library of programs, mostly collected from the public domain, for their visits.

Mrs C Wood, Sheffield

So there you have it. If you can run a business with one Meg, there's not going to be many problems in the home. Most commercial software for home use is designed to run in one Megabyte, but will take advantage of larger memory configurations. The ST is capable of having four Megs of RAM on board, and even top producers in recording studios are using standard 1040 machines.

PRICE AND AVAILABILITY

In your February issue, you mention ***ST Writer Elite***, ***DB Master***, ***Fastbase*** and ***Accountability***. Unfortunately, you do not state where to get them from. I've been through your magazine from cover to cover but cannot find them.

While on the subject of software, how do you justify the price of programs - ***Cubase*** £399, ***Calamus SL*** £575. I'm paying off for my 1040 STE and can't afford the software. How do others afford it? At least PD is sold at realistic prices.

Francis Wier, Ballymena, N. Ireland

The programs you mention are all available from PD libraries. If you contact any of the PD advertisers in this magazine, you should have no problems in obtaining them.

Cubase and Calamus SL are serious professional programs and are certainly not the kind of software that the average user is likely to buy.

They may seem expensive to the amateur, but they are well written, well supported and are earning money for their owners. This is why they can command such a high price.

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DEMO.92	ULTIMATE GFA DEMO by the Overlanders, 12 brilliant demos written in GFA basic!
DEMO.97	DARKSIDE OF THE SPOON - full screen mega-demos from ULM and guest screens.
DEMO.102	VODKA DEMO - ten unbelievable screens from Equinox. One of the best to beat.
DEMO.103	WHAT NOT TO DO - 8 short comical animations from the Inner Circle. Very funny.
DEMO.118	ELECTRA RESET - joke demo but press reset for brilliant mega-demo. (1MEG)
DEMO.131/134	PHALEON GIGA DEMO by Next - massive 34 sub-demos. (4 DISK set - £6.00).
DEMO.168	MATHEMATICA DEMO by Aura - excellent graphics using 'computer mathematics'.
DEMO.170	GROTESQUE DEMO by Omega - the fastest graphics ever seen.(1 MEG STE ONLY).
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MUS.6	ACCOMPANIST - 16 track midi sequencer by Henry Cosh, latest version 2.5).
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SORRY NO CALLERS

THE BLITTER END

We've had a number of letters concerning the future of the new Falcon 030. Here we print just one which raises some of the concerns of many ST enthusiasts. Atari replies

Is Falcon dead in the water before it has even taken off? I have been following with great interest all the rumours, fantasies, half-truths and facts about Atari's new wonder computer. I am now becoming convinced that it is going to be a dismal flop due to the company's seemingly uncanny knack of making a total mess of the launch of any new machine.

First, we are told that nearly all ST software will run on it. It has since been revealed that virtually no games and only some very well-behaved GEM/TOS software will work; a lot of popular packages will not. When you consider that little of the promised software seems to be appearing, it could cause severe difficulties.

We were also told that Falcon will be multi-tasking. It has now emerged that the first 10,000 Falcons in the country will not have MultiTOS supplied with them, but owners will be offered it in the future. By this, does Atari mean that it will send you a nice packet containing the MultiTOS disks through the post as soon as it is ready, or is it going to 'offer' it to you as a purchased upgrade?

We are now told that Falcon is to have a new case in the spring and the price is to be cut to £399 to compete with the Amiga 1200.

I don't think that many potential customers are going to be thrilled with the fact that their machine will be obsolete within a matter of months and will be replaced with a better one for £100 less! I know I wouldn't be.

Lastly, how much advertising has Atari taken out to promote its new baby? About as much as normal – none. I'm afraid the European Computer Trade Show does little to boost consumer knowledge as it doesn't allow them to actually see the machine.

I was recently talking to the manager of a chain of computer shops and he says they will not be stocking Falcon as there is simply no interest. People other than avid readers of ***ST Format***, ***User*** and ***Review*** just don't know that it exists and the Amiga 1200 is selling very nicely thank you.

