

# ST FORMAT

INCORPORATING

**ATARI ST** REVIEW

**High-speed comms:** The latest 28,800bps fax modems go head-to-head

**European show report:** Latest on the ST from Paris and Hanover

**£39,000**  
SOFTWARE GIVEAWAY see p11



# CUSTOMISE YOUR ST!

## DIY SPECIAL

Step-by-step guide to fitting those essential upgrade components

## REVIEWED THIS MONTH:

- NVDI 3.0 ● EXTENDOS PRO
- OUTSIDE ● PING 2000
- BRENDARVARIOUS ● TESSERA ●
- FALCTRIS ● REVIVAL ● QUICK FLIP
- FREEDOM ● SPEED OF LIGHT
- 3.7B ● GHOSTLINK ● TOYS ON DISK
- MYSTIC MICK'S LUCKY LOTTERY
- GRAFIX PD DEMO ● NOVADISK 6
- PANTHER OWNERS GROUP 7
- NO LIMIT CODING

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## CUSTOMISE YOUR ST!

**18** We show you how to boost the performance power of your ST, with our step-by-step photo guide to fitting those essential upgrade components. It's all you need!



## HIGH Speed Comms

**43** Unmissable guide to the latest 28,800 bps fax modems and upgrading your serial port.

## £39,000 GIVEAWAY



Yes, that's £39,000's worth of software to give away courtesy of Audiogenic. Turn to page 11 now!

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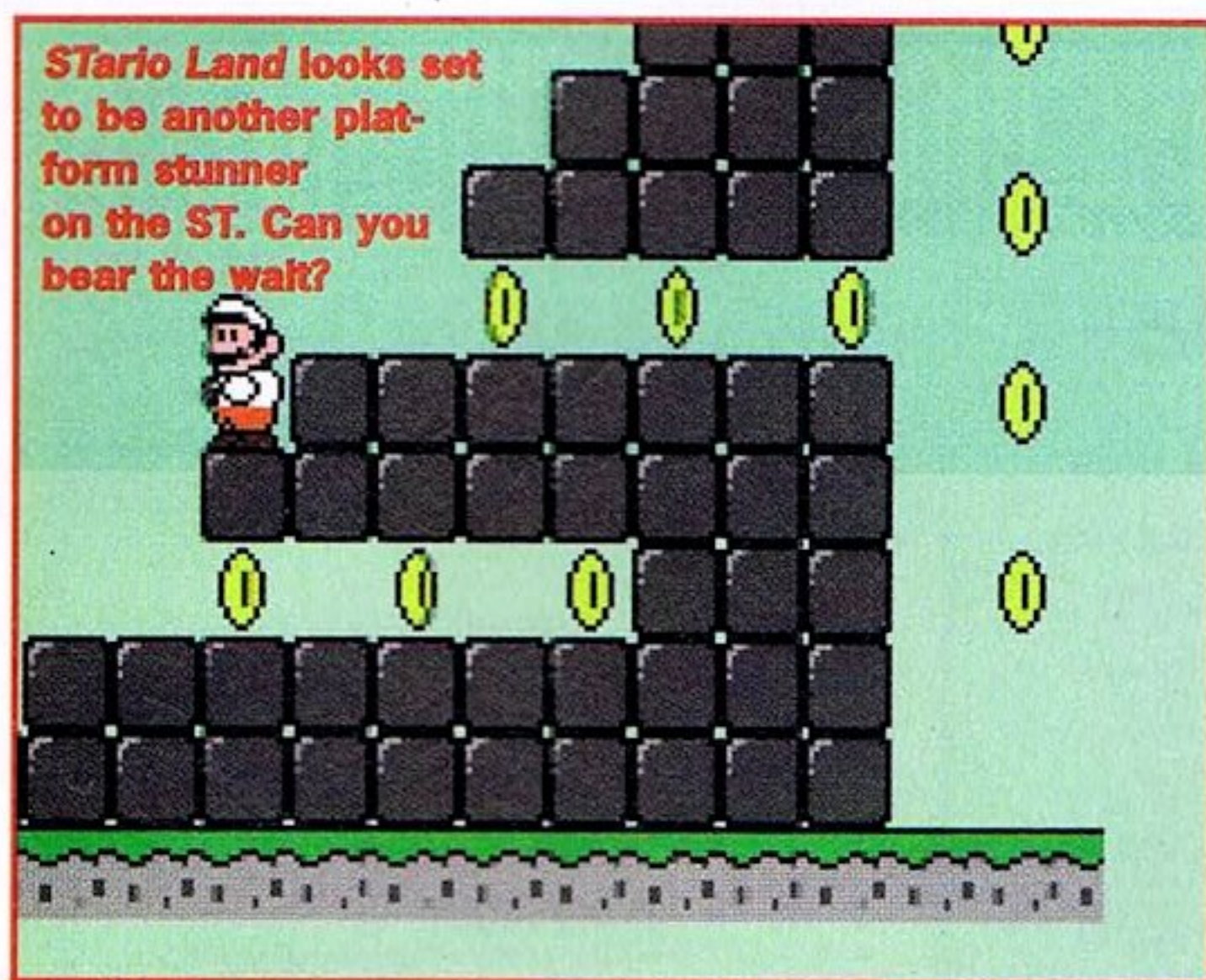
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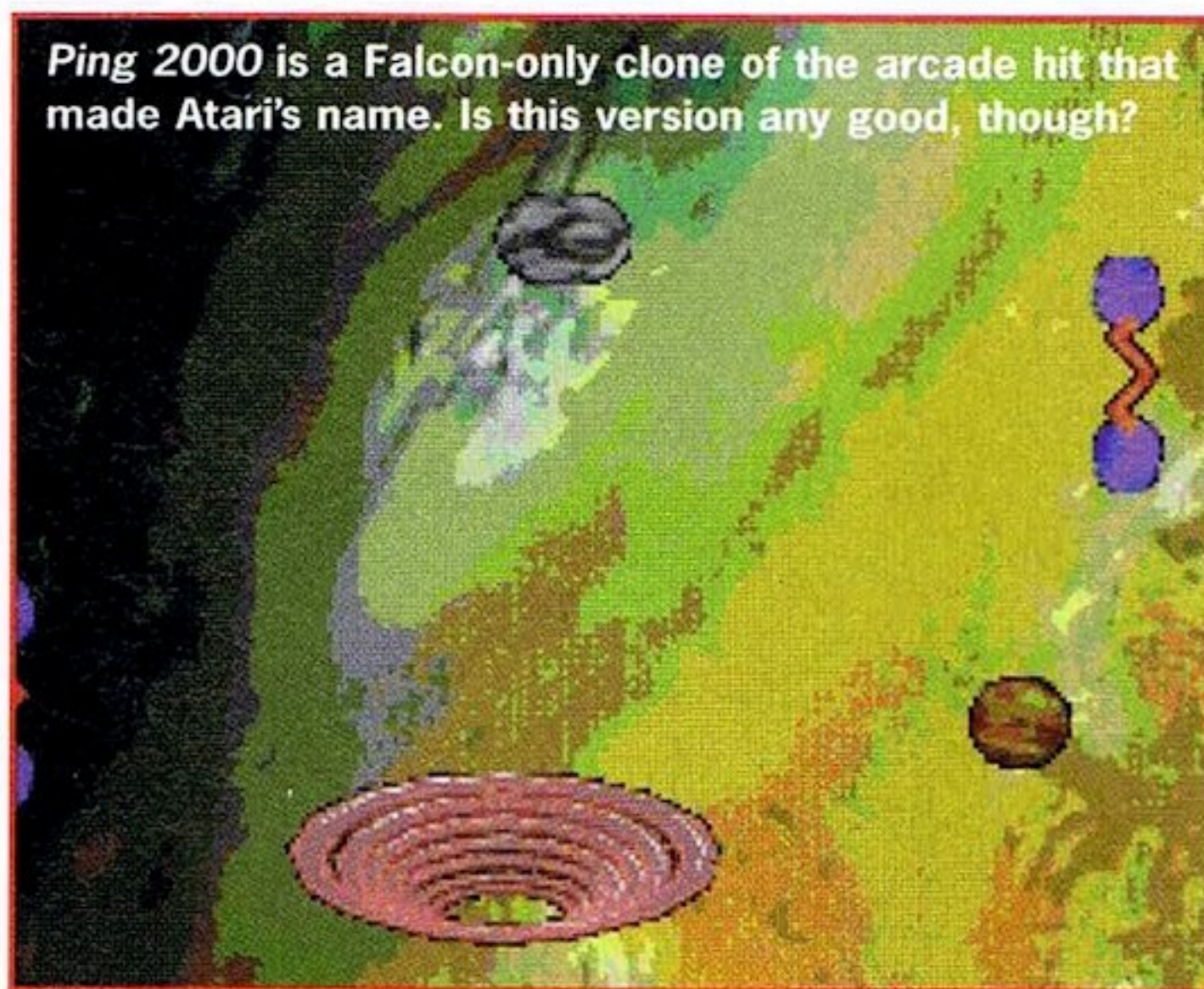


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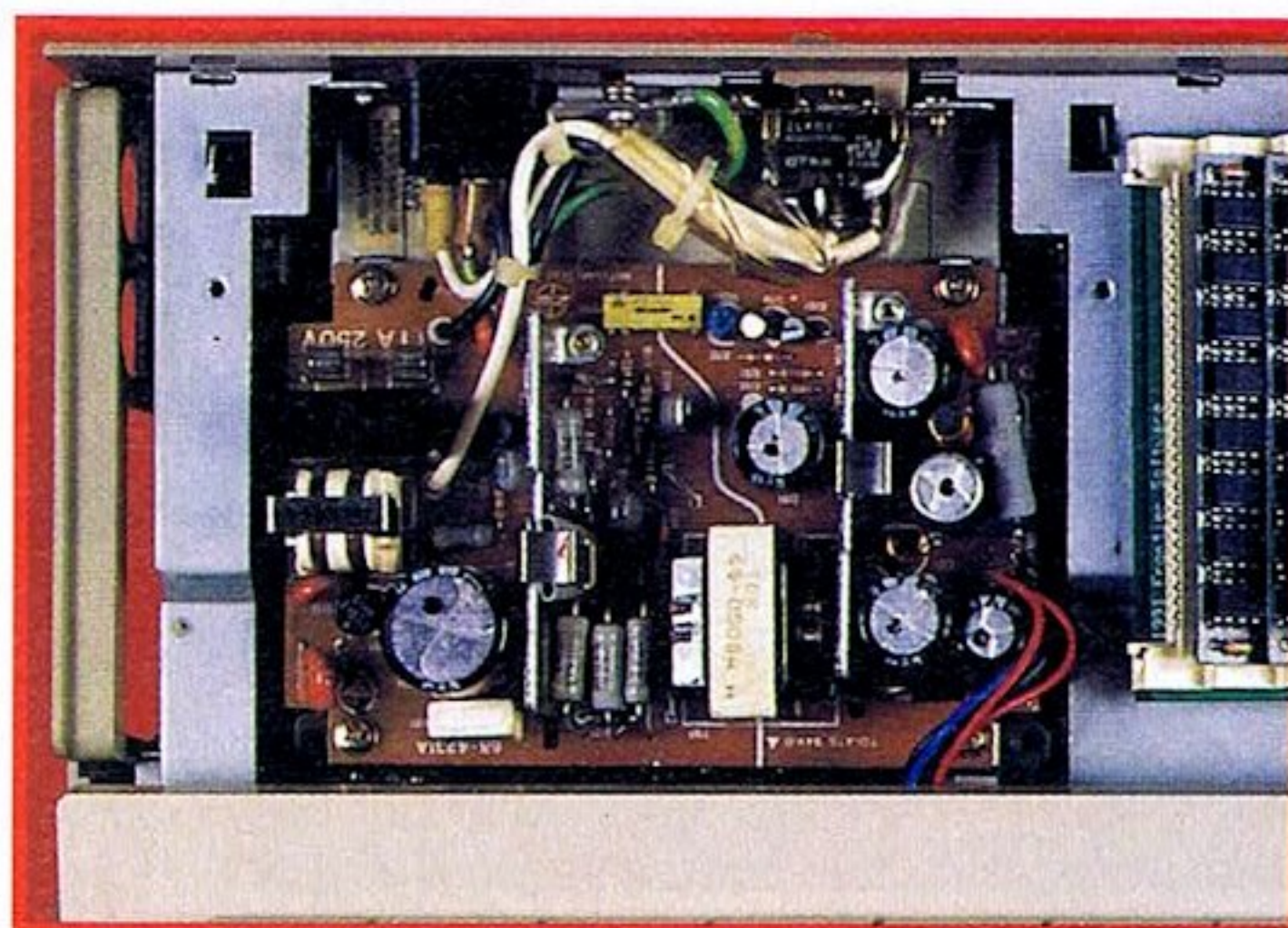
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No strange goings on here, although Death's popped in for a cup of tea and slice of cake.



**ST Answers goes under the cover this month, see page 49.**

# COVER DISK 71

THIS MONTH...



**ALIEN THING:** An exclusive level from this stomping alien blaster. 1MByte.  
**Uncompressed size: 487K**

**HISOFT C INTERPRETER:** Get programming with this powerful commercial package.  
**Uncompressed size: 606K**

**MUSIC BOX 2.6:** Keep track of your spiralling music collection with this custom-designed database. **Uncompressed size: 189K**

**DISK OPUS:** A powerful collection of disk utilities rolled into one nicely constructed program. **Uncompressed size: 169K**

**TESSERA:** Demo of this addictive puzzle-up from Dolphin Software. **Uncompressed size: 310K**

**THE DEMINER:** Monochrome version of the Minesweeper classic. Requires high resolution or *Sebra*. **Uncompressed size: 46K**

**MAGIC SHADOW ARCHIVER:** Version 2.3+ of this highly useful disk back-up and compression program.  
**Size: 25K**

**FAZE:** Screensaver that's small and discreet.  
**Size: 12K**

**BACK-UP:** Save everybody time, effort and swearbox money by keeping a back-up of your disk.  
**Size: 12K**

**MENU:** Get your blank disks ready, format them and copy all the wonderful Cover Disk software to them.  
**Size: 13K**









## ALIEN THING

**BY:** 999 Software  
**MACHINES:** All Ataris  
**MEMORY REQUIRED:** 1MByte  
**RESOLUTION:** Low  
**UNCOMPRESSED SIZE:** 487K  
**NB:** Joystick required

### Getting started

The *Menu* program will dearchive *Alien Thing* to a blank disk for you. Once done, reboot your machine with that disk in drive A, and it will load automatically.

### About the program

*Alien Thing* is an overhead blaster. You're transported into a station



It must be said that, while flamethrowers are most definitely a Good Thing, these green pools of corrosive acid are not.



Blast the aliens in *Alien Thing* to survive. It's no good trying the conciliatory approach - this lot will eat you first and ask questions later.

infested with hideous aliens and their eggs. Your job is simple: clear out the aliens while completing a number of related missions. This *ST FORMAT* demo contains a specially-designed level which is an amalgam of the early levels from the full game.

In this fiendish level you must 'simply' repair the door control panels. This is achieved by slotting the correctly coloured cards (which obviously need to be picked up

first) into the relevant slots in the correct room.

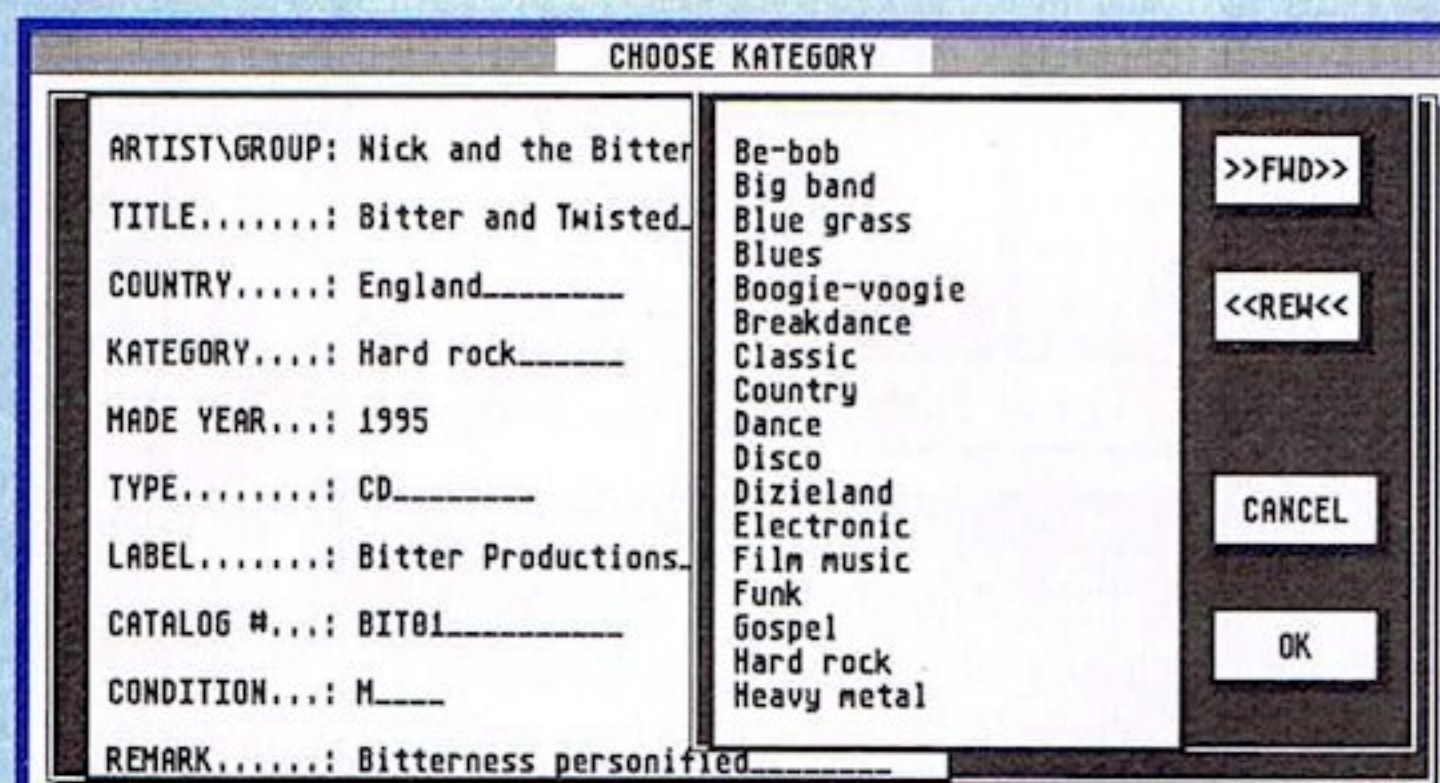
While you're at it, you might as well clear the area of aliens using a combination of guns and flame throwers (which are scattered around at various points). Ensure you keep a healthy number of access cards up in order to pass through the various doors which block your progress forward. These are found in lockers which are opened simply by approaching

## MUSIC BOX 2.6

**BY:** Kari Heimonen  
**MACHINES:** All Ataris  
**MEMORY REQUIRED:** 512K  
**RESOLUTION:** Medium/High  
**UNCOMPRESSED SIZE:** 189K

### Getting started

Once the *Menu* program has dearchived the program to disk,



*Music Box* is a wonderful program for music buffs. You'll need to register to get over the 100-record restriction.

copy the RECORD folder and its contents to a blank disk. This is now your data disk, and (if you've got two disk drives) it should be placed in drive B. If you've only got one, *Music Box 2* will prompt you to insert the data disk in your drive when it's required.

If you own a hard drive the *Menu* program will copy the files on to the root directory of the selected drive. Make sure they stay there, or the program won't work.

### About the program

It can be quite disconcerting to look at your vast record collection and realise you have very little idea of what you've got. If it's not the jumble of CDs in one corner, it's the tapes in another. And then there are the boxes of 45rpm sin-

gles next to the collection of vinyl that, if it isn't badly scratched, gets played once in a blue moon.

What do you do, then, if you want to scan through them all without leaving the comfort of your ST? You run *Music Box*, that's what. It's a database designed specifically to store all the information on your entire music collection. This includes everything from album or single title, artist and format (such as 12-inch or CD single) right down to the record label and track listing. This shareware version is restricted to 100 records, but registering for just £10 provides user support (including free updates) and support for as many records as your ST can handle (you can store up to 700 with just 512K). The latest registered version also includes the facility to access accessories from within the program.

Once the program has

them. Other goodies on offer are more ammunition and extra lives.

Look out for unhatched alien eggs - although these are easy to destroy, you shouldn't leave them lying around as, once hatched, they suddenly become far less pleasant to deal with. Also keep an eye out for patches of acidic green slime. These should be avoided or dispersed with the flame thrower.

The full game will retail for around £15, although if you register this shareware demo you will be entitled to a discount on the full version. Read ALDEMO.TXT for full details on both registration and the game itself, then indulge yourself in alien bashing!

## CONTROLS

[A] Abandon the level and begin again. You lose a life, but retain your weaponry and gain an extra five access cards.

[Q] Quit game altogether.

[Space] Pick up or drop objects.

loaded, you'll eventually arrive at the main menu. From there you can Add, Read or Edit your records (the registered version enables you to add and edit simultaneously). Seventy entries are provided (the author's selection - mine is just too sad) to get you going.

You can 'Read' your files in three ways: quickly in a list to enable you to find the one you're interested in, slowly (one at a time), or with a filter. This last option enables you, for example, to select all your records by Roxette, all of your CD singles, or just your Roxette CD singles. Add, unsurprisingly, enables you to add to the record list, while Edit enables you to edit existing records or delete those you no longer like or possess (spare Roxette records can be sent to me at the usual address).

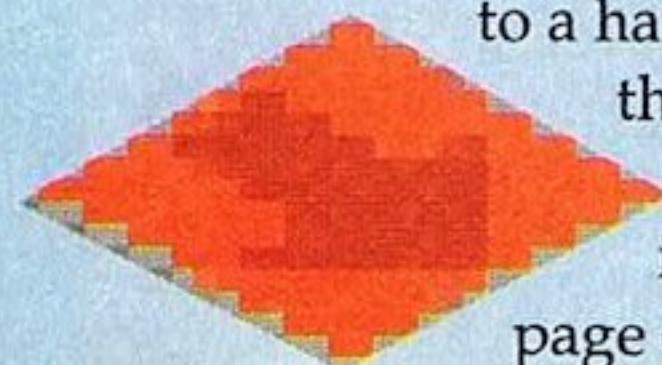
Check MANUAL.DOC if you need full instructions, although it's pretty easy to pick up.

## TESSERA

**BY:** Dolphin Software Group  
**MACHINES:** All Ataris  
**MEMORY REQUIRED:** 512K  
**RESOLUTION:** Low  
**UNCOMPRESSED SIZE:** 310K  
**NB:** Joystick required

### Getting started

You need to dearchive the program to a blank disk (it can't be installed to a hard drive) using the *Menu* program (follow the instructions on page 6). Full instruc-



tions are in TESSERA.TXT. Run TESSERA.PRG to execute the program.

### About the program

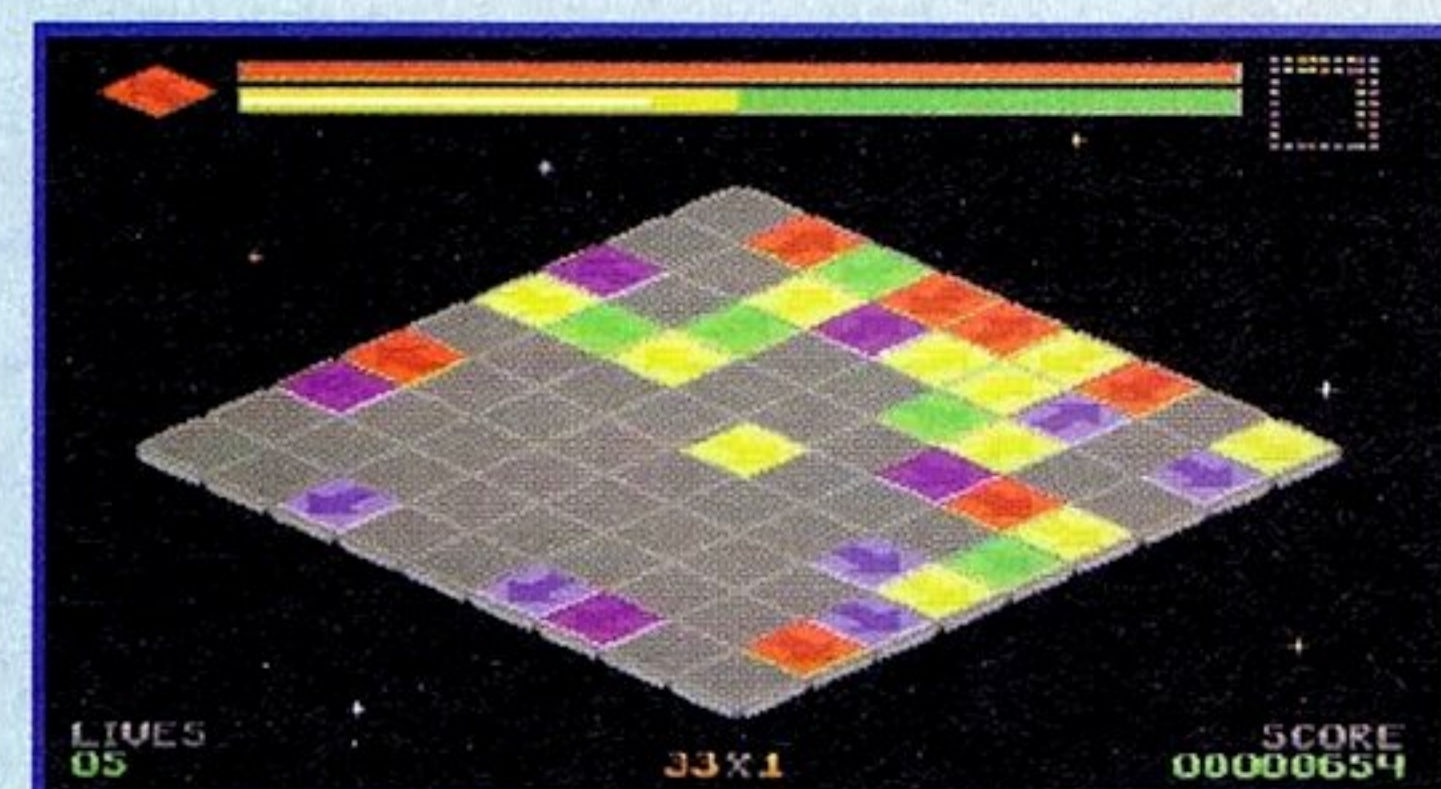
This is a demo of a rather addictive puzzle game from the Dolphin Software Group. The object of the game is to fill the grid with coloured tiles. These come flying in from one of four directions and can be moved left and right in order to place them. Note that while most tiles fly to the far end of the grid, some stop dead and must be slowly pushed into position by other tiles.

Sounds simple, right? Nope.

You cannot place any three tiles of the same colour adjacent to each other or they explode.

The remaining tiles move to fill the gaps, and if any more tiles of the same colour end up adjacent, boom! Before you know it, half your grid is empty again, and time (oops, forgot to mention the time limit) is fast running out.

You're limited to the first three stages at medium level in this demo. The full game costs just £5.



Trust the gods to cut corners. No wonder the gateway between heaven and earth is in a state of total disrepair.

Read TESSERA.TXT for details of how to obtain it, and check out the full review on page 35 of this month's *ST FORMAT*.



## DISK OPUS

**BY:** Thomas Nilsen  
**MACHINES:** All Ataris  
**MEMORY REQUIRED:** 512K  
**RESOLUTION:** Medium  
**UNCOMPRESSED SIZE:** 169K

### Getting started

Once the program has been decompacted to a blank disk, run DISKOPUS.PRG. Don't worry about the 'Config file not found' dialog that flashes up as you don't actually need one.

### About the program

This has to be the ultimate in free-ware disk and file management. Within its user-friendly interface are buttons enabling you to manipulate your files in... oh, lots of

ways. Using two file selectors you can transfer files from one directory or drive to another just by highlighting them and selecting Move or Copy (much quicker and easier than using GEM). You can also alter a file's attributes, 'touch' it (alter its date and time stamp to the current setting on your ST's clock), delete or rename it and even depack it if required.

Other options include viewing a disk's boot sector. It's very important that you don't use this function on commercial programs as their special boot sectors, often designed to protect the program from being unlawfully copied, can be misinterpreted as viruses. This option also enables you to build up a library of boot sectors which can be re-written to disks at a later date – another form of backup for your beleaguered disks.

In addition to all of this, you can view a number of low and medium resolution pictures

One of the problems is knowing where to start. Disk Opus has so many features you'll spend hours just exploring it.

## FORMATS

Those supported file formats:  
**Pictures:** SPU, NEO, PC1/PC2, PI1/PI2, CA1/CA2, IFF  
**Music:** Mad Max/Lap, Count Zero, TAO, David Whittaker, Lap (Old LAP), Jedi, Blipp Blopp, MODs  
**Packers:** Atomik, Ice.

(including the all important Degas format), and view files as ASCII or Hex, be they README documents or otherwise. Crumbs, you can even play certain music files, including MODs. Full details on how to use the program come in the DISKOPUS.TXT folder, and we'll be taking you on a more detailed tour next month.



## FALCONS

Falcon owners note: some of Disk Opus' functions won't work properly or at all on the Falcon. These are Print Dir and Print File (unless you run TOS4\_FIX), Play Music (unless you use an external MOD file player), Set Up (50/60Hz and GEM memory options) and View Pics (SPU files only: others work fine).

## MAGIC SHADOW ARCHIVER 2.3+

**BY:** Philipp Lang  
**MACHINES:** All Ataris  
**MEMORY REQUIRED:** 512K  
**RESOLUTION:** Medium/High  
**SIZE:** 25K

### Getting started

Just double-click on .PRG to run the program. Clicking on Help from within the program brings up a comprehensive help menu.

### About the program

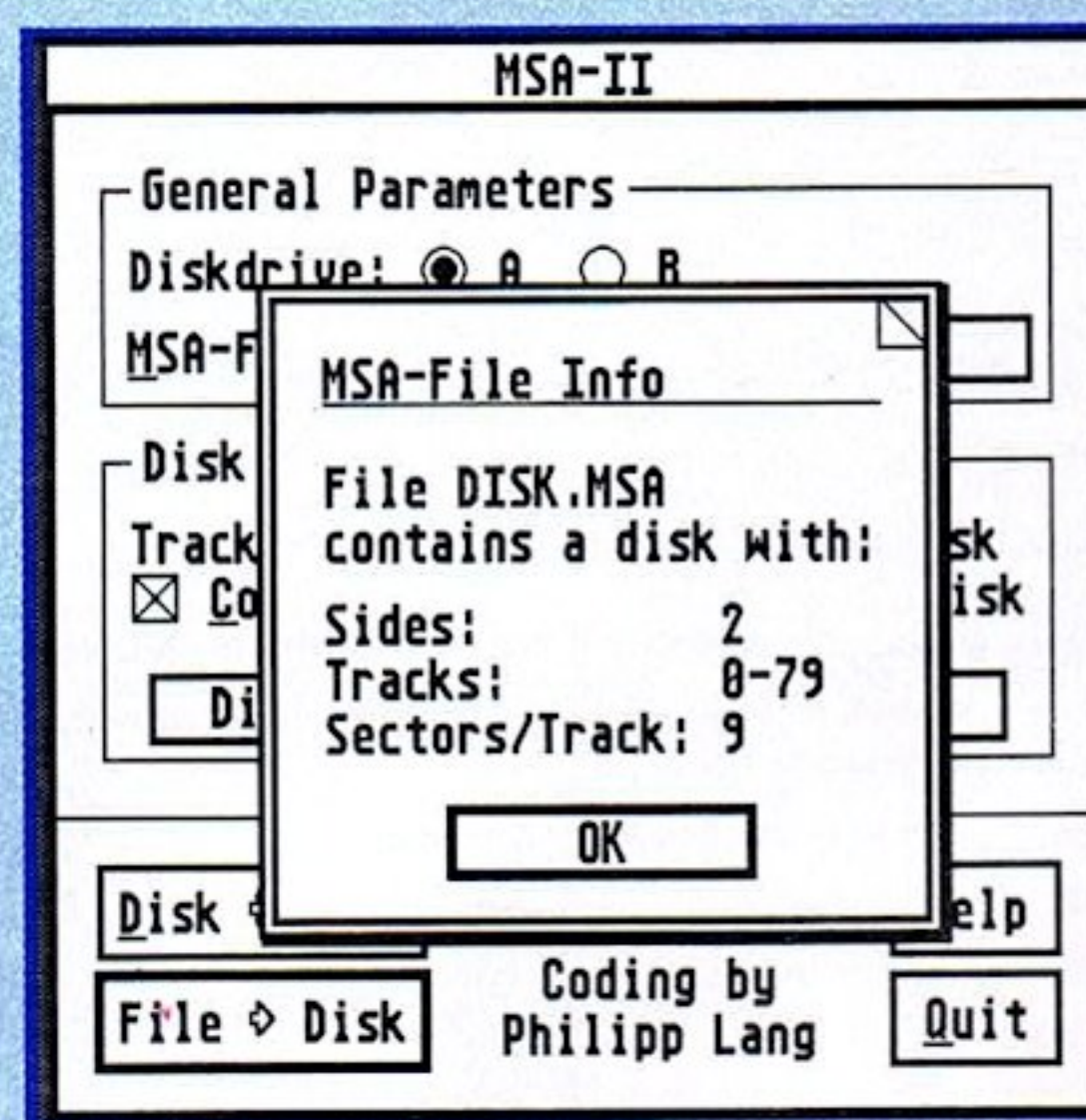
Magic Shadow Archiver enables you to back-up disks into one compressed file. This file stores all the attributes of that particular disk, including its boot sector and size as well as the contents.

When the file is decompacted on to another disk the result is an exact copy of the original. Once produced, the MSA files can be safely stored on any disk or drive.

This gives you a back-up that doesn't swallow up too much precious disk space.

To find out more about Magic Shadow Archiver and its author, click on the Help icon. Now you've got no excuse for not backing up your disks.

Magic Shadow Archiver takes the hassle out of backing up, while saving you lots of precious disk space.



## WE WANT YOUR PROGRAMS

We pay for your software – so if you have anything that's good, original and preferably short that you think really deserves to go on ST FORMAT's Cover Disk, send it with this form and full documentation to Nick Peers, ST FORMAT, Cover Disk, 30 Monmouth Street, Bath, Avon BA1 2BW.

Name \_\_\_\_\_

Address \_\_\_\_\_

Daytime phone \_\_\_\_\_ Program title \_\_\_\_\_

\_\_\_\_\_ Total size in K \_\_\_\_\_

On a separate sheet, explain concisely what the program does and why you happen to think it's so brilliant.

Remember to:  Include on-disk and paper documentation  Write your name and address on the disk  Use a virus-free disk  Keep a copy of your program, contributions are non-returnable  Enclose an attractive bribe. Roxette records would be nice...  Not that it makes a difference

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

Signed \_\_\_\_\_ Date \_\_\_\_\_

## FAZE

**BY:** Damien Jones  
**MACHINES:** All Ataris  
**MEMORY REQUIRED:** 512K  
**RESOLUTION:** Low/Medium  
**SIZE:** 12K

### Getting started

Just copy FAZE.PRG into your AUTO folder to make it resident on boot-up.

### About the program

There's nothing more unhealthy than leaving your ST and monitor switched on for long periods with nothing whatsoever happening on the screen. A static image can burn into the screen and leave a permanent mark on your monitor.

Faze is a screen-saver: if you leave your computer unattended

for long periods, it will display a simple, ever-changing pattern on the screen which prevents monitor burn from occurring. Moving the mouse or pressing a key returns you to your work. Running FAZE\_CFG.PRG enables you to determine how long Faze waits before blanking the screen. Read READTHIS.1ST for more details on how to use the program. stf



Ugh, someone threw up on my screen. Fortunately Faze only runs when you're away from your ST.



# GASTEINER

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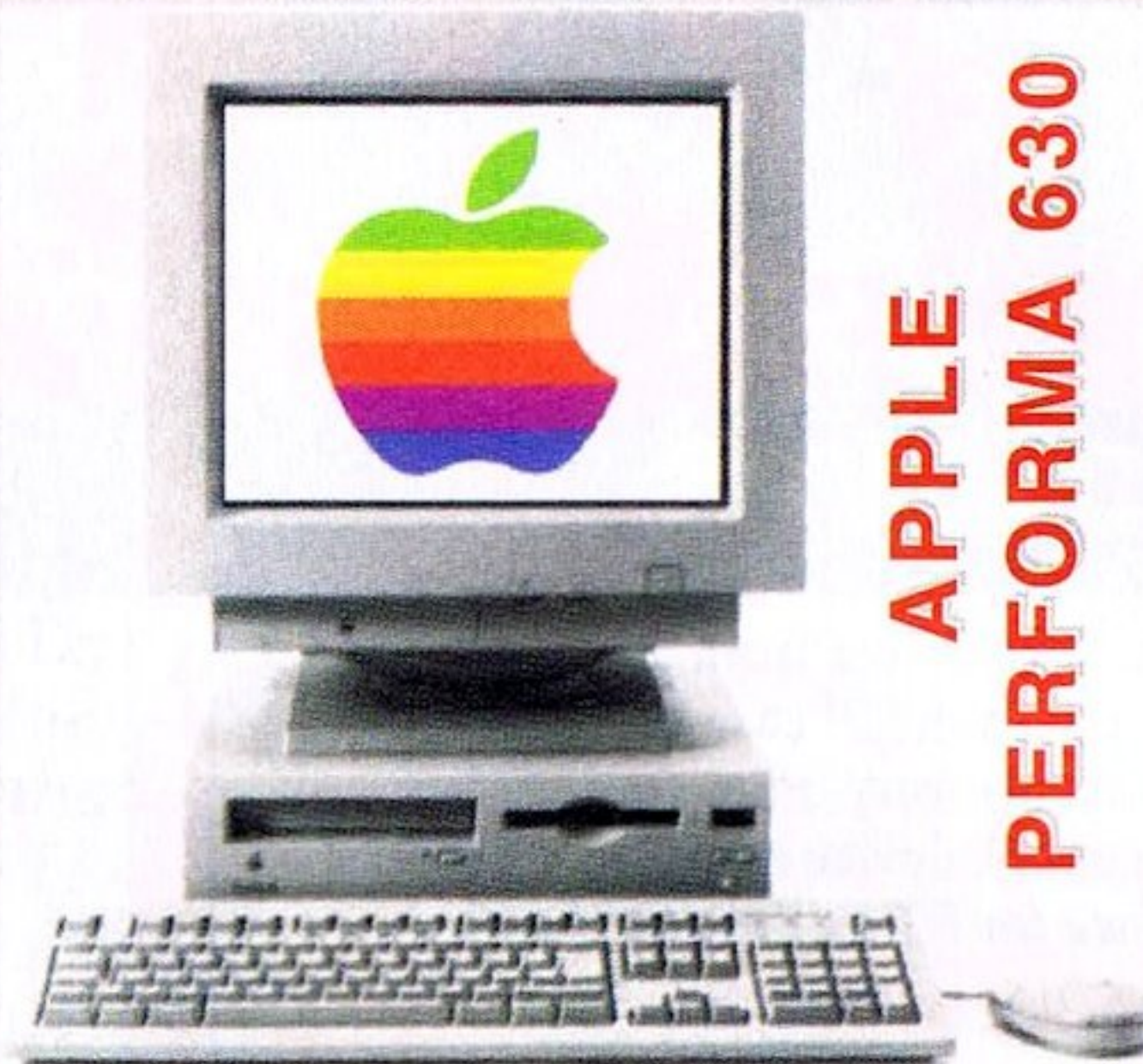
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## GASTEINER

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APPLE AUTHORISED RESELLER



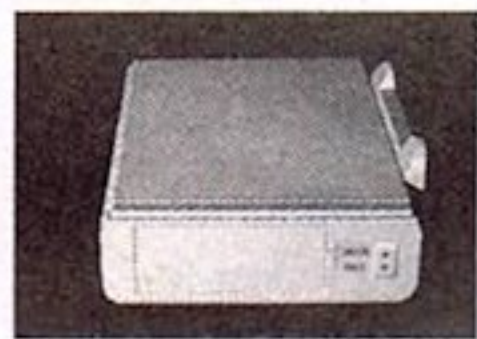
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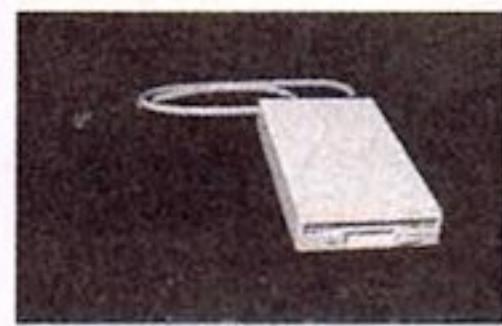


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Add £15.00 to Mono Monitor prices for sound system.	
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Solderless installation, with switcher and Tos manual	£49.99
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Fitted with switcher and Tos manual	£59.00
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# £39,000 software giveaway

Thanks to the generosity of the good folks at Audiogenic, we have 2,000 copies of the classic ST platformer *Helter Skelter* to give away...

**A**dmit it, you thought there was catch, right? Well, on this occasion we're happy to disappoint you. Audiogenic, renowned for such classics as *Rugby League Manager* and *Exile*, has 2,000 copies of *Helter Skelter* (each worth £19.99) to give away. All you have to do to get a copy is send 50p in stamps – for postage and packing – to the address below. Audiogenic has also promised to duplicate additional disks if copies run out before the closing date of Monday 8 May. You can't say fairer than that, can you?

*Helter Skelter* (STF 18, 75%) is a superbly presented platform game. You take control of a bouncing ball and attempt to splat

the creatures around you. It requires quick reflexes, lateral thinking, ball control and a head for heights. This is classic ST puzzling at its oddest, and it's not going to cost you anything... well, apart from those stamps!

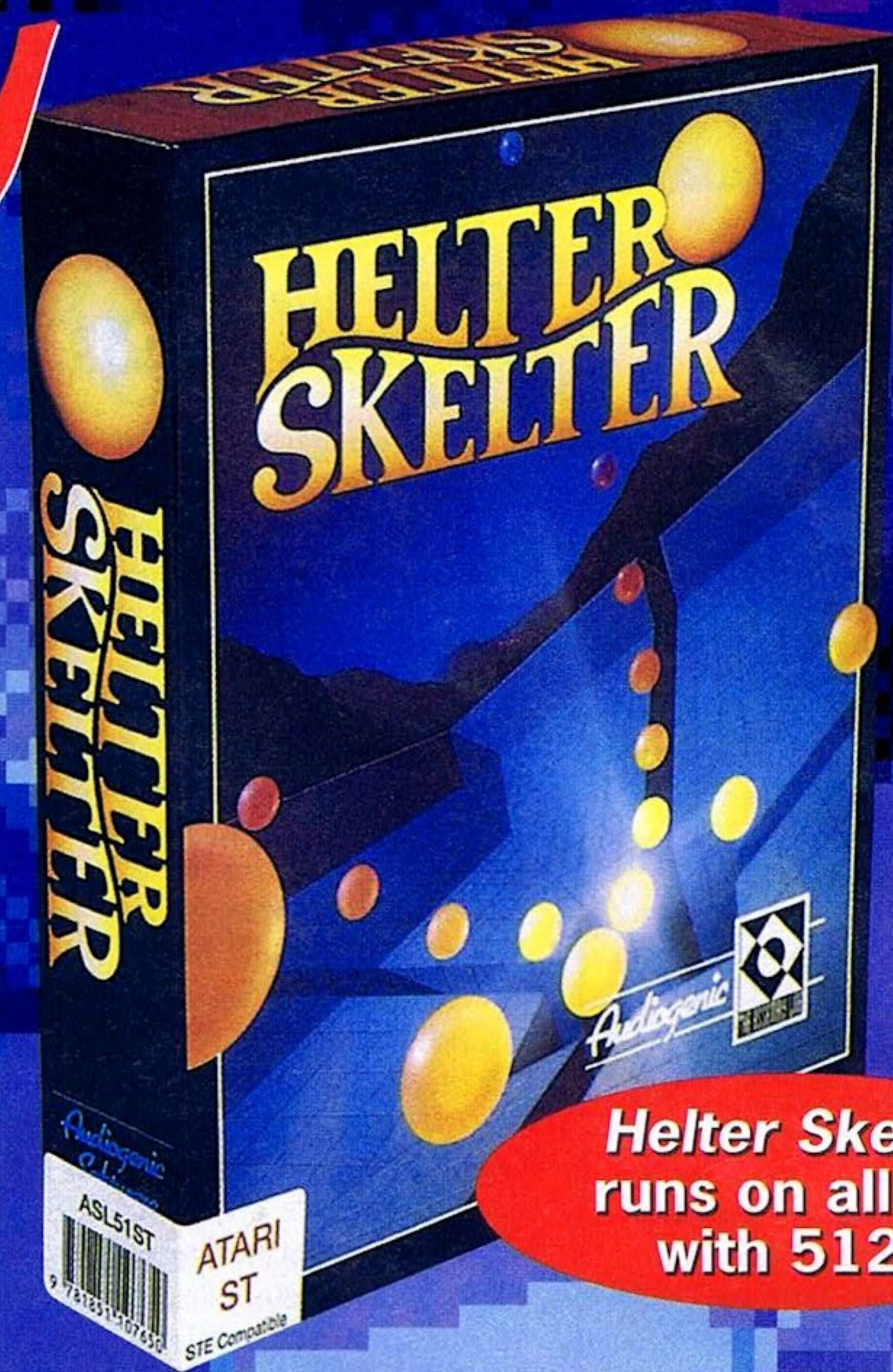
While we're on the subject, please make sure that you send the stamps in loose – Audiogenic can't send the game out if you stick the stamps on an envelope. As well as a copy of *Helter Skelter*, you'll also receive info on Audiogenic's other releases, including *Super League Manager* (reviewed next month).

So, what are you waiting for? Write your name, address and details of your ST down on a piece of paper, pop it in an envelope with 50p in stamps and send the whole lot to: *Helter Skelter* offer, Audiogenic Software, Unit 27, Christchurch Industrial Centre, Wealdstone, Harrow HA3 8NT.

You must post it to arrive by Monday 8 May 1995. Neither ST FORMAT nor Audiogenic can be responsible for any entries lost or delayed, and proof of posting will not be accepted as proof of delivery.

**"It's quite difficult, but then certain masochists thrive on that sort of thing"**

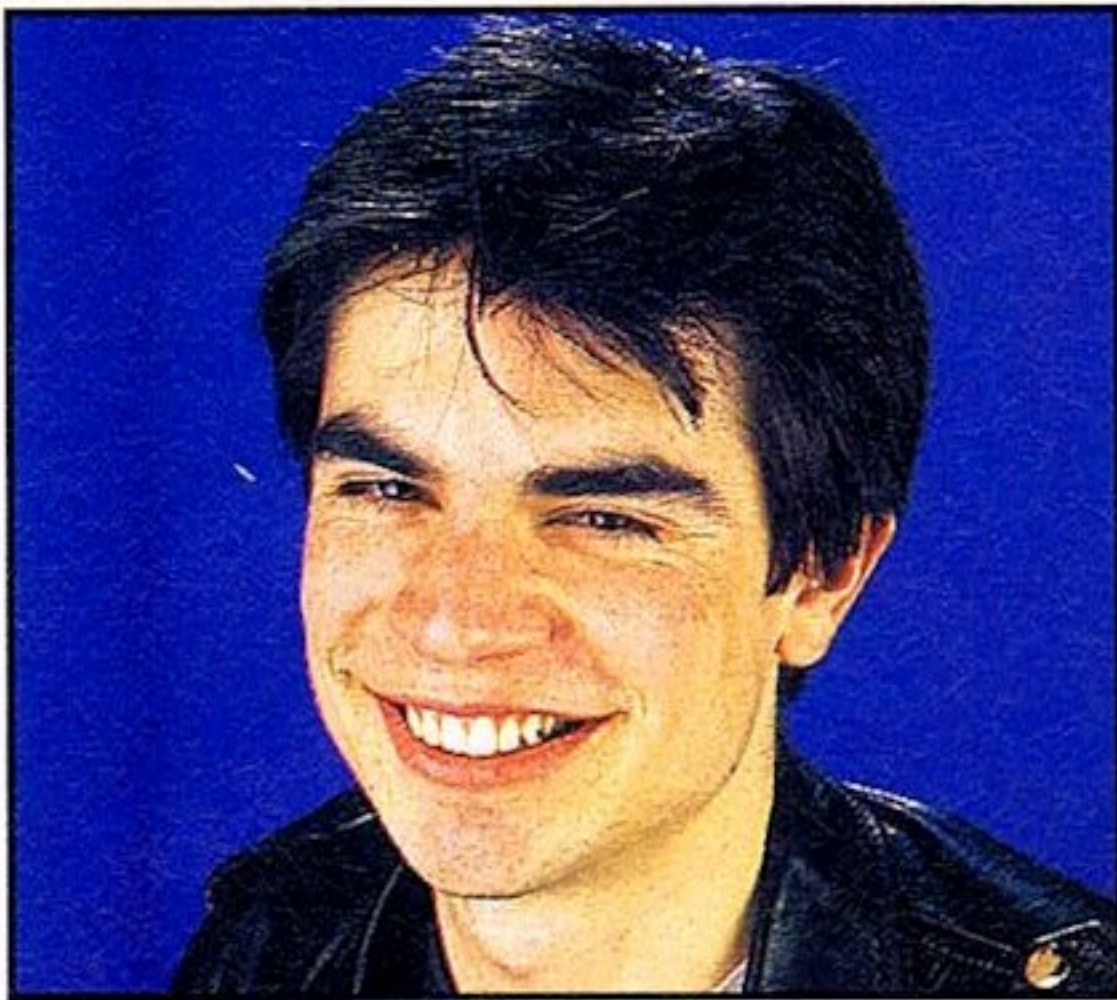
ST FORMAT 18



**Helter Skelter runs on all STs with 512K**







# STF News...

Nick Peers brings you the latest on Spotlight '95, the Atari Web page and Jean-Michel Jarre.

## SNIPPETS

Denesh (Danny) Bhabuta, who runs the Atari PD archives at HENSA, also helps Steve Taylor with the **Manchester User Group**. Members receive discounted PD software, a disk magazine and cheaper registration fees on certain shareware packages. You can contact Danny by post at CyberStrider (MAG), 203 Parr Lane, Unsworth, Bury, Lancs, BL9 8JW. Alternatively, e-mail him at dbhabuta@cix.compulink.co.uk.

Three new CD-ROMs featuring **Kodak PhotoCD-format images** of Ireland, Egypt and Australia respectively are now available for Atari STEs and Falcons from It's All Relative in the US. Priced at \$19.99 each, they all include a demo of the *Photo Show Pro* software, enabling you to view the images. There are 100 images per disk. Contact It's All Relative at 2233 Keeven Lane, Florissant, MO 63031, USA. Alternatively, send an e-mail to GREG@GEnie.geis.com today.

Activision has just released a CD-ROM for PCs featuring 15 games ported from the Atari 2600 console. Titles such as *River Raid*, *Grand Prix* and *Kaboom!* feature on the disc, enabling PC users desperate for a return to Atari consoles to ease their withdrawal pangs. The CD-ROM costs £24.99 and Activision can be contacted at ☎ 0181 742 9400.

Silly Software's *Grafix* is now being published by Top Byte Software at the same price announced in last month's issue (£19.99). Contact Top Byte on ☎ 01622 763056.

Following our news piece last month, **Seikosh's two new printers**, the SpeedJET360 Colour and MP-5450 respectively, have been delayed. Call Seikosh on ☎ 01753 685873 for full details.

**Ad.Lib BBS**, run by ST stalwarts Andy Curtis and Frank Charlton, has a little brother. **Ad.Lib 2**, which can be called on ☎ 0191 370 2885, commenced operations on 13 April and will relieve congestion on the main board, enabling more of the 956 Ad.Lib users to get on line. Why not join today - you might be the illustrious 1000th member!

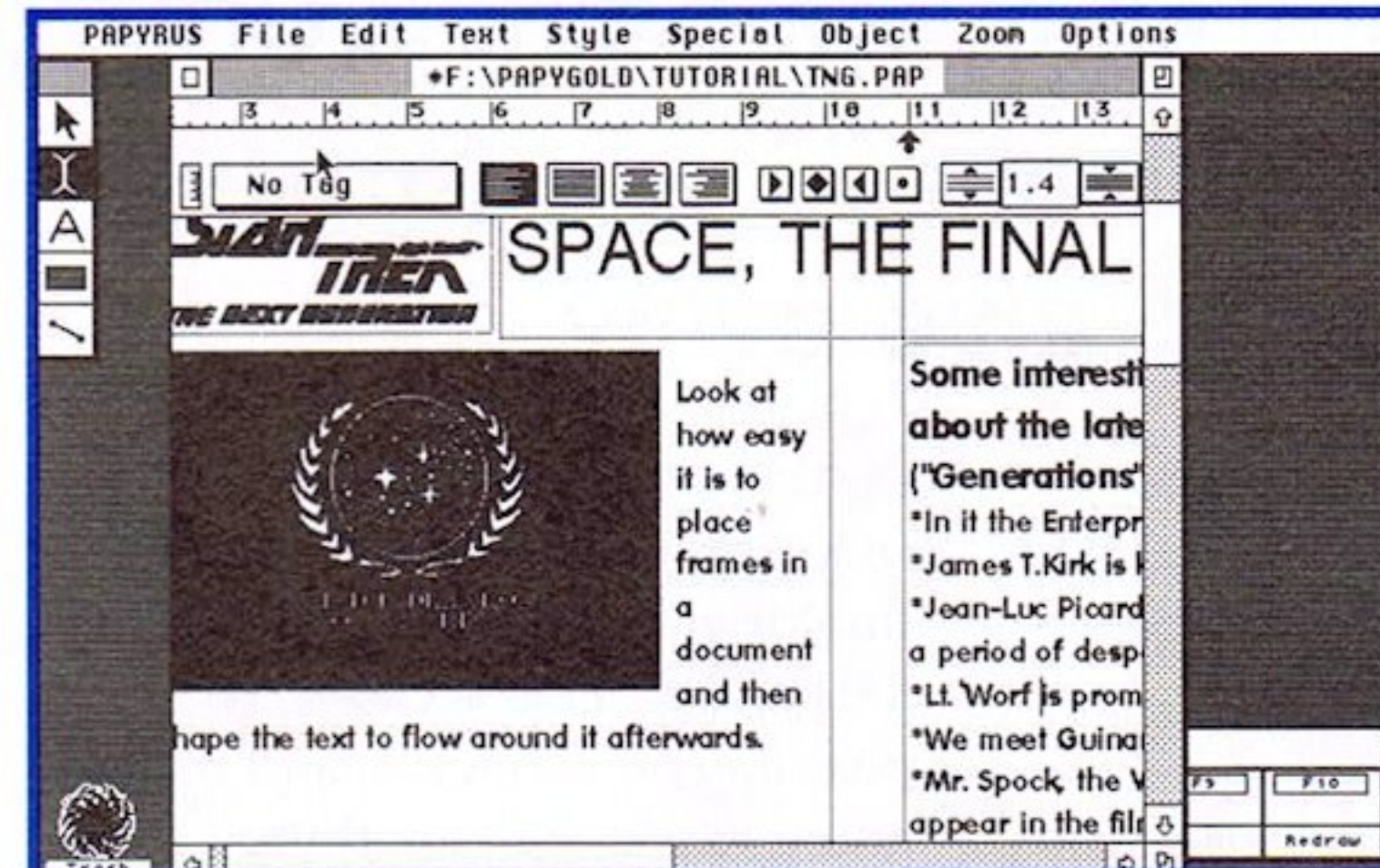
## Spotlight on Atari

The eagerly awaited Spotlight '95 Show gets ever closer, and details of several new projects to be unveiled at the show have filtered through to the news desk.

Aside from the official unveilings of both C-Lab's Falcon Mark 2 and GeSoft's Eagle 030 Atari Clone, several new software packages will be on show for the first time, including *Papyrus 4* and *Twist 3* from HiSoft. Not to be outdone is COMPO, which will be proudly displaying *Neon*, the new 3D rendering/animation package.

The new version of *Papyrus* has been completely rewritten in order to make it even quicker than the original. This major update also includes colour image support, making it an even more attractive package.

Also unveiled is *Twist 3*, the latest version of HiSoft's powerful database. It has a host of extra functions and you will be able to create attractive graphical forms for the presentation of your data.



*Papyrus 4* is one of the many programs that will be on display at the Gasteiner Spotlight Show. Be there, or we'll be round.

*Twist 3* will also feature increased *SpeedoGDOS* support (including printing) as well as *GDOS* graphics printing. HiSoft will also be displaying its Squirrel range of SCSI peripherals, including CD-ROM and hard drives.

GeSoft's Eagle, to be distributed in the UK by Gasteiner, was recently unveiled in France (see the Show Report on page 16). At the same time, and proving that there's still plenty of choice left in the Atari market, Digital

Awareness will be showing off C-Lab's Falcon Mark 2, now in a 14MByte guise for serious musicians everywhere.

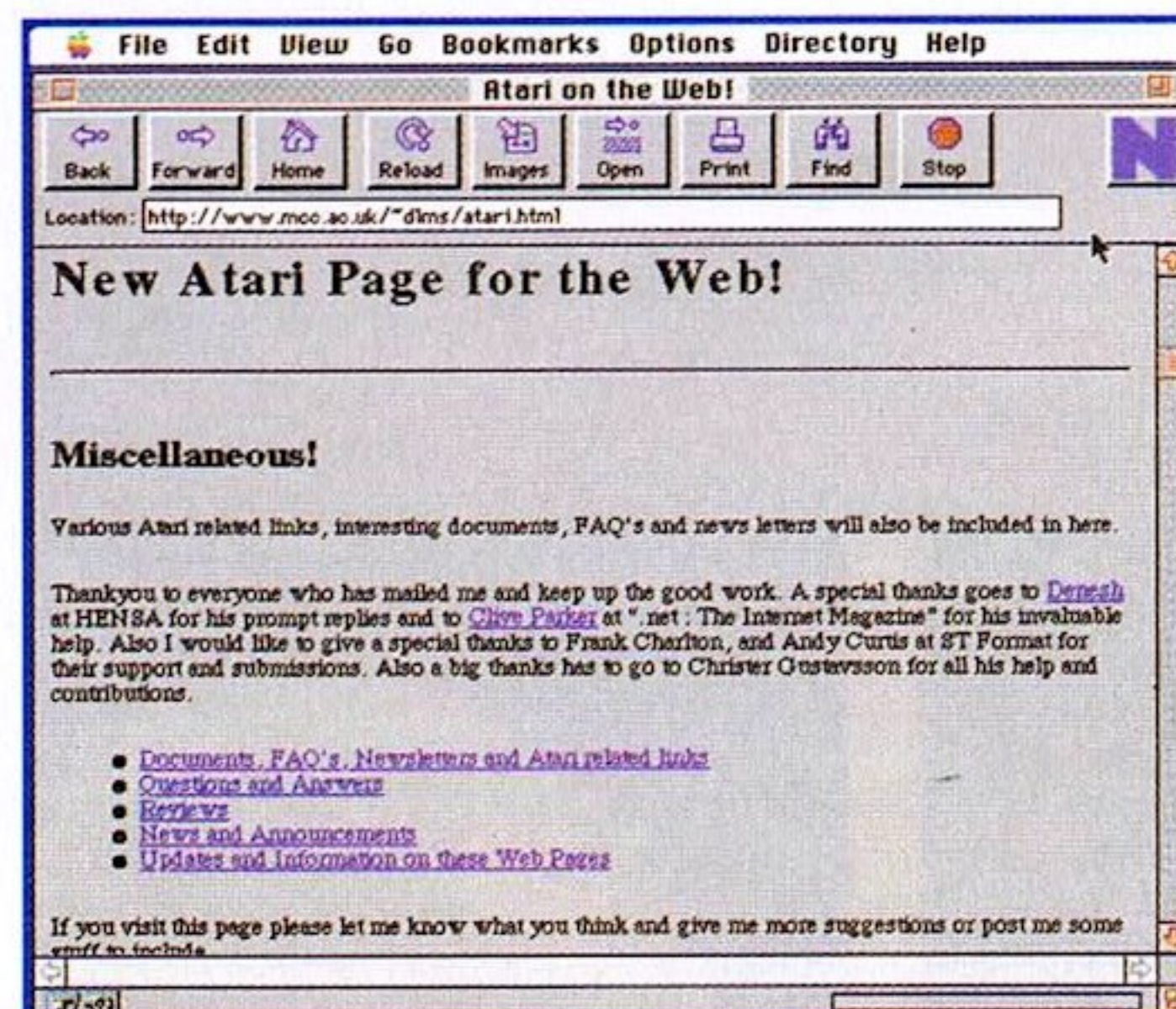
On the games front, 16/32 Systems will be demonstrating the latest Falcon games. You should also look out for *SubStation*

and *Team*, the latest gems in the New Wave of STE and Falcon games. If other Atari shows are anything to go by, there'll be loads of older games at bargain prices.

Spotlight will cost £5 to get into (or £2.50 if you're a subscriber to *ST FORMAT*) and takes place at the Hammersmith Novatel in London on 10 and 11 June. The *ST FORMAT* crew will be there in force, so you can find out whether we are as psychotic as we look. Call Gasteiner on ☎ 0181 345 6000.

## Atari on the Net

FORGET ABOUT ALL THOSE obscure galactic corporations on the information superhighway, the place to see and be seen is <http://www.mcc.ac.uk/~dlms/atari.html>.



The Atari Web pages, as seen through the eyes of an Apple Macintosh. Well, that's one way to bring some culture to the dreaded machine.

Run by Mark Smith, the Atari Web pages offer news, reviews, advice and downloads of the latest PD

software. With contributions from our very own Frank Charlton, Andy Curtis and 'Mad Doc' Clive Parker it's the perfect way to fill in the time between issues of *ST FORMAT*.

Better still, the site provides a comprehensive launching pad to other Atari sites. A quick glance down the list reveals the likes of HENSA, Toad Computers, Desert Star Software plus various software

archives from around the world, as well as the *ST FORMAT* Web page on FutureNet (an even better place to be seen). The Atari Web page is one place you can't afford to miss when surfing the Net, especially if you are new to cyberspace.

## NVDI UPDATE

Users of *NVDI 3*, reviewed on page 28, will be interested to know that an update is now available. Version 3.02 supports colour printers and is available free if you send in an SAE containing the master disk and a copy of your receipt. The price for *NVDI 3.02* is £49.95 for new buyers and System Solutions is on ☎ 0181 693 3355.



# Rendez-vous with Jean-Michel Jarre

**B**irmingham was the place for Jean-Michel Jarre fans to be on 23 April. Seven STs helped produce Rendez-vous '95, a lavish show promoting the popular French composer/performer. British and international fans were able to take part in all sorts of Jarre-related activities.

Aside from the usual exhibitions, seminars and auctions, there was a light show in the style of Jean-Michel's own extravagant productions, accompanying an eight-piece band that spent the day covering Jarre's music for the benefit of the fans.

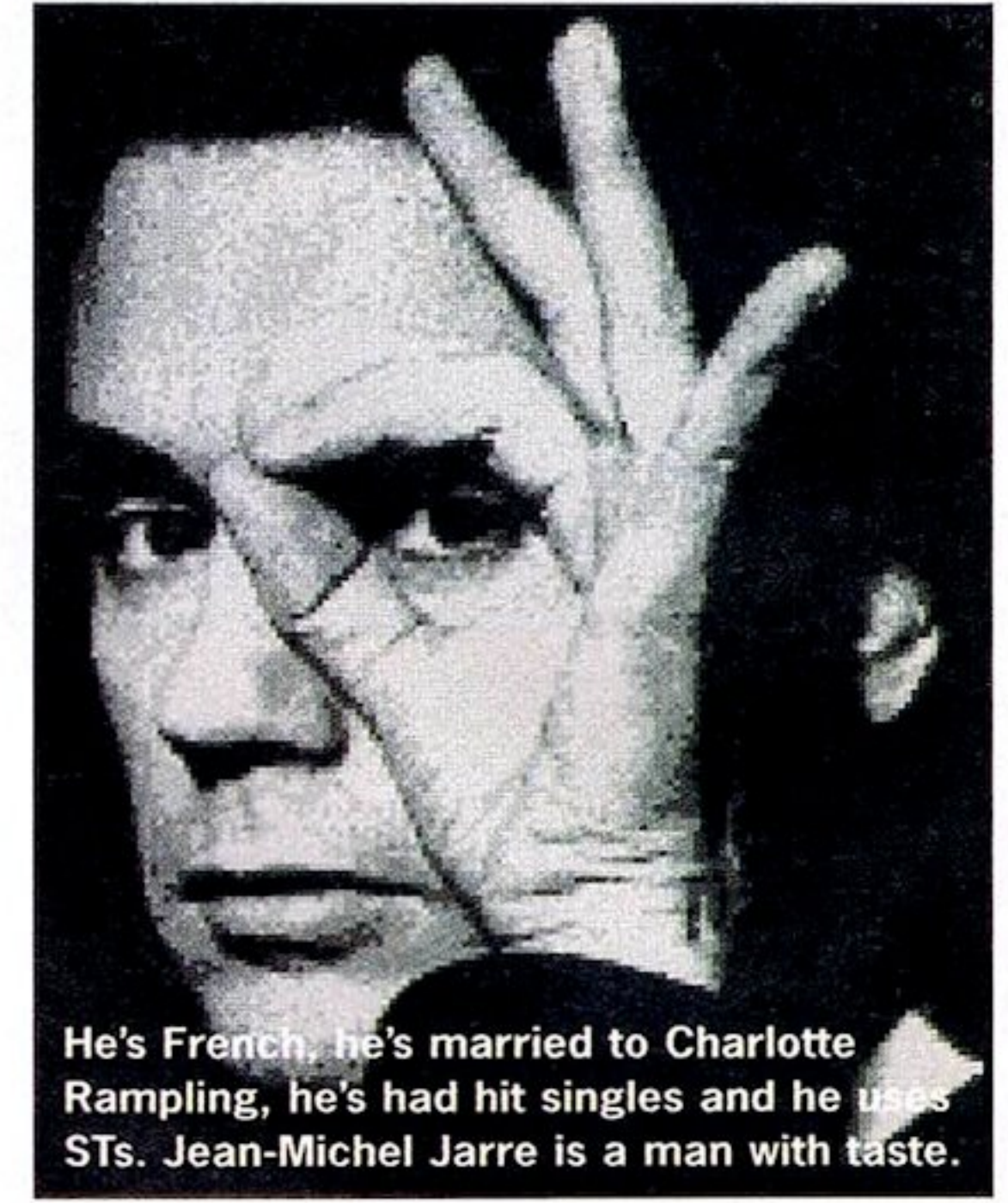
The seven STs were utilised behind the scenes: four running animated graphics, two controlling MIDI-generated music and one using *Mastersound II* to produce extra sound effects.

This use of STs mirrors Jean-Michel's own extensive use of the

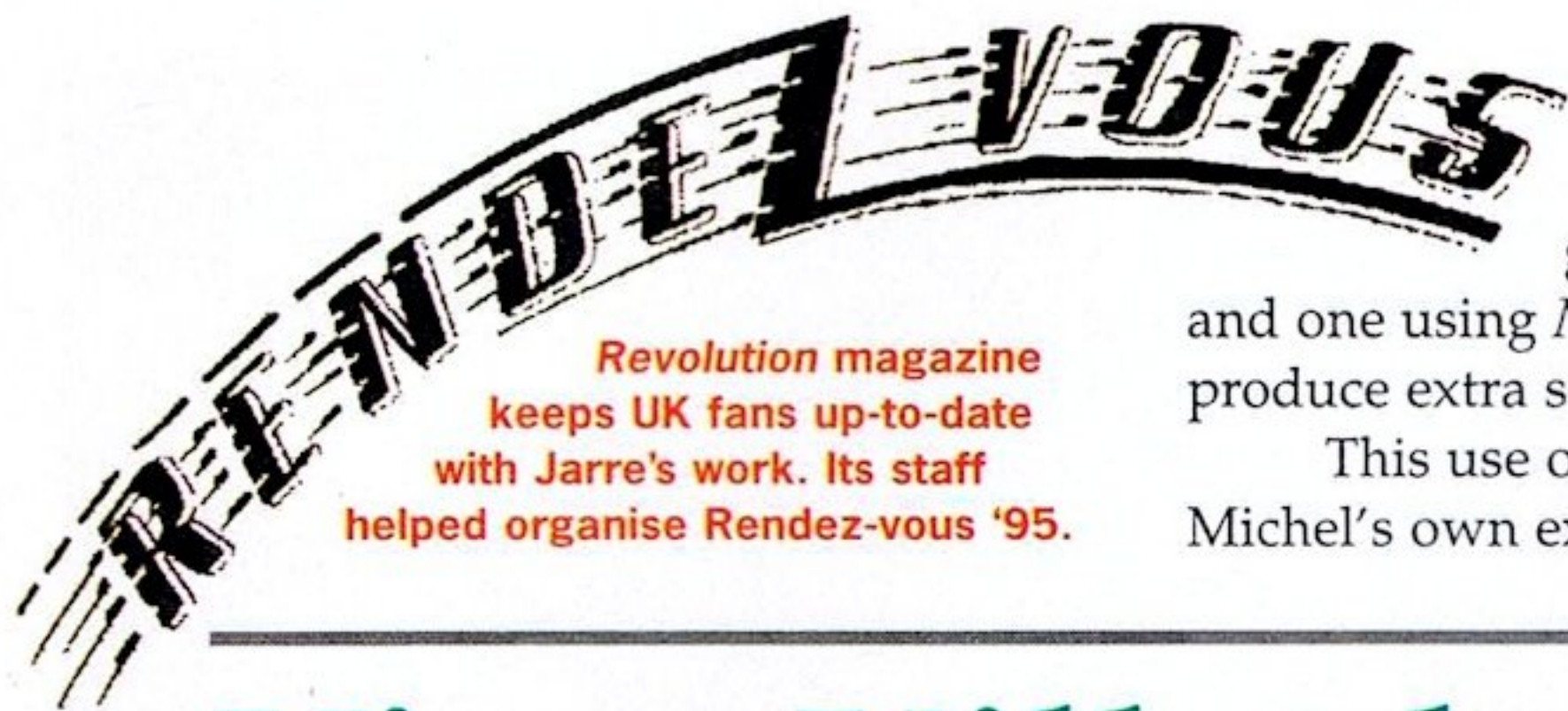
ST in his work. His latest sequencer, specially designed for him by Michel Geiss, is based around the guts of a 1040 ST and titled the Digisequencer. Prior to this, *Waiting for Cousteau* was written with the help of an ST and a fractal generating program. Outside of his loyal fan base Jean-Michel is best known for *Equinox* and *Oxygene*, which spawned several hit singles.

We'll be bringing you more details of the show's ST setup in next month's issue of *ST FORMAT*.

Thanks to Dave Knight, Rendez-vous '95 production, for this information.

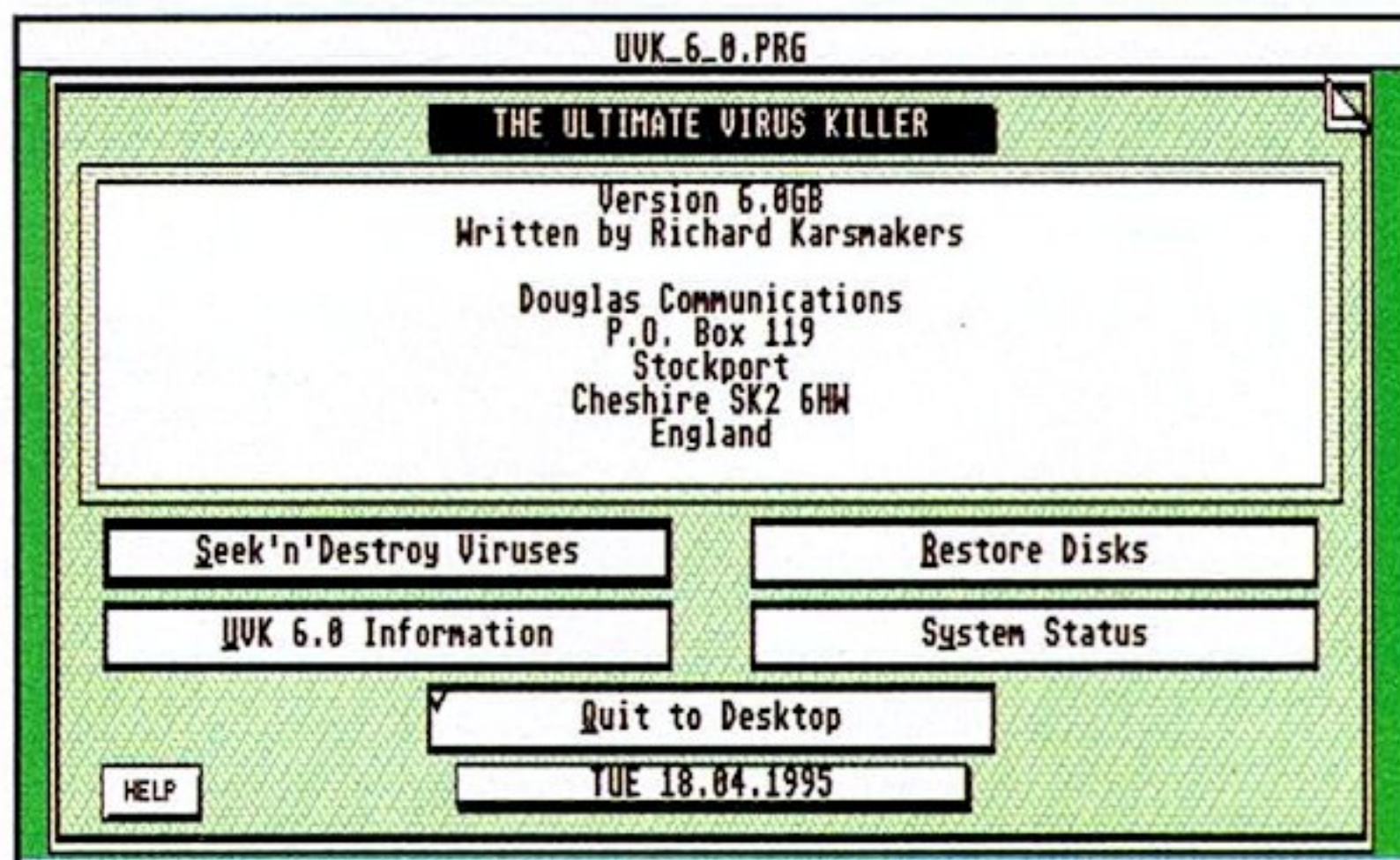


He's French, he's married to Charlotte Rampling, he's had hit singles and he uses STs. Jean-Michel Jarre is a man with taste.



Revolution magazine keeps UK fans up-to-date with Jarre's work. Its staff helped organise Rendez-vous '95.

## Virus Killer book



The *Ultimate Virus Killer Book* looks like the essential companion to this indispensable virus killer. The program itself is still available for just £9.95 from *ST FORMAT* Reader Offers (page 76).

If you have experienced viruses spreading through your disks like wildfire, chances are you'll have come across the *Ultimate Virus Killer* (*STF* 57, 92%), a utility designed to keep your disks free from viruses, and therefore harm. Now its author, Richard Karsmakers, has written a book to go with the program.

The *Ultimate Virus Killer Book* comprises an extended manual for the program, plus more general information regarding viruses, including a list of symptoms and

what to do to protect yourself against them. The book also has a history of viruses across several platforms. At £11.99 for 250 pages of top-notch information it sounds like a bargain.

UK users should make cheques payable to Mr Karsmakers and post their orders to PO Box 67, NL-3500 AB Utrecht, The Netherlands. If you order after 1st August, allow up to six weeks for delivery. Please note that the book is only available until 31 December 1995.

## MagiCMac in English

You've got a 68030/68040 based Mac with System 7, but you're missing your ST (why else would you be buying *ST FORMAT*?). Well, for just £149.95 you can get the English version of *MagiCMac*, a remarkably fast GEM-based ST emulator that runs programs in up to 256 colours. Call System Solutions on ☎ 01753 832212 for more details and look out for a review in these very pages soon.



This is the German version of *MagiCMac*. Now English Apple Mac owners can emulate the Atari 680x0, courtesy of System Solutions.

## PD NEWS

After providing Atari users with a wide range of PD software for a number of years, *New Age PDL* is closing down. While its catalogue disk is no longer available for new customers, existing users may be interested to know that *New Age* is offering all of its remaining 1,500 PD disks at the bargain price of just a £1 each (until current stocks are exhausted). Contact Caroline Price at PO Box 30, Leigh-On-Sea, Essex, SS9 4AD.

*Effect Public Domain* is a new PD library based around an association of members living largely in England and Iceland. It's being run by John Cove, author of the *Kuba Club Culture* disk packs, and you can get in contact by writing to 10 Beechwood, Church Hill, Caterham, Surrey, CR3 6SB.

If you're buying PD from *Transparent Dreams* or wishing to join the User Group *STench*

ensure that cheques are made payable to Simon Osborne. *Transparent Dreams* currently offers PD from 60p per disk (for orders of 16 disks or over). Call ☎ 0161 437 7474.

*Power PD* has just released the *Nebula Entertainment Galaxy Bundle* on two disks. This contains the full registered versions of *Nebula Entertainment's* shareware hits, a total of 12 games. At £19.95 it sounds a bargain.

*Power* has also taken over *Solent Software's* collection of 1,000 PD disks which will be available at the usual *Power* price of 99p a disk. Call them on ☎ 01622 763056 for more information.

*Digi-View* is a new PD library rising from the ashes of *Byteback PD*. Contact them on ☎ 01572 724676, or at 21 Queens Road, Oakham, Leics, LE15 6ED.

## LAPD'S TOP SELLERS

- |  |                                |
|--|--------------------------------|
| 1 Route Finder (Disk M155)                             | 15 Tetris (Disk G80)           |
| 2 Star Trek: The Game (Disk G131)                      | 16 Star Trek (Disk B50, £1.00) |
| 3 Storm/Storm '94 (Disk L87/L91, £3.00 each)           | 17 The Maze (Disk G217)        |
| 4 Grandad and the Quest for the Holey Vest (Disk G222) | 18 Planetarium (Disk M1)       |
| 5 Aliens (Disk G262)                                   | 19 Susan Adventure (Disk G167) |
| 6 Grandad and the Search For Sandwiches (Disk G303)    | 20 Form Finder (Disk M76)      |
| 7 Bio Hazzard (Disk L69, £3.00)                        |                                |
| 8 Auto Stereogram Creator (Disk L77, £3.00)            |                                |
| 9 The Coarse Angler (Disk G287)                        |                                |
| 10 Crack Art (Disk A44)                                |                                |
| 11 Grand Prix Manager (Disk L22, £2.50)                |                                |
| 12 The Gardener (Disk M161)                            |                                |
| 13 1st Word (Disk W3)                                  |                                |
| 14 Walls of Illusion (Disk G308)                       |                                |

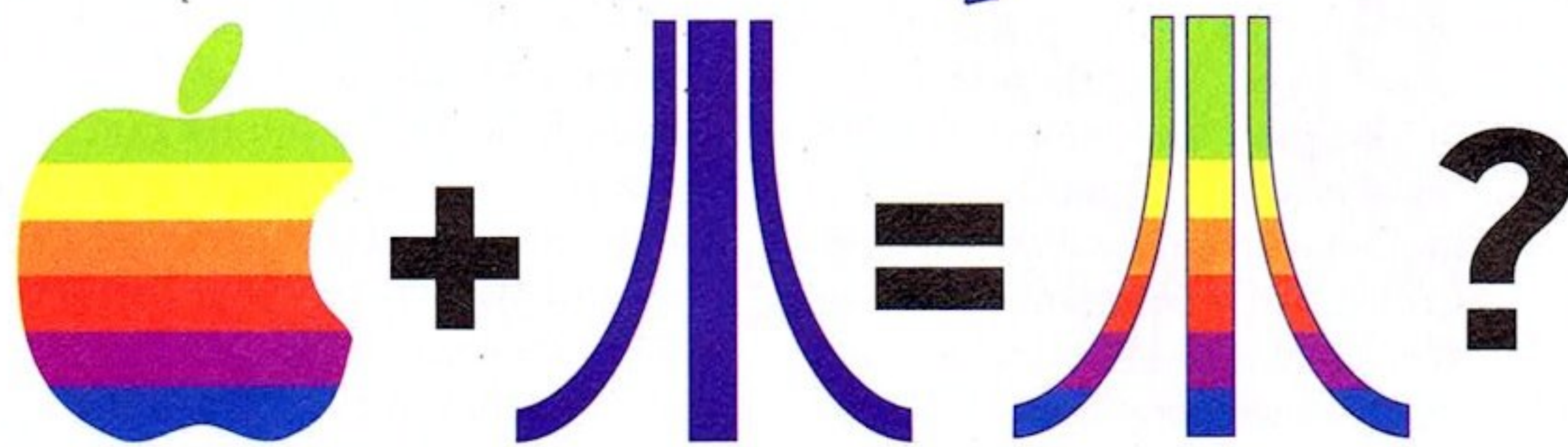
These are LAPD's top-selling disks of 1994. Clive Booth of LAPD would like to announce that "if any author who has a title, or titles, in our library, would like to know exactly how many copies have been distributed we will provide the information provided an SAE is enclosed with the enquiry." This is a useful device for shareware authors wanting to gauge registrations against the number of PD copies sold. Contact LAPD on ☎ 01773 761944.





# EuroNews Special

**Don Maple reports from the CeBIT Show in Germany.**

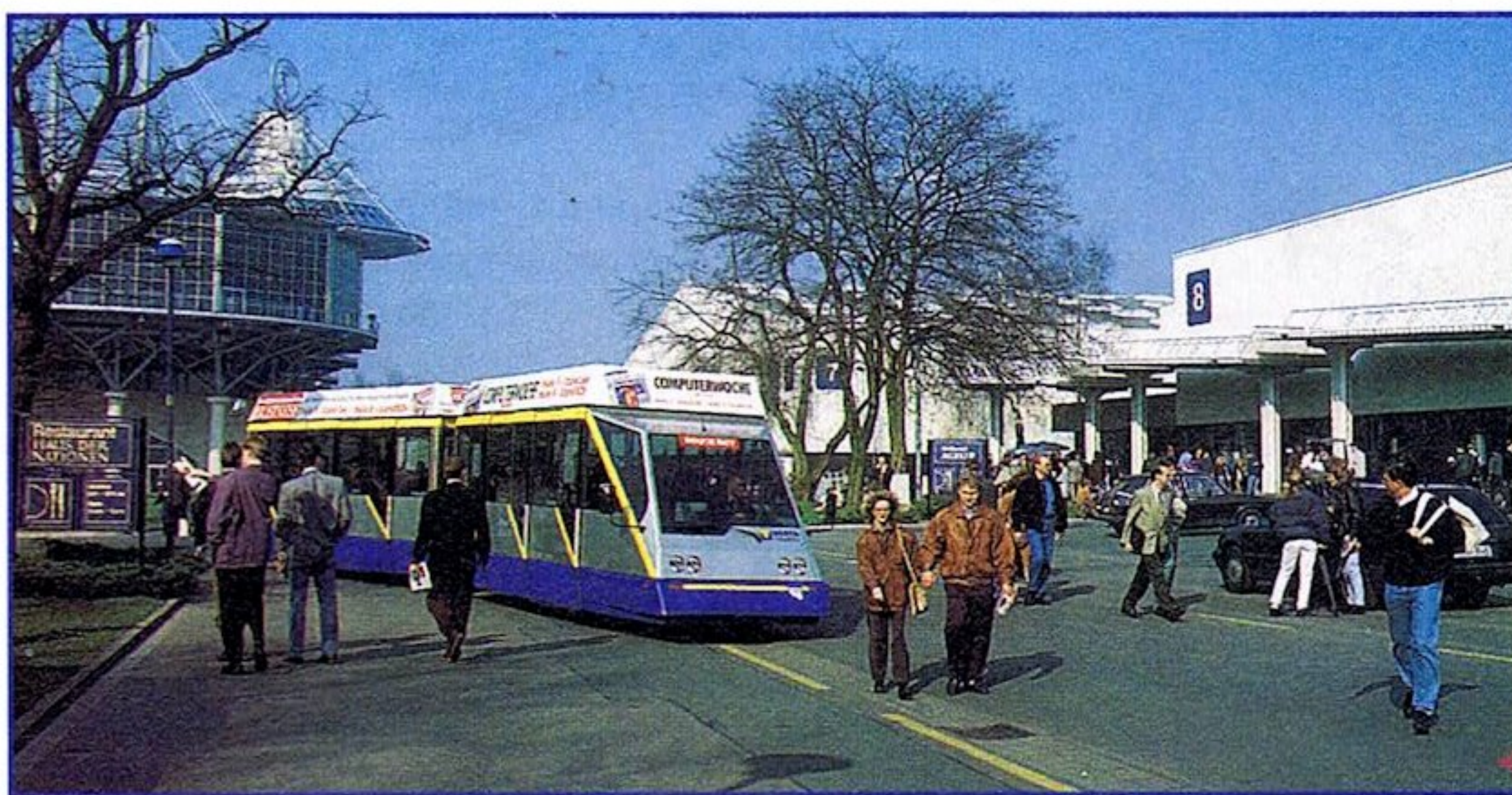


**W**hen people mention computer shows in the UK, the first thing that springs to mind is cheap disks and other bargains. Not so in Germany, where computer shows are more prestigious affairs. This means that the focus at German shows is on showing new products and generally 'presenting the company in a favourable light'. This goes double for a highly reputable show such as CeBIT (see the 'Just what is CeBIT?' box for more details).

This year, the obvious target

for all Atari fans was the Apple stand. Why the Apple stand? Well, the magic word connecting the two companies is *MagiCMac*, a program that enables Atari programs to run on Macs, often with a significant increase in speed. Several major Atari companies took the opportunity to show their new developments using the program, which explained why the busiest areas at the Apple stand were those running *MagiCMac*!

CeBIT in Germany is the world's biggest computer show.



## MagiCMac rules

THE KEY ATARI COMPANY AT the show was clearly Application Systems Heidelberg, affectionately known as ASH. It distributes *MagiC* for the ST and is responsible for its migration to the Mac. ASH sees *MagiCMac* only as a way to be able to continue concentrating on Atari applications without having to worry about the com-

This year CeBIT drew over 750,000 visitors. The grounds are the size of a small town and there are 25 exhibition halls, some of which could accommodate several football pitches with ease.

puter hardware they run on.

Besides, said head of ASH Oliver Joppich, "a Mac with *MagiCMac* is the fastest ST I own, plus I get a whole Mac thrown in." The idea is to have *TOS* running on as many platforms as possible.

However, although a version for Janus (an ST on a PC card) might be considered at some time in the future, a plain *PC MagiCMac* is out of the question.

Both the *MagiCMac* developer and the original *MagiC* authors were present. One of them, Wilfried Behne, revealed that *MagiC 3* for ST users is imminent.

Thomas Tempelmann, the MagiCMan behind *MagiCMac*.



There's no Falcon support as yet but that's expected by the time *MagiC 3* reaches the UK - around June. The *NVDI 3* screen accelerator for *MagiCMac* will be capable of printing to Mac printers and

soon will have access to Mac fonts. System Solutions is the UK importer of all these goodies, so for the latest details on pricing, availability and upcoming products, call ☎ 01753 832212.

## JUST WHAT IS CeBIT?

Quite simply, the biggest computer show on the planet, bigger even than Comdex in the US. Spanning eight days the show - held in the German city of Hanover on grounds the size of a small town - welcomed over 750,000 visitors this year, a new record. CeBIT has its own train station, internal free bus service, daily newspaper and 25 exhibition halls - some on multiple levels. It's gigantic!

Atari has traditionally used CeBIT to introduce new products, and many new machines saw the light of day at special CeBIT presentations. However, since Atari abandoned computers two years ago, the remaining third-party Atari companies were left to their own devices. Last year they exhibited individually, but this year they were all under the protective wings of Apple in the guise of *MagiCMac*.



*MagiCMac* made the Apple stand the obvious target for Atari fans.



Wilfried Behne, one of the co-authors of the original *MagiC* program.



# - CeBIT Show '95



## New from Digital Arts...

Also present at the show was Digital Arts, showing off the latest versions of programs specially customised for use with *MagiCMac*.

DA's *Layout* is now available in two new versions. *TC 5.5* can now export files in *Adobe Illustrator* format – an import facility is still to come. Version *BW 3.5* is the monochrome version. It now runs in colour resolutions and even displays colour images but, of course, still prints only in black and white. DA's *Picture* package has also been made Mac-friendly. It handles 15-

bit Mac colour mode and includes a texturing filter. DA's *Repro* now also has a special accessory for the 15-bit mode.

GT Look for Epson scanners now offers access to the Mac's SCSI

### Copy turns the scanner into a colour copier by enabling output to almost any printer

port, with two further modules available for the program. *Copy* turns the scanner into a colour copier by enabling output of the scanned

images to almost any printer, while *Optimizer* is used to optimize images during scanning. A pre-scan and complementary colour filters eliminate 'greying' and make colours more vibrant.



CeBIT offers a lot more than a few free disks – the focus is on public relations and showing new products.

## The Apple angle

THE MAN RESPONSIBLE FOR Apple's interest in the Atari market is Peter Gebhardt, the manager of Technology Marketing for central Europe at Apple Germany.

This is no coincidence since, before Apple, Peter used to work for Digital Research. DR wrote the original *GEM* – the graphical user interface we see on our STs every day. Because of this he was famil-

iar with the Atari market, which in Germany is quite different from the UK. On the continent the ST has always been considered a serious business machine.

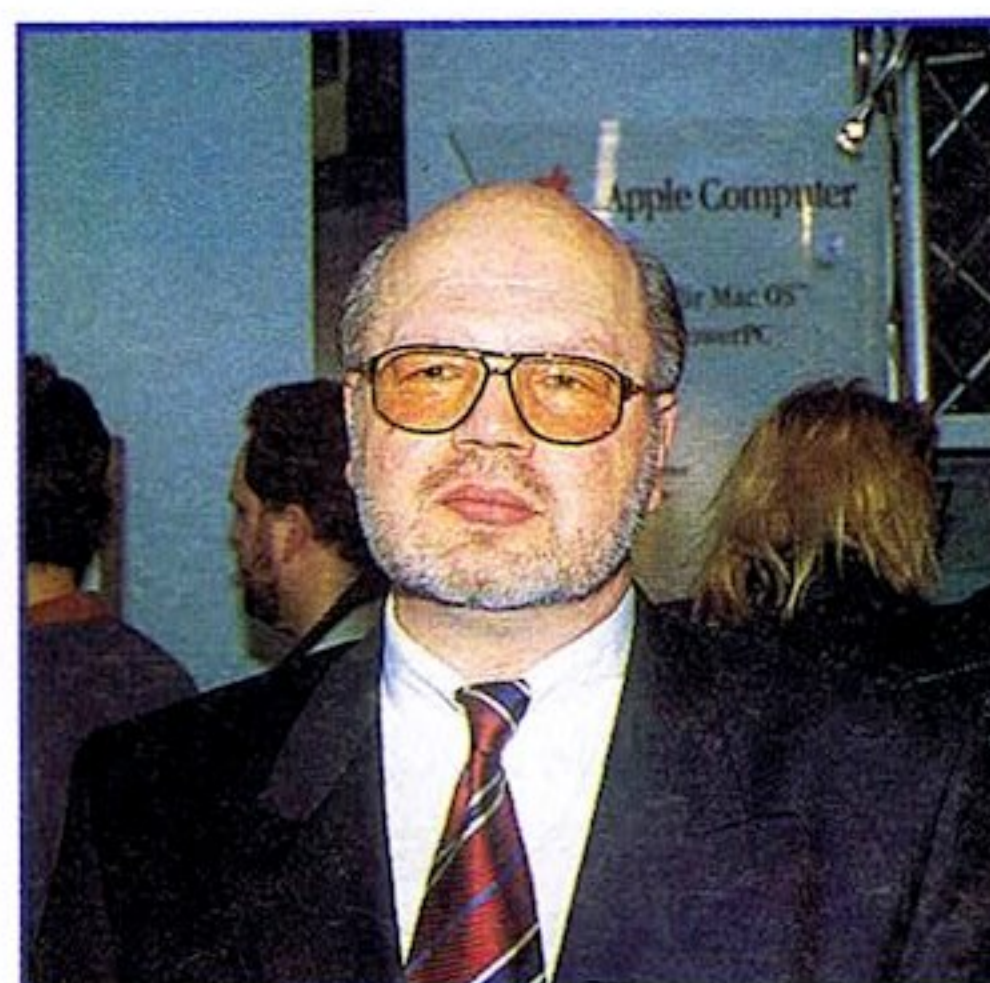
### On the continent the ST has always been considered a serious business machine

This is particularly the case in the small office arena, which is exactly what Apple is interested in. Another attraction is the high-quality,

inexpensive software available for the ST. It's because of this that Apple wants to open up other avenues for Atari developers by extending their user base to Macs running *MagiCMac*. This also fits into Apple's overall strategy of creating a market for so-called OpenDoc 'parts', that is to say, smaller programs to perform specific tasks. These 'parts' are incorporated into the Apple's system by being placed into so-called 'containers'. High quality Atari software is seen by Apple as fitting into the 'parts' strategy.

"Apple doesn't want to dominate the Atari market or take it over," stresses Peter. Apple is also in close contact with third party Atari hardware developers – with the producers of products such as the Eagle and Janus, for example – to perhaps provide add-ons for Apple in the future.

Next on the agenda is the UK where, drawing on the success of



Peter Gebhardt, Technology Marketing manager at Apple Germany, was the man who got the *MagiCMac* ball rolling.

*MagiCMac* in Germany, Peter and his British colleagues will be trying to introduce the *MagiCMac* project.

### SOFTBEAR

A couple of months ago (STF 69) we told you about *CoMa*, a fax program available from Softbear in the UK.

Unfortunately, the number we printed belonged to a community college in Cambridge. The correct number for Softbear is ☎ 01799 525038.

### IN CLOSING...

No matter which way we look at it, *MagiCMac* is a Trojan horse. The believers say it exposes Apple users to our wonderful Atari software and makes it possible for development to continue. The non-believers think that the whole thing is just a cunning Machiavellian ploy to trick Atari users into buying Macs. A fierce

## SHOW SNIPPETS

### Run DMC

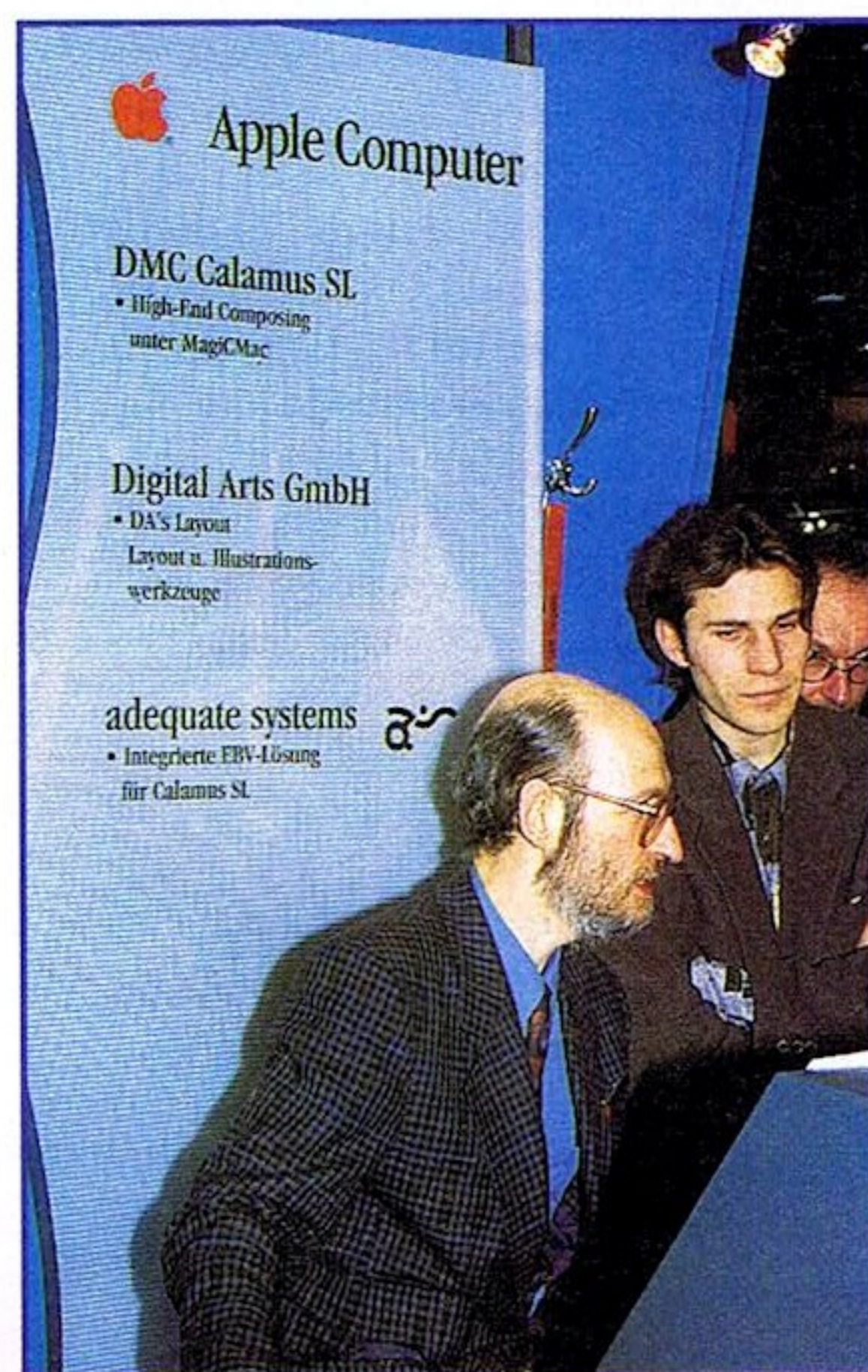
DMC, the maker of *Calamus*, needs no introduction. *Calamus SL* now runs fully under *MagiCMac*, and although most development is currently concentrated on *Calamus NT*, a new *SL* version is planned. Just when it will be released depends on demand.

### Maxon rock 'n' roll

Elsewhere at the show, Maxon was showcasing a range of product upgrades. The *TWIST 3* relational database is another package which runs under *MagiCMac*. It is now available with increased speed and ease of programming, including GDOS printing. *Harlekin 3*, the all-around accessory package, and *CrazySounds 2* (which adds sounds to all aspects of the Desktop) have also been adapted to *MagiCMac*. *CrazySounds 2*, for example, now supports full Mac sound output. Call HiSoft on ☎ 0525 718181 for UK availability and pricing of most Maxon products.

### Very adequate

Adequate Systems, founded by most of the original *Calamus* Atari team, is a company which develops additional modules for *Calamus SL*. New products at the show from Adequate included *TABELLEN*, which enables easy inclusion and processing of tables and other spreadsheet-like constructs into *Calamus*. *EDDIE* is a fully integrated text editor module which goes much further than the default PKS editor supplied with *Calamus*. The *EPS Import/Export Module*, as its name implies, is used to exchange *Adobe Illustrator* vector graphics files. Adequate Systems does not have a UK distributor yet, so for more information about any of these products contact Adequate in Germany on ☎ 0049 6241 955065.



The big three at the Apple stand.



# Paris Atari Show



The French Atari scene has always been a bit of an unknown quantity, so Steve Llewelyn travelled to the French capital to check out the two-day French Atari Show.

Although the French Atari scene doesn't match the German one, attendance at the French Atari Show totalled around 3,000 over the two days. The show, which took place in Paris on the weekend of April 1-2, was organised by Composcan.

Lots of new products were on display. These included Compo's *3D Neon* and GeSoft's 680x0-based computer, the Eagle.

## The Eagle

GeSoft's Eagle was on display at the La Becane stand, and could well represent the future for serious Atari users. It's been designed to offer access to several processor configurations, not just the Motorola 680x0 found in the Atari. You can make the Eagle a Power PC or Pentium clone via special add-on boards. In addition, the motherboard controls such connections as the serial, parallel and MIDI ports. Other I/O connec-

tions, such as video, are handled by other cards, enabling you to put PC-standard (or PCI) graphics cards into the Eagle, further boosting its performance and compatibility with industry standards.