Why can't Atari simply admit that it is unable to get a proper functioning machine out and release it when it is ready? Come on, Atari, we're not stupid.

Michael Kirk, Stevenage, Hertfordshire

We presented this letter to Darryl Still, Marketing Manager for Atari UK. Here is his reply:

Dear Mr. Kirk,
You have stated that you have been following the rumours, fantasies, half-truths and facts. Unfortunately, the problem seems to be that you are treating them all as the same thing.

Let me take your points one at a time:

1. Atari has always stated clearly that the Falcon is not a new type of ST, but rather a revolutionary new computer. However, in our tests, 71 per cent of all serious ST software will run on the 68030 Falcon, compared to the opposition's 'evolutionary' new machine which will run less than 60 per cent. The DSP will allow the Falcon to perform beyond anything comparable costing two or three times more.

2. There are nearly 200 software titles in development at the moment, much of which will be available when the machine is released.

3. MultiTOS is now ready. We do not intend to split our user base.

4. Falcon was previewed to the trade at ECTS in September. Early machines were to be made available to developers and enthusiasts who could not wait until the official launch, in the old ST case. I must admit that these numbers are smaller than we hoped to ship.

5. We have always said "Wait until March unless you are a developer or a real enthusiast". We also don't want thousands of obsolete machines and dissatisfied owners.

6. Why criticise us for waiting until March before advertising? We don't want to build up demand before we can supply. The same applies to chain stores or independent retailers.

Falcon is a revolutionary new computer which is technically far superior to anything under twice the price.

I hope we have shown you that we are doing what is best for the Falcon and when we do launch the machine, the software and support will be of a quality that will establish this computer at the top of the pile.

HAVE YOU WON?

Are you a winner of one of five Atari Lynx Batman Returns packs or a Seikosha SL-90 printer? Find out here.

We offered five Atari Lynx ***Batman Returns*** packs in our January issue. The winners are:

Kyle Brain from Lark Hill, Salisbury; Robert Brown, Cleethorpes, S. Humberside; Doreen Dunn, Sandwich, Kent; Richard Jones, Speke, Liverpool and Andy Knight, Hatfield Peverel, Essex.

In the same issue, we offered you the chance to become the proud owner of a Seikosha SL-90 24-pin dot matrix printer. The answers to the questions asked are:

1. The maximum print speed of the SL-90 is 240 cps.

2. The maximum resolution available is 360 dpi.

Entries with just the first answer were acceptable due to a slight error on our part, so the winner is Ray Carpenter from Aberdeen in Scotland.

Congratulations to all our winners, your prizes are on their way.

More Atari News & Views from HiSoft

The Serious Page

Devpac 3 £79.95

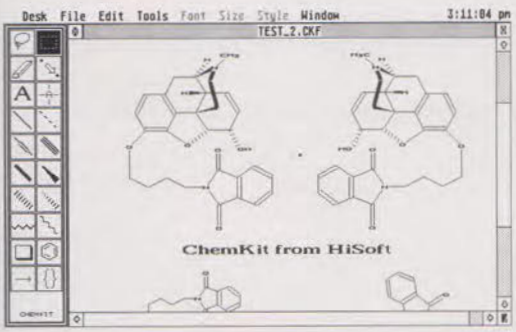
HiSoft Devpac 3 is the latest version of the popular assembler/ debugger package for *all* Atari 680x0 computers. Packed full of features, it is the ideal programming environment for beginners and professional programmers alike.

Improved and extended, the Devpac 3 macro assembler is now often 40% faster than its predecessor (without using pre-assembly), has many extra, switchable optimisations and, with the ability to pre-assemble files for inclusion, can now claim to be the fastest assembler on the Atari computers. It produces 68000 up to 68030 code (via a user option) & supports the maths co-processors.

Devpac 3 is supplied with a professional 350-page, wire-bound manual, all the necessary include files for your system (ST/STe/TT/Falcon030), GST and Lattice linkers, various utilities, example programs and a complete 68000 Pocket Programmer's Reference Guide. Call or write for more details.