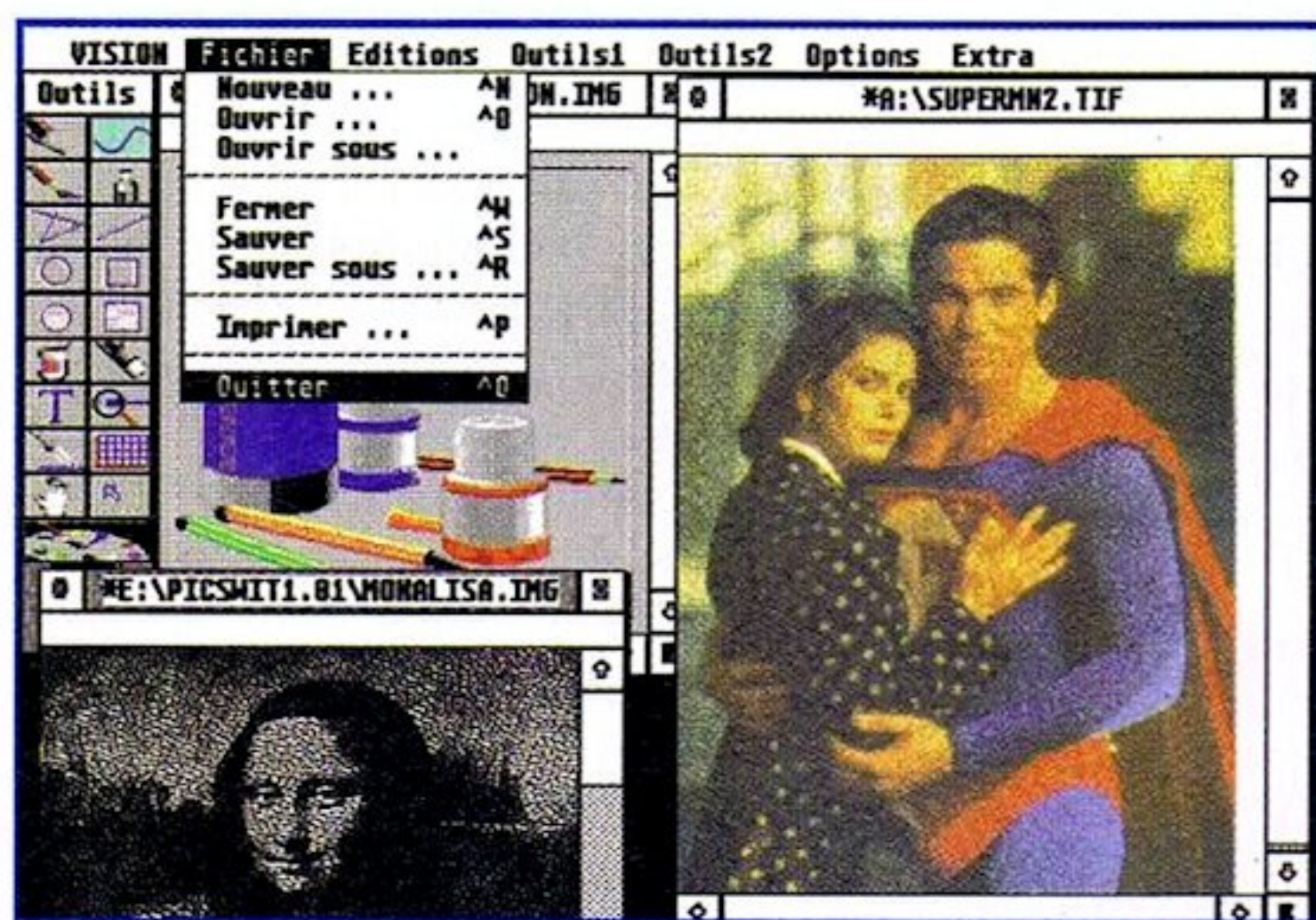
The version demonstrated ran a 68030 processor at 32MHz, but with the release of the 68040 version in June and a 68060 processor some time after, the Eagle is set to offer Atari compatibility and immense speed at a reasonable price. La Becane, for example, was offering an Eagle with 8MByte RAM and a 24-bit PCI graphics card in a mini tower for around FFr15,000 (£1,975). This version doesn't include an IDE or SCSI hard drive, however.

## 3D graphics

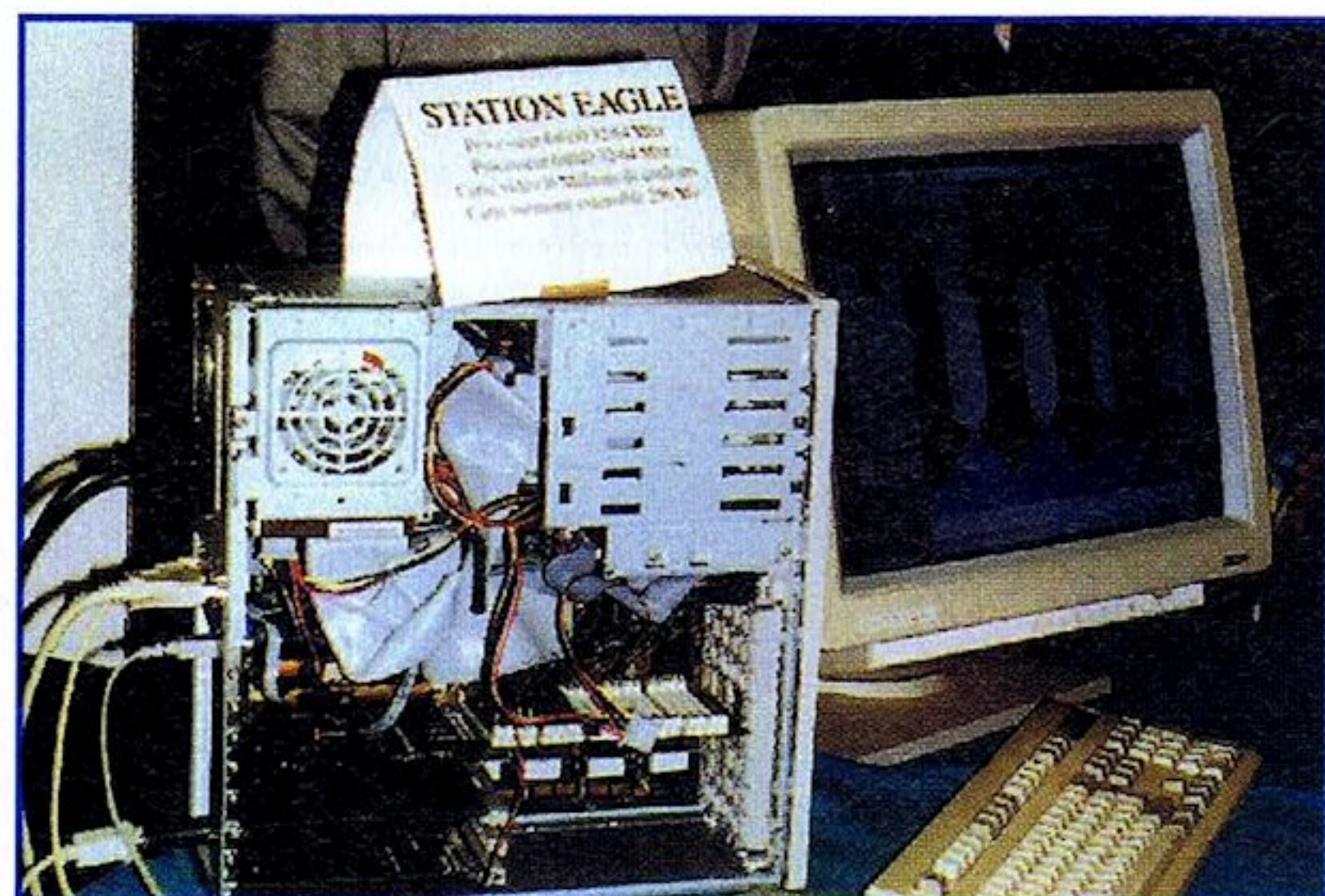
Composcan was proudly displaying *3D Neon*, the dedicated modelling, rendering and animation package for the Falcon.

The German programmers gave us a guided tour of this integrated 3D package, starting with the Modeller Editor. This is used to construct and place basic objects within the 3D world. It also has an option for morphing between two pre-designed objects, producing some very complex results.

The Material Editor enables you to render any TIFF or JPEG texture on to these objects.



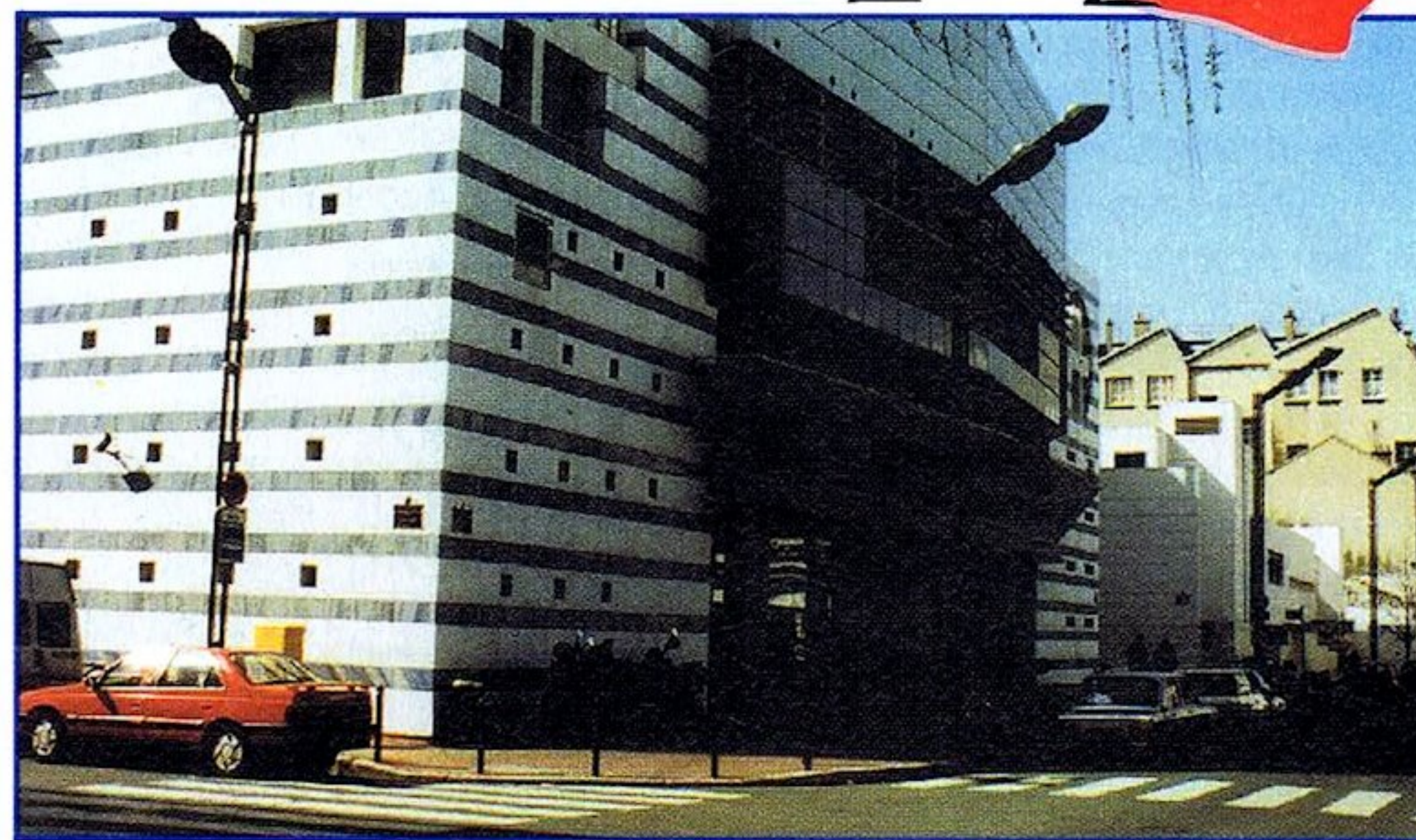
*Vision* is a powerful French graphics package that was one of many new French software programs on show in Paris.



The Eagle will be officially unveiled in the UK at the Spotlight Show in Hammersmith in June (see page 12 for more details).



Lexicor was one of the many companies showing off Falcon accelerators and PC-style tower cases.



The Palais des Sports Marcel-Cerdan was the venue for the Paris Atari Show, where 3,000 enthusiasts eagerly viewed the latest in European hardware and software.

The Scenery Editor sets up the camera position and light source with any final adjustments and settings handled by the Animation Editor. Finally, the Render Editor, in conjunction with the DSP chip, constructs the animated sequences which are saved directly to the hard disk.

All the editors work interactively, making this powerful program easy to use. *3D Neon*

should be available in the UK via Compo towards the end of the year, when a TT version will also be released.

## Other news

Composcan also had *MagiCMac* on display, and the new CD-ROM attachment for the Jaguar console was being demonstrated for the first time. To date around 10,000 Jaguars have been sold in France, which means the CD-ROM drive should be well received there. Also

on display was *Vision*, a new French graphics package from ICI that runs on all Ataris and in all resolutions. A demo should be appearing in this country soon.

With over 8,000 French Falcon owners, the newly formed

French Falcon Club was a buzz of activity, despite only having been active for the past three months. On offer was their

28-page magazine with an additional HD disk packed full of Falcon programs and utilities. Even better for Falcon users was the presence on virtually every stand of custom-built tower cases.

Hardware specialist Turtle Bay showed off the Falcon Elan 030, an adapted PC tower with an interface for attaching a standard PC-keyboard and mouse. The display unit contained Turtle Bay's Alligator 030, which replaces the processor with a 68030 running at an amazing 42MHz for just FFr1500 (£200). TT owners can get the 040 version which boasts a speed of increase of about four-fold, but this was not being demonstrated at the show.

## A Grand Day Out

Coupled with the success of the CeBIT Show in Germany, the Paris Show proves that there's still a lot of vibrancy and life in the Atari market. With 3,000 attendees at the Paris Show alone and over 8,000 Falcon users, Atari's 680x0 computers are going to be around for a long time to come. *stf*



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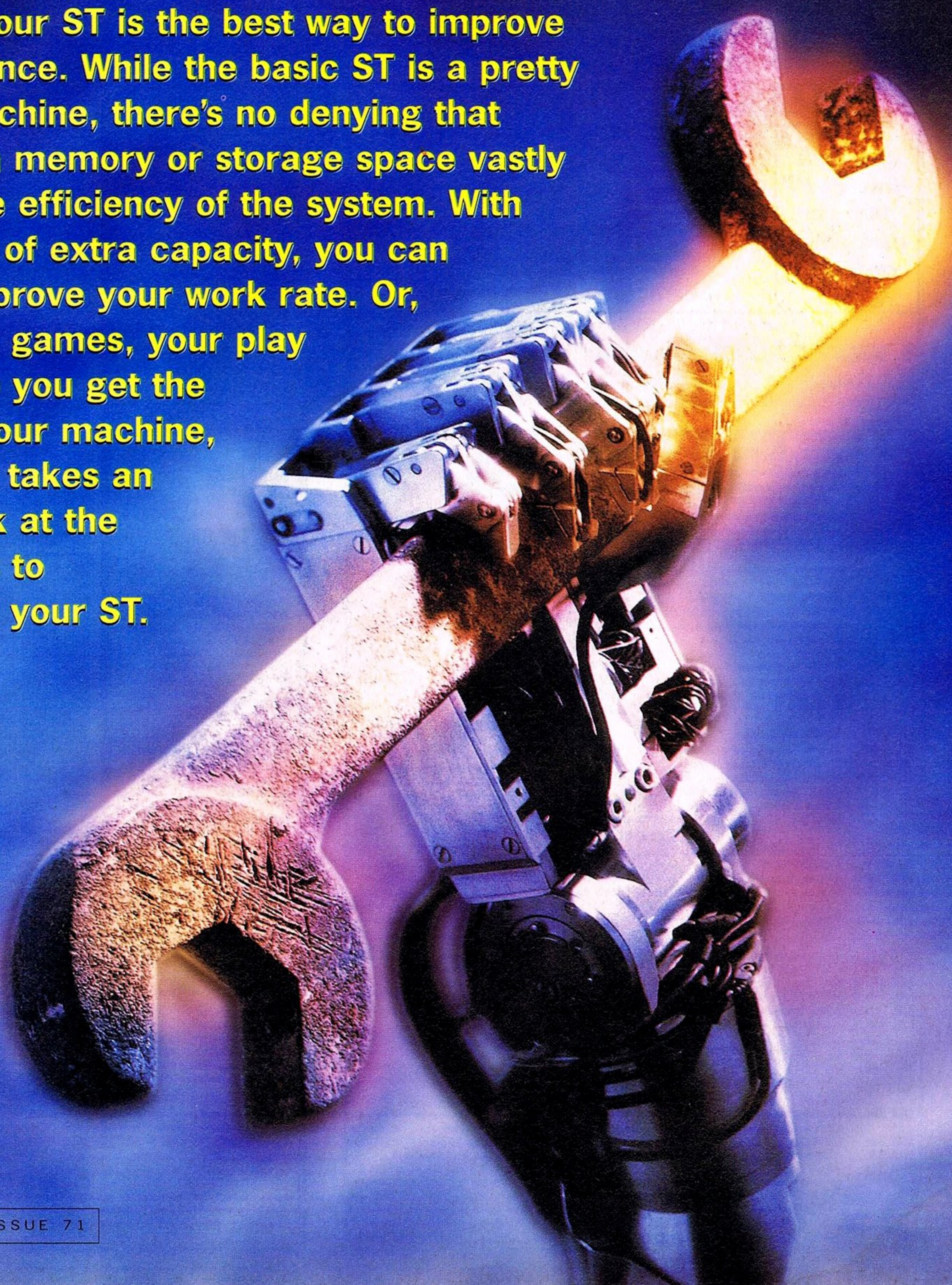
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# CUSTOMISE YOUR ST!

Upgrading your ST is the best way to improve its performance. While the basic ST is a pretty powerful machine, there's no denying that adding extra memory or storage space vastly improves the efficiency of the system. With that little bit of extra capacity, you can seriously improve your work rate. Or, if you're into games, your play rate. To help you get the most from your machine, Clive Parker takes an in-depth look at the easiest ways to supercharge your ST.





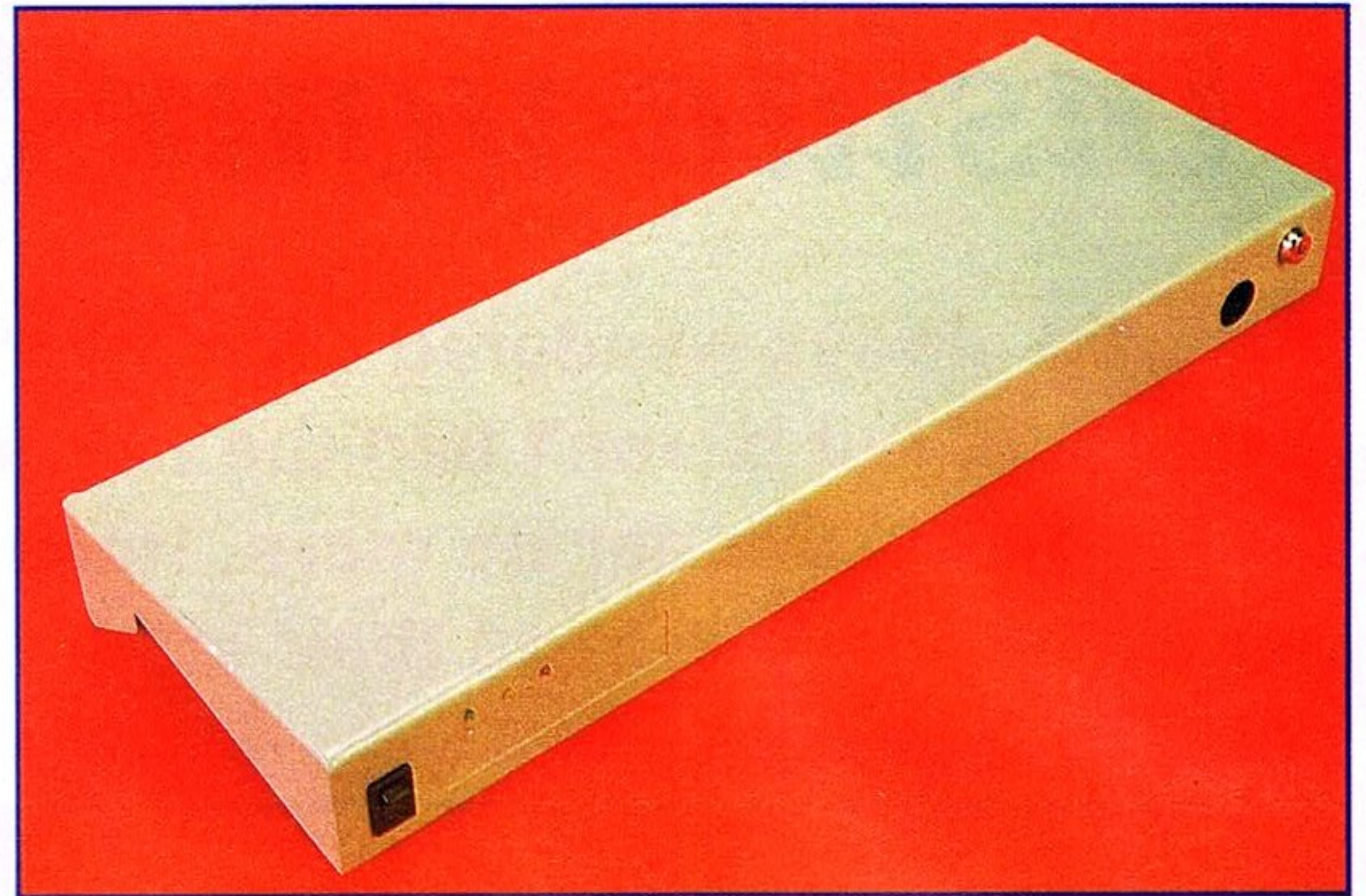
**Y**ou've really got to upgrade your ST if you want to get the most from it. With 1MByte or more of memory you can start to use serious software like *Papyrus*, *Atari Works* and *Cubase*. And the more software and hardware you buy, the longer the Atari ST will be supported by developers.

### Why not get a PC?

Good question. Why spend money upgrading your ST when you can buy a reasonably well specified 486DX with 4MByte of RAM, huge hard drive, CD-ROM drive and VGA graphics for under £1,000?

probably going to cost you at least as much as the PC itself. There is plenty of commercial Windows software about, but it isn't cheap (hardly anyone uses DOS software now, it's just too unfriendly).

And the Mac is just as expensive to 'tool up' to your current level of software. There are ST emulators for both the Mac and the PC which enable you to continue using most of your serious ST software, but they cost at least £150. Far better to upgrade your ST and get the most from the software you already have. Most performance-boosting upgrades are inexpensive and easy to install.



Using the Dual Docker from Gasteiner, you can add a PC keyboard and optional internal hard drive to your ST. Watch out for the full review in *ST FORMAT* soon.

The next upgrade you should consider is a TOS switcher. There are several available for both the STF and the STE – some need a little soldering and some don't. The Compo T-Board 68 for the STE needs soldering, but it's worth serious consideration because it has a through socket enabling other, STF-only, upgrades to be added to your system.

### Disk drive upgrades

If you can't afford a hard drive, but you need additional storage space, a high density floppy drive is an excellent compromise. You get the added storage space of a 1.44MByte disk without going to the extra expense of a hard drive. Some soldering is required for this upgrade, but it's one of the best ways to increase your storage space, especially now that HD floppies are so cheap.

### Graphics upgrades

There aren't too many options for upgrading the graphics capabilities of your STE or STF unless you go the whole hog and get a full-blown upgrade, like a tower

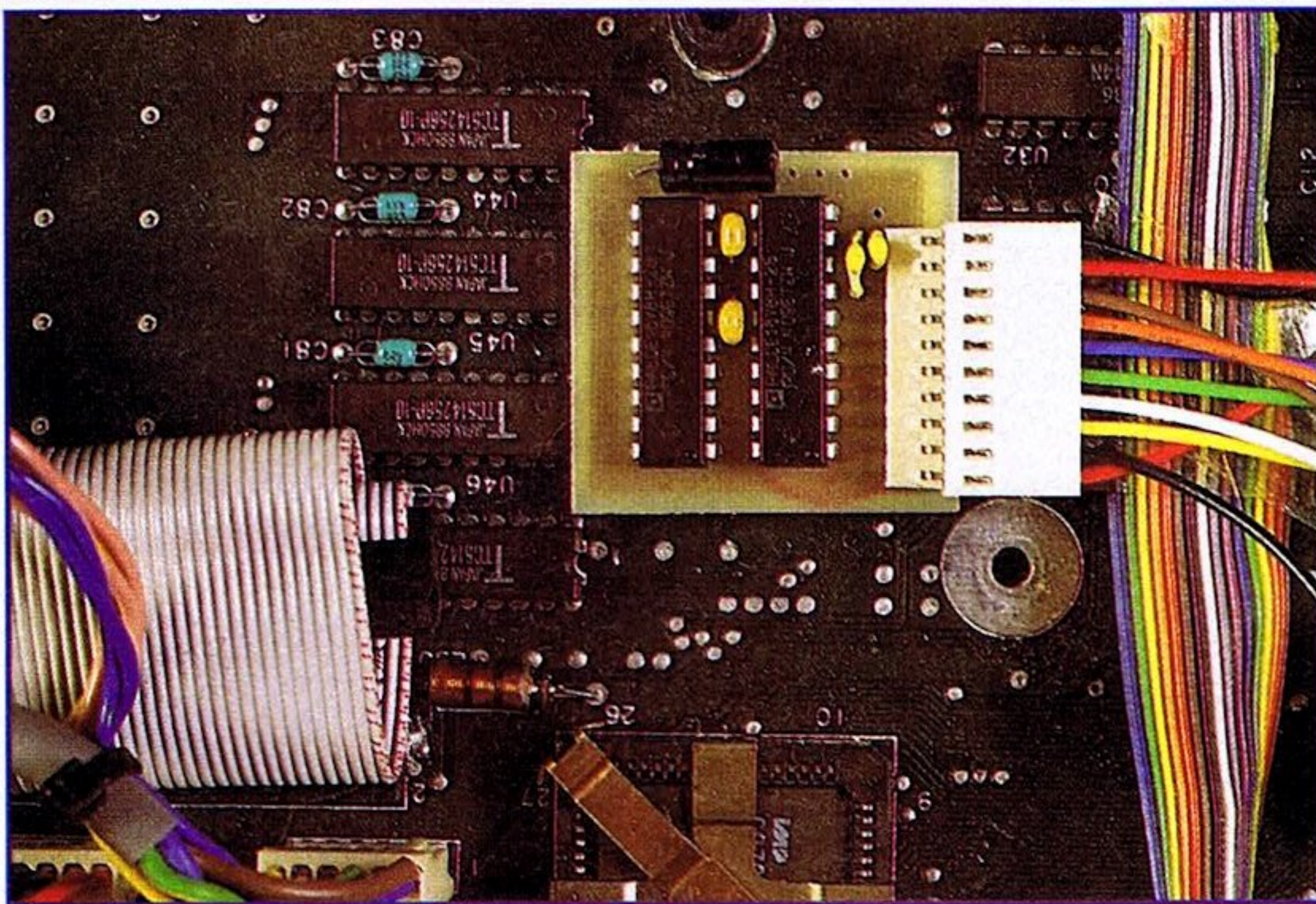
case and an expensive 24-bit graphics card. This is likely to set you back over £400 when you take all the hardware into account.

There is a less expensive option for the STF or Mega ST. You can get a small device called the AutoSwitch Overscan from Compo Software (☎ 01487 773582) for £49. It's small, and tricky to install, but it increases the resolution of the STF significantly.

We recommend that you get Compo to install the OverScan for you. Call and ask for details of their installation service.

### And the rest

Some of the more expensive upgrades like hardware accelerators, tower cases and colour graphics cards are probably best left to the really serious power user. A hardware accelerator starts at around £180 for the STF, and it's only really useful if you're using processor-intensive applications like CAD packages or DTP software. If you are already using this kind of software, then you probably have a hard drive and a big chunk of memory in your ST.



Here you can see the AutoSwitch Overscan installed in a Mega ST. Although it's tricky to fit, it provides a significant increase in resolution. We suggest you let Compo install it for you.

Software, that's why. What are you going to do with – at the very least – several hundred pound's worth of utilities, applications or games? Scrap them, that's what. And you'll have to replace all of the application software you have with the PC equivalent. At the very least you'll need a word processor, spreadsheet and database. If you're into graphics or DTP the replacement software is

### Where do you start?

There are all kinds of ways to upgrade your STE or STF, but the first thing you should do is increase the amount of memory. You can upgrade an STE for under £100 and the STF for about £125. You should add as much memory as you can afford in one go, but if you can only afford 2MByte at first, don't worry – it's easy to add the extra 2MByte later.

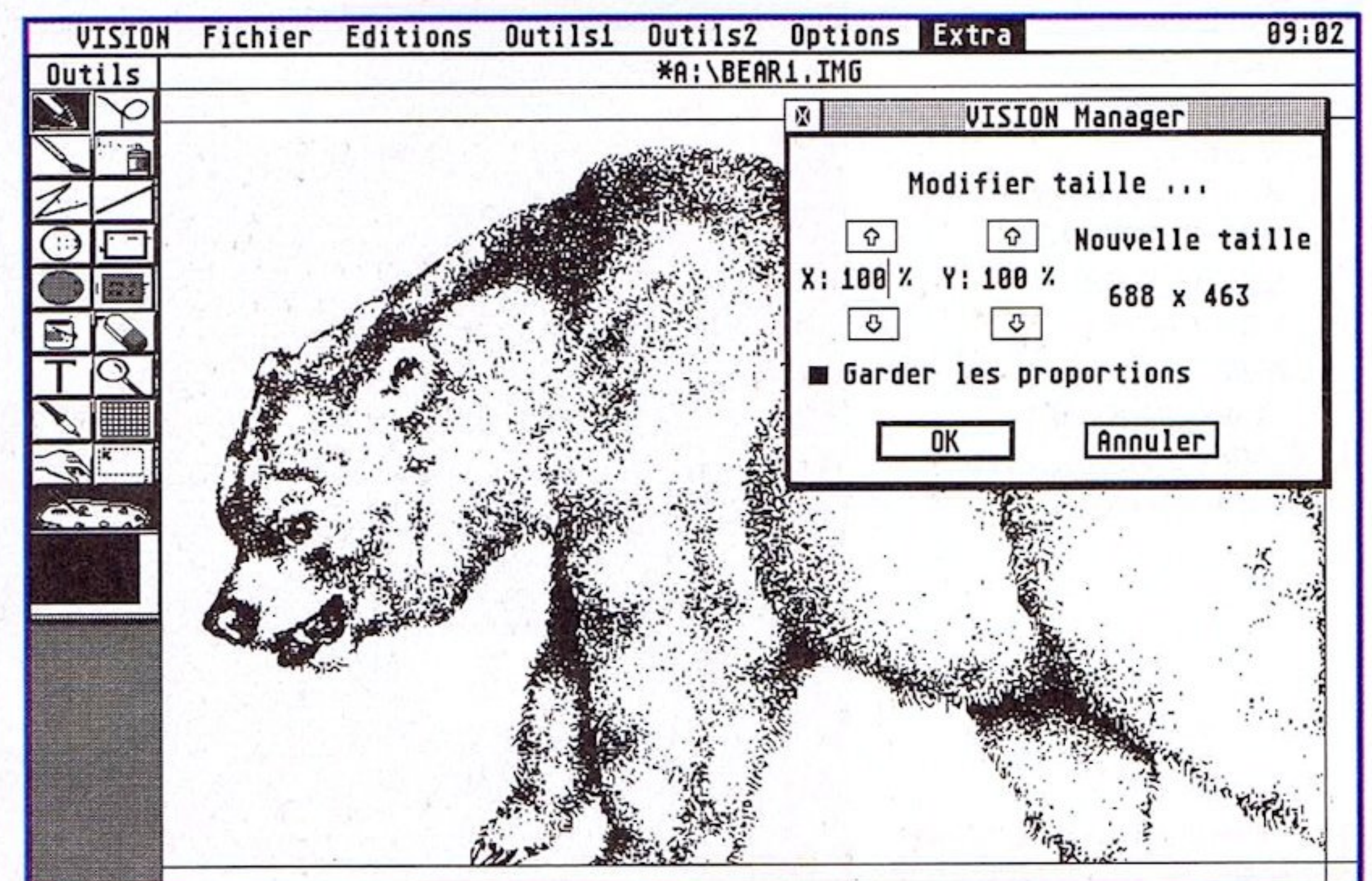
## STATIC ATTACK

You should always be aware of the dangers of static electricity when you are handling components like memory chips or working on the motherboard of an ST. Not the dangers to you, but to the electronic components themselves. They are more vulnerable than they look.

You know the static shock – that quick zap and spark – that you sometimes get when you touch a door handle or some other metallic object? Well, that quick zap can destroy a computer chip – especially RAM chips. However all components are at risk, so you should always wear an earth strap, connected to something like a gas or water pipe, or touch an earthed piece of metal before handling static sensitive devices. You can get an earth strap from any electronics store, such as Tandy or Maplins, for about £2.50 – which is a lot less than the price of a new chip.

You should also be careful when you are soldering. Prolonged heat can damage computer chips, so when you are soldering the legs of chips or other components you must complete the joint as quickly as possible. See page 47 for further soldering tips.

If you have any doubts at all about performing any upgrade, don't do it yourself. Ask your supplier about installation services. Most companies have fixed courier and installation fees for all of their upgrades.

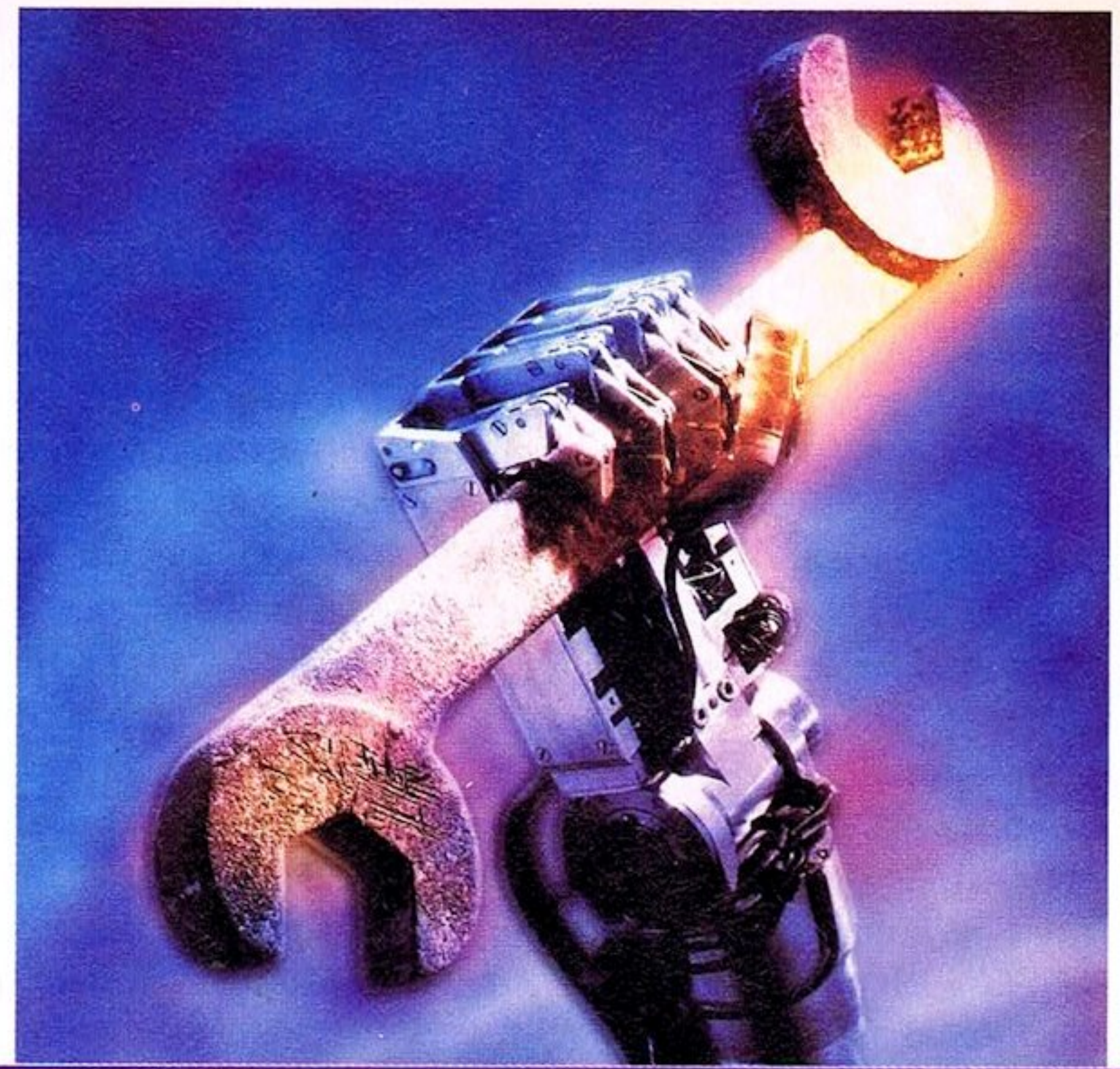


You can increase the resolution of your STF and get more pixels on the screen using the AutoSwitch Overscan from Compo Software.



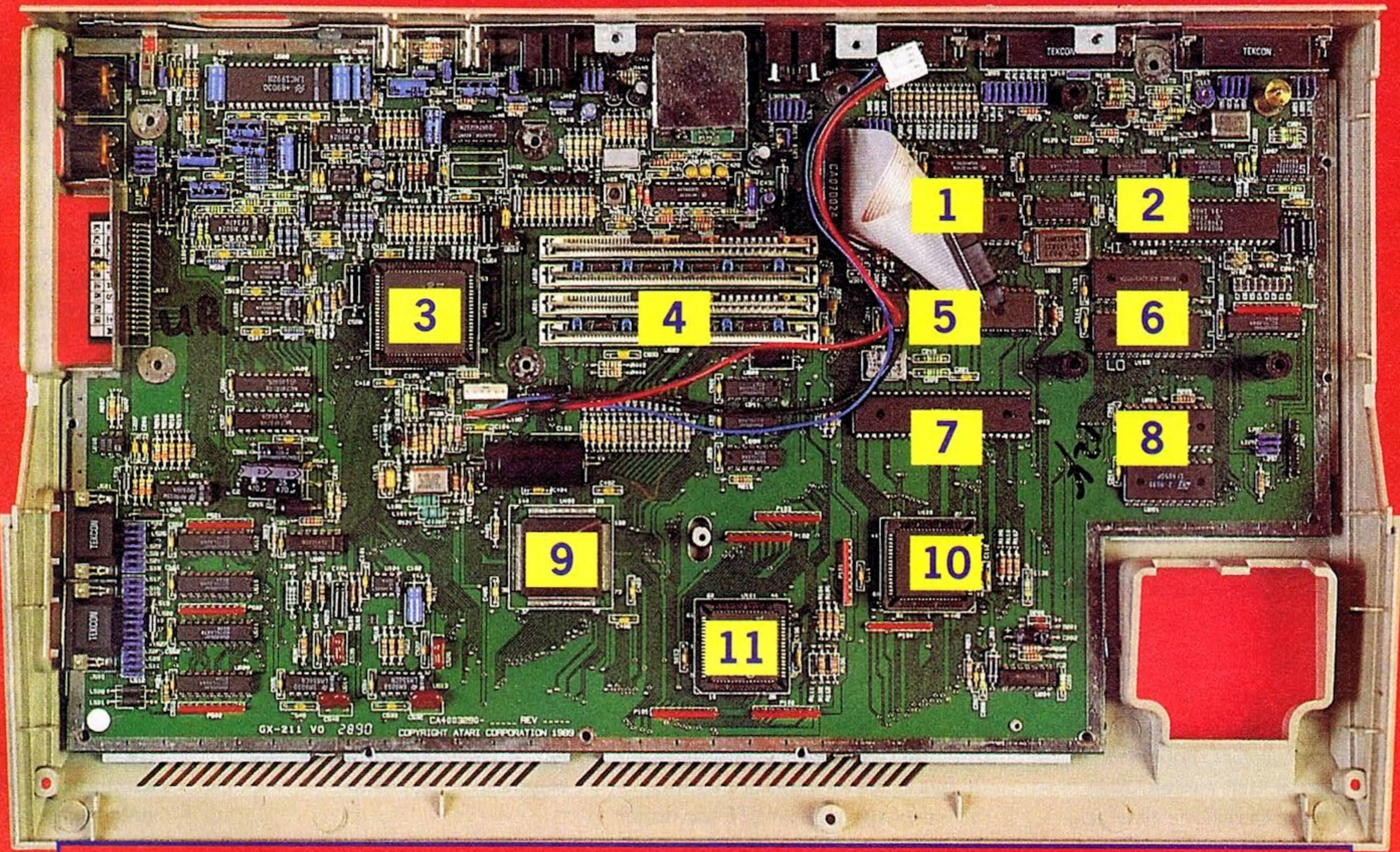
# Inside your ST

If you've always wondered what your ST is like inside, but haven't had the nerve to take it apart, wonder no more. Here are the STE and STFM in all their glory.



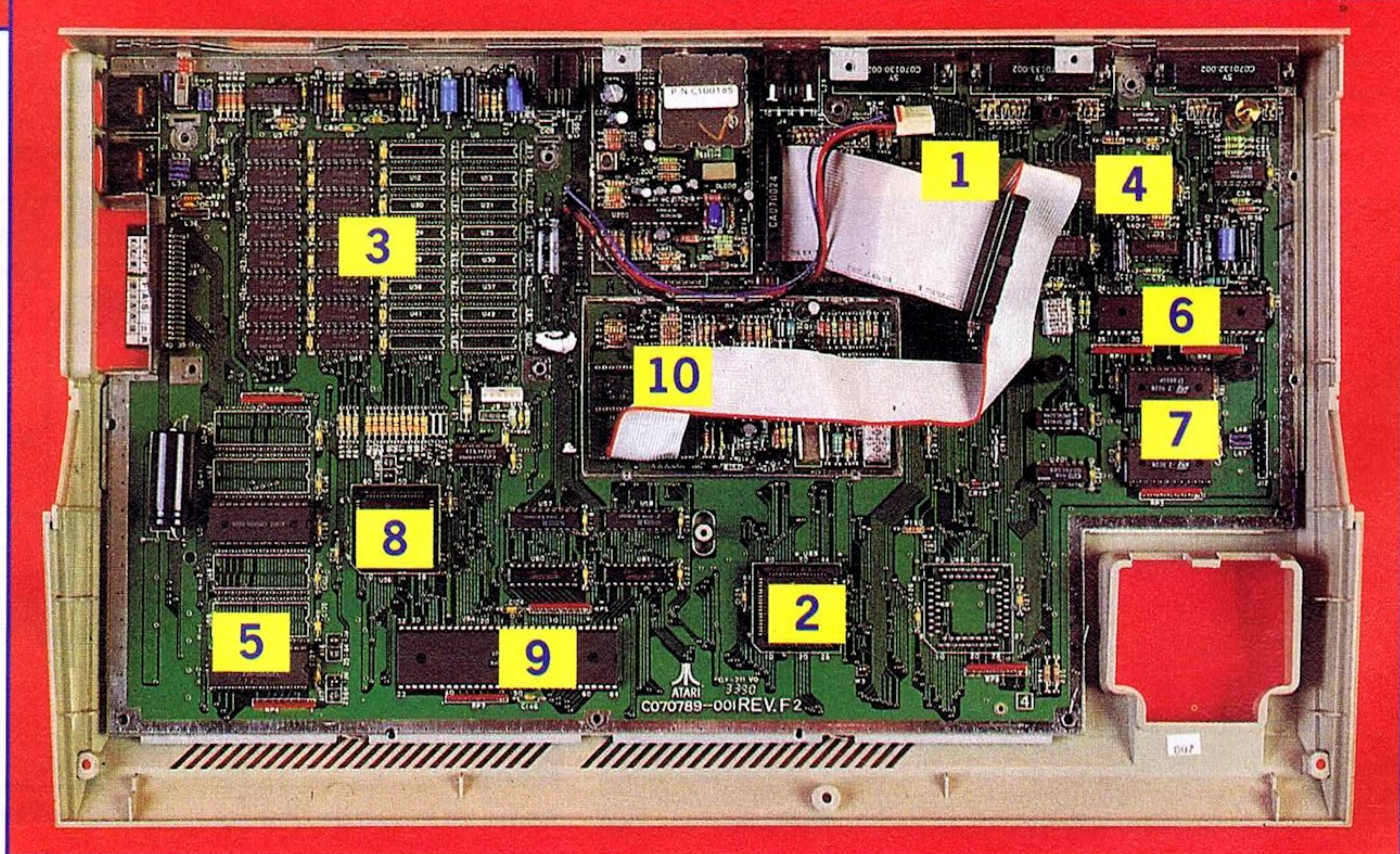
## THE COMPLETE GUIDE TO WHAT MAKES YOUR STE TICK

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3. Glue chip, holds the system together.
4. SIMM memory sockets, upgradable to 4MByte.
5. Sound chip, which also controls serial operations.
6. TOS ROMs.
7. 68901 MFP Chip.
8. 6850 ACIAs, which control data from the mouse, joystick and MIDI ports.
9. MMU (Memory Management Unit), orders memory addressing, generates the screen image.
10. CPU, which is the heart of the STE.
11. Blitter chip, speeds up data transfer, mainly in graphics operations.



## AND THE STFM...

1. WD1772.
2. Glue chip.
3. Memory.
4. Sound generator chip.
5. The STFM's TOS.
6. 68901 MFP.
7. 6850 ACIAs.
8. MMU.
9. The 68000 CPU.
10. Video shifter, not found in the STE.

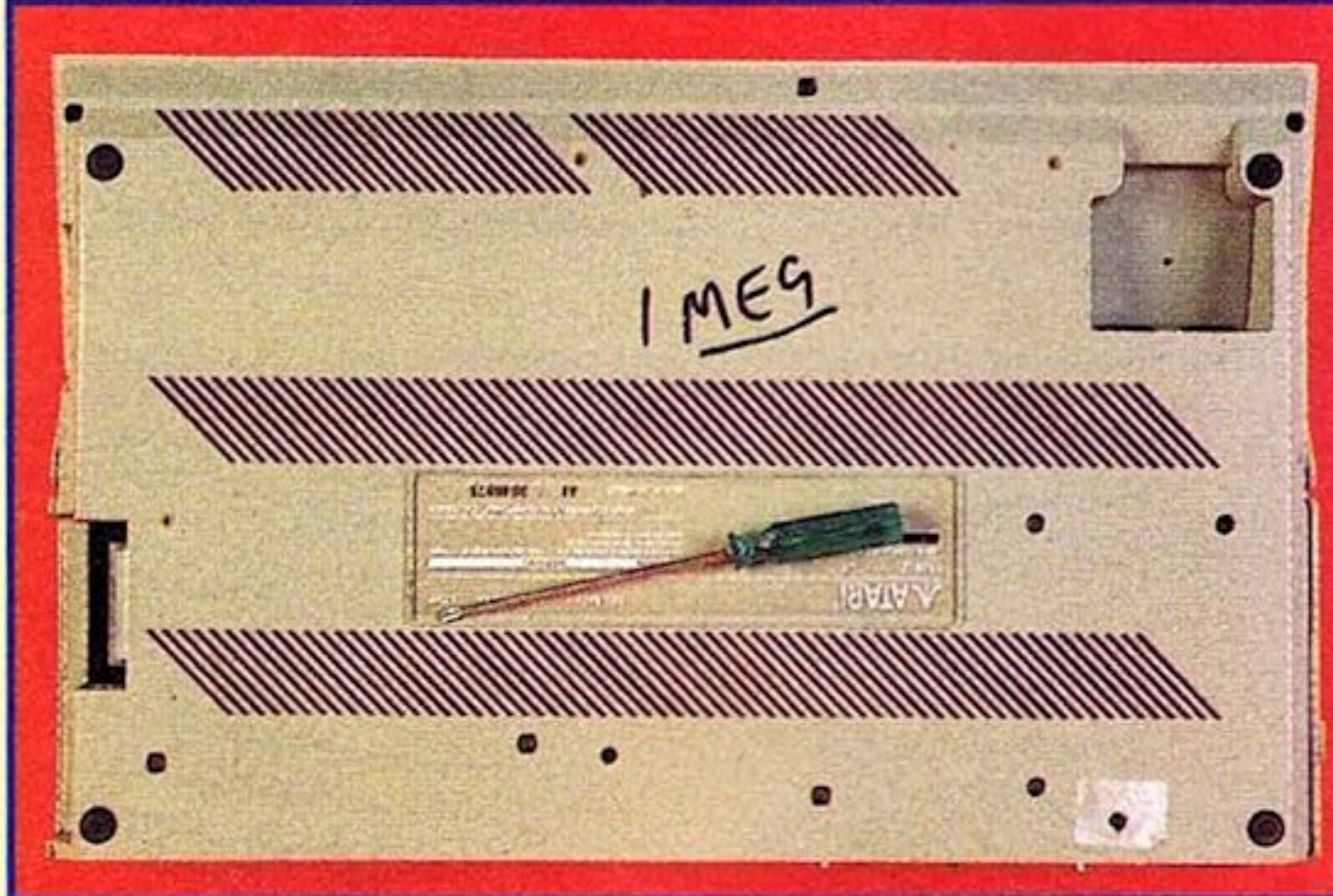


There are several different board layouts for the STFM. This is the Revision F board with part of a memory upgrade installed.



# Stripping down your ST

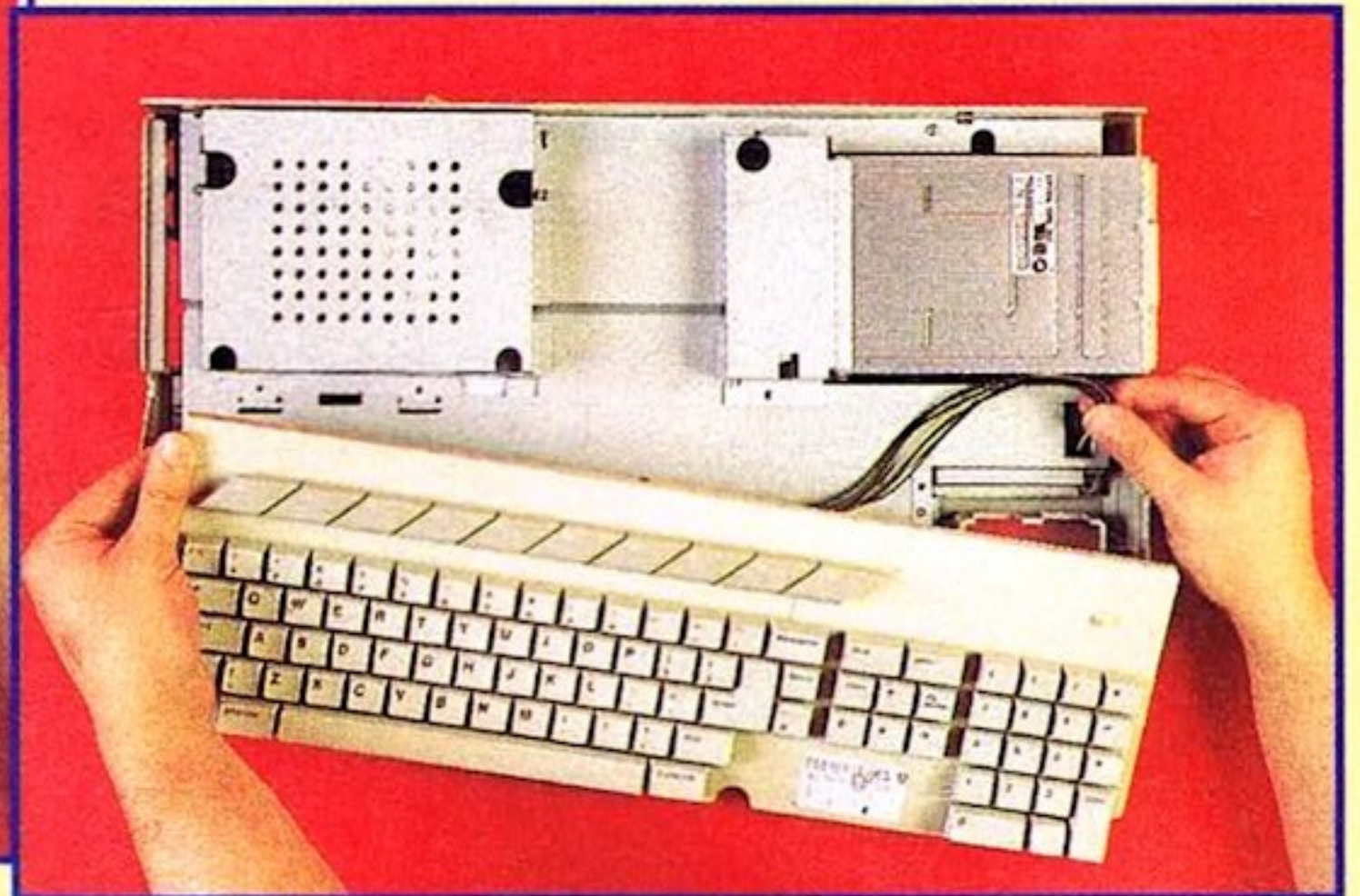
Before you can add anything to your ST – memory, a TOS upgrade, or a floppy drive – you need to get inside it. Fortunately it's pretty easy to reduce your ST to a pile of components... and almost as easy to put it back together again. Follow this step-by-step guide to take yours apart.



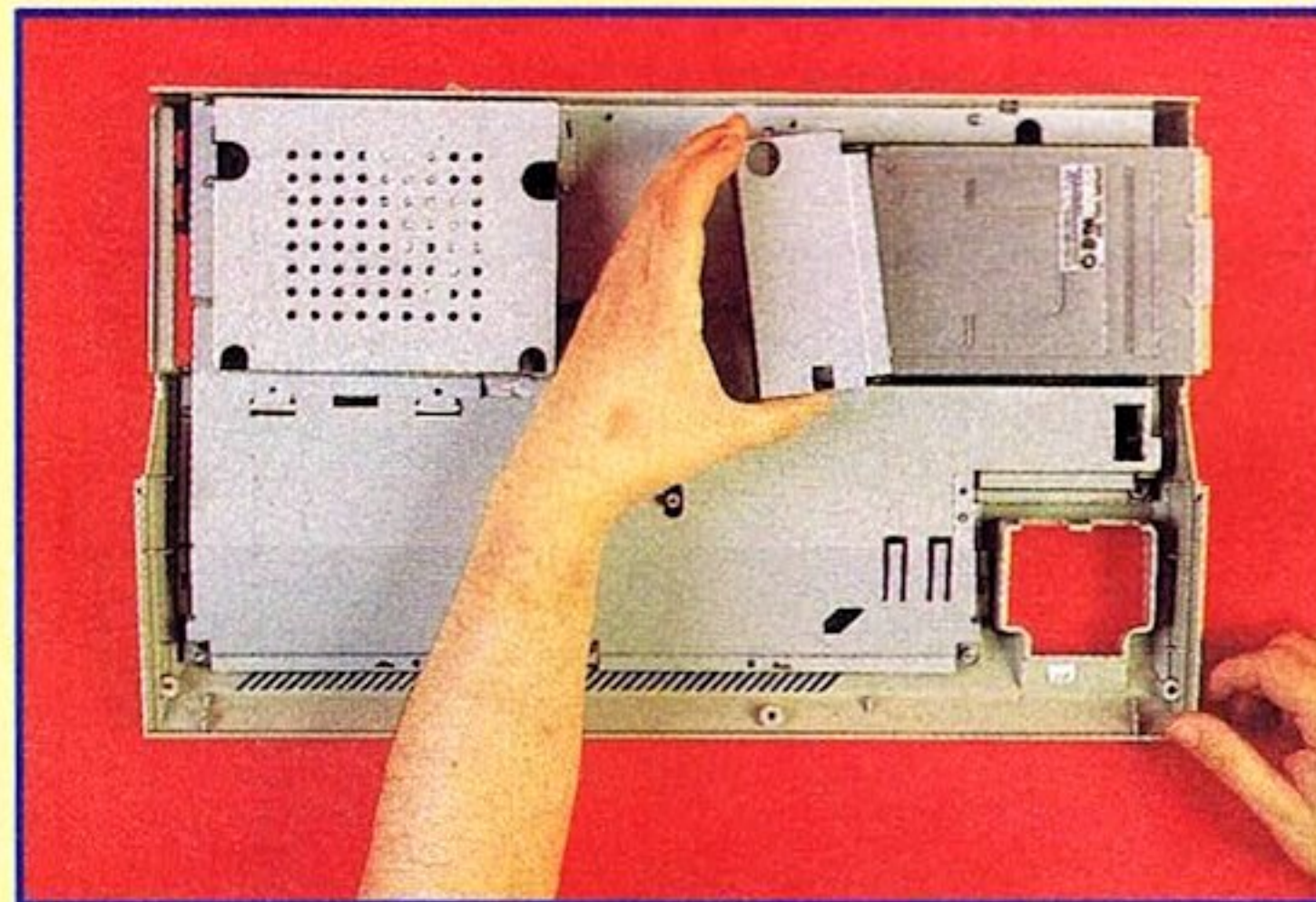
**1** Disconnect all leads and peripherals from your ST and lay it face-down on a flat surface. Locate the seven screws in square holes. These hold the case together and must be removed. There are also three screws in round holes beneath the disk drive. These hold the drive in place and must also be removed.



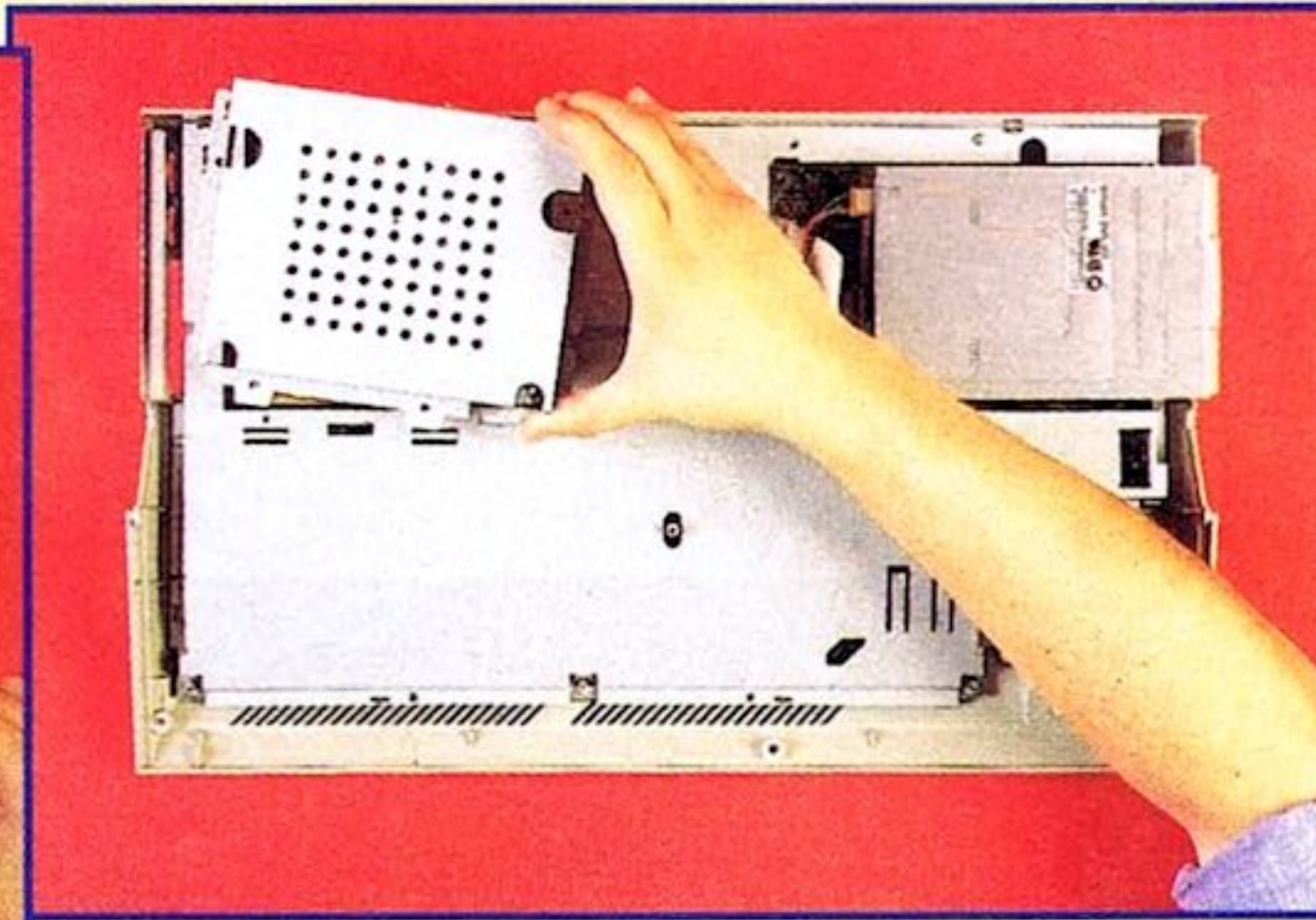
**2** Carefully flip your ST over and place it face-up on the flat surface. Lift the top half of the case and slide it to the right. This disengages the case from the disk drive eject button, which protrudes from the side of the case. Put the case to one side, along with the screws (keep the screws all together on a saucer).



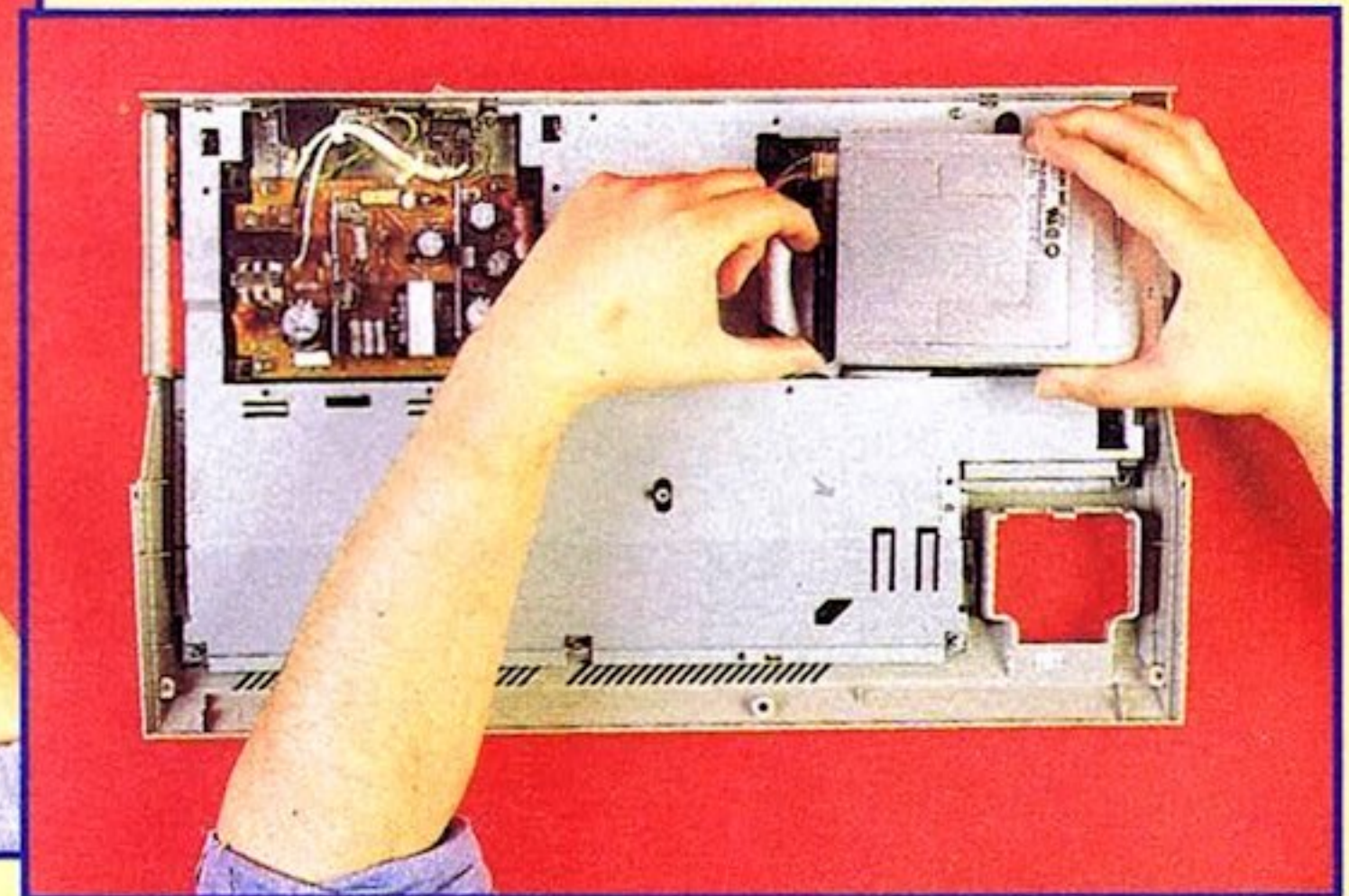
**3** Lift the keyboard from its mountings and locate the data connection cable. It plugs into the base of the ST on the right-hand side of the case, just below the disk drive. Carefully unplug the cable and remove the keyboard from the base of the ST. The keyboard cable only plugs in one way round.



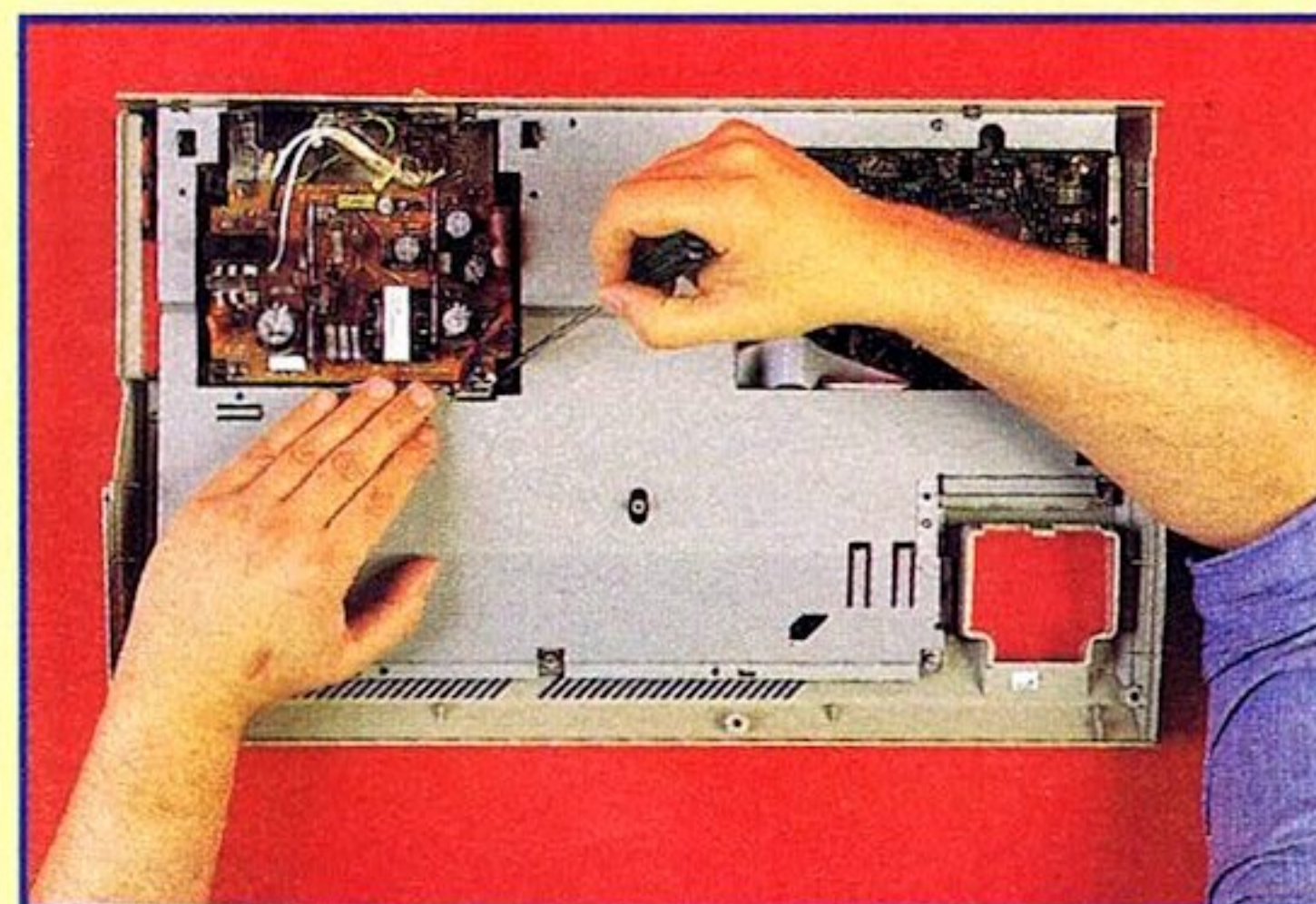
**4** There are two metal screws holding a protective piece of shielding over the disk drive cables. Remove the screws and put them safely to one side. They have to be replaced in the same holes. Remove the shielding over the disk drive cables and put it to one side. This shielding may be left out after some upgrades.



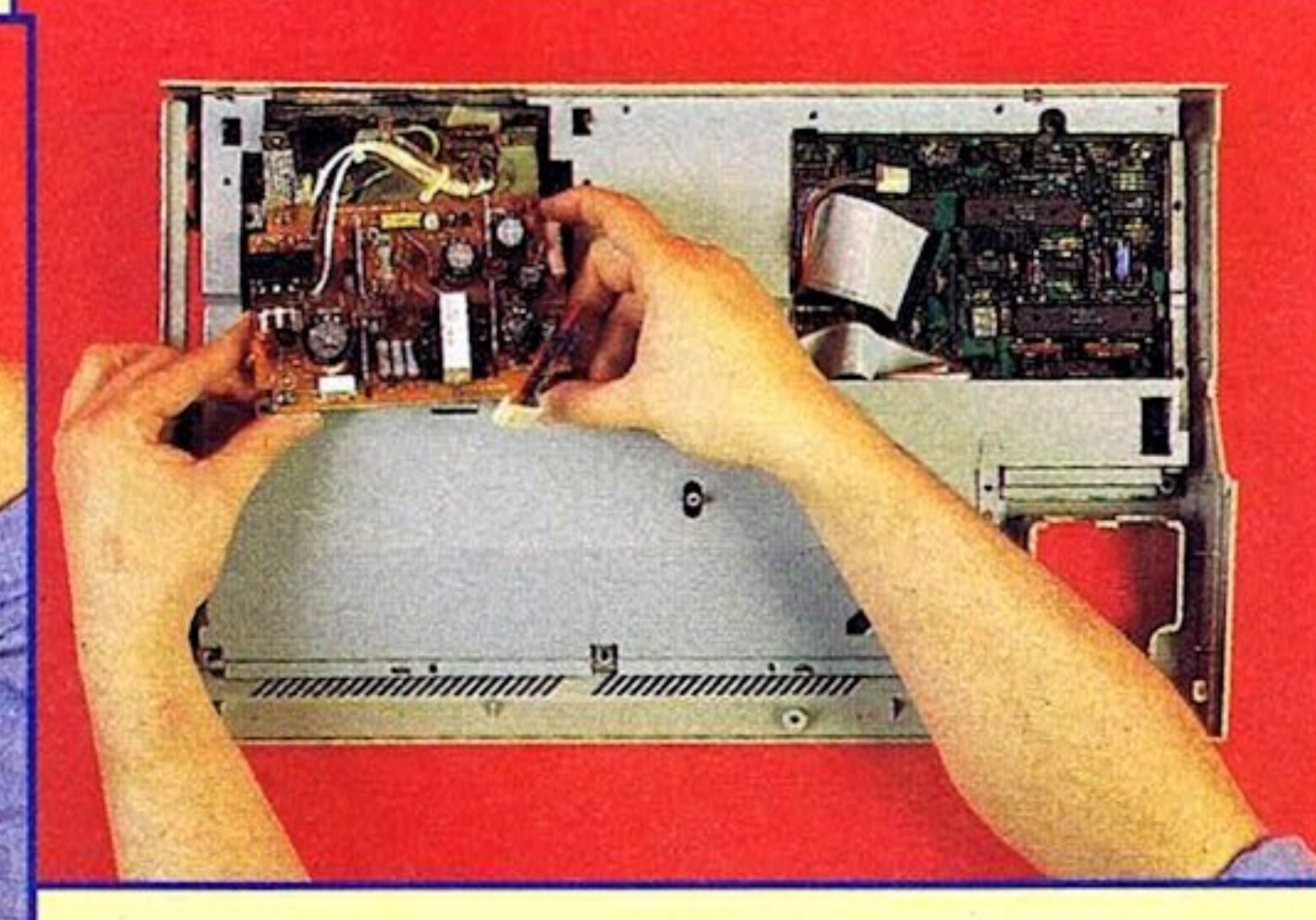
**5** Remove the screws holding the shielding over the power supply unit (PSU) and store them safely. There are also two metal tabs holding the PSU shield down. Twist them straight using a pair of long-nosed pliers. Lift the shield and slide it towards the rear of the ST to disengage the lugs at the front of the PSU.



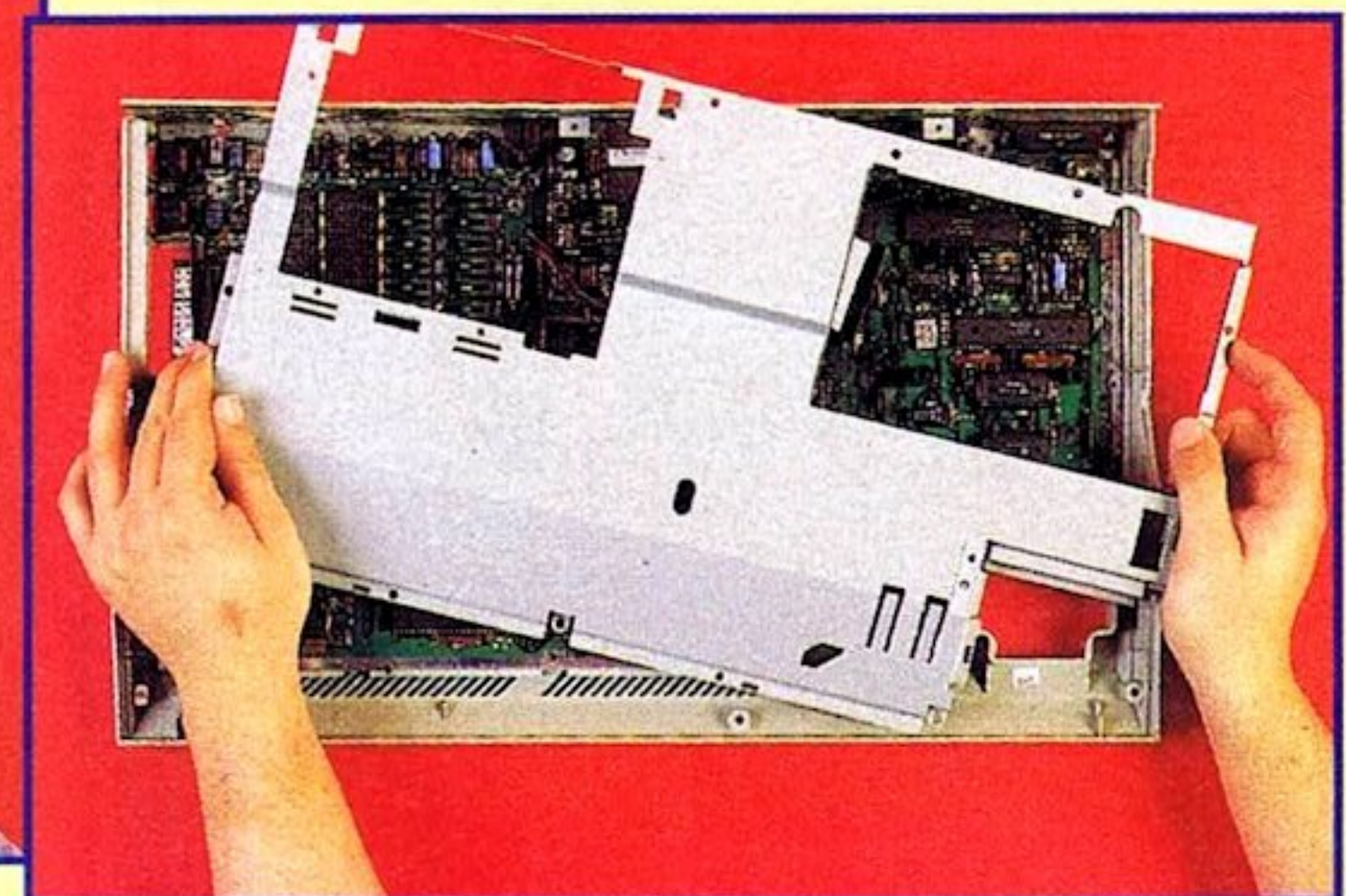
**6** Lift up the disk drive and carefully unplug the ribbon cable. It may be worth noting which way up the cable is so you know how to replace it later, although most drives have guide slots on the socket. Now unplug the small power cable near the back of the drive and remove the drive from the ST.



**7** There are two screws at the front corners of the PSU, holding it to the motherboard. They are on the support legs of the PSU and are the only screws you should remove from the PSU. The other screws on the top of the PSU hold its various components together and must remain in place.



**8** Unplug the power cable at the front of the PSU. Lift the whole unit up and slide it forward to remove it. This is quite tricky – you have to disengage the lugs that slot into the motherboard. Make sure that the main PSU socket and power switch slide forward and out of the holes in the back of the case.



**9** Remove the screws from around the edge of the shielding and note where they go. They must go back in the same holes. There are also metal tabs that must be untwisted before you can remove the shield. Check that you have removed all the screws and tabs before you remove the shield or you could bend it out of shape.





# Memory upgrades

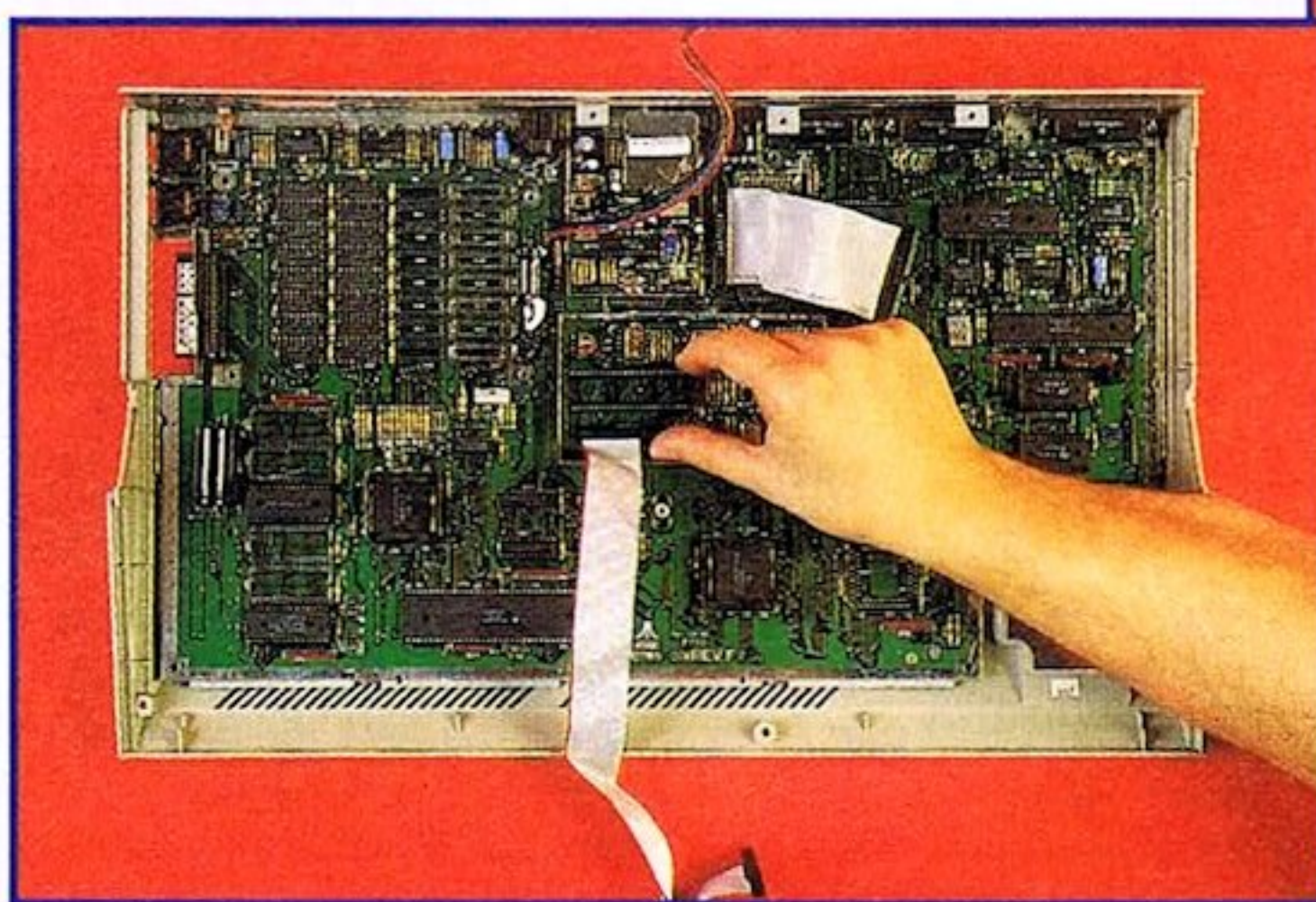
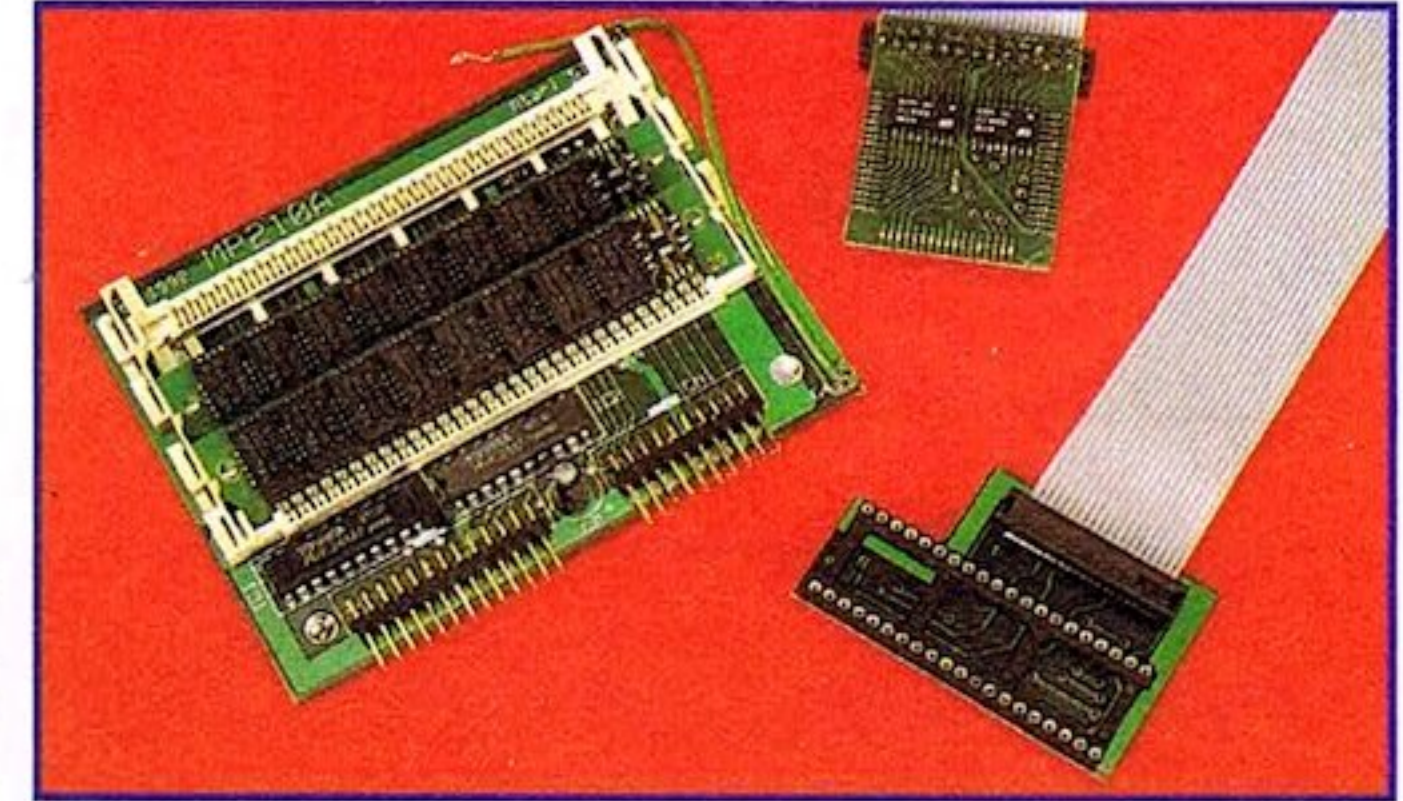
Adding memory is probably the most common, and beneficial, upgrade. The STFMs are harder to upgrade than the STEs, but it's worth the effort.

## STFM MEMORY UPGRADE

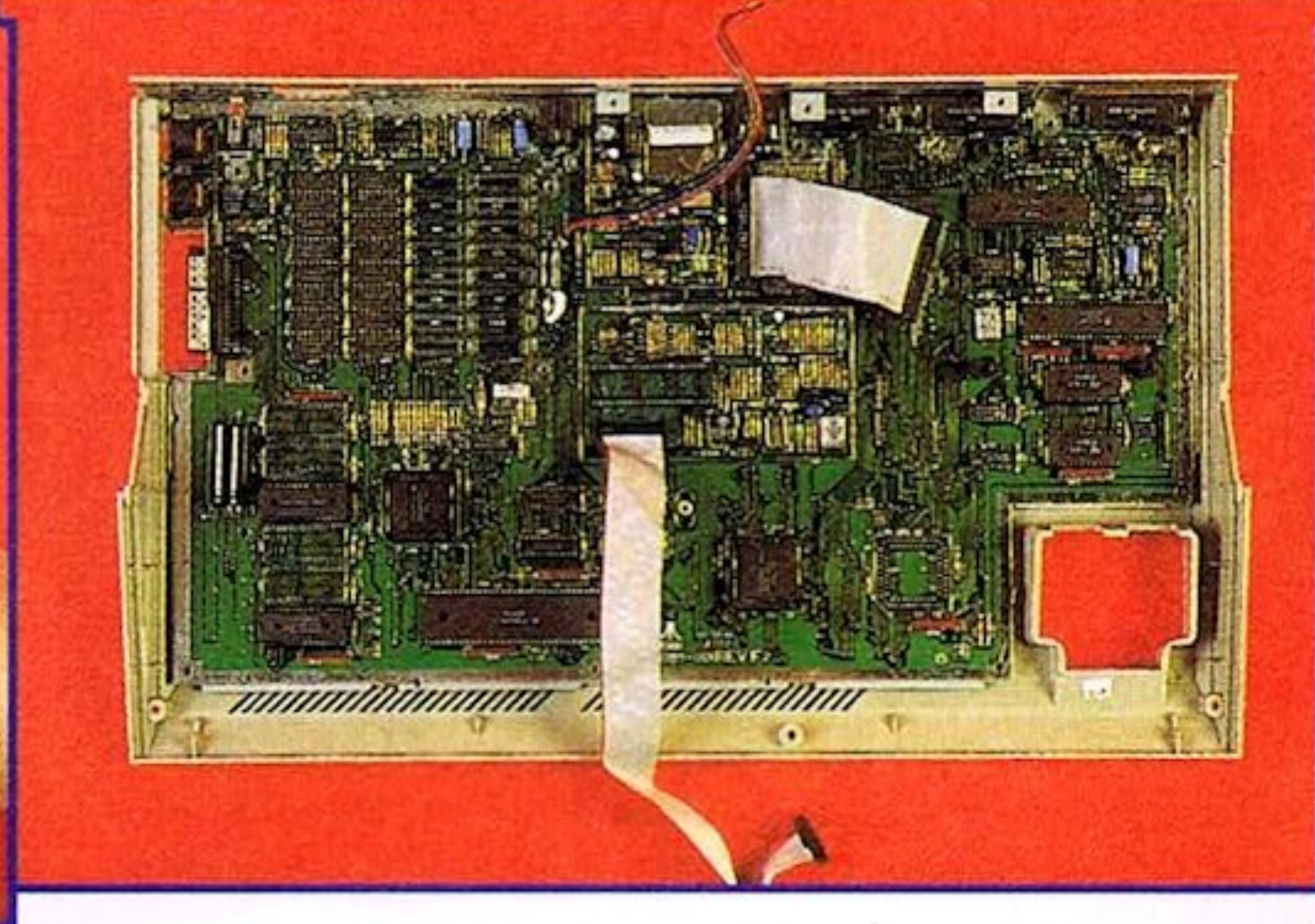
The STFMs can be tricky to upgrade – there's a good chance that at least one component will need to be soldered into place (for advice on soldering, turn to page 47). If you have any doubts at all, have the extra memory added by a professional upgrade service (see box headed 'Join the professionals', below).

Strip down your STFMs to the bare motherboard following the nine steps on page 21, then follow the seven steps below.

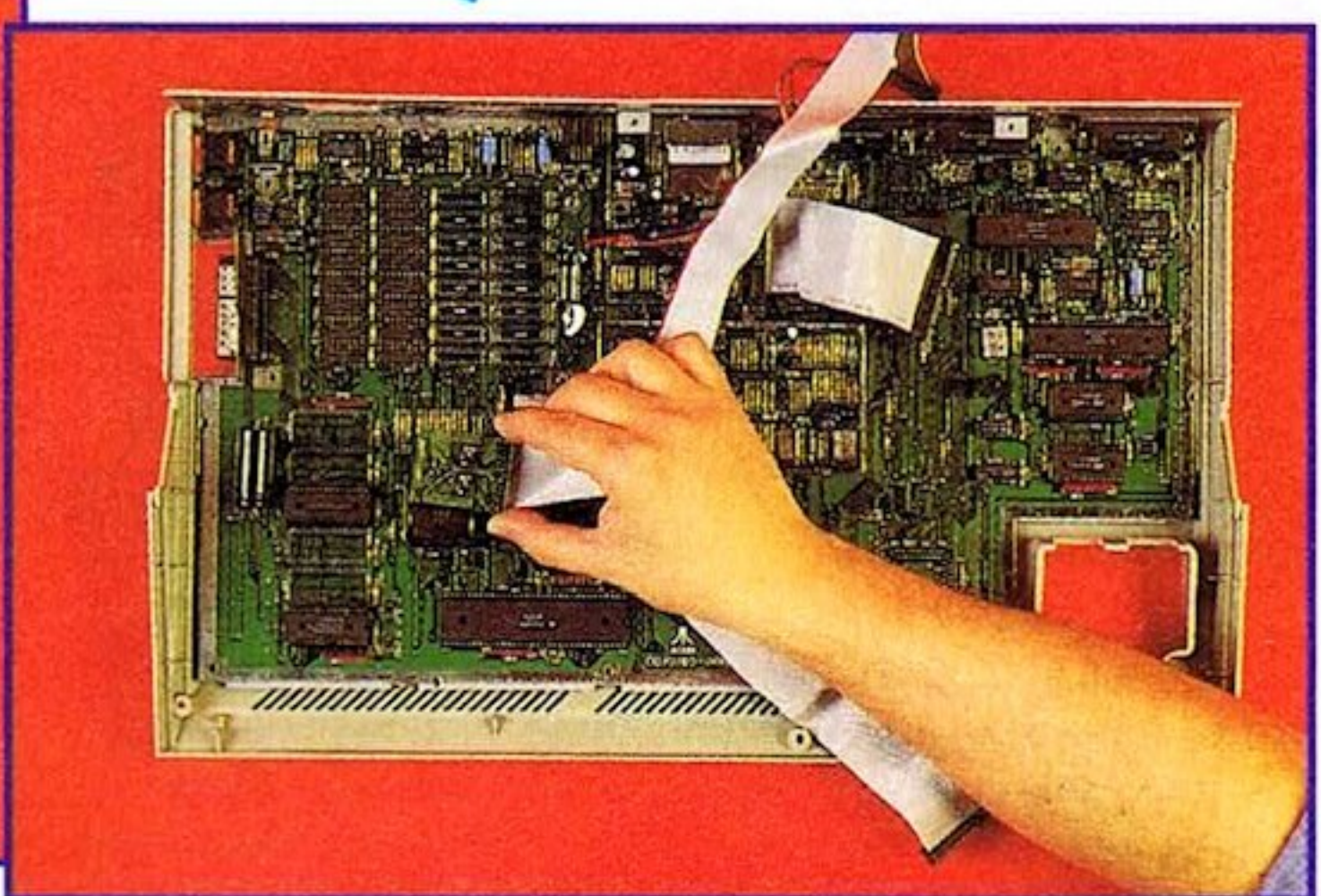
The Marpet Xtra-RAM Deluxe is the easiest way to upgrade your STFMs.



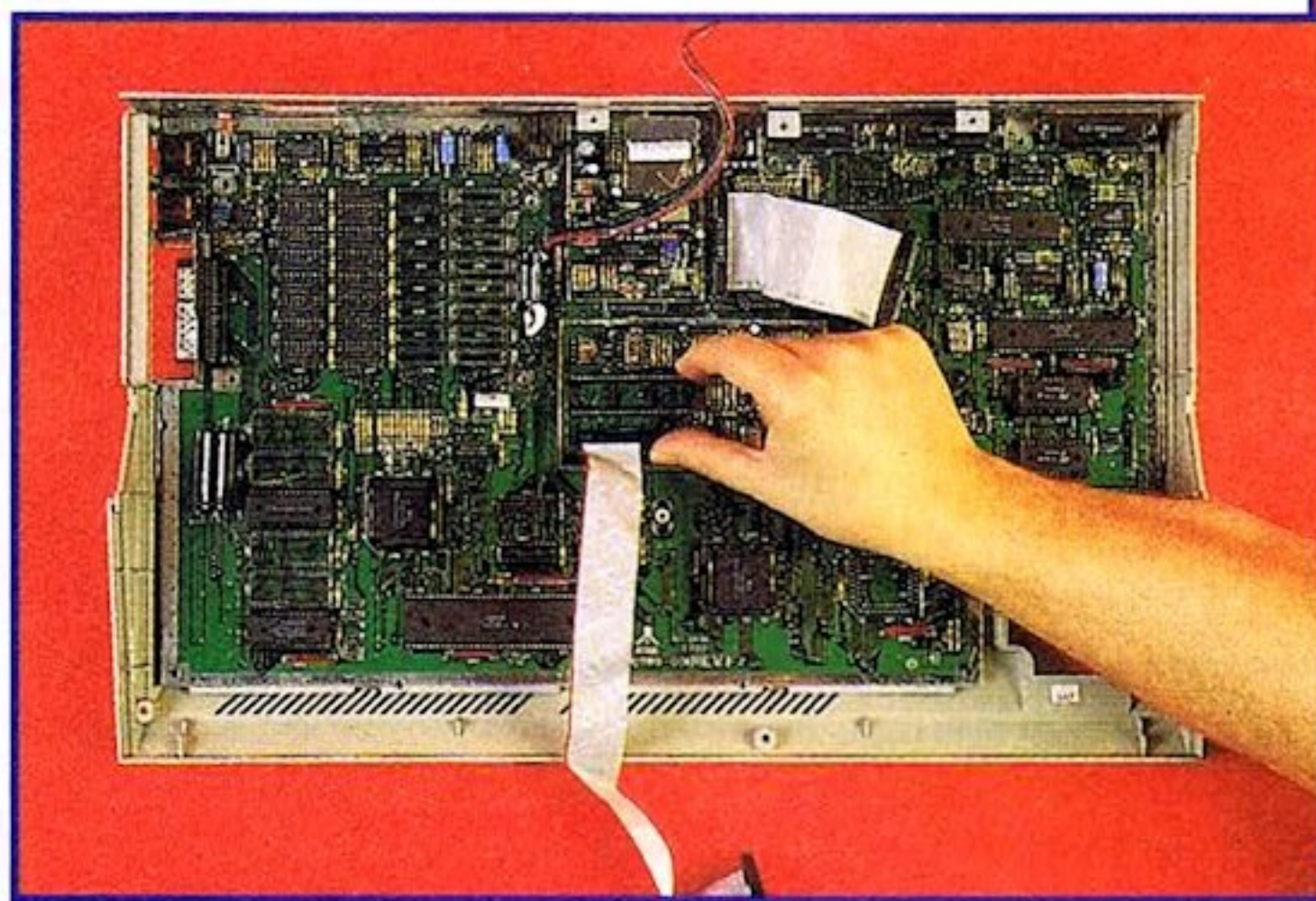
**1** The large silver box in the centre of the motherboard contains the STFMs's video shifter chip. Begin by removing the lid from the box, then get the video shifter adapter from the Xtra-RAM kit.



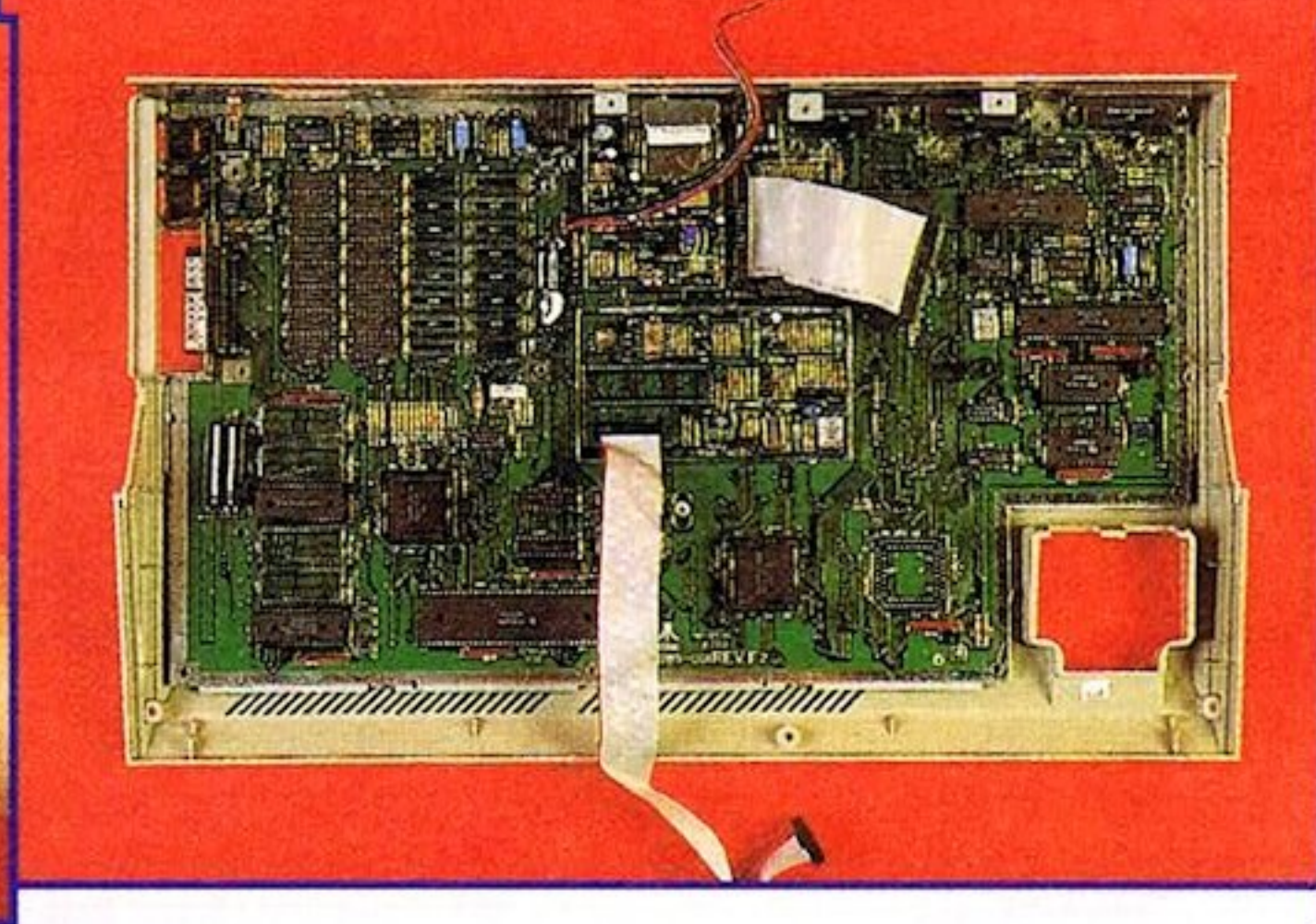
**2** If the video shifter is soldered in, the adapter must be soldered on top. If it's socketed, remove the chip and plug it into the socket on the adapter, then plug the adapter into the empty socket.