ChemKit £39.95

A new package that many chemists and students of chemistry have been waiting for; ChemKit allows the easy creation, amendment and printing of any chemical structure.



Using a wide variety of flexible drawing primitives together with GDOS text, this package is a boon for anybody involved in producing chemical drawings. ChemKit runs on any ST/TT/Falcon030 and needs 1Mb of memory.

Books from HiSoft

We have a number of excellent books for the ST in stock at the moment. These include *C-manship* by *Clayton Walnum*, ideal for the C enthusiast or the beginner; *Program Design Techniques* by *Paul Overaa*, an informative book on how to write well-structured programs in most languages; *Real-Time 3D Graphics* by *Andrew Tyler*, shows you how to create vivid solid 3D colour graphics while the *Motorola 680x0 Programmer's Reference* is the bible for 680x0 assembler programmers. Please call us or write to us for pricing details on these titles.

The HiSoft Promise

While many other companies are abandoning the Atari market, we are moving forward, acquiring and writing new titles, many of which are detailed on this page.

Rest assured that we will continue to offer you the best software at truly competitive prices with a range of customer support options to ensure that you can use your Atari 680x0 computer, and our software!, with confidence and ease.

We are very encouraged by the Falcon030, believing that it will breathe new life into the general-purpose microcomputer market, which has often been driven by the computer enthusiast, who will find this new machine both fascinating and exciting.

We will sticker all Falcon030 product with Atari-approved labels for convenience and clarity; there are three such labels - *Falcon030 Exclusive*, *Enhanced* and *Compatible*, watch out for them.

TruePaint £39.95

TruePaint is the first art package to take advantage of the true colour capabilities of the Falcon030 computer. Some of the highlights of the product are:

- Works in all screen resolutions including 768x480 True Colour
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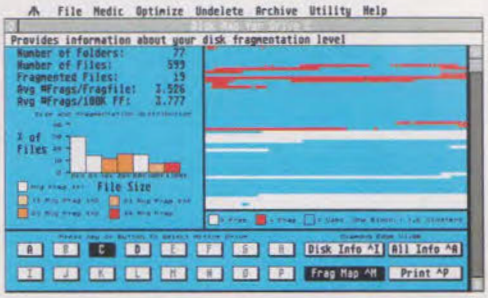
- Animation, FSM/Speedo GDOS support, wide variety of file formats including IFF, TIFF, JPEG, Targa, IMG, Neochrome and more

We have re-scheduled the release of TruePaint to coincide with the general availability of the Falcon030 computers - the package will now be available on 18 February 1993. Please contact us to be sent a TruePaint brochure when this is available.

HiSoft BASIC 2, Harlekin 2, Lattice C 5.5, HiSoft C, HighSpeed Pascal, FTL Modula-2, KnifeST, WERCS, HiSoft Devpac, HiSoft BASIC 2, TruePaint, Wordflair, Diamond Back, Superbase, Diamond Edge, K-Spread, K-Data, FirST BASIC, HiSoft FORTH, ProFlight, ChemKit, Tempus 2 ...

All prices include UK VAT and P&P within the UK. Please call for export prices, educational discounts etc. E&OE. Specifications and prices may change.

Diamond Edge £49.95



From the authors of Diamond Back, the popular hard disk backup program, comes a new package that is essential to any serious user of an Atari 680x0 computer.

Diamond Edge is a complete set of management, optimisation, diagnostic, repair and data recovery tools for use with floppy disks and hard disks.

Please note the new price of £49.95 for Diamond Edge; the poor Sterling/US Dollar exchange rate means that we can no longer hold the price down.

XBoot 3 £34.95

We are pleased to have acquired the exclusive rights to version 3 of this package, which provides comprehensive management of your AUTO folders.

New features include independence from any video hardware, selection of CPXs, definition of links between related files, new batch editor, integrated parameters dialog, a complete new function to change the running order of your programs and more. Please enquire about upgrades if you have an earlier version of XBOOT.