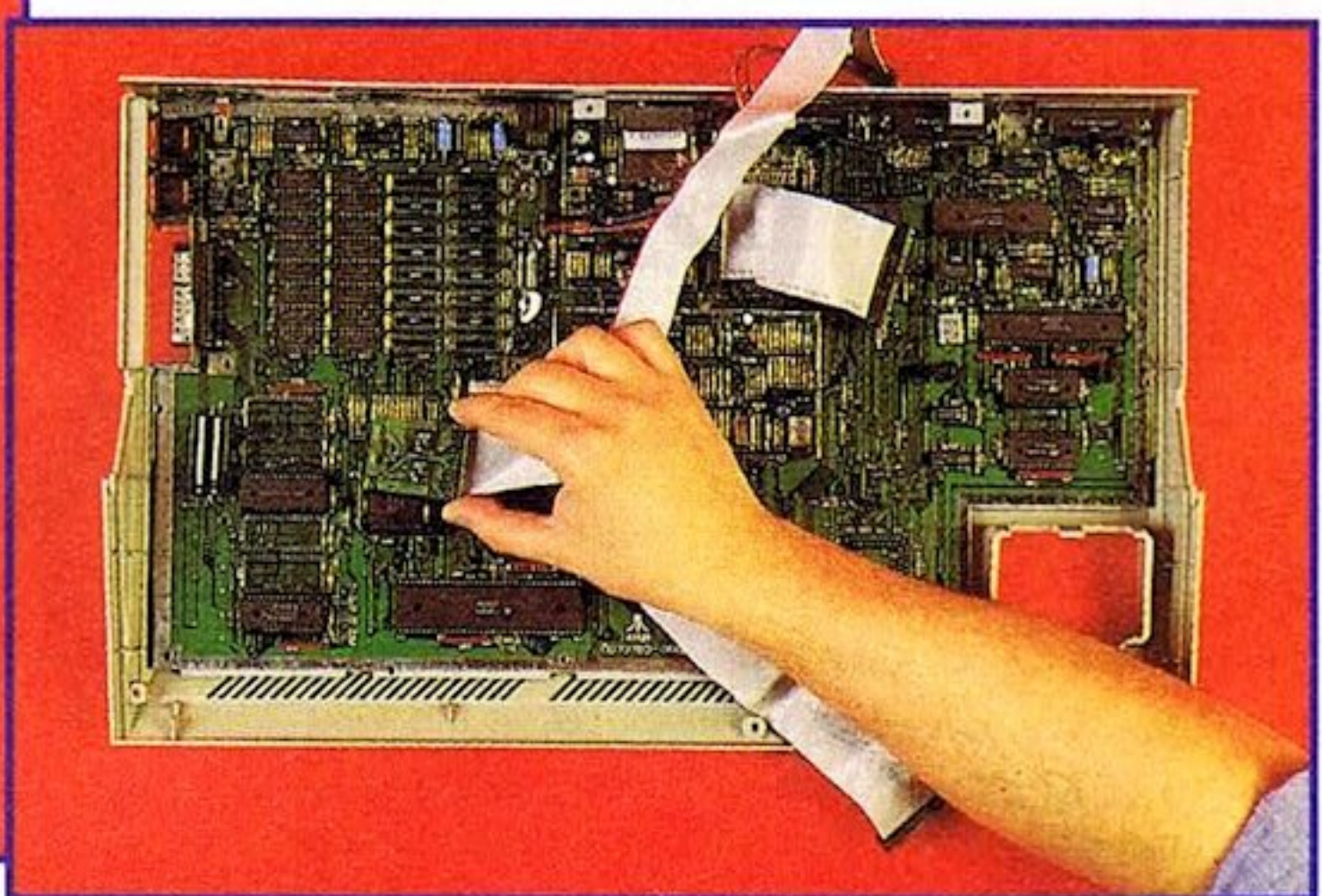
**3** Locate the MMU chip in your STFMs. It's in a different place on each type of STFMs, but the Xtra-RAM kit contains full instructions for finding it. On our test machine, it's here at the bottom left.



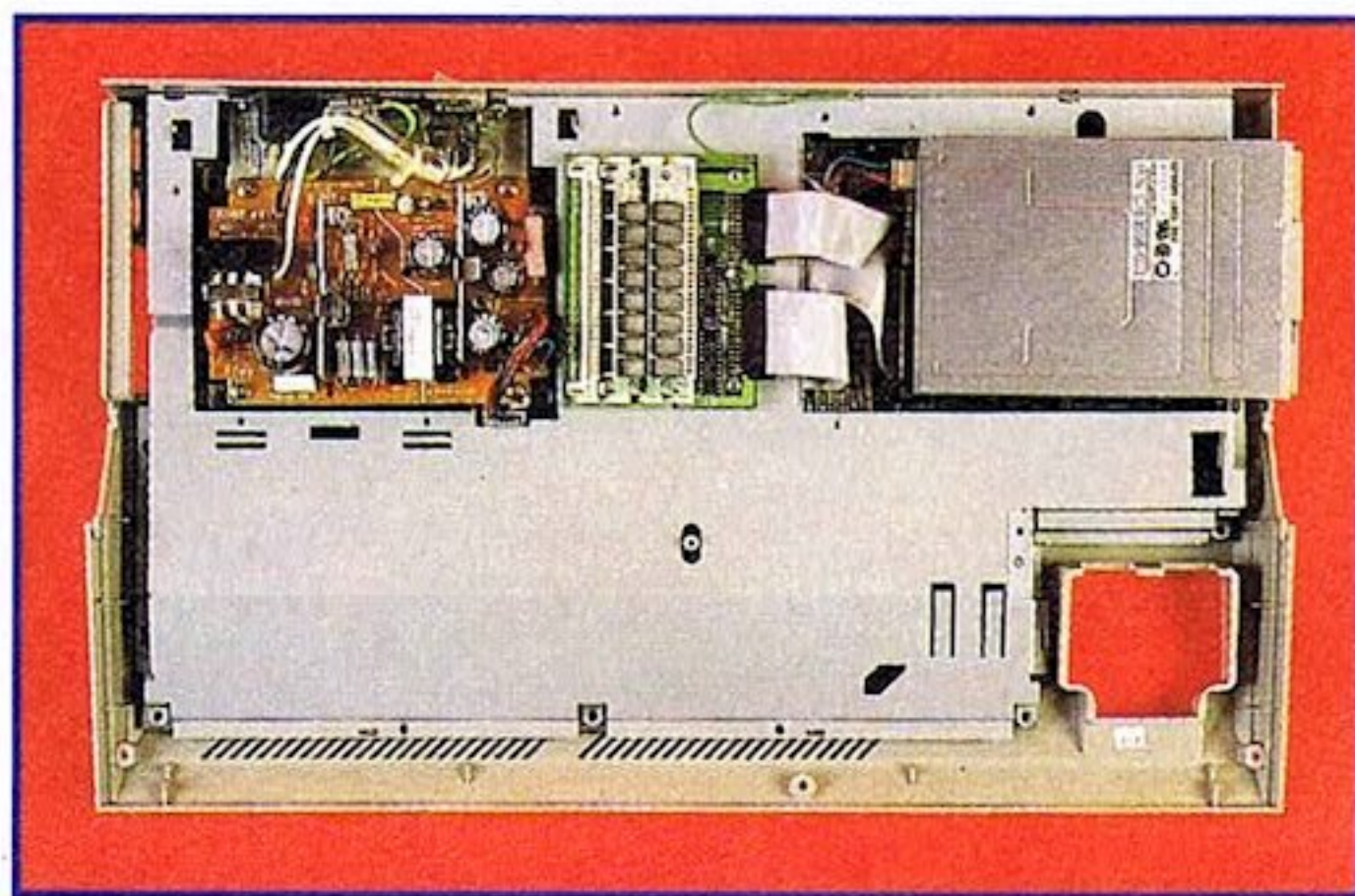
**4** Fix the MMU (Memory Management Unit) adapter over the MMU chip. In almost every STFMs you can clip it into place. It takes a lot of pressure to fix it on to the MMU, but be careful you don't bend the legs.



**5** Fold the ribbon cables from the two adapters so that they run tidily to the area near the disk drive ribbon cable. Also check to make sure that the cables can't get trapped when you replace the shield.



**6** Replace the shield and thread the two ribbon cables out through the disk drive hole. Get the main Xtra-RAM board and plug the ribbon cables into it. Use sticky tabs to fix the board to the top of the shield.



**7** Replace the PSU and disk drive. Connect the small, green cable running from the memory board to the shield of the STFMs with one of the screws used to fix the disk drive shield. Check the memory using the supplied software. If it's okay, rebuild your STFMs.

## JOIN THE PROFESSIONALS

There are several suppliers who can upgrade your STFMs for you. Here's a comparison of their upgrade service and costs. All prices shown here include the memory upgrade itself, installation and return courier service (which is well worth the cost). You can also get the boards and fit them yourself – call for details.

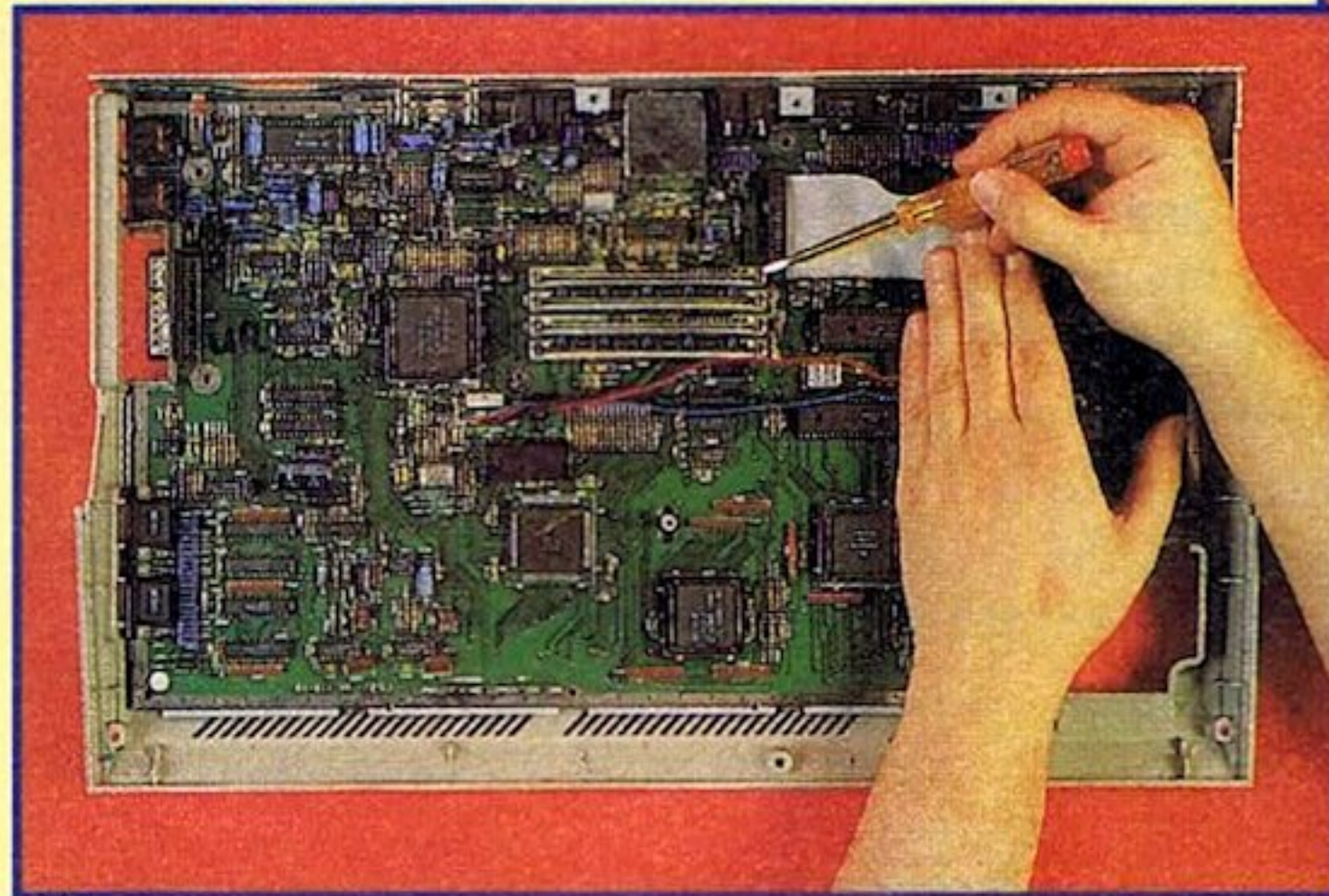
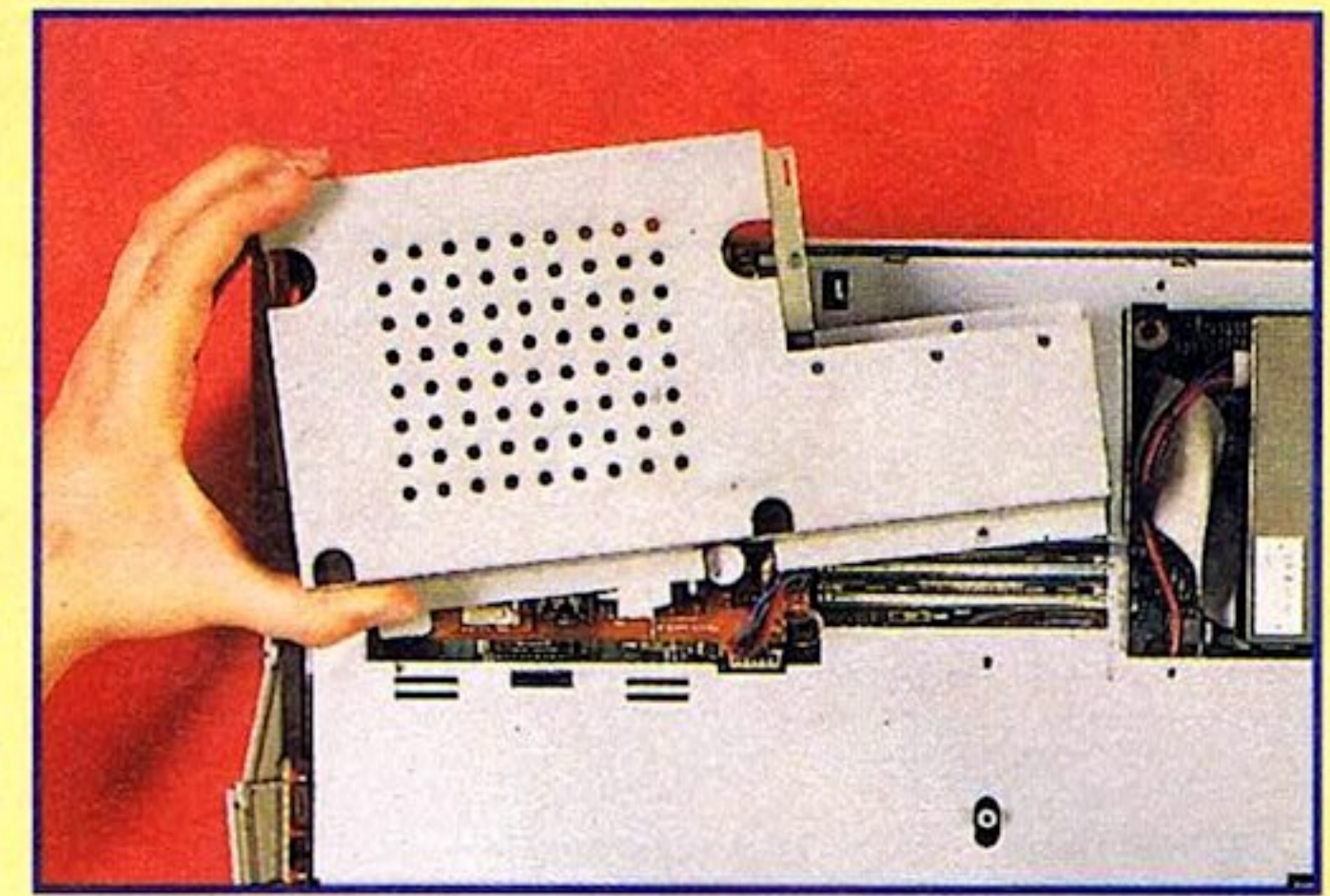
Company	Contact	1Mb	2Mb	4Mb	Time
1st Computer Centre	☎ 0113 231 9444	£85.99	£125.99	£165.99	5-7 days
Analogic Computing	☎ 0181 546 9575	£67.00	£109.10	£149.05	3 days
Compo Software	☎ 01487 773582	£65.00	£90.00	£130.00	1 day (book in)
Ladbroke Computing	☎ 01772 203166	£59.99	£94.99	£134.99	6 days
Marpet Developments	☎ 01423 712600	£51.78	£92.90	£139.90	3 days
The Upgrade Shop	☎ 01625 503448	£61.99	£98.99	£138.99	4 days
System Solutions	☎ 01753 832212	£79.95	£129.95	£189.95	5-10 days



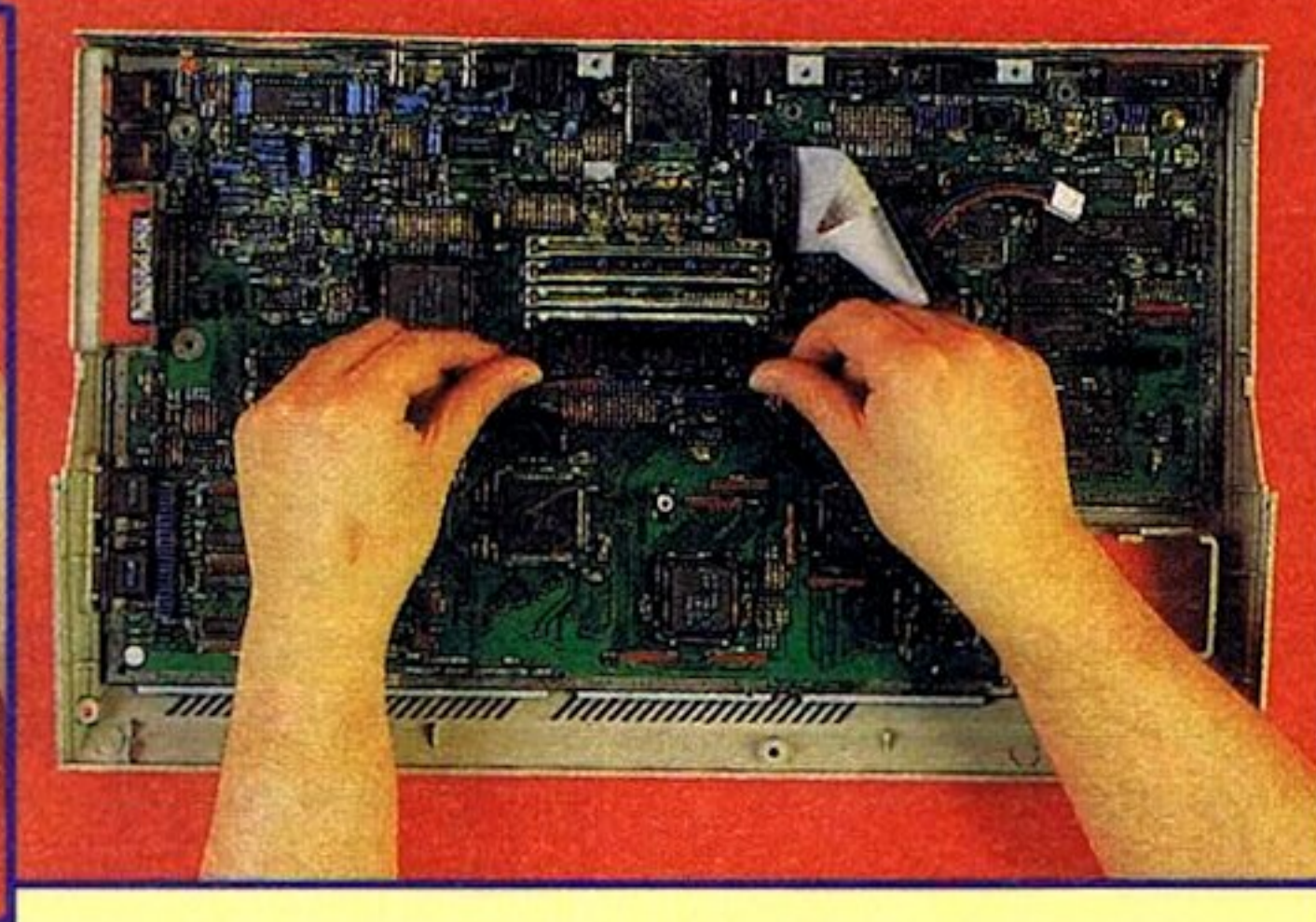
## STE MEMORY UPGRADE

Upgrading the STE's memory is simple. To upgrade a 512K STE to 1MByte, dismantle the machine following steps one and two described on page 21. On the STE the PSU (Power Supply Unit) shielding is L-shaped and also covers the SIMM memory slots. Remove the PSU shielding and you can access the SIMM sockets to add or remove SIMMs. You don't really need to completely strip down your STE as shown here, but we've removed all the shielding to make it easier for you to see exactly what's going on.

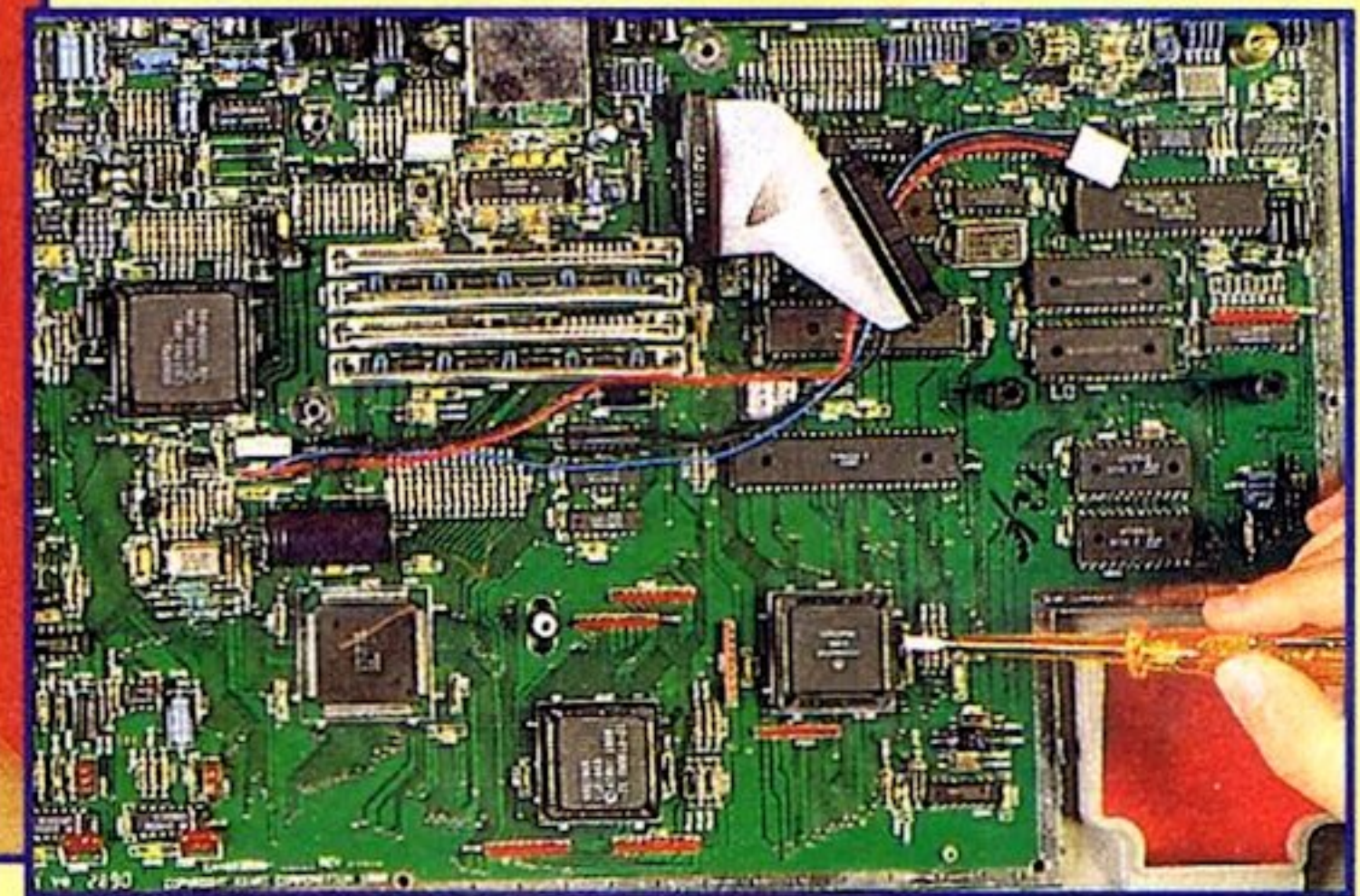
Here you can see the L-shaped PSU shield being removed from an STE to reveal the SIMM sockets.



**1** These are the SIMMs, in their slots on the motherboard. There are four slots, arranged in two banks of two. Counting from the back of the STE's case, bank 0 is the first and third sockets, bank 1 is the second and fourth sockets. A 512K STE has 256K SIMMs in bank 0 and a 1MByte STE has 256K SIMMs in all four sockets.



**2** SIMM boards are easy to install into their sockets. They only fit in place one way round, with the chips facing the rear of the STE. With the SIMM angled towards you, and the edge connector facing away, gently insert it into the slot. Now gently tilt the SIMM until it is upright and clicks into place.



**3** Once the SIMMs are in position, check that they are firmly in place. If you are very careful, you can test the STE before reassembling it. Replace the keyboard and the PSU shielding and boot the STE. Use the test software supplied with the upgrade to check it's working. If it's okay, reassemble your STE.

# WIN A MEMORY UPGRADE!

We've got ten Marpet 512K Xtra-RAM Deluxe boards to give away, courtesy of Marpet Developments. All you've got to do to be in with a chance of winning one is correctly answer the three questions below.

- 1 What's the maximum memory you can fit in an STFM?
- 2 Which version of TOS supports high density drives?
- 3 What do the initials PSU stand for?

Of course, even if you don't win, you can still get hold of one of these quality upgrades – and now, for the first time, you can get it direct from the folks at Marpet themselves, so there's no middle man to take his cut. The 512K Xtra-RAM Deluxe board costs just £27.03 (inc VAT) if you buy it direct from Marpet.

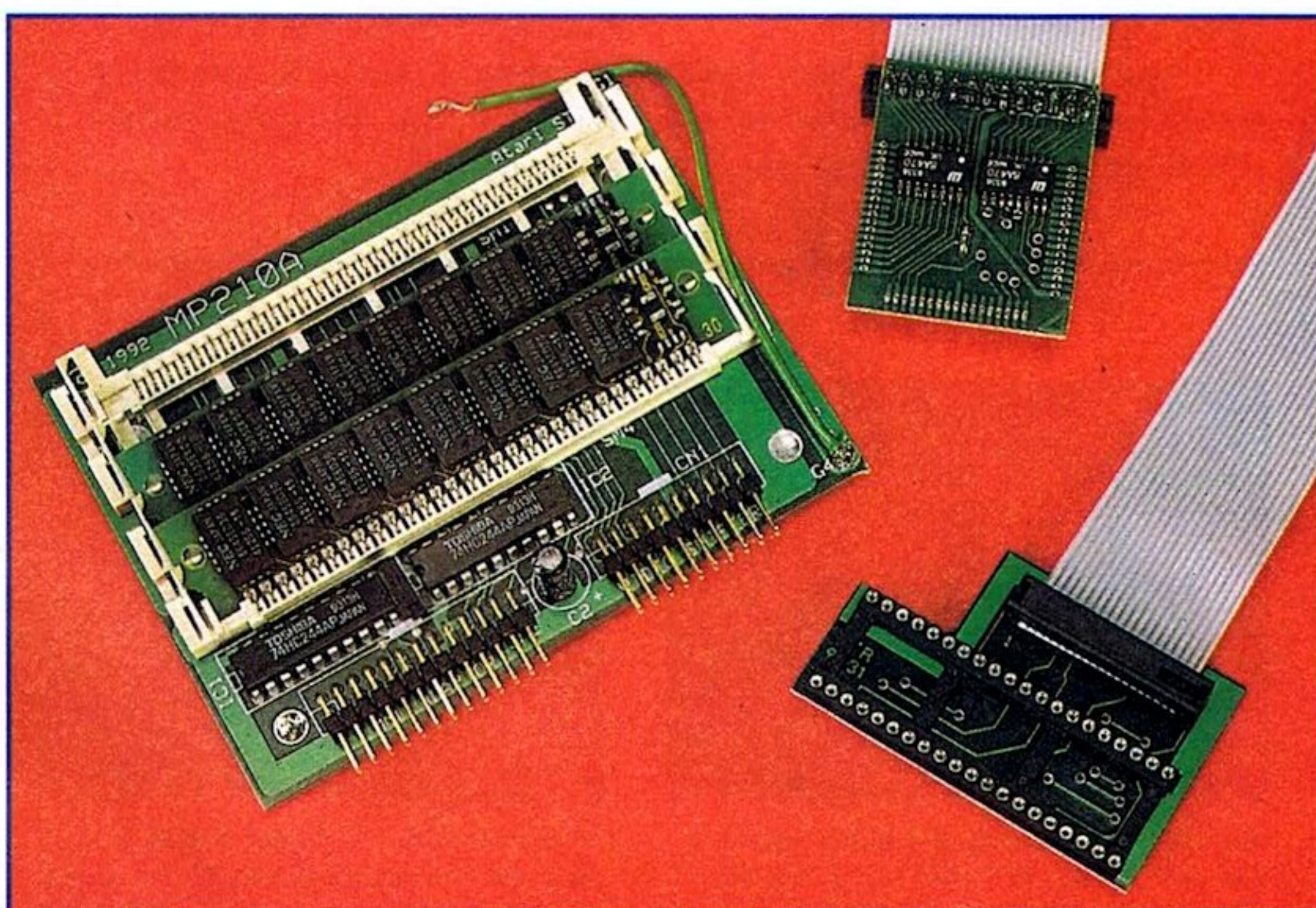
The benefits of upgrading your machine to 1MByte are obvious – suddenly you can take advantage of a host of serious applications and addictive games.

If you'd like to know more about Marpet's excellent upgrades and

fitting service, give them a call on ☎ 01423 712600 – oh, and don't forget to tell them who sent you.

### Competition address and rules

Send your answers on a postcard to 'Gimme a Marpet MByte', ST FORMAT, 30 Monmouth Street, Bath, Avon BA1 2BW. The closing date is Tuesday 13 June. Employees of Future Publishing and Marpet Developments are not eligible to enter, and the editor's decision is final.



Has your STFM only got 512K RAM? Do you fancy upgrading it to a full 1MByte so you can run serious applications and mind-blowingly good games? Well, answer the competition questions above and we may just bung you one for free!





# TOS 2.06 upgrades

Since the Mega STE appeared in 1991, one of the best upgrades you can do is an upgrade to TOS 2.06.

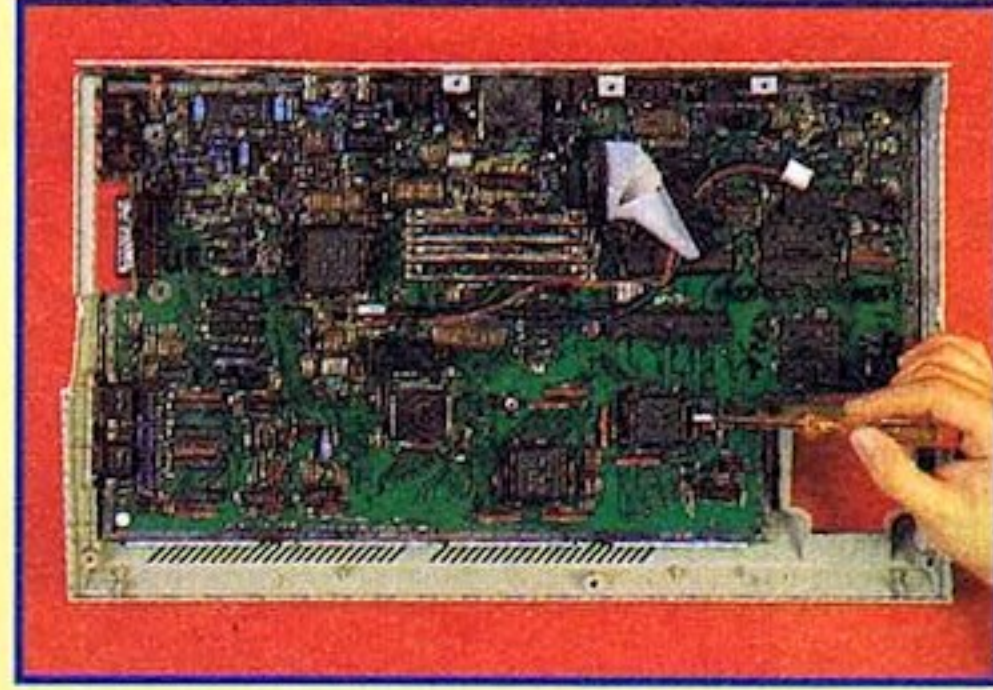
In most cases the upgrade enables you to switch between two different versions of TOS inside your ST. This means you can still use any of your old software that doesn't work correctly with the new version of the operating system.

There are several different upgrades for both the STFM and the STE, and each supplier offers a fitting service for the less confident upgrader. Compo Software (☎ 01487 773582) supply the

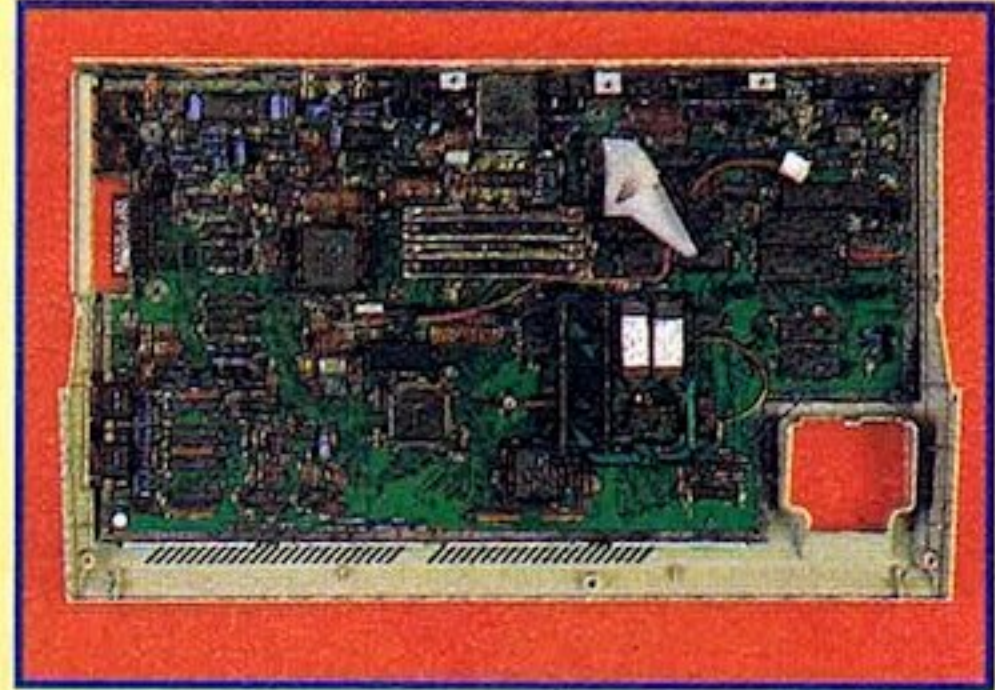
T-Board 64 (£54) for the STFM and the T-Board 68 (£54) for the STE. Both need a degree of soldering to install and use software to switch between TOS versions. Compo is currently working on solderless STE board that uses a hardware switch to swap between TOS versions – call for details.

Analogic Computing (☎ 0181 546 9575) developed the Amitar TOS Switcher for the STE and STFM. Both versions are solderless and quite simple to install,

### STE TOS UPGRADE



The T-Board 68 fits over the 68000 processor. Unlike the STFM, the 68000 in the STE is square and sits in a socket.



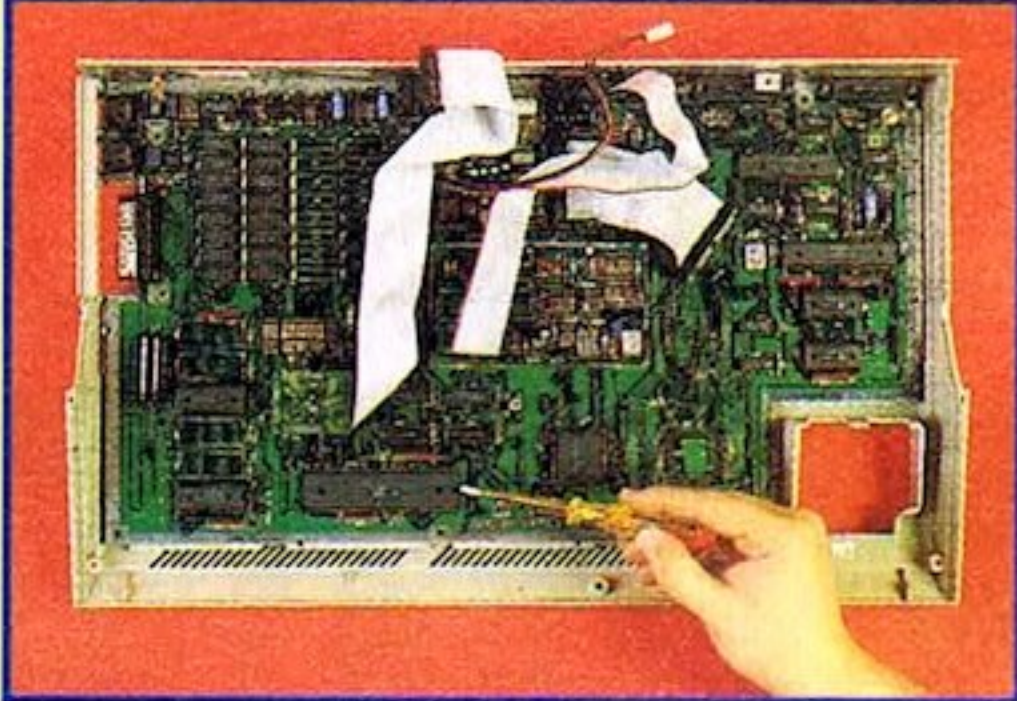
The T-Board 68 clips over the top of the 68000. Two cables are soldered to the legs of one of the original chips.

and both use a hardware switch to change between TOS versions. The boards cost £59.95 each.

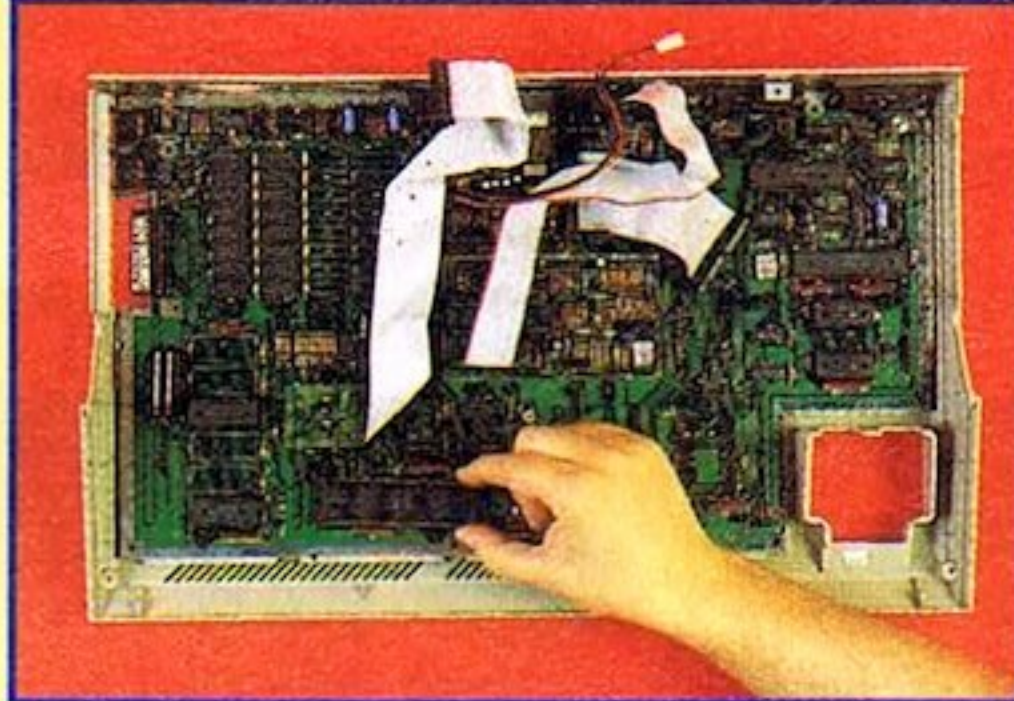
The Upgrade Shop (☎ 01625 503448) also supply a solderless

TOS Switcher for the STE for £49, and a kit for the STFM for £59. The STFM kit needs some soldering and, as we discovered last month, it can be quite tricky to fit.

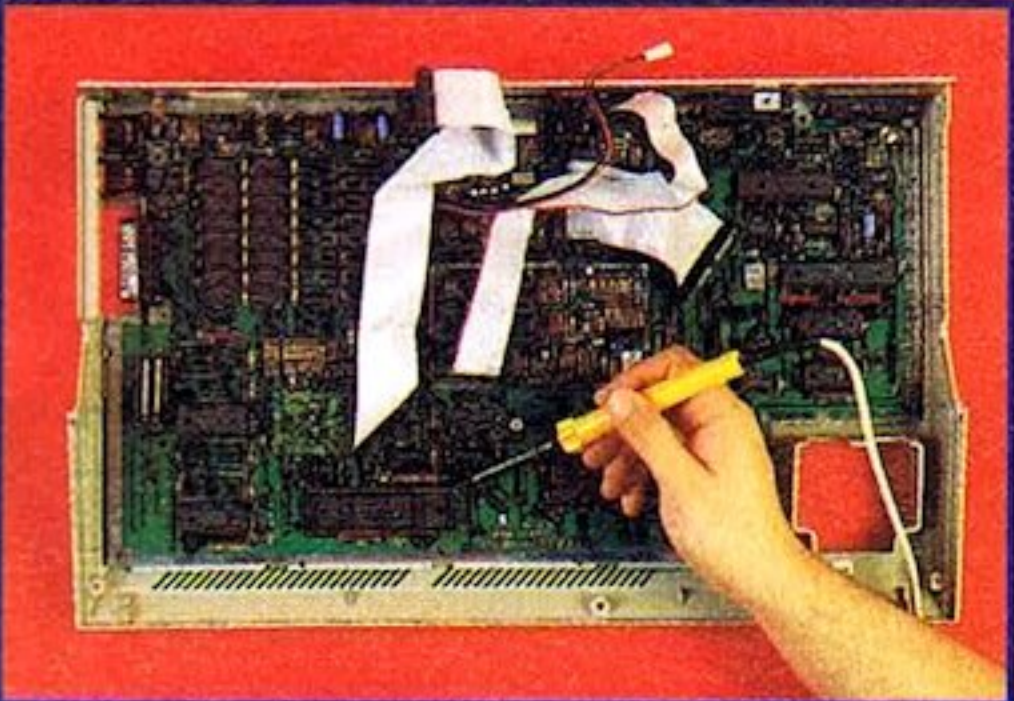
### STFM TOS UPGRADE



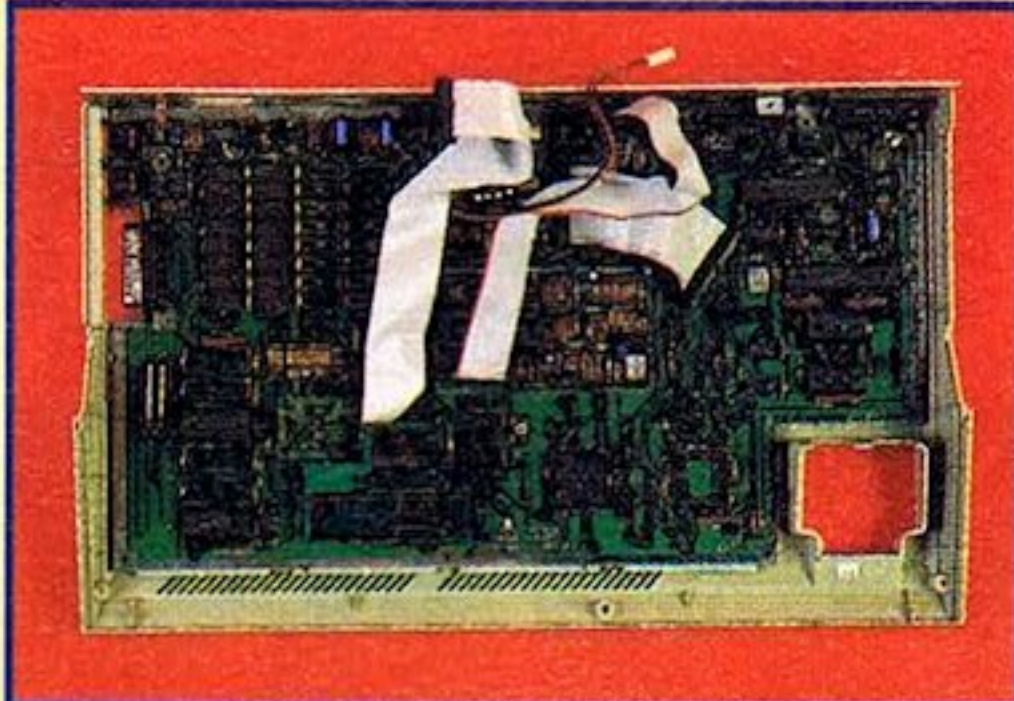
The T-Board 64 fits over the STFM's 68000 processor – the long chip, usually found near the front of the motherboard.



The 68000 chip is usually fixed in place, so you'll need to mount a socket on top of it, making sure all the legs line up.



Solder each leg of the socket to each leg of the 68000 chip. The chip's sensitive, so be as quick and careful as poss.



Once the socket's in place, the T-Board can be plugged in. You may have to cut a hole in the shield before you replace it.

# High density floppy drive

A high density floppy drive enables you to use 1.44Mbyte disks.

An excellent upgrade for any ST is the addition of a high density (HD) floppy drive. This upgrade is a good com-

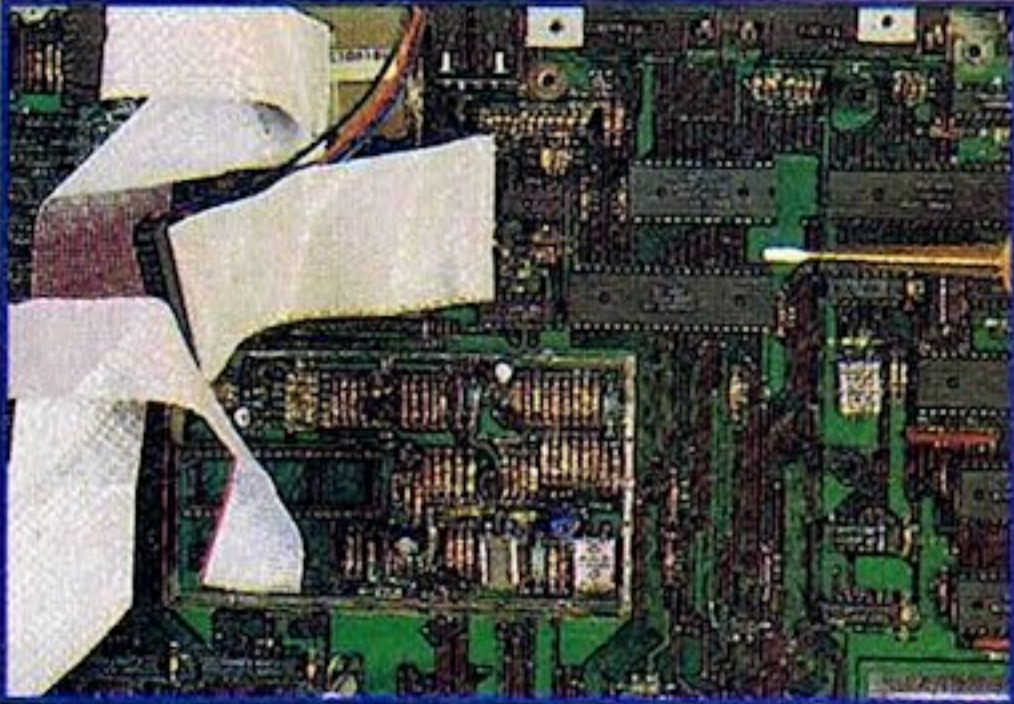
panion to the TOS upgrade, because TOS 2.06 supports HD drives. You will still be able to read normal 720K disks.

Analogic Computing (☎ 0181 546 9575) can supply you with its high density drive kit for £59.95. The Upgrade Shop (☎ 01625 503448) kit costs £58.

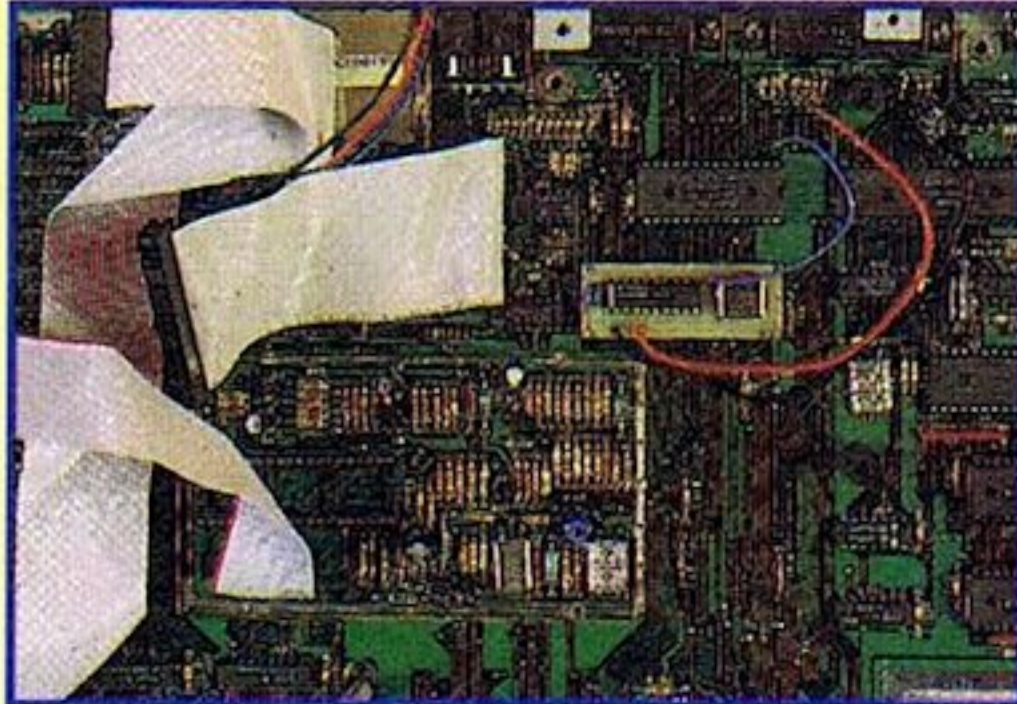
You can only add a high density drive kit to your ST if the WD-1772 floppy drive controller chip

has the number 02-02 on it. If there is any other number on the chip, you will have to send your ST off to have the upgrade fitted. Both Analogic Computing and The Upgrade Shop can replace the WD-1772 chip when they install the upgrade.

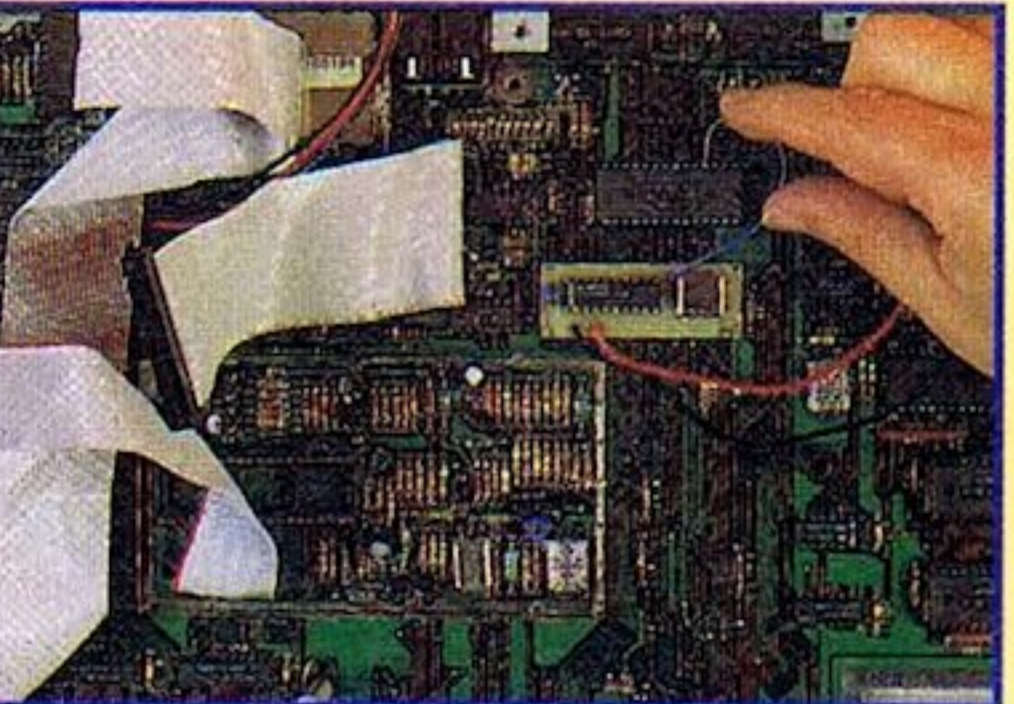
### HIGH DENSITY FLOPPY DRIVE



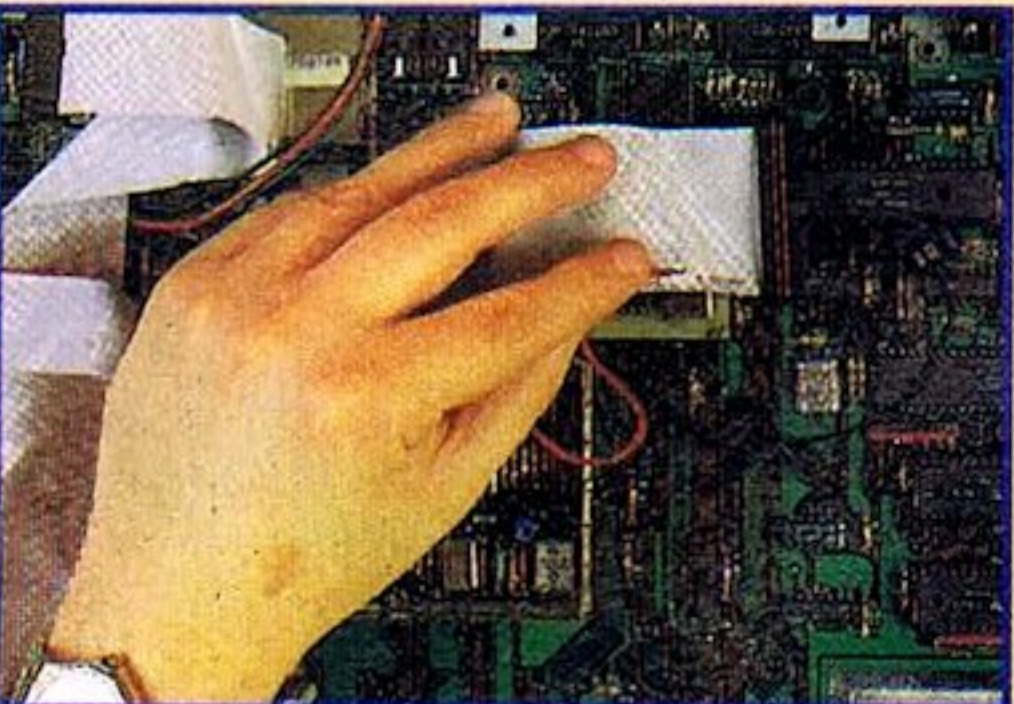
The HD module fits over the Yamaha sound controller chip. The WD-1772 controller chip is the smaller chip just above.



The high density module is soldered into place over the Yamaha sound chip. Make sure it's the right way around.



Cut the leg providing the clock signal to the drive controller, and solder the blue wire of the HD module to the leg.



To provide the HD detect signal, a wire must be connected to the ribbon cable, or the HD detect connection of the drive.



# Replacement components

**STs are normally very reliable, but as time goes by you may have to replace some components.**

**A**lthough most STs are amazingly reliable and never have any problems at all, there are many bits and pieces inside that can fail. In most cases the problem needs to be fixed by a specialist repair service, especially if the problem involves surface mounted (soldered) components. However, there are a few things you can replace yourself.

If your disk drive fails, don't bother trying to get it fixed. It's

cheaper to buy a new drive and replace it yourself. Note that if your new floppy drive has a different-shaped eject button than the old one, you may need to cut the top half of the case. Some companies can supply replacement Atari drives with the correct shaped disk eject button. Ask when you order.

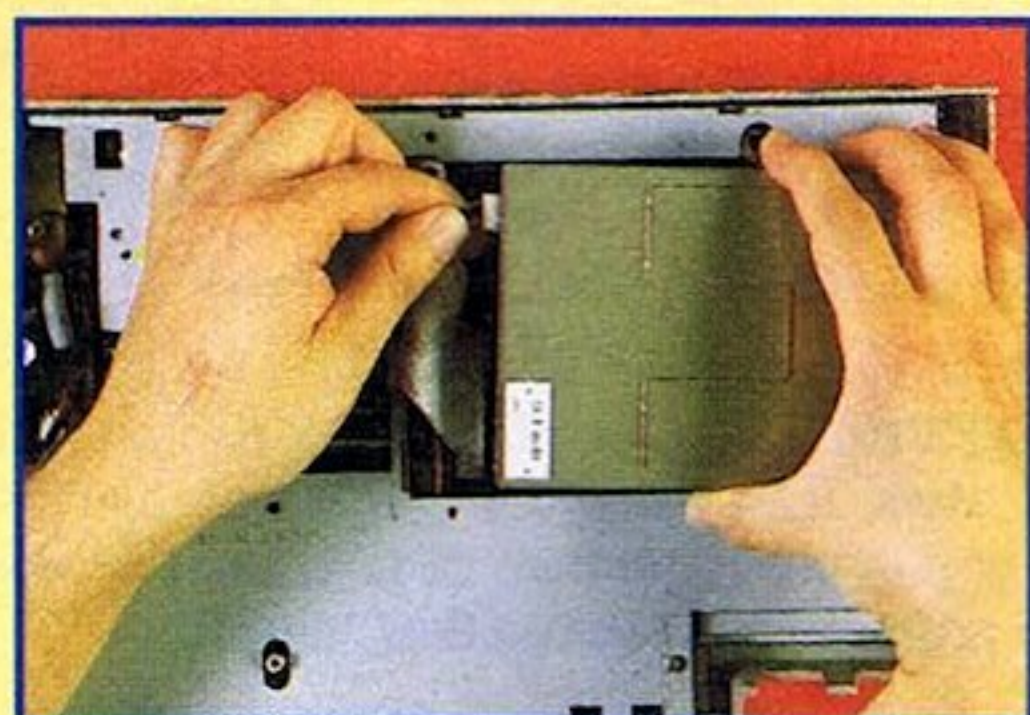
You can get replacement disk drives from: Gasteiner (☎ 0181 345 6000) for £45; The Upgrade Shop (☎ 01625 503448) for

£39.99; Analogic Computing (☎ 0181 546 9575) for £39.95; or First Computer Centre (☎ 0113 231 9444) for £49.99.

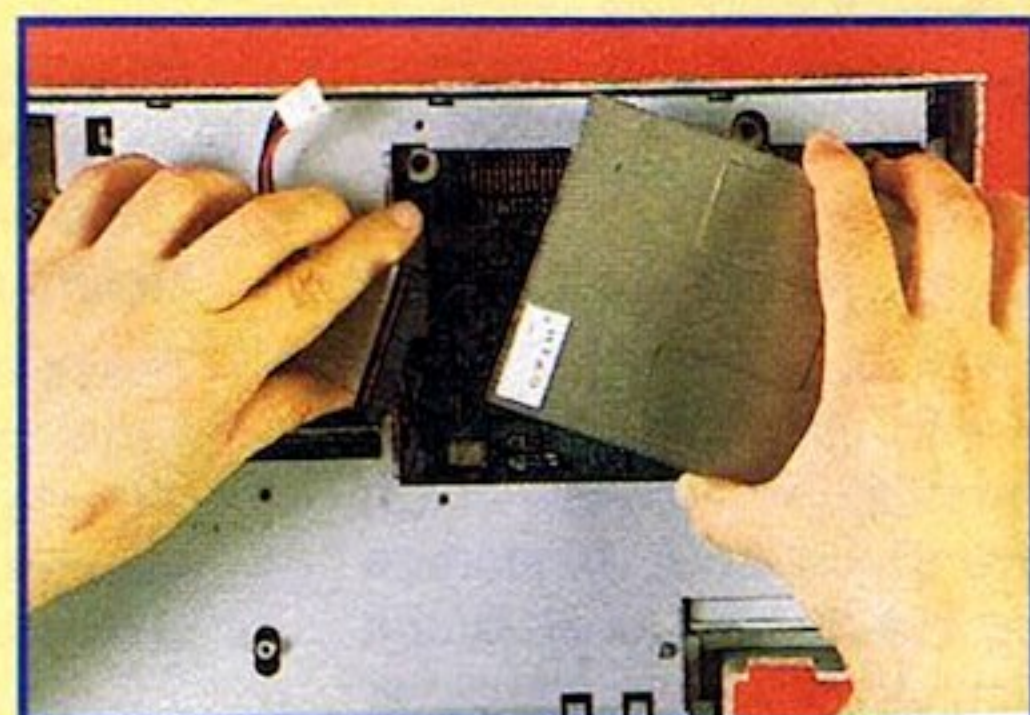
The procedure for replacing the floppy drive is the same for both the STE and STFM. Dismantle your ST up to step three on page 21, then follow the steps below.

Note that you can use the same procedure to replace a single-sided drive in an old STFM with a new double-sided drive.

## REPLACEMENT DISK DRIVE



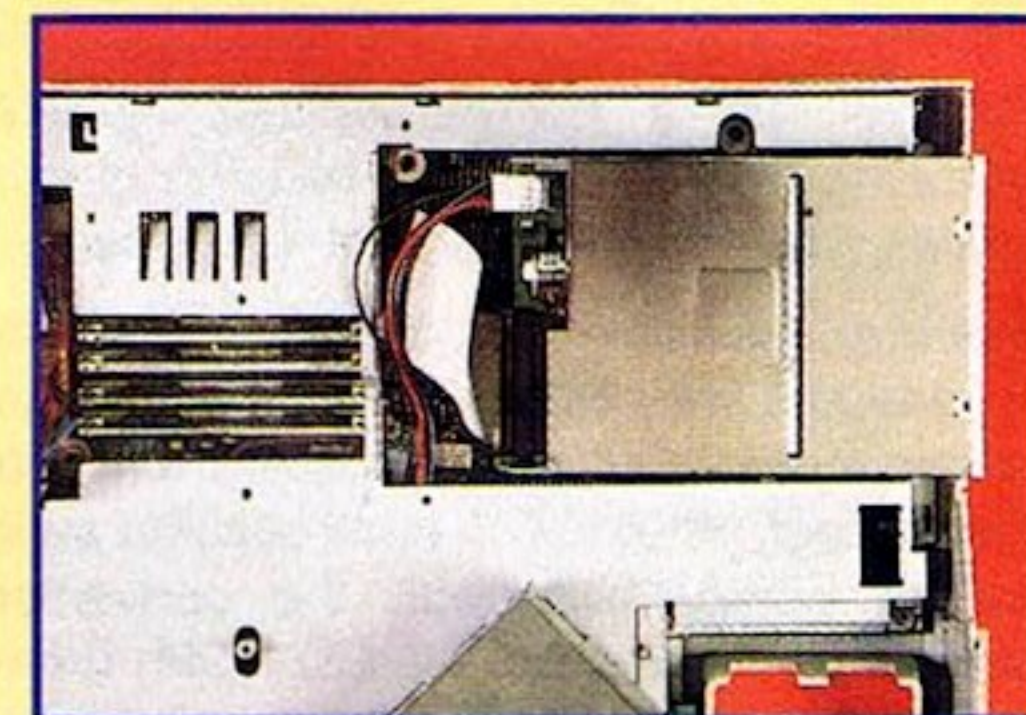
Lift up the old disk drive and carefully disconnect the power cable, which you'll find near the back of the ST.



Now grip the ribbon cable and gently disengage it from the socket on the drive. Put the old drive to one side.



Unwrap the new disk drive and carefully connect up the ribbon cable and the power cable.



Locate the drive on the support legs, then reassemble your ST. You're in business again!

**Power corrupts, but power units get corrupted. Happily, they are easy to replace.**

Another component likely to fail is the PSU (Power Supply Unit). It's simple enough to replace, though, because it's only fixed in position by two small screws and the power connection to the main circuit board of the ST.

You can get replacement PSUs from: the First Computer Centre (☎ 0113 231 9444) for £39.99; Gasteiner (☎ 0181 345 6000)

for £34.95; The Upgrade Shop (☎ 01625 503448) for £32.99; and Analogic Computing (☎ 0181 546 9575) for £49.95.

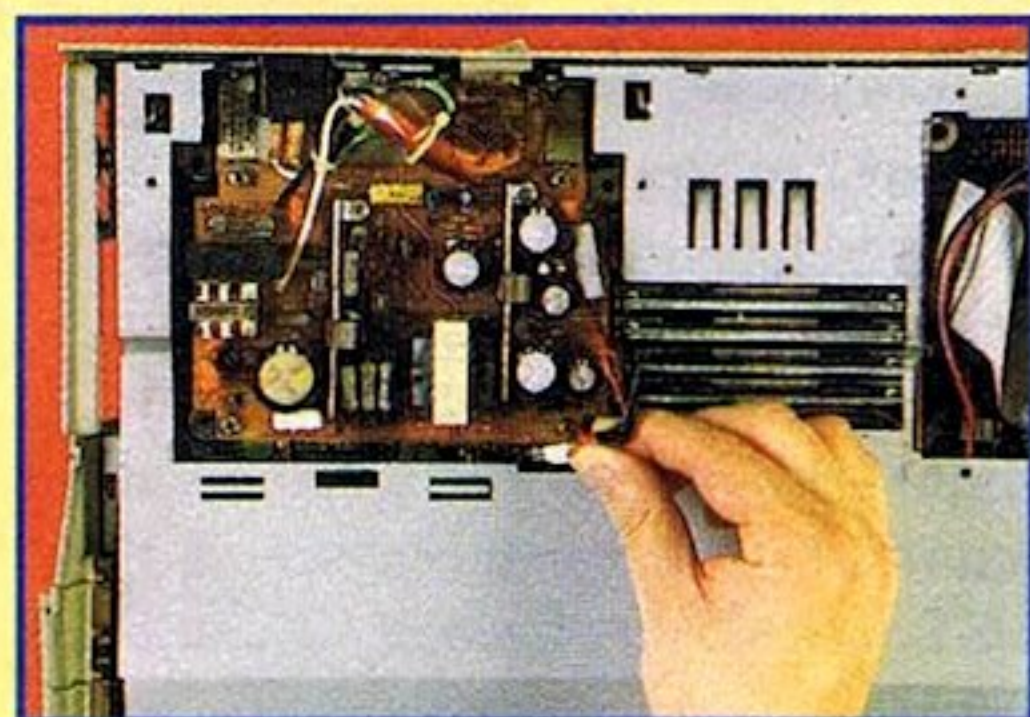
Analogic will part exchange your old PSU for a new one for £29.95.

To replace the PSU, follow stages one, two, three and seven of the stripdown procedure on page 21, then follow the four-step procedure shown below.

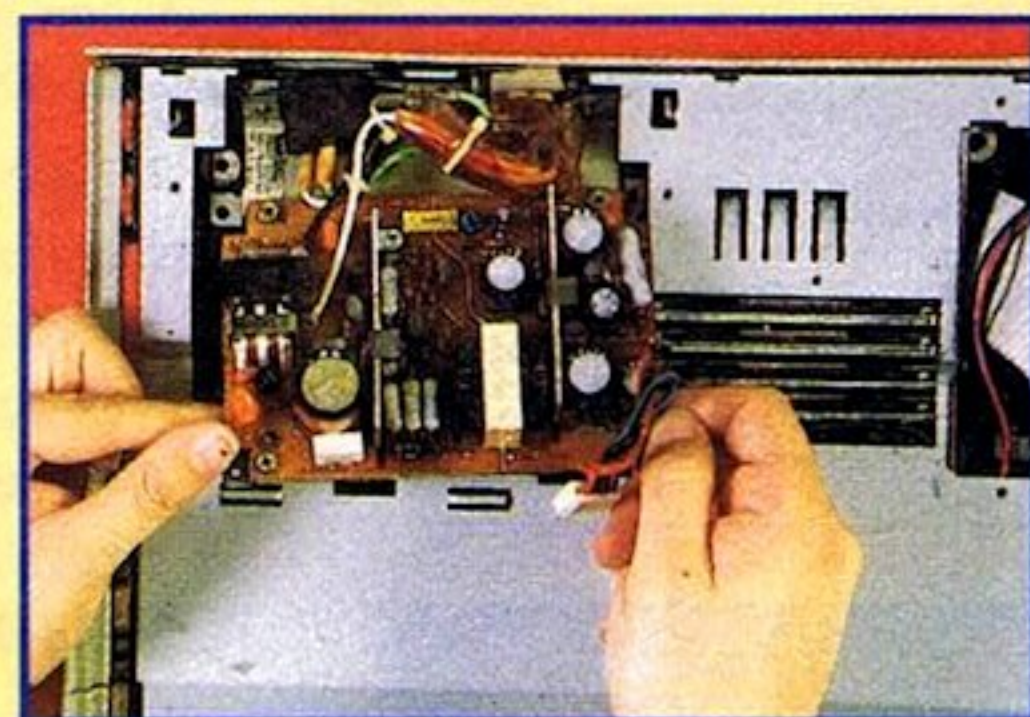


A replacement Atari power supply unit, yesterday.

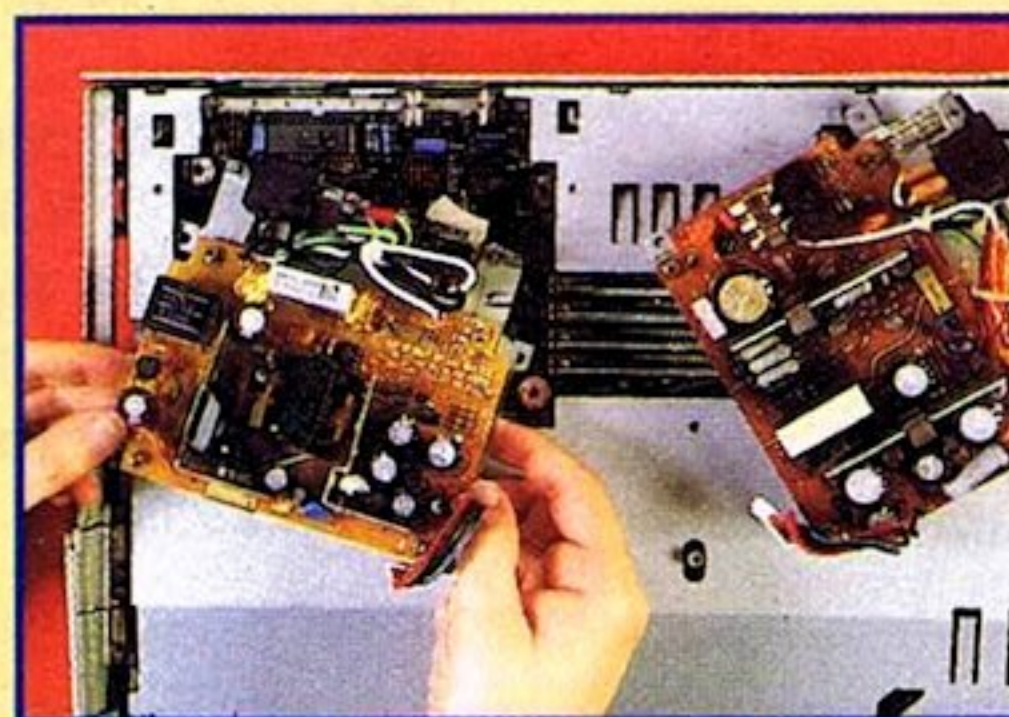
## REPLACEMENT POWER SUPPLY



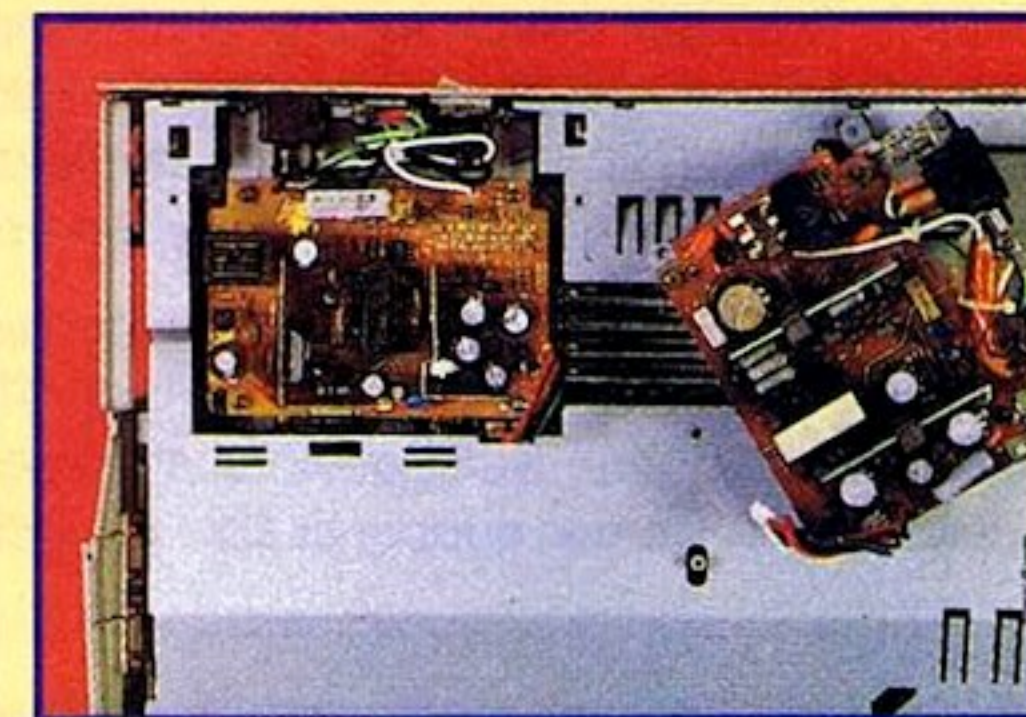
Remove the two screws on the front legs of the PSU and unplug the power cable at the front. Then lift the PSU...



...and slide it forward. Disengage the legs and make sure the socket and power switch slide out of the holes in the case.



Slide the new PSU into the old one's space. Slot the legs into motherboard's holes and free any trapped cables.



Fix the PSU in place using the two screws and connect the power cable to the socket. Now rebuild your ST (see page 21).

**Keyboards are difficult to repair – replacement is often the answer.**

Unfortunately, the more use an ST gets, the more likely the mouse or joystick port will fail. This is because the ports are fixed to the keyboard by solder connections to the circuit board. Repeated plugging and unplugging of mice and joysticks cause the solder joints to crack, and eventually one or more

conductors become unreliable.

Fixing this problem is a long and fiddly process, involving stripping the keyboard down and resoldering the joints. Unfortunately, the underside of the keyboard is held in place by over 40 small screws, and getting it back together again can be a nightmare.

Unless you have the optimism of a maniac or the patience of a saint, it's probably easier to get a new keyboard. You can get keyboards from: The Upgrade Shop (☎ 01625 503448) for £49.95; First Computer Centre (☎ 0113 231 9444) for £49.99; and Gasteiner (☎ 0181 345 6000) for £65. *stf*





# NUTS TO YOU ALL!

As you will see from this page, we are still nuts about the Atari range of computers and are continuing to support the platform. We have released over 50 titles for the Atari over the last 9 years (most of them are to be found on this page, somewhere) and now we announce **Squirrel Storage Systems** - SCSI peripherals at realistic prices. We think that it's about time that Atarifolk were able to buy quality SCSI devices at competitive prices, so we have put together some very special deals based on high quality components, all with 2 year warranty. (Atari ST/STe owners will need a SCSI interface). Whether you're buying SCSI for the first time, extending your SCSI chain or fitting more units in a tower case, why not take advantage of the generosity of our storage-hungry squirrel and grab his nuts while you can!

## SCSI CD-ROM Drives



**Squirrel 2x - int £129, ext £189**  
**New! Squirrel 4x - int £199, ext £259**

Introducing our brand-new quad-speed CD-ROM drive, the Squirrel 4x; a feature-packed, lightning-fast drive at a stunning price. This is the flagship of our range of CD-ROM drives, all designed to suit your needs and your pocket.

Squirrel CD-ROM drives are cased in extremely stylish enclosures with two SCSI connectors and offer fast access times, stereo headphone sockets with volume control, phono line output, PhotoCD™ multi-session support, CD-DA (digital audio) compatibility with the convenience of tray-loaded action. The Squirrel 2x CD-ROM drive offers 300Kb/sec transfer while the Squirrel 4x attains a 600Kb/sec sustained transfer rate, with an access time of only 190ms.

You will need suitable CD-ROM driver software; please add £29.95 if you require us to supply this.

## SyQuest Drives



**44Mb - int £129, ext £189**  
**88Mb - int £269, ext £329**  
**270Mb - int £419, ext £479**

Introducing removable SCSI drives for your Atari computer. Based on reliable, proven SyQuest™ mechanisms, these 44Mb, 88Mb and 270Mb units offer transportable, compact, high performance and, above all, expandable storage for all your computing needs. SyQuest is the world leader in this technology across computer platforms which means that you can transfer work between Atari, Macintosh™ and PC, with ease. Our drive prices include 1 free cartridge.

## SCSI Hard Drives



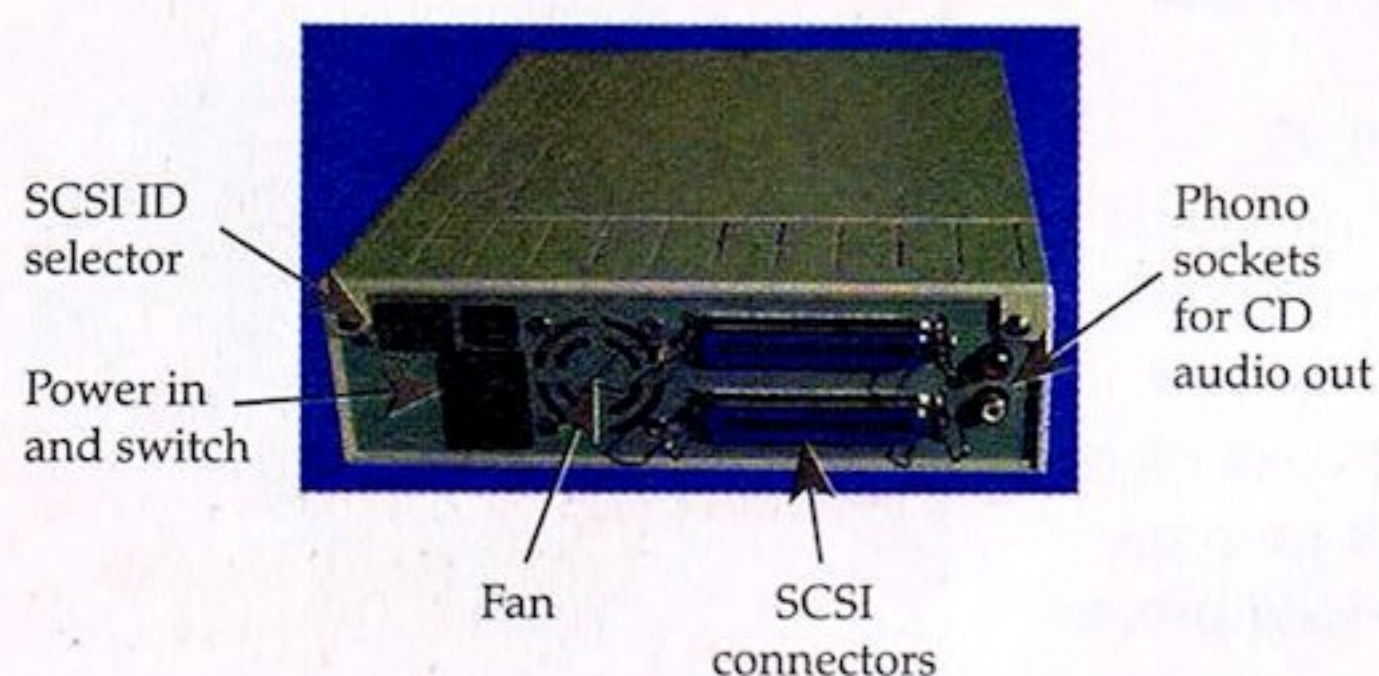
**270Mb £169, 540Mb £239**  
**730Mb £279, 1Gb £479**  
**Add £60 for external units**

Hard drives are becoming more and more affordable and we can now offer some tremendous prices on a range of superb quality drives in a range of capacities.

These drives offer fast seek times (14ms @ 270Mb, 11ms @ 540/730Mb, 9ms @ 1Gb), large caches and high speed data transfer rates. All units can be supplied for you to fit in your own case or pre-installed in one of our professional Squirrel SCSI cases.

*We can supply all necessary SCSI connecting leads (both internal and external), SCSI terminators etc. Please feel free to call and discuss your exact requirements with our friendly, technical staff.*

## Squirrel SCSI Cases



All our Squirrel SCSI devices come either bare (*int* - ready for installation internally within a suitably-equipped Atari or other computer) or fully-cased (*ext*) with integral multi-voltage power supply, SCSI in/out, SCSI ID selector and audio out (for CD-ROM). The cases we supply are high quality, shielded, snap-together enclosures, each with 40W power supply - the back panel of the 5.25" case is shown above. These SCSI enclosures are available at **£69.95** each (please specify 3.5" or 5.25" when ordering).

Please note that, unless you already have one, you will need a SCSI interface for your Atari ST/STe in order to attach our Squirrel SCSI devices. We recommend the ICD Link 2 which we can supply at **£69.95** inclusive.

## Essential Utilities

These are programs that you should never be without.

<b>Diamond Back 3*</b> - hard disk backup	£39.95
<b>Diamond Edge*</b> - hard disk maintenance	£39.95
<b>XBOOT 3</b> - boot management	£29.95

## Programming

Our first program on the Atari platform was our HiSoft Devpac assembler and we have always regarded the Atari 680x0 computers as ideal machines on which to develop your programming skills. Over the years we have produced a wide range of programming languages and associated utilities and now here is a great opportunity to purchase anything that you may have missed or perhaps have not been able to afford.

<b>HiSoft Devpac 3.10*</b>	£59.95
<b>DevpacDSP Falcon*</b>	£49.95
<b>HiSoft BASIC 2.10*</b>	£79.95
<b>HiSoft BASIC 2.02</b>	£59.95
<b>Lattice C 5.6*</b>	£99.95
<b>Personal Pascal</b>	£29.95
<b>WERCS</b>	£9.95
<b>FirST BASIC with</b>	
<b>Your FirST BASIC book</b>	£19.95
<b>Modern Atari System</b>	
<b>Software book</b>	£15
<b>The Atari Compendium book</b>	£39.95

## Graphics

We offer two superb True Colour packages for painting and image processing.

<b>TruePaint*</b>	£19.95
<b>TrueImage*</b>	£39.95
<b>TruePaint+TrueImage*</b>	£49.95

## Productivity

Two power programs and one three-in-one program here to satisfy all your word processing, database and spreadsheet needs.

<b>Papyrus Gold*</b>	£129
<b>Twist 2 database*</b>	£59.95
<b>Atari Works*</b>	£59.95
<b>Papyrus Gold &amp; Twist 2 bundle</b>	£169

## Music/Video

Two years ago we acquired all the Microdeal titles and, since then, we have improved and developed these products, enhancing for the Falcon and re-working the documentation. These are all quality hardware products at superb prices.

<b>Clarity Falcon*</b> - 16 bit stereo sampler	£79.95
<b>Replay 16</b> - 16 bit mono sampler	£99.95
<b>VideoMaster Falcon RGB*</b>	£99.95
<b>VideoMaster ST RGB</b>	£89.95
<b>ColourMaster</b> - RGB splitter	£49.95
<b>StereoMaster ST</b> - 8 bit stereo sampler	£29.95
<b>PlayBack ST</b> - 8 bit stereo playback	£24.95

\* Falcon enhanced title. Some programs need extra memory and a hard disk to function; please check first if you are in doubt. All offers subject to availability and strictly only valid to readers of this magazine and until 30 May 1995. E&OE. © HiSoft 1995.

## Ordering Information

All HiSoft products should be available through your favourite Atari dealer but if you have difficulty in obtaining any title, we offer some special direct-to-you prices as listed on this page. To order directly from HiSoft - just call us free on **0500 223660**, armed with your credit or debit card; we will normally despatch within 4 working days for a postage charge of £4 or, for £6, by guaranteed next day delivery (for goods in stock). Alternatively, you can send us a cheque or postal orders; please add postage as appropriate. All prices include UK VAT. Export orders: call or fax to confirm pricing and postage costs.

**Order Free on 0500 223660**



# HiSoft

## SYSTEMS

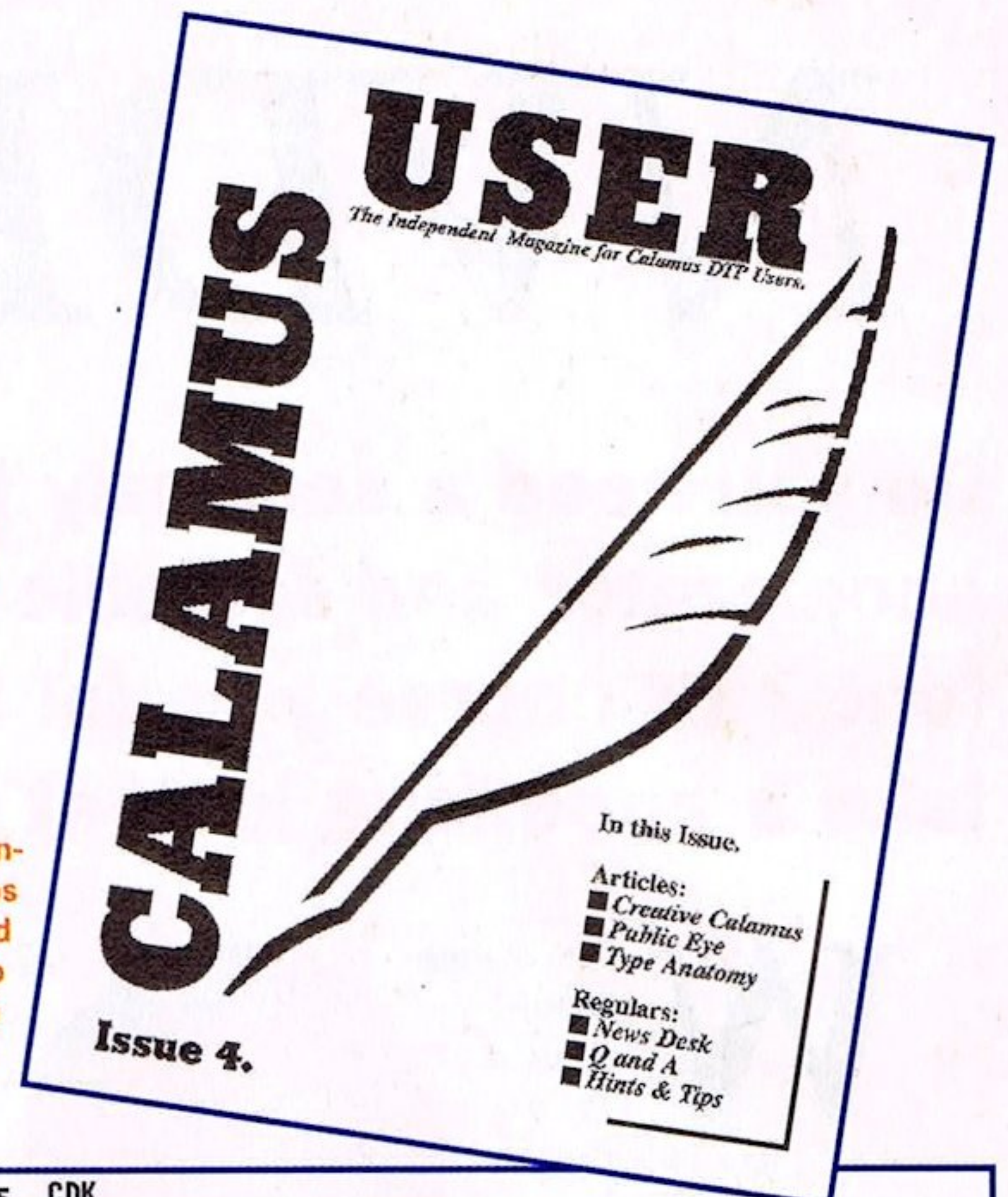
The Old School, Greenfield  
 Bedford MK45 5DE UK  
 Tel: +44 (0) 1525 718181  
 Fax: +44 (0) 1525 713716



# Calamus User Group

**Nick Peers quizzes Steve Llewelyn of the Calamus User Group about his dedication to the ST's premier desktop publishing program.**

Calamus User is an independent publication that keeps its readers fully informed about everything relating to their favourite desktop publishing program.



**Y**ou've got Calamus. You realise how powerful it is, and you want to do some really great things with it. To get the most out of it, you need a user group, and there's no better place to start than the Calamus User Group, run from Kent by Steve Llewelyn, a man who knows Calamus inside out.

**stf:** How did you yourself first come across Calamus?

**Steve:** Around 1987-1988 I ran a small mail order company and became one of Mike Dale's (Signa Publishing) first Signum dealers. One day he gave me a DTP package, all in

German, to try out. That was my introduction to Calamus.

**stf:** What advantages does it have over other programs?

**Steve:** Before Calamus, I used Publishing Partner (now Pagestream) and Signum. Calamus provided the quality output of Signum and the DTP features of Publishing Partner. Once past the initial 'icon shock', I found Calamus easy to use, and the

modular system in Calamus SL offers so many opportunities for future expansion.

There are many Calamus users who migrate to other platforms and then complain that PageMaker and QuarkXPress are nowhere near as good as Calamus. **stf:** How long has the Calamus User Group been in operation?

**Steve:** The magazine has been going for about two years now. The idea was to produce a mag that would act as a platform for

users of all levels to communicate their problems or offer to help to each other.

**stf:** Why did you decide to set up the user group?

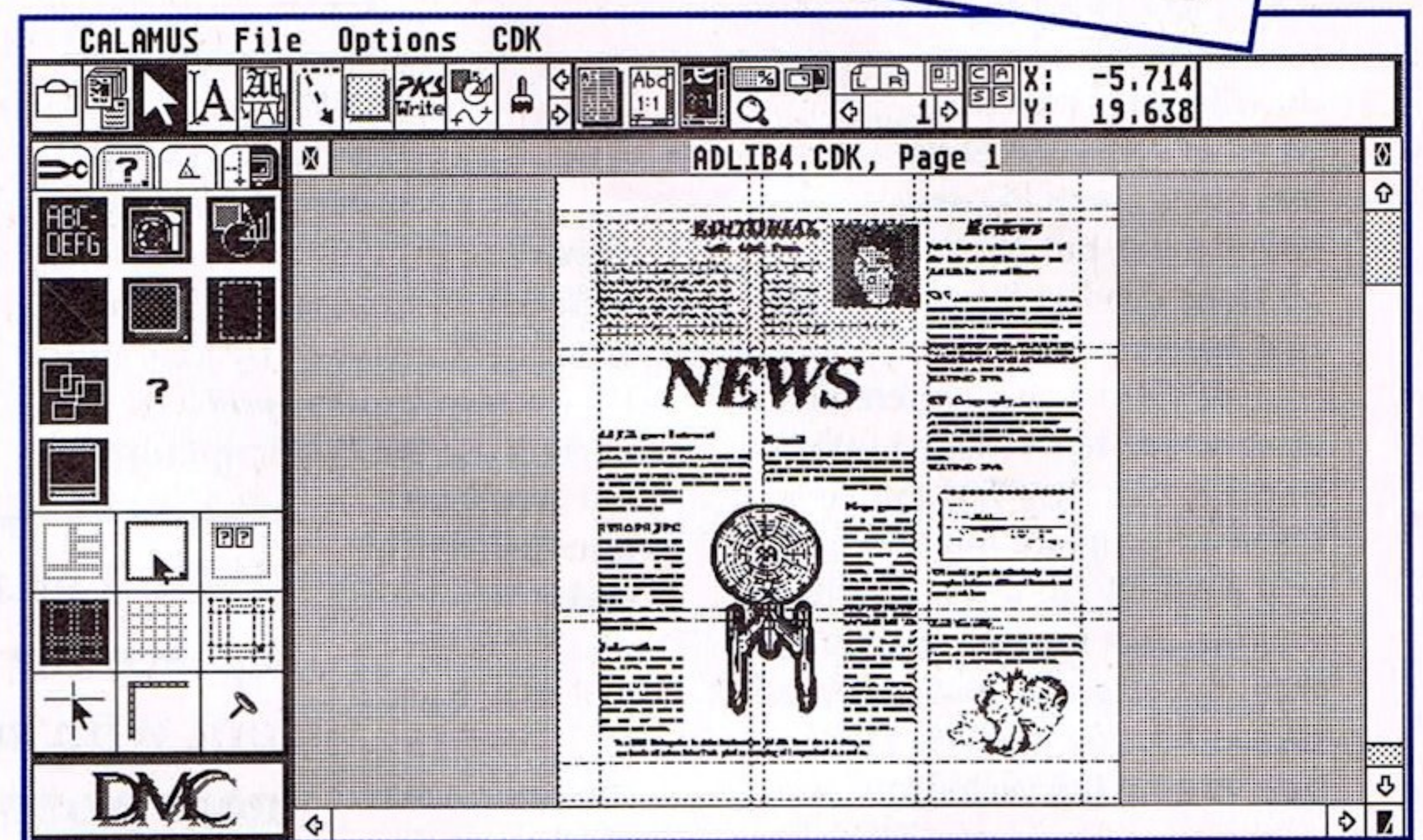
**Steve:** It all goes back to a time

when I worked freelance for Les Player at GFA. Les sponsored the user group and send out subs forms with every GFA product. In return, the user group offered support on all the GFA products, releasing Les to concentrate on promotion.

With the demise of Signa Publishing as Calamus's UK distributor I saw the opportunity to

**We're always pleased to receive mail from anyone who uses the Calamus program**

Steve Llewelyn, Calamus UG



This is the program that inspires such fierce loyalty. It's so well respected, in fact, that Apple Mac and PC versions are due to be released in the very near future.

start a magazine for the program. Unfortunately, Halco never saw it in the same way.

**stf:** What contacts have you made through the group?

**Steve:** My first and most important contact was Nathan Potechin of DMC Publishing, the US and Canadian distributor for Calamus. He's very informative and helpful.

Last year we got a letter from a Texan company called Serious Type which led us to distributing their range of commercial fonts in the UK. We are getting a large collection of professional vector-based clip-art which will be available soon. In addition, we have started to use the DTP Roundtable in the US to act as an American distributor for Calamus User with some success. We're always pleased to

One of the most popular sections of Calamus User is its Q&A section, where readers get to exchange queries and hints with each other. A bit like our very own ST Answers really.

receive mail from anyone who uses the Calamus program.

**stf:** What plans do you have for the coming year?

**Steve:** We are looking to feature the Windows NT and Windows '95 versions of Calamus, but the main core of the magazine will remain dedicated towards v1.09n and SL. We're also planning to produce our own User to User hints.

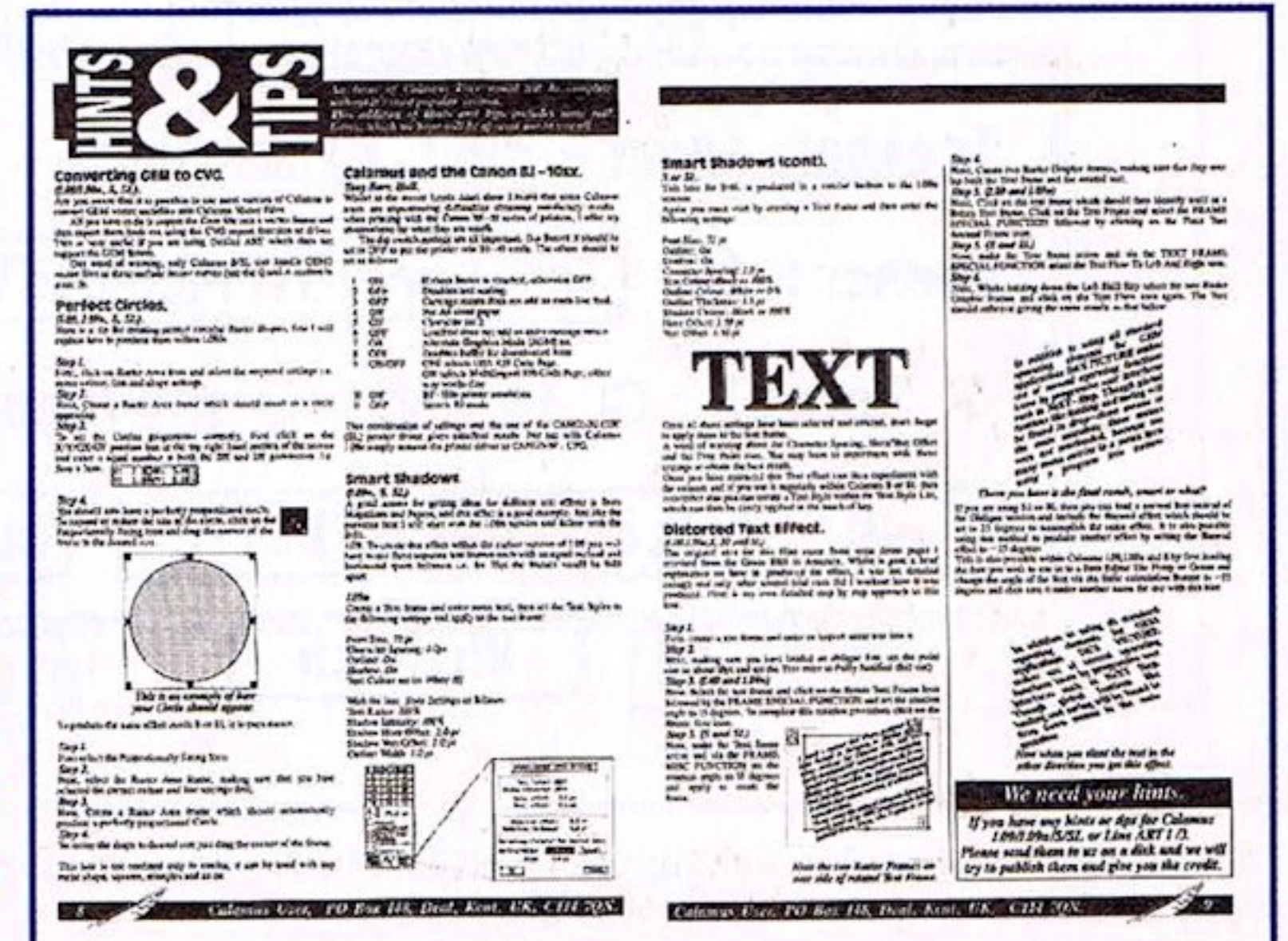
We've recently contacted a German PD library and are hoping to bring a new source of Calamus-related PD material to the UK. We will also be making regular appearances at the Atari shows. **stf**

## CALAMUS USER GROUP

The Calamus User Group provides a wide variety of services for Calamus fans. Above and beyond Calamus User, an independent publication packed with reviews, news, hints and a very popular Q&A section, the Group also markets a selection of disks containing fonts, vector clip-art, and PD and shareware Calamus utilities. Thanks to his worldwide contacts, Steve also sells a selection of publications dedicated to enabling the

user to get the most out of the Calamus range.

For more details on the Calamus User Group, contact Steve by post at PO Box 148, Deal, Kent, CT14 7QN or by e-mail at caluser@cix.compulink.co.uk. Calamus User costs £3.00 per issue in the UK (or £8.00 for four issues) and slightly more to overseas readers. Cheques and postal orders should be made out in pounds sterling to Calamus User.





# NVDI 3

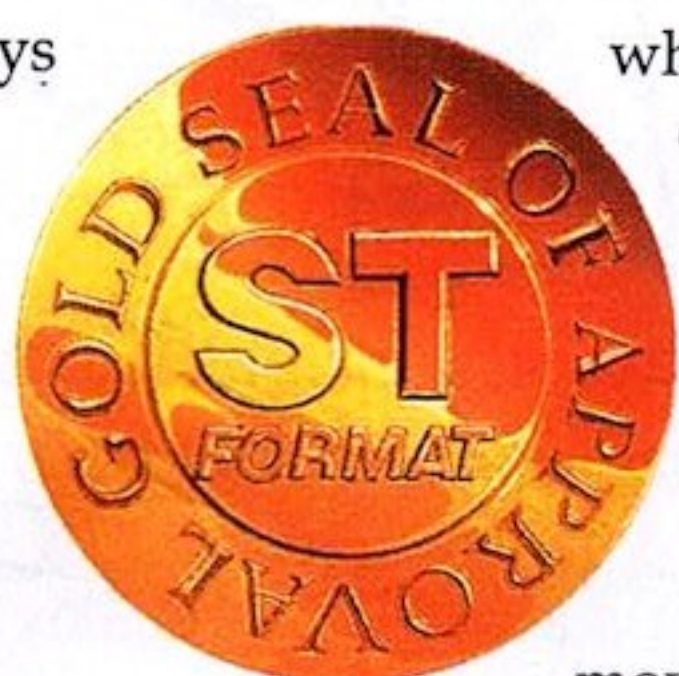
**Do you need a seriously fast screen accelerator and scalable vector fonts? Of course you do! So let's take a good long look at NVDI 3...**

**W**e've always recommended NVDI - it's a piece of software no serious ST user can do without. There may be other screen accelerators about, both PD and commercial, but NVDI kills them all stone dead in terms of sheer raw speed.

If you've ever suffered from slow screen redraws in a DTP package like *Easy Text Pro*, or a GEM art program like *HyperDraw*, you need NVDI. If you're still waiting ages for decent printouts from the original Atari release of GDOS 1.1, you need NVDI. If you've seen the vector font support offered by *SpeedoGDOS*, but couldn't justify the cost of *Speedo* and NVDI 2, you should certainly take a look at this.

## Faster, faster

NVDI 2 offered a full replacement for GDOS which was faster and less buggy than the Atari original. It also completely replaced the ST's VDI (Virtual Device Interface) with a vastly optimised version written in assembly language, producing a massive speed increase

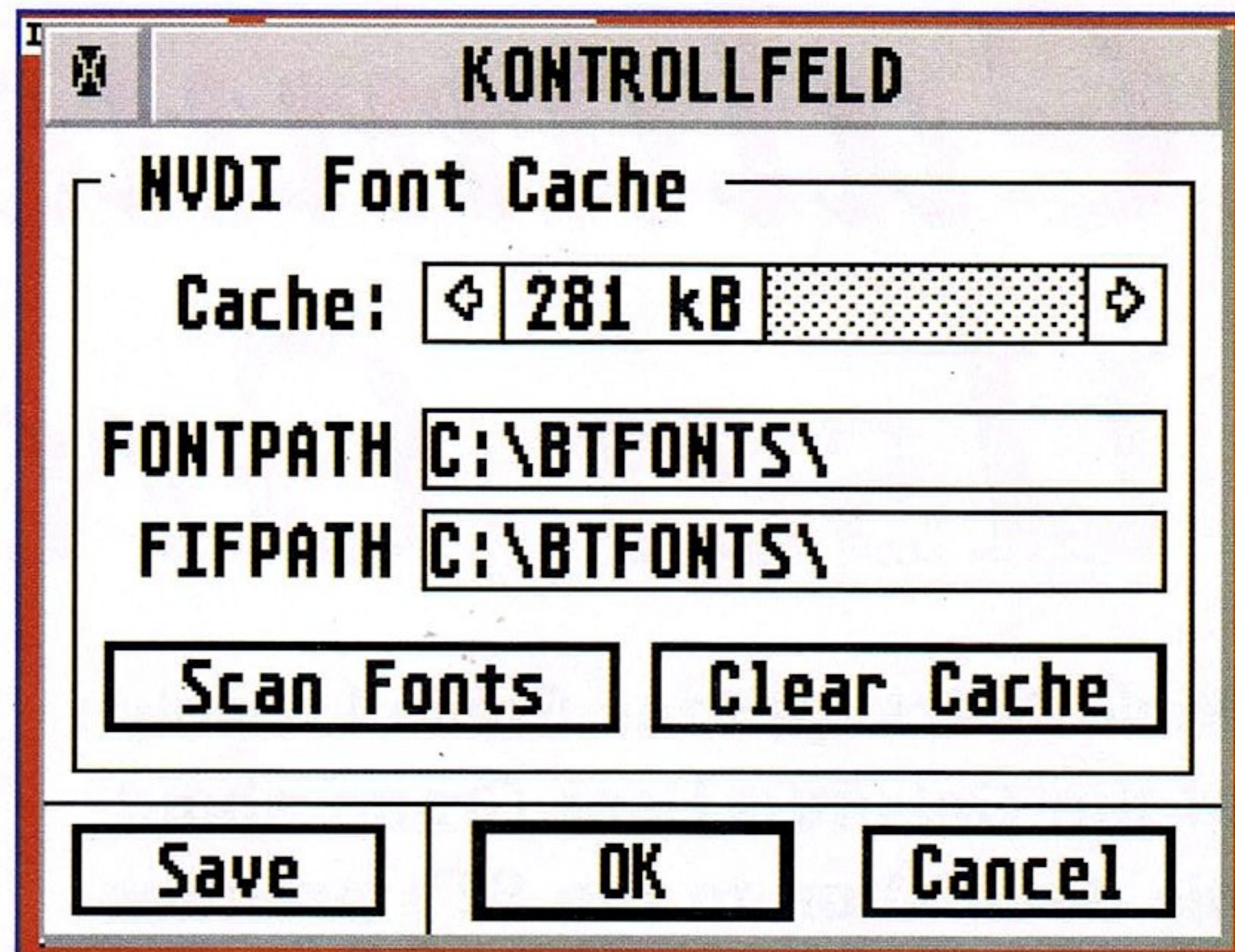


when compared with the original TOS routines. Any program which used GEM to display to the screen could be made to scream along with NVDI.

The latest version moves a step forward by providing support for vector fonts in Speedo format as well as the TrueType fonts used by Mac and PC owners. Unlike *Speedo 5* it doesn't use the PostScript format, but TrueType fonts are much easier to get hold of, so this isn't a real drawback.

NVDI 3 comes on a single disk, and installs automatically to your boot disks or hard drive. Two basic Speedo fonts are supplied, Life and Gothic. They look very much like the Swiss and Dutch faces we all know so well.

Beyond that you can make use of any Speedo font, such as those provided with *SpeedoGDOS* and applications like *That's Write 3*. TrueType fonts are available both commercially and as PD or shareware - any PC BBS or shareware



It's easy to configure the vector font side of NVDI 3. All you need is a copy of the XControl accessory, from any PD Library.

library could supply more than you'll ever need. Commercial offerings are usually of a higher quality, and companies such as Compo or System Solutions stock them on floppy or CD.

Installing new fonts under *SpeedoGDOS 4* or *5* was a bit of a bind - you had to run the OUTLINE program, and often needed to re-boot to force the system to recognise

your new fonts. *Speedo 4* needed all fonts to be in the same folder, while *Speedo 5* enabled you to separate the different font formats into three folders.

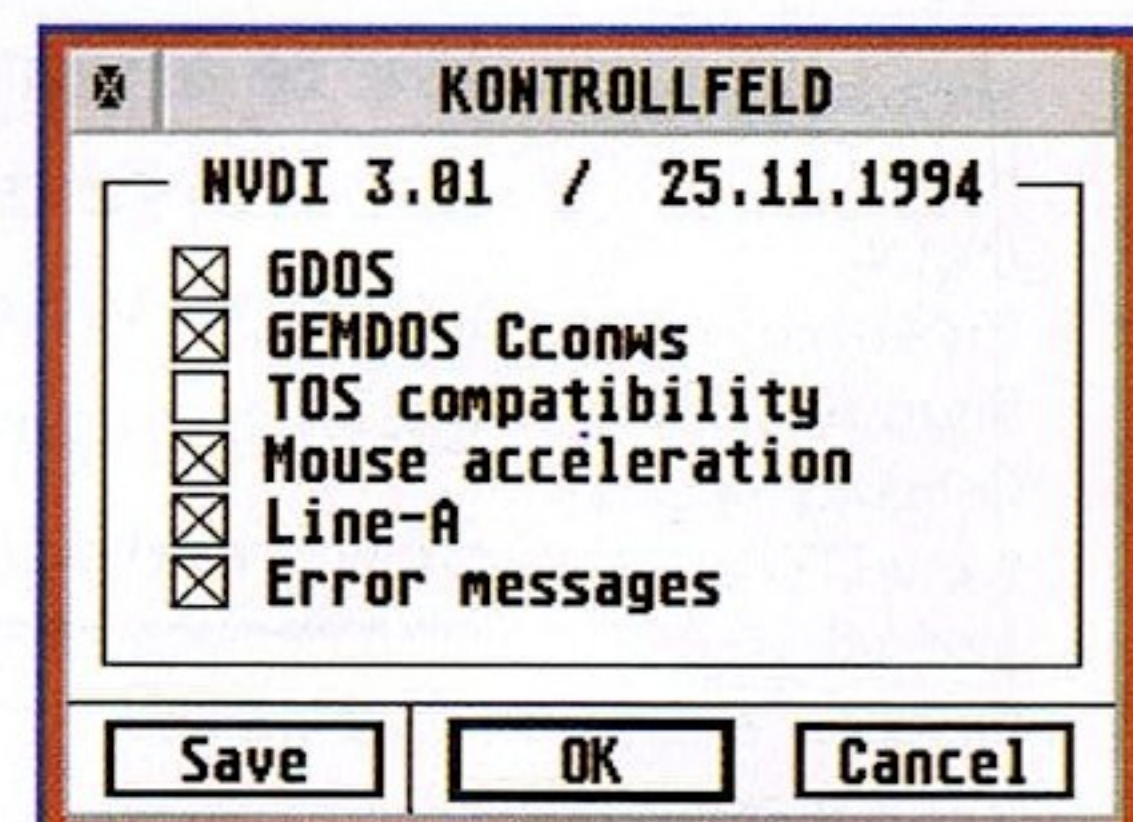
NVDI 3 offers a better solution - it scans any folder inside the default BTFONTS directory, so you can create SPEEDO and TRUE-TYPE folders, and separate your fonts even further within them. For example, you could keep fancy

special effects fonts separate from normal display faces.

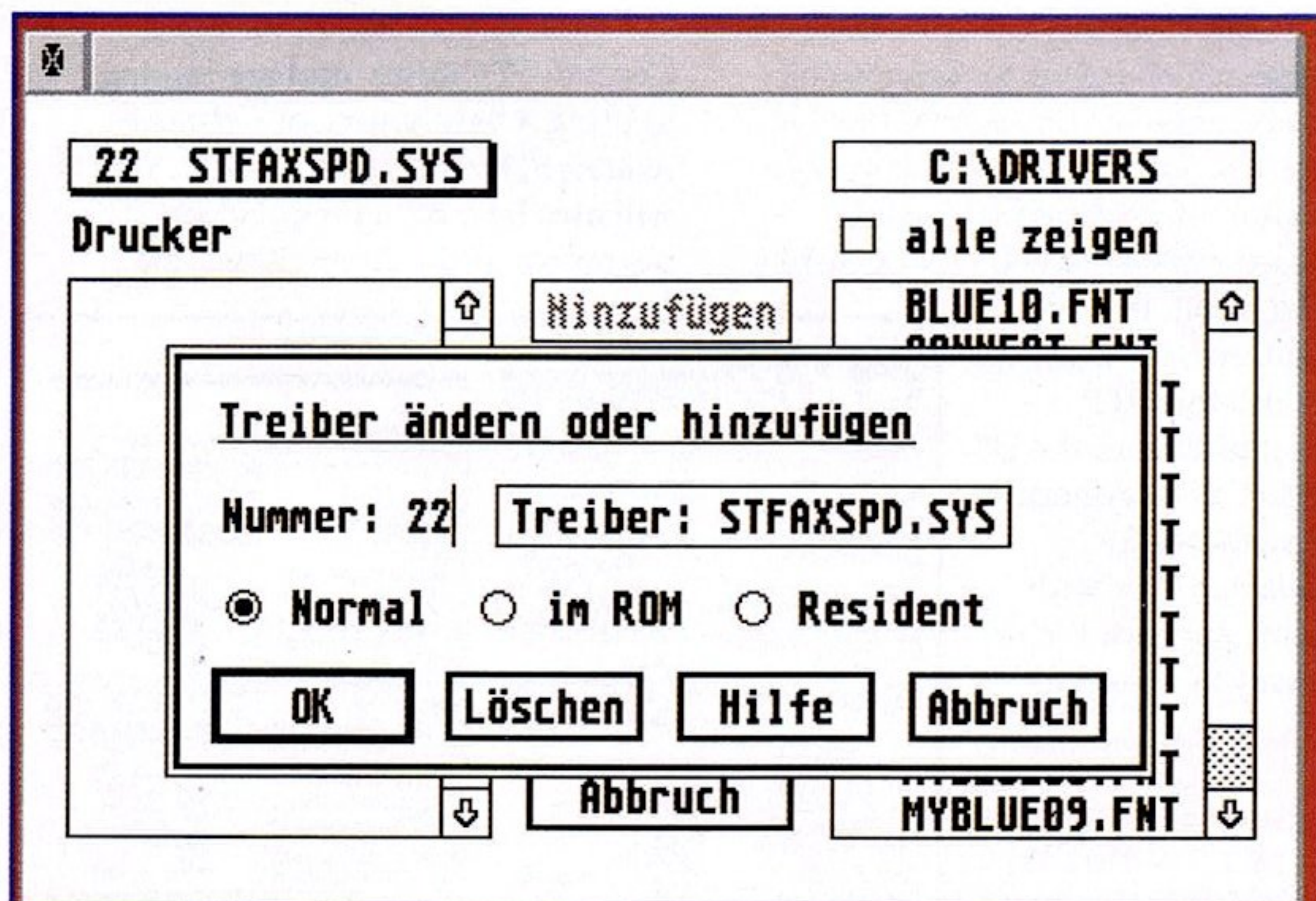
Installing a new font is as simple as dropping it into the folder and clicking on the 'Scan Fonts' button in the supplied XControl .CPX module. Removing a font is equally simple - either delete it, or move it into a HIDE folder and then re-scan.

## Cache me if you can

*Speedo* and NVDI both store font data in a 'cache' in memory. When you type a character for the first



Using this CPX you can set NVDI's parameters, including a handy mouse accelerator.



The ASSIGN utility makes editing the ASSIGN.SYS file easy. It may be in German, but it's pretty easy to work out which button does what.

## LIFE AND TIMES OF GDOS

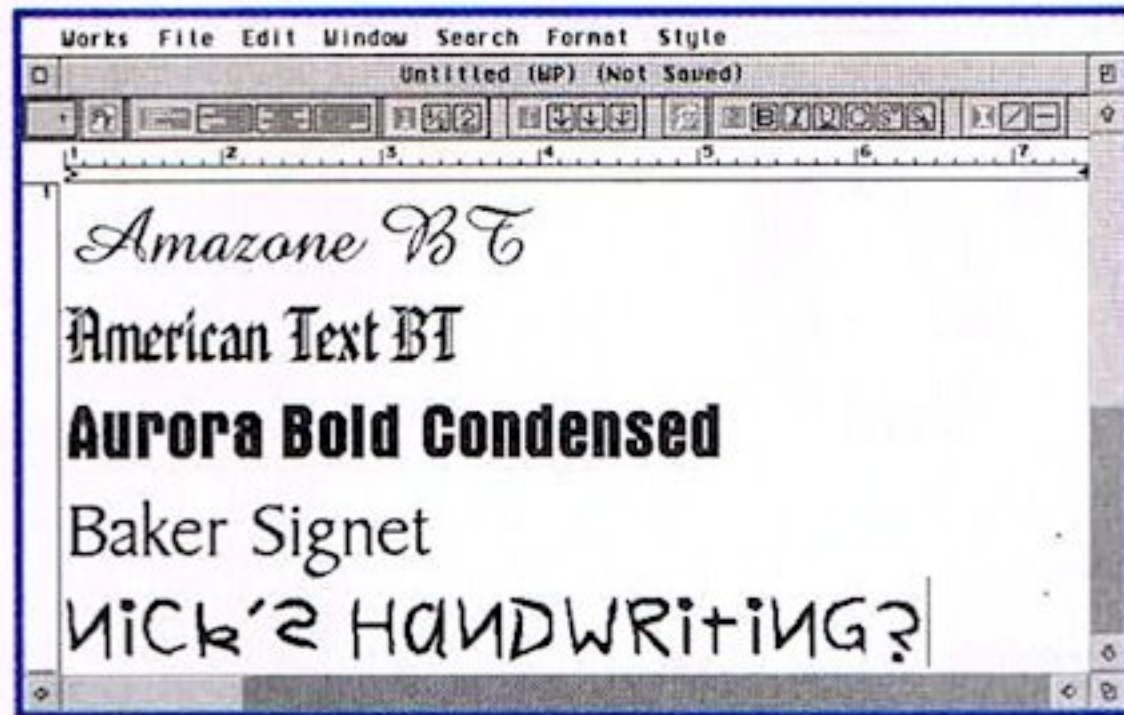
When Atari released the original ST, they left an extension to TOS out of the ROM - GDOS. Short for Graphical Device Operating System, it was intended to provide generic device drivers for printers and plotters which could be used by any GDOS-aware application.

Unfortunately, GDOS used bitmapped fonts which needed a separate font file for each point size in each font. Worse still, it needed different font files for each type of printer. High-resolution devices such as laser printers often needed huge amounts of disk space for a handful of quality fonts. If you had 12- and 24-point fonts available, but wanted a 48-point headline, GDOS would

enlarge the 24-point font, producing nasty jagged edges on screen and in the printed output. These problems, coupled with the drop in speed when GDOS was installed, inspired authors to produce new font formats all over the place. Programs like *Calamus*, *PageStream* and *Calligrapher* all used their own font technology, none of it interchangeable between different applications.

Atari redressed the balance slightly with FSMGDOS - FSM standing for Font Scaling Module - which saw a limited release before *SpeedoGDOS* arrived, offering a true scalable vector font system available to almost any program which used the original GDOS.





NVDI gives you access to the wealth of TrueType fonts from the PC, including some rather bizarre ones...

time, the scaler builds it from the font data. It is then placed in the cache to save time next time you use it. With NVDI it is easier to resize the cache on the fly using the CPX, and changes are used instantly; however, it doesn't have the facility used by Speedo 5 to dump the contents of the cache to disk and reload later. This can be useful when you need a little-used font in a hurry.

### Drive that printer

NVDI 3 comes with an excellent set of printer drivers covering everything from 9-pin dot matrix printers up to the latest inkjet and laser devices. Installing a new driver is done with a CPX module too, with no re-boot needed.

NVDI 3 supports the GDOS convention of installing a printer as GDOS Device 21. You can also add secondary drivers, such as one to print each page as an IMG picture to disk as Device numbers 22 through 30. The installation program will install a second printer as 22 for you, but any others above that and you'll need to either edit the ASSIGN.SYS file with a text editor, or use the supplied German program to do it.

Applications like Papyrus Gold support drivers 21 and 22, which means you can access a secondary driver - such as the 'Print to FAX' driver from STRAIGHT FAX 2 - with the minimum of fuss.

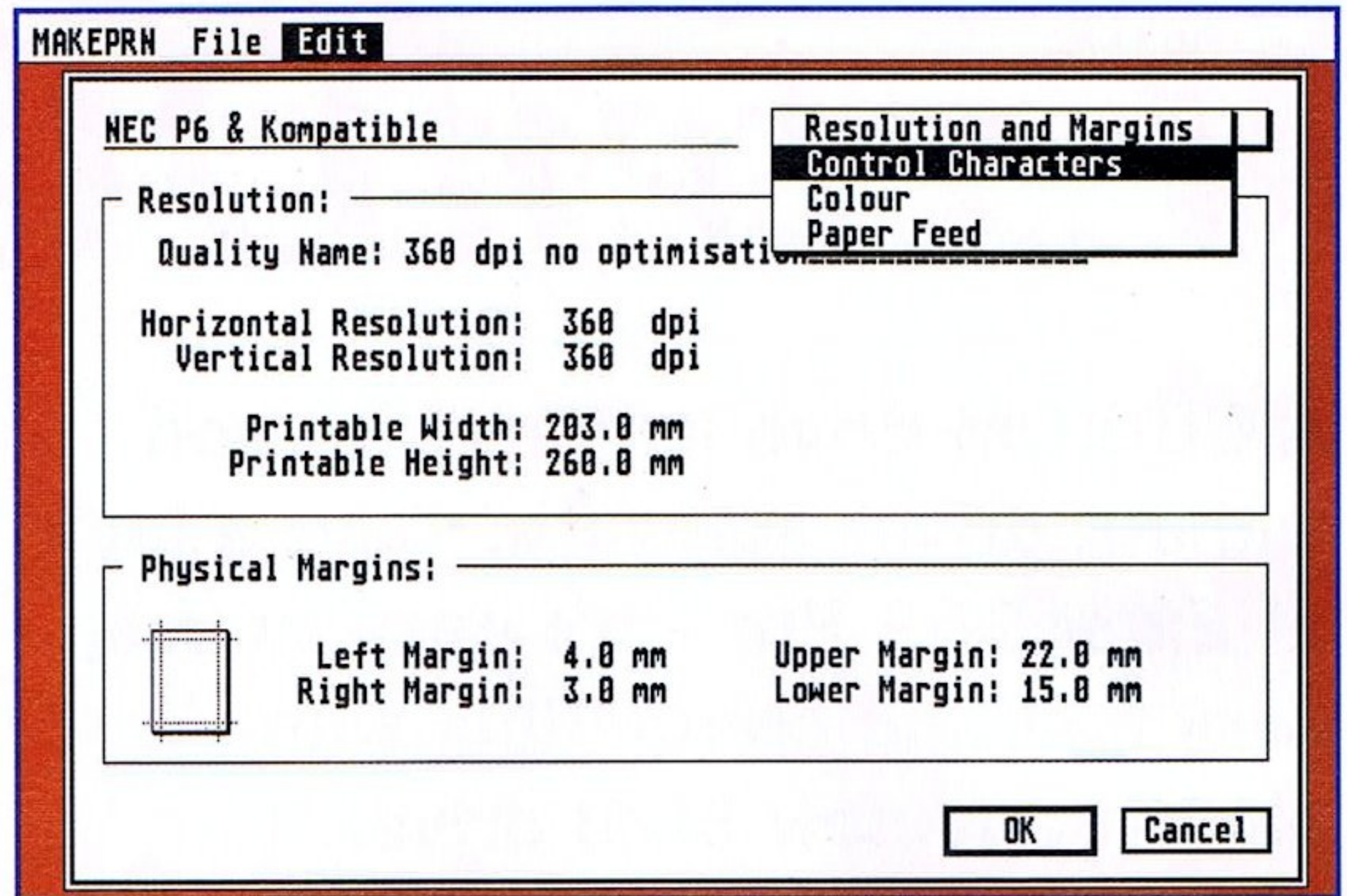
NVDI 3 also includes a driver which knows about odd dpi ratios like the 196dpi used by fax pages - full marks for this.

The drivers are easily configured for quality and paper size with the CPX. You also get a program which enables you to modify existing drivers or build your own from scratch, but you need to know a lot about your printer before you attempt this.

NVDI 3 still supports the old bitmap fonts, and we found it more reliable than Speedo 5 in this respect. Bitmaps which previously choked Speedo installed without problems with NVDI.

Like all previous versions, NVDI 3 enables you to replace the TOS screen font with something more personal. The same Apple Mac-like Monaco font is used, but any GDOS screen font at 8, 9, 10 and 20 point will do, such as the ANSI fonts used by a lot of comms users. Installing new screen fonts means editing ASSIGN.SYS, but the manual covers it thoroughly.

Compatibility was always one of NVDI's strong points. We had no problems on an ST, but



If you need to edit or create a Printer Driver, NVDI is happy to help you do it.

things went less smoothly on a Falcon - some programs crashed when NVDI was installed. Our early version of Truepaint bombed in Truecolour mode, and Falcon graphics demos which accessed the hardware directly didn't like it either. As a rule though, compatibility is very high, and all major applications ran with no crashes.

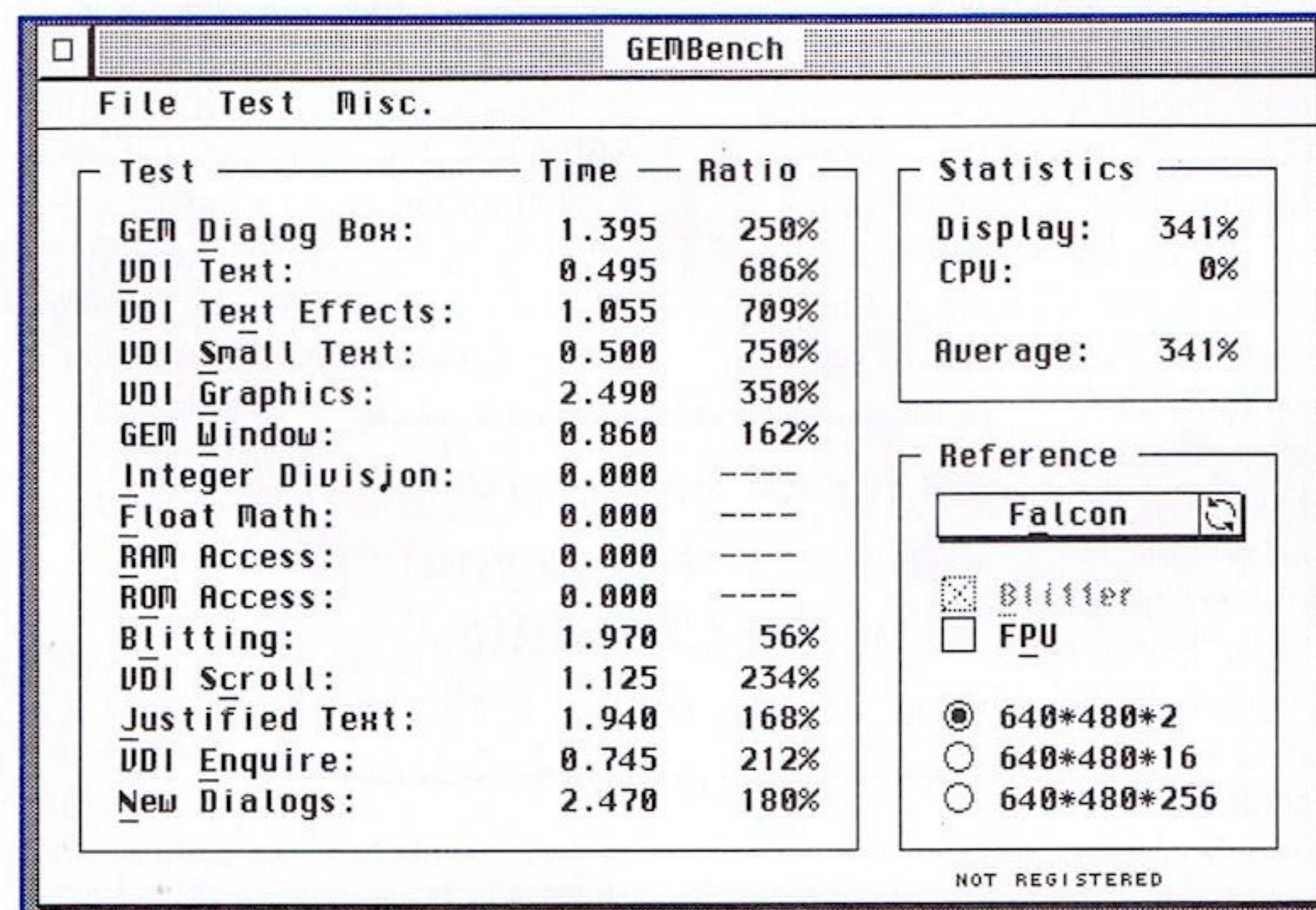
### The Need for Speed

NVDI is like a turbocharger for your ST. In terms of speed, it wins out over Speedo any day. Speedo 5 could recognise and hook into NVDI 2, but NVDI 3 is faster still. Loading TrueType fonts in Papyrus was noticeably quicker.

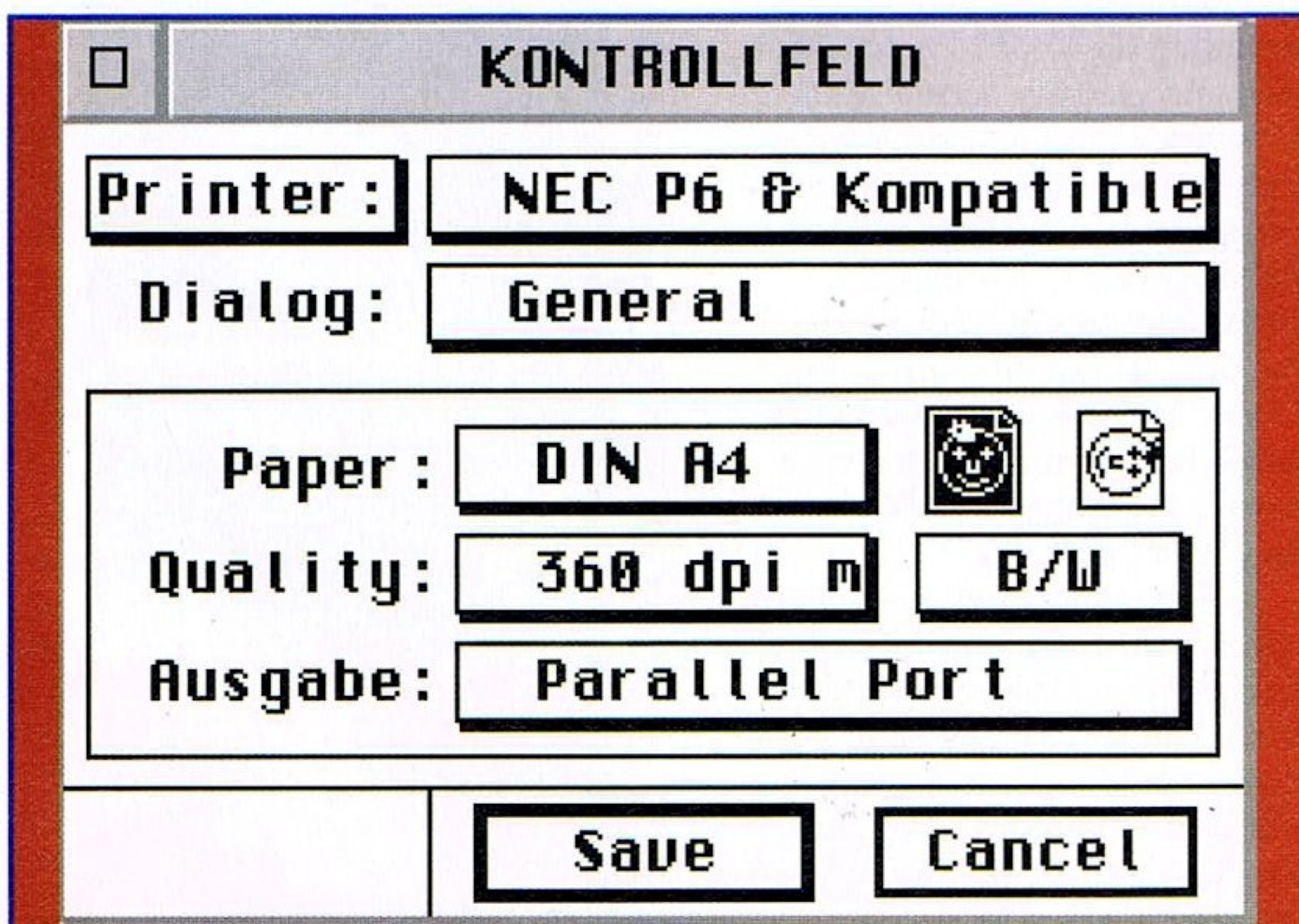
If you already have Speedo 5 and NVDI 2, deciding whether to upgrade is difficult. NVDI 3 offers everything bar PostScript fonts in one well-written, fast package. Adding and removing fonts is easier with NVDI, and its caching appears to be quite a bit faster than Speedo's. Try to take a look at NVDI 3 running, as you may well find the single integrated package more comfortable to use.

If you have Speedo without NVDI, or an older NVDI without the vector font use, this is a must. Personally, we love it, and we want to have its babies. *stf*

FRANK CHARLTON



The shareware benchmark program GEMBench here shows how much faster your display can be with NVDI 3 satisfying your need for speed.



Configuring your printer drivers is a doddle too, with this CPX module.

### FONTS

Bitmapped fonts are huge because each character is stored as a pattern of dots, rather like a tiny IMG picture. Vector fonts only store a mathematical description of the characters, and different point sizes are generated as you need them by the scaling engine. The advantages are obvious: any point size can be generated without losing smoothness, and each font only needs one file, no matter what screen or printer resolution you use. To generate a huge 144-point 'A', the font scaler just enlarges the font description mathematically, producing lovely curves.

STF VERDICT

### NVDI 3.01

£49.95 System Solutions  
 ☎ 0181 693 3355  
 Minimum hardware: ST/TT/  
 Falcon030, 512K. 1MByte  
 or more for vector fonts,  
 hard drive recommended.

#### HIGHS

- Faster than SpeedoGDOS
- Easy font installation
- Excellent print quality

#### LOWS

- Some Falcon compatibility problems

### In short...

NVDI is like a turbocharger for your ST. Essential, fast-moving stuff - and we love it.

97%



# ExtendDOS Pro

A CD-ROM drive isn't much good without driver software. Take a look at *ExtendDOS Pro* – it's easy to use, very fast and compatible with almost any new SCSI drive.

Strange things, computers. Just a short while ago (several years, actually – Karen) we were marvelling at how good floppy disks were compared to cassettes. Now we've got CD-ROMs – shiny pieces of plastic barely bigger than a floppy, but capable of holding up to 650MByte of data.

As well as the CDs crammed with ST PD and shareware, there are a lot of generic discs from the PC market you can use – clip-art, MIDI files, GIF images. You'll still need driver software, though...

*ExtendDOS Pro* by Anodyne Software (distributed in the UK by System Solutions) is the only CD-ROM driver which runs happily on all Atari machines. Competitors



such as the ICD driver supplied with the Link 2 are more specialist, since they run under MiNT or MultiTOS.

*ExtendDOS* comes with everything you need in one simple package, and runs under all TOS

versions and with multitasking environments like *Geneva* and *MagiC*. *ExtendDOS* will run CD-ROM drives attached to the SCSI ports of a TT or Falcon; if you have an ST, *ExtendDOS* will only work with one of the ICD host adaptors like the AdSCSI, Link or Link 2.

The manual provides a quick-start installation guide. Assuming your CD-ROM drive

has an ID of 5, just copy the files to your boot disk and re-boot.

Most modern CD-ROM drives have a switch on the case enabling you to set the ID – check your manual.

If your drive has a fixed ID, you'll need to reconfigure *ExtendDOS*. This is done by editing the EXTENDOS.CNF file in a text editor. As long as you know the drive's ID, this is easily done. Once *ExtendDOS* is set up and copied to the AUTO folder, a quick re-boot gets you going.

*ExtendDOS* is almost transparent in use. The

EXTENDOS.CNF file specifies a drive letter for the CD-ROM drive (the default is P).

Opening the icon from the Desktop accesses the contents of the CD as if it were a write-protected hard drive partition. Files can be copied, programs run and archives extracted



*ExtendDOS* can access PhotoCD disks, but you'll need a separate viewer like *ImageCopy 3.5CD* to look at them. This is one of Andy's holiday snaps, actually.

without worrying about the mechanics behind it.

What sets *ExtendDOS* apart from the competition, like the ICD driver, is speed. The MiNT driver is sloooooow – open a folder with MBytes of data in and you almost have time for a cuppa before the window opens. There's none of that with *ExtendDOS* – it is slower than working with a hard drive,

but not much. Double-speed CD-ROM drives have a data transfer rate of about 300K per second, and *ExtendDOS* is happy to work

at that speed. A cache buffer stores regularly-accessed data such as the FAT.

*ExtendDOS* can access single and multi-session CD-ROMs, including the Kodak PhotoCD format, and can play normal audio CDs. Since most new drive manufacturers use the same basic mechanisms from a few big companies, *ExtendDOS* should work with almost any new SCSI drive you can find. Be careful of the cheap CD-ROM drives advertised in PC mags though, as they are almost always IDE rather than SCSI, and they won't work.

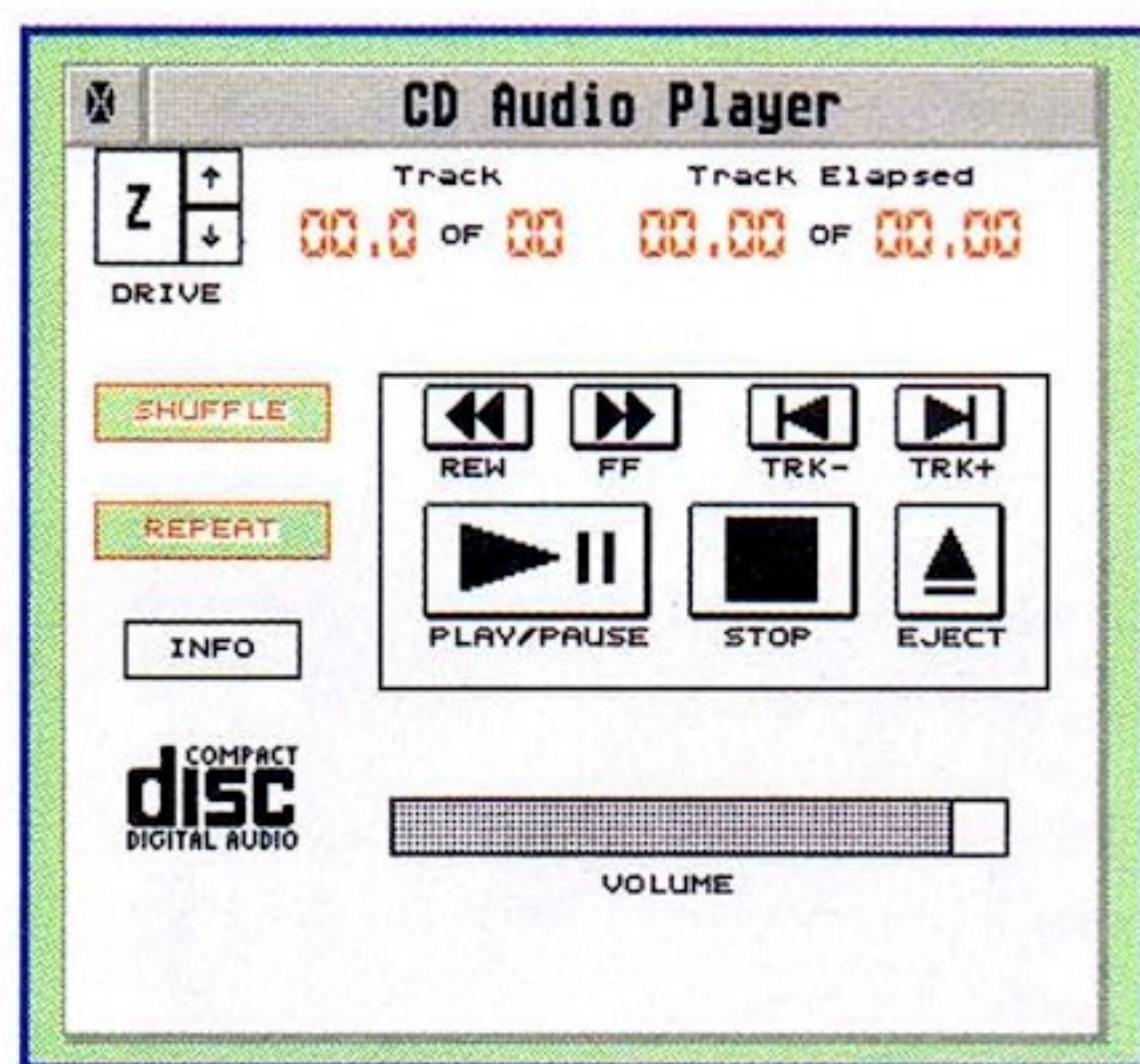
The manual lists a selection of drives from Chinon, NEC, Philips, Sony, Texel and Toshiba, and mentions that any other SCSI drive should work with multi-session and PhotoCD discs, but won't necessarily play audio discs. We tried it with a Matsushita mechanism that wasn't on the list, and while it worked fine as a CD-

ROM drive, it wouldn't let us listen to any audio stuff.

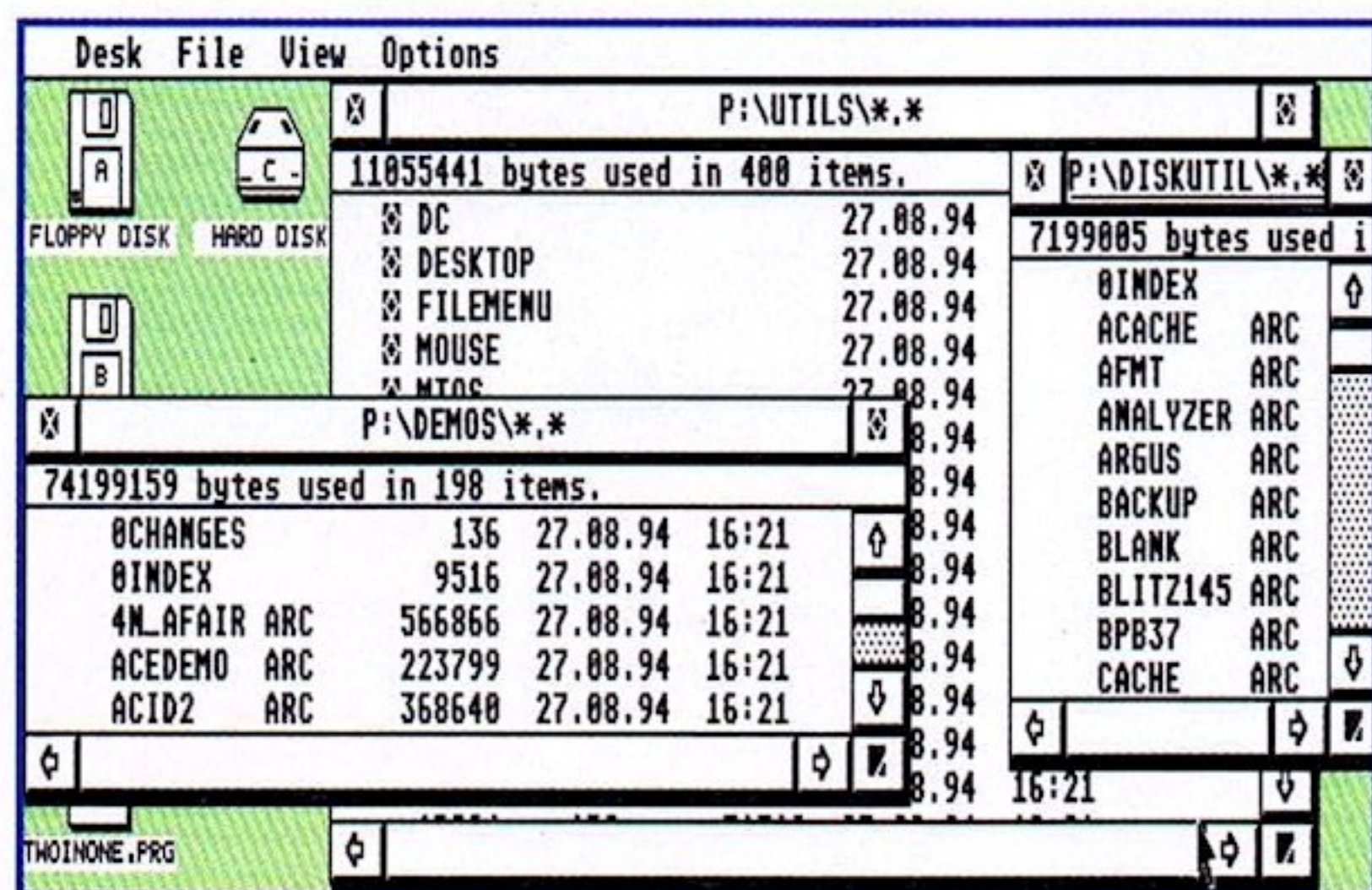
The Audio CD player comes as a Desk Accessory which has controls like a real CD unit. There is a track and time display, and a 'shuffle' function which plays tracks in a random order. As it's an accessory, you can listen to your favourite CD while you work, too.

*ExtendDOS* is easy to use and very fast. If you've got a CD-ROM drive, chances are you'll be thinking about this already. If you're planning to buy one, it's well worth adding the cost of *ExtendDOS* to your budget. *stf*

FRANK CHARLTON



The Audio CD Player has controls just like the real thing, so you can listen to Kylie as you work. Er, maybe not.



The CD acts just like a large read-only hard drive. With 650MByte of files you almost qualify as a PD Library!

**As it's an accessory, you can listen to your favourite CD while you work, too**

**STF VERDICT**

## ExtendDOS Pro 2.0

£29.95 System Solutions  
0181 693 3355.  
Minimum hardware:  
ST/STE/TT/Falcon030,  
512K. ST/STE require an  
ICD host adaptor.

**HIGHS**

- Faster than the ICD/MiNT drivers
- Good drive support

**LOWS**

- Audio not available on some drive types

**In short...**  
Easy to use, very fast and it works well. Overall, the only sensible way to use CD-ROM. **92%**



# Outside

The Falcon030 comes with 1, 4 or 14MByte memory, but what if you want more than that? Take a look at this new virtual memory system from 16/32.

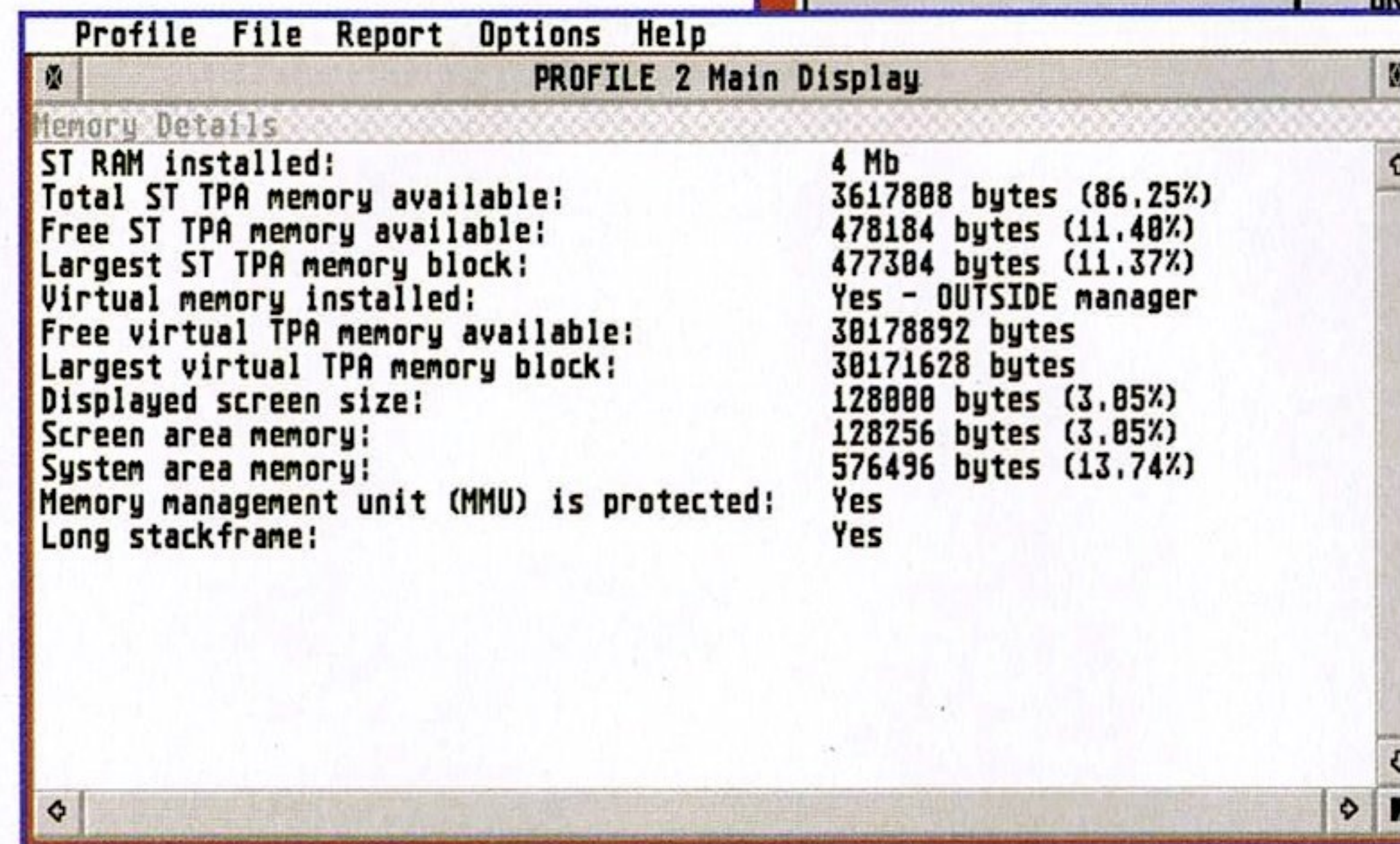
**V**irtual memory isn't a new concept, but we haven't seen much of in the ST market.

Programs like *Calamus SL* have the ability to assign drive space as RAM, but until now there hasn't been a reliable system to use with all ST software.

*Outside 3.2* is the new version of the popular virtual memory system from Maxon Computer in Germany, now distributed in the UK by 16/32 (and by Lexicor in the USA). The catch is that it only runs on a machine equipped with a 68030 processor – a Falcon or TT, or an ST fitted with a PAK/68 processor board. The 030 CPU is able to use memory protection, so programs use only their own segment of RAM. If one crashes, it doesn't cause everything else to collapse, at least in theory.

## Step outside, luv

*Outside* comes on a single high-density disk containing the program itself, a small selection of related utilities, and a copy of the *HD Driver* hard disk driver (written by *Outside's* author, Uwe Seimet). *HD Driver* is provided because *Outside* won't work with hard drives formatted with the



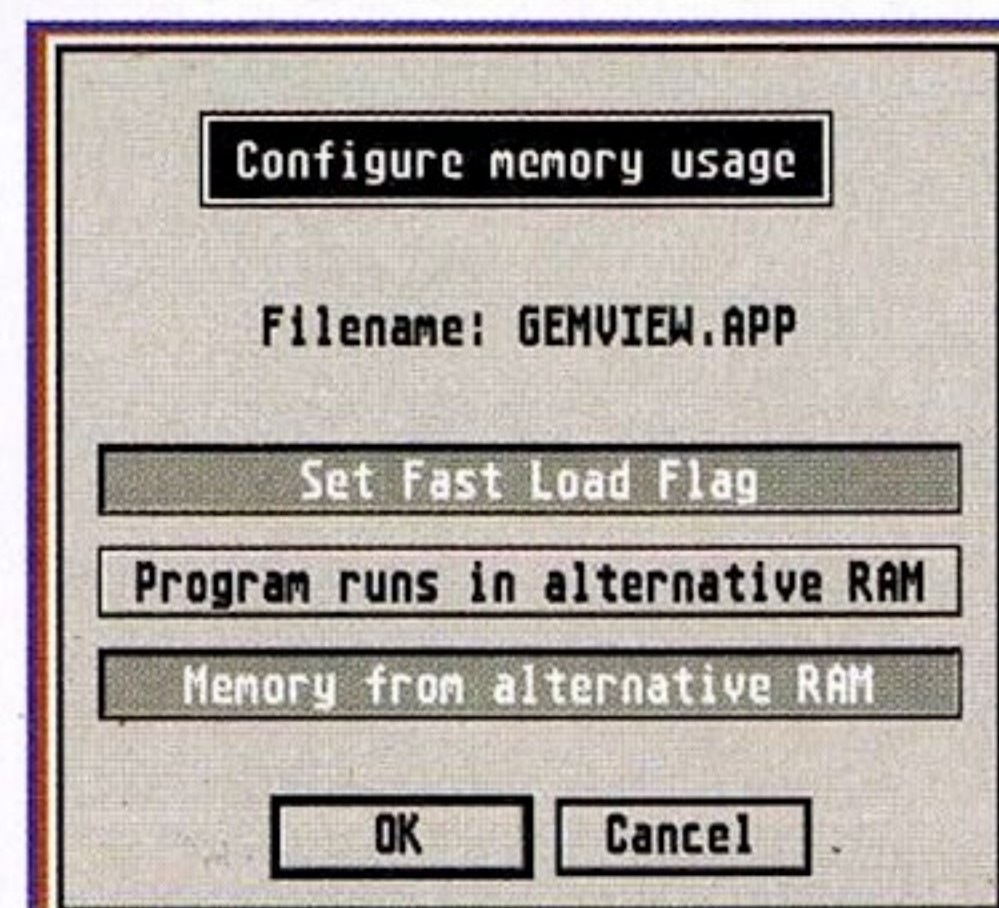
The shareware utility *Profile* recognises *Outside*. Look at that – all of a sudden you've got 30MByte of extra memory to play with. Bring on those TrueColour graphics!

ICD software. Your drive must be formatted fully AHDI-compatible in order to run *Outside*, so although the ICD driver is compatible, the ICD format isn't. You may have to reformat with Atari's AHDI utilities, but you're free to use the ICD driver again once that's done. If you're in any doubt at all, check with 16/32 before ordering.

Installing *Outside* is as simple as copying OUTSIDE.PRG to your Auto folder and running the separate configuration

program. Here you can set how much virtual RAM you want – up to 512MByte, presuming you have the drive space.

The program scans your par-



It's easy to modify programs to take advantage of the virtual RAM with this utility, which is supplied with *Outside*.

## Considering the cost of upgrading your Falcon to 14MByte, *Outside* is a bargain

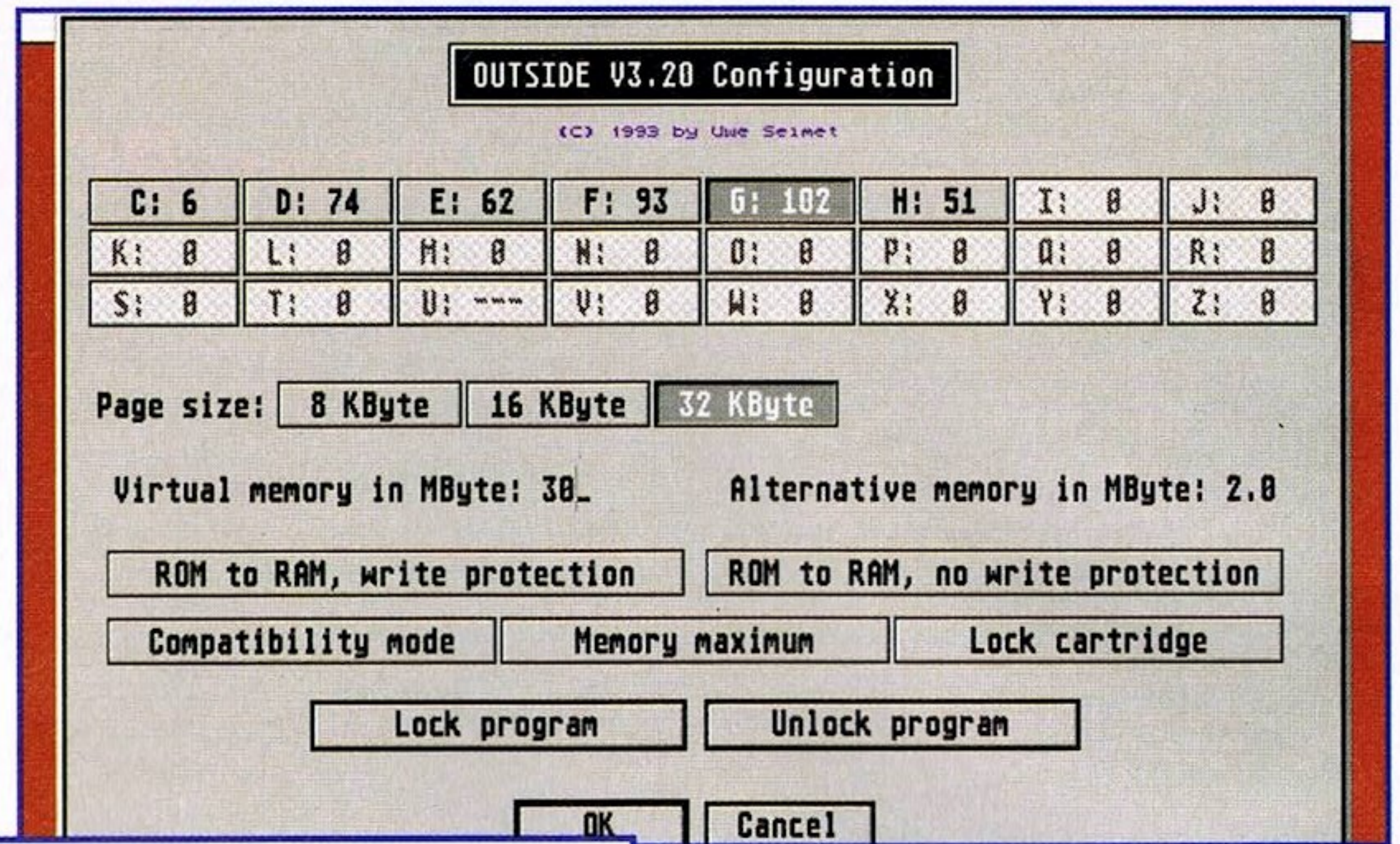
titions and shows how much free space you have on each, then you choose the swap partition. *Outside* can use any partition as virtual RAM, without existing data being lost. However, you can't write to that partition while *Outside* is running – a dialog box tells you the drive is write-protected – so it's best to use a dedicated partition

big enough for your needs. If you do use an already-occupied partition, you can still read files and run programs from it, and it reverts back to normal if you boot your machine without *Outside*.

## Outside inside?

The virtual RAM acts as the equivalent of the TT's Fastram, so almost all software should be able to take advantage of it. An included utility will modify a program's header so that it can run in virtual RAM, or allocate any memory it needs from there, or a combination of both.

We found running from ST RAM and allocating RAM from *Outside* worked very well with every application we tried, including *Apex Media*, *GemView*, *Papyrus* and *Studio Photo*. *ImageCopy 3.5CD* would occasionally quit back to



The configuration program is explained clearly, so you can't do any damage.

the Desktop for no apparent reason, but worked well otherwise.

Any program you can think of – especially graphics software running in the Falcon's TrueColour mode – needs as much memory as possible. By using *Outside* we were able to edit massive 24-bit images which would otherwise have choked our 4MByte Falcon. It wasn't as slow as we had expected, and *Outside* is certainly much faster than the swapfiles used by *Windows* on the PC.

Considering the cost of upgrading your Falcon to 14MByte, *Outside* is a bargain. Even if you already have 14MByte on board, the ability to go still higher makes it worth looking at.

We found *Outside* almost transparent in use, with no frustrating delays as memory was swapped to disk. It might seem expensive, but consider the cost of the alternative. stf

FRANK CHARLTON

## VIRTUAL RAM

Put simply, virtual memory is a way of fooling your machine into thinking it has a lot more free memory by using space on your hard disk as a substitute. It isn't as fast as 'real' memory, but it is certainly cheaper, and an acceptable compromise if you have a reasonably fast hard drive. The virtual memory program waits until a program requests more memory, then it looks through what's already in RAM, and 'swaps' a chunk which isn't currently being used to disk. When that part is needed again, the program reloads it, swapping out another block if necessary.

**STF VERDICT**

## Outside 3.20

£69 16/32 Systems  
☎ 01634 710788  
Minimum system:  
Falcon030/TT or ST with  
PAK68 upgrade, hard drive,  
2MByte RAM

**HIGHS**

- Much cheaper than the real thing
- Facilitates serious use of your Falcon

**LOWS**

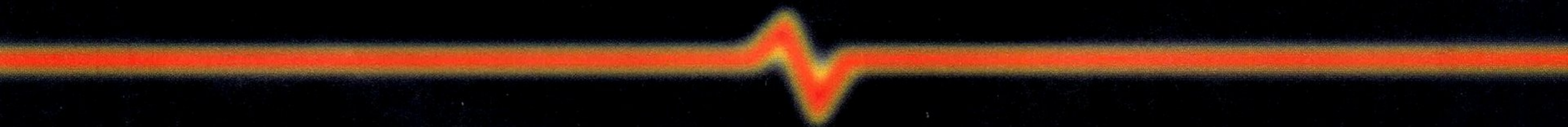
- Requires fast hard drive
- Hassle if your drive is ICD formatted

**In short...**  
Make serious use of your Falcon030 without spending serious money on RAM. **89%**





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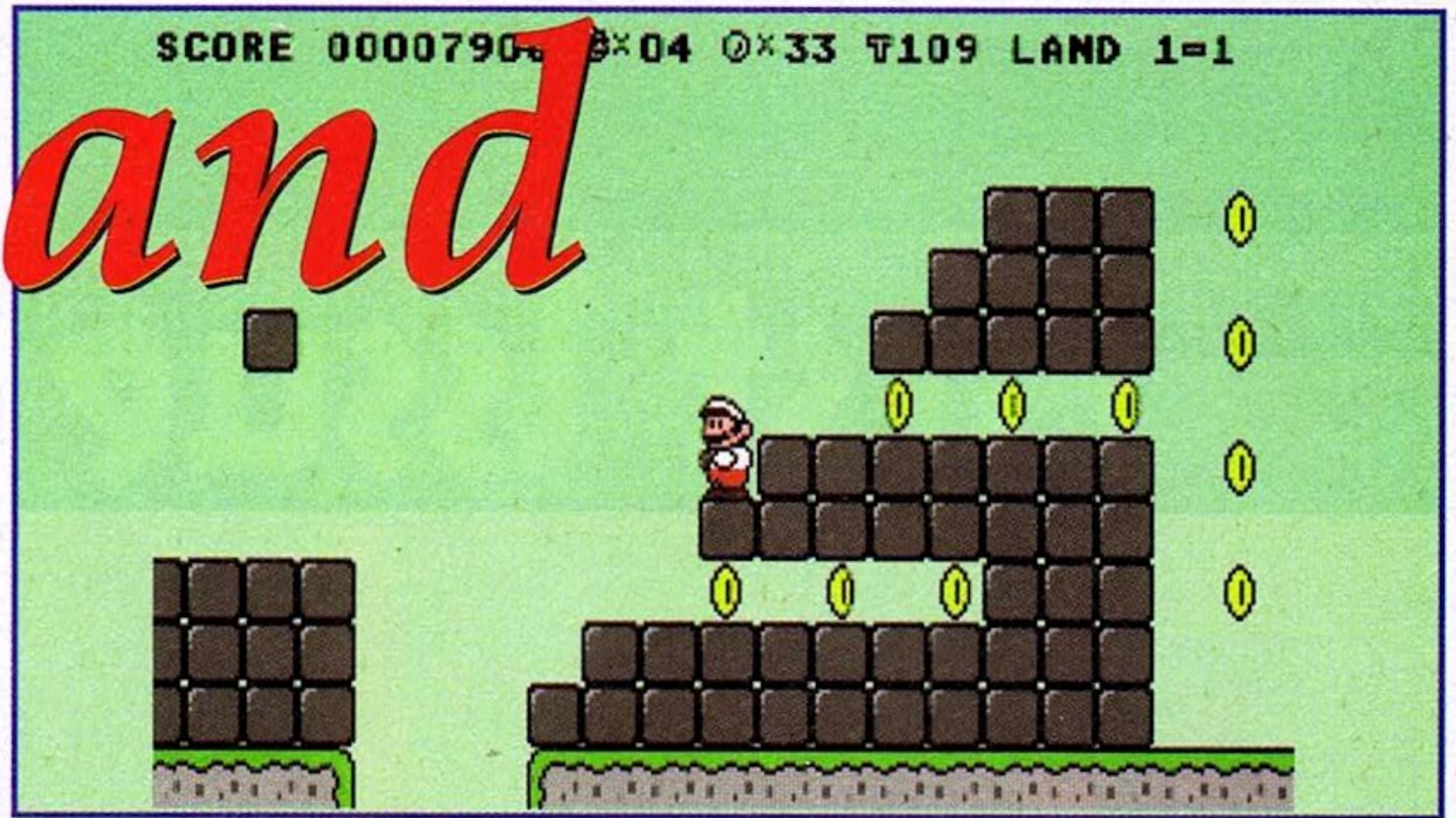
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# STario Land preview



Spinning coins rotate, tempting STario into a feeding frenzy. How to get those coins beneath him, though? You certainly can't fit through that gap.

**Serious, thoughtful gaming makes its excuses and leaves as Top Byte Software prepares to release a simplistic, fun platformer.**

**D**rawing heavily on the influence of newer console games, Top Byte's latest platformer follows the adventures of a skilled labourer on a treacherous journey through a land strewn with strange creatures and enormous amounts of cash. The classic values of 'something to kill, something to collect' are in evidence as a cute hero bounces around the screen.

STario Land's fun lies in its simplicity. You control a character that can walk, run, jump and

crouch to make his way from the left-hand side of the horizontally-scrolling world to the right, and all you really have to master is the way he moves. The obstacles you come across are either puzzles to solve, scenery to climb or dexterous manoeuvres to make, but the inclusion of a swarm of bad guys who hurt you on contact turn every piece of colourful scenery into a challenge.

Bad news for violence fans – you don't have to shoot anything. Though you can obtain the ability to bounce thunderbolts at the more unapproachable evils, the majority of the slaying involves jumping on your enemies' heads. The cash, of course,

only needs to be jumped through.

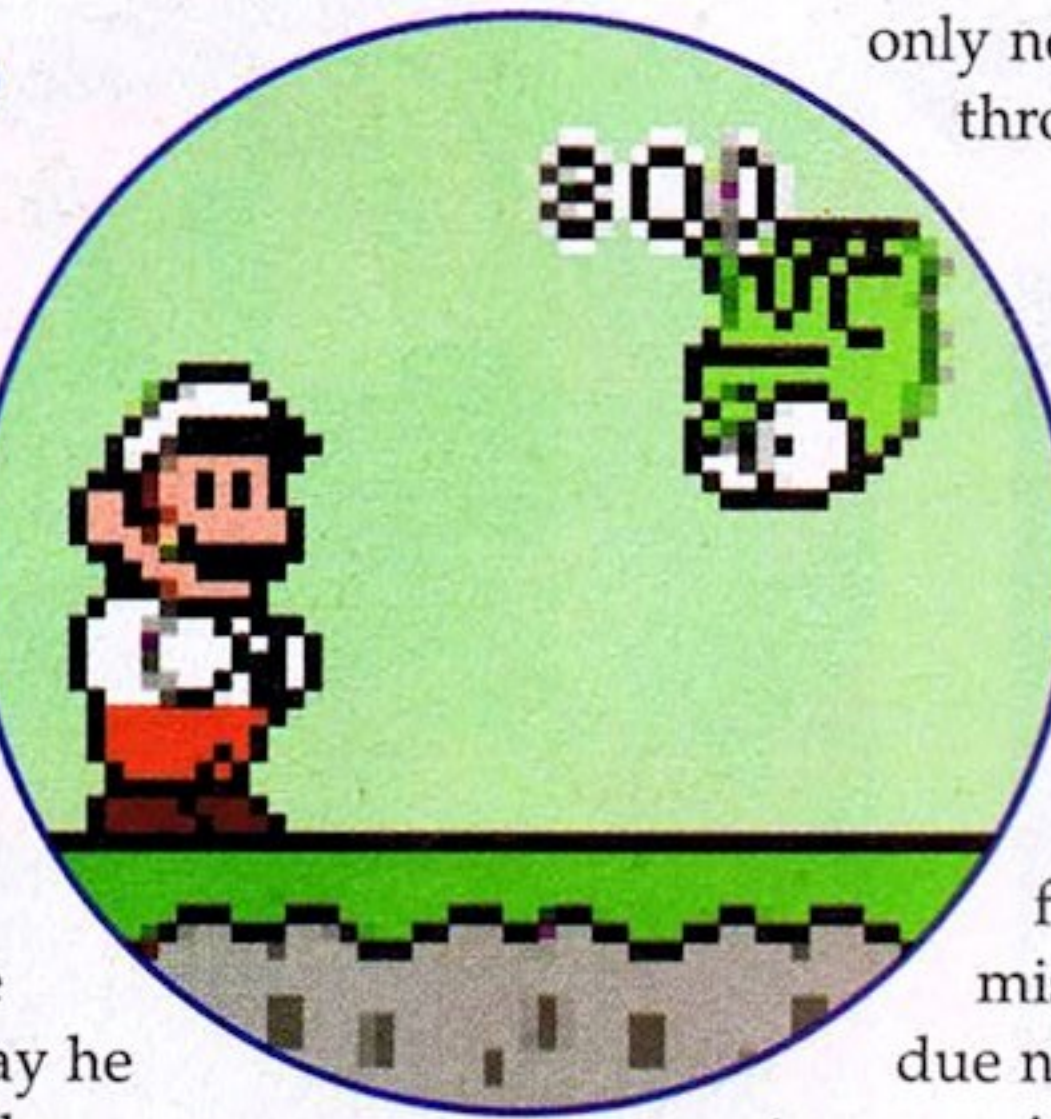
Initially the movement of the main character may cause a problem. You can spot a beginner a mile away, sliding off the end of a platform or totally misjudging a jump, due not only to STario's two running speeds but also

to an seemingly unnecessary amount of inertia. As you play, though, you'll develop the fluidity and timing that makes STario such a joy to play, becoming smoother

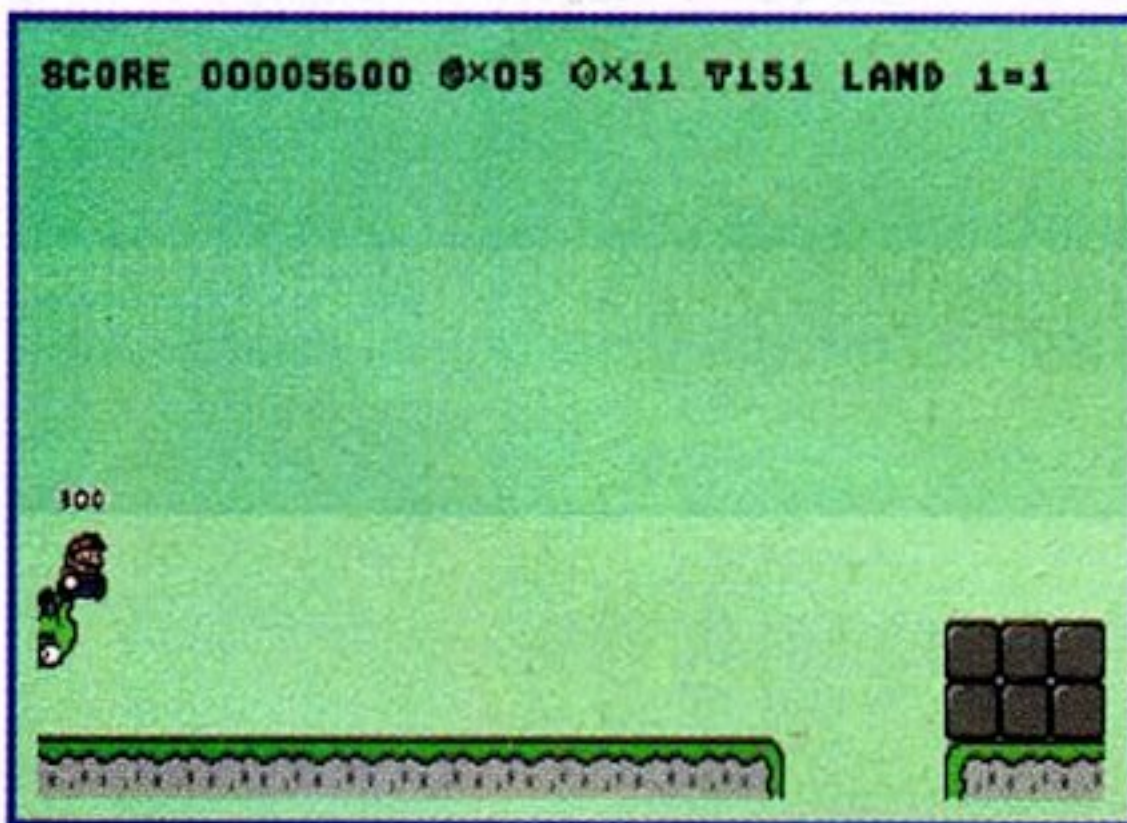
and less awkward as you get used to the feel of the game. STario's weighting is about right, the speed matching the parabola perfect-

ly (in other words, the character doesn't look like he's swimming when he jumps).

The emphasis in STario Land is on enjoyment. The graphics confirm that this is a game with a sense of humour, and the bad guys go from the sublime to the plain silly. From tortoises to typewriters (I think), just about everything imaginable roams the cheerfully coloured landscape. The linear nature of the game means you

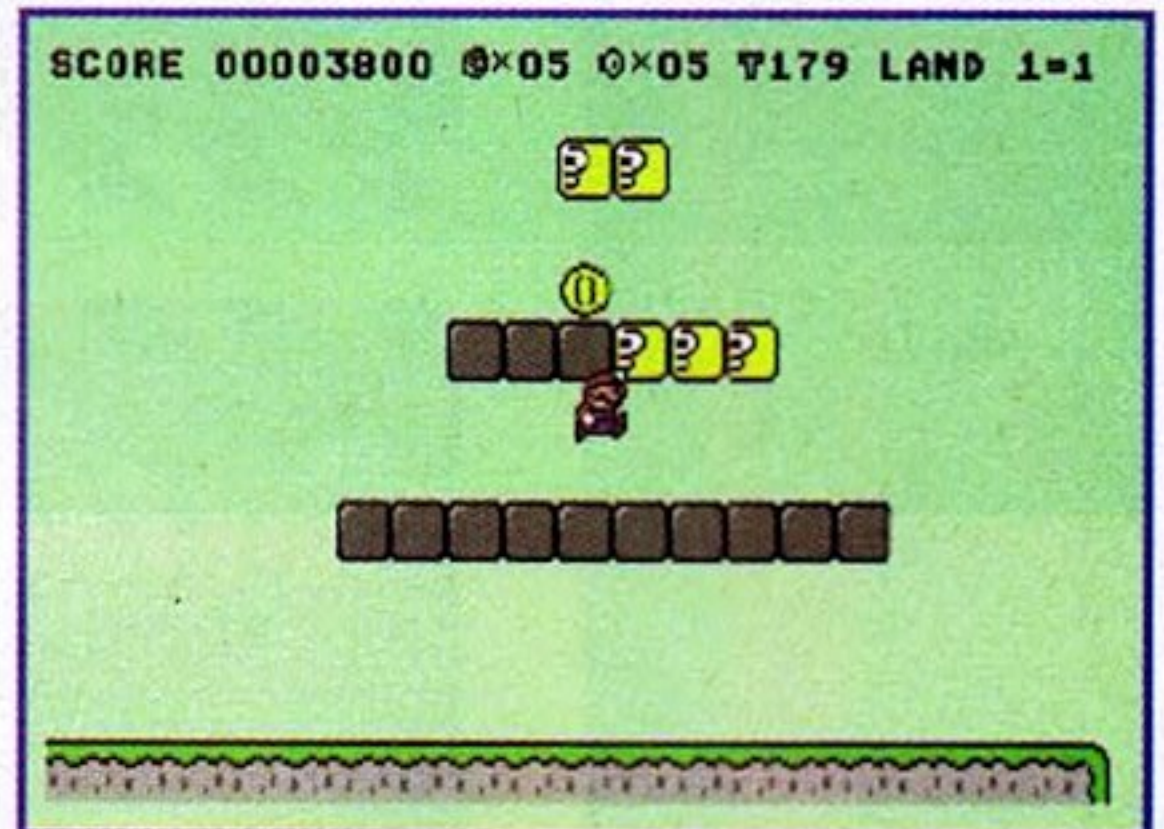


**The linear nature means you don't have to make big decisions or navigate maps**



The speed at which you can move makes even the flattest, most featureless landscape a challenge to navigate.

**AHEM...**  
These STario Land screen shots are undoubtedly going to get some people excited about exactly how the console market influenced this game. Indeed, these graphics don't look all that unfamiliar. I can only stress that this game is still in development, and uses sprites that will not appear in the final game, for obvious legal reasons.



The yellow blocks hold goodies that can be revealed by jumping into the block from beneath, nudging that cash out.

don't have to make big decisions, navigate maps or get lost – just get to the right any way you can, and have fun doing it.



Whatever it ends up looking like, you can expect a reviewer wibbling about traditional gaming values in a few months. STario Land is mindless, hassle-free, simple fun, and I think you're going to enjoy it a lot... stf

DAVE BARRINGTON

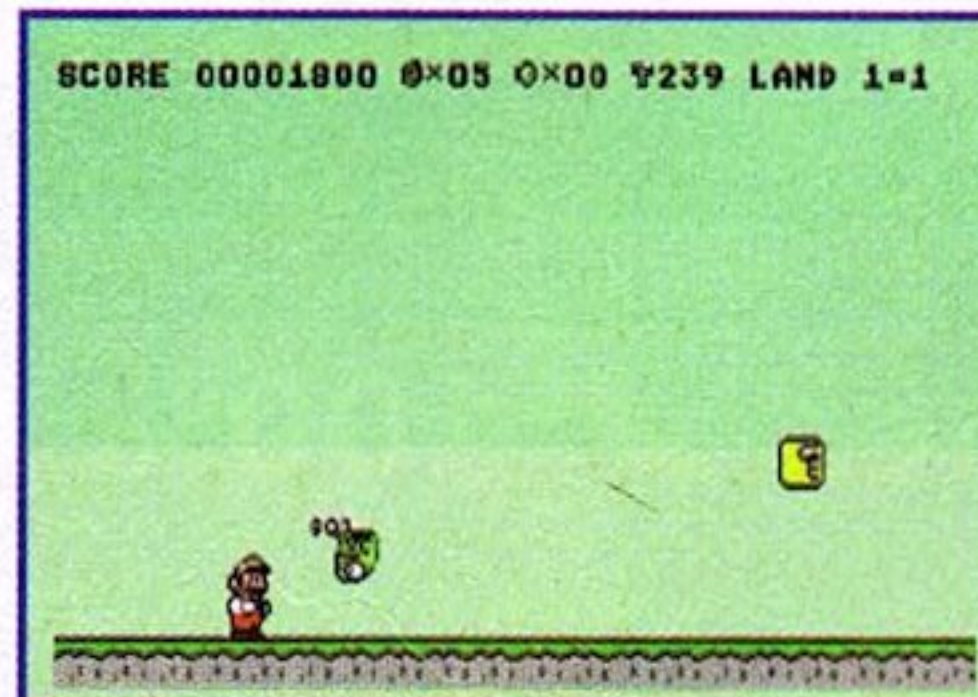
## WHERE DID IT COME FROM?

One of the most successful industries in the home entertainment sector is the console industry. It started with Atari, and has been making money ever since. Atari is still in there with the Jaguar, although the half-hearted attempts to push this obviously talented machine suggest a slight lack of enthusiasm. When we dig into the past, other machines come to the fore, such as the Master System, the NES, and more recently the SNES and Mega Drive.

Far from pushing back the boundaries of home entertainment, the consoles carved out their niche with a unique style of gaming, headed by a tidal wave of new,

cute platform games. Though, in essence, the platform game has been around since the dawn of time, the wave washed up general style points new to the gaming scene. Platform games picked up in speed, size, and detail. Ingenuity on the part of the designers taxed the player's reflexes, skill and speed, and the new wave called for a great deal more thought, attention and learning than older games.

For some reason, this unmistakable game design has never made its way back to the computer it started on – until now. STario Land is a game designed with speed and dexterity in mind.



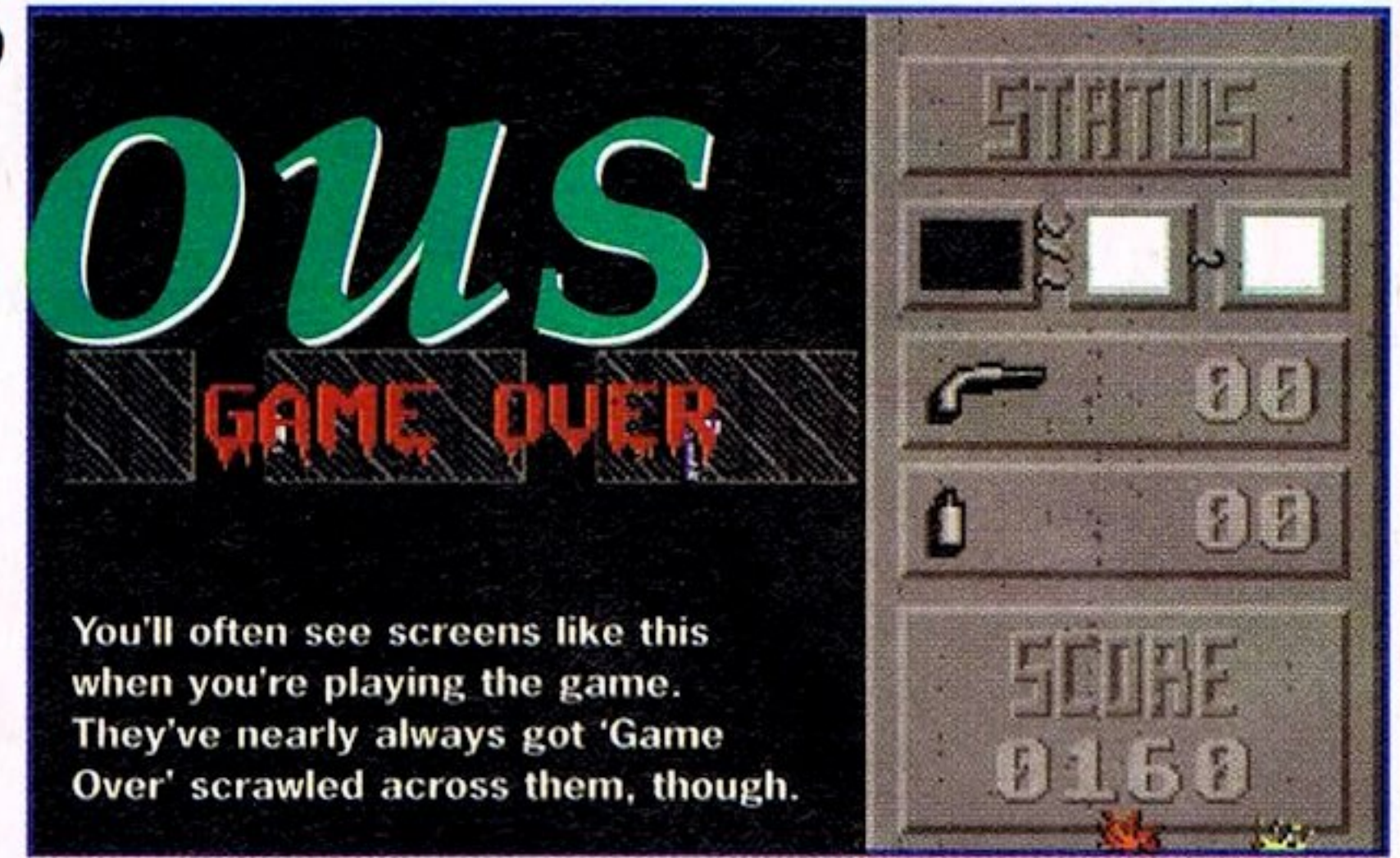
It was at that moment that our eyes met. Everything seemed to freeze as the large green frog fell to earth – before cracking his skull open.

**WHERE TO GO**  
STario Land will be available from Top Byte Software, who can be contacted at 3 Salisbury Road, Maidstone, Kent, ME14 2TY. It should cost £19.99 when it's released in a month's time.



# Brenarvarious

Top Byte's latest alien bloodfest gets off to a disappointing start. Watch that bullet spray... and then run.



You'll often see screens like this when you're playing the game. They've nearly always got 'Game Over' scrawled across them, though.

**B**renarvarious is an overhead gauntlet-style game that opens with you, the hero, standing in the middle of the network of corridors, rooms and walkways that makes up the Brenarvarious ship – which is overrun with alien eggs.

That's right folks, aliens. Since the Ridley Scott trilogy made its way into British cinemas, we've seen no end of games involving eggs, aliens and That Gun Noise. Brenarvarious features sampled sound, so your arsenal of bombs,

bullets and jumps have the atmospheric noises they had in the film.

All too soon, however, you arrive at the game's first downside – a complete lack of lasting weaponry. Any game that gives you infinite ammo is simply begging to be completed, but Brenarvarious starts you out with one bullet and one bomb. Once you've accounted for the inhabitants of the first flick-scrolling screen, you are reduced to running around the map leaping over bad guys and quickly losing energy, wishing you had another chance to hear That Gun Noise (the large machine gun, torpedo and flamethrower combo from *Aliens*) again.

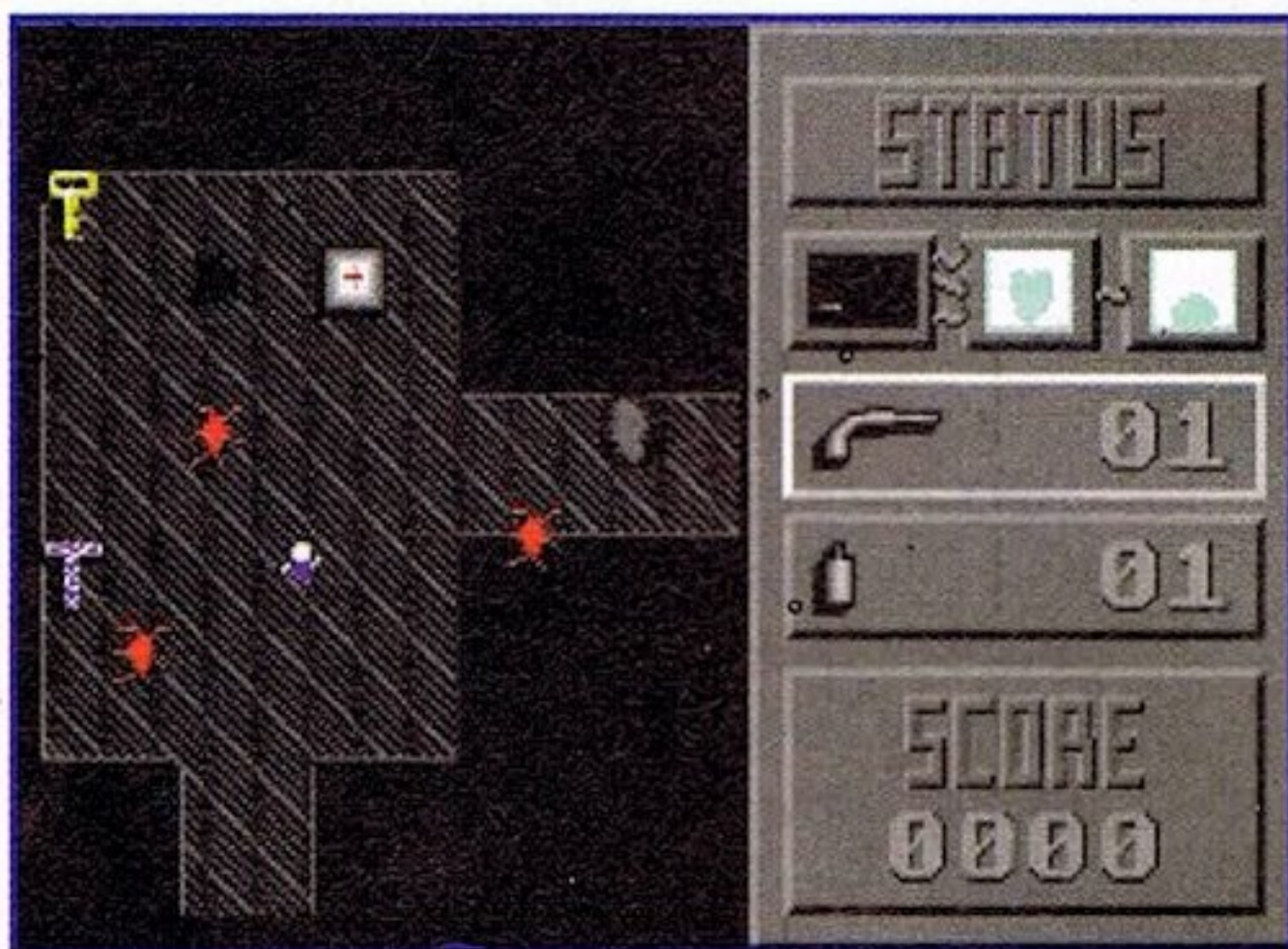
And that, unfortunately, is about all there is to the game. Whether you can explore far enough to find extra ammo is up to you, but if you do you'll be exploring a dull, repetitive set of screens and experiencing the true meaning of the phrase

'bad game design'. For example, you're not able to flick through your weaponry, which is all stacked on to the fire button. You move to bombs when your bullets run out, finally ending up with a jump, which is needed to cross the chasms blocking your path. As there's no obvious way of using the jump until you've run out of ammo, starting with only one bullet works out in your favour.

So we're looking at a game in which 90% of your time is spent wandering around trying (without success) to avoid aliens, the other 10% wondering why you're bothering; why the floor is almost as black as the lethal drop on either side; why the power-ups seem to do nothing other than increase your score; why the character's movement is so stunted; why you have to stop and wait every time an alien hatches; why said aliens don't do anything other than make their way to you; why there's no ammo to kill them with... and why the hell there's an optional editor, to create yet more

levels of the same old repetitive mess. There are a lot more questions that need answering, but I think you get the point. *stf*

DAVE BARRINGTON



There are three aliens on this screen, but you've only got one bullet and one bomb. Fun, huh.

**Brenarvarious**  
 £8.99, Editor £5.99, £11.99 for both  
 Top Byte Software,  
 3 Salisbury Road,  
 Maidstone, Kent, ME14 2TY  
 Minimum system: 1MByte, colour screen

- HIGHS**
- James Matthews of Top Byte is a really nice bloke
- LOWS**
- It's rubbish, frankly

**In short...**  
 A strange 'massacre the aliens' title with very little in the way of redeeming features. **25%**

**Tessera**  
 £5.00 Dolphin Software Group, 5 Dolphin Grove, Norwich, NR2 4DZ  
 Minimum system: Colour monitor, joystick

**HIGHS**

- Well constructed
- Maddeningly addictive
- Great value

**LOWS**

- No pause button
- Can become repetitive

**In short...**  
 Simple and well executed, Tessera brings a breath of fresh air to the puzzle format. **79%**

# Tessera

Another 'line up the blocks' game. Sigh. Actually this one's rather playable, in a 'line up the blocks' sort of way...



Apparently, if you don't keep the grid in good condition the gods will fall to Earth as mortals. Might as well take the day off, then...

**T**essera is a very clever variant on the *Tetris* theme. Ignoring the obligatory banal plot involving the gods, and names that wouldn't look out of place in Roman legend, your job is to plug the 81-piece grid with coloured tiles and prevent it from collapsing.

You have a limited number of lives which are lost when you

push tiles off the grid into empty space or fill empty holes that have appeared due to wear and tear. To make your task harder you can't place three tiles of the same colour adjacent to each other without them being destroyed. As the rest of the grid shifts to compensate, several explosions are possible, undoing all your hard work in just a few moments. The game is split into stages, each of which involves placing a tray of 81 tiles on to the grid. Depending on your performance, you can be penalised or rewarded at the end of each stage.

What's so attractive about *Tessera* is the way it manages to weave some intricate elements into the gameplay without losing the game's overall simplicity. The graphics, although basic, are nicely coloured and easy to follow, and the sound effects are sparse after the intro tune (which grates after a while). While *Tessera* won't

become as recognisable a classic as *Tetris*, it will prove to be a game you'll find hard to put down. *stf*

NICK PEERS



# Ping 2000

**Journey through time with the latest incarnation of Pong on the Falcon. TV tennis has entered a new era...**

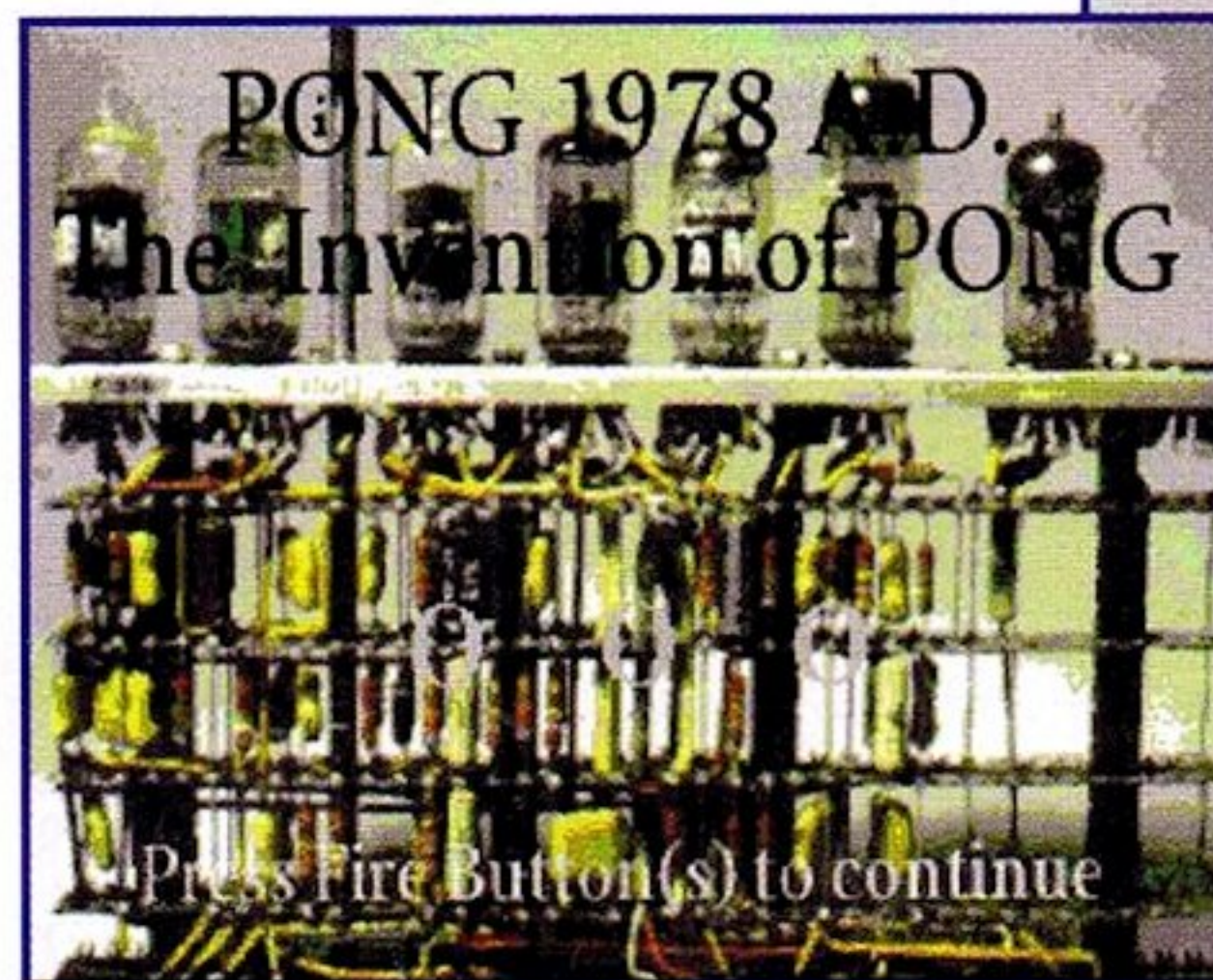
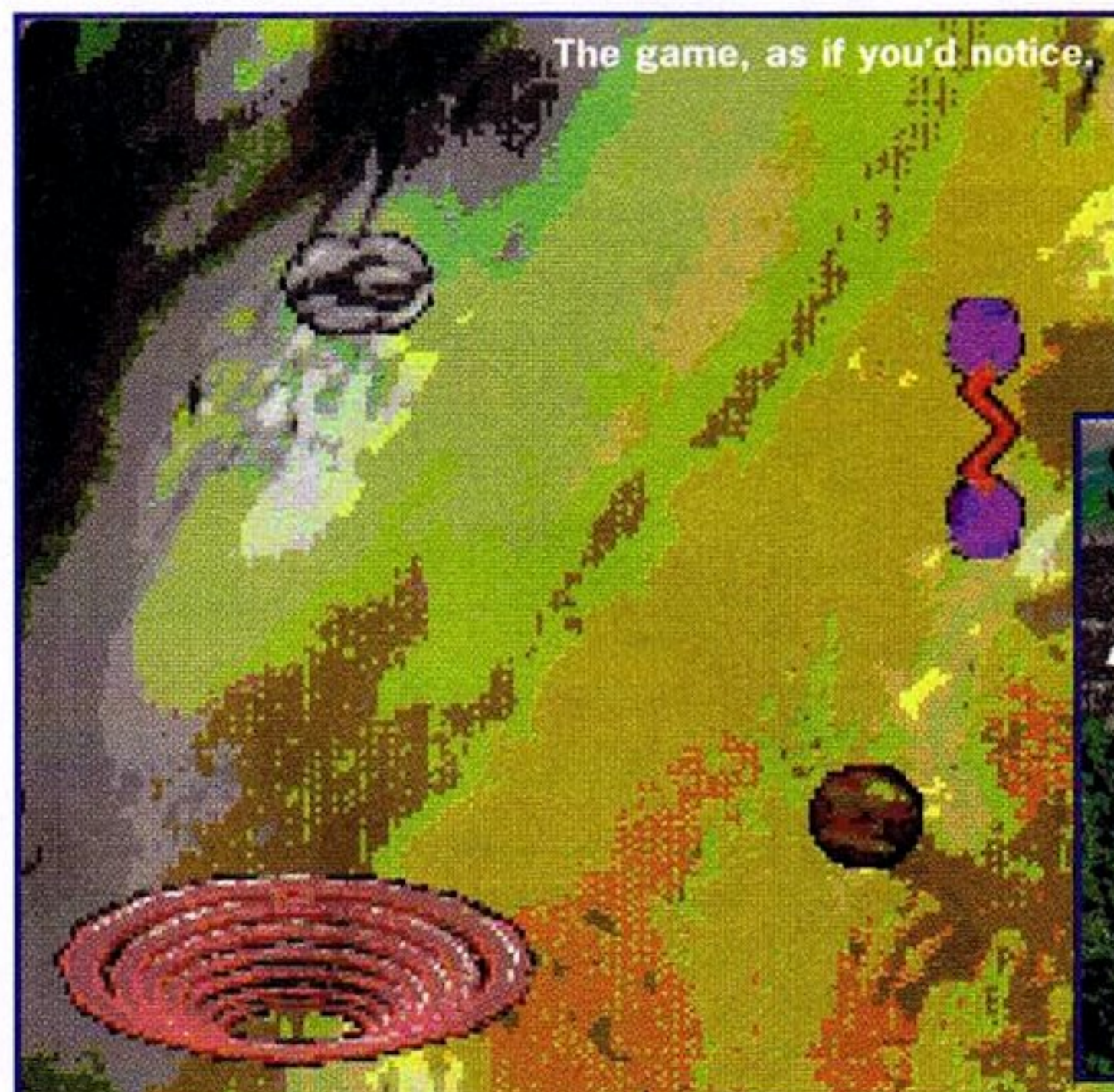
Ask any computer games veteran how the industry started, and they'll enthuse for hours about a game called *Pong* – and rightly so. *Pong* was the first arcade game, and way back then it took the world by storm.

If you've never heard of it, don't worry. You've played it before, but you know it as TV tennis. Holland Game Design has decided to bring the game into the 1990s with a souped-up Falcon version called, for copyright reasons, *Ping 2000*.

When Jeff Minter coded *Tempest 2000*, he created a version of his classic game that took full advantage of the Jaguar's presentational abilities, but stuck closely to the original game. This works with *Tempest*, a fast and furious shoot-'em-up that benefits from the graphics, sound and speed of the new format (plus a few new features). *Ping 2000* is based on the most basic form of TV tennis – what more can you add?