XBOOT is an efficient, easy-to-use program and comes with a well-written and useful manual.

Superbase Professional £99.95

Following the sale of the ST and Amiga versions of Superbase to Oxxi Inc with whom we are working closely on a project for the Falcon030, we are pleased to be able to offer the superlative Superbase Professional (Version 3.02) at a substantial saving over its previous recommended price.

All HiSoft's products should be available through your local computer dealer. If you have difficulty in obtaining a title you can order directly from HiSoft using your credit or debit card - just call Julia, Sallie or Marlynne on 0525 718181.

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Letchworth, Herts SG6 1UJ.
Tel: (0462) 481166 (6 Lines)

HISOFT PRODUCTS

HISOFT BASIC VERSION 2
Hisoft Basic 2 comes complete with a Compiler and Debugger. The package is a complete development system which is ideal for both professional and casual programmers.
RRP £79.95 OUR PRICE £54.95

HISPEED PASCAL
HighSpeed Pascal is designed to be compatible with the hugely successful Turbo Pascal on the PC. It features a fast single pass compiler, compilation speed of more than 20,000 lines per minute. Compile to memory or disc and an integrated multi widow editor.
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NEW – HISOFT DEVPAC 3
Hisoft Devpac 3 is the latest version of the popular assembler & debugger package for the ST. Packed full of features it is the ideal programming environment for beginners and professional programmers alike. It contains an Editor, Assembler and a Debugger.
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HISOFT C INTERPRETER
Hisoft C lets you develop, debug and test programs quickly and easily in a simple environment. Hisoft C features over 460 library functions, fast and powerful Gem based editor and built-in help for quick and easy reference.
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HISOFT LATTICE C V5.5
Lattice C V5.5 is a versatile and powerful development system for the popular C programming language, adhering extremely closely to the ANSI standard. It contains the most complete set of C libraries to be found on the Atari 68000 computers. Gem based installation program, multi window editor, project manager and lots more.
(Requires 1 Meg)
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SOUND SAMPLERS & DIGITISERS

STEREO MASTER
Stereo Master is a low cost, high quality sound sampler for the ST. Its features include: Sample Rates from 3.0 to 27.9 Khz. Mix sample with full or half volume, Hifi stereo playback option using the Playback cartridge. Full STE stereo support.
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REPLAY 8
Replay 8 features powerful sampling and playback commands such as Sample, Pre-Sample, Auto Record Trigger and more, as well as the usual editing commands Replay 8 also contains some Special Effects software and a 2 voice programmable Drum Machine called Drumbeat 8.
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VIDI ST

Vidi ST & Vidi-Chrome	CALL
Rombo RGB Splitter	£49.95
Vidi ST Complete Colour Solution	CALL

STEREO REPLAY
This system can record in high quality stereo from its twin phono input sockets. Taking sounds from any suitable Stereo equipment such as a Portable Cassette or CD player. Editor features include Mark Hide, Cut, Loop, Paste, Insert, Delete, Fill, Clear, Overlay, Reverse, Fade, and many more.
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**** NEW – VIDEOMASTER ****
Videomaster combines a Video Digitiser and a Sound Sampler in one low cost unit. Can digitise in colour using the filters supplied or an additional RGB Splitter (not supplied). Record sound tracks using the Sound Sampler to create your own short films or demos.
MJC PRICE £52.95

REPLAY 16
The first 16 bit sound sampler for the Atari ST. Contains an Editor, Midiplay Sequencer and Drumbeat 16. Samples at rates up to 46 Khz.
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Our most popular mouse includes Operation Stealth, Mat and Holder.
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A great value replacement mouse.
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The all time best selling educational software from Database Educational. A number of programs on each package covering a range of subjects.

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Fun School 2 – For 2 to 6 years	£6.95
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Fun School 4 – For 2 to 5 years	£16.95
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Answerback Junior Quiz (6-11)	£14.95
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Factfiles are for use with the Answerback Junior Quiz only.

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NEW – Hisoft Devpac 3	£59.95

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Auto sensing joystick/mouse switch box.
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