## The dawn of time

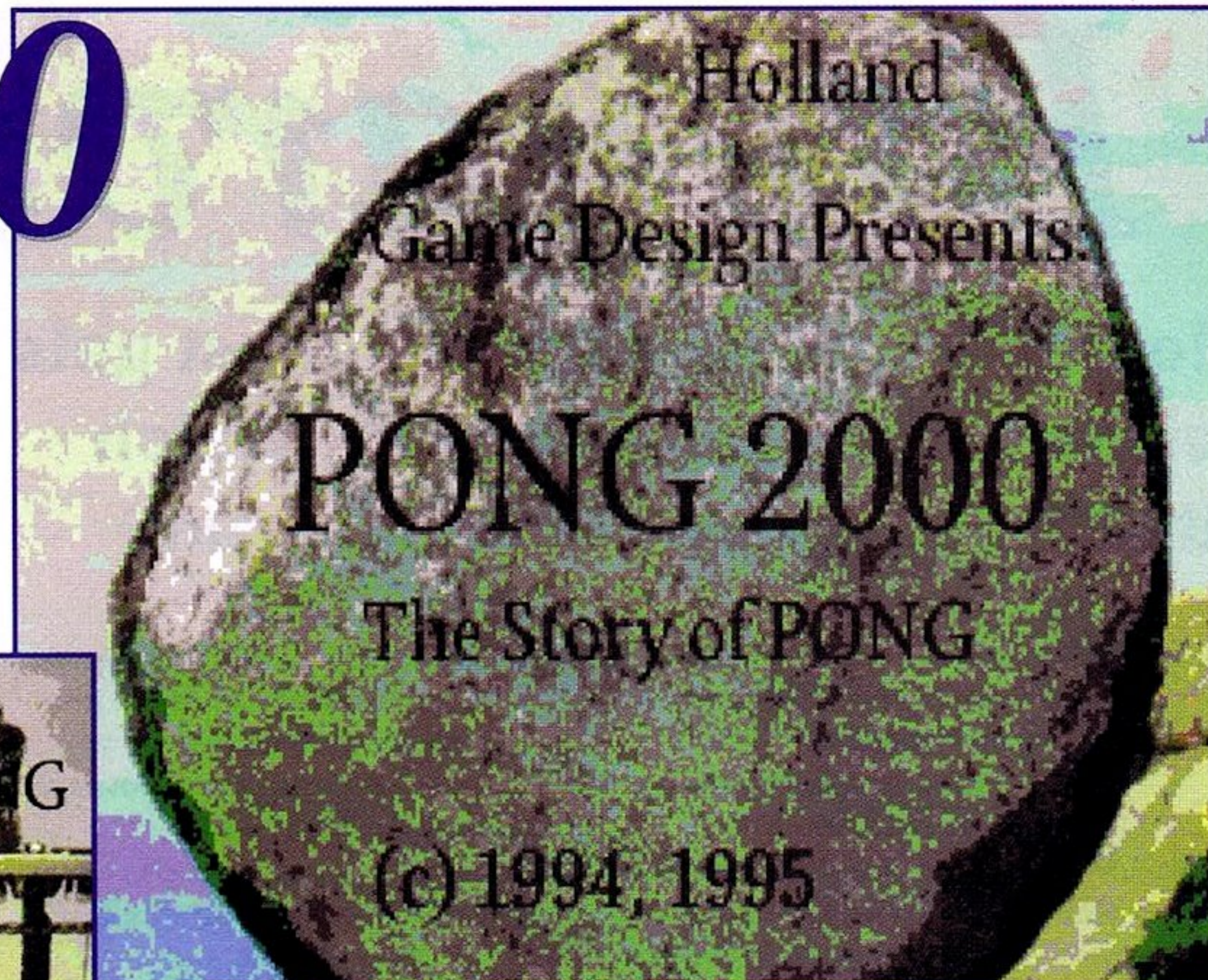
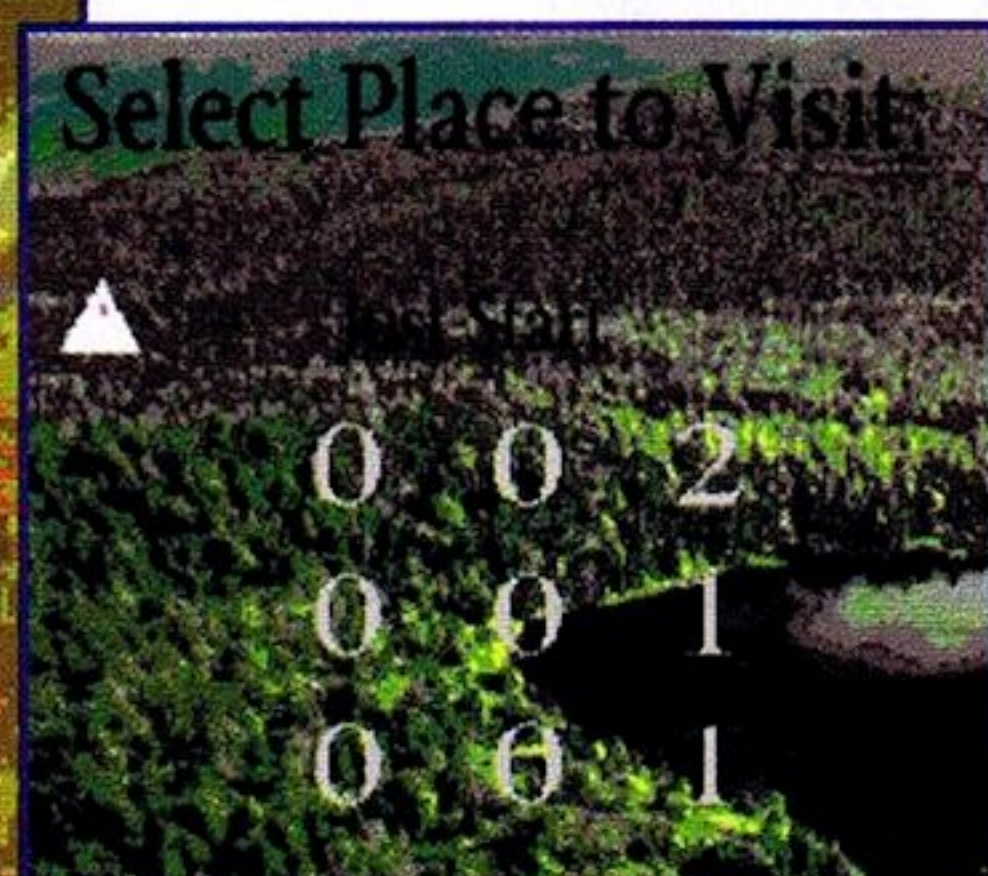
According to HGD, "Ping 2000 will take you on a journey through time, and show you that Ping has been a basic element of existence." The game has been split over six stages, from 20 million years BC through the 16th century and on to space wars in the future. This is achieved with themed levels. The basic game remains the same.



*Ping* has an almost monumental feel to it. A series of good stills sets the mood and pace for the rest of this historical (in more ways than one) game.

Each level starts with a bat on each side of the screen and a ball being launched in the middle. The old rules of computer tennis apply and the ball bounces back and forth across the screen from bat to bat. You control one while the computer or another player controls the second. If the ball gets past your bat and leaves the screen on your side, your opponent has scored a point against you, sapping one of your three lives. When you score a point you gain a life, and your opponent loses one.

The immediate problem with this is that it's *Pong*. Although the original game was undoubtedly popular, today's gamers expect more for their money. Despite being intriguing (obviously born of a die-hard *Pong* fan), the plot has very little to do with the game. The graphics change on each level,



Note the 'clever' use of the O, enclosing the I. To be quite honest, that's one of the bigger additions to the old Atari classic. Humbug.

giving a fairly good impression of the settings, but these are superfluous to the game. What we're really interested in are the extras a game like this should contain.

## With knobs on

To call *Ping* a pretty *Pong* clone would be unfair. HGD has made an effort to expand the game by adding a series of obstructions to the court. The ball bounces on them, and various other moving objects, resulting in random changes of

direction. These obstacles detract heavily from the skill aspect of *Pong*, as any careful planning or thought is completely blown away by a rock floating randomly across the ball's path.

The other addition to *Pong* is the power-up system. When the ball hits a power-up, the last person to touch the ball receives its qualities. Power-ups can either speed the bat up, slow it down, award an extra life, alter the ball's speed, or simply win the match.

As a final touch, the court is larger than the screen, smoothly scrolling back and forth to allow more complex shots and longer duels before the ball bounces back up the screen.

## Was it worth it?

That's the question on everyone's lips: do the additions merit a completely new game? The simple answer has to be, unfortunately, no.

Having seen *Arkanoid's* con-

tribution to breakout, *Ping* falls short of the grade. The power-ups could do a lot more than affect the ball's speed, and the obstacles could do a lot more than bounce the ball. Admittedly the game is packed with a lot of pretty pictures and original sprites, but graphics do not a good game make.

In summary, this is quite a good *Pong* clone, but the addition of a few bland features and the number 2000 don't make it the game of the century. If you're completely nuts about the original (still?) you'll probably enjoy *Ping*, but the rest of us will be disappointed by this fairly bland bat and ball game. *stf*

DAVE BARRINGTON

STIF VERDICT • STIF VERDICT

## Ping 2000

£19.90 Merlin  
01452 770133  
Minimum system: 4MByte Falcon, 3MByte hard drive space, colour monitor, joystick or powerpad.

### HIGHS

- Excellent presentation
- It's *Pong!*

### LOWS

- It's just *Pong*
- And thus it's bland and shallow

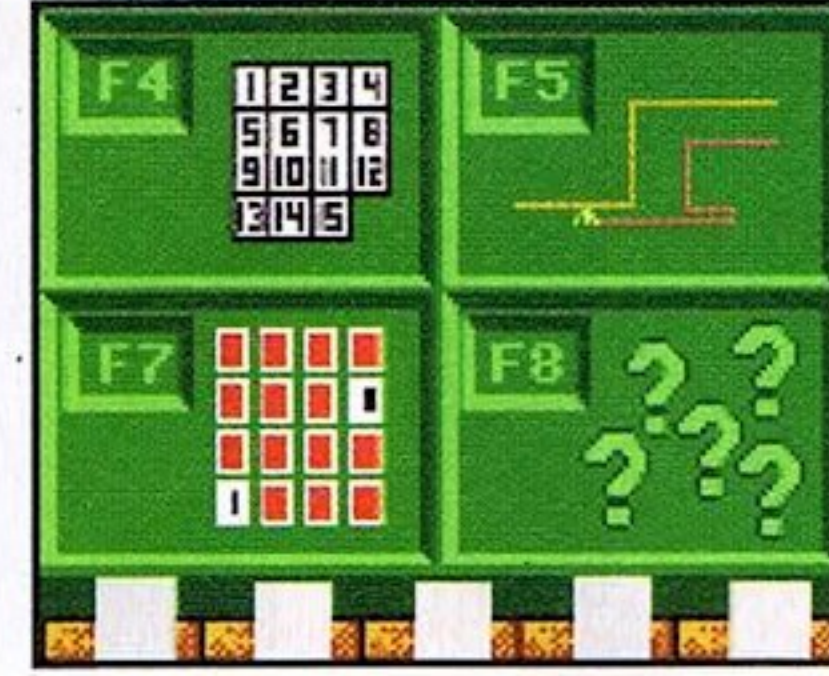
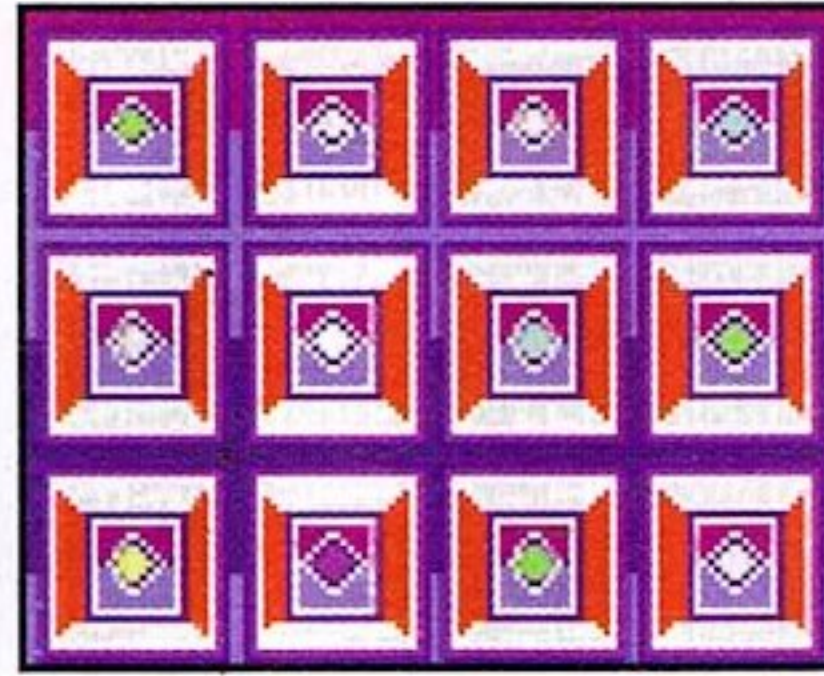
## In short...

A good version of *Pong*, but the unexciting additions to the theme tend to get in the way

**60%**



# PD Action



Nick apologises, but there's no Game of the Month award this month. Ah well, that's life.

## GAMES

### FALCTRIS

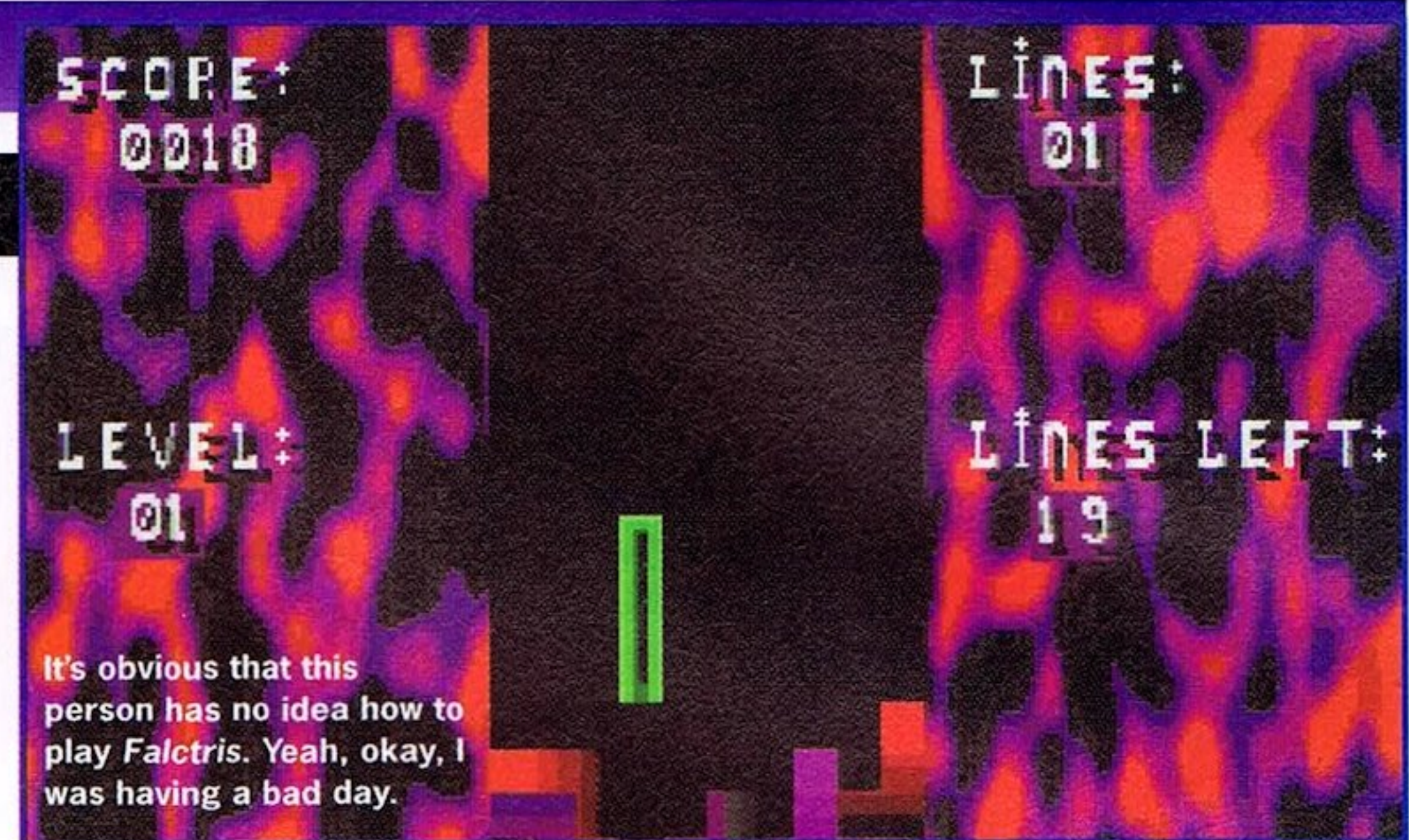
AD.LIB PD  
Falcon only

FALCTRIS IS A TETRIS CLONE for the Falcon. All the expected features are there, including a nicely rendered backdrop and sound effects to make you snarl once the novelty has worn off. The tiles themselves are nicely shaded, but dark enough to be almost

invisible at times.

Ultimately, though, *Falctris* is *Tetris*. You either like it or hate it, although it has to be said you can't watch someone playing it for very long before you get itchy fingers. If you've got a Falcon, and you're dying for a *Tetris* clone that suits your machine's enhanced graphics, this is well worth a look.

STF RATING: 71%



## REVIVAL

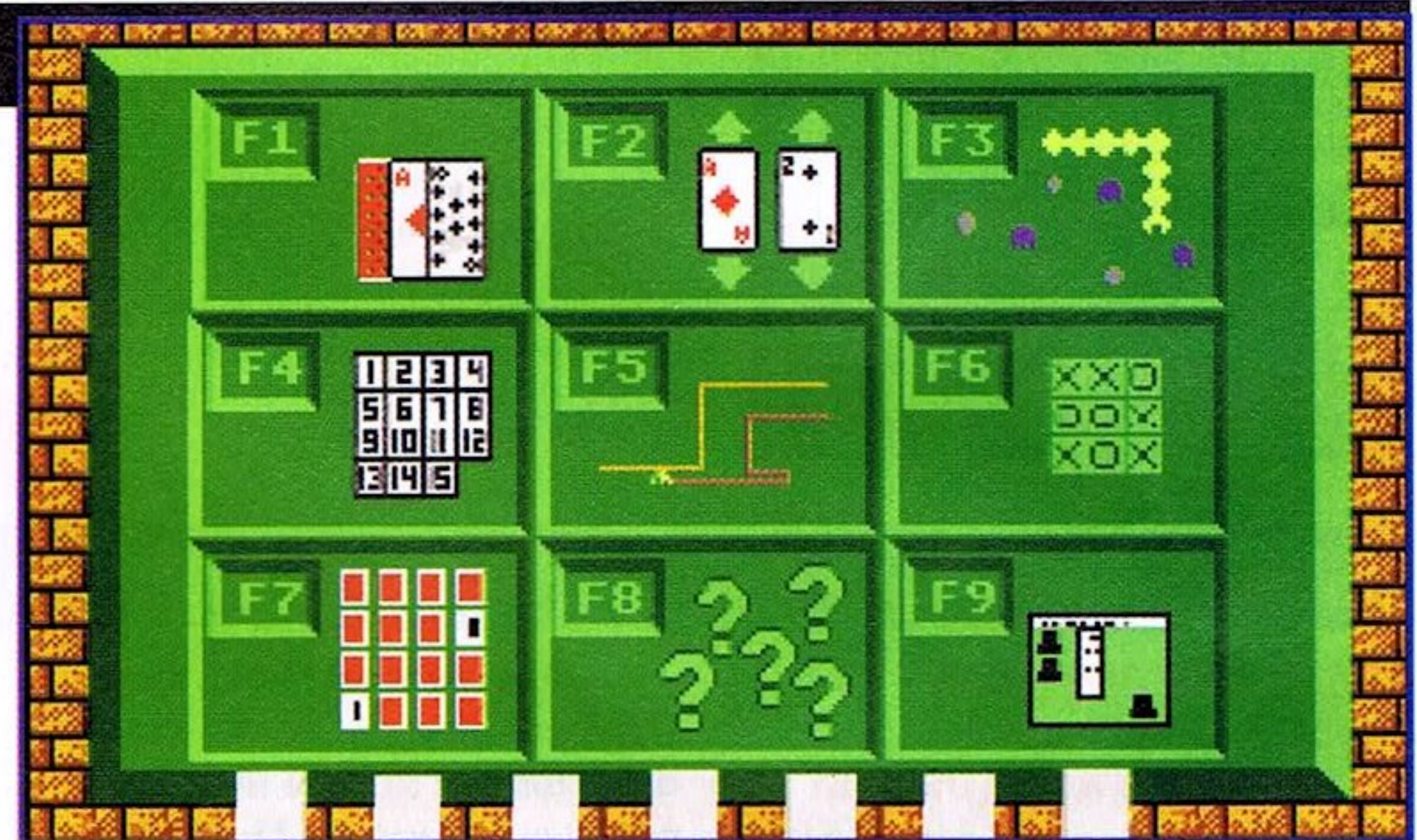
POWER PD, DISK PWR928  
TOS 2.06 and Falcon  
compatible with STOS fix

REVIVAL IS A COLLECTION OF seven games rolled into one program. All the games are simple variants on popular pastimes such as Pontoon, Snake, Tron, Noughts and Crosses and a sliding puzzle akin to *Taquin* from Cover Disk 68. Each game is nicely, if a little sparsely, presented but there's no real challenge in any of them. With Noughts and Crosses, for example,

once you work out how to win you can defeat the computer every time. The Hi-Lo card game has no scoring system, so what's the point? There's also a really annoying tune that can't be turned off, forcing you to lunge for the volume control.

All in all, this collection would appeal mainly to younger users. There are other, and better, variants on all of the games featured here that offer more for experienced gamers.

STF RATING: 59%



A good value collection this, but none of the games in *Revival* stand out in any way.

## QUICK FLIP

QUICK FLIP  
LAPD, DISK L110  
All STs and STEs, not Falcon  
compatible

DUNCES CAP SOFTWARE ISN'T the only puzzle specialist on the ST scene. Nice Bytes Software has also churned out a few puzzlers in its time, and its games are as identifiable as Dave Cobbleddick's efforts.

*Quick Flip* is set on a four-by-four grid. You score points by moving the joystick in one of four

directions on one of the 16 tiles to change its colour. All this is done with the threat of killer (or unusable) squares cropping up, not to mention a time limit.

It might have helped if the game had come with more readable instructions – watching them scroll by in a pitifully small window is not my idea of a good time (in the end I was forced to load the program into *Knife ST* to read them at my own pace). The screen itself is nicely coloured, but far too confusing and cluttered to be of any real use. You'll find yourself wondering why you bothered.

STF RATING: 40%

If you've seen one puzzle game from Dunces Cap Software or Nice Bytes, you've seen them all. *Quick Flip* is just one more overcomplicated variant on an already overworked theme.

## PD ACTION ROUND-UP

Here's a quick look back at the PD games we've covered in recent issues.

GAME	PD LIBRARY	ISSUE	RATING
Pacman on Es 2/Tomtar	Power PD	68	90%
Conquest 2: The Viking Hordes	LAPD	69	87%
Aliens	STellar PD	70	85%
Datachess 2	Floppyshop	70	85%
Serenade Menu v17	STellar PD	68	84%
PD Pack Eight	Chaos PD	69	82%
Fruity/Match It	Transp. Dreams	68	78%
Noughts and Mad Crosses	Power PD	68	76%
Pothole 2	Chaos PD	70	75%
ST Vegas	Who's PD	67	65%
Project Purify	LAPD	69	63%
Overscan Invaders	Floppyshop	67	55%
Max	Power PD	69	55%
Grand Prix Manager	Floppyshop	68	54%
Pop!	LAPD	69	51%
Lindemo and War	Goodmans PD	67	50%
International Manager	LAPD	70	49%
Crazy Letters	LAPD	70	35%
Starburst	Power PD	69	20%
Mad	Chaos PD	70	20%





# PD Choice

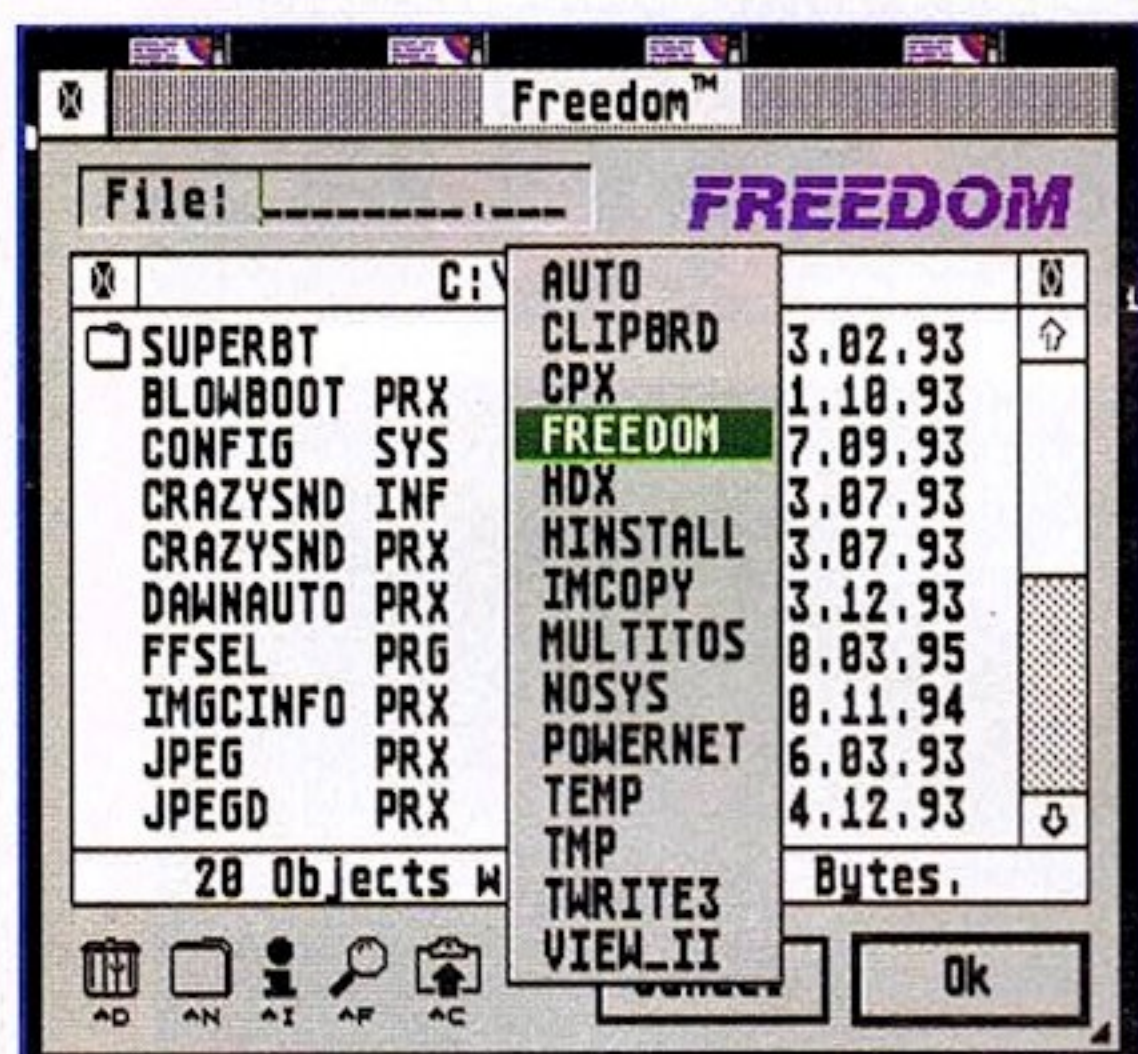


Batten down the hatches – here's Nick with some more choice PD selections.

## UTILITIES

### FREEDOM 1.1

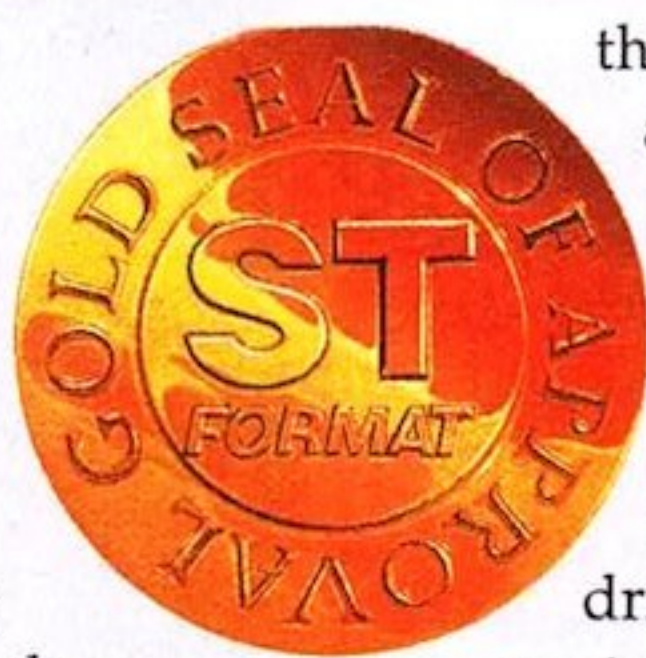
**HENSA SOFTWARE ARCHIVES Falcon compatible. Hard drive, lots of memory and a multi-tasking package recommended**



FREEDOM IS THE latest in a long line of file-selectors for your Atari, but the first to be non-modal. This means that other operations aren't automatically suspended when you access the file-selector, which makes Freedom perfect for use with multi-tasking operating systems such as MagiC and Geneva.

Like BoxKite, this program takes the excellent Selectric (91%, STF 69) as its inspiration. Unlike BoxKite, however, Freedom takes

Moving around your various directories is a dream with Freedom, which almost, but not quite, steals the crown of Selectric, king of the file selectors.



the best of Selectric and adds a whole lot more to boot. One of its most attractive features is the ease with which you can move around different folders on different drives. Clicking on the relevant section of the path name above the file-selector enables you to move directly between different folders without having to return to a higher directory first.

When you enter a folder you can mask any or all of the files by clicking on the \*.\*. Rather than display a preset list of extenders, the program limits itself to displaying all of those represented in the current folder, making it easier

to get to the files you want.

It should be stressed that this is only a demo of the full version. There are a number of annoying restrictions which should encourage registrations, including the fact that you can't give filenames extensions or even see how big various files are (unless you highlight them first). But considering the effort that's gone into this finely-honed piece of craftsmanship, the authors deserve fame, riches and encouragement to keep going. While it isn't really suitable for those of you with limited memory and no hard drive, it is one more good reason for upgrading your machine. Marvellous.

**STF RATING: 90%**

## GHOSTLINK

**RIVERDENE PDL, DISK UTL325 All Ataris with a null modem connection**

GHOSTLINK IS A SUPERB utility enabling you to network your Atari to a PC. Your Atari acts as the master and you can access any of the PC's drives, including a CD-ROM drive.

One use might be to set up a GEM partition on the PC's hard drive for you to store files. This can save you money by enabling you to use a PC hard drive for both computers. Alternatively you can use Ghostlink to read CD-ROM disks from the PC, again saving you the price of a CD-ROM drive. If you're fortunate enough to own a TT or Falcon you can connect up

to three PCs via different ports!

There are a few glitches in this beta version of the program, but the author hopes to develop support for MIDI and parallel ports, which should speed the transfer process up and make it possible for the Atari to act as a slave, enabling the PC to access its ports and drives (this would be most useful in MIDI applications).

He also hopes to produce a version enabling you to link two Ataris together, which means your old STFM might have a use yet!

Aside from the bugs, the idea is a sound one, and will save you money if you have two machines. It could also be seen as an inexpensive alternative to Janus, the hardware ST emulator for PCs.

**STF RATING: 80%**

## MISCELLANEOUS

### TOYS ON DISK

**GL-PD, DISKS GL77A/GL77B All Ataris, PCX file viewer required**

A STAGGERING 51 PCX picture files are included on these disks, all diagrams explaining how to make paper toys for children.

PCX files are actually designed for the PC. The best program for loading, displaying and printing them on your Atari is PicSwitch 1.01, which conveniently (Perhaps too conveniently for conspir-

acy theorists – Karen) featured on STF 68's Cover Disk.

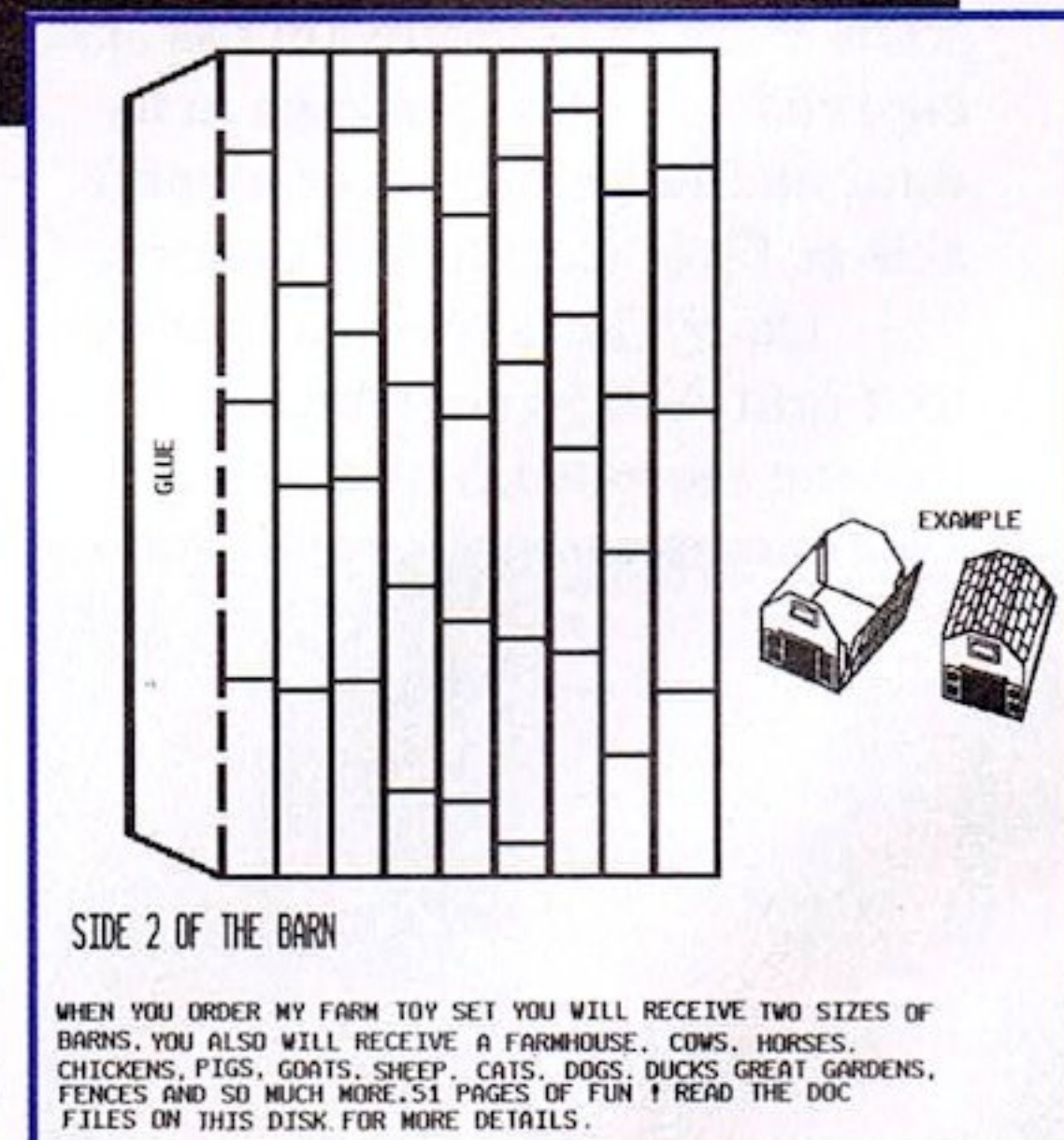
Each picture consists of a number of elements which make up a toy. All you need to do is follow the printed instructions and cut out the elements as shown before folding and linking them together. A number of hints and tips are included in the accompanying documentation to help you get the best results from your particular brand of printer.

The pictures themselves are

of excellent quality and should provide an entertaining way to prevent your children (Or disk editors – Karen) from getting bored and running amok on a wet afternoon. Highly recommended, and buying the full versions of each toy set seems like a very worthwhile investment.

**STF RATING: 86%**

Ah, a cheap way to buy presents for little sisters, cousins and god-daughters, which means more CDs for yours truly! (Thwack! – irate mother. Ouch! – Nick)





# MYSTIC MICK'S LUCKY LOTTERY NUMBER PICKER

**TRANSPARENT DREAMS PDL**  
All STs and STEs, not Falcon compatible

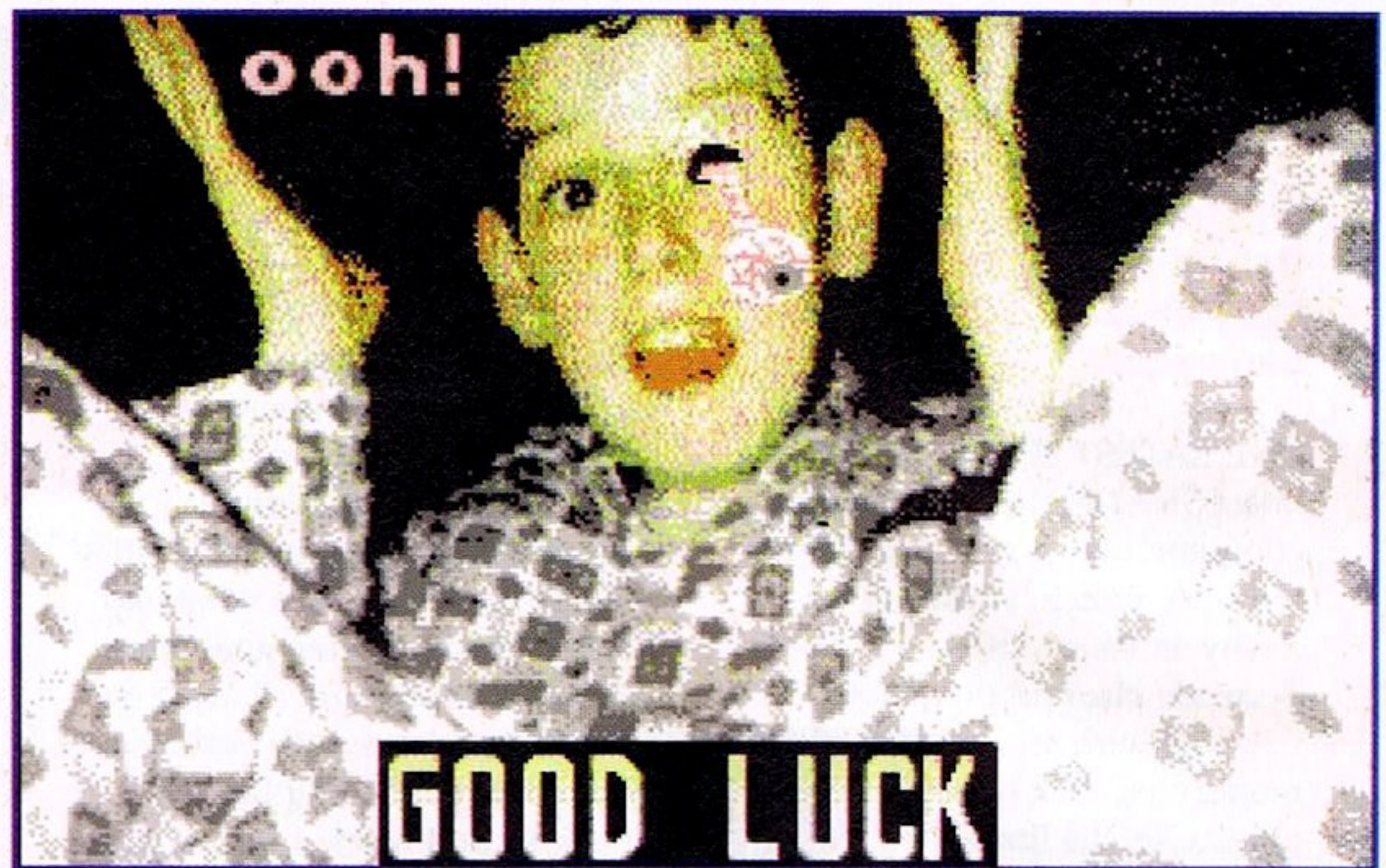
LOTTERY PROGRAMS HAVE proved more popular than any other type of PD or Cover Disk submission in the past few months – proving how easy it is to write them. All you need is to produce five (*Six, I believe – Mary*) random numbers and then bolt on a groovy user interface. Even I could do it, and if the market wasn't already flooded I probably would.

This one is a little more interesting in that the numbers are generated depending on how you

answer a number of questions – however, answering them in the same way each time produces identical results. Once done, you're given the option to print your selection or return to the beginning of the program, via a digitised pic of the author and a rendition of Cliff's majestic hit *The Young Ones*, courtesy of (wait for it) *The Young Ones*. Fun, but like all lottery programs, only entertaining for a few minutes.

**STF RATING: 60%**

Hmm, whether *Mystic Mick* will bring you riches is irrelevant when he looks like this. Time to run screaming in the opposite direction, methinks...

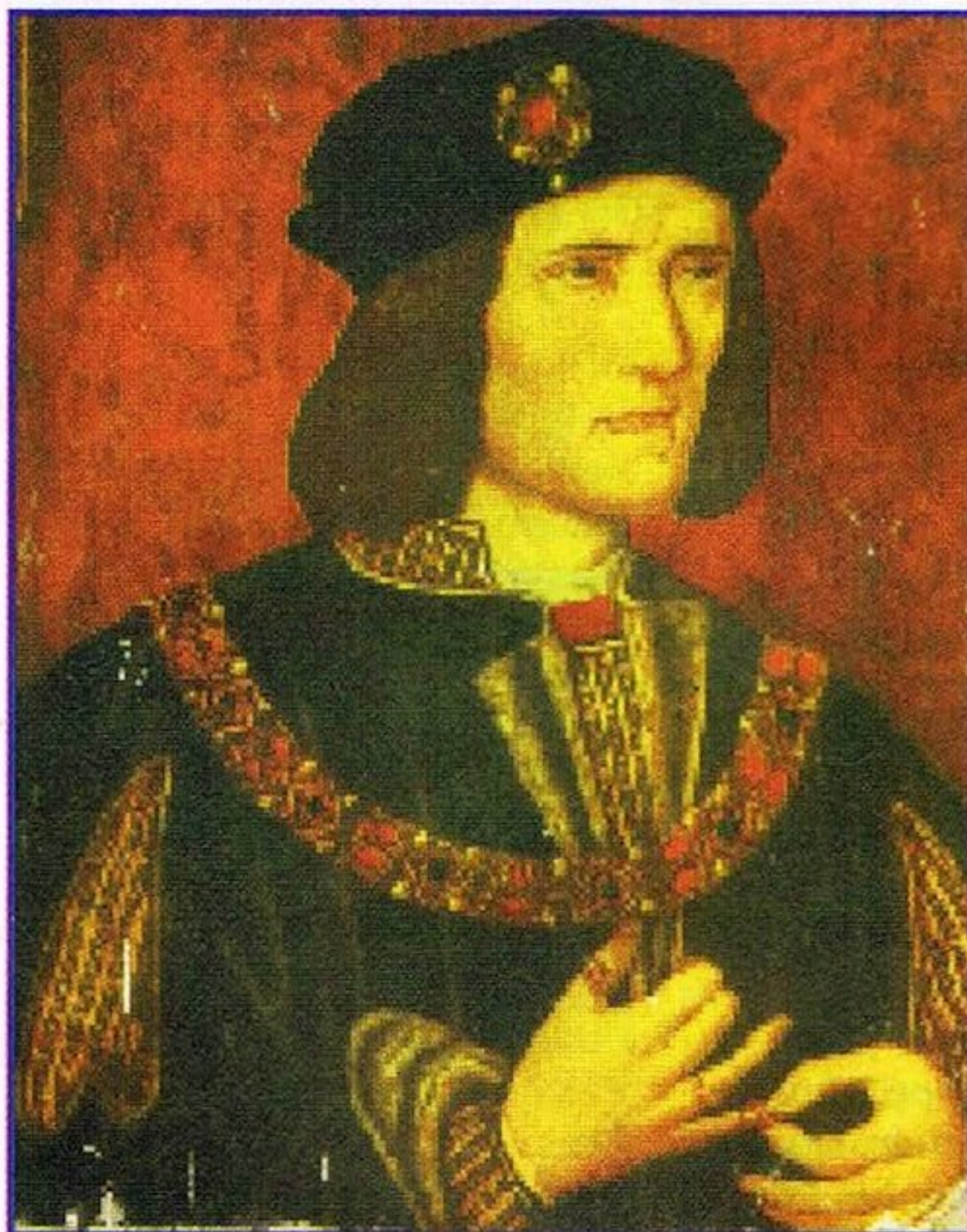


## ART

### SPEED OF LIGHT 3.7B

**AD.LIB PD (or next month's Cover Disk)**  
All STs, Falcon compatible

JUST WHEN YOU THOUGHT *Speed of Light* had reached its peak, along comes Stuart Denman with



an update that knocks the socks off its predecessor. Version 3.7 enables you to run, display and dither graphic files in any ST resolution. This means those of you with monochrome monitors can now see what the fuss is about.

*Speed of Light* is a GIF and JPEG file viewer. Clever use of rapid palette switching enables you to view 256-colour pictures on your humble ST with only the slightest hint of a flicker. If you want to display GIFs in the ST's two, four or 16-colour palette (depending on resolution), you can incorporate a number of dithering options which shade the image with dots to compensate for the

With *Speed of Light 3.7B*, 256-colour GIF or JPEG files can be viewed on a 16-colour ST with just the slightest flicker. Look out for it on next month's Cover Disk.



lack of colours available to you. Subsequently you can get excellent results even from a monochrome monitor.

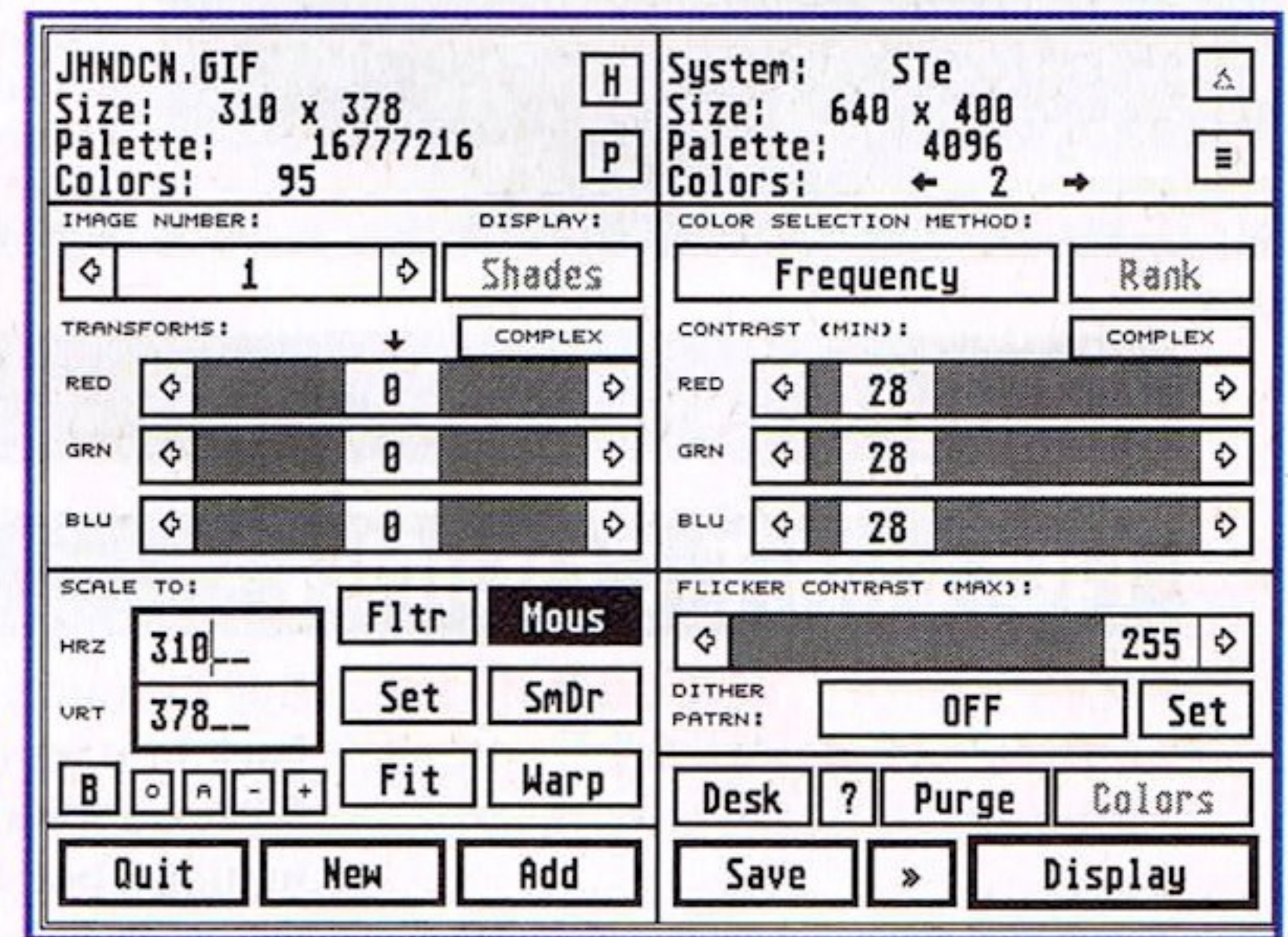
The customary restrictions remain – although a host of new dither options have been incorporated into 3.7, you'll need to register in order to access most of them. *Speed of Light* has always been an excellent example of shareware in operation – amply demonstrating its powers to potential buyers while being restrictive enough to encourage registration (remember, registering this version automatically entitles you to

Now monochrome users can view GIF and JPEG files easily – in glorious black, white and grey.

future updates). On top of this are other features, such as image scaling, filtering and warping, enabling you to alter the way your picture is displayed on-screen.

*Speed of Light* does nothing but improve with each update, and this latest version is no exception. If you can't be bothered to get hold of it from Ad.Lib, wait a month – it is going to be on next month's Cover Disk.

**STF RATING: 93%**



## GRAFIX PD DEMO

**POWER PD**  
All STs, Falcon compatible

SILLY SOFTWARE, AUTHOR and now publisher of *Grafix*, the art tutorial program (featured as a demo on Cover Disk 65) return with a brand new demo of this eagerly-awaited tutorial for the artistically challenged.

This version does more than just concentrate on heads: tutorials on perspective, colour, landscape and animation are now included. Even the section on basic heads

has been thoroughly updated since Cover Disk 65. It seems Silly Software has got a potential hit on its hands.

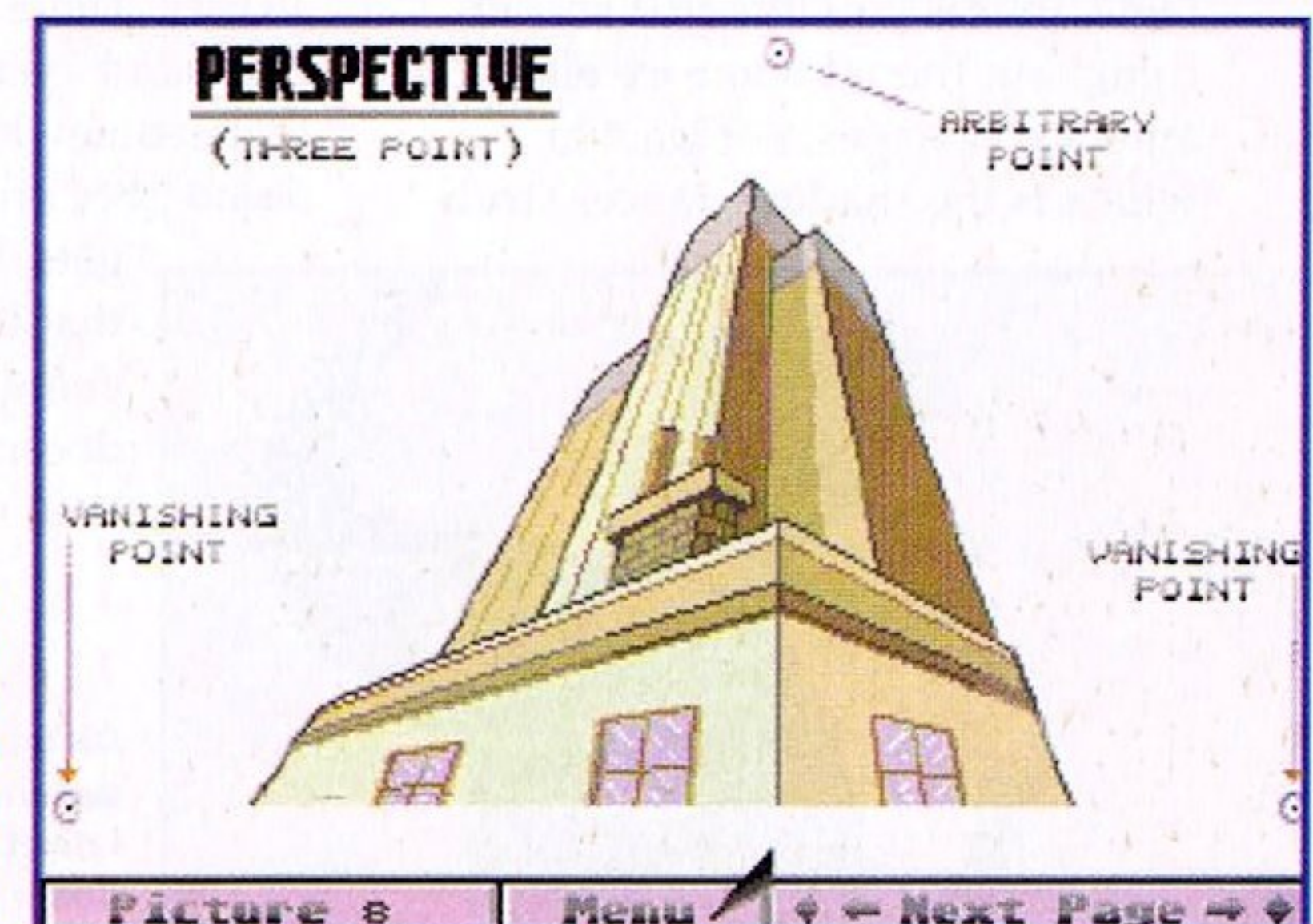
Each screen is informative and gives you step-by-step instructions to help you produce the best effects. You can also watch some simple, but remarkably effective, animation sequences.

*Grafix* has been designed to help any budding artist, not just those perplexed by the intricacies of *Pablo Paint* from last month's Cover Disk. The quality of the pic-

tures is excellent. *Grafix* appears to be doing its job – teaching the likes of you and I the basics of art – effectively.

**STF RATING: 84%**

It's been a long time coming, but the full version of *Grafix* is imminent, and at £19.95 for three disks it's looking damn good value for money too.





## DISK MAGS

### NOVADISK, ISSUE 6

▶ **£2+SAE from NOVADISK, 91 Elm Tree Avenue, Kilburn, Belper, Derby, DE56 ONN. Not Falcon or TOS 2.06 compatible**

THE LATEST ISSUE OF THE latest *Star Trek* diskmag arrives complete with a new text display interface which, while not as flashy as *Warp's* (92%, STF 70) is perfectly clear and readable.

As with all magazines, disk or otherwise, the litmus test comes with con-



tent, and *NovaDisk* doesn't disappoint, proving that it's maturing well as the issues fly by. Opening with a superb commentary on the recent *Generations* convention in London, including a well-crafted synopsis of who said what and when, the magazine goes from strength to strength. It also contains interviews with various cast members (including Patrick Stewart and Marina Sirtis), plus other features such as news, stories



Even the most objective *Trekhead* can't fail to be impressed with the quality of *NovaDisk*. Buy it, or even better, subscribe.



and technical details (including a starship directory and Klingon language tutorial).

Once you've read the text files, you can access the seven pictures. The *Generations* pictures are

all in Spectrum 512-colours and are of excellent quality, and the *Voyager* pictures are nicely drawn. *Trekkies* and budding disk magazine producers should check it out.

**STF RATING: 92%**

### PANTHER OWNERS GROUP ISSUE 7

**PANTHER OWNERS GROUP, 56 Whitley Crescent, Wigan, Lancs, WN1 2PP. 1MByte required. Diskzine not TOS 2.06 or Falcon compatible**

IF YOU'RE A BIG *FRONTIER* FAN you'll be interested in *Panther Owners Group*, the periodical disk magazine that keeps *Frontier* fans in touch with each other.

This reviewer isn't easily swayed, but the editor gets off to a nice start with a quotation from those giants of rock, Queen. However the rest of the disk's magazine section is a bit of a let-down. Ignoring the outdated interface, there's

very little there: some letters and a couple of stories padding out what turns out to be a very lightweight section overall.

Thankfully *POG* is more than just a disk magazine. It also includes a number of saved games

from readers to help users explore the massive universe of *Frontier: Elite II*. On the whole though, this doesn't match up to other diskzines as there's little in the way of content or presentation.

**STF RATING: 66%**



It seems that scouring the universe brings with it some lovely scenic shots. And you forgot to bring extra film with you...

## DEMOS

### NO LIMIT CODING

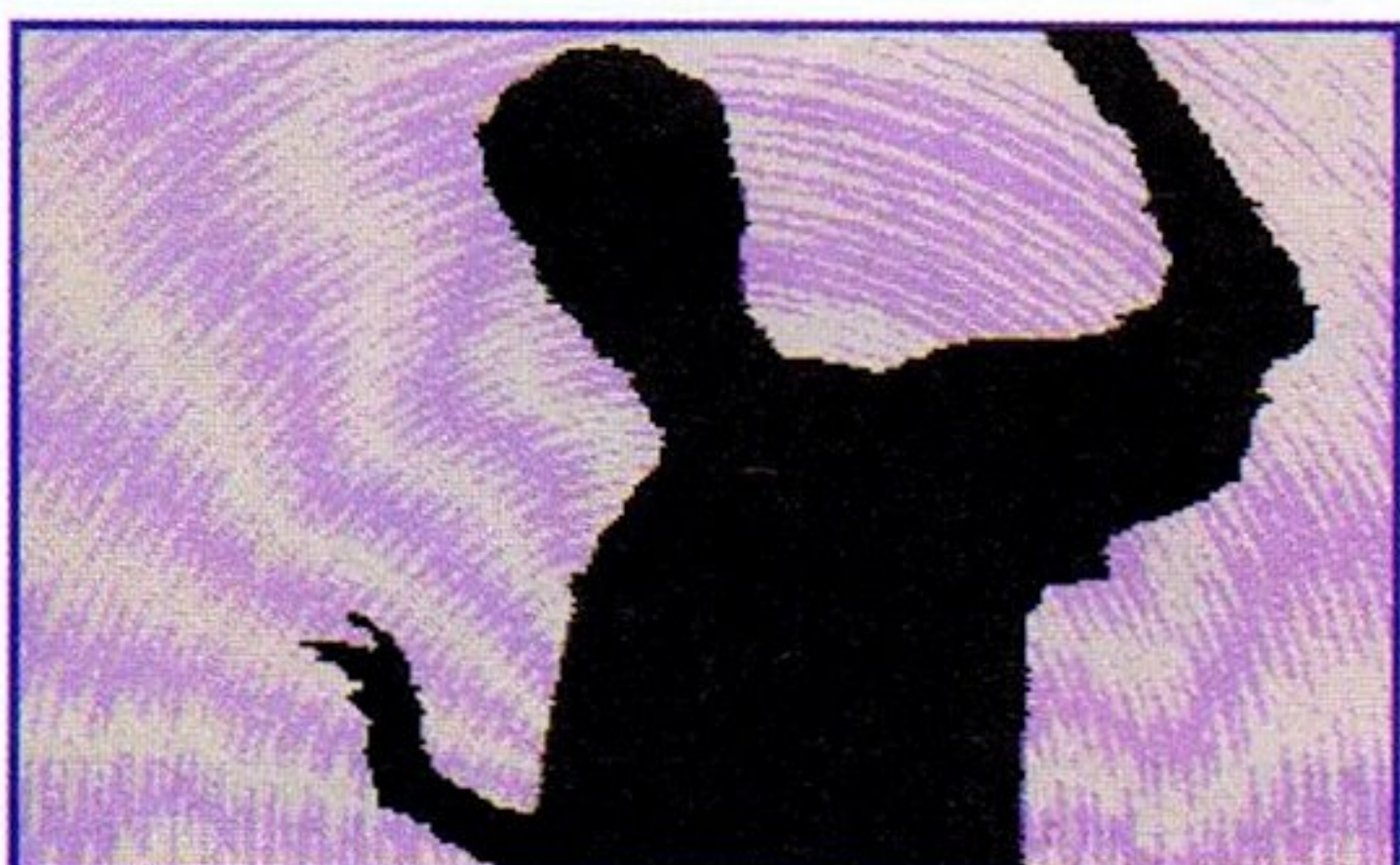
**FLOPPYSHOP, DISK DEM 4413 1MByte STE or Falcon required**

THIS DEMO IS QUITE A GOOD one, all things considered (the main thing being that I hate techno). The music is always forgettable, unless you like that sort of thing, but there's some excellent animated images, not least of which is the shadow dancer strut-

ting his funky stuff in front of a backdrop reminiscent of *The Word*. Okay, so it's a series of looped animations, but they've been cleverly mixed to hide the fact.

The demo itself goes on for some time, combining the shadow dancer with several rotating shapes. There's a drum pad, a clock and even a pulsating cube in there somewhere. The longer the demo goes on, the more frenetic it gets, but despite the fact that it's the same images being repeated the show doesn't get that boring. Well worth five minutes.

**STF RATING: 75%**



Oh heck, yet another shadow dancer grooving away to techno. I don't suppose anyone has a demo of someone headbanging to heavy metal, do they?

## PD CHOICE ROUND-UP

Missed a back issue? Want to know when we reviewed a particular piece of PD? Then look no further than this definitive guide to PD reviews over the past four issues.

TITLE	PD LIBRARY	TYPE	ISSUE	RATING
Warp Issue One	Keefy's PD	Diskmag	70	92%
Selectric 1.10E	Ad-Lib	Utility	69	91%
Speed of Light v3.5	Floppyshop	Art	67	90%
Autowaschen Verboten	Floppyshop	Falcon	70	90%
Falcon Utilities	Floppyshop	Falcon	68	89%
Clip Art Collection	Floppyshop	Art	67	88%
Third Dimension 10	Floppyshop	Diskmag	69	85%
Oh no!! More Froggies	Floppyshop	Demo	67	83%
525 v2	Ad-Lib	Utility	69	83%
STellar Diskzine 14	Stellar PD	Diskmag	69	83%
Compact Office Management System	Chaos PD	Utility	69	81%
Modest	Ad-Lib PD	Music	68	80%
BoxKite	FaST Club	Utility	69	80%
Cycdelic Knockout Demo	Floppyshop	Falcon	67	79%
Chinese Horoscope/1 Ching	Goodmans PD	Misc.	68	79%
Calamus Font Utilities	Locutus PDL	Utility	70	79%
Lexicon	LAPD	Misc.	70	79%
Ozbornz Modules 3	Transp. Dreams	Music	68	78%
The PD Collection	Transp. Dreams	Utility	67	76%
RAE Tutor	Floppyshop	Misc.	68	76%
JPEG Pictures	Floppyshop	Falcon	67	75%
Visual Illusions	LAPD	Misc.	69	75%
Strange Circumstance	Floppyshop	Falcon	70	75%
Psion-ST Transfer Software	Goodmans PD	Utility	67	71%
Even More Falcon Utilities	Floppyshop	Falcon	68	71%
Archivers	Goodmans PD	Utility	67	70%
Clipart Disks	STellar	Art	70	70/61%
Intro Maker v1.5	Floppyshop	Utility	67	68%
Big Top Type	Floppyshop	Education	67	67%
Text Help Files and Utilities	Merlin	Utility	69	66%
Magnet 9/Gullbach	Floppyshop	Falcon	68	65%
STellar Module Collections	STellar PD	Music	70	65/50%
Lottery and Pools Predictors	Power PD	Misc.	70	62%
Falcon MOD Files	Floppyshop	Falcon	67	61%
Soccer Kid Music Demo	AGPD	Music	70	59%
Trannies 1	Transp. Dreams	Diskmag	69	54%
UFology	STellar PD	Misc.	68	38%



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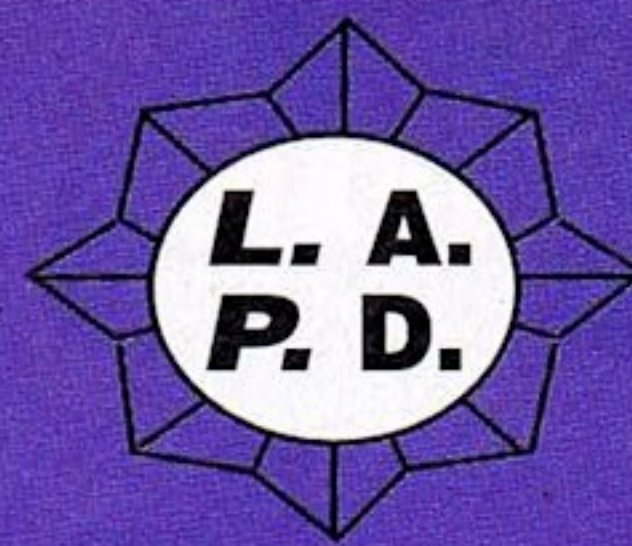


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- G.366 DAVE MUNSIE GAMES: 9 games from the master programmer, including Frogger (1Mb).
- G.355 WING LORD: Aerial duelling game in the style of the classic 'Joust'.
- G.380 STARBALL: Pinball game - arguably the best PD game on the ST!
- G.381 MAX: Help Max find his girlfriend. A 'cute' arcade platform game (1Mb)
- G.333 SUPER PSYCHO KART: High speed platform game to rescue piglets (1Mb)
- G.316 H-MEC 2: The ultimate Pac-Man? (1Mb STE or Falcon)
- G.286 ROCKFALL - SPECIAL EDITION: Tunnelling/diamond collecting puzzle game
- G.281 PSYCHO PIG: Platform shoot'em up with Rambo-esque pig. (2 disks/£3.00)
- G.279 OPERATION GARFIELD: Frantic 'Operation Wolf' type shoot'em up action. (STE)
- G.250 CYBERNETICS: Good, challenging 'Defender' type arcade game.
- G.80 TETRIS & PILE UP: Two very good versions of the Tetris arcade game.
- G.171 HACMAN II: 1 megabyte version of Pacman, 100 new levels!
- G.221 GRAV 2: Follow up to highly praised 'Oids' type rotate and thrust arcade game.
- G.110 LLAMATRON: 100 levels of fast arcade action with wicked sound FX.
- G.150 COLUMNS: An impressive relative of the Tetris tumbling block game (1Mb).
- G.201 BLATI: Tetris style three in a row, falling blocks with many added features.

### FANTASY/ROLE PLAY

- G.351 TOWERS: First-person view role playing fantasy adventure game (2 disks/£3.00)
- G.308 WALLS OF ILLUSION: The ultimate Dungeonmaster clone with English instructions (1Mb).
- G.370 MINDMELT: Fantasy adventure with an overhead view.
- G.343 BLUDGEON: Solo fantasy adventure using the Bludgeon combat system.
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- G.262 ALIENSI Space Marines v Aliens strategy combat game.
- G.115 MYSTIC WELL: Complete Dungeonmaster style adventure game.

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- G.387 SPACESWEEPER: A challenging 'Minesweeper' game in three dimensions!
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- G.280 COLOUR CLASH: Adventure/Maze game with puzzles by Animalsoft
- G.269 QUIZMASTER: Multi-choice answer general knowledge quiz (STE).

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- G.303 GRANDAD AND THE SEARCH FOR THE SANDWICHES: Graphic adventure (1Mb 2 disks/£3.00)
- G.167 SUSAN: An adult adventure (over 18's only)
- G.91 QUEST FOR THE HOLY GRAIL: Python-esque madcap humour.
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- G.332 CAESAR: Strategy game set around the Mediterranean in 200BC (S/W)
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- G.388 STRATAGEM: Two player strategy world war game (2 disks/£3.00)
- G.329 PEGASUS: Space strategy game. Seek out and colonise planets (1Mb, 2 disks £3.00)
- G.287 THE COARSE ANGLER: Angling simulation game (1Mb)
- G.237 CHAOS: Madcap game of battling wizards by Martin Brownlow (1Mb or .5Mb)
- G.324 IMPERIAL CONQUEST: Complex ancient Mediterranean game of conquest (S/W)
- G.325 SOCCER MANAGEMENT: A complex simulation of soccer management (S/W)
- G.217 THE MAZE: 3D adventure game loosely based on 'The Crystal Maze'
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- P.44 GFA BASIC V2: Full version of language with tutorial & compiler! (N.B this disk is not PD - L.A.P.D. have permission to distribute it)
- L.68 SPRITE WORKS: New commands for games writers using GFA V3+ (2 disks/£7.00)
- DSP.1 SOZOBON C: A complete C compiler with documentation
- P.24 MENU-MAKER: Make your own menus with music, sprite and scrolling message
- P.33 ZX SPECTRUM EMULATOR: Emulate the old Speccy on your ST/STE (1Mb)
- P.17 68000 PROGRAMMING COURSE: 10 "How to do it" document files
- P.19 GFA EXPERT: Massive text file and help routines for GFA-basic 3.0
- P.16 C ADVENTURE TOOL KIT: Write professional quality adventures in C.

## UTILITIES

- U. 67 ST TOOLS: An exhaustive collection of Atari ST utilities
- U. 53 TERADESK V1.36: Replacement desktop for the ST/STE (1Mb)
- U. 20 FASTCOPY 3: Excellent disk copier for cover disks
- U. 48 PREMIER PACKERS: 13 of the best program packers, plus a de-packer
- U. 62 MENU-HACKER: Replace a picture in almost any menu/demo/game/intro
- U. 42 PICTURE HUNTER: Rips picture screens from other programs
- U. 66 BEFORE DAWN: Animated screen saver that will use your own animations
- U. 47 PROBE ST: Handy utility. Grabs music/graphics, disk/memory editor, etc
- U.52 VAULT & TURTLE: Fast hard disk back-up utilities.

## ART & GRAPHICS

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- A.44 FANTASY SLIDESHOW: Spectrum 512 pictures on fantasy theme (over 16's only)
- L.26 L27, L28 TYPE WRITE CLIP ART: 4 disks sets of quality clip art in IMG format. £10 per set

## MISCELLANEOUS

- L.103 LEXICON: Ideal program for word game fanatics. Solve crosswords, anagrams etc (£3.00)
- M.155 ROUTE FINDER: Route finding program for England, Wales and Scotland.
- M.161 THE GARDENER: A special database for gardening enthusiasts.
- M.176 FUCHSIAS DATABASE: A specialist database for the fuchsia grower.
- M.175 FISHERMANS DATABASE: The ultimate record program for the keen angler.
- M.19 AIR WARRIOR: Flight sim with World War II aircraft.
- L.17 ADDRESS BOOK: Neat and easy to use database for name and addresses (£2.50)
- L.18 CIRCUIT: Easy to use electrical circuit diagram producing program (£2.50)
- M.93 STITCH MATRIX: Pattern making program for knitting machines.
- M.111 NORTHERN & EQUATORIAL STAR ATLAS: Superb serious astronomy program S/W
- M.77 THE BIBLE: King James Authorised version. 3 disks (£4.50)
- M.76 FORM-FINDER: Proven horse race analysis and prediction program.
- M.81 NEWSDISK: Construct your own newsletters and magazine disks.
- M.100 GERMAN TRANSLATORS: Three programs to translate German text to English
- M.98 FILOFACT: Electronic filofax - diary, calendar, alarms, addresses, etc
- M.26 GENEALOGY: 2 programs for the family historians to trace their forebears
- M.5 YOUR SECOND ATARI ST MANUAL: Text files to supplement the official manual.
- M.17 WORD PUZZLE: Stuck with word games? Then this disk may help.
- M.30 EXTRA WORD LIST: 70,000 extra words to use with disk M17.
- M.84 ASTRO 22: Calculate position of planets, cusps and zodiac for astrology.

## HOLLYWOOD HUSTLER

The first live action poker game on any platform!  
Over 1Mb of interactive sampled speech and FX.  
The closest thing to interactive video on the ST!  
"a faithful poker simulation - rated 75%" - ST FORMAT 69

£24.95

## EDUCATIONAL

- M. 95 ABOUT THE HOUSE: Excellent collection of programs for young children
- M. 28 KIDZ EDUCATIONAL: Alphabet, Maths Test, Numerical-Go-Round & Number Maze
- M. 37 KIDZ DISK #1 Colouring book, Spell Pic, Word Pic and Flash Card
- M. 42 KIDZ DISK #2: Dot to Dot, Keyboard Capers & Matching
- M. 67 BODY SHOP: Graphic quiz-type human anatomy tutor
- M.104 SOLAR SYSTEM GEOGRAPHY: Effects of the sun & moon on tides, seasons, etc
- M. 16 KIDZ COMPILATION: Kid Graph, Grid, Music, Notes, Piano, Publisher, sketch and story... all on one disk!
- M. 31 SHIPWRECK: Save the stricken mariner by answering maths questions.
- PRO.27 EARLY LEARNING MATHS 2: by Philip Rankin for 9-12 years
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- L.113 BBS DIRECTORY: Money saving directory of UK BBS's (£5.00)
- C.22 TEDDYTERM: A superb multi-function communications program
- C.7 VANTERM V4: Excellent multi-function comms program
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## BUDGET PRICE DISKS - ONLY £1.00 each!

- B. 45 FIGHTING SAIL: Naval Battles
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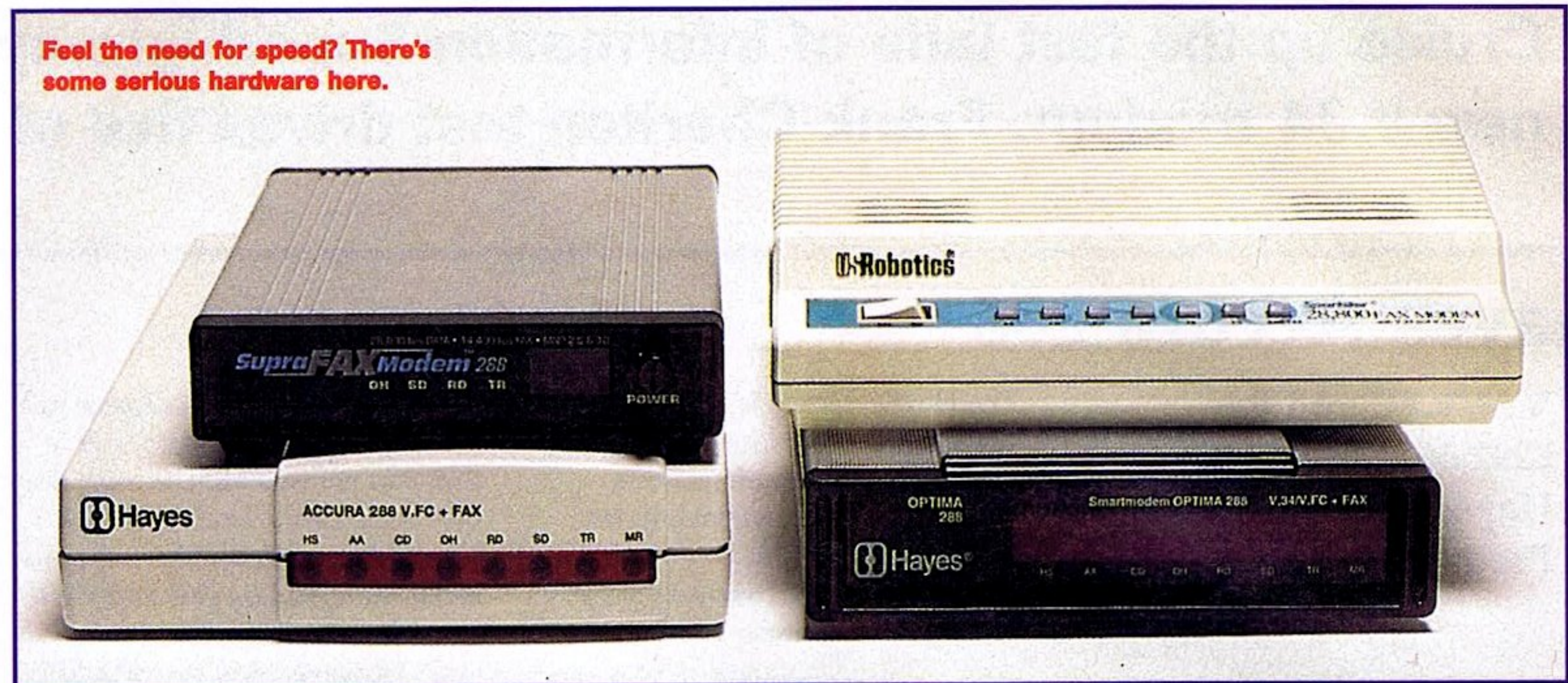
Please make all cheques/postal orders payable to L.A.P.D.  
Credit cards welcome





# High-speed comms

You can't ride the waves on the Information Superhighway without a modem. Frank Charlton takes a look at the latest ultra-fast technology.



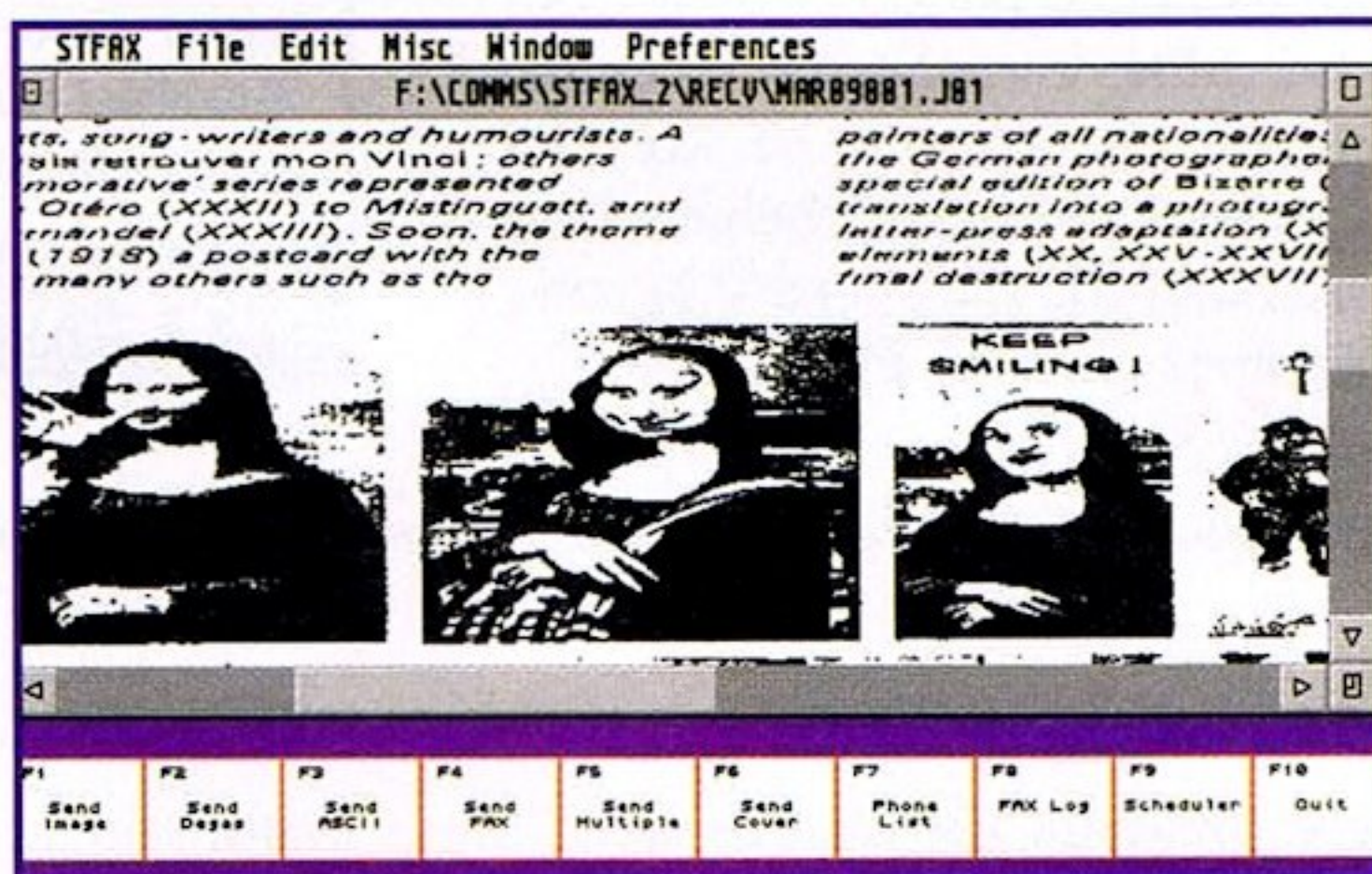
You can't open a newspaper or switch on the television these days without the Internet being shoved in your face. Comms enthusiasts, previously lumped in the same category as trainspotters, are finally in fashion.

One of the positive side effects of this sudden hipness is that modems are becoming more advanced, easier to use and cheaper. Only a few years ago you needed a second mortgage for a slow 2400 modem. Now we have little black boxes capable of shifting data down the telephone line at ten times that speed – and they cost less.

## Hello World...

So what can you do with a modem? Well, explore the Net is

the obvious answer. The benefits include electronic mail to over 25 million people all across the globe, easy access to millions of files and instant information on any subject imaginable. Furthermore, all this



**Straight FAX 2 is the best fax software you can get – and, no, it won't really do this to your Mona Lisas.**

costs you little more than the price of a local phone call.

There are also Bulletin Boards – friendly places where you can meet up with like-minded ST users to swap hints and tips, get help and just generally make friends. They are free apart from the phone call, and a fantastic way of keeping in touch with the ST scene.

You've also got fax capability. Even with so many businesses and individuals connected to the Internet, fax is still the most widely-used method of business communication. With the addition of software like *STraight FAX 2* (from 1st Computers, ☎ 0113 231 9444), all the modems reviewed can act as a fax machine. Applications like

*Calamus* and *Papyrus* enable you to produce professional-looking fax documents – or amusingly individual ones.

Owning a modem can be great fun, and can beef up your productivity if you use your ST seriously. Making the purchase can be a little daunting though, with so many standards, speeds and models to choose from.

The latest standard to emerge is V.34, which delivers data at 28,800 bits per second (bps). This is probably the fastest conventional phone lines will ever manage. It's still fairly new, and V.34-capable

**Easy access to millions of files and instant information on any subject imaginable**

modems are appearing on a weekly basis.

Over the page we scrutinise five ultra-fast fax modems to use with your ST, Falcon or TT.

If you're a Falcon or TT owner you can plug in and go. The standard ST's serial port is only capable of 19,200bps though, so you need to make some hardware modifications to get the best from the new breed of modems. It's cheap and easy to do, and we're showing you how on pages 46-47. The modification will improve the efficiency of a 14,400 modem too, especially with uncompressed files.

## V.WHAT?

**LAPM: Link Access Procedure for Modems.** An error-correction system designed to minimise problems caused by noisy phone lines.

**MNP: Microcom Networking Protocol.** MNP levels 1 to 4 deal with error correction, while MNP5 is a data compression system. MNP is generally slower and less efficient than the V.42bis/LAPM combination.

**V.21: 300 bits per second (bps).** Avoid V.21 modems like the plague.

**V.22: 1200bps.** Old and slow.

**V.22bis: 2400bps.** Once state-of-the-art, now outdated. Buy a cheap second-hand one if you must, to see if comms is your thing.

**V.32: 9600bps.** This is the real minimum you should consider. Some good bargains can be picked up second-hand.

**V.32bis: 14,400bps.** The most popular modems around.

**V.FC or V.Fast:** An early implementation of the 28,800 speed. Now that V.34 has been accepted, you should check to see if a V.FC modem can be upgraded to V.34.

**V.34: 28,800bps.** The business – as fast as conventional analog phonelines can realistically go. As yet only some Internet providers – and not too many Atari BBS systems – support V.34.

**V.42bis:** a high-speed error correction protocol.

## BABT APPROVAL

In the UK it's illegal to use a modem which hasn't passed a stringent approval process. It isn't illegal to buy or sell unapproved modems, but dealers must state clearly whether or not a modem has BABT approval. Approved modems generally cost a bit more than unapproved ones.

There's nothing stopping you from purchasing an unapproved modem, but it is against the law to connect it to the phone system. Apart from the Supra 288, all the fax modems we're looking at over the page are BABT-approved.



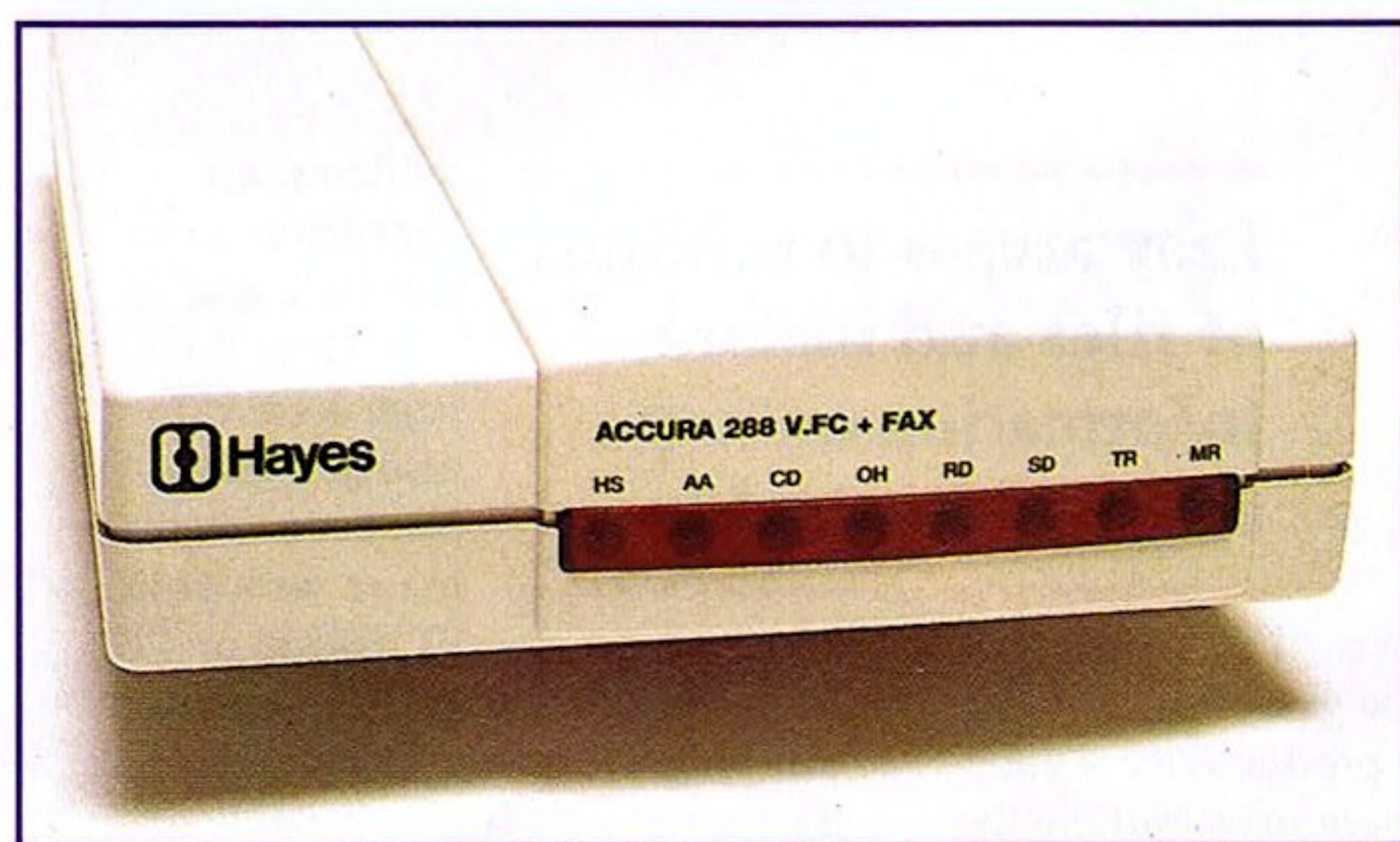
# Fast fax modems

Cruise up the fast lane of Information Superhighway with a zippy new V.34 modem. Frank Charlton test drives five of the best.

## Hayes Accura 288

V.34/V.FC and Fax  
£292.58  
Hayes Microcomputer  
Products ☎ 01252 775511

The Hayes Accura is primarily designed for the domestic market. The white plastic case is quite robust enough to withstand normal use in the home. There are software options for Apple Macintosh and PC



If you would like a 'big name' modem but don't want to spend a fortune, the Accura could be for you. Its no-frills approach to comms is refreshingly simple and effective.

owners, but the Atari range is not directly supported. The result is that you get two high density floppies which you may never find a use for. Nor, regrettably, is there a serial cable, unless you happen to be a Macintosh owner.

However, you do get a full kit for connecting the modem to the phone line and your phone to the modem. The manual is adequate, with an excellent beginners' section for those new to comms.

We found that both modem and power supply stayed very cool, even when they were left on for extended periods. Apart from difficulties encountered when we tried to connect with US Robotics modems, the Accura behaved very well indeed. Top speed V.34 connections to many BBSs were

achieved on the first attempt, with no configuration changes from the factory defaults.

Fax operation was trouble-free. Although the manual doesn't state which fax standards are supported by the modem, it appears to be Class 1 and Class 2. The Accura worked well with every piece of fax software we tried.

**CONCLUSION: A reasonably-priced modem with the famous Hayes name. It performed in a sure-footed and reliable way.**

Initial ease of use:	88%
Supplied hardware:	89%
Value for money:	87%

**OVERALL: 88%**

## Hayes Optima 288

V.34/V.FC and Fax  
£586.33  
Hayes Microcomputer  
Products ☎ 01252 775511

The Optima is Hayes' top-of-the-range modem, designed primarily for commercial and heavy use applications. It has a wealth of specialist features – for example you can connect it to a plotter to

plot or print incoming data, and it has various synchronous modes. However, the average ST user is unlikely to need these features.

In many ways the Optima is similar to the Accura (reviewed above), but the case is metal, rather than plastic, and it is slightly bigger. The software and hardware supplied is exactly the same as for the Accura.

The real difference between them is their capacity for data

compression. The Optima can compress data in an 8:1 ratio, resulting in very fast file transfer rates, very fast indeed when – and only when – it is connected to another Optima. The Accura, in common with most V.34 modems, is capable of only 4:1 data compression. That still provides you with transfer rates of around 3200 characters per second, or around double the speed of a standard V.32bis (14,400) modem.

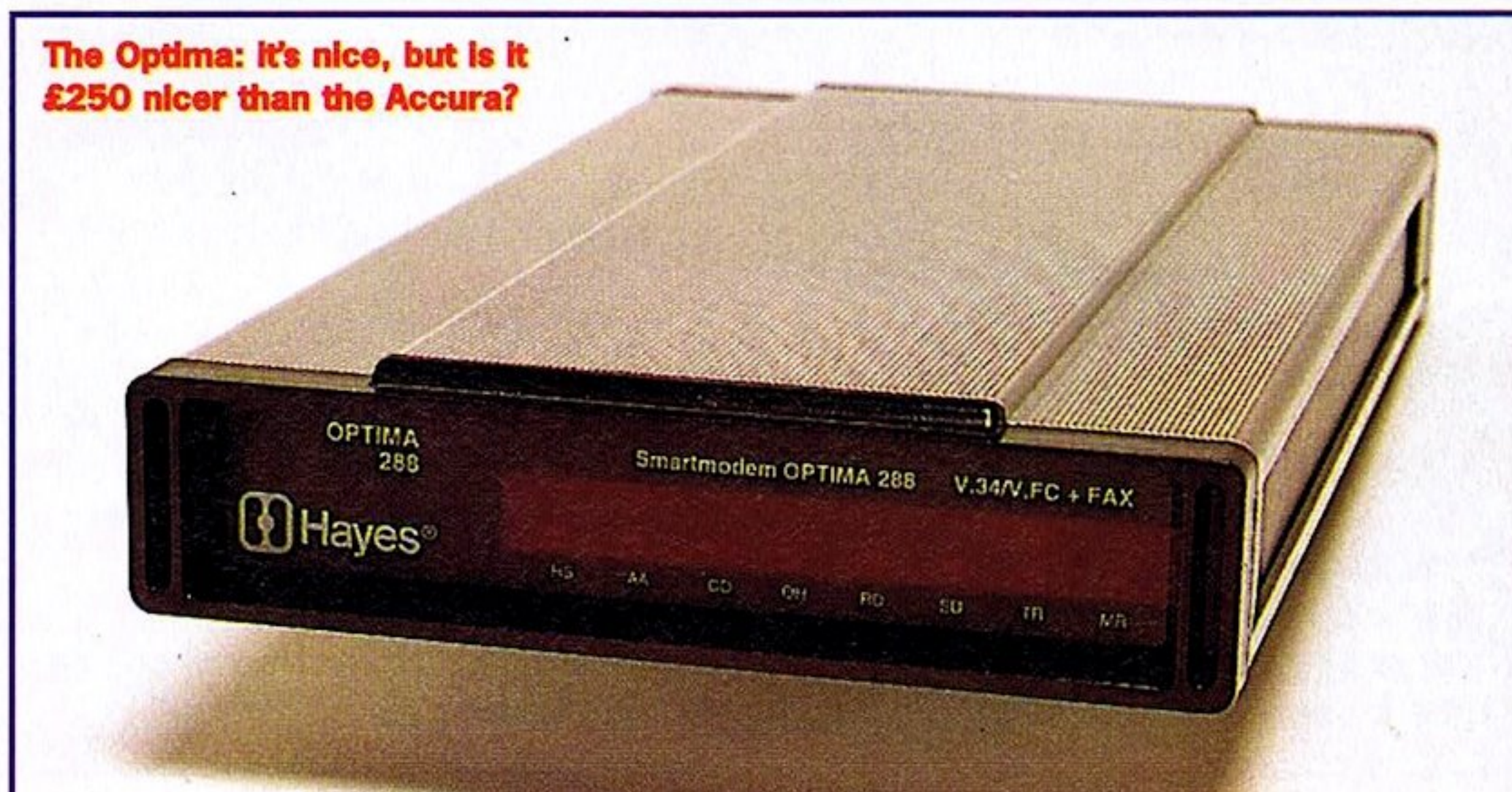
The Optima is especially suited to BBS use because of its sturdy build quality and ability to remain cool, even when used

continuously. If you are a SysOp, there are special deals available, enabling you to purchase the Optima at vastly reduced rates. Give Hayes a call to find out more.

**CONCLUSION: The Optima is a great modem, but its price is very high, particularly when you consider how little you are gaining over an Accura in terms of features.**

Initial ease of use:	88%
Supplied hardware:	89%
Value for money:	72%

**OVERALL: 81%**



The Optima: It's nice, but is it £250 nicer than the Accura?

## FAX CLASSES

There are three standards for fax modems: Classes 1, 2 and 2.0. Classes 2 and 2.0 are essentially the same (2 is the earlier, unofficial stab at the standard). Class 1 leaves most of the data compression to the software – 2 and 2.0 do it via the modem's hardware for added speed. The ST's most popu-

lar FAX software, *STraight FAX 2*, doesn't currently support Class 2.0, although author Charles Smeton assures us it will soon.

*STraight FAX 2* is worth considering if you're planning on using fax a lot. The USRobotics modems will only work with *STraight FAX 2*, and not earlier versions.

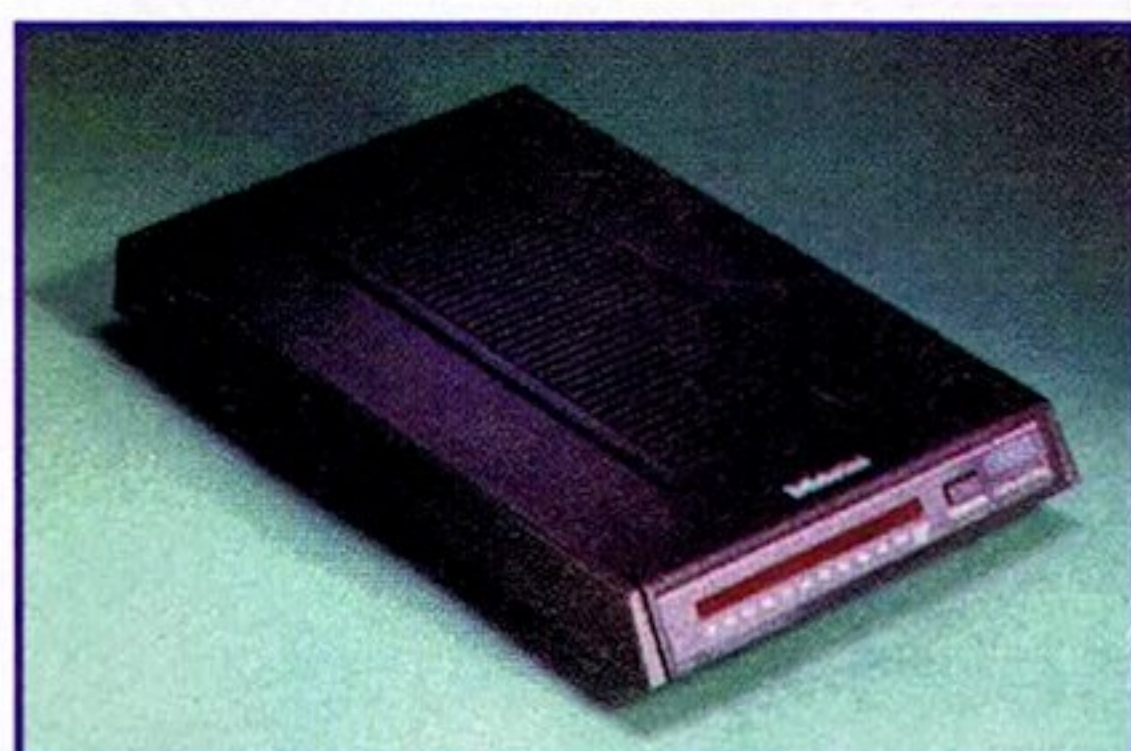


## US Robotics Courier Dual Standard

HST/V.34/V.FC and Fax  
£327.99

1st Computer Centre  
☎ 0113 231 9444

The Courier is US Robotics' top-of-the-range modem. The case is



This sleek black box hides a powerful modem – the US Robotics Courier Dual Standard.

sleek black plastic, but feels a little cheap in comparison to the Hayes models. An extensive array of LEDs show all modes of operation, and it has a sliding volume control tucked away at the side. DIP switches on the underside can be used to configure the Courier, and they're properly explained.

Yet again, there's no serial cable, and the software is PC-based. The manual is excellent, covering everything from basics to advanced technical details.

In use, the Courier worked very well, apart from the problems connecting to Hayes modems. It has Adaptive Speed Levelling, and can shift speeds up and down easily during awkward conditions. Connections to other modems

proved to be fast and very stable. Like the Sportster, fax operation is Classes 1 and 2.0, but the Courier was considerably more reliable.

The Courier also supports a proprietary USR standard called

### FLASH ROM

Some modems use Flash ROMs, enabling you to update the modem's software by downloading a file and re-programming the Read Only Memory. This is an excellent way of future-proofing the modem. However both US Robotics and Supra only supply the updates in PC- or Apple Mac-executable format, so you'll need access to a PC or Mac.

HST, or High Speed Transfer. HST delivers speeds of about 16,000 so it isn't as fast as V.34, and only other Couriers support it. USR offer a Flash ROM upgrade service (see box), and new software ROM code can be downloaded from their UK support BBS.

**CONCLUSION:** A lot of SysOps use Courier Dual Standards, and rightly so. They're reliable and stay cool over long periods. Expensive, but BAPT-approved and well-behaved.

Initial ease of use:	91%
Supplied hardware:	76%
Value for money:	79%

**OVERALL: 89%**

## US Robotics Sportster 288

V.34/V.FC and Fax  
£234.99

1st Computer Centre  
☎ 0113 231 9444

The US Robotics Sportster modems were designed as budget models, with a plug-in-and-go approach. Over the years they have sold by the truckload. The plastic case is rather reminiscent of a Stylophone, with a rotary control on the side to control the speaker volume.



The Sportster V.34, with a case design that would do Rolf Harris proud.

The manual is very sparse and doesn't go into any great technical detail. The software provided is for the PC, and again there's no

serial cable in the package.

The Sportster worked well out of the box with no setup required. A bank of DIP switches on the bottom can be used for setting common parameters such as auto-answer. Connections at V.34 and V.FC were fairly stable, but seemed prone to speed retrains when the line was bad. As with the Courier, we had problems connecting to Hayes modems.

Fax support is for Classes 1 and 2.0 – not Class 2 – which means *STraight FAX* uses the slow-

er Class 1 mode. Fax operation wasn't perfect, and a number of connections were refused by 'real' fax machines, including the one in

**CONCLUSION:** A basic modem designed to avoid technofear. It really doesn't cut the mustard compared to the others.

Initial ease of use:	70%
Supplied hardware:	76%
Value for money:	82%

**OVERALL: 72%**

## Supra 288

V.34/V.FC and Fax  
£233.99

1st Computer Centre  
☎ 0113 231 9444

The 288 is the top model in Supra's award-winning line of modems. It looks almost identical to the 14,400 model, using the

same brushed metal case. It comes with everything you need to get on line, including a serial cable. It's also the only modem with ST software provided, as 1st Computers thoughtfully includes a copy of *Freeze Dried Terminal* on disk. The manuals are excellent, and a good source of reference.

Both modem and PSU stay much cooler than Supra's previous models, and were happy to be left on for long periods of time. Supra provide an excellent LED-matrix display which flicks between connection speed, compression and correction modes, and displays any errors during a

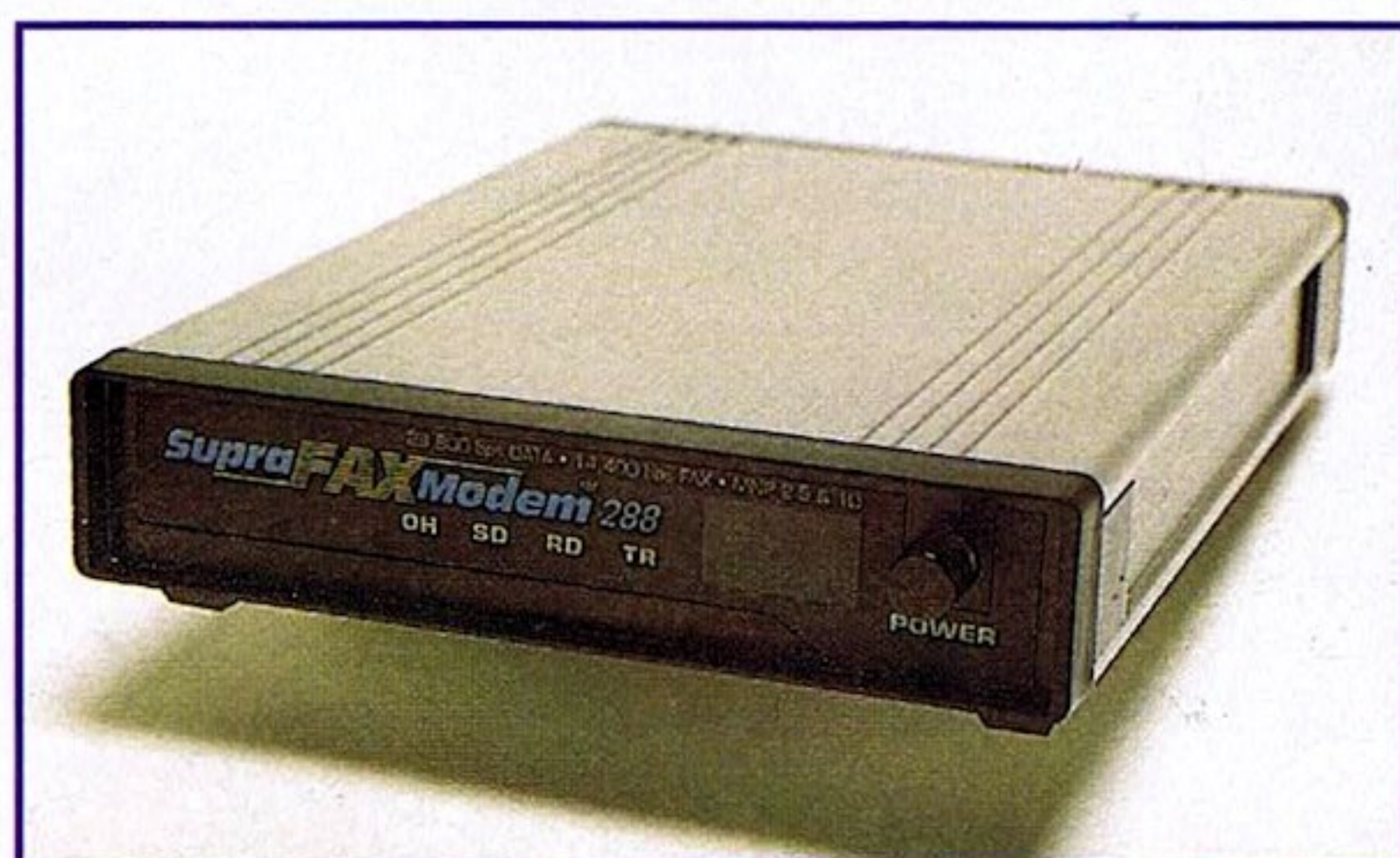
connect. The Supra has Flash ROMs – see the box above – for easy upgrades and bug fixes, making future support look good.

We had no problems connecting to any other modem straight out of the box. The defaults did not need changing and we were up and running in minutes. Fax support is Classes 1 and 2, and it worked flawlessly.

**CONCLUSION:** This is an exceptional modem both for normal use or to run a BBS with. Connections were fast and rock-solid every time. The Supra isn't BAPT-approved, but it is certainly the most trouble-free modem we tested.

Initial ease of use:	80%
Supplied hardware:	95%
Value for money:	88%

**OVERALL: 94%**



Solid and reliable, the Supra 288 comes with everything you need, including software.

### SUMMARY

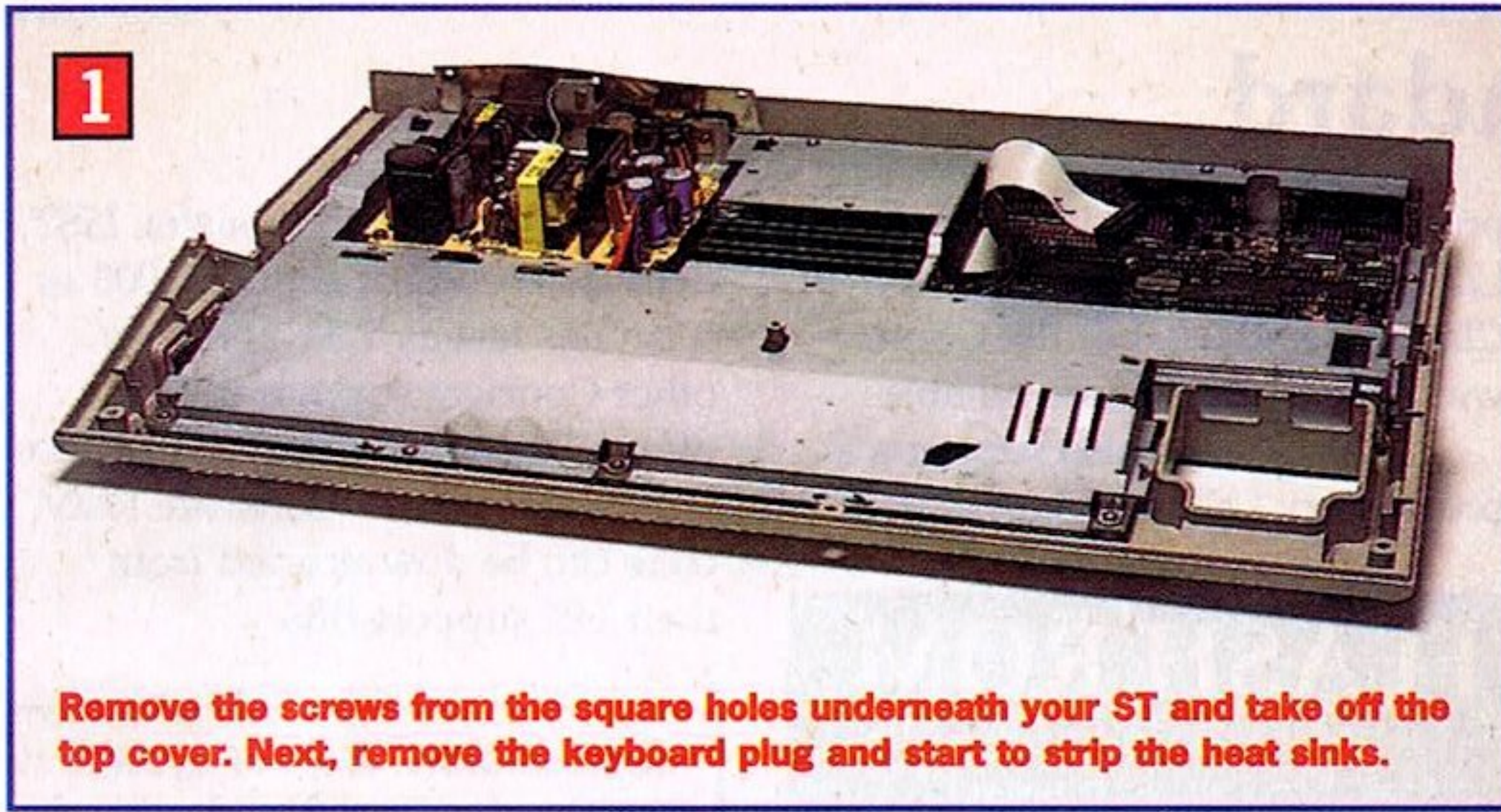
All the modems we tested worked well. The Sportster was certainly the one most likely to suffer when line conditions deteriorate, but it was also the cheapest modem with full BAPT approval.

The Hayes models were robust, and the SysOp discount scheme makes them an attractive proposition if you're running a BBS.

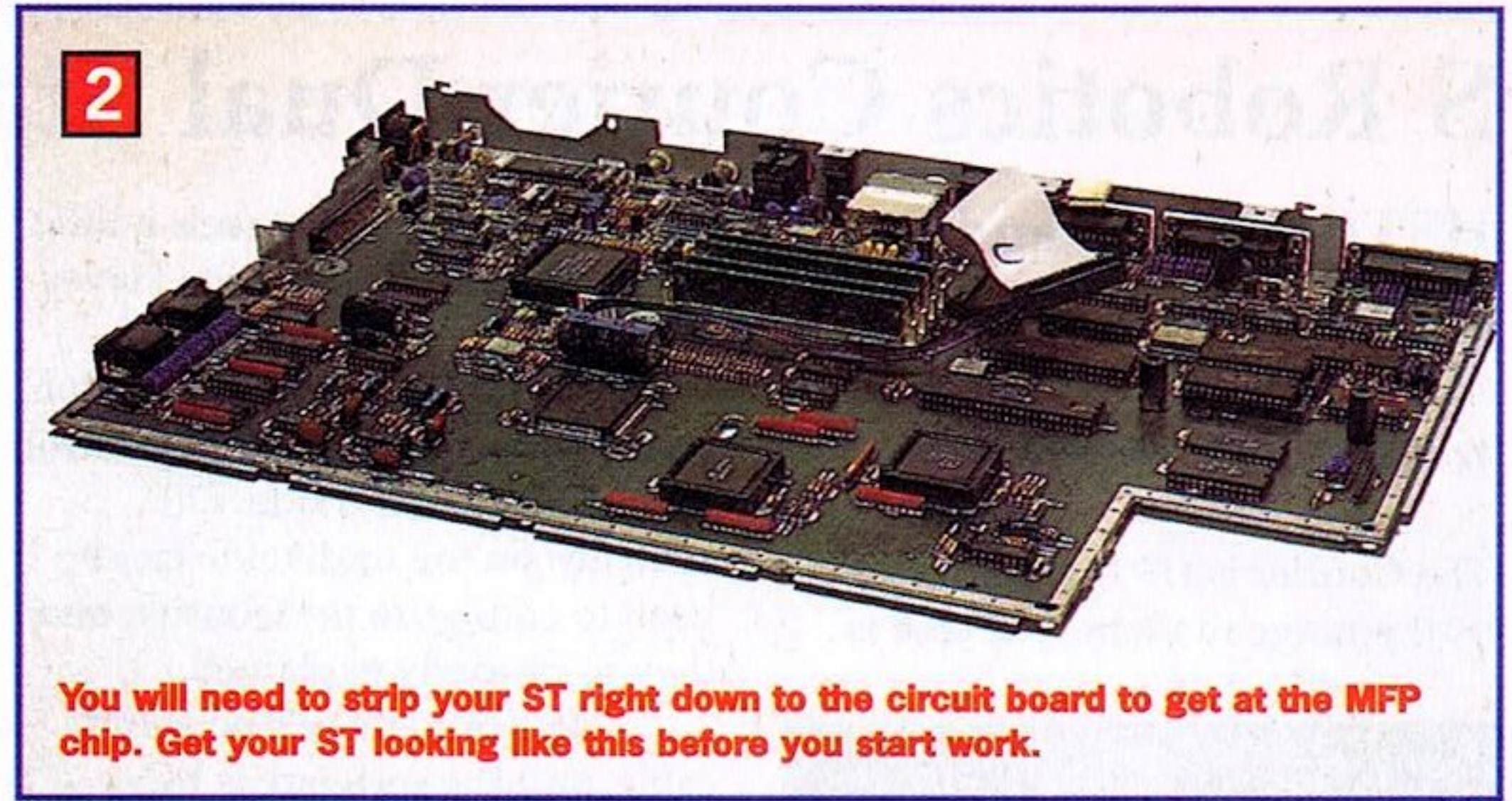
US Robotics' Courier is a modem with a long and reliable history, and it is deservedly popular among SysOps and serious users. At the new lower price it's a very attractive deal.

If you're not bothered about BAPT approval – and do remember that it's illegal to connect a non-approved modem – then the superb Supra 288 is by far the best of the bunch for reliable connections and all-round good value.





Remove the screws from the square holes underneath your ST and take off the top cover. Next, remove the keyboard plug and start to strip the heat sinks.



You will need to strip your ST right down to the circuit board to get at the MFP chip. Get your ST looking like this before you start work.

# ST serial port upgrade

Bring your serial port up to V.34 speed with Andy Curtis' step-by-step guide to savaging your precious ST.

**T**he problem with the new super-fast modems is that your ST's serial port just can't keep up - it runs at a maximum speed of only 19,200bps. Fortunately, you can upgrade it, relatively easily, to run at 38,400bps, enabling it to fly along with the fastest modems.

Please note that if you have no knowledge or experience of electronics you may find this upgrade tricky or impossible. Check out the 'Chicken!' box (opposite) for a commercial alternative. If, however, you have some experience with a soldering iron, and enjoy a challenge, you will probably find the job straightfor-

This is the circuit design to follow. If you use different coloured wires for each connection it will be easy to keep track of everything. We've also put it on the cover disk to make life easier for you. Load it into an art package and print it out.

ward. It is a tried and tested circuit design, and all the parts (see box) are readily available.

### Pin numbers

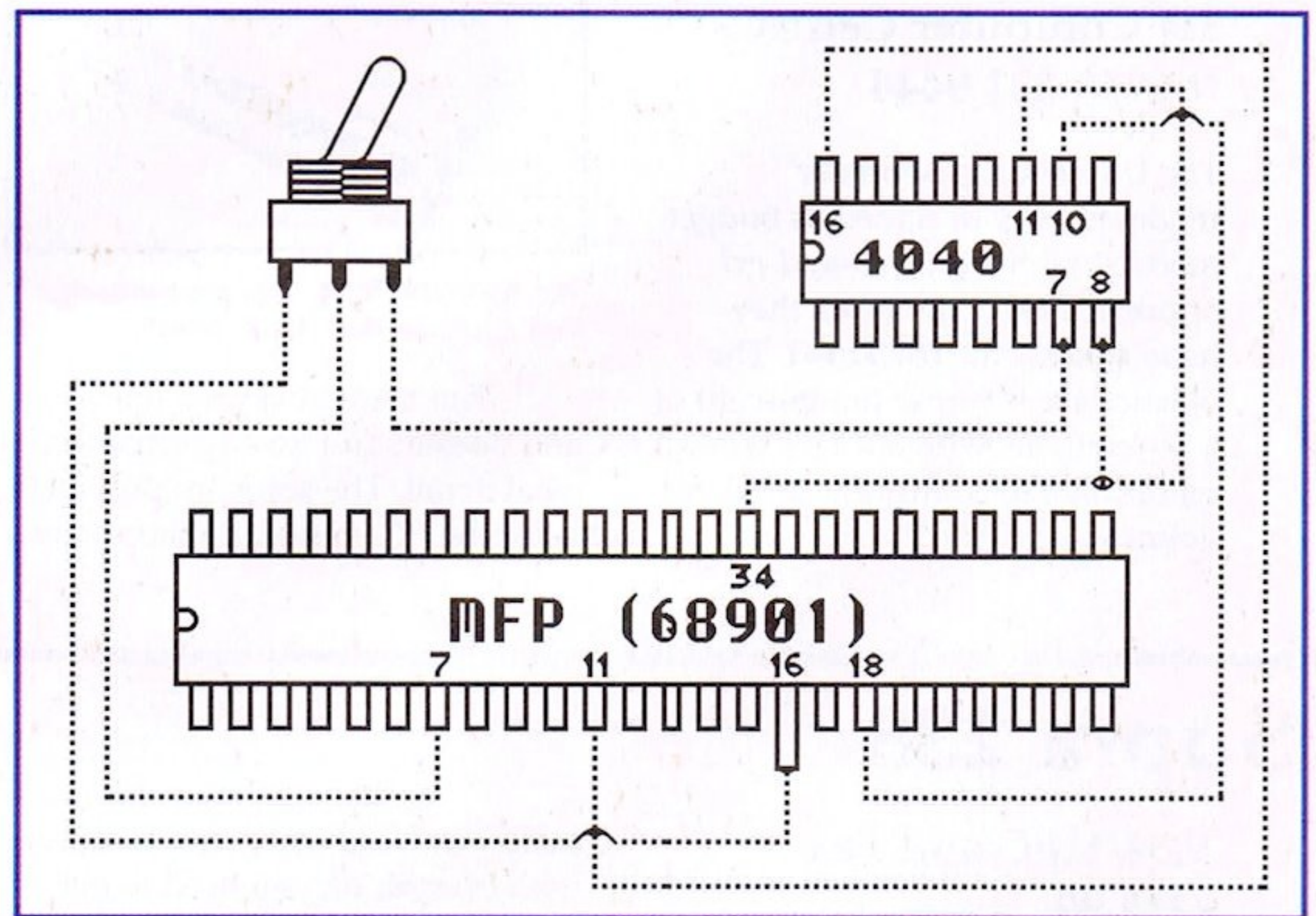
If you are unsure which leg of a chip is leg 1, look for a dot on the chip at one of the corners. If there is one, that will be leg 1.

If there isn't a dot there will be a semi-circle at one end of the chip. Hold the chip so that the semi-circle is at the left-hand side with the legs pointing away from you. The bottom left-hand corner of the chip is leg one. You can use this approach to work out the pin numbers of any chip.

### The assembly

Remember to assemble as much as you can without touching your ST. This reduces your chances of doing any damage to it.

The small piece of circuit board can be cut to size with wire cutters. It needs to be just big enough to fit the chip socket on to. Use your modeller's knife to cut through the copper tracks joining each side of the board. Failure to do this will wreck the upgrade, so



do be very careful! If you have a continuity tester of any sort then use it to make sure there is no continuity between the two sides of the board.

Insert the chip holder and solder each leg carefully. With this done you can join the wires to the various legs and the switch as shown in the diagram.

## TOOLS...

There are no specialised tools needed for this upgrade. If you have the following, or something roughly similar, you should be able to do the job.

- Modeller's knife (one of the red plastic ones)
- Small- and medium-sized cross-head screwdrivers
- Small flat-head screwdriver
- Small 15W soldering iron and some solder
- Helping hands (a friend will do)
- Insulating tape
- A pair of electronics wire cutters
- 30cm wooden ruler (not a metal one, okay!)
- Continuity tester or multimeter
- Starfleet issue tricorder (Oh really? - Karen)



## ...AND PARTS

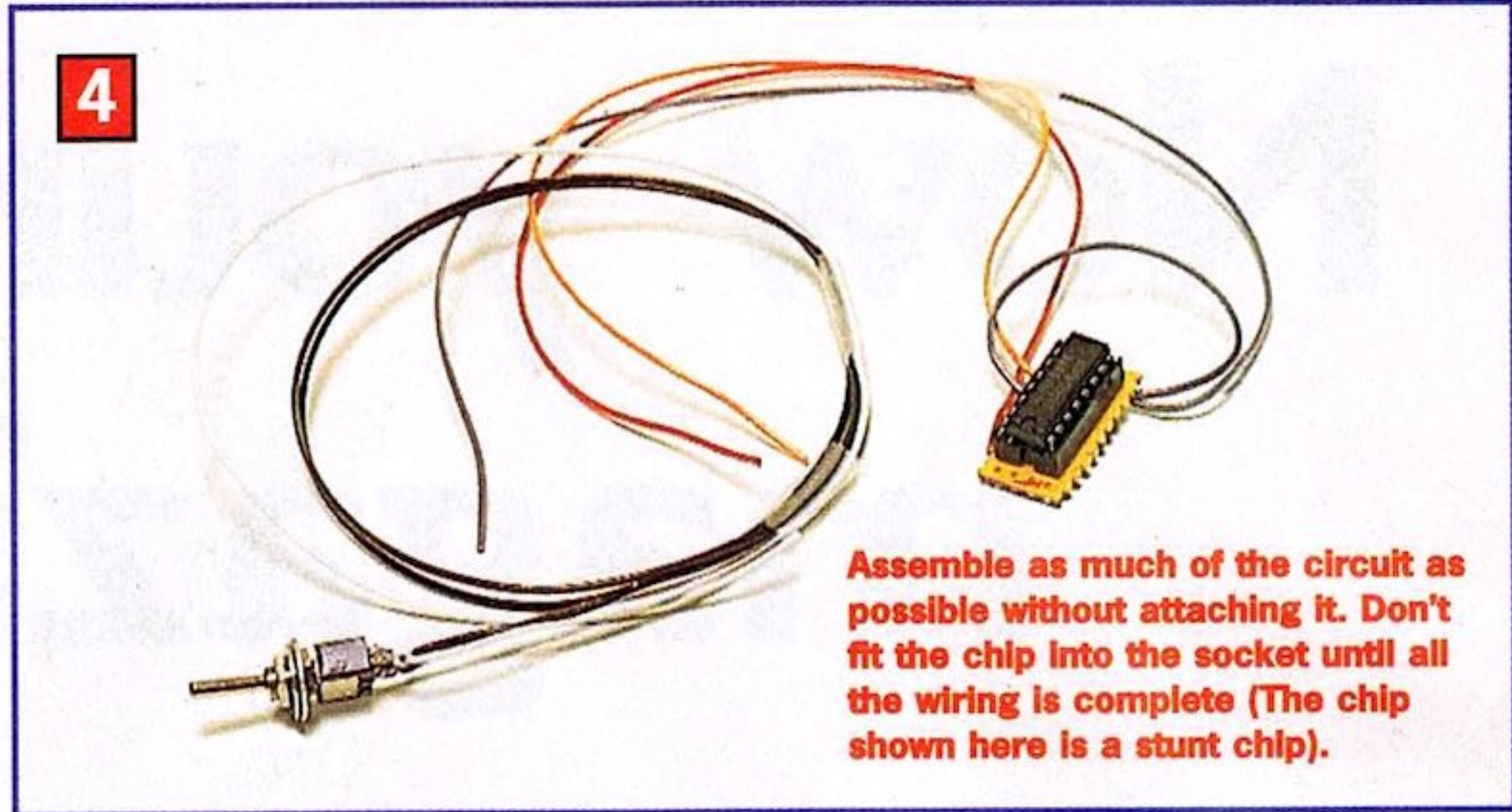
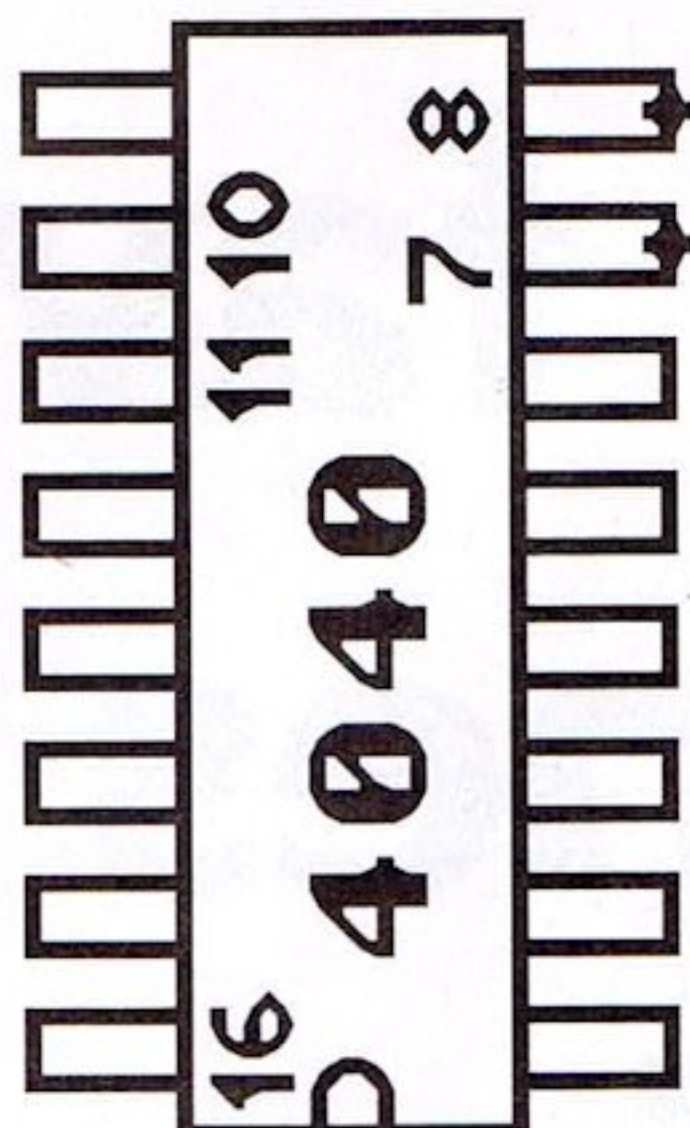
All the parts you need are available from your Maplins Electronics stores. If you do not have a local branch, call Maplins on 01702 554161 for mail order details. Order numbers and prices are correct for the 1995 Maplin Electronics Catalogue.

PART	ORDER No.	PRICE
1x SN74HC4040N chip	UF02	£1.10
1x DIL socket 16-PIN	BL19	£0.10
1x strip board 1039	JP46	£0.49
1m ribbon cable 10-way	XR06	£1.36
1x miniature switch	FH98	£0.89
<b>TOTAL COST</b>		<b>£3.94</b>





3 These are the parts you will need - make sure your wire is at least 30cm long. Multi-coloured wire makes life easier.



4 Assemble as much of the circuit as possible without attaching it. Don't fit the chip into the socket until all the wiring is complete (The chip shown here is a stunt chip).

### The crunch

You will need to cut leg sixteen of the MFP chip, easily recognised on your ST's printed circuit board (PCB) by the letters 'MFP' emblazoned on it. Cut it as near the PCB as you can and bend it out to make sure there is no contact between it and the board.

Now, wire the assembly into your ST as per the diagram. Connect each wire to the correct pin methodically. Count the pin

**If you enjoy a challenge, you will probably find the job straightforward**

numbers using the method described earlier - you may want use some correction fluid to mark the destination pins before you solder to them.

Make a hole for the switch with a drill and mount it. There is just room if you discard the shield-

ing that normally covers the internal disk drive plug area. When everything else has been done, touch the metal internal casing of your ST to equalise the static between you and the computer, then remove the chip from its packing. Match up the semi-circles on the socket and chip and careful-

ly insert it into the socket.

The legs will probably be splayed too wide to fit in straight away. Use a ruler to ease them

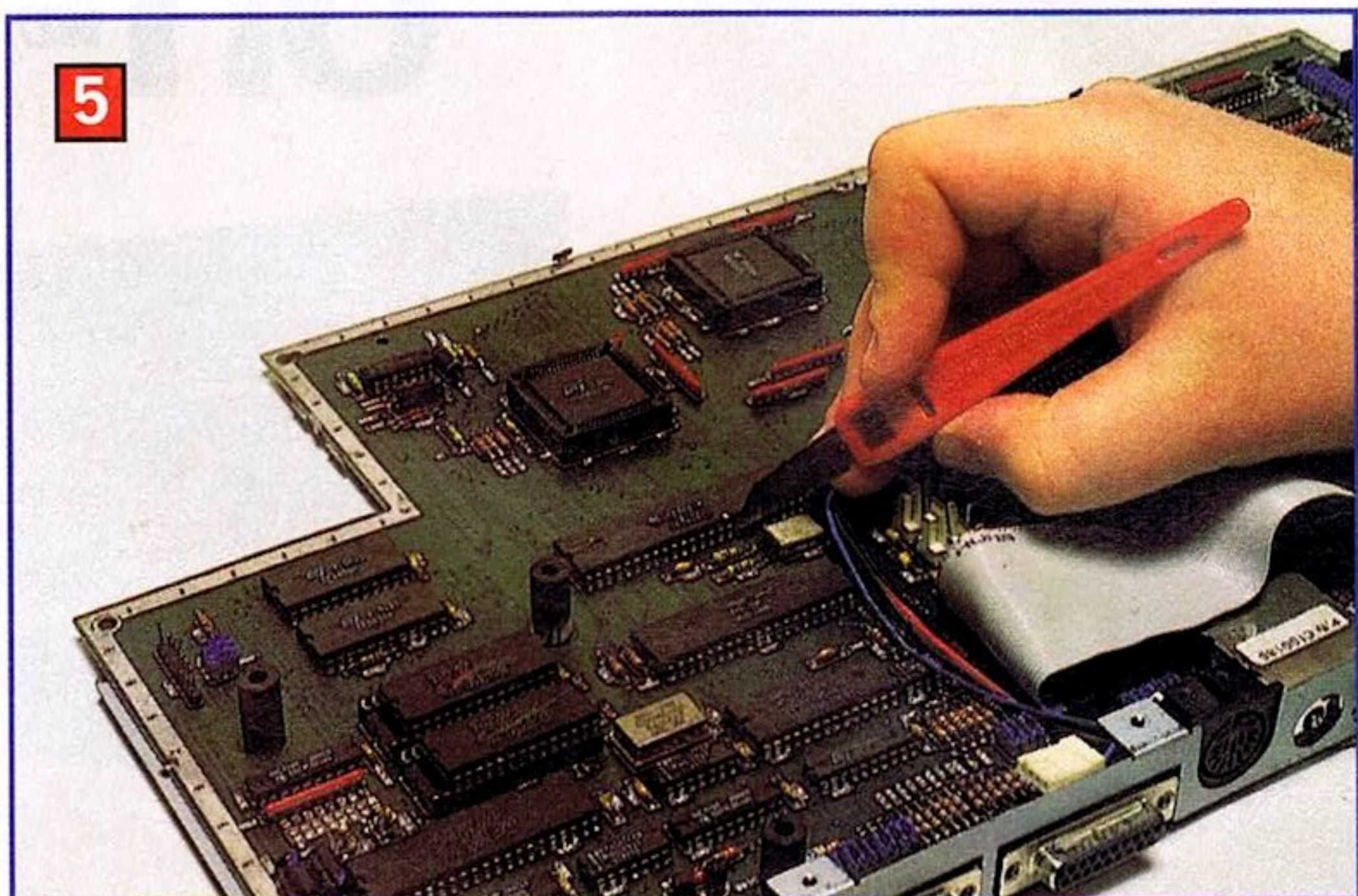
together one side at a time. Keep trying the fit to make sure you don't overdo it, and avoid touching the pins too much - the chip is a sensitive electronic device.

When the chip is inserted have one last look around and make sure that all the connections are correct. If you have used colour-coded wire it will be easy to follow the paths and make sure all is well. Once you are satisfied, place some insulation tape around the board assembly and tuck it away neatly underneath the top shielding. Make sure that no wires are being stretched. If your wires are a little too short there will be room for the board directly underneath the disk drive.

Now re-assemble your ST. The only outward sign that anything has taken place should be a neat switch at the rear of your machine. The switch simply alternates between the old serial port speed, necessary for some fax software and graphics tablets, and the new, higher, one.

### And the software?

You will need to run *HS Modem*, the serial port configuration utility, to get best use out of your new modification. *HS Modem*, now at version 6, completely overwrites



5 The surgery begins. Leg 16 of the MFP chip must be cut as close to the PCB as possible. This makes it easier to re-attach it if you want to take the upgrade out.

the TOS serial port routines and replaces them with bug-free routines that are much more efficient.

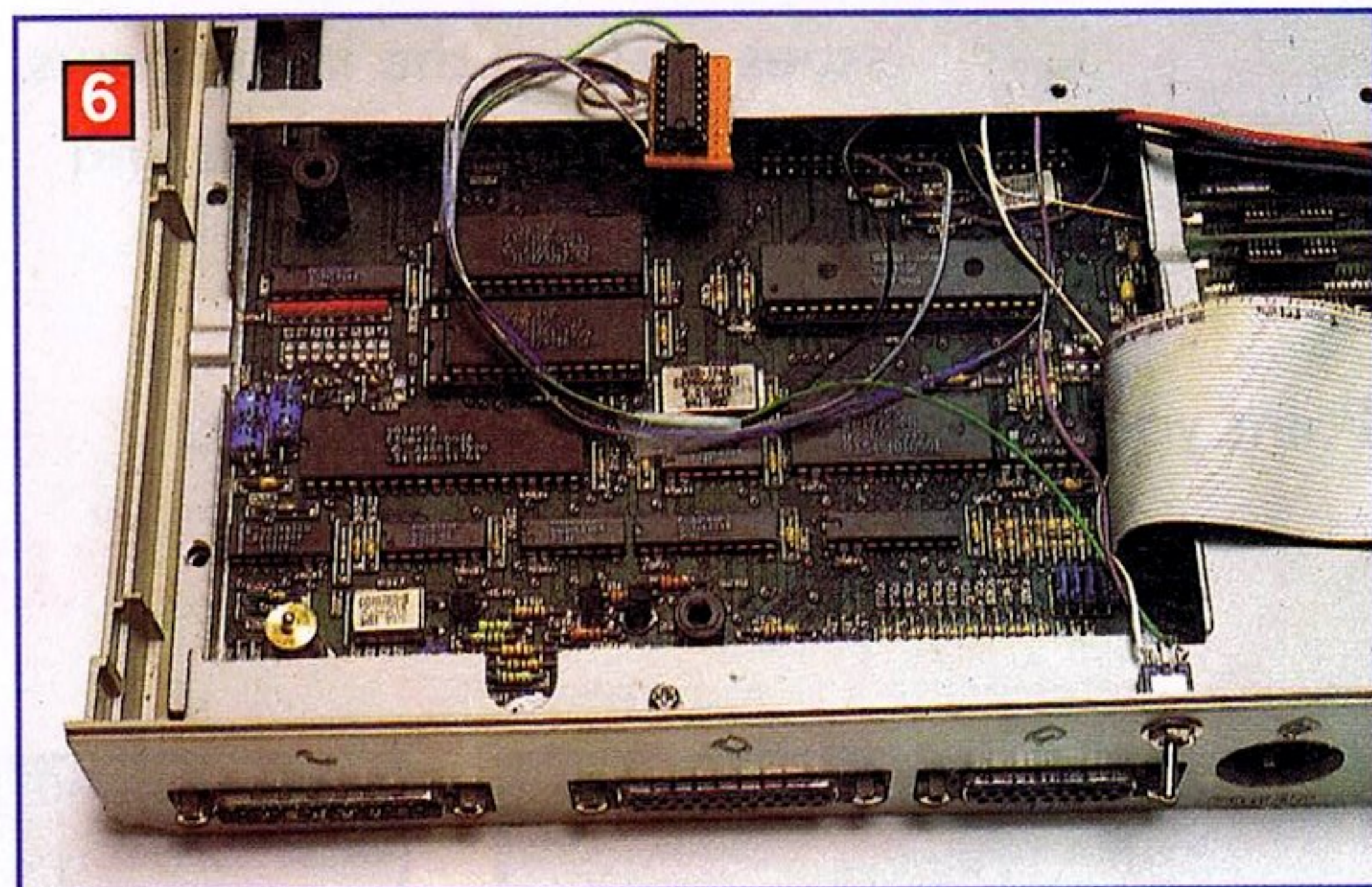
This program also recognises that you have done the serial port upgrade and can be configured to

make the 38,400bps port speed available to comms packages that would not normally support it. *HS Modem v6* is currently available on the Ad.Lib BBS and from Ad.Lib PD (☎ 0191 370 2496). stf

## SOLDERING

Soldering inside a computer can be tricky because the components are so small. However you can load the dice in your favour:

- Do not use a large 25 or 40W soldering iron. Use a small 15W iron with a small tip.
- Do not use too much solder. It can and will trickle into all the wrong places.
- Do not use a wire stripper for the small wires you will be using. It will probably strip away all the core as well as the sleeve.
- Use the modeller's knife to strip 5mm from the end of each wire, then apply a little solder to the end so it will join virtually instantly to the circuit when required.
- When making a joint, hold the soldering iron on to the joint until you see a tiny puff of smoke. This means that the solder has activated and the joint will set properly. If you are unsure, practice on something that does not matter first.
- Be very, very careful.



6 All the wires are now attached correctly. Simply wrap some insulating tape around the chip and tuck it away before re-assembling your machine.

## CHICKEN!

If you're brave enough to admit that all this electronics stuff is way too complex for you, or if you're just plain lazy, there is a simple commercial solution. The Upgrade Shop (☎ 01625 503448) will fit its own version of the serial port upgrade for the princely sum of

£49. This includes courier pick-up and return of your ST, and VAT.

If you're keen to have a go, but would like to buy The Upgrade Shop's easy-to-fit kit instead of purchasing the individual components from Maplins, it costs £29.99 including postage and VAT.





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### WIRED FOR SOUND

THE .net GUIDE TO ROCKING ALL OVER THE NET

You can't beat two guitars, drums, bass, but you can have a damned good try. Rock 'n' roll, pop, techno, ambient, heavy metal, indie - the Internet's got the lot, and so has this roarin' toothin' issue of .net

- **Wired for sound**  
Seve Rapport with an introduction to the musical side of cyberspace.
- **The death of discs**  
Ivan Pope meets a man who could be ringing the death knell for CDs.
- **Hello to Yello**  
The Swiss funkmeisters talk to Simon Hindle about noise and the Net.
- **Thank you for the music**  
Seve Rapport closes the show with a comprehensive rundown of the Net's venues, including rock on the Web, live music broadcasts, the latest on the virtual band, a dash through the newsgroups, a look at on-line CD stores, and finally a browse through the Net's numerous music mags and exciting e-zines.

You'll find the latest information on new issues and forthcoming special offers.

### Don't Panic

Those stupid little problems that have been annoying you, the ones you can't find any answers for in the DOS or Windows manuals, will annoy no more. Ed Ricketts and Paul Pettengale are the smartasses with all the answers. Photography: Ashton James

We are your friends, we like to help you out, and we enjoy telling you what to do. At which point we'd like to add that it's also our job, and we've all got mortgages to pay for, so when we're told, "Give our readers at least 100 top tips on how to get the most out of their PCs, informing them how to make their PC-using lives easier, and giving them the lowdown on the essential software they should get", we jump. And after we've done that we get down to it.

We know these PC things can be a pain where it hurts from time to time - things go wrong, you get confused, you cock everything up. Hey, we've all done it (though Ed never admits to it), but in most cases, if you have your PC set up well in the first place, or if you follow a series of simple precautionary procedures once a month or so, you can rest assured that things will never, ever go wrong. Well, not frequently at any rate. So let us tell you what to do, up by up, to make sure that your PC life is a happy one.

And to make it positively acerbic, we're also going to tell you how to make your PC do things you

Articles from back issues are available free to search and browse.



# ST Answers

Viruses, dodgy disk drives, sad CD-ROMs... there's no end of problems in our ever bulging ST Answers postbag. Luckily Clive Parker is at hand with the solutions.



## TOS UPGRADE?

**Q** What is the difference between TOS 2.05 and TOS 2.06? I have just bought a Mega STE with TOS 2.05 and I am wondering if it is worth upgrading it to TOS 2.06.

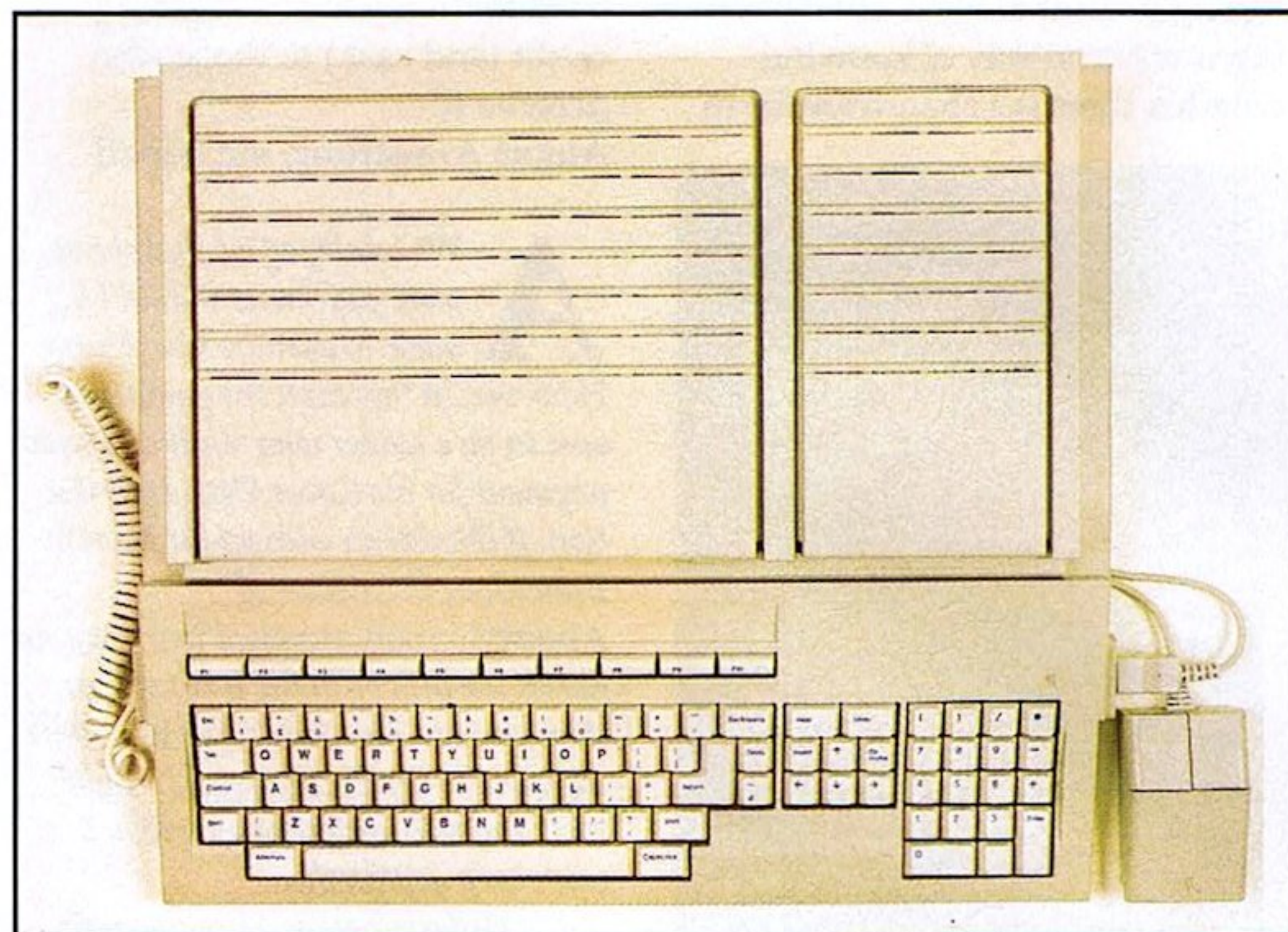
Paul Finch, Morden, Surrey

**A** The main differences between TOS 2.05 and 2.06 are a few routines which have been improved in the latter version. File handling and hard drive access are improved, the high density (HD) drive support is better and a few other routines were optimised to run faster.

It's a good idea to upgrade to the later version of TOS in your Mega STE, version 2.06 was practically rushed out to replace 2.05. You can get replacement TOS 2.06 ROM chips from Compo Software, the official UK distributor. The ROMs cost £49.95. Give Compo a call ☎ 01487 773582 to order a set.

## GAME TRANSFER

**Q** I have a 1040 STE (German version) with 210MByte AT-BUS hard drive fitted internally, and a Philips CM8833 Mk2 monitor. I'm having problems with my hard drive. I have *Formula One Grand Prix* (on four floppy disks) but I've been unable to transfer the files to the hard drive. When



A Mega STE, yesterday. There's no doubt that TOS 2.06 is the best operating system for this machine - it has improved file handling and hard drive access routines.

I look at the floppy disks they appear to be blank without any files or directory, yet I can boot up the game as normal. Is there something wrong with my disks, and is there any way I can transfer the game to my hard drive?

Robert Pilarczyk, Opole, Poland

**A** Well, first of all, there's nothing wrong with your game disks, Robert. The disks are formatted in a special way so that it is impossible to transfer the files to another floppy disk or to a hard drive.

This is done to prevent software theft and piracy. This means, that unless the game has a hard drive installation option in the set-up menu, you can only play it from the original floppy disk, and you'll have to put up with all the tedious disk swapping.

## IDE DRIVE KITS

**Q** In issue 69's ST Answers you told a reader that it isn't possible to connect an IDE drive to an ST. Well, I'm sorry, to contradict you, but it is possible!

Both ATAPI interfaces for CD-ROMs and actual IDE interfaces are available in Germany from:

**Hard & Soft  
Computerzubehoer GmbH  
Obere Muensterstr. 33-35  
D-44575 Castrop-Rauxel**

The AT BUS TOS Card costs 109 DM (about £49) without ROMs and 179 DM (about £81) with TOS 2.06 ROMs installed.

An external ATAPI 3.3 speed CD-ROM drive is advertised for 499 DM (about £226), an AC SI adaptor for the ST is 129 DM (about £58) and a Falcon adaptor is 49 DM (about £22).

Thorsten Guenther, via e-mail

**A** Thanks for that information, Thorsten. I have also been told by several Ad.Lib members that Gasteiner Technologies (☎ 0181 345 6000) also sell an IDE interface for the ST for £69. We'll get one in for review as soon as possible.

## PRICE QUERY

**Q** I have 2MByte of RAM in my STE, with two slots filled and two slots empty. I presume that each of the SIMMs is 1MByte in size. I have noticed in the Gasteiner ads in recent issues of *ST FORMAT* that a 1MByte upgrade is £4.95 and a 2MByte upgrade is £50. Can't I just buy two 1MByte

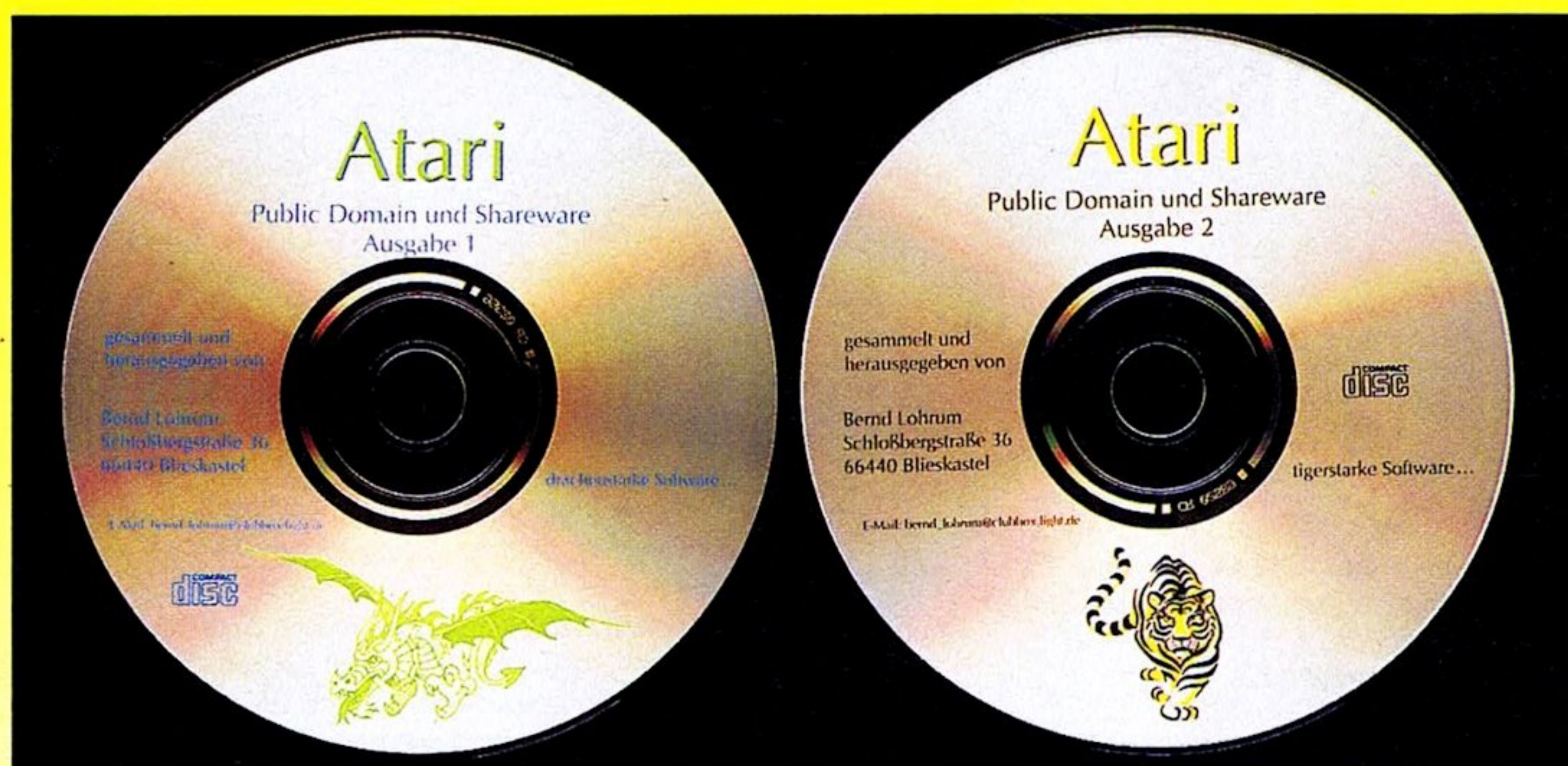
## CD-I COMPATIBILITY

I have a 520 STE and I am thinking of getting a CD-ROM drive to use with it. If I get a CD-ROM drive will I be able to put Philips CD-i discs in it like *Encarta Encyclopedia*, *Dangerous Creatures* and *Musical Instruments*?

Mr R Frost, Felixstowe

**stf:** No, I'm afraid you can't use CD-i discs with a CD-ROM drive on the ST. In fact, you can't use CD-i discs with a PC, an Amiga or an Apple Mac CD-ROM drive. This is because CD-i discs are designed to work specifically with the computer built into a CD-i console. (Note, there is a CD-i card for the PC.)

If you get a CD-ROM drive for your STE you can use ST software on CD-ROM disc, graphic images like GIFs and JPEGs, sound samples, text files, MOD and MIDI music files. You can even listen to audio CDs, but you can't run software designed to work on other computers. Sorry.



Connect a CD-ROM drive to your ST and you can soon be working with superb high-resolution pictures and hundreds of megabytes of shareware - all stored on these little beauties. They're almost like portable PD libraries.



► upgrades for £9.90 instead of buying one 2MByte upgrade?  
**Simon Shand, Essex**

**A** It isn't exactly what it seems, Simon. The 1MByte upgrade consists of two 256K SIMMs, giving a total of 512K. When you add them to an STE with 512K, it increases the memory to 1MByte. This is generally known in the trade as 'a 1MByte upgrade' because that's how much RAM is available after the SIMMs have been installed.

Perhaps the wording could be improved in the ads in ST FORMAT. How about saying '512K to 1MByte

upgrade,' or 'add 512K to your STE to give you 1MByte.'

To increase the RAM in your STE to 4MBytes you'll have to buy a 2MByte upgrade. Give Gasteiner a call on ☎ 0181 345 6000.

### FAIR SHARES

**Q** I have a couple of questions for you about shareware.

You gave away a game called *Abombinaball* with issue 47 of ST FORMAT. I recently installed it for my six year old son. He loves it! But there is no way of knowing whether there is a shareware fee to

be paid! Is there, and to whom is it payable? Another game which I recently found (I'm not really into games) was one called *Rolling Ronnie*, from something like issue 37. Same question, or is that one a commercial release?

If there is money owing, I would certainly appreciate a reply, as these happen to be my son's favourite games right now. We've seen enough developers and programmers leave the Atari world, and I'd just like to feel that I've tried to do my share in giving credit (and cash) to those who deserve it!

**Angus Armstrong, via e-mail**

**A** We totally agree that shareware payments should be made to authors of software. However, in this case, the game was sent in by a reader who received a small payment for his *Cover Disk* contribution. If there is an address for *Martin Brownlow*, the author of *Abombinaball*, supplied in a *Read.me* file on the disk or in the intro screen, then you can send him what you think the game is worth. However, if there isn't any info with the game then I can't help you further.

Unfortunately, I have no information about the author of *Rolling Ronnie* either. Once again, check the *Read.me* file for an address.

Almost all software states either in the doc files or within the program itself if it is a shareware program and if a payment is required. If this kind of information isn't supplied with the program then it's impossible to send a payment. With *Cover Disk* games, we normally indicate on the *Cover Disk* pages if a shareware fee is required, and print the address.

### STACY EMULATOR

**Q** Is it possible to fit a PC emulator into a STacy portable ST or the ST Book?

If it is possible, which is the best emulator to fit?

**Declan Fitzpatrick, Lancashire**

**A** No, there are no PC emulators you can fit into the Atari STacy or the ST Book. The motherboard inside is so compact you'd have trouble adding any hardware internally to the STacy.

### SLOW PRINTING

**Q** My name is Wael Elazab, and I was wondering if you can help me sort out my printing problem. My NEC Pinwriter 2200 takes over 15 minutes to print a single page of text from my installed *Atariworks* software. It's a complete nightmare. If I have to print out a long document it can take nearly a day. What's the problem?

**Wael Elazab, Westminster**

**A** It's not very clear from your letter, but I assume you have at least 2MBytes of RAM because this is the minimum you need to run *SpeedoGDOS* on an ST system. There's no way that *Atariworks* should take so long to print out documents unless you have made some very basic setup errors. It may be something as simple as your print buffer being a little too small and slowing down the processing of each page of the document. Send me more details of your setup and your *Atariworks* and *SpeedoGDOS* settings, so I can have a good look at the problem.

### DRIVE SYSTEMS

**Q** I want some information about floppy disk drives, both 720K DD (double density) and 1.44MByte HD (high density) types. I had a TOS 2.06 upgrade fitted by Compo engineers. I was a little bit worried when I got it back because the



You can't add a PC emulator to the ST Book. You could, however, add an ST emulator to a portable PC - providing there's a free slot where you can fit a Janus card, that is.

## QUICKIES

### Memory transfer

Can old SIMMs from an STE be used with a Marpet Xtra-RAM board?  
**Craig Lochhead, Dumfries and Galloway**

**stf:** Yes, Craig, you can use STE SIMMs on a Marpet board. They just plug into the slots.

### Memory confusion

I have a 1MByte STE and I want to upgrade it to 2MBytes. Is it possible to use four 256K SIMMs. Or will I have to buy myself a full 2MByte memory upgrade?  
**Nick Hutton, Wirral**

**stf:** A slight bit of confusion here, Nick. Your STE already has four 256K SIMMs, these make up the 1MByte you already have. (4 x 256 = 1,024K). So, yes, you'll have to get two 1MByte SIMMs to

upgrade to 2MBytes of RAM. **Ladbroke Computing** can supply you with a 2MByte SIMM upgrade for £39.99, give them a call on ☎ 01772 203166.

### It's all a game

I have just got an external Zydec drive for my ST system. I can use the drive from the Desktop, but I can't get it to work with games. Can you tell me how to get the drive to work with two-disk games.  
**Neil Mitchell, Middlesbrough**

**stf:** Unfortunately you can't. The problem is with the game software, not your system hardware. ST game designers assumed that all systems would only have a single drive connected, so there are no games available that use the external drive and the internal drive to access data and reduce disk swaps. There were a couple of games, many

years ago, that checked for two drives, but most programmers couldn't be bothered to write the extra code needed.

### Old magazine wanted

I am trying to locate an article published in the USA by Antic Publishing in *STart* magazine. The article concerned a laser disc controller released on the *STart* disk for January 1990. I have the disk but I need the accompanying article. It was written by Michael Riley and gave details of building a serial interface for certain Pioneer CD players. If anyone out there could supply the article, I would be most grateful.  
**K M Boyle, 38 Bure Park, Friars Cliff, Christchurch, Dorset BH23 4EF**

**stf:** If anyone can help, then please drop Mr Boyle a line at the above address.



# NO PICTURES

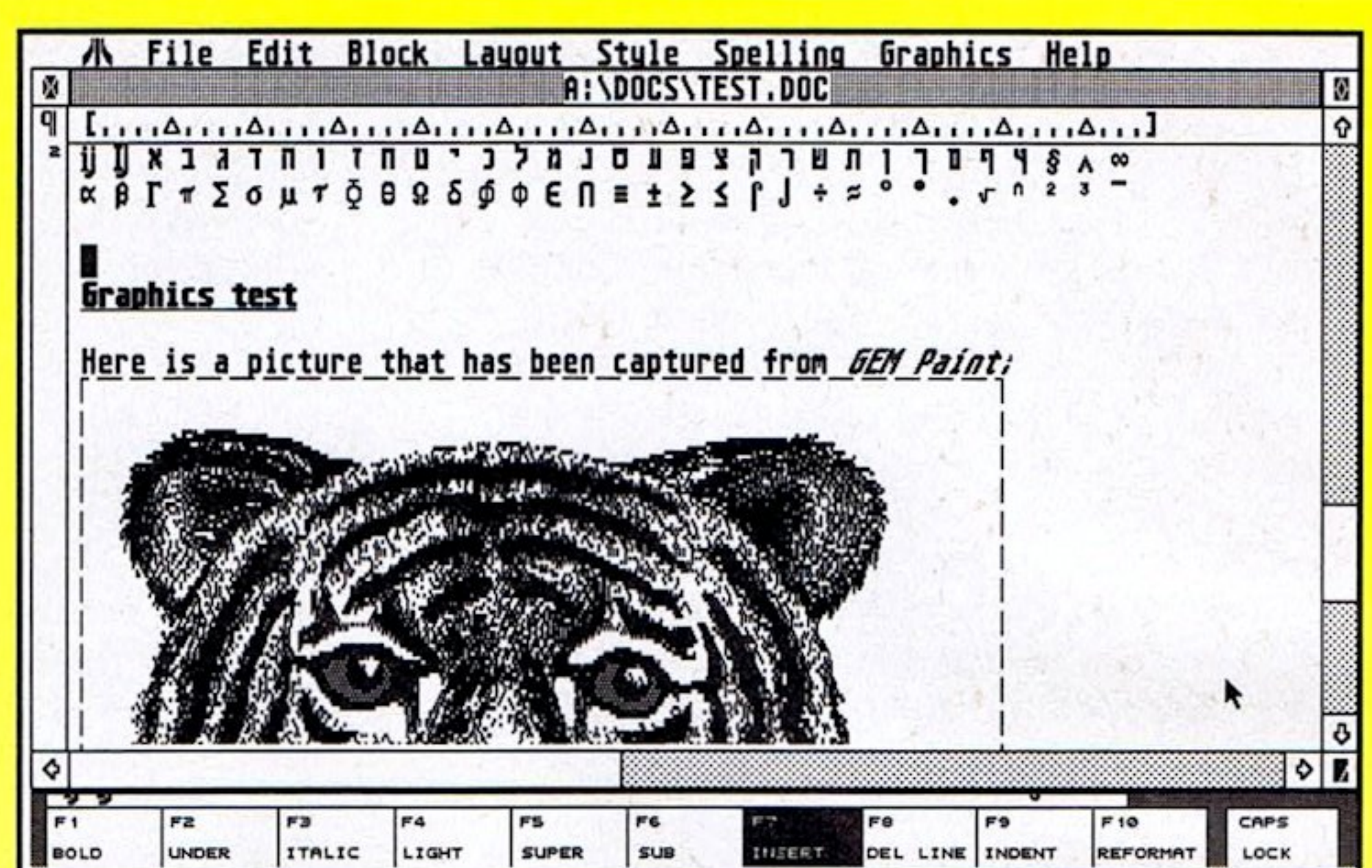
I have been trying to get pictures on to paper using *First Word Plus*. I have a 1MByte STE, a Citizen ABC printer and a Philips CM-8833 Mk2 monitor. I also have *ST FORMAT* Cover Disks going back many years.

I found a few Cover Disks with clip art in *Image (IMG)* format, which I tried to load and print in *First Word Plus* but all I get is the error message 'wrong resolution.' I then tried using *GEM-View 3* (from the now defunct *ST Review*) and I managed to print some beautiful black and white piccies.

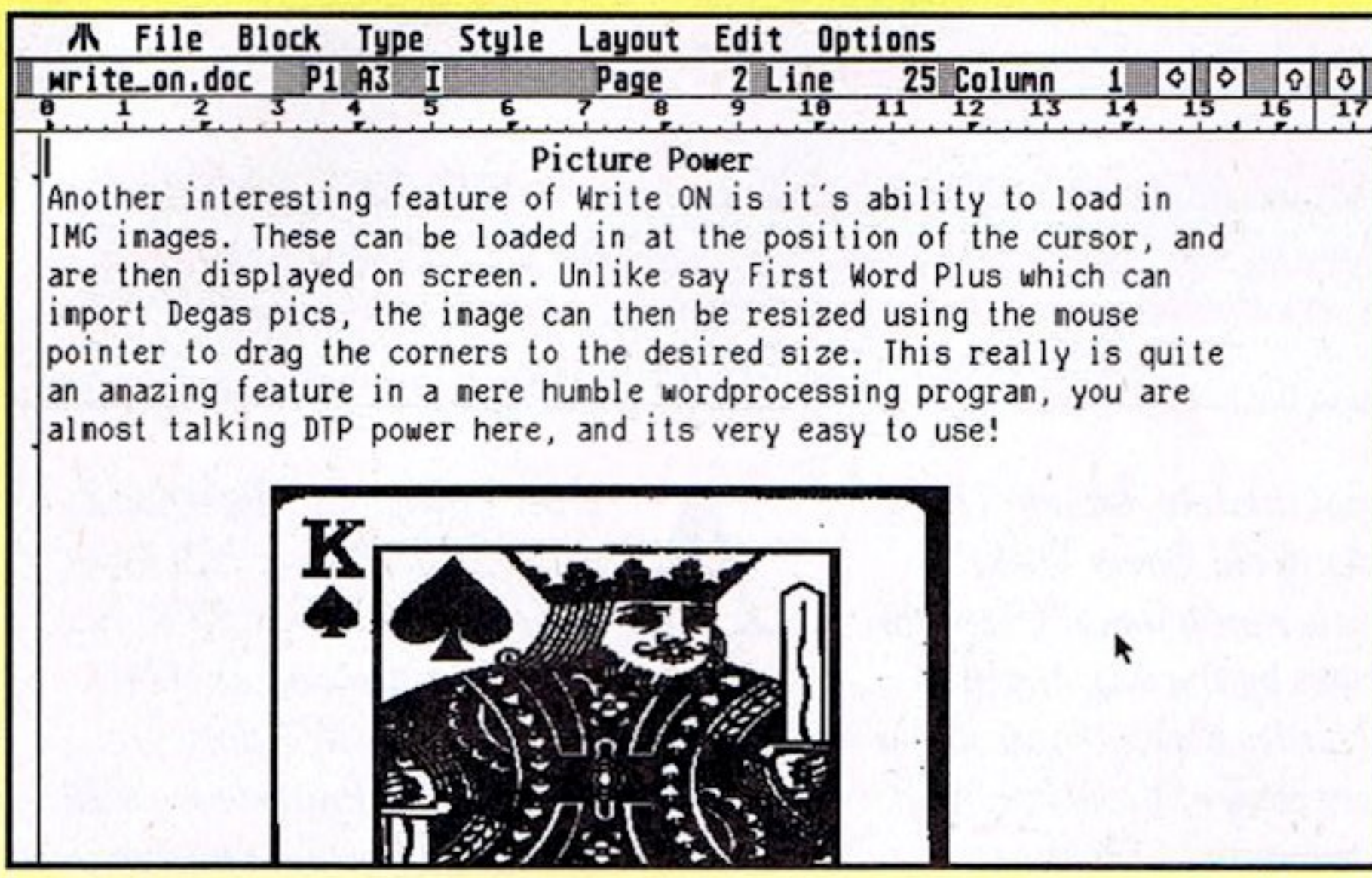
I also tried using the *Sebra* mono emulator to load the clip art into *First Word Plus*, and although I got some great images onscreen I was unable to print anything out. Is it possible to buy fonts and clip art that I can use with a word processor such as *First Word Plus*, *Protext* or *ST*

**Writer? Or do the fonts and graphics have to be dedicated to a specific program? I need to put pictures in a word processor, make sure I have the right printer driver and use more fonts.**  
T Yendle, Pontypridd

*stf: Your main problem stems from the fact you are using a word processor that's getting on for ten years old. First Word, the predecessor to First Word Plus, was actually developed in 1985. Many of the more usual functions of modern word processors just aren't available*



Yes, you can load high resolution images into *First Word Plus*...



*in First Word Plus, including a range of built-in printer drivers and fonts. The word processor you are looking for is called Write On. It was featured on Cover Disk 33 (check your Cover Disk collection) and is still available from Compo Software for the bargain price of £29. Write On works in medium or high resolution, so it will be fine with your system, and it can even load in high resolution Image format pictures in medium resolution. Basically, your printer is too modern ...although Write On is much easier to use and has many more features.*

*for First Word Plus. You can set up Write On to print using an Epson printer driver - this will work with your Citizen ABC printer. When it comes to typefaces, Write On has a range of 14 fonts supplied with it, which should be enough for you to get started. You can buy extra fonts and clip art in Image format from any PD library, see the directory page for contacts. Fonts are normally program specific, while Image format pictures can be used with almost any ST graphics program. You can also convert pictures from other formats like GIF or Degas into Image format using GEM-View 3, and then use them in Write On. A new version, Write On 2 will be available soon, but in the meantime if you want to order the original Write On give Compo Software a ring on ☎ 01487 773582.*

floppy disk access lights on both the internal and external drives flicker on and off all the time my ST is running - even when there is no disk in the drive. Is this causing any damage to my system? I am also thinking of getting a high density drive upgrade, do you know where I can get one?

Another point with floppy drives: I removed my external floppy drive from its case and tried to install it as the internal drive as an experiment. Once installed, the only result was a message saying the drive wasn't connected and the busy light also stayed on constantly.

I know I connected the cable the right way around (they only fit one way because of the lugs) but it still wouldn't work. When I put the disk drives back in their original positions they worked fine. Why didn't the swap work?  
**Paul Ellis, Fairford**

**A** First of all, there's no need to worry about the flickering drive access lights on your ST. This is a normal procedure with TOS 2.06, the operating system is checking for the presence of an HD disk in the high density floppy drive.

It does this automatically, because TOS 2.06 was designed for the Mega STE, which normally has an HD 1.44MByte floppy disk drive as standard. It won't have any harmful effects

on your system. I had exactly the same baffling symptoms when I added a TOS 2.06 upgrade to my first STE.

Remember, when you get a high density kit, that you also need a 1.44MByte drive to replace your original internal disk drive. You can continue to use the external drive as a 720K drive. The Analogic HD kit is easy to fit and only costs £59.95 with the HD drive, give them a call on ☎ 0181 546 9575.

There's a simple reason your disk drive swap didn't work. Although the connections to both drives are physically the same, the internal drive is logically identified as drive A, and the external drive is logically identified as drive B so your ST can tell which drive is which. The ID is normally altered by changing a jumper on the drive, or perhaps a dip-switch, depending on the manufacturer of the drive. Or you can cut and swap the drive identifier lines in the 34-way ribbon cable if you really want to mess about with the cables. So you see, you can't actually perform a straight swap without physically adjusting the disk drives themselves. Why bother anyway? Both your drives are working perfectly as they are. My advice is 'if it ain't broke, don't fix it.'

**WRITE PROTECTED**  
**Q** Can a virus spread on to disks that are write protected? I'm thinking of the

principal where a colour system is fooled into thinking it's connected to a mono monitor. And how long can a virus survive in memory? I caught a virus and left my ST off all night, when I switched it on in the morning it was still there.  
**J Trigwell, Salisbury**

**A** No, viruses cannot be copied on to write protected disks. It's physically impossible for the disk drive to write to a write-protected floppy disk. You can fool an ST into think a drive is write protected, but not write enabled.

A virus disappears from the memory of your ST after about 30-40 seconds at most. If the virus still appears to be there the next time you switch on, you've either got a disk in the floppy drive or a hardware fault of some description which you have mistakenly identified as a virus. For instance, many people seem to think that the line of bombs that appear on screen when your ST crashes is a virus. It's not. The number of bombs indicate the type of problem the system has encountered.

The best way to ensure your ST is completely free from viruses is to boot up without a disk in the drive, this takes about 45 seconds. Now get a virus killer disk (which should have been write protected since you got it) and run the program.

Now test all of your disks to make sure that they are free from

viruses. Next month I'll devote a full page of *ST Answers* to virus security.

## MYSTERY SOLVED?

**Q** In *ST FORMAT* issue 68 a reader asked what the mysterious switches tucked away inside the Mega STE are used for. I think I know the answer to this mystery. The dip-switches in question on the Mega STE are used to identify specific additional hardware built into the computer. They first appeared in the STE, reappeared in the powerful 32-bit TT workstation, once again in the Mega STE and finally in Atari's last TOS based computer, the Falcon030.

As far as I can tell, the only dip-switch that has any meaningful function in the Mega STE is switch number seven. When switched to the on position, it tells TOS that the computer contains a High Density (HD) 1.44MByte Floppy disk drive. When it is in the off position it means that the machine has a standard 720K floppy disk drive installed.

To detect which state the switches are in, TOS versions from 1.6 onwards include the \_SWI cookie in the cookie jar. To find out the current value of the cookies in your STE or Mega STE, use the Cookie CPX you can find at most ST related BBSs or from any good



## FIRMLY FIXED

I've attempted to perform the DIY Video Port upgrade in issue 62 (turn to page 77 if you missed it), but I've been unable to complete it. I've followed your detailed instructions and managed to remove the case, keyboard, shielding and disk drive. Unfortunately, I am unable to remove the power supply unit (PSU) because there are some screws masked by the three-pin power socket and the power switch.

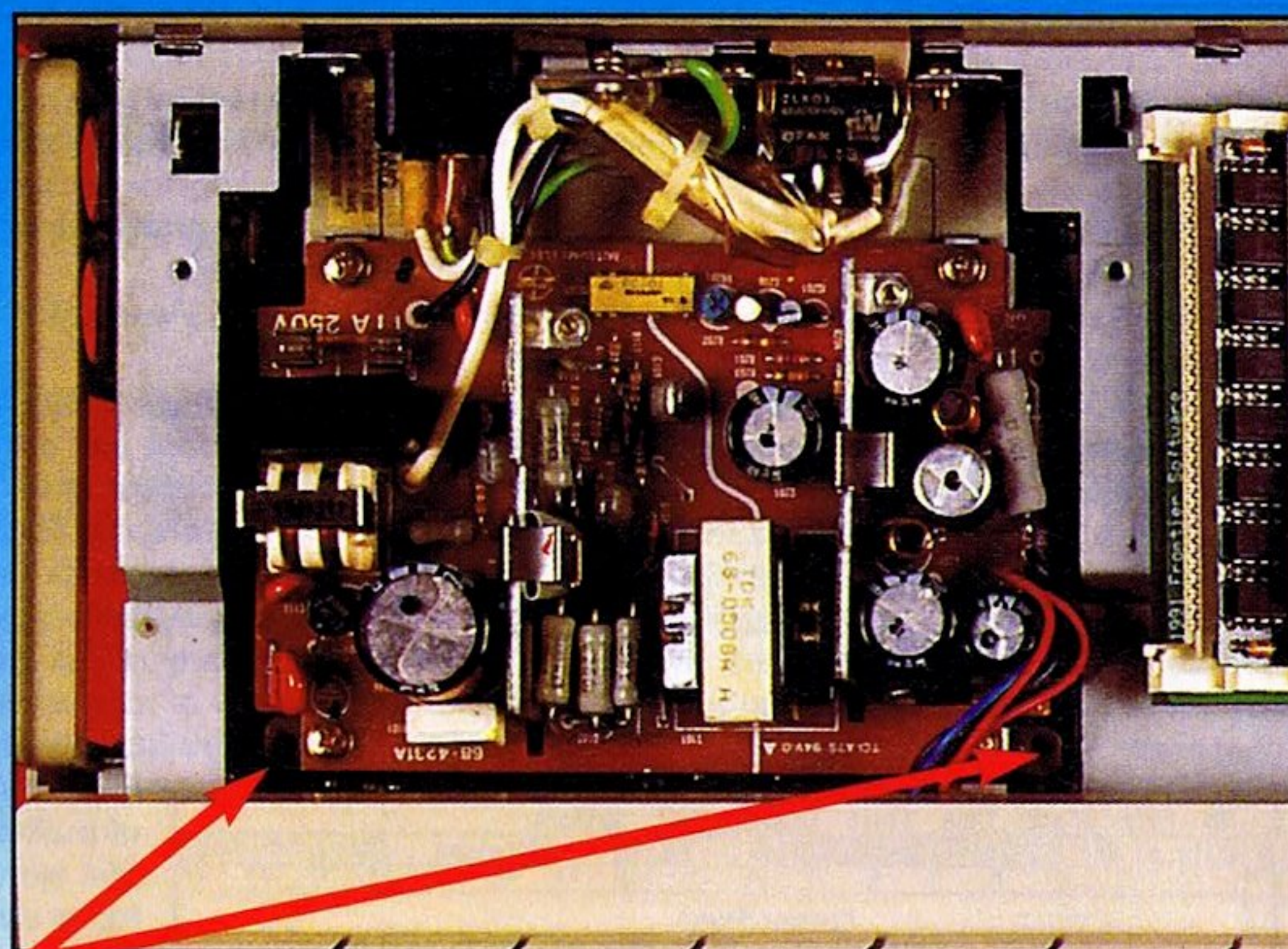
I have tried all sorts of things but I have been unable to get at these screws. The heads are located between the outer case and the metal plate and cannot be removed. Please print a solution to my problem.

D E E Stokes, Colchester

**stf:** You are trying to remove screws that hold the various parts of the power supply together, not the actual fixing screws. On all STFM and STE model power supply units, there are two fixing screws which hold the two front legs – at the front of the power supply – to the motherboard. The four screws on the top of the PSU – one in each corner – hold the PSU together. You do not have to remove them.

Once you have removed these two fixing screws, unplug the cable from the PSU to the motherboard. Now you must gently lift the PSU up, and bring it forwards so the power socket and switch disengage from the case. It is an awkward job to do for the first time, the ST isn't designed to make removal of the PSU very easy. After a bit of fiddling about, you should be able to remove the PSU. It can be just as awkward to replace the PSU after you have finished the upgrade.

Take a look at the photo of a PSU so you can see exactly which two fixing screws need to be removed.



These are the only two screws that need to be removed before you take the PSU out of your ST. For more details see the 'Customise Your ST' feature in this issue.

public domain library.

Alternatively, you can get the information using the SYSINFO program, or any other ST hardware interrogation utility.

Now it all starts to get a bit technical. Once the cookie has been found, the inquiring software can examine the value associated with it, and act accordingly. When all switches are in the off position, the value in the cookie is 'all bits on' in the low byte of the long-word cookie value. As each switch is moved to the on position, the corresponding bit in that byte is switched off.

This means that a standard Mega STE with a 720K floppy disk drive installed (and a few early machines were fitted with 720K drives) would have the value 000000FF hexadecimal as the value for the \_SWI cookie. Switching switch seven on inverts bit six (remember that bits are numbered from zero), so the value in the jar changes to 000000BF.

The standard TOS 2.06 and TOS 3.06 Desktops will, when switch seven is in the on position, enable the High Density formatting option in the Disc Format/Copy command, thus enabling the formatting of high density 1.44MByte disks.

Unfortunately, if you are using MultiTOS on a pre-Falcon TOS, as is the case with the Mega STE, you need a specific patch in the Auto folder. This is because MultiTOS does not use the \_SWI cookie to detect high density drives. This means that the High Density drive button will not be visible if you try to format a 1.44MByte disk under MultiTOS. If you are interested, I'll send the

software patch to ST FORMAT for use on a future Cover Disk.

Sorry if this explanation seems a little too complex and technical, but because careless fiddling with dip-switches has the potential to kill your ST stone-dead, a reasonably in-depth discussion of exactly what they actually do is required.

Gavin Miller, New Zealand

**A** Don't worry about the explanation going on too long or being too technical, this is exactly the kind of hard-to-come-by technical information we are looking for in ST Answers. We're not too proud to admit that we don't know absolutely everything, even we have our limits – especially when the hardware in question doesn't get mentioned in the technical specifications of the computer.

It's good to know that the inner workings of the Mega STE's hardware aren't totally unknown to everyone. If anyone else has any information about the functions of the dip-switches in the STE, Mega STE, TT or Falcon030, then let us know at the usual address.

And, Gavin, please do send us that software patch for the ST FORMAT Cover Disk, we'll put it on the first available disk with a bit of room to spare.

### OLD DISKS

**Q** I was rooting around in my old ST FORMAT binder and I came across issue 35 with both Cover Disks still firmly attached to the cover!

Unfortunately, the GFA collection disk is faulty, is there any possible way I can get a replacement disk?

S M Burns, Barnsley

**A** Unfortunately, we don't have stocks of old Cover Disks.

They are only usually kept for a couple of issues by the disk duplicators in case of faulty disks. If any of you can find a spare copy of the disk send it into me, I'll pass it on to Mr Burns.

### EXTERNAL KIT

**Q** I have upgraded my 1MByte STE to TOS 2.06 and I have also installed a high density floppy disk drive kit. This has left me with a spare double-sided double density disk drive just sat on the desk. Is there a kit available or are there parts I can buy to make the spare drive into an external unit?

Ron Dawson, Wrexham

**A** Sorry to disappoint you, Ron, but there's no kit available that enables you to do exactly what you want. It should be possible to build the external drive yourself using parts specifically purchased for the job, but this would probably turn out to be more expensive than buying a brand new external disk drive.

We'll do some research on the problem, though, and see if we can come up with a do-it-yourself project for inclusion in a future issue of ST FORMAT.

### PHILIPS CD-ROM

**Q** I am thinking of getting a Philips CDD 462/05 CD-ROM drive. But I want to know, will this drive work with the STE? If not, what exactly do I need to make it work? Is it really worth buying a CD-ROM drive for just a couple of discs of software?

Jonathan Lukas, Gibraltar

**A** If the Philips CD-ROM is a SCSI drive, then it will work perfectly with your STE, providing you have a couple of other bits and pieces of hardware and software.

You need a SCSI interface called the Translator from System Solutions (☎ 01753 832212) and some CD-ROM driver software. The Translator costs £69.95 or £79.95 with extra hard drive software. The best CD-ROM driver software you can get for the ST range is ExtenDOS Pro 2, £39.95 from System Solutions. It is recommended for the Falcon030 too, and it's much more reliable than using the MultiTOS CD-ROM drivers supplied by Atari. Remember, there's no way you can use a CD-ROM drive – or any SCSI drive – with your ST without an interface of some kind.

There are more than just 'a couple of CD-ROM discs' available for the Atari ST now. System Solutions alone have more than ten different titles, with more being added all the time. Compo Software (☎ 01487 773582) also sell an expanding range of ST compatible CD-ROM titles. So, there are a few good reasons for getting a CD-ROM drive, and more coming along all the time.

## PROBLEMS?

Send your ST Answers queries to our man in the field: Clive Parker. You can contact him by e-mail at: [cparker@futurenet.co.uk](mailto:cparker@futurenet.co.uk) Or you could always do it the old-fashioned way and post your questions to: ST Answers, ST FORMAT, 30 Monmouth Street, Bath, Avon, BA1 2BW.



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# SUBSTATION

**Life is a gift.**

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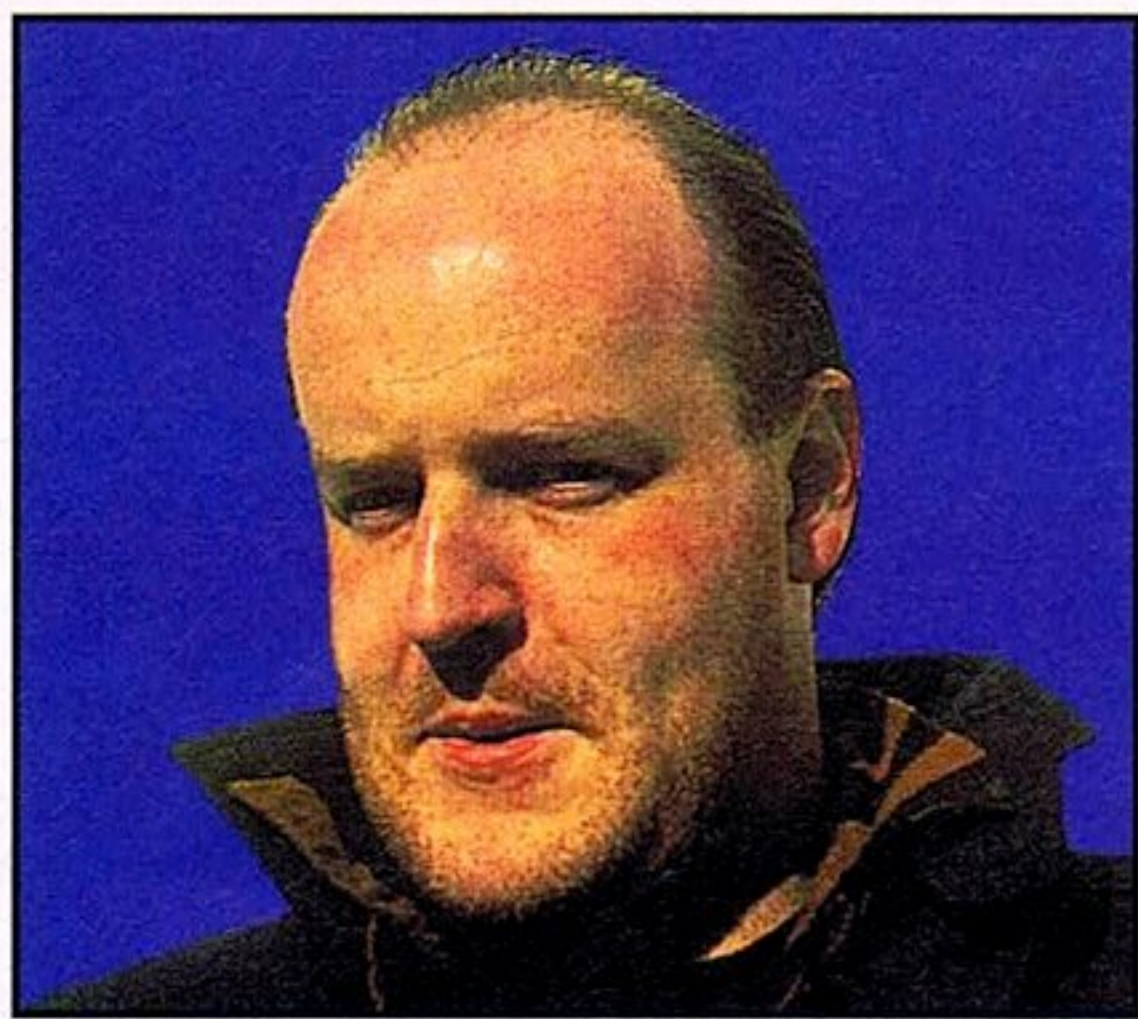
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**SUBSTATION: In 1996, Mitushi Industries Corp. reveals the greatest innovation in search of alternative energy sources. By cooling the lava streams inside the mantle they create electric power through large underwater turbines. Two years later, Mitushi's "IEE" (Inside Earth Energy) base SubStation, at 2500 metres below sea level, is fully operational and provides Japan's two largest cities with all their power needs. June 6th, 1999, 11:15 am. Contact with SubStation is lost. In panic, Mitushi's board of directors pay the U.S government an unknown amount of money to lease an "M.E.M"-squad to explore the secrets of the ceased contact with SubStation. Secrets that should remain hidden, deep down at the bottom of the sea..**

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Frank Charlton ventures once more into the world of communications, and explains the difference between an on-line service like CIX, a BBS, the BBC and BSKYB. Okay, we lied about the last two.

# alt.queries.net@...

## Getting your CIX

CIX – the Compulink Information Exchange – is way too big to be called a BBS. It's a full-blown conferencing system based in London, and is a favourite haunt of lots of Atari users. You can access CIX via modem (at 14,400 and 28,800 baud) and ISDN (at 38,400 and 57,600) if you use the BT ISDN service and own a terminal adapter. X25 access via BT's Dialplus service is available too.

CIX isn't a free system – there's a joining fee of £25, and you pay charges for the amount of time you're on-line. There's a monthly minimum charge of £6.25 which works out at roughly two and a half hours connection time a month. Any time you use on top of this is charged at 6p per minute during peak time (Mon-Fri, 8am-5pm) and 4p per minute at all other times. Note that these prices don't include VAT, and you need a credit card to subscribe.

CIX has 'conferences' – similar to the message areas on a BBS. Because CIX can have many users online simultaneously, the conferences have the feel of true on-line forums. Each conference is subdivided into Topics, each one covering a separate subject. The confer-



ences are 'threaded' – meaning replies are linked to the original message, so you can follow the thread of a conversation easily. The areas are moderated too, so there isn't a lot of long meaningless drivel in there – messages which don't fit the current topic can be withdrawn by the Moderator, or moved to a more appropriate Topic. The good thing about this is that it's easy to find help and information when you need it without wading through tons of stuff you don't want to read. There's a conference for almost anything you can think of – and if there isn't, you can create and moderate your own.

CIX has long been a hangout for Atari users, and there are quite a few conferences related to your beloved machine – try the general conference area atari.st. It has lots of topics devoted to comms, hardware, questions, DTP and other related areas like the Falcon030 and CD-ROM technology.

## Saving money

With charges involved, it's sensible to do as much work as possible off-line. The Atari range has an excellent suite of software designed to help with this in the form of *CIXComm* and *CIXRead*.

Although you can access CIX with any normal comms software, *CIXComm* makes life much easier. *CIXComm* handles everything automatically for you, using scripts prepared before going online. Collecting and delivering mail, picking up and replying to conference messages, send-

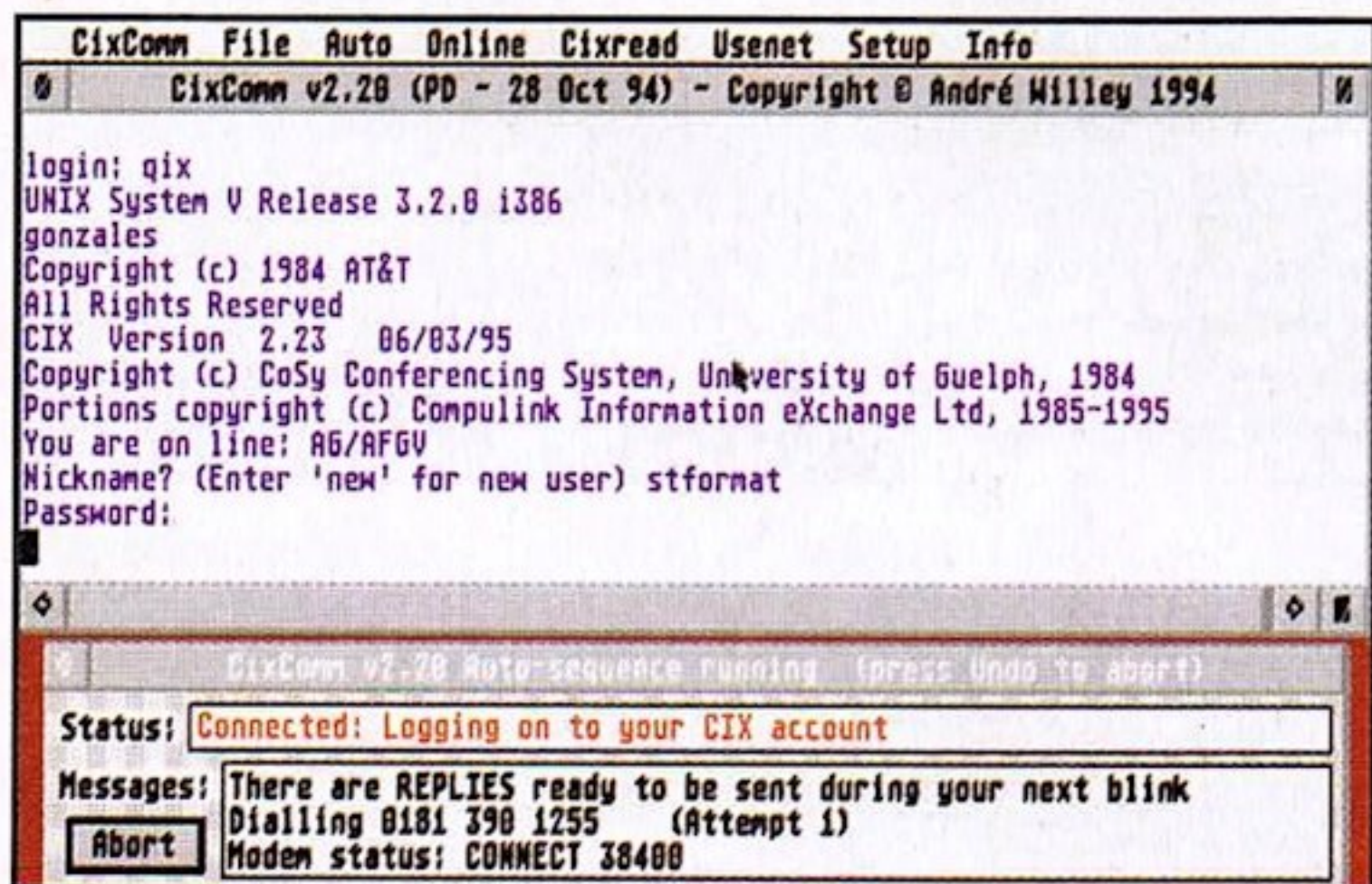
ing files to other users and even downloading software from the quality selection of PD and shareware on offer – *CIXComm* does it all without you needing to remember cryptic commands. *CIXComm* is shareware, and costs £20 for the full version. The PD version is almost fully functional, but pauses for 10 seconds before any automated operations. Registered users get access to a few extra features, too. *CIXComm* even keeps track of time spent on-line, and displays a chart telling you how much you've spent, based on current on-line charges. It's an excellent piece of software for all Atari machines, and will pay for itself in saved on-line charges in no time. To find out more, mail author Andre Willey at [andre@cix.compulink.co.uk](mailto:andre@cix.compulink.co.uk) for further details.

*CIXRead* is the companion to *CIXComm*, and handles the offline management of your mail and conference messages. It's brilliant



*CIXRead* automates your offline sessions effortlessly – here we're about to download some files.

stuff, and you really can't do without it for long. *CIXRead* is where you read and reply to messages off-line, and even browse the file lists and choose files to be downloaded next time you call. Again, it's shareware, and the PD version restricts you to only five conferences off-line, certainly enough to find out how indispensable the program is. *CIXRead* costs £20, and you can find out more from author Kevin O'Donovan by send an e-mail to [kebab@cix.compulink.co.uk](mailto:kebab@cix.compulink.co.uk). Both programs also have on-line support in the [atari.st.olr](http://atari.st.olr) conference.



Using *CIXComm* makes your CIX account much easier to use than a standard terminal program.

## CIX AND THE 'NET

If you don't already have full Internet access, CIX provides a capable gateway to the Net. Most services are available, including full e-mail, ftp access and use of the text-only WWW browser Lynx – see last issue for details. While the CIX gate isn't yet as flexible as a true SLIP or PPP account (though full SLIP access is coming), it's still very good, and links into the off-line software very well. It's a good way of using a lot of the facilities of the Net without tangling with complex software and UNIX commands.

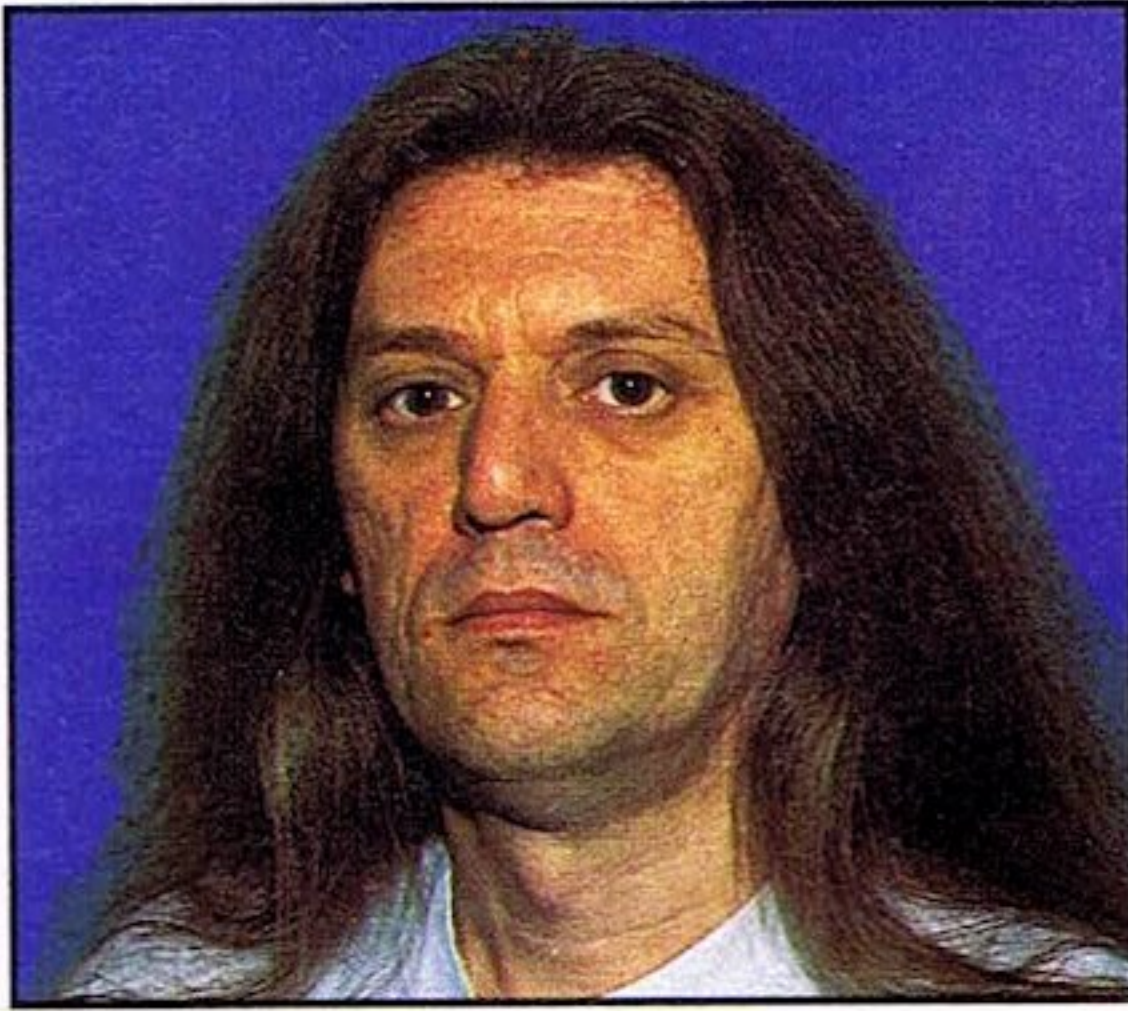
CIX is an excellent system with a lot to offer Atari users, and the users – or CIXen – are a friendly bunch who are happy to answer

your questions. If you use the offline software and don't go barmy online, it won't break the bank either. For membership details, email [cixadmin@cix.compulink.co.uk](mailto:cixadmin@cix.compulink.co.uk) or call 01492 641961 for details, and don't forget to tell them *ST FORMAT* sent you!

Contact Frank at the main ST Answers address (page 52), or e-mail him at: [frank@tachyon.demon.co.uk](mailto:frank@tachyon.demon.co.uk)

NeST 90:100/308.2  
AtariNet 51:6/208.2  
FidoNet 2:256/502.28





**Don Maple once again delves deep into his instruction set to pull out a stack of easy-to-understand gems. This month he helps you get to grips with Linking and Unlinking your programs.**

# Assembly Line

## Building a complex

Even though the instruction set of the 680x0 is very clean and well thought out, there are a few instructions whose actions are not immediately obvious. One such pair is the LINK/UNLK which appear so complex that many people just simply ignore them.

Normally, the only place where LINK/UNLK combo can be spotted with definite regularity is when disassembling high level language code – a C program, for example. But their usefulness does not end there. Once you get familiar with what they do, LINK and UNLK will feel right at home in your own programs.

## Stacking up

But before we plunge in, let's talk about the stack. The stack on a 680x0 machine is basically any portion of memory which the stack pointer points to. There are actually two stack pointers depending on whether you are in user or in supervisor mode. In either case, the stack pointer register is A7. To distinguish the two, the user stack pointer is called USP and the supervisor stack pointer is called SSP (the 68030 has two supers, ISP and MSP). On a 680x0 the stack grows downwards. That is to say, when you put something on the stack the stack pointer is first decremented by the size of the value and then the value is deposited on the stack. The reverse happens when we retrieve something back from the stack. The value is first read from the address currently pointed to by the stack pointer and the A7 is then incremented. These are the standard pre-decrement and post-increment addressing modes and you can easily simulate the stack with any address register.

There is one little quirk to note here. The stack pointer under-

stands only words and longwords, not bytes. In other words, the smallest unit it can address is a word so it can only be in/decremented by a multiple of 2. This means that even when we push a byte on the stack, the stack pointer will still be decremented by a word. Just thought I'd mention it...

## Linkage

The LINK/UNLK commands work with the stack. Explained in simple terms, LINK reserves an amount of memory on the stack and handles all stack pointer management. UNLK does the reverse. The form of the instruction is: **LINK An, #<displacement>** Here's an example using A6 and #<displacement>.

**LINK A6, -#<displacement>**

This instruction will, first of all, save the contents of A6 on the stack. Next, the new stack pointer resulting from this action will be moved to A6. Finally, the displacement will be added to the stack pointer. Since the displacement is negative this will effectively make the SP point below its old value.

All this is much clearer if we write it out as a small program:

```
MOVE.L A6, -(SP)      Save the
                       A6 register
                       on the stack
MOVEA.L SP, A6        Move new
                       value of
                       SP into A6
ADDA.L -#<displacement>, SP  Add the
                               displacement
                               to the SP
```

Not so bad is it? Or is your head still spinning? Well, to make it unequivocally clear here's a 'before' and 'after' snapshot of the stack.

Before LINK...

```
A6 = $XXXXXXXX      (Previous
                    value)
```

```
A7 = $00100106
$100108 —
$100106 — < A7
```

After LINK...

```
A6 = $00100102      Old stack
                       pointer (after
                       A6 save)
A7 = $00100002      Start of re-
                       served memory
$100108 —
$100106 —
$100102 XXXX < A6  Top of re-
                       served memory
```

```
... ..
... .. #<displacement>  Bytes of
                       reserved memory
... ..
$100002 — < A7      Bottom of
                       reserved
                       memory
```

You could, in theory, also use positive displacement but in normal circumstances that doesn't make much sense. After all, you want to reserve new memory on stack and not interfere with data previously saved there. Now what? Well, you have now reserved an amount of memory on the stack and can do with it what you like. The address register points conveniently to the top of this memory and you can easily access it by using a relative addressing mode. For example:

```
MOVE.L -<displacement>(A6), D0  Get
                               something at
                               offset -<displacement>
MOVE.W D1, -<displacement>(A6)  Save
                               something at
                               offset -<displacement>
```

... Etc...  
The only thing you have to be careful about is not to destroy the value in the register used for the LINK. In the above example, this was A6, which is what high level languages always seem to use by convention. But you could easily use any other address register.

## Unlinking

When all is said and done it's time to restore things back to normal. The general form of the instruction is a simple:

**UNLK An**

Or to wrap-up our example:

**UNLK A6**

This will first move the contents of the A6 register to the stack pointer. The stack pointer will therefore skip reserved memory and point back to where the original value of A6 was stored. All that's left now is to get this value off the stack and store it back into A6. This would be equivalent to the program shown below.

```
MOVEA.L A6, SP      Skip displace-
                       ment and
                       restore SP
MOVEA.L (SP)+, A6  Restore origi-
                       nal
                       value to A6
```

And that's all there's to it! We're back where we started from.

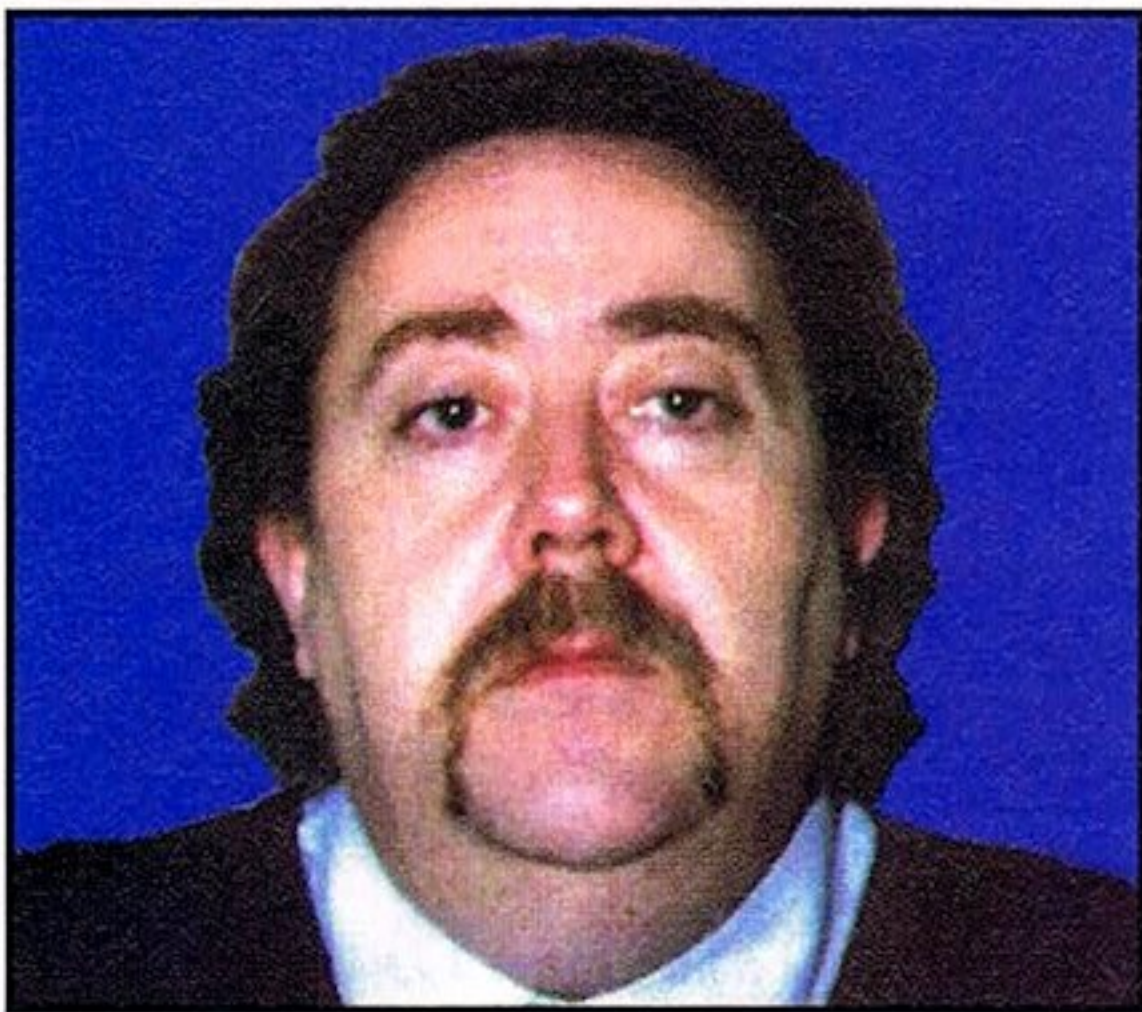
## TIME TO RELOCATE

So in future when you need a temporary area of memory instead of mucking about with the DATA segment simply use LINK. In most cases you would do this at the start of a subroutine and then unlink the memory when you're done at the end of the subroutine. Not only will your program be smaller but you will – almost by default – start using indirect addressing to get at this memory. This is always a good

idea because it makes your programs relocatable. Until next month then, happy linking.

**You can contact Don Maple with your Assembly problems at the normal ST Answers address (page 52) or e-mail him at: donm@ucon.gun.de**





**Mac Marsden ponders life, the universe and everything, along with the mystical significance of the number of the 42 within GFA Basic.**

# GFA Workshop

## BUG OFF

**Q** Is there any way to list my GFA Basic code while it is being run? Sometimes my programs hang and I find it difficult to debug without seeing which part is causing the trouble.

Anne Reeves, Sunderland

**A** There are a couple of functions that can assist you in the debugging process, these are TRON (Trace ON), used in the format TRON #n and TROFF (Trace OFF).

These functions enable you to run your program with each line either displayed on-screen, sent to the printer or saved to a file as it is executed. In this way you can see the last line that was executed before your program crashed.

I have included three small routines to clarify the method. The word 'Start' appears then the numbers 1 to 5 are displayed, along with the GFA Basic commands which lead to their display. Then the word 'End' appears, ending the program.

To display on screen...

```
PRINT "Start"
TRON
FOR x = 1 to 5
```

```
PRINT x
NEXT x
TROFF
PRINT "Off"
```

To send the output to a file...

```
OPEN "o", #1, "\TRON.LST"
TRON #1
PRINT "Start"
FOR x = 1 to 5
PRINT x
NEXT x
TROFF
PRINT "Off"
TROFF
CLOSE #1
```

To send the output to a printer...

```
OPEN "o", #1, "prn:"
TRON #2
PRINT "Start"
FOR x = 1 to 5
PRINT x
NEXT x
TROFF
PRINT "Off"
TROFF
CLOSE #2
```

## MICE AND STICKS

**Q** I have two questions that I hope you can help me with. Is there any way I can turn

the mouse pointer off then later turn it back on? And how do I program the joystick?

Phillip Chatt, Mansfield, Nottingham

**A** The mouse pointer can be turned off and on by using the following commands; HIDE M and SHOW M. I have included a small example of these commands below. Clicking the left button on the mouse displays the pointer, clicking the right button hides the pointer, pressing both buttons together exits the loop.

```
REPEAT
IF MOUSEK=1
SHOWM
ENDIF
IF MOUSEK=2
HIDEM
ENDIF
```

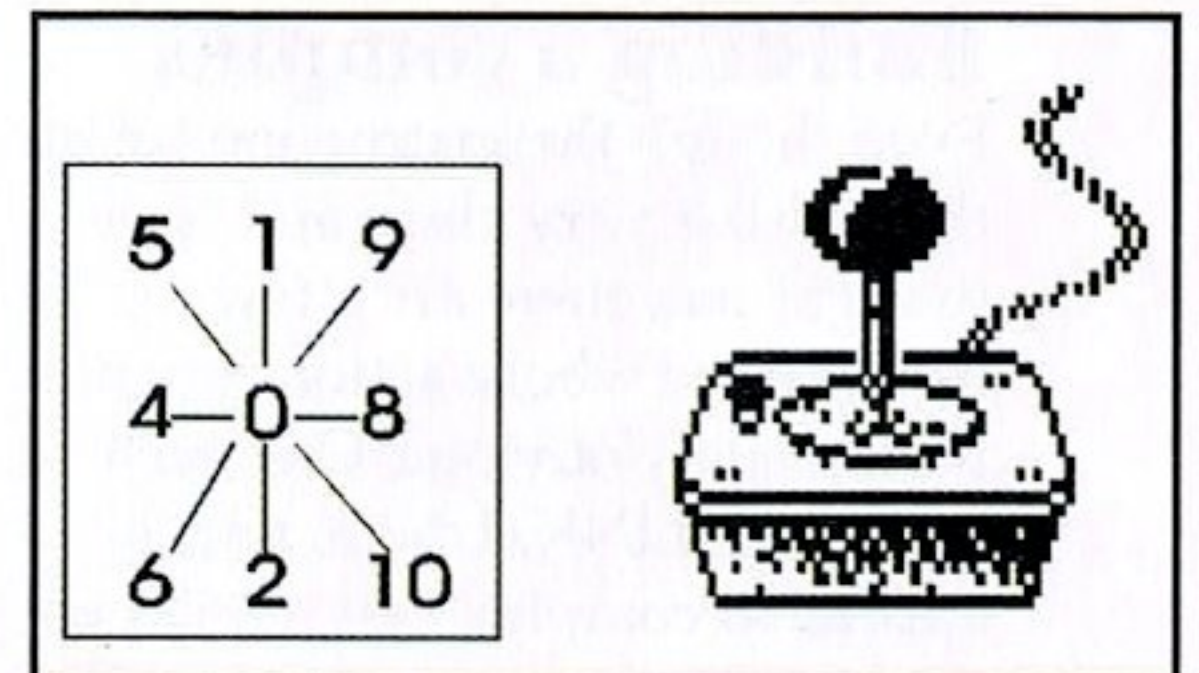
UNTIL MOUSEK=3  
There are three commands that cover using the joystick, STICK m, STICK (p) and STRIG (p). STICK 0 causes Port 0 (mouse or joystick port) to supply mouse information.

STICK 1 causes the joystick port to supply information. STRIG (p) returns the joystick information, for an explanation of values used in (p) see the diagram on the right. We've included a small listing to get you going.

Move your joystick left, right, up and down and you'll see the direction printed on the screen. To exit the program press the fire button.

```
STICK 1 !Activate joystick if attached to Port 0
```

```
REPEAT
direction%=STICK(0)
FIRE!=STRIG(0)
SELECT direction%
CASE 4
PRINT "LEFT"
CASE 8
PRINT "RIGHT"
CASE 2
PRINT "DOWN"
```



The joystick codes required for programming.

```
CASE 1
PRINT "UP"
ENDSELECT
UNTIL FIRE!
WHILE STRIG(0)
WEND !Waits for the fire button to be released
```

## THE CONVERSION

**Q** I want to write a picture convertor in GFA Basic. Do you know where can I find the file formats of image and sample types?

Matthew Wilson, via e-mail

**A** Matthew, you do not say if you want the information to write the program as an exercise or to be released as a shareware or freeware program when it is finished. If you wish to do it as an exercise in GFA programming then fine, but if you want to release it, you should really think twice before starting the project. There are already a lot of fine image conversion programs like GEM-View and Image Copy Colour. A new untried and untested program would not be as well received as it should. All the information you require about image formats can be found on the Ad.Lib BBS (0191 370 2659) in an area named 'TEXTBASE'.

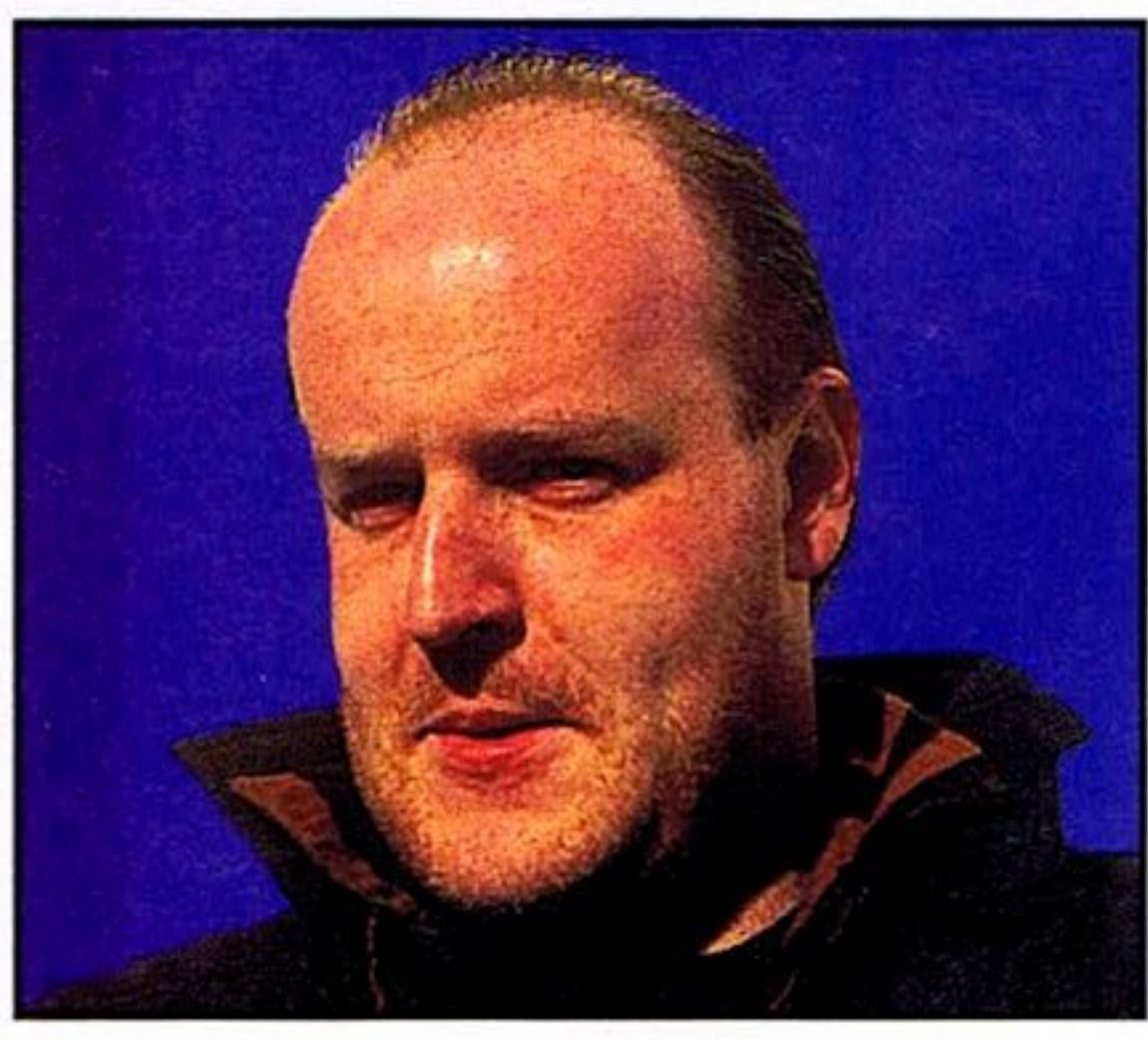
## CHAIN GANG

I was wondering if it is possible to have a main program chained to a second program, with the second program able to use some (if not all) of the routines in the first program. The routines would be for graphics, like icons, and to draw windows, buttons and so on (like those that are used in ZeST). The main idea is to try and save disk space and loading times since I have several programs which use the same graphical interface and all are called from a main program. Thanks for any help you can offer. DG Williamson, via e-mail

**stf:** Okay, Dan, the answer to your first point is yes, you can call or chain another program in to memory using the command EXEC, which we covered in last month's issue. As for the second program using information from the first program, you can only use variable information. The graphical information you want to reuse can be used from the same resource (\*.rsc) file holding all of the information you require. From the one \*.rsc file you will be able to pick and choose what Icon/Window/buttons you wish to use for each particular program.

You can contact Mac with your GFA problems and queries at the main ST Answers address (page 52) or e-mail him at: mac@mentor.demon.co.uk





Mild-mannered Frank Charlton once again slips into his Captain STOS alter-ego in an attempt to stamp out programming injustice, and to answer this month's batch of reader questions.

# STOS Corner

## GARBAGE, MA'AM?

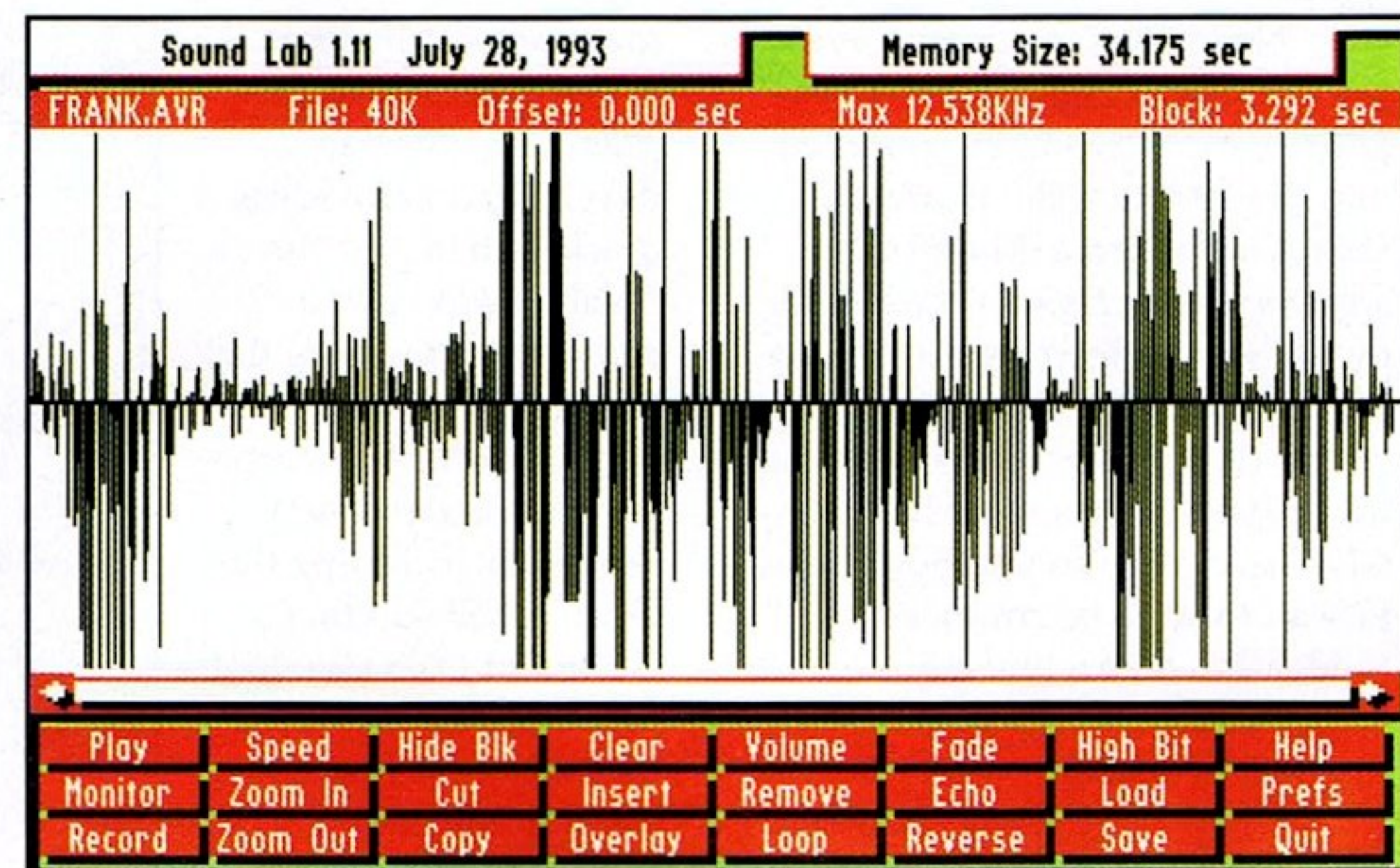
**Q** I've been working on a role-playing adventure game for a while now, and I'll admit the code is getting a little spaghetti-like. It's grown out of all proportion, and now when I run it there's an annoying pause before my combat routines kick in. I've been right through, and it's driving me mad. Where did this pause come from?

Russ Piper, Camberwell

**A** Russ, 'a little spaghetti-like' is the understatement of the year. Obviously as the program has evolved you've dropped the use of some variables and introduced others – but on the way you left a lot of redundant ones in there. Some of your routines are initialising and working with these variables, but they're not actually being used by anything. When the memory occupied by variables is used up, STOS does a 'garbage collection.' With as many variables as you have, this causes the pause. You can control this by forcing the garbage collect routines at a point where the pause won't be noticed. Using a dummy variable (yes, I know you have about 30 already!) and issuing the command `dummy_variable = free` will force the garbage collect. Better still, take a long hard look at your code and strip all of that redundancy out. It takes time, but it's worth it. Secondly, considering the size of your work, you really should intersperse it with comments. Use REM statements to identify key subroutines – it makes life a lot simpler when you have to do a major revision like this.

## BANKING ON IT

**Q** I found a little machine code program on an old PD disk to use within STOS programs, but I can't get it to load. The section from my game looks like this:



SoundLab will swallow almost any sample format without hassle. What's more, we gave it away on issue 69's Cover Disk. We're too good to you, we really are.

`reserve as work, 6000`  
`load "RAINBOW.PRG", 7`  
 What am I doing wrong?  
 Jesse Morris, Texas

**A** It's a simple mistake, Jesse. In the case of little machine code modules, you don't actually need to reserve the bank first – STOS does it for you. Just remove the first line in your example, and the second line should do the trick for you. Just CALL the routine as normal and all should be well.

## SOUND ADVICE

**Q** I've just got a second-hand STE to replace of my battered old STFM, and I'm interested in using samples with the STE's DMA using either STOS Maestro or the STE Extension. When I called my local BBS they had a lot of samples, but none of them were in the STOS Maestro format. Most were in files with extensions like WAV, AVR and VOC, so how can I use them?

Jill Armstrong, Sussex

Firstly, Jill – STOS Maestro doesn't play samples through the DMA. The STE Extension does though (it

wouldn't be very STE otherwise) and you can easily convert the samples. We gave you an excellent sample manipulator on ST FORMAT Cover Disk 69, called SoundLab. This attempts to load anything you throw at it, and succeeds in most cases. We've tried it with all of the formats you mention, and with the exception of the occasional VOC sample it works perfectly. Check the BBS you mentioned for a sample converter called

SOX5, although it's a non-GEM TTP program, it converts VOC samples easily for you.

## DREAM ON

**Q** I read that a disassembler can convert machine code programs back to the assembly source code – has anyone written something which will convert a compiled STOS program back to a STOS Basic listing?

Michael Hunt, Thornaby

**A** No. Since the compiler converts a STOS listing into machine code, and doesn't leave any of the STOS Basic code at all, this is an impossible task. If you knew assembly you could disassemble a compiled STOS program, but it would produce an assembly listing, not a STOS one. If you're good enough to navigate assembly language like that, there's little that someone else's STOS program could teach you. If, however, you want to recreate the source code of one of your STOS programs, you've learned a valuable lesson. Always keep a backup of your original source code in case something happens to it.

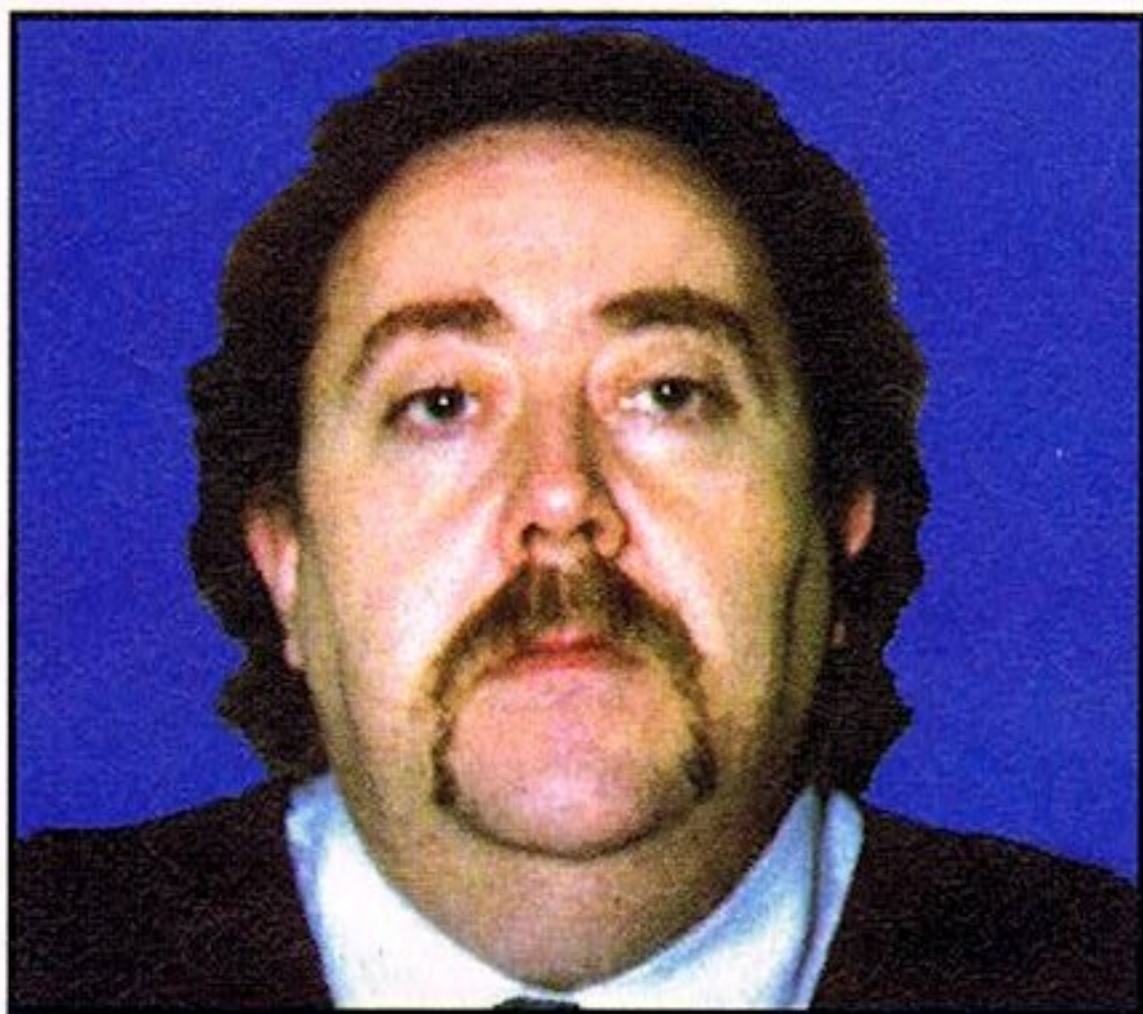
## HOME AND ARRAY

Finally this month, a gem of a tip from Les Greenhalgh that came in via the STOS Mailing List on the Internet. Les reckons that this can be as much as 40% faster than the usual methods, and that's even after it's been compiled. So, the next time you want to copy two arrays, just try the following routine:

```
dim a(n), b(n)
copy varptr(a(0)), varptr
(a(0))+n*4 to varptr
(b(0))
Try it. It's ultra-fast. Compare it
with this old chestnut:
for x=1 to n
b(x)=a(x)
next x
When you want to initialise an
array use:
fill varptr(a(0)) to
varptr(a(0))+n*4, 0
which fills it with the value 0.
```

You can contact Frank Charlton at the main ST Answers address (page 52) or if you've got on-line access, then you can contact him at the following locations:  
**frank@tachyon.demon.co.uk**  
**NeST 90:100/308.2**  
**AtariNet 51:6/208.2**  
**FidoNet 2:256/502.28**





In the first of a new series, Mac Marsden takes you from A to B with *HiSoft C*. If you don't want a D on your first assignment, read this now.

# HiSoft C Centre

**T**he C language, born in 1972, was the brainchild of Dennis Richie and Ken Thompson. It was designed as a step up from Thompson's B language and distributed to programmers as a tool for debugging and testing their programs.

From there it has grown into the main language used in industry. Why? Well, in its 'purest' form (ANSI C), it is very portable. Code written on an Atari in ANSI C will (in theory) work on an Apple Macintosh, PC or any of today's other computers. It has a multitude of uses – the only limit is your imagination.

Normally C is classed as a compiled language. Before a program is run it has to be compiled into executable code. However HiSoft has taken a different approach with *HiSoft C Interpreter*, giving you an interpreted version of the language that still has all the power of C. Your code is executed immediately (as is, for example, *GFA Basic* code) so you don't have to wait for it to be compiled (which can take a few minutes) before you get to see your program working.

*HiSoft C Interpreter* is aimed at two types of programmer:

- The beginner, who can gain access to the language in an easier

more relaxed manner.

- The experienced programmer, who can develop program ideas quickly, then port the finished code into a compiler to produce the finished program.

HiSoft has incorporated a library of 460 functions, including the usual ANSI, UNIX, C, GEM and DOS standard functions, along with a toolbox of functions to assist in the coding of windows, dialog boxes and menus.

## Getting started

When you load up the program you are presented with an empty text window (eventually you will type your code in here) and an imposing array of drop-down menus. Let's start by running through the menu options, which are all accessed by moving the mouse pointer on to the menu and clicking on the required option.

**FILE:** this menu looks after all of your Load and Save options along with the option to leave the interpreter. Two selections worth mentioning are 'Abandon' and 'Insert'.

## LOOPS

The normal make-up of For loops and If statements in C is as follows:

```
for (arg1;arg2;increase/decrease count)
{
    For loop program code here;
}

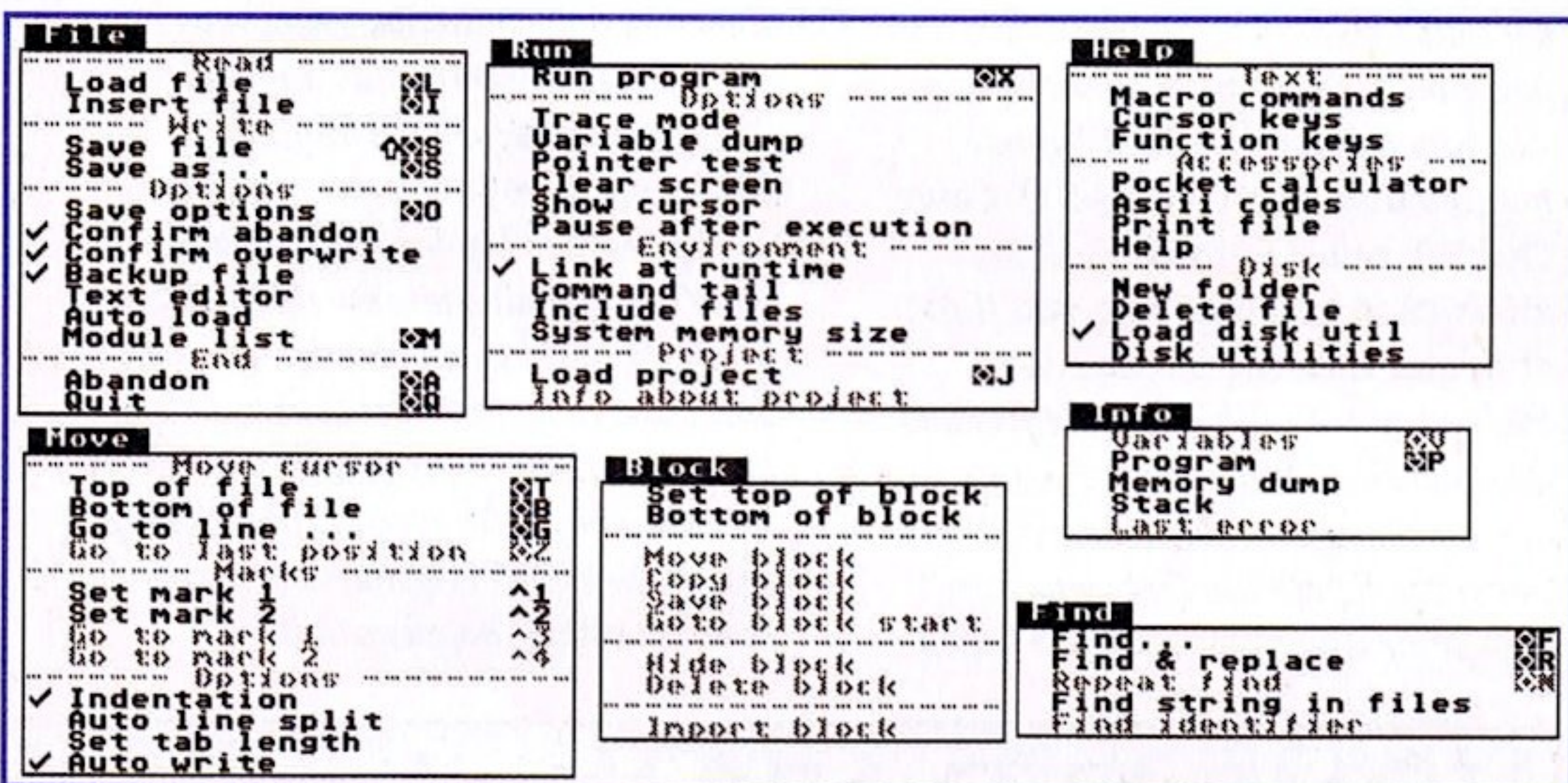
if (condition(s) to be met)
{
    code to be performed if conditions are met;
}
```

Abandon will clear the current program from memory. However it will only delete the code in the open window – the other loaded modules remain intact.

Insert enables you to 'merge' another file into the current code. The merged file will start on the next line beneath the current cursor position.

**FIND:** allows quick Search and/or Replace options.

**RUN:** controls the running of the program, the environment and debugging/tracing of the current program. Initially you will want the 'Link at runtime' option deselected. If it is selected, all eight



The seven drop-down menus present you with a somewhat daunting array of options.

## C PROGRAMMING TIPS

### Program Annotation

It is very important, no matter how small your program is, to annotate your code. If your code is properly annotated you will be able to return to your program listing at a later date and see straight away what each line of code and each variable does. The C REM (short for 'remember') statement takes the following form: a forward slash (/) followed with an asterisk (\*), then your annotation text, followed by another asterisk and then the final forward slash, so an annotated line would look like:

```
/* this is the line of code that prints a message
to the user about saving data */
```

### The main() function

This is the most important function in your program. All other functions are initially called from this function. It is the first function that C executes. If your program does not contain a main() function it will not work.

### Declaring variables

All variables, whether they are numerical or character-based, have to be declared in one of two places:

- Inside your function. These variables will remain valid only in the function they have been declared in. Variables declared within a function are called Local variables.

- Outside the function. In declaring the variable(s) outside functions you are declaring them as Global. This means that rather than having control in one function as you have with a Locally declared variable, any function calling a Global variable can alter either its value or contents.

### Declared variables in functions

Variables have to be declared at the beginning of the function. In C you cannot decide halfway through your function that you need another variable and just put it in wherever you happen to be. By all means use a new variable, but remember to go back and declare it at the beginning of the function.







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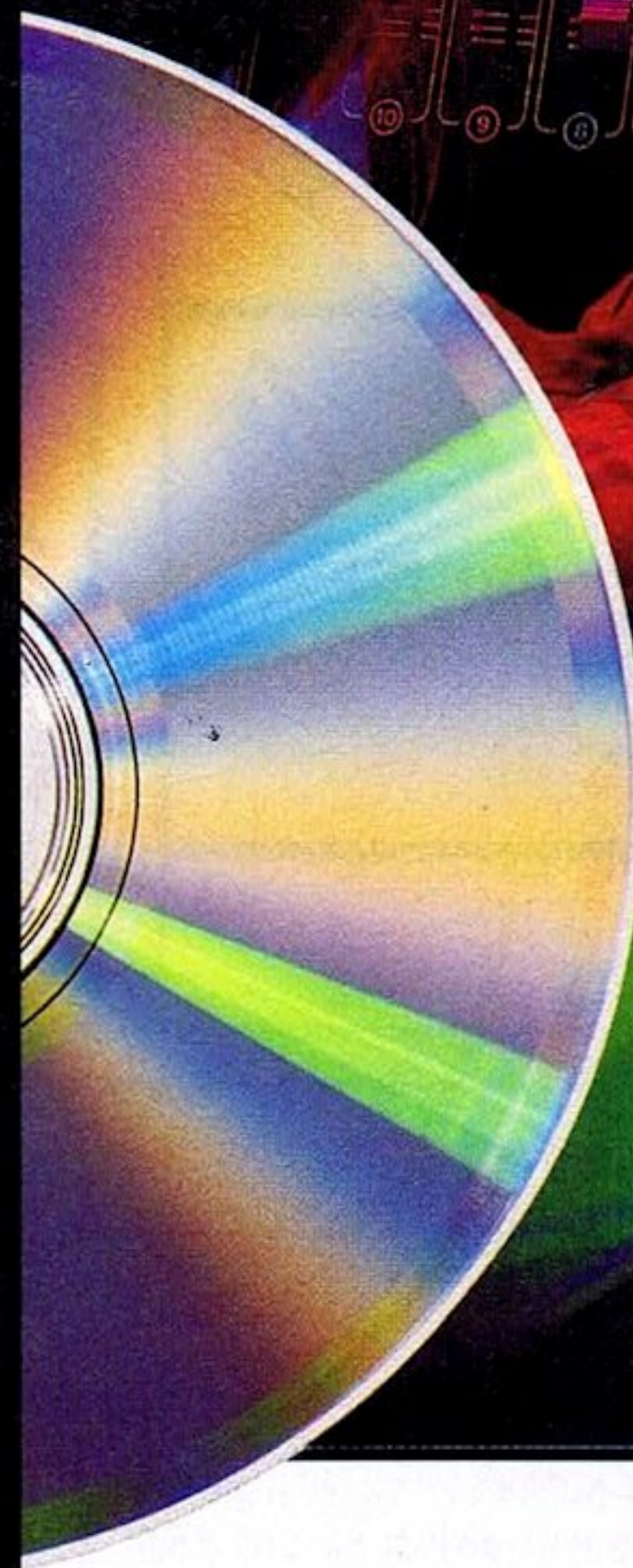
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# The Score

Act Two of Andy Curtis' musical extravaganza covers everything from delays to keyboards and brings you all the latest MIDI/music news.



MIDI files of these artists' works are currently available, but for how long?

## No more free MIDI files

The Mechanical Copyright Protection Society (MCPS) is the UK's biggest force when it comes to licensing music to be re-recorded or replicated in any way by a third party. They are presently tightening up the rules regarding MIDI files.

Most people know that if

they produce a cover version of someone else's music they will have to pay a licence fee, so that the original author gets his or her share of the booty. Fair enough. Exactly the same principle is being applied to MIDI files, and as there are many uses for them beyond just playing them at home, MCPS would like a slightly bigger share of the profits for its members.

Once again, fair enough. However, there is talk that certain artists will be refusing to give even licensed permission for their songs to be used in commercial MIDI files. This is a real shame because the catalogues of many MIDI file libraries will have to be cut back to reflect these new restrictions. MCPS also told us it is considering prosecuting Internet FTP sites and BBSs that make MIDI files available to the public free of charge.

In effect, this kills the hobbyist involvement in the creation of

titles. No licence is available for people to provide free files and System Operators who make these files available electronically run

the risk of prosecution. Perhaps this will, on the upside, prompt more people to concentrate on original compositions.

## Budget mothers

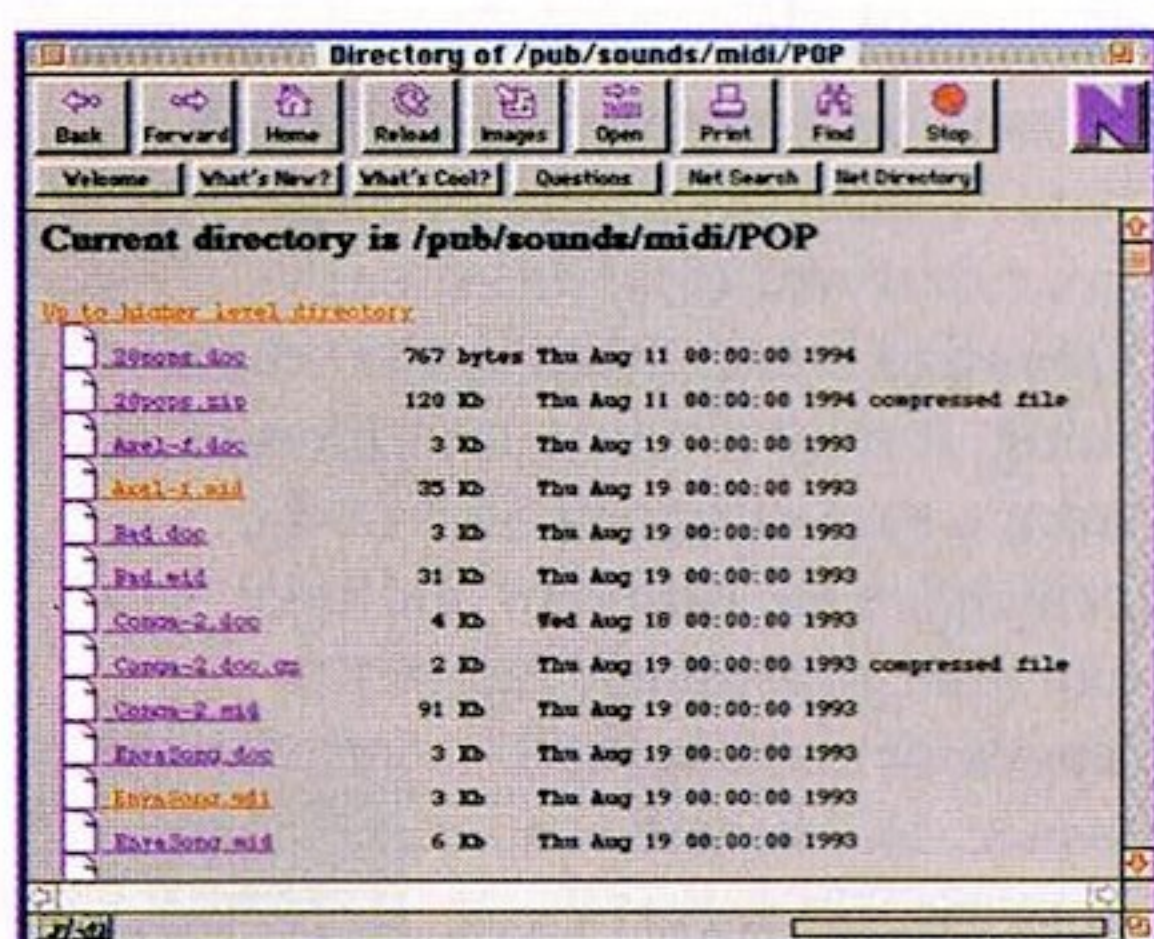
With the current enthusiasm for the new generation of great value GM MIDI modules, a new market has opened up for budget-priced mother keyboards. Gone are the days when a simple MIDI controller keyboard cost £500 or more – these days mother keyboards are available for under £100.

The Fatar Studio 49, for example, is available from Tech-Mate UK for just £99 including VAT. Features are limited to a four octave range and touch sensitivity – if you need anything more advanced you will have pay a bit more. That said, this simple

keyboard opens up a world of real-time recording possibilities for the hobby musician. Rather than simply playing back and editing MIDI files, you'll be able to create your own from scratch. Who knows, you could end up creating a chart-topping hit song.

If you're interested in the Studio 49 then give Tech-Mate a call on ☎ 01206 793355.

Alternatively, we will be having a more detailed look at the Roland PC-200GS next month to see whether £165 buys enough extra features to make it worth the added expense.



There are loads of commercial MIDI files on this Finnish FTP server on the Internet. Can you bring them into the county legally? Well, maybe. Can you upload them to a BBS in the UK? Probably not.

## KORG 05R/W GM MIDI MODULE

£399, Sound Control Hi-Tech ☎ 0191 232 4175

Korg's budget-priced 05R/W.



The Korg 05R/W is one of the new breed of half-rack size GM MIDI modules. The design is low-key, with the emphasis on performance rather than flashing lights.

Each unit comes supplied with a power adaptor and a single MIDI cable. The rear panel boasts a full set of link-up hardware including MIDI IN, OUT and THRU sockets as well as stereo line outputs and the new Mac/PC serial output.

The manual is clear and easy to understand, and there are only 12 controls on the front panel, making it simplicity itself to operate. Beginners

will find it very unintimidating, and if you have a working knowledge of MIDI, you will have the 05R/W blasting away in no time at all. Overall, the presentation is neat and well-planned.

### In Action

The unit has three main modes, Combi, Prog and Global Multi. In Combi mode you gain access to the unit's most powerful sounds. Component sounds have been combined, mixed and enhanced to work together to provide some convincing and, at times, exhilarating effects. The Combi mode is full of two, three and four element sounds which use most of the unit's polyphone (32 note) at one go. Simply assign a single MIDI channel in your sequencer and flip through the program change numbers for an entertaining couple of hours.

The Prog mode is full of all the individual sounds from which the Combi sounds are made up. Many of them are superb in their own right and they all use the most up-to-date sampled sounds as their basis.

There is also a bank of GM MIDI sounds which

give the unit its GM compatibility. Many of them are fine in their own right, especially the saxophones, but they lack the finesse of Korg's custom sounds. GM Bank switching, which gives alternatives to the basic GM set, is fully implemented and works well.

Global Multi is the setting you need for replaying GM MIDI files. Here you can select which MIDI channels are active and assign multiple sounds on different channels. We tried it with a few MIDI files and the Korg gave an excellent account of itself.

If you fancy the next model up in the range the Korg X5DR looks much the same as the 05R/W but has double the polyphony (64 notes can be played at once) and many extra sounds. The X5DR costs £599.

### Verdict

Extensive use of effects such as reverb and delay within individual sounds gives the Korg a smooth and attractive overall sound. Considering its budget price tag, the 05R/W has all the makings of a real winner. Buy with confidence.



# Real-time recording

Many people use their sequencer for step-time entry of music scores, and have a lot of fun in the process, but often these pieces end up sounding mechanical and somewhat contrived. If you are a wizard with the edit pages of your sequencer it may be possible to make the sound much more natural. It is, however, generally agreed that the best way to get a convincing and authentic sequence is to play the parts in real time.

The principle is simple: if you play a part into the sequencer at tempo, it sounds like a true performance. Unlike step-time entry, you won't be tied to a score and you can easily change the notes as you play them to create your own arrangement. The overall result is that you start to feel much more like a musician and less like a mechanical score-copier!

We have to point out that

you need a fair degree of keyboard proficiency to achieve good quality real-time recording using a sequencer. If a musical keyboard is completely foreign to you, you may find yourself somewhat disadvantaged.



However, if you have some basic keyboard skills, take this opportunity to develop those skills and start creating your own arrangements or compositions.

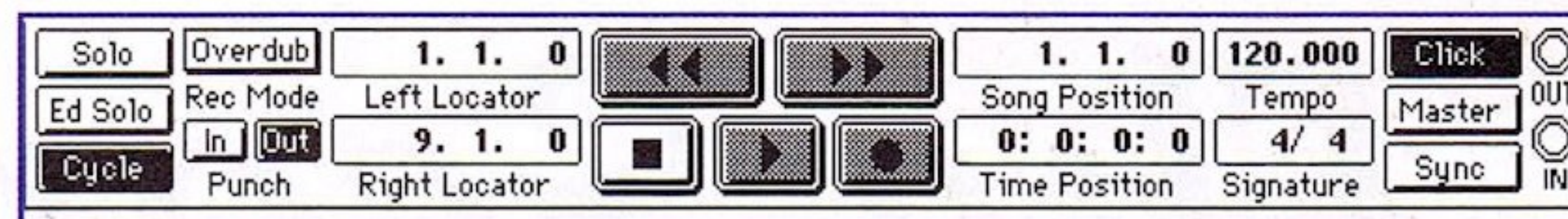
## Before you start

Find the metronome function on your sequencer and make sure it gives out a nice loud click or beep so that you can keep in time. Set the tempo to 120bpm, or whatever speed you feel comfortable with.

The count-in is simply a bar when only the metronome is sounded and no recording takes place. It will give you a chance to pick up the tempo and prepare to play. As soon as the count-in finishes the recording will start. You will need to set up an eight bar cycle, which means setting the left locator to bar one and the right locator to bar nine. Put the sequencer into cycle mode and you are ready to record.

## Rhythm

Most modules and keyboards have a drum section and you will need this to provide some rhythm for your piece. Take some time to



Most sequencers have a 'tape transport' display similar to this. Remember that for eight bars of music the locators must be set to bars one and nine respectively in order to leave eight clear bars in between.

familiarise yourself with the positioning of the different sounds. It is actually possible to play these sounds on the keyboard as if it was really a drum kit.

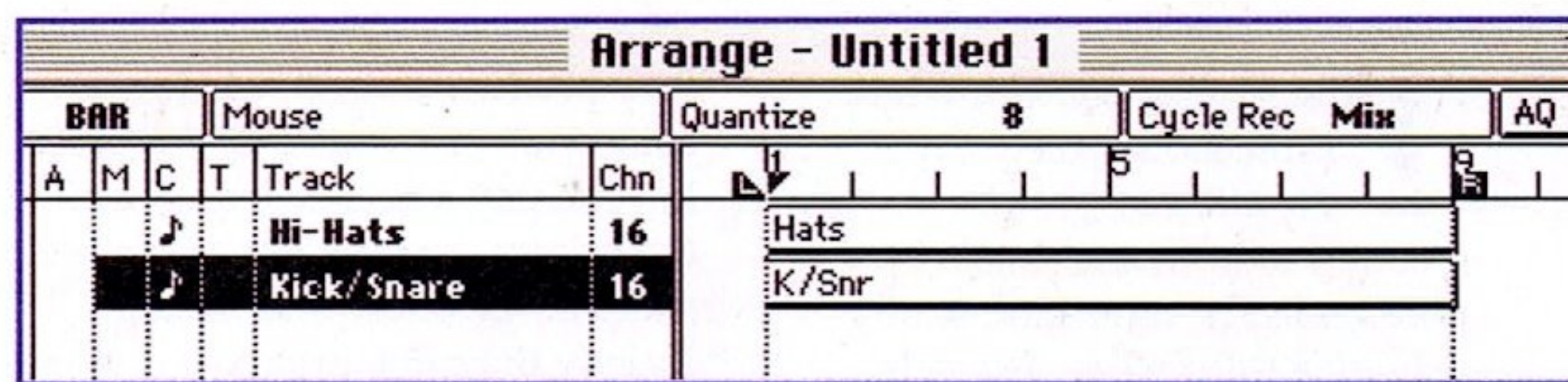


Don't worry too much about co-ordinating the sounds - you can play in each sound individually if you prefer. A good way to start is by putting down a hi-hat part.

Listen to the metronome and play along with it. Practice playing

Now listen to your work. It may have some mistakes - if so these can be corrected by quantizing to quaver lengths (eighths of a bar).

Next, put down the kick and snare drum parts. Put a kick on the first and third beats of the bar and a snare hit on the second and fourth beats of the bar. Record the kick and snare on one track by playing them at the same time. Kick-snare-kick-snare...



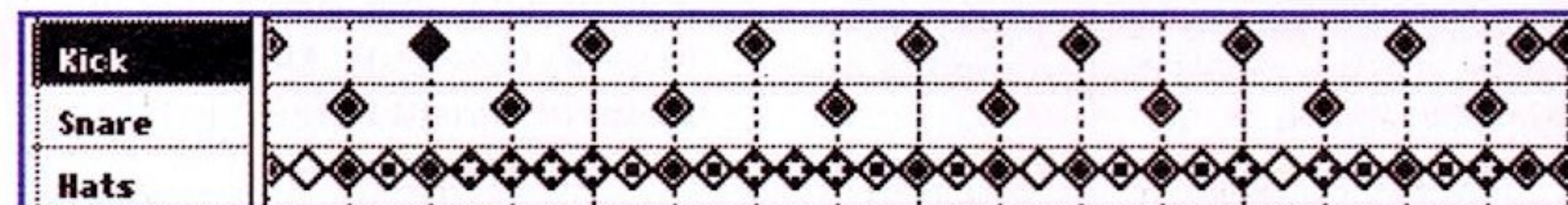
It may well be easier to record the hi-hats separate from the kick and snare parts. They can be combined easily later on in the recording process. Be sure to label your parts clearly.

one hit on the hi-hat for each beat of the metronome, then double the rate of your hits so that you play two hits of the hi-hat to each beat of the metronome. You can further improve this alternating a high velocity hit with a low velocity hit so that the resulting sound varies in volume and texture.

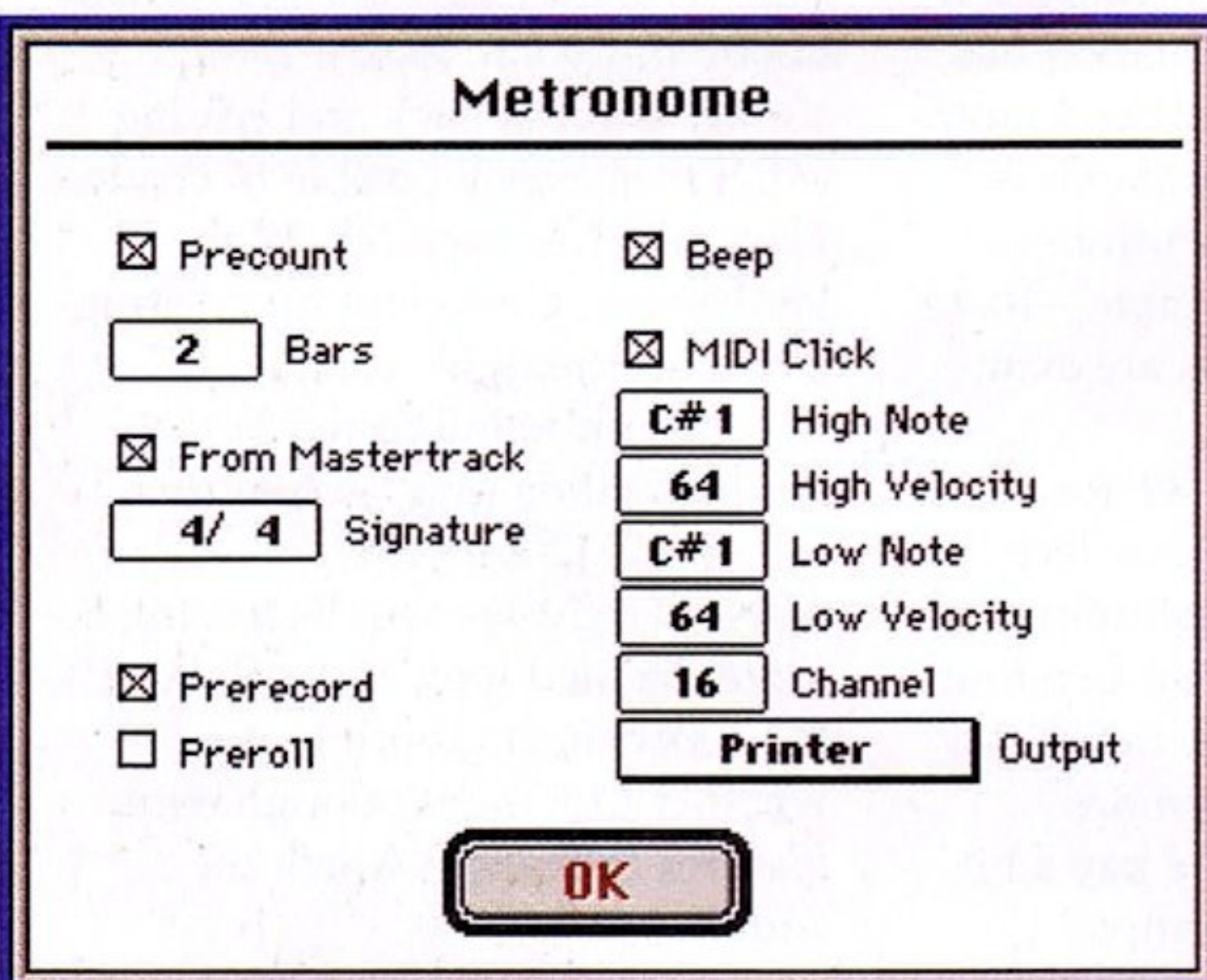
When you're proficient at this, hit the record button, wait for the count-in and play in the hi-hat part till the eight bars are over.

## Success!

When you have recorded all eight bars of this you will have recorded your first real-time drum part. Quantize it and listen to the whole thing. It may not be a lot different from a step-entered one, but the principles are different and they can take your music out of the league of step-entered music, as you will see next month in part two of this tutorial.



Here are the finished parts combined and displayed in a drum edit page. This really is beginner's stuff, but the same principles apply to the most complex pieces.



Use the metronome page of your sequencer to give yourself a nice loud click or beep for every beat of the bar. You can also set the count-in from a page like this. Your sequencer should have an equivalent.

## MIDI JARGON ULTRA-BUSTER PART TWO

Welcome to the second part of our ultimate 'cut-out-and-keep' MIDI and music jargon guide. This month we cover everything from D to K.

### Delay

Some sequencers have a MIDI delay facility which enables you to set a parameter similar to a normal digital delay. The difference is that, instead of being sampled, the note is being replayed after a set number of milliseconds and possibly at a lower velocity. If you don't have this feature, it is easy to create manually, saving you the price of a digital delay box.

### Drum Edit

The drum edit page is vitally important to everyone who uses rhythm in their music. It will usually enable you to list all your available drum

sounds and manipulate the recorded data. If your music is to sound really good, you will need to master the art of drum editing.

### Dump

It is often wise to dump the setup from your keyboard to a MIDI file. Your keyboard manual will tell you how to make the keyboard send the data in system exclusive format.

Simply set up a track in your sequencer to receive on the correct channel and engage Record. All the data sent will be stored and can then be played back into the keyboard if your settings get destroyed.

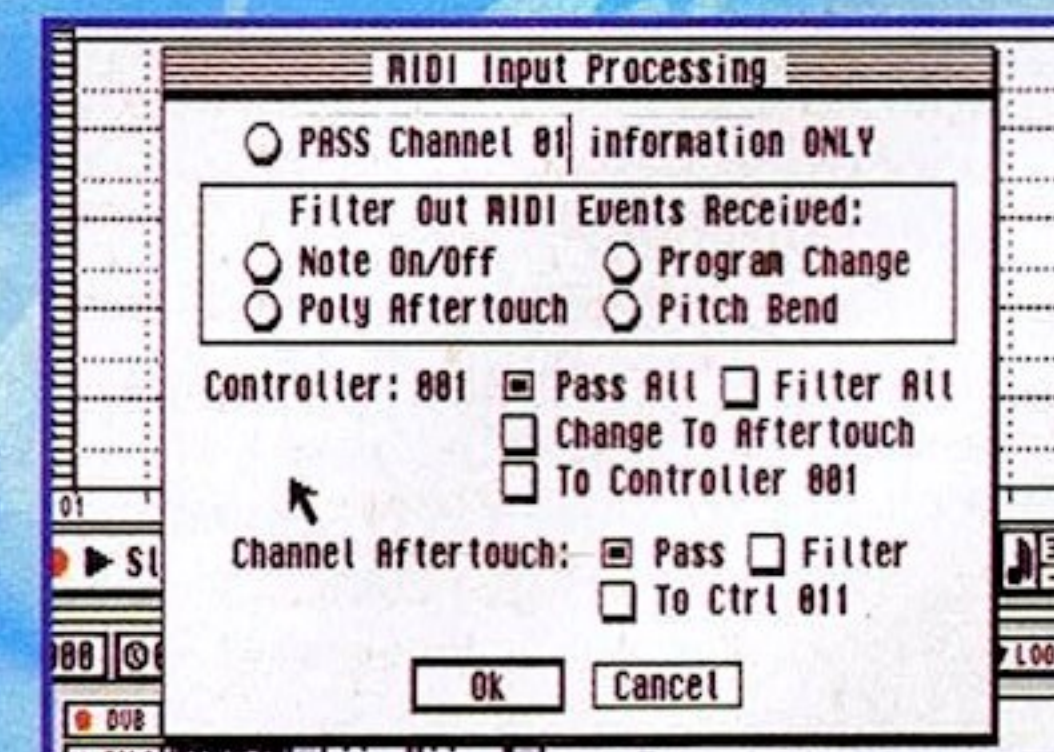
### Editor

An editor is a page or screen in your sequencer program which enables direct editing of a section of music. It will often deal with a specific part rather than the whole piece.

### Filters

MIDI filters can be set to filter out any kind of MIDI data. They can filter what comes in as well as what goes out from the sequencer. If you merely want to add aftertouch information to a part, for example, you could filter out any note on and note off messages, thus adding only the controller information.

MIDI filters limit the kind of events your sequencer will respond to when input.





# Quick questions

## STARTING UP

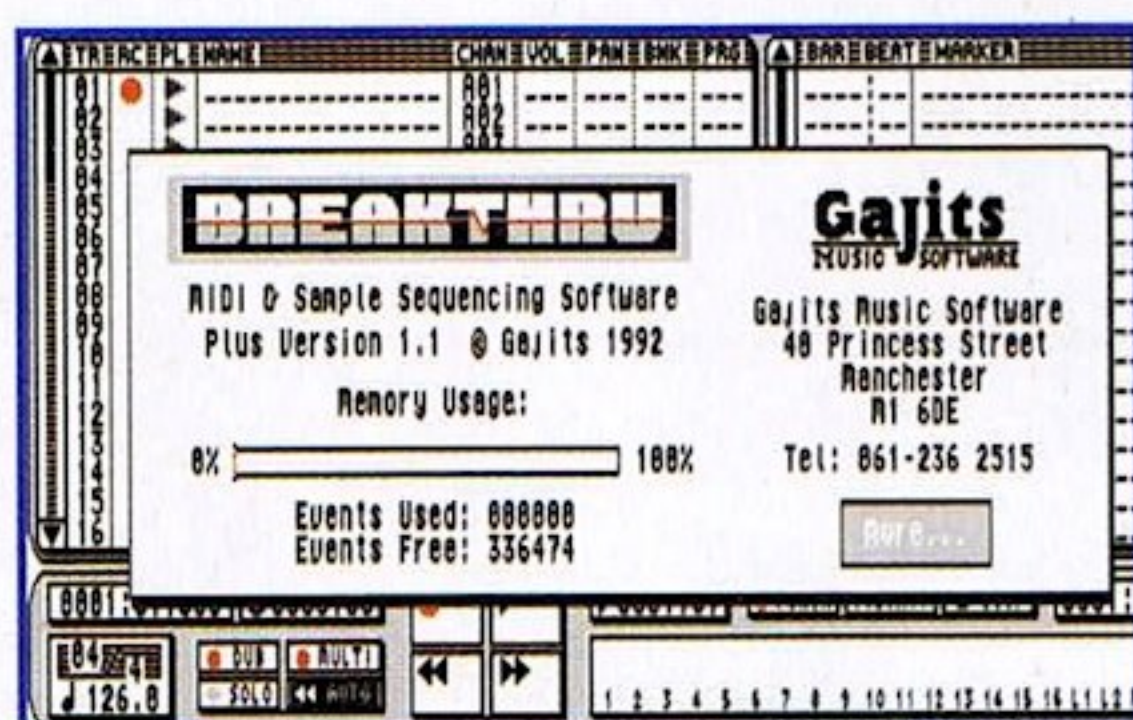
**Q** I have a 1040 STFM which I would like to make music with, without spending too much. I play a lot of music (guitar, percussion etc) and ideally I'd like to generate rhythms and perhaps sample stuff. I know nothing about sequencing but I'd like to give that a go as well!

So my question is: where do I start? Is it possible for my ST to do the job of a synth or a drum machine? I will also have access to a four-track recorder, microphones and so on.

Joe Jones, via e-mail

**A** Let's start by saying that your ST is a superb machine for helping you make great music. The thing to bear in mind is that it's real power is in its handling of MIDI rather than its sound generation capabilities, which are, at best, only average. The upshot of this is that you will need an external MIDI instrument of some sort.

You could do a lot worse than have a look at the Korg 05R/W reviewed on the previous page. A module such as this would provide you with a full set of drums and great synth sounds. If you don't have a MIDI keyboard already, the Korg X5



Breakthru is a great sequencer for beginners. It's easy to use and you can include samples as well as standard MIDI data in your sequences.

is a full keyboard version with exactly the same features. It should cost you just £649 from Sound Control Hi-Tech (☎ 0191 232 4175).

Once you have a sound source connected you will need a sequencer to drive it with. Breakthru is available from Software Technology for around £130. As well as being a fully-featured sequencer that runs on a 1040ST, it handles ST samples which you can include in your sequences, thus getting the very best out of your machine. Call Software Technology on ☎ 0161 236 2515 for more details.

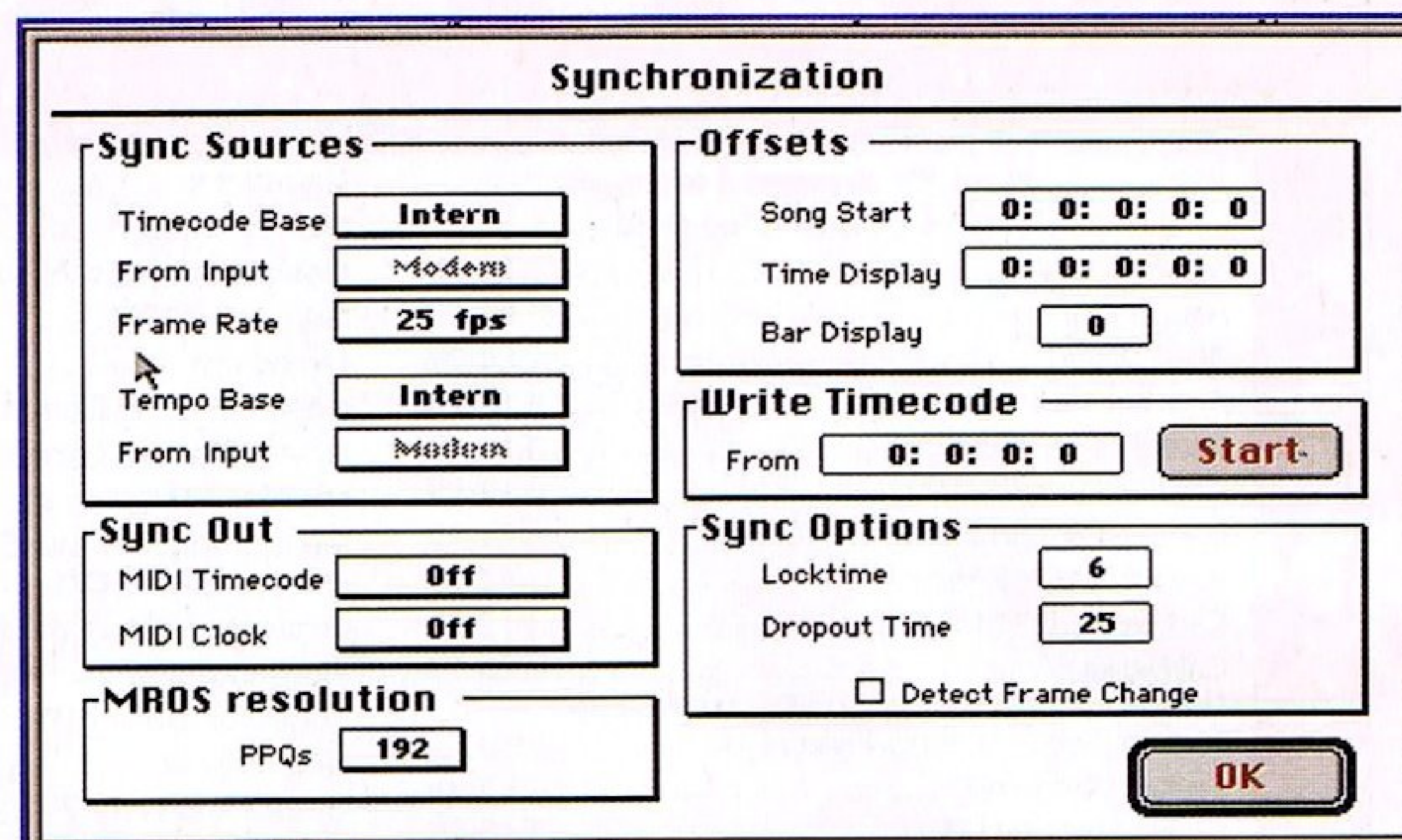
## LITE

**Q** My system is an ATARI STFM 1040, with mono monitor, and I use MIDEX+ of Steinberg to use the SMPTE sync on a Tascam Porta05. I don't need many tracks so I am interested in Cubase Lite but, apart from the 12 tracks, what other limitations does Cubase Lite have, and does the program support the MIDEX+ to provide an SMPTE signal for synchronisation?

Carlo Buongiovanni, Italy

**A** In fact Cubase Lite has 16 tracks rather than 12, making it quite sufficient for even complex sequences. Unfortunately there is no support whatsoever for MIDI synchronisation in the package.

The other main limitation is that the only available edit page is Score edit. This is because the program was originally developed for educational use and only score editing was required. It seems to me that you would be better off running Cubase 3 which will (just) run on a 1040ST. An upgrade to 2Mbyte of memory would leave you plenty of room for large sequences. The added editing pages



Cubase 3 has a fully specified synchronisation page to enable you to sync up with most, if not all, commercial recording multi-trackers. Unfortunately the budget version, Cubase Lite, doesn't have these luxuries.

and facilities make Cubase 3 a considerably more attractive program for the serious user.

## HELP!

**Q** I have a 520STE with an upgrade and I use Sequencer One for music. Despite plugging a microphone in the back (I had to have a lead made specially to do this) I cannot get Sequencer One to convert the microphone to MIDI data. I know that Sequencer One handles sound data in this way so what am I doing wrong?

Daniel Morrison, Hartlepool

**A** There's no completely polite way to put this, Daniel, so here goes. Everything! The phono sockets on the back of your STE are OUTPUTS. Your ST will only be able to take samples via an external sampling cartridge of some sort. Sequencer One does not change these samples into MIDI data, it simply fires off the samples at specified times according to your sequence. Hopefully you didn't have to pay too much for the lead you had made.

If you're interested in sampling on the ST then give Hi-Soft AVR a ring on ☎ 01525 718181 and ask about sampling cartridges. stf

## WHAT'S THE SCORE?

Each month The Score brings you the latest ST-related MIDI news and reviews, and answers your MIDI and music queries.

Tell us what you'd like to see in future issues and we'll do our very best to satisfy your needs.

You can e-mail Andy Curtis at: [acurtis@theshack.demon.co.uk](mailto:acurtis@theshack.demon.co.uk)

Or send your queries by snail mail to...

The Score, ST ANSWERS, Future Publishing, 30 Monmouth St, Bath, Avon, BA1 2BW.

### File

MIDI files are now nearly standard, using the GM/GS system. There are four types: 0, 1, 2 and 3. The differences depend on the amount of data stored within them and whether it is all on one part, containing information from many MIDI channels, or stored on separate parts within the file. Most recent sequencers can cope with the different types of MIDI file with no problem.

### Ghost Parts

These are 'virtual' MIDI parts which act as normal MIDI information except that they are a copy of an original part. When a change is made in the original part, all the ghost parts change with it.

### GM/GS MIDI

Started by Roland, the General MIDI standard is, essentially, a set of program change numbers which each describe a pre-defined sound.

Program change number 1 is always a piano, for example. This enables composers to write MIDI files that play correctly on any GM-compatible synth or module. The standard has since been expanded to cover other elements of sequencing and sound selection as well.

### Grid Edit

On most sequencers this describes an edit page where one part is represented by a list of MIDI data for each event. It is often accompanied by a 'piano roll'-style graphical representation of the music. MIDI events may be edited very accurately here and full access is given to controller, system exclusive and other non-note MIDI events.

### Human Synchronisation

Some sequencers provide the facility for you to tap your MIDI keyboard in order to describe a tempo. Setting a value in bpm is not always easy

whilst tapping it out is the most natural thing in the world. A very thoughtful feature.

### IN

This legend, found on a MIDI device, shows you where to insert a MIDI cable feeding from the MIDI OUT of your computer or the MIDI THRU socket of the previous MIDI device in the chain.

### IPS

The Interactive Phrase Synthesizer. A Cubase feature which enables you to vary a musical phrase according to a set of mathematical parameters.

### Keyboard

Piano-style electronic keyboard enabling you to enter MIDI data in real time. It often has extra MIDI controllers as well, such as a sustain pedal, modulation wheel and pitch wheel.



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# STOS tutorial

Assembly-quality games with the ease of STOS? You better believe it! Professional programmer Tony Greenwood shows you the speed and animation tricks that made **HERO (STF 64, 85%)** a success.

**W**hen it comes to speed, it's all a matter of getting your ST to do as much work as possible in the shortest period of time. That sounds obvious, but in order to do it you need to find a range of commands, routines and tricks that enable you to get the best from STOS. By far the greatest time-saving trick involves 'pre-shifting'.

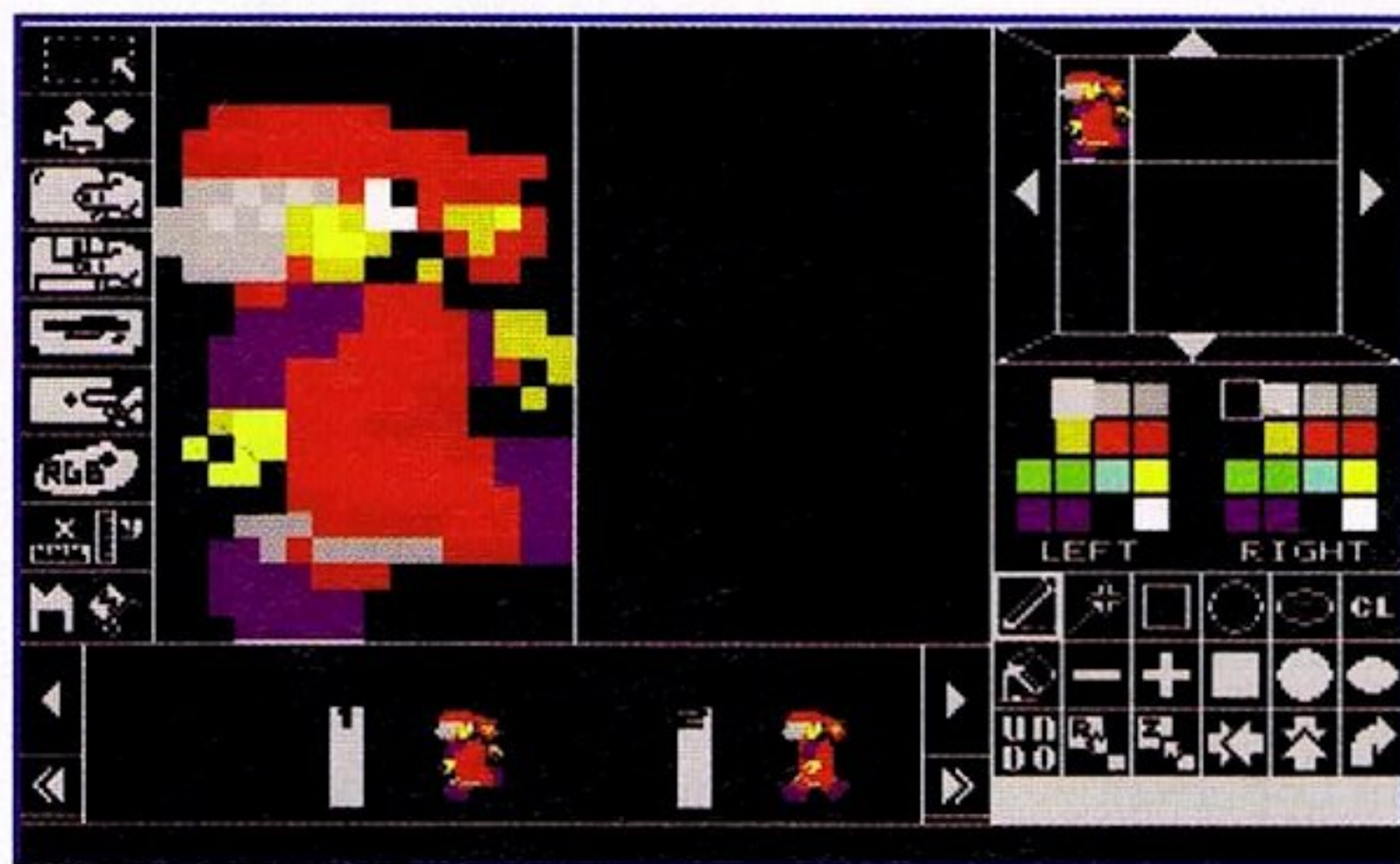
The problem with the way the ST displays the screen is that it uses a series of strips 16 pixels

wide. Sprites can only be placed in x positions marked by this grid. You can't, for instance, display a sprite at the x position 19 - you have to modify it by shifting the image three pixels to the left and display it at position 16. This is called pre-shifting, because you shift the sprite image left or right prior to displaying it.

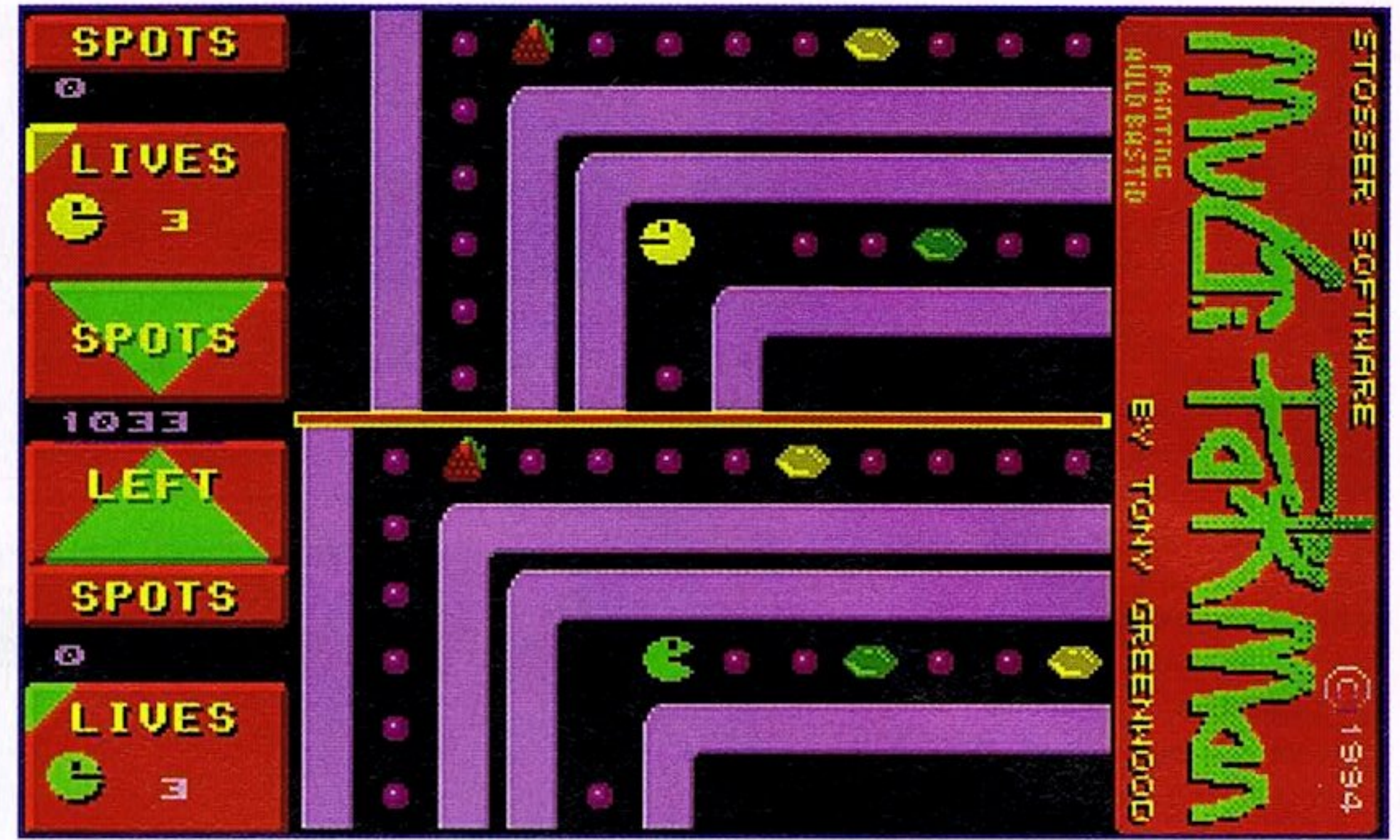
Cleverly, STOS takes care of pre-shifting for you in real-time, but this has obvious drawbacks when it comes to speed - it only takes ten or so sprites in motion

for STOS to spend all its time pre-shifting, causing your game to slow down in direct proportion to the amount of information you have to display. The drop in speed isn't constant, though, causing an ugly lag every time you move too many of your sprites.

The solution is



The STOS sprite editor has stood the test of time. It is still needed today for designing BOBs and other background blocks.



Pakman features split-screen smooth multi-scrolling maps, touch sensitive joystick control, superfast gameplay and exceptional sound quality - all in STOS Basic.

## STOS MYTHS

**STOS is slow**

No, STOS used to be slow before being upgraded.

**STOS is jerky**

The sprites are but we've just replaced them with BOBs.

**STOS is unresponsive**

Not any more - see above.

**STOS does not support GEM**

So what?

**STOS is no longer supported**

Not by Mandarin, sure, but we know of no other language on the ST that is upgraded at the same rate as STOS. Also, independent upgraders have a better understanding of the needs of STOS users.

**STOS is incompatible?**

Wrong - as STOS can now be fixed to work with just about any TOS version. Nothing in this world can be guaranteed to be future compatible.

## Animation

So let's get straight on with animating these BOBs. For a simple left and right movement you need three new variables - let's call them B\_R and B\_L for the direc-

tions and IMG for the image. Your STOS sprites are numbered starting from 1, whereas BOBs are numbered from 0, but this is taken care

advance planning. As the programmer, you know in advance how your sprites are going to move (and how much they need to be shifted), so why not do it before the game starts, saving enormous amounts of vital processor time when it's most needed during the game?

To be honest, the STOS sprite routines won't help all that much - they're slow, and don't give you or the player enough control over the display. A better system can be found in the *Missing Link* extension, using BOBs instead of sprites.

**You need to find a range of commands, routines and tricks to get the best from STOS**

of when you convert your sprites into BOBs using the extension.

A bank of 12 BOBs (the first six being the left animations and the remaining six for the right movements) would be numbered B\_L=0 and B\_R=6. Your actual BOB command asks for the image as one of its parameters, so use the variable IMG for this. To place your BOBs in bank 6 and then show the first image at the current X, Y co-ordinates you need the command:

```
BOB LOGIC, START(6), IMG, X
Y, 0 (all one line)
```

Having done that, you could then increase the appropriate variable and assign IMG to it whenever joystick movement was detected. So the left movement with an overflow error check would look

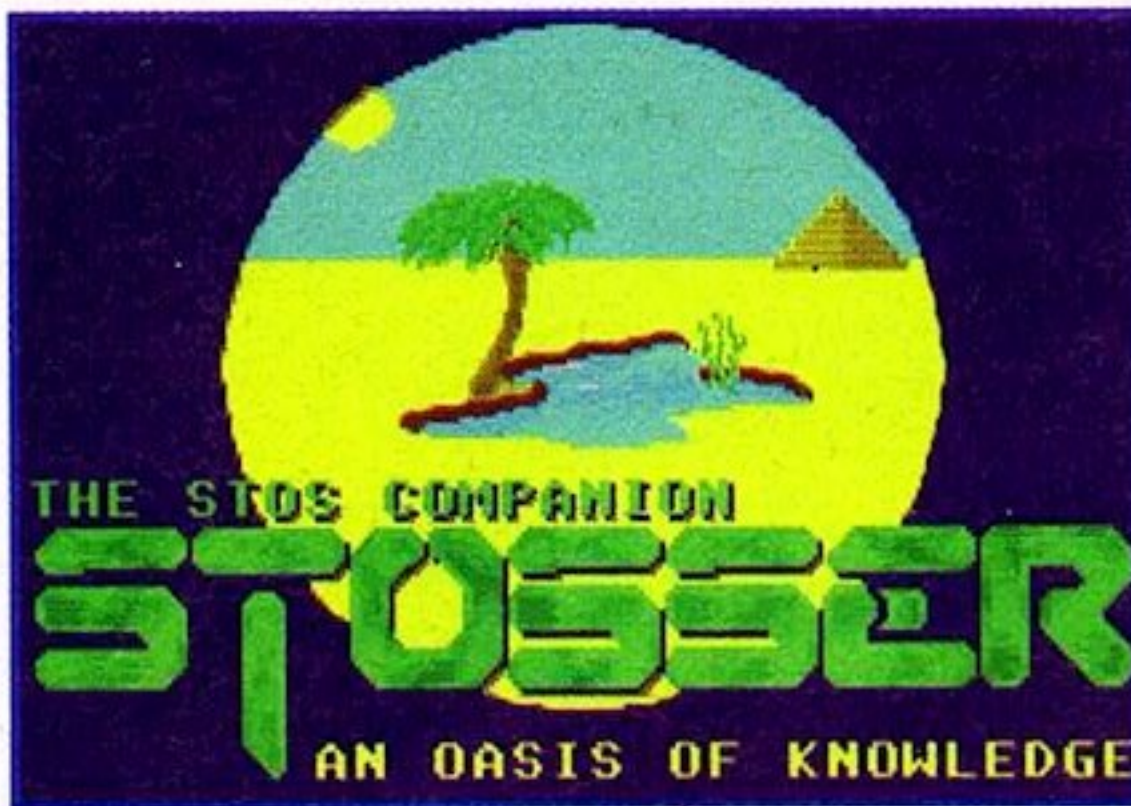
## THE MUST-HAVE EXTENSION

STOS Basic has been added to on a regular basis over the years, and more upgrades are in the pipeline as we speak. Of the extensions currently available the most notable - and the one no STOS programmer should be without - is *Missing Link* by Top Notch Software. If you haven't already got it, skip along to Back Issues (page 77) and order *ST FORMAT 51* - you'll find the PD version on the Cover Disk. Alternatively, you can go the whole way and purchase the full shareware version from Goodman International (☎ 01782 335650).

Top Notch Software dragged STOS into the future with their *Missing Link* extension - we love 'em, we do.







The STOSSer diskzine: "No, I think we'll go with plan B - make it look as far removed from a programming language as possible."

like this:

```
IF JLEFT THEN INC B_L :
IMG=B_L : IF B_L>5 THEN
B_L=0 : IMG = B_L (one line)
```

When STOS runs out of left animations (that is, it reaches 6) it restarts at animation 0.

Set animations, such as climbing a wall, can be achieved by making a loop that is governed by the number of animation frames needed. You then retrieve the correct animation numbers from a line of DATA. This is one of the tricks used in HERO - although I had over 250 frames of animation to work with, some frames were used more than once for different effects. With the LOOP/DATA trick the animations don't have to be stored in sequential order and the DATA line enables you to mix and match frames from different animations to create new ones.

### Jim never moved!

The biggest illusion created in HERO (and, indeed, in many other

## EXTRA READING

More information on STOS can be found in the longest running STOS saga of all time - the ST Answers STOS section currently under the vice-like grip of Frank Charlton.

Alternatively, the STOSSer diskzine, currently at issue 23, is packed to the brim with articles, tutorials and all manner of STOS-related documents, plus plen-

ty of source code with every issue. To get hold of a copy, simply send a disk and SAE to B Goodfellow, 2a Colvin Street, Dunbar, East Lothian, EH42 1HE.

The Beginners Guide to STOS can be found for as little as £15.00 if you shop around the PD libraries. As the title suggests, it is perfect for the new user. However, the package does not include STOS Basic.



Jumping, climbing or just hanging about, Jim never strays from the centre of the HERO screen - so he never needs pre-shifting.

commercial games) is to make the player believe the main character moves, even though he never strays from the centre of the screen. If you hold your finger over the screen where Jim appears, then play, he never leaves the end of your finger! It's only the background that moves, the obvious advantage being that unlike the BOBs used for baddies, you don't have to use pre-shifted versions of every frame of Jim's animation, because he never changes his x position anyway.

If you've got the Missing Link

extension, you have commands at your disposal that allow you to design large areas to be used as scrolling back-grounds. As these are made up of 16x16 pixel blocks that started out as sprites, you can apply the pre-shifting method to a screen full of sprites, giving the game's scenery

smooth multi-directional scrolling.

The size of the map created does not affect the speed - a 640x480 map will be displayed, scrolled or updated at the same rate as a 1280x960 map, but the amount of the map you show on the screen at any one time can have varying effects...

A square map of any size will give you a smoother effect than any oblong map as the ST has the same amount of work to do no matter what direction you scroll. A displayed map that takes up the full width of the screen should be avoided unless you only intend to scroll horizontally. For optimum effect the largest map displayed on your 320x200 screen should be no more than 200x200 pixels.

There is an undocumented limit of 128 16x16 blocks that can be used in the creation of your map, but there are other uses for the blocks beside drawing scenery. In HERO, the starting position of both Jim and the baddies are different for every level (an important aspect of any platform game). This was achieved using dummy world blocks. When a map is loaded the

X, Y BLOCK command is used to find the positions of the dummy blocks, which are stored in an array to be used as the baddie starting positions. The REPLACE RANGE command is then used to place more usable blocks into their vacated slots.

### Constant loops

As we've discussed earlier, the game's speed has to be constant. If the whole thing speeds up or slows down every time you place or remove moving sprites, you won't impress anyone. If your first level contains only one baddie, but the fourth level contains 20, the drop in speed will be as noticeable. You can combat this problem by consistent programming.

The first level, with its one baddie, should still have the routine drawing the other 19. The player will never see them and your routine will not detect them, but the program will run at the same speed because it is still drawing them (you can draw them to a part of the map that is not being used, or to a dummy screen). Because you have to draw the baddies anyway, you can animate them dying or leave them burning.

Next month we'll be covering sound and gameplay techniques - see you then. stf



HERO: "I'm so depressed. You go on without me. I'll just wait here with my sandwiches."

## TEN TO GO...

Here are ten things you can get rid of:

GET RID OF	REPLACE WITH	EXTENSION
Sprites	BOBs	Missing Link
CLS	WIPE LOGIC	Missing Link
SCREENCOPY	BLIT	Missing Link
PRINT	TEXT	Missing Link
HIDE/SHOW	MOUSE OFF/ON	Misty
SCREEN\$	QUICK SCREEN\$	Control
APPEAR	FADE IN/OUT	
Mouse pointer	A tasteful one	Design your own
STOS music	CHIP/ABK	
INKEY\$	HARDKEY	

## SPEEDING UP STOS

- Use a variable rather than the actual address of a bank, such as:  
S6=start(6)  
S6 will hold the address of bank number 6 and your computer doesn't have to work it out every time.
- The fastest loop you can use is a FOR/NEXT command. It's even faster if you don't include the variable after the NEXT.
- Accessing a normal variable is faster than accessing a dimensioned array, so using:  
A=1:A1=19:A2=7  
will give you a faster routine than using:  
DIM A(2)

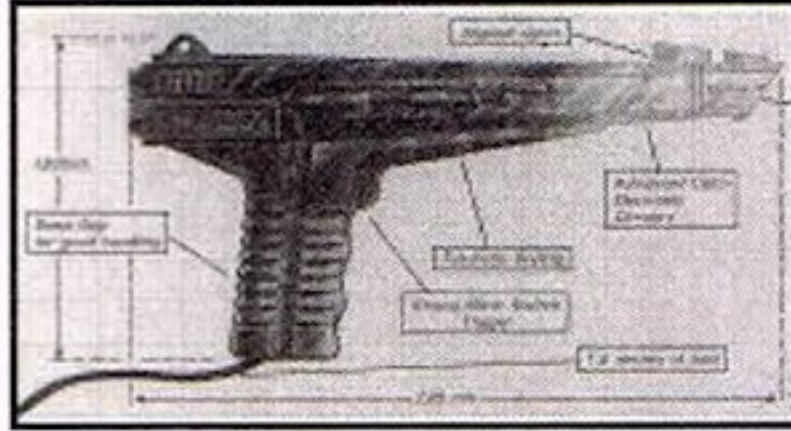
- and assigning the numbers to the array elements.
- The fastest way to move a whole screen about is to use the FASTCOPY command (from the MISTY extension), using variables for the addresses. For example:  
FASTCOPY S6, LOGIC.
- Turn AUTOBACK off just before your routine starts, as it's both useless and time consuming. On more complex routines the speed difference will be visible to the naked eye. Changing modes or using CLS will turn it back on.
- Using the INC command is a faster way to increase a variable's contents by one than x=x+1. Two successive INC commands are faster than x=x+2.



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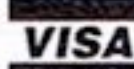
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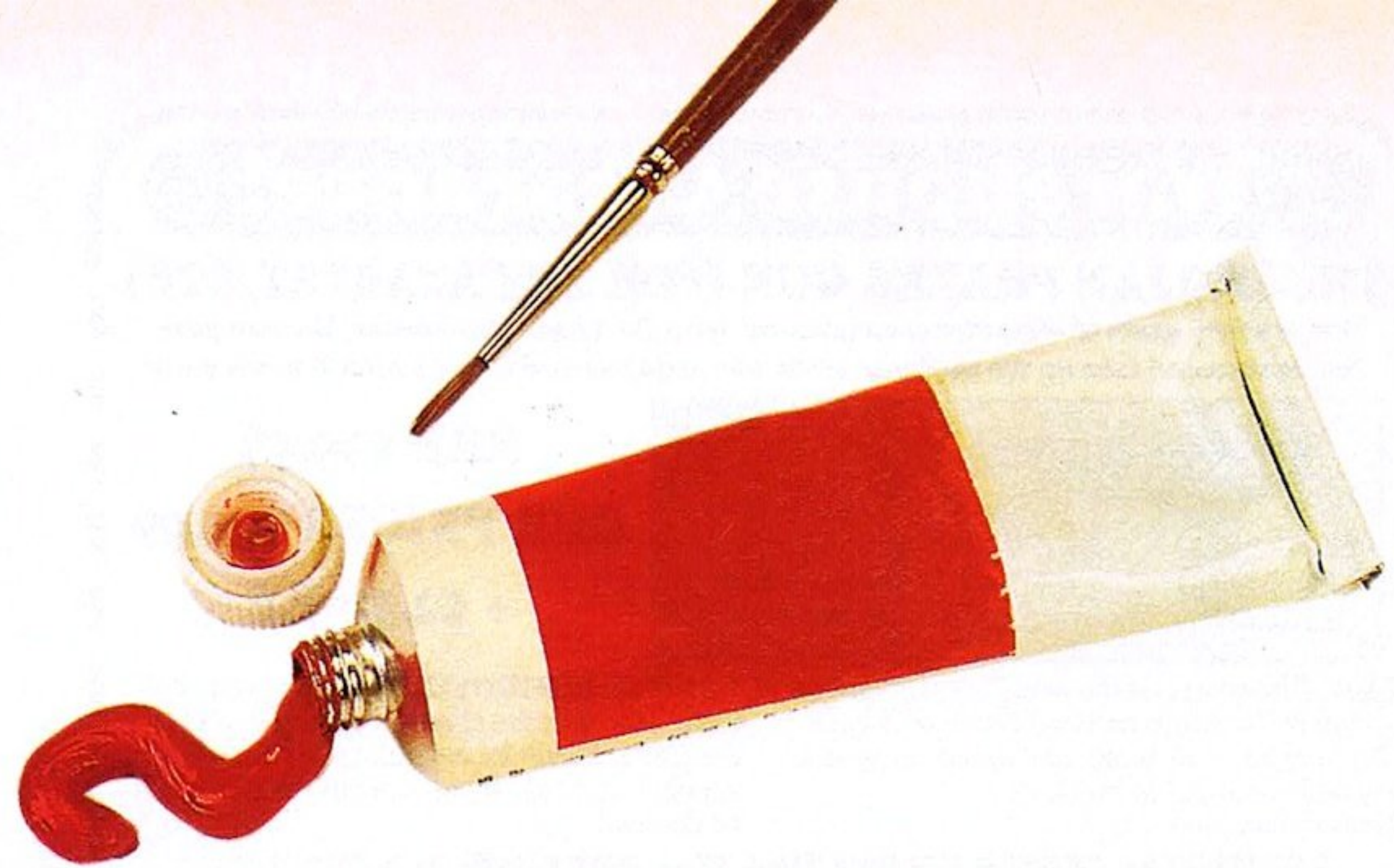
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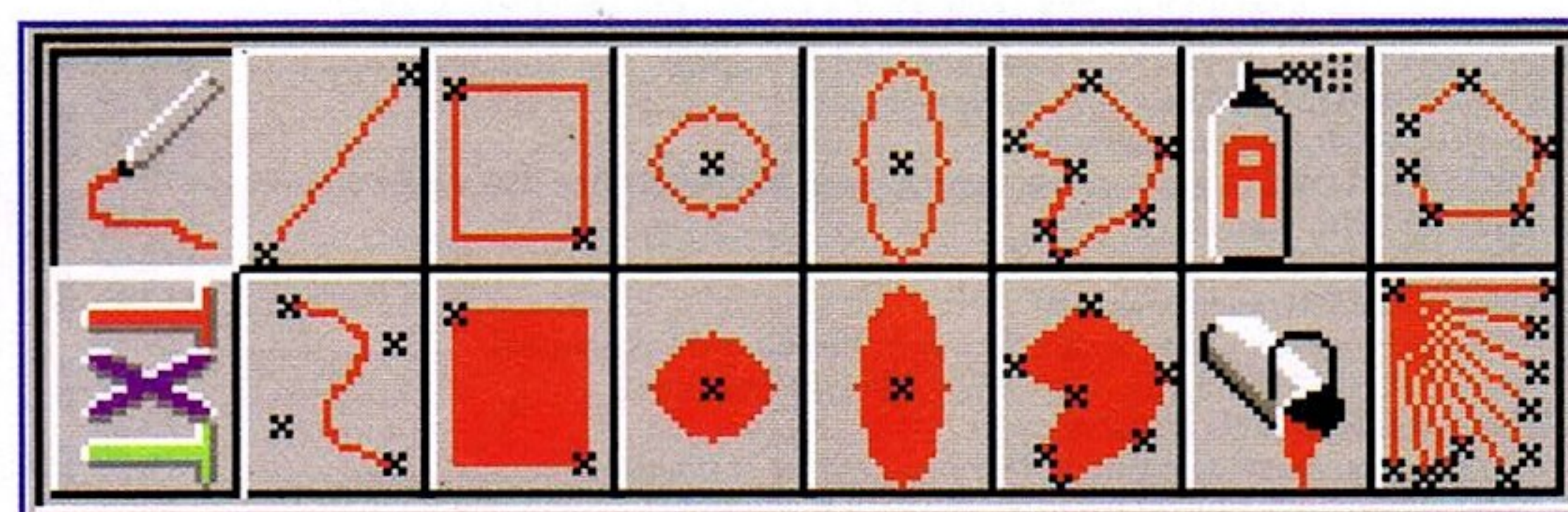
#### EDUCATIONAL



# Pablo tutorial



Last month we put the shareware version of *Pablo Paint* on the Cover Disk and explained all the tools. This month Frank Charlton shows you how to create a work of art... or at any rate draw a few lines.



*Pablo's* Icon Toolbox: this is where the drawing tools hang out. Many of them – including the Pen, Line, Connected Line and Curve tools – have more than one mode of operation. You can switch between modes by clicking on the tool again while it's still selected.

In issue 70 we took you on a guided tour of *Pablo Paint's* easy-to-use icon interface. By now you'll have had plenty of opportunities to see just how intuitive and powerful *Pablo* can be, so this time we'll delve a little deeper and show you some of the things it can do. Grab the icon guide from last month's *ST FORMAT* (turn to page 77 if you missed it) and settle down for some artistic fun.

## Drawing Tools

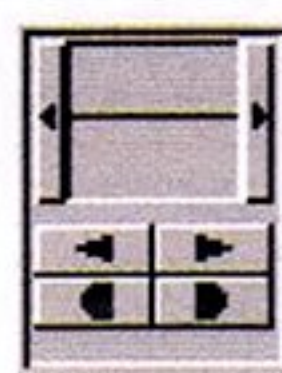
As with any art package, *Pablo* has a good selection of basic drawing tools for both freehand doodling and more precise drawing.

When you're creating a complex picture from scratch, it's easy to get bogged down in too much detail to begin with. Take a look at some of the winning entries in 'Pixel Painting' – issue 69 has a good example. The artist Ian West started his drawing with a rough freehand sketch of the basic lines and shapes. You have to think in a certain way for this to work – don't worry too much about rough edges or wobbly lines, the idea is to capture the basic composition of the picture. The tidying up can be done later.

The best tool for this type of freehand drawing is a simple pen

or brush. *Pablo's* Pen tool has two modes of operation (to switch between them, click on the icon while it's selected). The standard mode is Connected – the icon looks like a pen drawing a solid line. Using this mode is like doodling with a pen. No matter how fast you move the mouse, the lines you draw stay fully connected, with no gaps between pixels.

The other mode is Unconnected. This is more like using a brush loaded with paint. If you move the mouse slowly, the lines are connected; moving the mouse faster will leave gaps between the pixels, as if you were drawing faster than the paint could flow. Once you're confident with this mode, it can be very useful for basic outline sketches. You can use the dotted lines as a rough framework to build on, without having too much to remove from the finished work.



You can change the thickness of your pen's nib using the box just to the right of the Main Toolbox. It contains a line with an arrow either side. Clicking on the arrows will increase or decrease the thickness of the line. The buttons below control whether your lines have rounded or pointed ends.

This sets the lines for most of the basic drawing tools, so don't

forget to reset it before you switch functions if you've been using a chunky brush.

If you flip to Unconnected, *Pablo* reverts to single-pixel lines. This is handy, since it means you can switch modes to add the odd fine line, then go back to your fatter pen. Another useful tip when creating a template for the real drawing is to draw in a colour which is close to the background – dark grey on black, for example.

## Lines

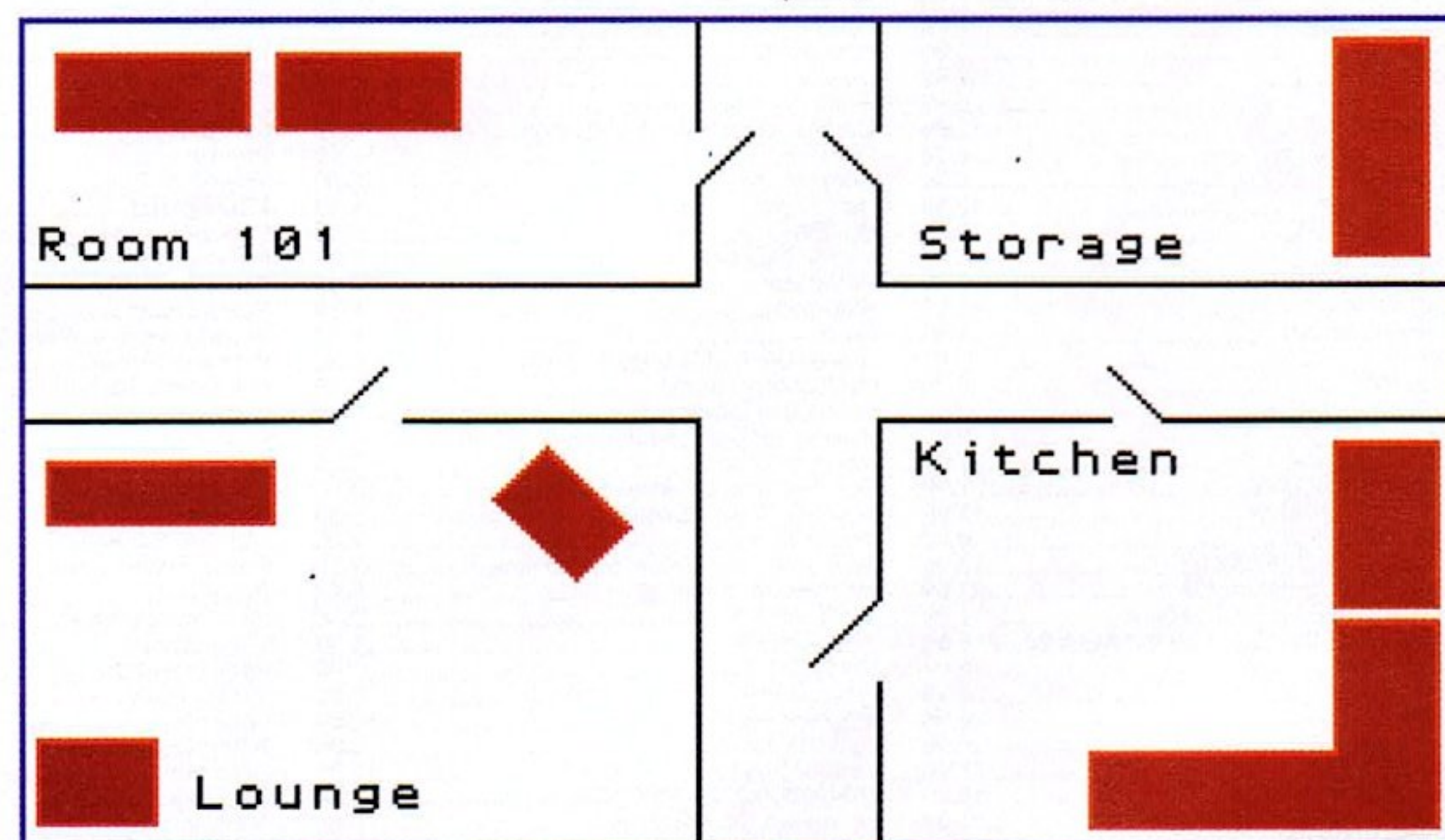


Once you've created your rough draft, you'll want to go back and add some detail, and smooth out a few

of the rough edges. *Pablo's* line and curve functions are ideal for this, since they offer a greater level of control than freehand sketching.

The Line tool also has two distinct modes – Freeform and Locked. Freeform is the default, and is shown as a diagonal line in the icon toolbox. To start a Freeform line, click once with the left button. You don't need to keep the mouse button held down as you draw a line – just move the mouse to where you want the line to end, and click again to complete it. You can draw lines of any shape and size, and at any angle which takes your fancy.

Change to Locked mode by clicking the icon again, so it



Locked mode is great for precise drawings like this simple house plan, since you can guarantee that all the lines will be horizontal, vertical or at 45 degrees.

## TAKE THE TABLETS

If you've got one of the cheap but excellent Tabby graphics tablets from CGS ComputerBild (☎ 0181 679 7307), you'll be happy to know that *Pablo* works very well with it. Unlike some packages, *Pablo* is fast

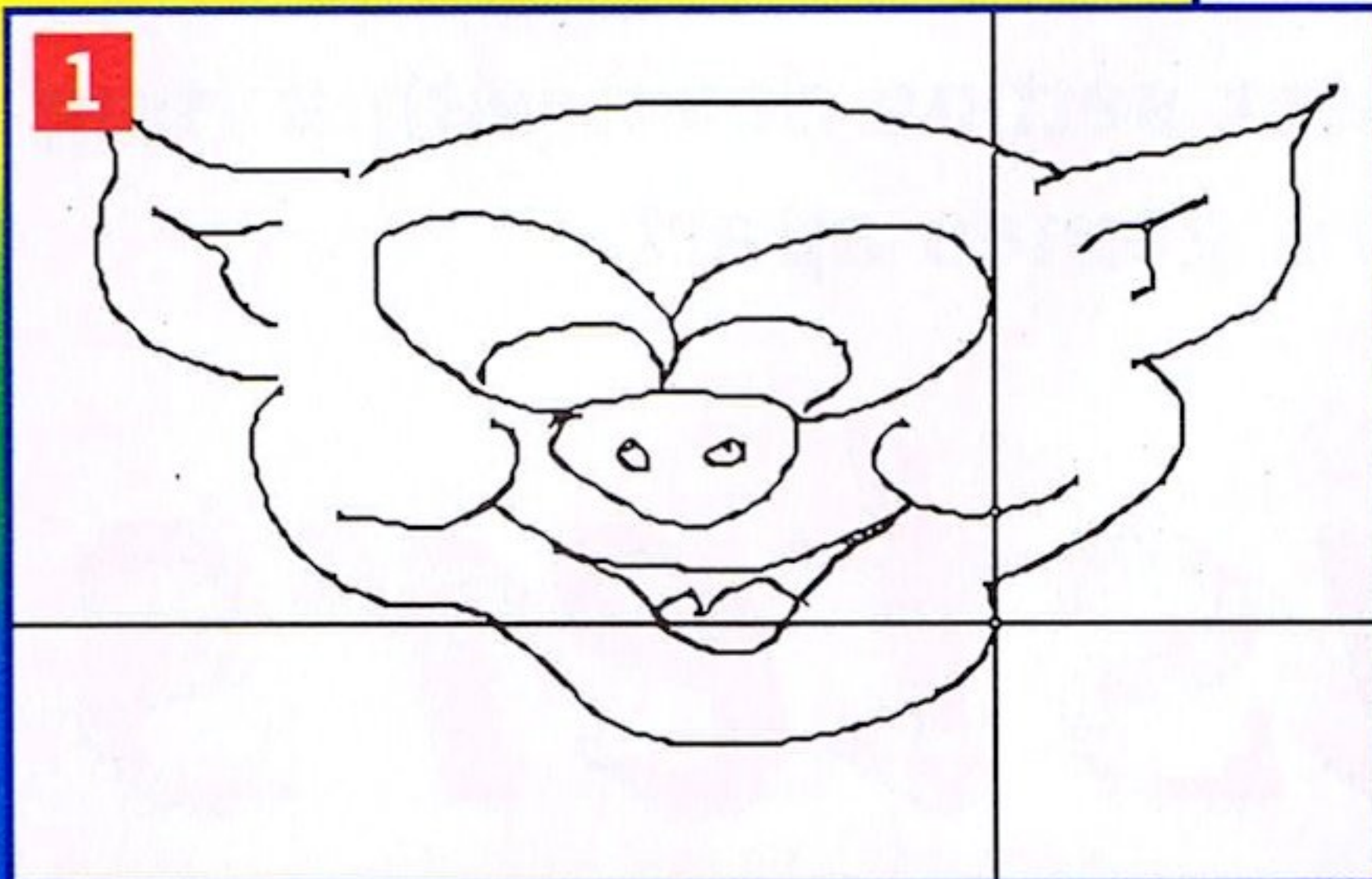
enough to keep up with the Tabby, however quickly you draw. It's extremely responsive in freehand drawing mode, and great for producing sketches and rough outlines.



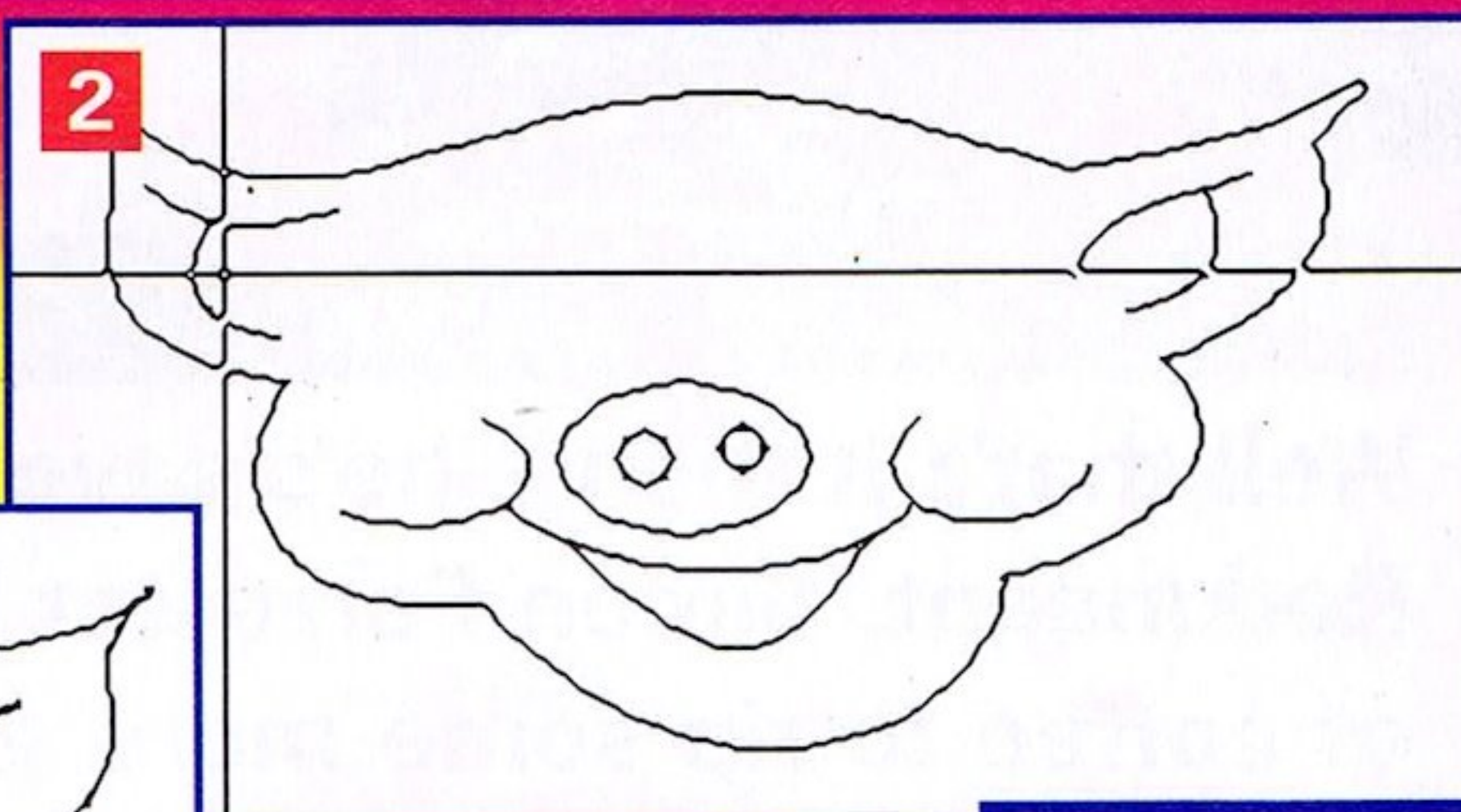


# ROUGH SKETCHING

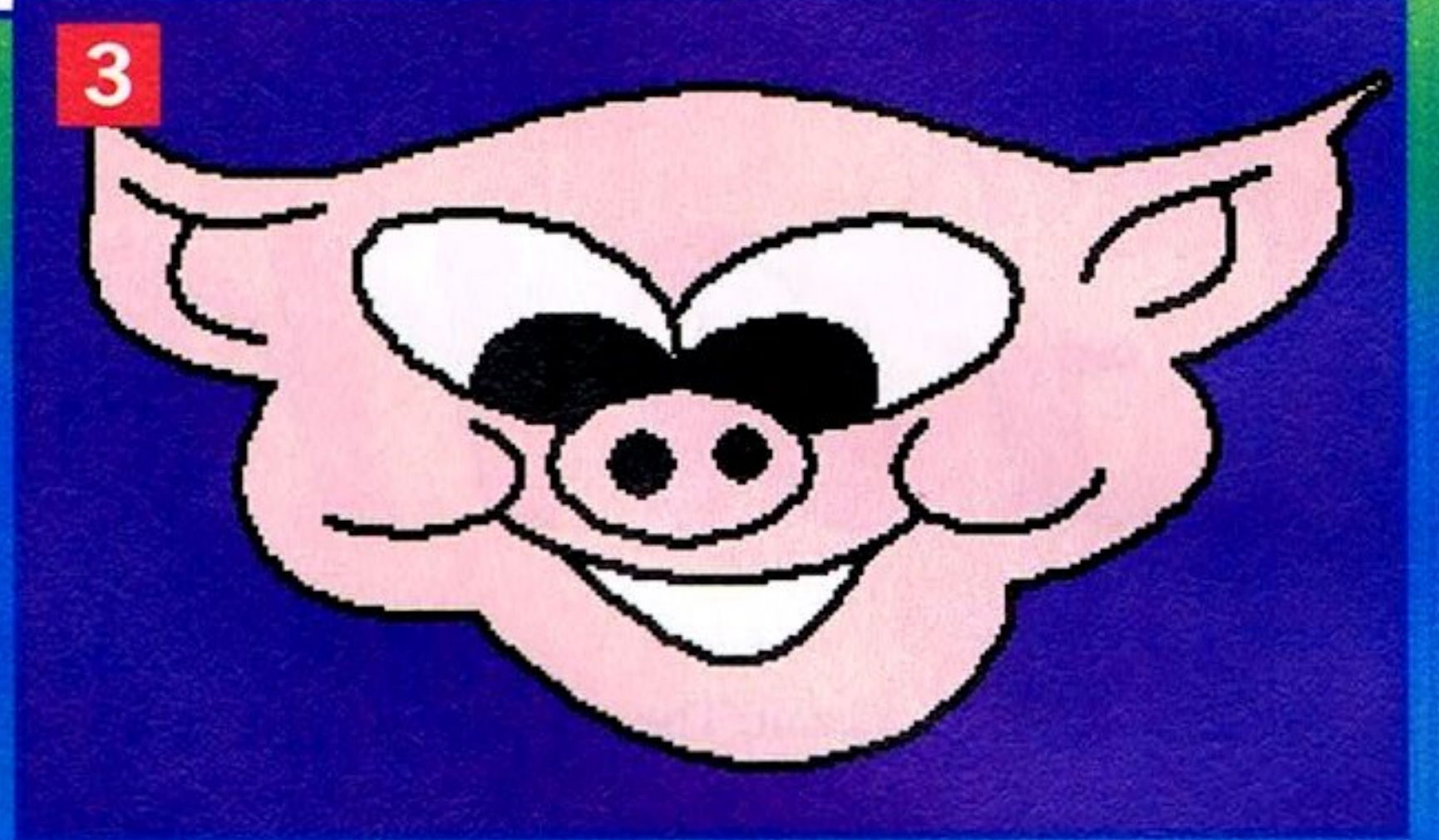
It's easy to use a rough freehand sketch as a template for a more polished picture. Here's a quick guide to doing it with a simple image.



1. Make a quick sketch, using the pen in Freehand mode. Don't worry if your lines are rough and jagged - this is early days and you don't want to get too bogged down in details. The doodle should just give you an idea of composition and where the final lines should be.



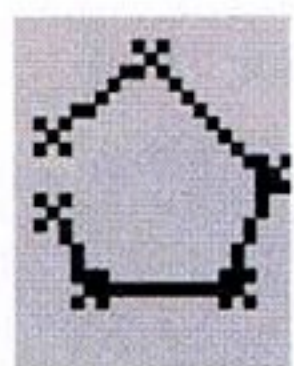
2. Change the palette so the original freehand lines are in a light grey, producing a template to draw over the top of. Start adding the final lines in black. Once again don't be too worried about sticking to the original - remember, the sketch was only meant to be a guide. Feel free to improve on it as you add smooth curves and lines with the appropriate tools.



3. To finish off, alter the palette again to remove the grey guidelines. Thicken the lines using the Outline tool - see last month's icon guide - to make them more like the bold lines used in cartoons. You can also add some flat colour using the Fill tool. Now you're ready for a bit of subtle shading and tidying up with the Magnify tool. Next month we'll deal with choosing the final palette for best results.

changes to a picture of a horizontal and vertical line. When you're in Locked mode, *Pablo* will only let you draw vertical, horizontal, and 45-degree diagonal lines. Click the button once to start, and move the mouse around a bit. You'll see that *Pablo* 'locks' the line in one of the three directions. You're free to move the mouse about, and the line will lock on to a new direction as it needs to. Another click fixes your line.

## Connect the Dots



By now you'll have seen that the Line modes only draw a single line at a time. To draw more complex shapes you need the Connected Line tool, which you'll find at the far right of the toolbox. Freeform mode looks like a pentagon with a gap in it, while Locked mode is a strange geometric shape made of vertical and horizontal lines.

Using this tool is similar to using the normal line function. Click to start the first line, move the mouse, and click again to fix the end of the line. Unlike the standard line, *Pablo* immediately starts

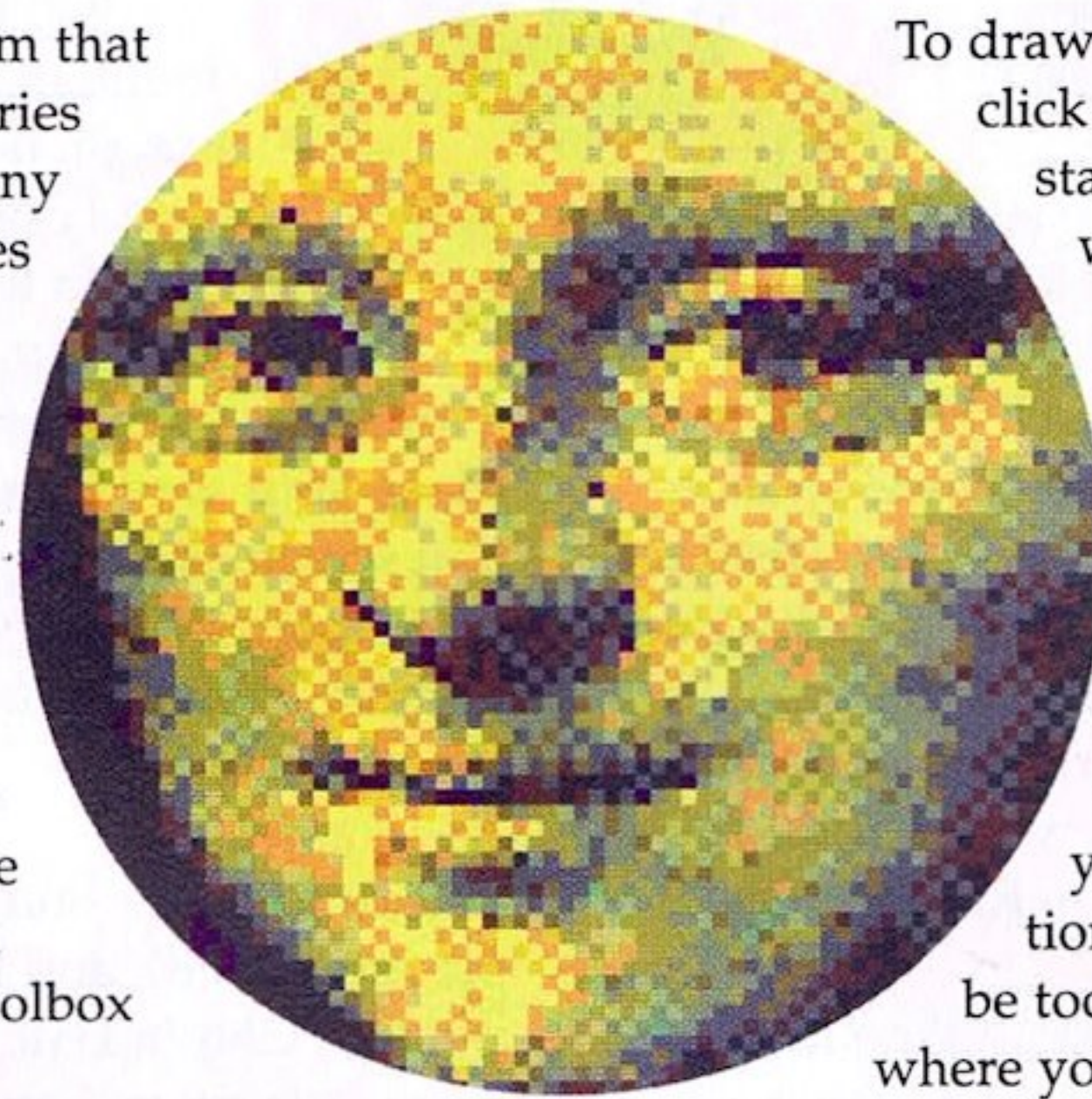
a new line from that point, and carries on over as many connected lines as you need. When you've drawn the last line in your shape, click the right mouse button - *Pablo* fixes the shape and takes you back to the Toolbox Screen.

## Curves



Drawing smooth curves and arcs is difficult if you only have lines to work with, so *Pablo* provides two curve modes - Bezier and Freeform. Bezier is the default mode, and the icon looks like a reversed letter S.

Bezier curves have appeared in art packages for years, but they've often been difficult to use. Bezier curves are defined by four points - start and end points, and two intersection or control points.



To draw one in *Pablo*, click once to set the start point. You will only see a small dot on the screen - don't worry, this is correct. The next two mouse clicks will define your intersection points. Don't be too fussy about where you put them, since you still can't see your curve, and you can adjust them later. Click a fourth time to set the end point.

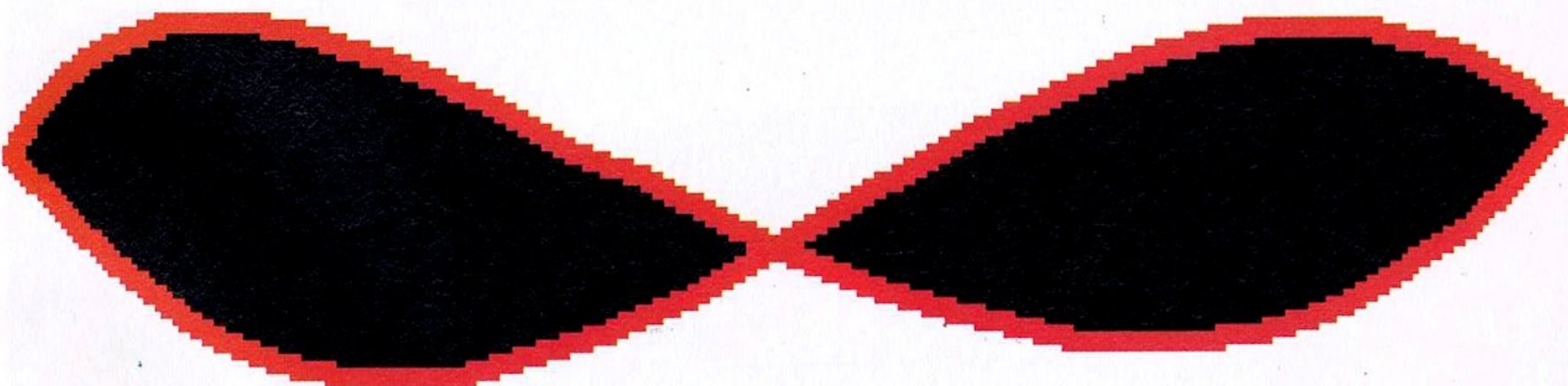
Now you'll see the Bezier appear. Note that the curve itself won't necessarily pass through the intersection points. To change its shape, adjust the curve points by clicking on them. Hold the mouse button down as you move the point, then release it to drop the point at a new position.

Moving the intersection points to produce the smooth curve you're looking for can take a bit of practice. Often it seems as if

the Bezier has a mind of its own - persevere with it, since Beziers are very powerful tools. Experiment with moving the intersection points to different distances and you'll soon get the hang of the strange way it works.

Freeform curves are much simpler, since they're only defined by the start and end points. As before, use the mouse to define the two points. As you fix the second one, the curve appears - move the mouse about and the curve will follow it dynamically. You can't produce complex bends the way you can with a Bezier, but it's often quicker to use Freeform for a simple regular arc.

Next month we'll be covering some tricks you can do with *Pablo's* powerful block manipulation tools, such as perspective distortion and bending images along curves and sine waves. *stf*

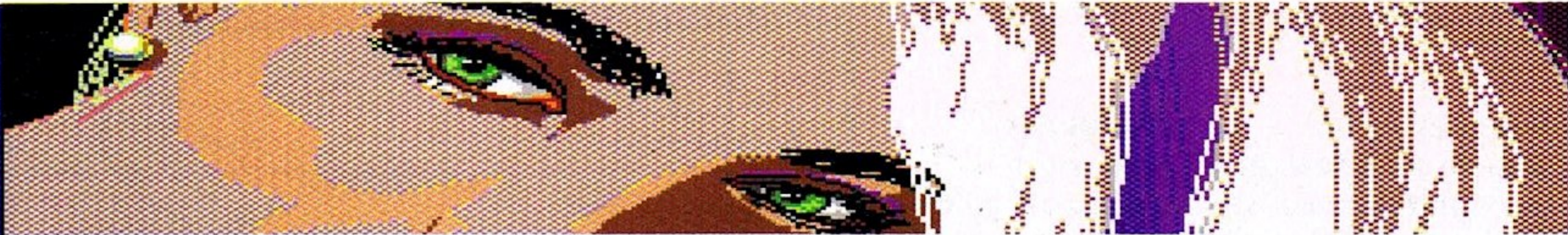


A simple shape like this would be fiddly to do with lines, and almost impossible in Freehand mode. If, however, you master the black art of the Bezier curve, you can design new eye holes for your ski mask in seconds. However getting them symmetrical takes a little longer.

## BALLS!

For those of you who wrote in or rang asking why bright red bouncing balls suddenly skitter across the screen from time to time, you haven't got a virus-infected copy of *Pablo*. It's a screen-saver built into *Pablo* to protect your monitor, and it kicks in when you haven't touched the mouse or keyboard for a while. Just jiggle the mouse and you'll be back to the familiar workscreen.

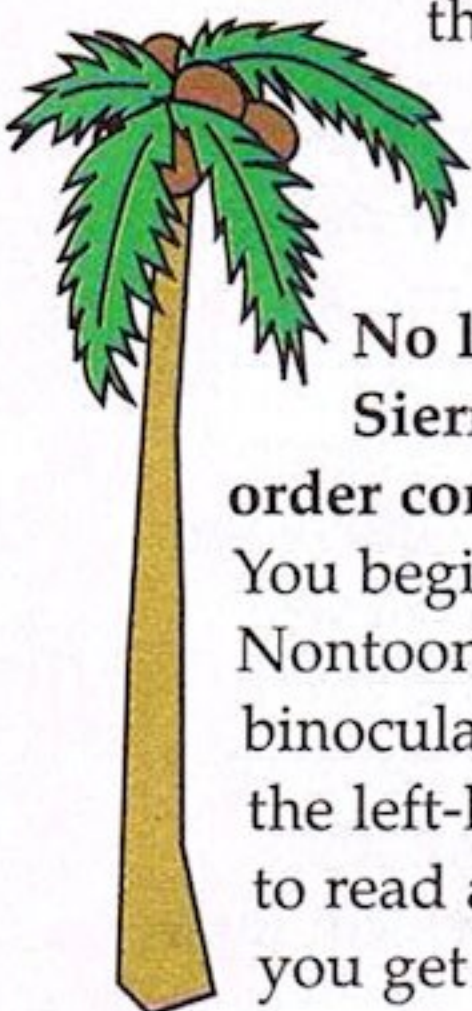




Well that's it then – he's saved the world. Twice. Redundant, Simon Forrester settles down with a mug of coffee to rip some more games apart.

# Gamebusters

Okay, we submit. The office has been flooded with solutions to the popular (though really quite tacky) *Leisure Suit Larry* series, and we can't resist popular demand. *Per Bengtsson* of *Munka Ljungby, Sweden* wins £25 for his guide to the – and let's be honest here – dodgiest graphic adventure the world has ever seen.



## Leisure Suit Larry 3

No longer available from Sierra – ring around mail order companies, *STF 15*, 61% You begin on the cliff on Nontoonyt Island, next to the binoculars. If you look through the left-hand set you'll be able to read a far-off plaque. When you get bored, leave the cliff.

Passionate Patti – one glass of wine and she's yours. Or you're her.

You'll find yourself deep in jungle. Follow the hand pointing to the left, and you'll be at your house – only to be dumped by your wife.

Head back into the jungle, then leave the screen from the lower right. You'll find yourself in yet more jungle, and Larry should change back into his normal suit. Head to the lower right of the screen again, and you'll come to a fountain. Head to the lower left, and you'll find yourself at work. Inside your boss is waiting to fire you. His wait is over.

You may as well go home (the way you came). In the mailbox outside your house you'll find a credit card (always handy). Go



back to the jungle (head right). Type **look Grandilla** and be sure to get the wood.

Go back to the fountain and head straight down to the beach. Look at the girl, then talk to her. Give her the credit card in exchange for a knife she buys from a vendor. Make your way back to the fountain screen and sharpen the knife on the steps. Carve 'Grandilla' into a statue, then take it.

### Life's a beach...

Return to the second piece of jungle (upper left), and head to the right, to Chip'n'Dale's. Cut the grass outside and weave it into a nice skirt, then head into the comedy club on the right.

Talk to Al Lowe, who's sitting in the lower left corner, then sit at the centre table. If you can stand the jokes for long enough, you'll get a points reward. Stagger back to the fountain, then head to the right, into the cabana.

Get the soap from behind the sink, go into a cubicle and change into the skirt. Go back to the beach and sell the statue to Tawni, who'll give you twenty dollars. Go back to the cabana and change into your suit. Throw the towel around at the beach and you'll get a good tan (stop before you burn).

### At the casino

Go back to the fountain, then go up the steps into the casino. Head up for another two screens, then go to the upper left corner. If



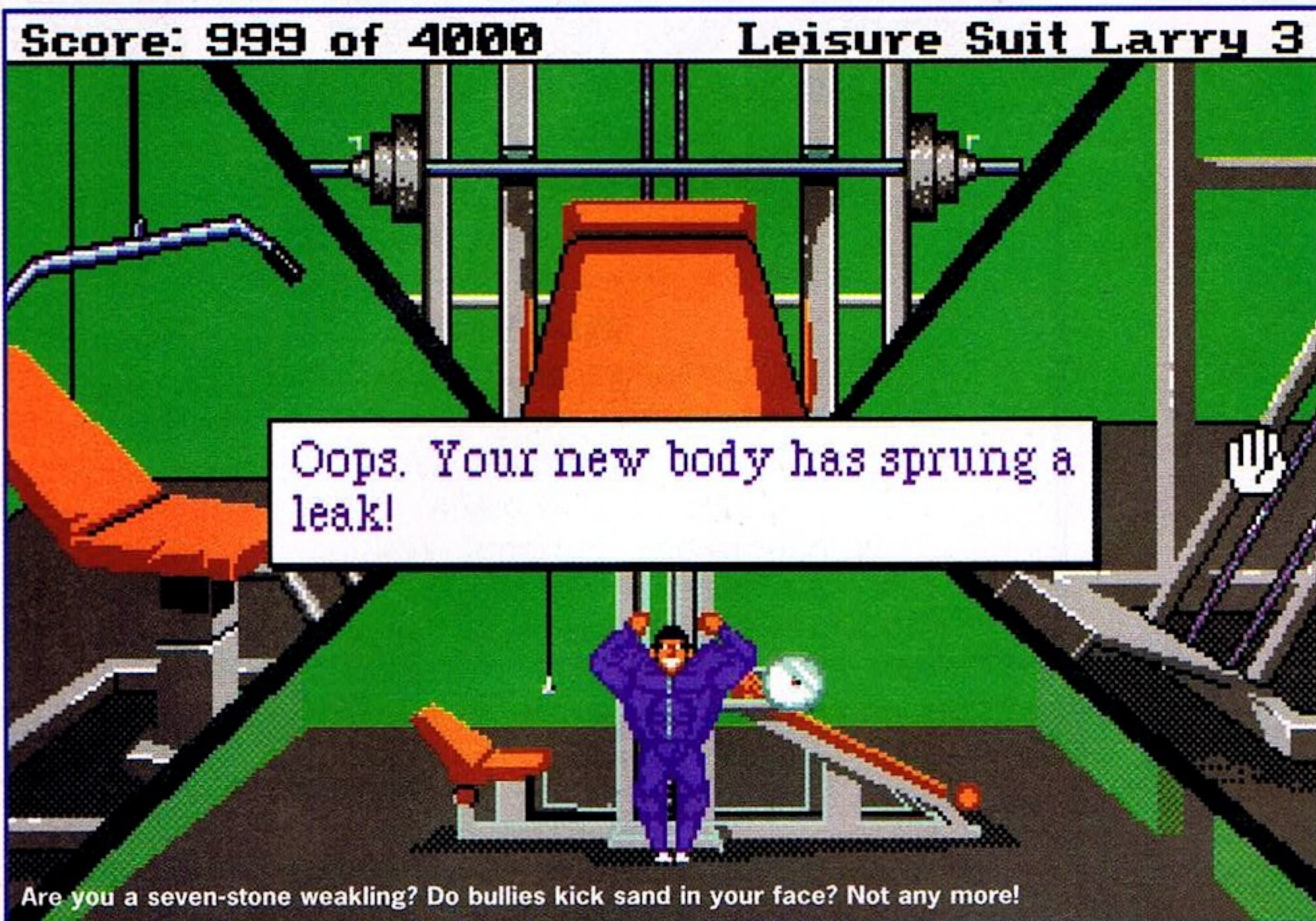
Score: 76 of 4000

Leisure Suit Larry

Throw the towel around at the beach and you'll get a good tan...







Are you a seven-stone weakling? Do bullies kick sand in your face? Not any more!

you're really into collecting points, look in the mirror. Walk to the left until you come to the theatre lounge, and give the man your pass. Provide the code he asks you for, then give him your money. After the cabaret show, wait in the lounge until Cherri Tart comes in. Talk to her until she says she wants land. Give her some land.

**Dewey, Cheatem and Howe**

Go back to the jungle screen and go to the upper right corner. You should find yourself at the office of the local lawyers, Dewey, Cheatem and Howe. Go in and ask Roger for a divorce. You'll be directed to Ms Cheatem who'll talk to you (or rather at you) and send you out. She'll tell you about the deed as you leave.

Leave the building completely and then go back in again. Ask Roger for the land and he'll give it to you. Go back into the theatre lounge and knock on the door. Cherri will open the door and let you in. When you stand on the dance floor, start to dance. When you're finished, go back to the lawyers' offices, and ask Roger for a divorce again. This time you've got to pay, but that's no problem.

You'll get Ms Cheatem barking at you again, but when you've finished with her, leave and re-enter the building once more. Get

the divorce pages from Roger, and look at the decree - you'll find a Fat City membership card in it. Go back into the theatre lounge and open the backstage door. Change your clothes and then go to the second jungle screen again.

**Fat City Health Club**

Head to the lower left and you should be standing outside a big whale. It's Fat City, the town's health club.

Go into the club, and insert the keycard into the left door. You should find yourself in a maze of lockers. Type **find locker** repeatedly until you're burning hot. Look at the back of the keycard and you'll see three positions to find in your manual. The page numbers make up the combination number, so enter them into the locker. You'll now be able to take the sweats. Close the locker, and head to the top right, to work out on all four of the stations. Do nine of each exercise and you'll become a body builder.

Go back to the locker, open it and get the towel and soap. Close the locker and go to the top left door - you'll find yourself in a shower. Go up and turn on the shower, then get into the middle and use the soap. Leave the shower and open your locker again. Remove the towel, dry and

spray yourself. Get your suit on and leave the locker room. Use the keycard in the top door. Talk to the girl until she says she needs help, then help her with her financing.

When you're through with Bambi go to the first jungle screen and head to the lower left. Sitting on the bench

reading a newspaper will gain you extra points here. Go to Chip'n'Dale's and head into the cave to the left of the screen, taking the flowers from the right corner. Go to the casino, and head up for two screens, turning right at the top.

**Passionate Patti**

Continue until you get to a piano lounge, and find Passionate Patti. Talk to her, then give her the divorce decree. She'll ask you what you want to do, so type **go to room**. She'll want some wine. Go to the

comedy hut and take the bottle there, then head back to the casino. Instead of heading up, go into the elevator to the right. Press the button and wait for it to arrive. Press the '9' button. Once you're sitting on the bed pouring the wine, Larry has served his purpose. When you begin to play again, you should have switched roles from Larry to

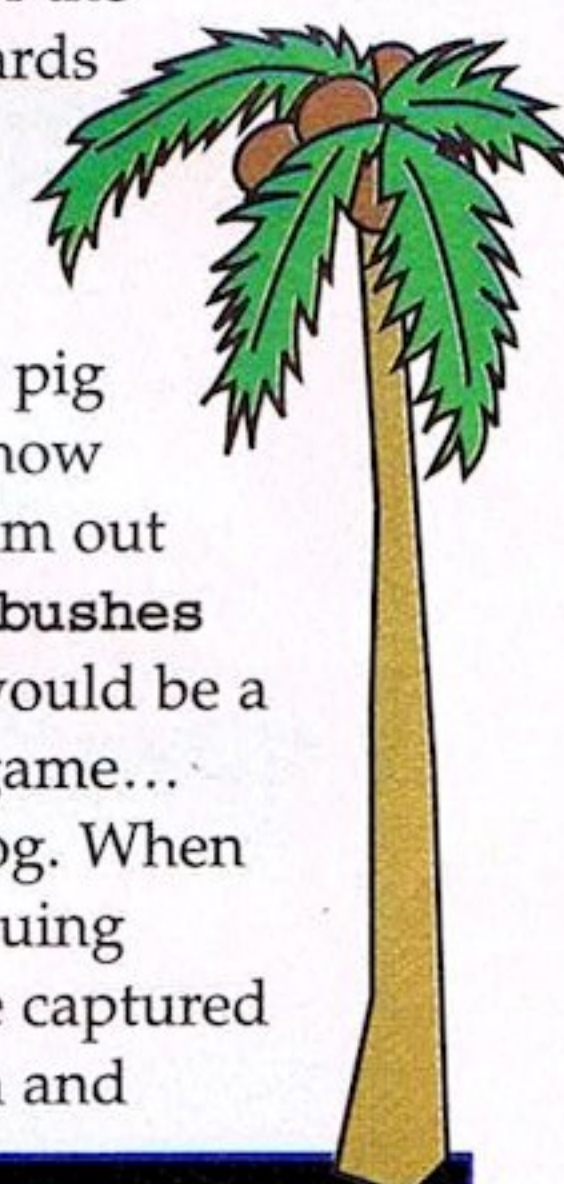
water you've got in the bottle. Head up, left, up and you should be at a river. Get as close as you can and drink from it.

Head upwards, then remove your pantihose. Tie the pantihose to the big rock and you should be able to climb down the cliff. At the second cliff, climb up the tree and get the coconuts. Get the (*stand by for complaints, team - Karen*) marijuana and make a rope, then throw it to the rock on the other side. Tie your end to a tree, of course. Rip the dress to secure your hands on the rope, then climb up it.

**Sausages, anyone?**

When you've crossed the gap, head to the upper left of the screen, then head upwards until a pig blocks your path. Remove your bra, put the coconuts in it and throw it at the pig to scare it off. You can now get to the river and swim out a little. Type **look in bushes** and get the log. Now would be a good time to save the game...

Climb on to the log. When you've finished the ensuing arcade section you'll be captured by the Amazon women and



**Passionate Patti.**

Take the wine bottle, then go behind the dressing screen and get dressed. Head to the piano lounge and get the magic marker and your money. Go to the cabana and fill the bottle with water, then head for Chip'n'Dale's which is finally open. Enter, paying the man as you go in. Sit in the empty chair and watch the show.

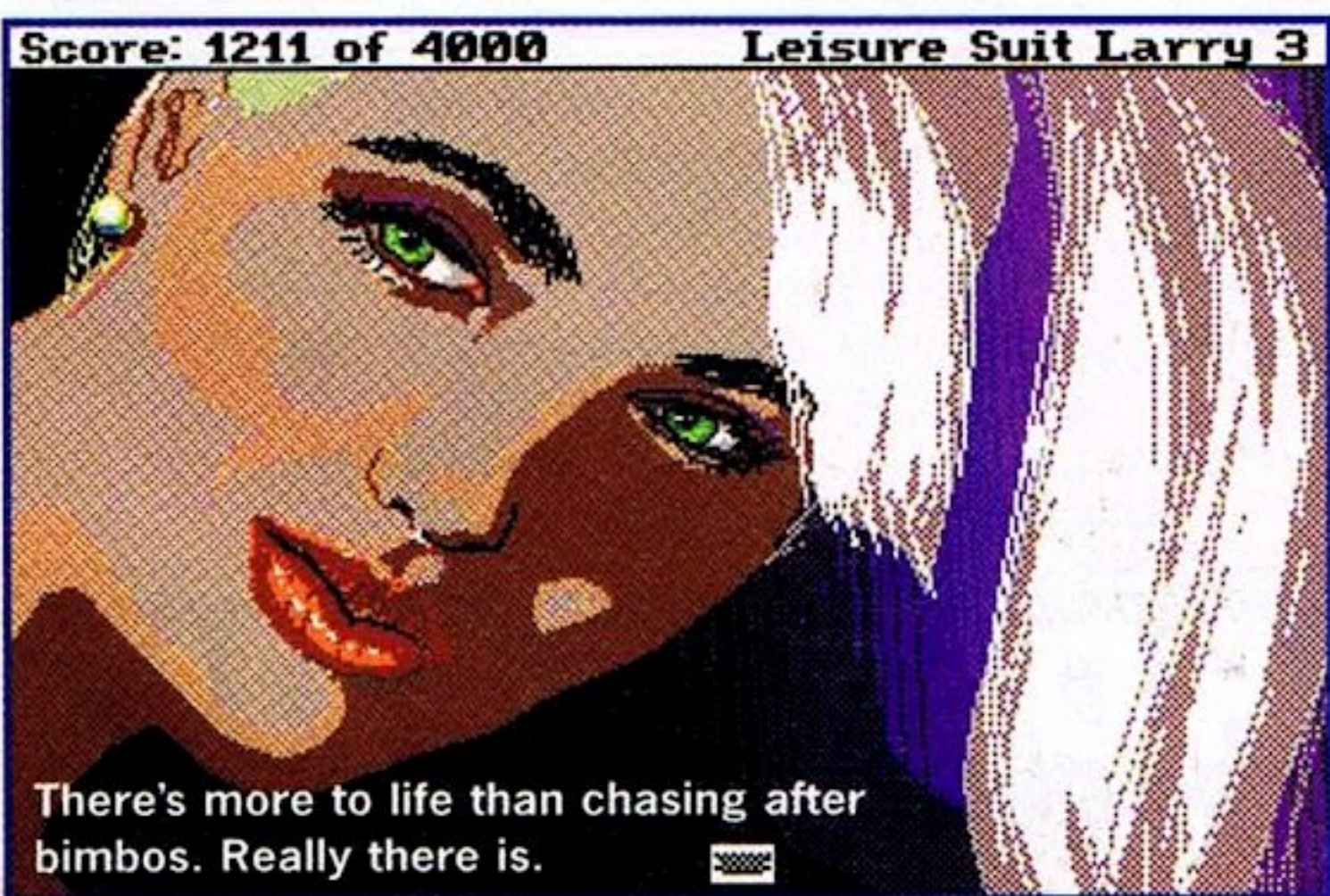
When it's over, Dale should come into the room. If you call him he'll come to your table. Talk to him and ask him for help - you'll find he won't do a thing for you. Leave, go to the comedy hut, and then head to the right.

Enter the bamboo and you should find yourself in a big bamboo maze. Go up, up, right, right, up, left, up, right, up, up, left, left, down, left, left, up. Now would be a good time to drink the

thrown into a cage - where you'll meet Larry. Talk to him and look around. You can use your magic marker to escape from the cage (**use magic marker** would be a good way to do this).

You'll fall out of the game (oh, this is just silly) into the Sierra parking lot. Head to the right until you come to the anti-gravity machine, at which point you'll become weightless and start flying. When you get near enough to the switch, turn it off, then head to the right and watch the end of the game go by. *stf*

**If you've got a hot hint, a clever cheat or a superb solution, send it to us at Gamebusters, ST FORMAT, Future Publishing, 30 Monmouth St, Bath, Avon, BA1 2BW. It might make you famous, good-looking and utterly irresistible - or win you £25.**



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## SALES

Magazine collection including original cover disks: ST FORMAT issues 1 to 41, ST User Aug 89 to Feb 93, offers 01604 832153 - Dave.

Falcon 030 4 meg memory and 65 meg hard drive plus Atari SM 146 high res B&W monitor. Some software. Mint condition £695 ono. Tel 01400 281720 - Trevor.

PC Emulator, External £50. Call Steve on 0122 701279.

Atari 520 STE, 1MB Ram, TOS 2.06, 2nd disk drive, 540 MB Mini-5 drive, greyscale monitor, Lattice, HiSoft Basic 2, loads magazines, shareware, games. £400 phone John, 01698 79306 after 6pm.

Atari 520 ST FM, 1 meg upgrade, new DS disk drive, new mouse & joystick plus stacks of new boxed games. £150 Tel 01395 567531 - Mike.

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Lattice C Version 5 complete C development package. Very good condition £25. Ring Chris 01225 310015 Evenings.

Atari 1040 STE Family Curriculum Pack. Philips monitor. Two quick shot joy sticks. All boxed as new. £250.00. Tel 0628 525241.

Original games; Sensible Soccer £8, Heindall £8, Toyota GT Rally, Supercars II, Wacky Races, £5 each. Many others. Phone after 6pm on 01929 551896. Ask for Anthony.

STE, 2 MEG, Mono monitor £200. 12 magazines and 40 cover disks £30, DEVPAK 3 and Manual £25, Real Time 3D Graphics book and disc £10, TOS Tech reference £15, 0378 796643 Bristol area.

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ST Games: Civilisation £10, War in Skies £10, Frontier £10, Cannon Fodder £10, F1 £7, Powermonger & WW1 £7, Another World £5, Supremacy £5, Cybercon III £5, Simitcity £5. Robert 01903 815988 after 9pm.

Boxed original games - eg Sim City, 3X Larry, Midwinter, Knights of the Sky, loads more. Send stamp to: Nick, 26 Spenser Street, Padiham, Lancashire BB12 8RD.

Civilisation, Elite 2, Sensi-Soccer International, Champ, Manager 94, Lemmings 2, Monkey Island, Ishor 2, FIGP, JWW Snooker, Lure of Temptress and many more. All boxed originals. Bargain prices. Tel 01962 884169

Atari 520 STFM 2 MByte RAM. Atari 1435 Colour monitor, 80 MEG hard drive, loads of software. £400. Phone 01543 276541.

1040 STFM, TOS 2.06., 105 MByte ext SCSI H/drive, 3.5-inch drive. Also boxed games. Phone 01494 461729 after 6pm.

Falcon 4 MByte boxed, 520 STEM and 2nd drive. Philips monitor, 24 print printer, all with cover, 3 joysticks, pedal, 9 serious software, many games, 28 PDS. £675. 0161 792 3370.

Atari STE 2 MEG, colour monitor, LC10 Star printer, many more games. 2 mice, joystick. Everything must go. £200. 01942 206391.

Wordwriter, Textstyle, Dynablaster, Formfinder and others. Originals CW Manuals. Reasonable offers considered. Phone Steve on 01992 620663.

Original games: Powermonger, F16, Supremacy, Shadowlands, Castle Master 2, £8 each. To Mr G J Llewellyn, 116 Heol West Plas, Coity, Bridgend, Mid Glamorgan CF35 6BH.

ST Games for sale - AAARGH £3, Gladiators £3, Mindbender (new) £4, Silicon Dreams (3 games) £6, Terropods £6, Final Flight £6, Borodino £5, Barbarian £6. Tel Nick on 01253 894296.

STE 1 MByte, some hard disk, over 100 cover disks, 78 magazines, over 70 original games, DTP, Music, Programming and word processing software, mouse, joystick, books and manuals. £300. 0114 258 7462.

ST software for sale including Cannon Fodder, Frontier Dynablasters, Premier Manager, Mega Lo Mania, First Samurai. Andrew Reed, 36 Hazeldene, Monkseaton, Tyne and Wear NE25 9AL.

Jaguar for sale, 2 joy pads, 4 games, inc. AVP, Tempest 200 and Iron Soldier. £250. If interested, Nicolas on 01733 63640.

Unwanted STE software for sale, Microprose Golf, UMS II, Monkey Island, Patrician, Life and Death and more. Phone Mike 01895 847708.

Atari 520 STFM, upgrade to 1MByte. Lots of games two joy sticks mouse and mouse pad games. Have instructions. £120. Phone anytime after 6pm 01622 631417.

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Offers wanted for Premier Manager 2, Timeworks 2, Mastersound Sampler 2, Sequencer One Plus, Fontkit Plus 3, Gajits sample series disks. Phone Craig 01964 630446 after 7pm.

Citizen 120 D+, 9 pin dot matrix printer, excellent condition. Still boxed with leads and instructions. £80. 01736 796622 (Cornwall).

Atari STFM (1MB) with Replay 16 Cartridge, lots of samples etc. £175 o.n.o. Phone Craig on 01592 750423.

For sale - Nigel Mansell's World Championship, fully boxed with Manual £10. Will swap for STOS 3D with manual or Stereomaster. Phone 01473 740542.

Atari 520 STE, upgraded to 1MB, external disc drive, all boxed. Many games and simulations. All in good condition. £150 o.n.o. Phone Gordon 01782 642737.

ST games eg Elite, Killing Cloud, Midwinter, Sensible Soccer, Speedball 2. For full list and prices write to Richard Holmes, 67 Valley Road, Brackley, Northants NN13 7DQ.

Atari 1040 STE, business, education, games (3-10 yr) software, mags with cover disks, £150; Phillips CM8833-11 Colour Monitor £150: All boxed as new. Together £280. Phone 01494 436339.

Atari 520 STE with mouse, Joystick, books and games. Tel Alan 01922 51112. £100 o.n.o.

Atari clearout - hardware/software eg NVDI 2.5 £20, SLM 605 laser printer £120. SAE for full list W Murray, 2 Cadogan St., Middlesborough, Cleveland TS1 4JT.

For sale, games: Championship Manager, 93, 94, Another World FA Stealth Fighter, Midwinter Two, B17, AV8B, Harrier Assault. All boxed as new £6 each £35 for lot. Tel 01295 738112

STFM Games for sale. Rocket Ranger £4, Doodlebug £10, Carrier Command £3.50, Simpsons £6, R Type £3.50, Star Wars £3.50, Mini Office Pro £15. All prices include UK postage. Phone 01942 711951.

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HiSoft Clarity Falcon £50, Video Master RGB for Falcon £65 all boxed, excellent condition. Phone Joe 01227 369914.

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Falcon 030 TOS 4.04 4 MEG RAM, 65 MEG hard disk with software £500 - will not split. Citizen 120D+ printer with leads £35. Phone John after 6pm on 01257 425131.

ST STE Games for sale. All boxed, for list send SAE to John Wheeldon, 48 New Bolsover, Near Chesterfield, Derbyshire S44 6DQ.

Manesman Tally Printer needs some repair £30 o.n.o. Games: BAAL £7, Cosmic Pirate £7, Flood £8, Ghost Busters £10, Phone Tim on 01737 764145.

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Anyone willing to sell a Flight Simulator 2 or a 320 Air Bus for an Atari, please phone 0151 652 1709 or write 34 Raffles Road, Birkenhead, Merseyside LA2 0HN.

## WANTED

Wanted Disciples of Steel and Pools of Radiance for Atari new or secondhand acceptable Telephone 01543 373049 with offers.

Help ! I can't play my Tusker game. Disk B is corrupt. Would some kind soul send me a copy quickly before I get so upset I buy an Amiga. I'll pay for a copy. Also I'll buy or swap Golden Axe from somebody. 01896 750606.

Anybody out there got Dungeon Master version with infinite health and strength £10 offered. Phone Tommy 0908 221118.

Wanted: Copy of Steinberg Masterscore reasonable price. Please write to J Rowland, 17 Briarlyn Avenue, Birchcliffe, Huddersfield, W Yorks HD3 3NN.

Wanted: Alternative Reality copy or original. I'm willing to pay for it. Also any other good RPG. Contact Andy 0161 256 1865.

Wanted: Any golf games for Atari, Sim City, Civilisation - has anyone got manual for 1989 game Millenium or disks. Tel 01522 536478 after 6pm.

Boot disk for Atari Megafile 20 hard drive must have 204 boot IMG and 204 Root IMG files. Phone 0121 588 6740.

Wanted Campaign and Thunder Hawk for Atari ST. Phone after 3pm 01782 31431.

Anyone wishing to sell a PC Emulator suitable for an Atari Mega ST. Please let me know. Contact Steve on 01227 265531.

Wanted Atari High Res monitor SM124 SM125 or SM144. Please call and ask for Tony on 01884 256955.

Wanted Thunderhawk and Kings Quest 4. Will pay £5 each. Must work for STE. Also wanted game hints books for ST games. Tel Nick on 01253 894296.

Cannon Fodder wanted for Atari 520 ST. Will pay up to £10. Call Ricky on 01274 597381 after 5.30pm.

Wanted copy of map for Master Tronics War in Middle Earth. Can anyone help? D Richards, 32 Sycamore Avenue, Alnwick, Northumberland NE66 1DT.

Contracts requiring relating to serious data compression related programs. Information or early runnables versions of LZARI, LZHUFF, LZSS etc., needed. Have very large collection - will swap. 14 Ravenscroft, Covingham, Swindon, Wilts SN3 5AE.

Wanted Calamus S must be in good condition with original folder, manual and software box. I will pay you a good price. Tel Mike 01949 831206.

Mellenium 2.2 (boxed with manual) desperately wanted. Contact Marc on 01482 586415.

Anyone got any tips on ST games to help make a free ST hints letter. Write to Mr N Russell, 18 Windsor Court, Poulton Le Fylde, Blackpool, Lancashire FY6 7US.

Anyone who has got hint for A Cruise for a Corpse, Hook and anyone who sells adult glamour games, etc 01333 450867.

Suspicious Cargo game by Gremlin, book entitled ST Internals by Abacus books. Also Cyberscript and Cybersculpt. 0181 802 1453 after 6pm.

Printer driver/manual for Panasonic KX-P 1091 or whereabouts of this extinct ?? animal will return calls. Computer is STFM 1M. 01506 853596.

Wanted dead or alive, old, unused, unwanted, broken, gathering dust computers. Will pay postage and a pint (or more)? Contact Ben 01926 313190. My God Jim, they've stolen Spock's brain!

Wanted ST User Issues 85,86,88 with cover disks. Also wanted ST FORMAT issues 32,30, 33-35, 37-40. Will pay up to £4. Tel 01473 740542.

Hard drive wanted 2nd hand, cheap! 40MB to 170MB, Atari 520 ST FM and good condition maybe some software on it. 01874 624807.

Atari SM124/125/144 Hi Res Monitor cash waiting can collect. Memory upgrade wanted for STE 520K and 2 MB cash waiting. Scanner wanted also. 01884 257487.

Philips 88 33 colour monitor wanted for use with STE. 01256 22491.

A copy of Cubase 2 or better. 01480 394639 after 6pm.

Passport Mastertracks Pro (higher than version 3.5) for the ST. Decent price paid for genuine disk. Also, anyone got Ikari Warriors? (and cheats?) Again, good price paid. Peace! 0181 942 3063.

Wanted any emulators for the Atari ST. Will swap for any of mine. Phone Matthew on 0181 524 4326.

Anyone got No Second Prize, willing to swap for Lure of the Temptress, TNT 2 or Lotus 3 or even TNT 2 and Aces of the Sky. 01582 419079.

Lynx games - Klax, Awesome Golf, Block Out, Road Blasters. Write with price to N Taylor, 18 Brook St., Stourbridge, West Midlands DY8 3XF.

Wanted: Reach for the Skies and Knights of Sky. Will swap with B17, Ishar 2, Shadow Worlds and others. Write to: Andrew Clayton, 64 Moffat Road, Dumfries, Scotland DG1 1NY.

Wanted software for hard drive to run SH204 with STE, TOS 2.06. Phone Dave 0181 466 0857.

Wanted C64 Emulator for the Atari ST phone Matthew on 0181 524 4326.

Wanted any Emulator for the Atari Falcon phone Matthew on 0181 524 4326.

Wanted Apple Mac Emulator for the Atari ST phone Matthew on 0181 524 4326.

Wanted BBC Emulator for the Atari ST phone Matthew on 0181 524 4326.

Are you selling an ST Book or Stacey - is it cheap? Write to: Jason Cheswick, 23 Astral Close, Lower Stondon, Henlow, Beds SG16 6EL.

Graphic Artist wanted for Monopoly clone I am writing, the program will be PD so the work will be unpaid. Pete, 30 Quarry Street, Johnstone, Strathclyde PA5 8DZ.

Printer Driver for Citizen Swift 200 printer, for use with Atari STE 1040. 0151 709 5599.

## SWAPS

Proflight, Falcon F16, Strik Eagle F15, Lancaster, Harrier Strike Mission, EPYX Sub Battle, Swap for Advanced Destroyersim, Loom, Future Wars. Write to A Abrey, 50 Fairacres, Ruislip, Middlesex HA4 8AW.

Want to get rid of your ST software, hardware? To swap or sell send an SAE to Mr N Russell, 18 Windsor Court, Poulton le Fylde, Blackpool, Lancashire FYE YUS.

I will swap F1 by Domark for Dynablasters and B17 Flying Fortress for Lemmings 2. Phone and ask for Adrian on 01761 415536.

Swap Premier Manager 2 for Championship Manager 93 and end of season disk for Atari ST. Phone 01761 415536 and ask for Adrian.

Space Quest I and II, IceMan, Leisure Suit III, Sensible Soccer 93. For UVK 6 and Clamus 1.09. Will add cash. Write only. 21 Glovers Way, Bratton Farm, Shawbirch, Telford, Shropshire TF5 0PS.

Australian ST user wants to swap, buy or sell ST games and software with other Aussies. I dig flight sims and adventures. Let's make a deal! PO Box 2322, Townsville, Queensland, Australia 4810.

## MESSAGES

Are there any Jaguar owners in Belgium ?? If so, please contact me: Jo Declercq, Groendal 88, 9420 Mere. Phone 053 83 71 10.

For free membership of the STOS programmers group and first newsletter send a disk, SAE and £1 to SPG c/o Andrew Gale, 33 Leicester Square, Soundwell, Bristol BS16 4PD.

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New PD Library called PAJ Software is now open. Send SAE for a disk catalogue to PAJ Software, PAJ House, Shaftesbury Avenue, Cheadle House, Stockport SK8 7DB.

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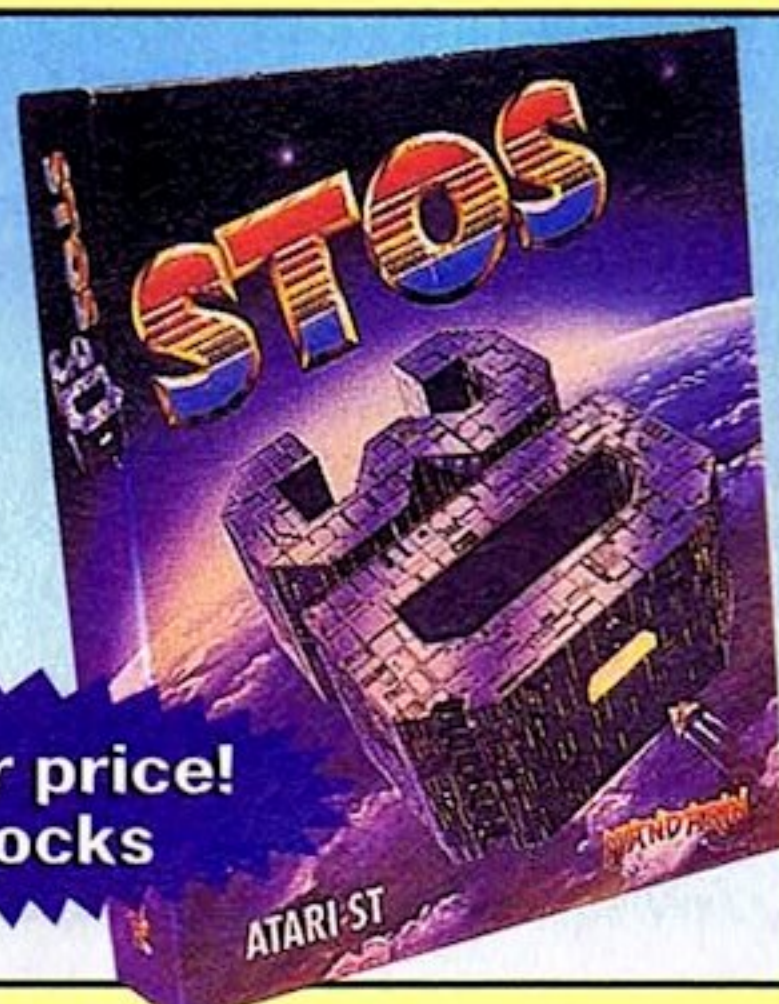
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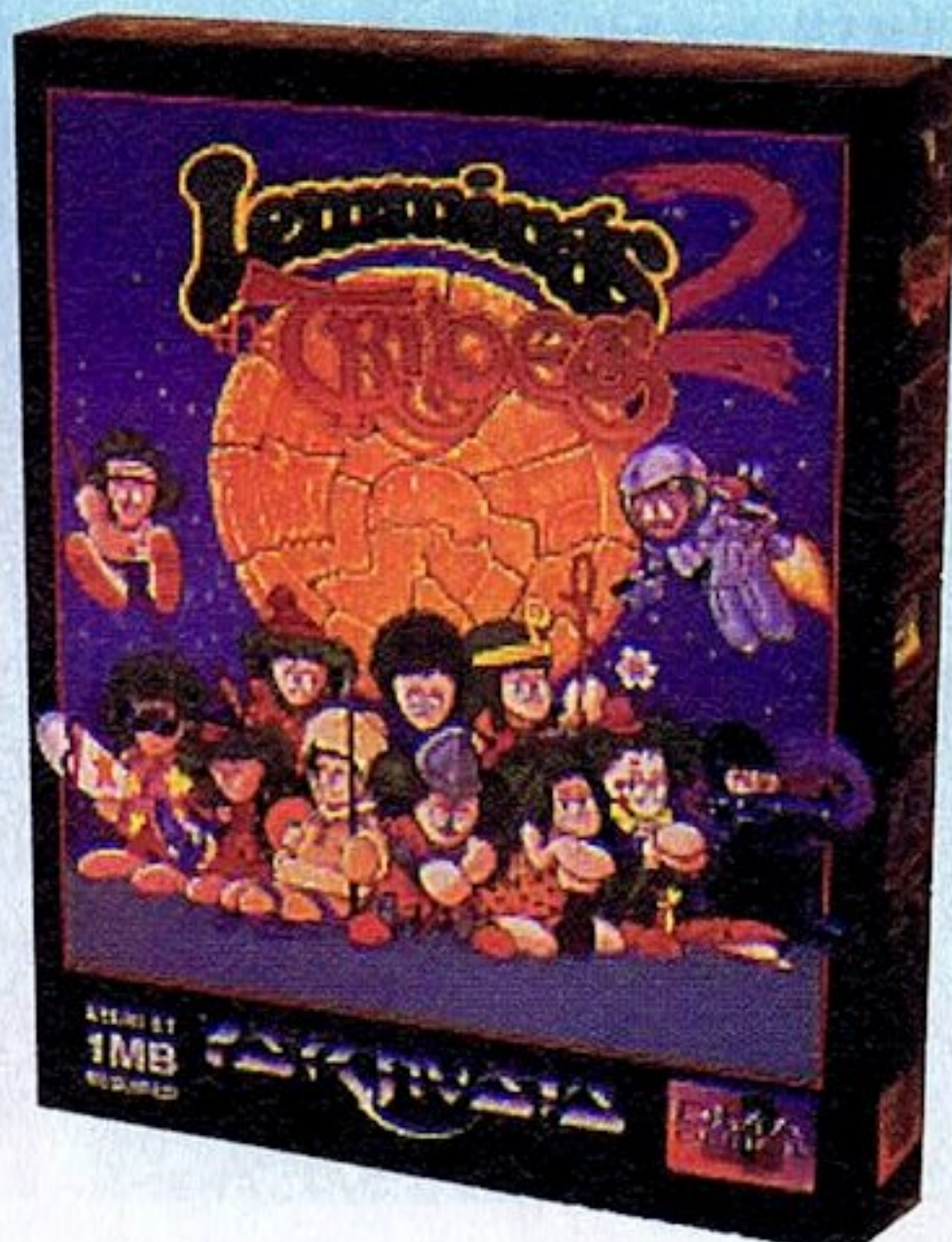
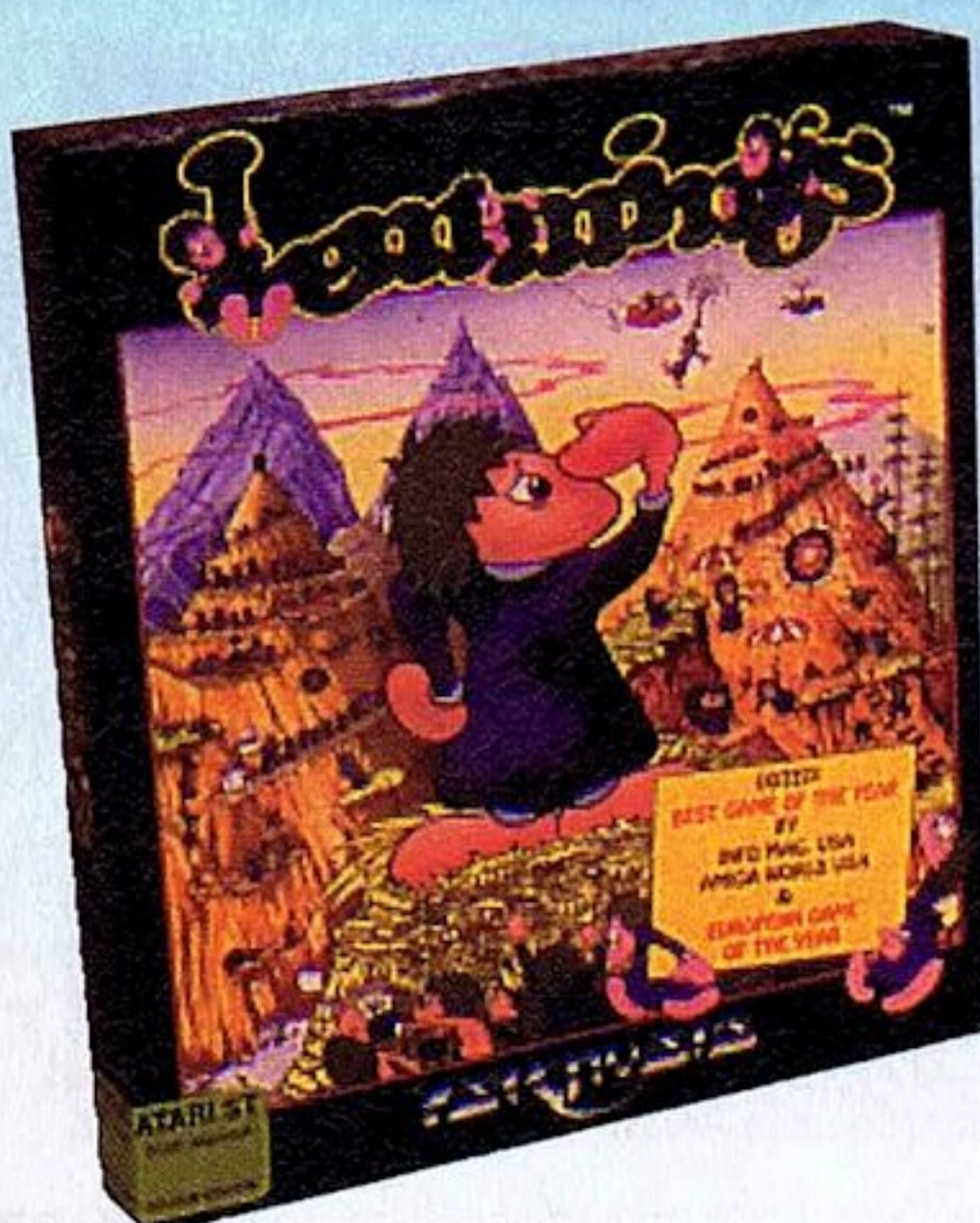
## LEMMINGS & LEMMINGS 2

PSYGNOSIS

*Lemmings* is one of the most famous games in the history of computing, and at this price you'd have to be crazy to pass it up. They caused such a stir when they were released that we gave each of them an *ST FORMAT* Gold award. *Lemmings* runs on any ST; *Lemmings 2* requires 1MByte of RAM. Both versions are Falcon-compatible.

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STF price: £9.99  
Order no: STFLEM1  
Description: *Lemmings 2*  
STF price: £9.99  
Order no: STFLEM2

Description: *Lemmings* and *Lemmings 2*  
STF price: £17.99  
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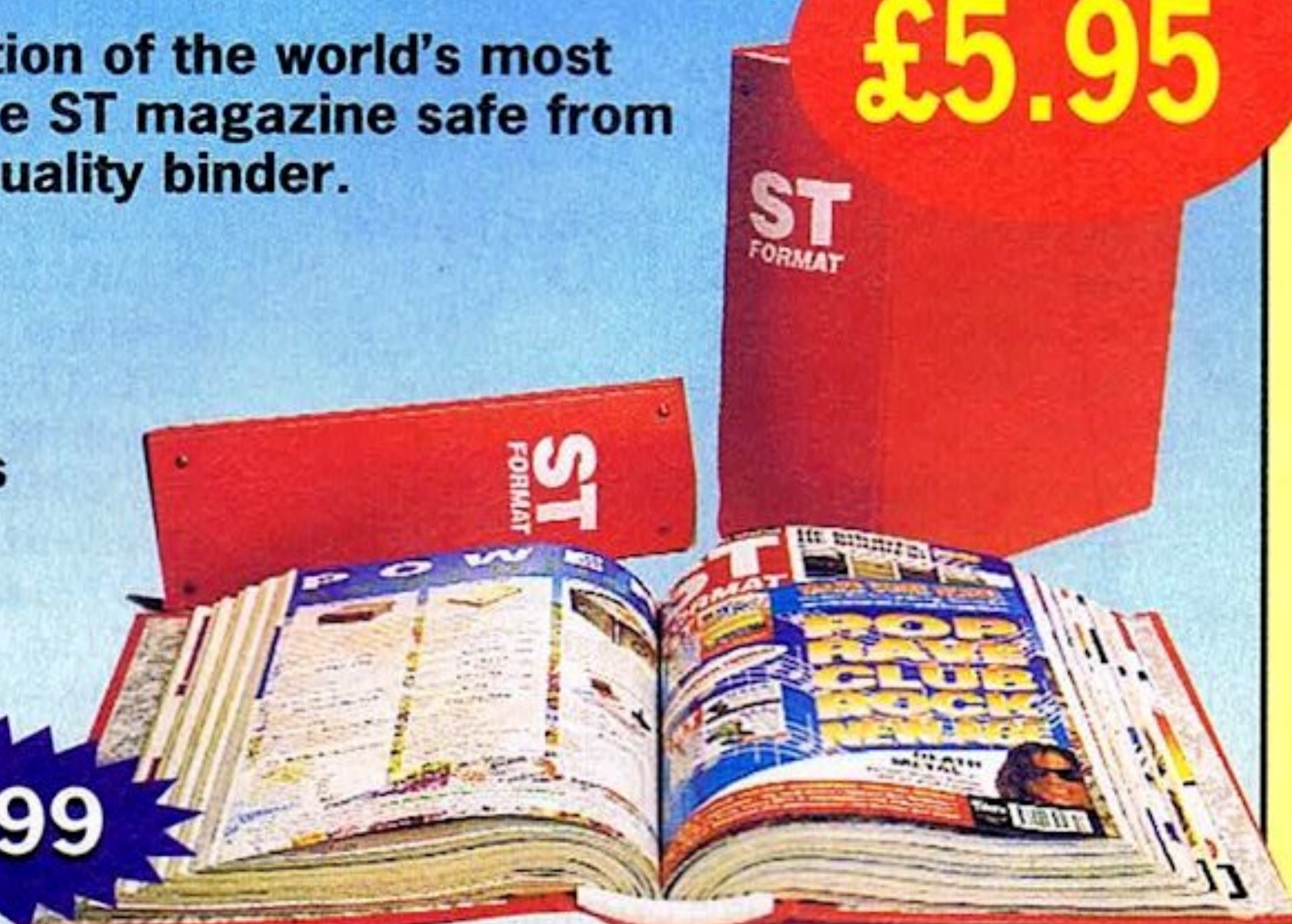
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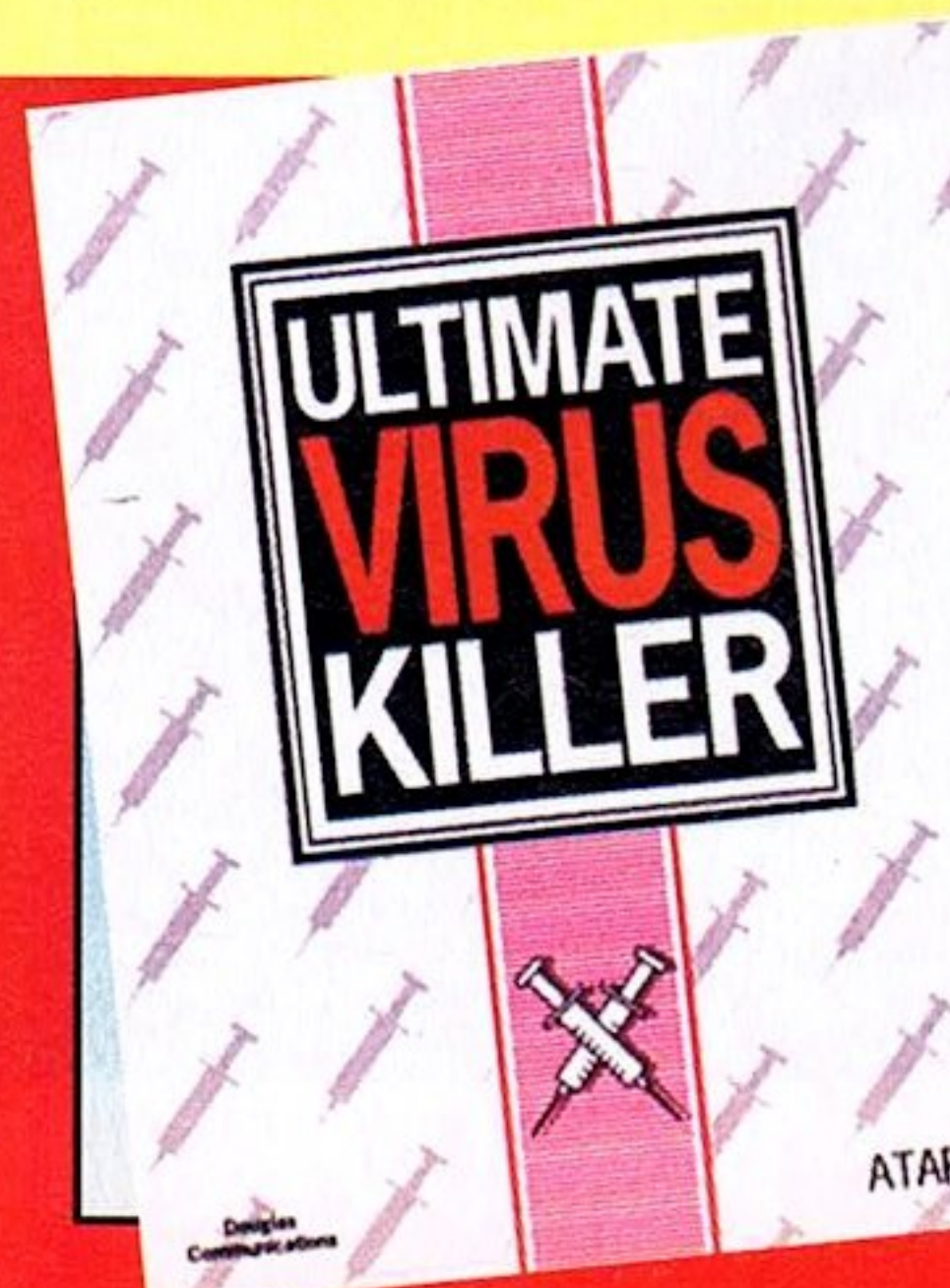
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ISSUE 70

MAY 1995  
Disk: Team demo, Pablo Paint, 525 2.02  
Inside: DTP guide, plus disk utilities for fine-tuning your ST Reviewed: MaxiS hard drive, PAK 68/3, Prima HD/CD  
Tutorials: Pablo Paint, World Wide Web



ISSUE 69

APRIL 1995  
Disk: Obsession table, Chequebook and Hang About Inside: The Survival Guide, plus Mix It Up - music special Reviewed: Ease, Calamus updates, Hollywood Hustler Tutorials: AtariNOS, APEX media



ISSUE 68

MARCH 1995  
Disk: Magic Storybook and BBS Directory  
Inside: A World of Information - Net sites and how to set up your own BBS; MagiC vs Geneva; KAOSDesk, Twist 2, ST Disk Cat, AtariNOS tutorials; APEX media...



ISSUE 67

FEBRUARY 1995  
Disk: Smash Hit and KAOSDesk 2.1  
Inside: Pure Genius - explore your ST's powers; Twist and Superbase Pro head to head; ProTOS show Reviewed: Obsession, Quill 2, Imagecopy Colour 3.5



ISSUE 66

JANUARY 1995  
Disk: Stardust, Endurance, Route Finder and more  
Inside: All you need to know about animation; ST First Aid course; programming tutorials Reviewed: Zero-5, Metamorphosis...



ISSUE 65

DECEMBER 1994  
Disk: Grafix, Jetpac, Arcade Classics and many more  
Inside: Plug your ST into the Internet; word processors head to head; GFA and Personal Pascal tutorials Reviewed: Twist 2, ScreenEye...



ISSUE 64

NOVEMBER 1994  
Double Disk special: Personal Pascal, Starball, Grafiek and much, much more  
Inside: The future of the ST; full PD library round-up Reviewed: HERO, NeoDesk 4, Munch, Robinson's Requiem



ISSUE 63

OCTOBER 1994  
Disk: Quill and HERO demos and Herman  
Inside: Pure Gold - all the ST FORMAT Gold winners; coding for beginners Reviewed: Starball, Protex 6.5, Papyrus Gold and That's Write 3

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Then just turn to page 79 and fill in the order form. You can pay by cheque or credit card and you don't even have to cough up for

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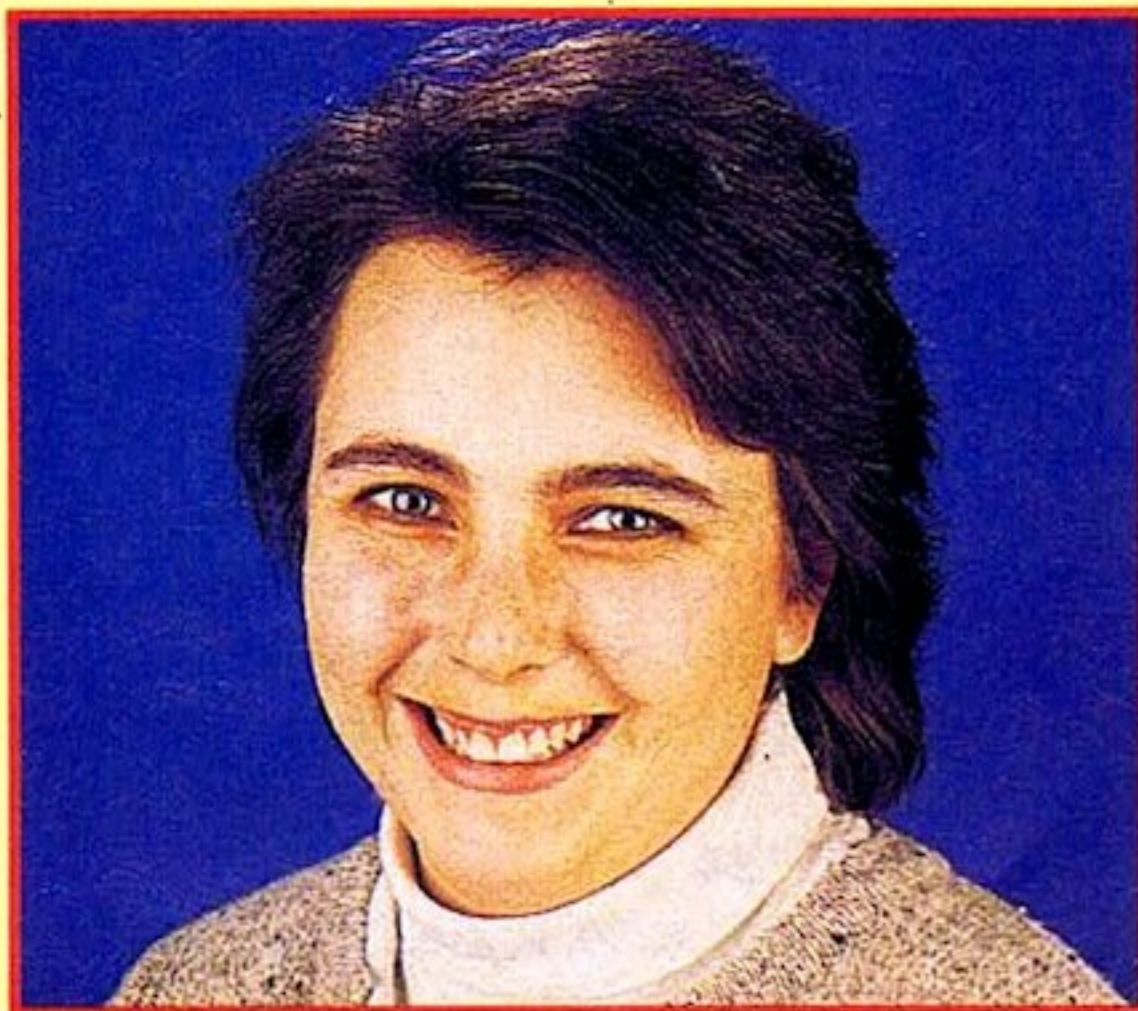


**HOTLINE: 01225 822511**









# Feedback

ST FORMAT  
JUNE  
1995

With all the questionnaires and big pile of other mail, Karen's finally had to invest in a letter opener. Nick's thumbs will never be the same again!

## The good book



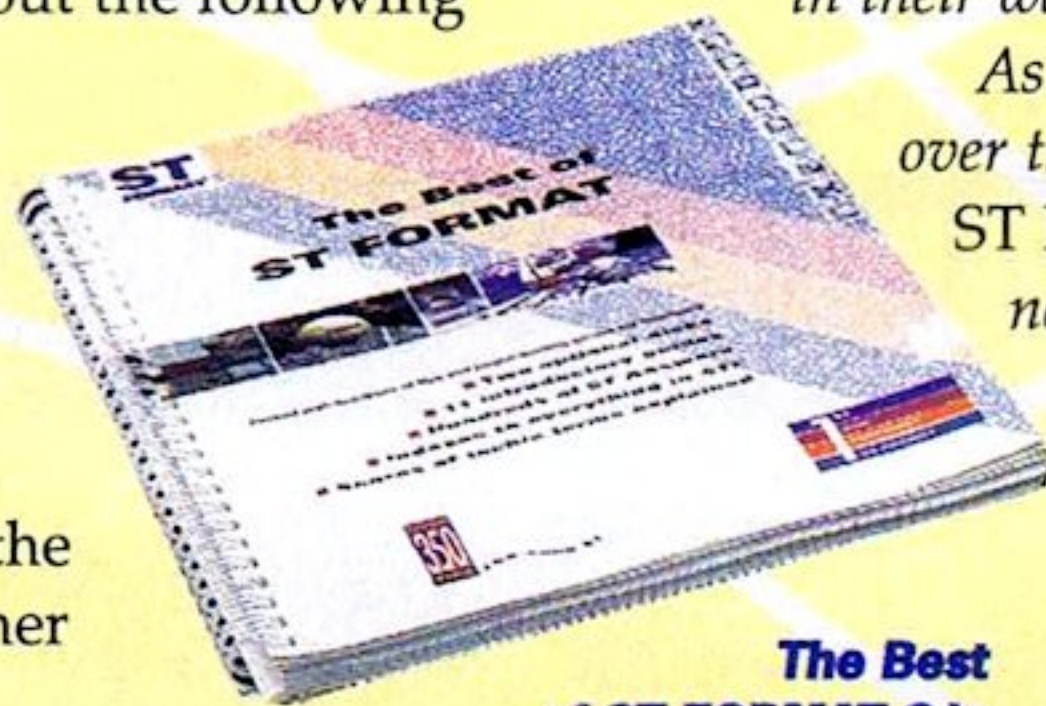
First, thank you for the goods I received recently. I found *The Best of ST FORMAT*

book and disks most interesting. Is there any chance of you publishing an updated version of it?

Also, I was most disappointed that you were unable to supply a copy of *ST FORMAT 67*, as this was an issue I was most interested in. Could you please, please, try to locate a copy of this issue and/or the disk? There must be one lurking in a wholesalers' warehouse somewhere.

Finally, I have been following the correspondence in your magazine recently regarding the demise of *ST* magazines, as I too have suffered as a result of this phenomenon. I am thinking of taking out a subscription to your magazine, but I'm concerned about the following points...

1. How long will you continue to publish your magazine?
2. Can we rely on your support for the *ST* in general, rather than just the *STE/Falcon*?



**The Best of ST FORMAT 2 is coming your way real soon now.**

3. Now that there is effectively no competition in this field, will the content and quality of the magazine deteriorate, the price increase, or the free disks disappear?

Eric Williams, Exeter



*stf*: Yep, there is indeed a sequel to *The Best of ST FORMAT*, called, surprisingly, *The Best of ST FORMAT 2*. Clive and Jill have been plugging away on it for the past few months, and it promises to be a solid read. We'll be publishing an extract from it and telling you where you can get a copy next month.

I'm afraid we can't be as helpful when it comes to issue 67 – sold out really does mean sold out. We only keep a limited number of copies for back issues, and they all disappeared before the month was over. Perhaps you could try placing a free wanted ad (see page 73), or phoning some of the larger newsagents like *WH Smiths* or *John Menzies* – they might have a few in their warehouse.

As for your concerns over the life expectancy of *ST FORMAT*, you needn't worry. The magazine and its Cover and Subscriber Disks will be here for years to come, and as long as there are

STOS Fixer Version 3.0

© 1994 Robert Guzzada

Calculating addresses...

Please wait....

If you missed issue 67, you can get a copy of *STOS Fix 3* from any good PD library.

*ST* users, products and projects, we will continue to support you – whether you have an *ST*, *STE* or *Falcon*. As for price, if you subscribe you not only save money and have total price protection for 12 months, but you are also free to cancel your subscription and claim a refund at any time. Can't say fairer than that, can we?

S Evans, Cardiff

*stf*: You can get a copy of *STOS Fix 3* from any good PD library – try *Goodmans*, *Floppyshop* or *Tumblevane* (see page 75 for contact details). If you're interested in *STOS* programming techniques, make sure you take a look at *Tony Greenwood's STOS masterclass series*, which starts this month – see page 65.

## In a fix



I recently placed an order for the February issue of your magazine, but it was sold out. Is there any way of getting the cover disk for this issue? If there is, could you tell me how much and where to send my order? If not, could you tell me where I could get a copy of *STOS Fix 3*?

## PC transfer



I have an *STFM* running *Protext 4.3*, *Write On* and *Wordwriter ST*, but my university is packed with PCs running *WordPerfect 5.1*. All I want to do type up simple reports on my *STFM* at home and print them on the laser printer at the university. Is there any program that

## COMPANY SPEAK

If you work for a company producing software or hardware for any of the Atari computers, and have an announcement you'd like to draw our readers' attention to, drop a line to *Company Speak*. Announcements should be brief and of genuine interest to our readers.

We are becoming increasingly concerned at the apparent acceptance of the infringement of PD authors' rights. The problem appears to be that new libraries feel that if a program is PD, they are free to do with it whatever they wish, ignoring the general rule that all the files of a PD program must remain together, in an unaltered condition.

The current trend seems to be that people who lack the talent to write programs themselves are using what talent they do have to take other people's programs and pack them on to a compilation disk. They are then putting their own

name on the front end. While we accept that not every compiled disk infringes copyright, the fact that some do is enough to make any decent library not stock any of the titles.

If this trend continues, we feel the authors who do have the talent will simply not bother. Would you be happy to find your hard work changed and distributed – possibly with text files removed – with others getting credit for the disk?

If a disk compromises copyright it should be outlawed by all persons who respect the legal niceties of distributing PD. Leigh Caudwell (*LAPD*), Mike Goodman (*Goodmans*), Steve Delaney (*Floppyshop*), Phineas Pope (*Merlin*)

*stf*: The whole issue of *Public Domain* is fraught with problems. Often users, programmers and amateur PD libraries are confused by the legal

requirements of distributing PD. Others simply don't care, knowing that copyright infringements are difficult to prosecute at best.

*Public Domain*, in the strictest sense, is freely distributable software where the author has rescinded all copyright. However almost all of what we think of as PD is actually *Freeware*. This falls under the same category as *shareware*, in that while you are free to copy it, the copyright and intellectual rights remain the property of the author. So if he or she asks you to copy text files along with the program you are obliged to do so.

Here at *ST FORMAT* we do not review compilation disks which we believe may have had their accompanying text files removed or altered. Like Leigh, Mike, Steve and Phineas we don't want to see talented programmers leaving the PD scene because of the profiteering activities of less reputable individuals.



will allow me to create or convert documents on my STFM into a format usable on the PC network? I know about PC emulators, but I'm looking for a cheaper alternative.  
**Mohammed Asghar, Slough**

*stf: Quite right too! You don't need a fancy hardware solution – it's easy to transfer text files to a PC, and from there across a network to a laser printer. All you need to do is save out your reports as ASCII text. The PC's own word processor will then be able to read the text and print it. The only downside is that ASCII text doesn't save any stylistic additions you have made, such as italics and bold – so you'll have to add those back in just before you print.*

### A tiny portfolio



Today I received my copy of *ST FORMAT* 69, and on page 11 I saw a picture of the new Roadrunner Pocket Modem, with the words "Now all you need to do is find an ST of equally tiny proportions". Well, guess what? There is an equally tiny Atari computer, called the Portfolio. It is a 16-bit, PC-compatible pocket computer, measuring 200 x 105 x 29mm. You can pick up a secondhand Portfolio for around £50.

It has five built-in applications: spreadsheet (*Lotus 1-2-3* compatible), calculator, text processor, address book and dialler, and a time manager. You could also connect it to your STE to transfer data. Eat your heart out Psion!

Can anyone tell me what happened to the Portfolio Connection club? I heard that if no-one offered their services the club was due to close with the loss of around 1,000 PD disks. Can anyone confirm whether this did happen? (My information is second-hand.) I would be quite willing to help with the running of the club or act as a message base to put people in touch with each other.  
**PH Finch, Morden**

*stf: If you have any information on the Portfolio Connection or would be interested in helping support such a club, give Mr Finch a call on 0181 542 8350.*

### A Mind-ful company



Please print this letter as I believe Mindscape deserve a big pat on the back. As you know, Mindscape produced the game *Captive* for the Atari back in 1989. As this is one of my favourite games, I was shocked to discover my copy had become corrupt and

was refusing to load. I thought my *Captive* days were over, unless I could obtain a secondhand copy.

On the spur of the moment, I contacted Mindscape and was told they would supply me with replacement disks, even though the game was five years old. Not only that, but it would be free of charge. I posted the old disks back and in three days I had a new copy.

Well done Mindscape!  
**Roger Carpenter, Walsall**

*stf: Too often nowadays we hear about readers receiving second-class treatment from the PC-dominated software companies and high street stores, so it's refreshing to know that some companies are still capable of exceeding our expectations.*



**Mindscape. For services beyond the call of duty, we salute you. Ta lads.**

### Don't believe it!



I know this letter might sound a bit daft, but could you please tell me the difference between an STFM and an STE? I understand they're different machines, of course, but I've heard a rumour that STE games can be played on STFMs.

I have an STFM, but I can't play any of the *ST FORMAT* Cover Disk games like *Stardust* or *Obsession* because they are for the STE only. Can you tell me what I need to do to get them to work on my machine?  
**Matthew Whereat, Cirencester**

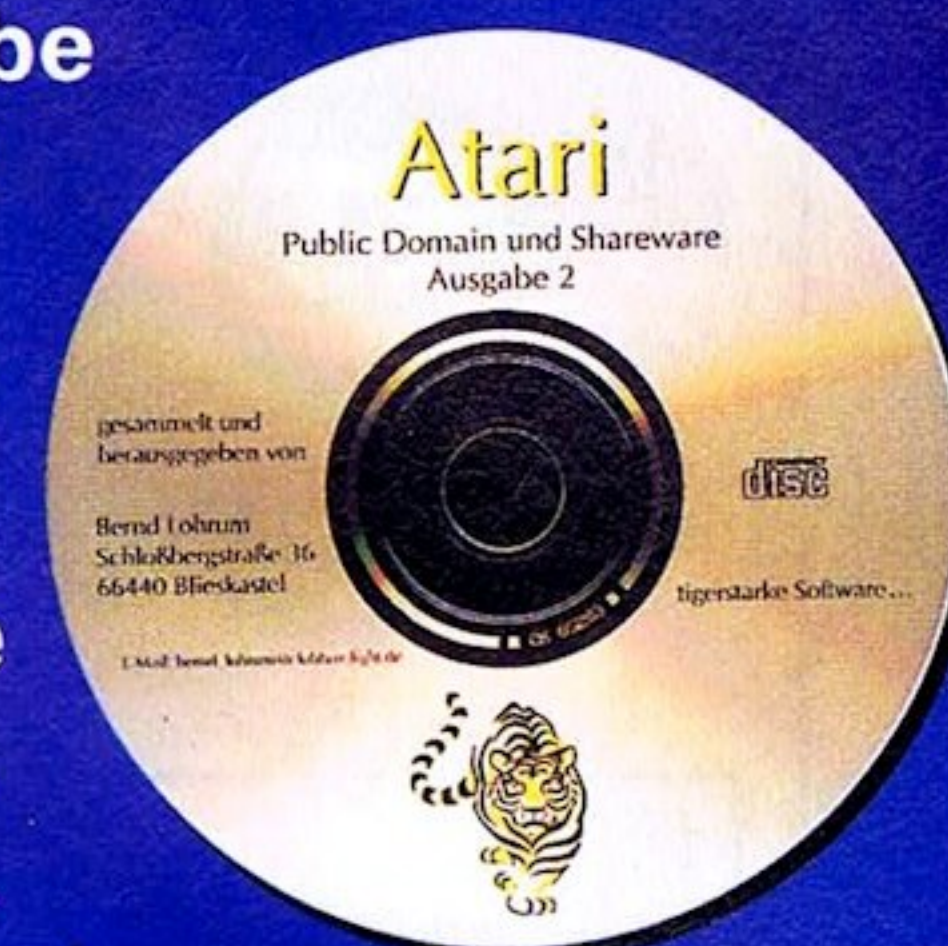
*stf: You don't need to do anything, because there's nothing you can do. This rumour's been doing the rounds since the STE was launched – and it's no more true now than it was then.*

*STE games take advantage of special hardware built into the Enhanced machine – such as the blitter chip, hardware scrolling and stereo sound chip – which isn't in the earlier model. So while you can run most STFM games on an STE, you can't run STE-only games on the STFM.*

**If you have a point to make, send your letters to the editor, Karen Levell, at: Feedback, ST FORMAT, Future Publishing, 30 Monmouth Street, Bath, Avon, BA1 2BW or e-mail them to: klevell@futurenet.co.uk. Letters may be edited for length and grammar.**

# NEXT MONTH

As you may have gathered over previous months, we can't always be certain of what exactly is going to find its way into the following issue, but if things go according to plan (stop laughing at the back there) next month's *ST FORMAT* will include...



## JOIN THE CD-ROM REVOLUTION

Take a look at all the latest drives, discs, connections and drivers in our definitive guide to CD-ROM on the ST...

## IN YOUR FACE!

We take a look at 3D modelling and rendering techniques, and give you a different perspective on computer-generated artwork!

**ST** *ST FORMAT* 72  
on sale Tuesday 9 May  
**FORMAT** It's going to be great!

## ON THE CARDS

We're not making any promises, but if you're wondering what's pencilled into the *ST FORMAT* diary for forthcoming issues, take a look at the list below. And if there's a subject you think we should be covering, or if you want us to address a specific question in any of these articles, drop us a line at: On the Cards, *ST FORMAT*, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW.

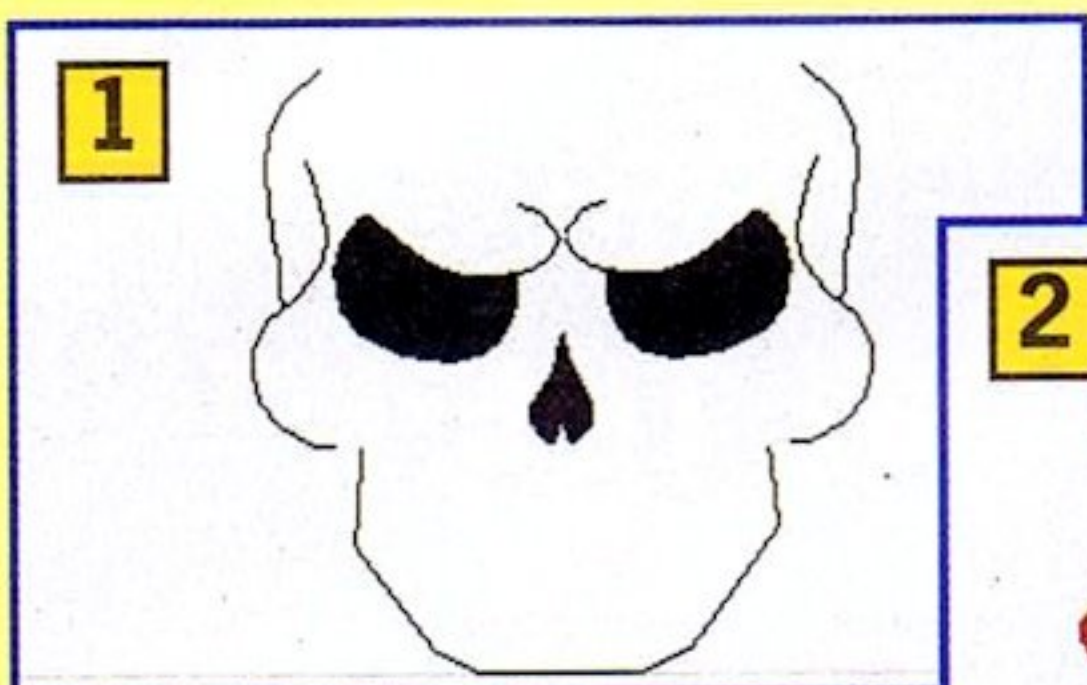
- How to get the most out of your mono or colour printer
- PD libraries – what they have to offer and how you can set up one of your own. Should you feel brave enough...
- The buyers' guide to hard drives, what you should look out for before you choose, and the best offers available
- On the money – your guide to specialist business applications and making money with your ST
- Programming special – how you can create your own games and serious software



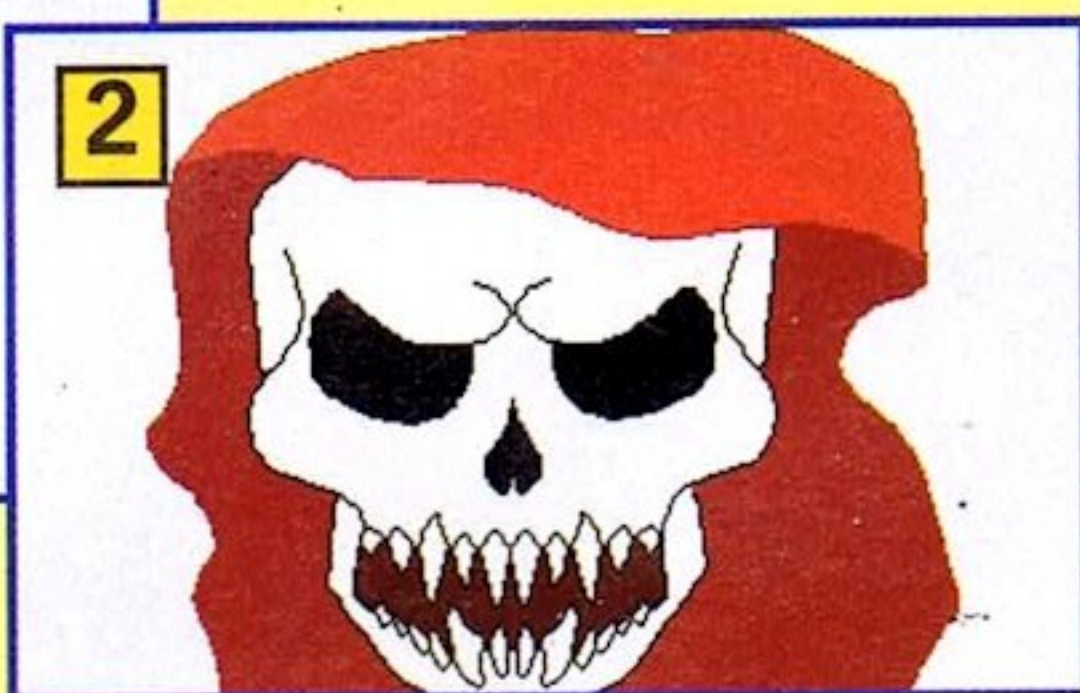
# PIXEL PAINTING



Let me assure you that, come next month, the Cinematography competition will have been judged. Otherwise the Hairy will be thrown to a horde of grinning Reapers, like the one here – drawn by Chris Williams of Abingdon. Chris is this month's £25 winner with a rather nicely-drawn rendition of the Duke of Spook himself. Chris used a friend's sketch and Canvas to bring Death to the ST. Here's how he did it.



1 Chris used the K-Line feature sketch an outlines. He drew half the face, then flipped it horizontally.



2 He resized the skull to make the hood fit, then added teeth using horizontal flipping.



3 Chris shaded the picture by imagining a light source in the top-left corner, giving Death a 3D look.



4 Finally he removed the original black outline, gave Death some menacing eye-balls and signed his name.

**MAG\*SAVE**

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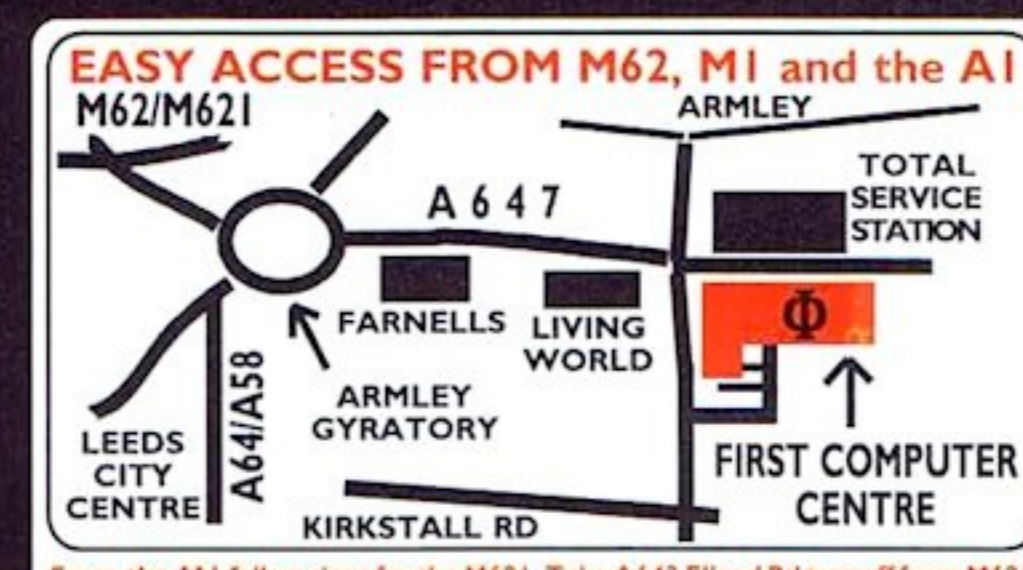
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From the A1 follow signs for the M621. Take A643 Elland Rd turnoff from M621. Follow signs for A58. This merges with Armley gyratory. From the A1 take the turnoff for the A64. This merges with the A58 (bypassing Leeds town centre) which meets the Armley gyratory.

## Thinking of buying a Printer?

Whether you're buying your first printer or upgrading your old printer, you need the facts to decide which best suits your needs. Call for the definitive guide of First's entire printer range. Whether it's an Inkjet, Dot-Matrix or Laser, we provide the facts and print outs for you to make your decision. At a cost of only £1.99 its a cheap price to pay to make sure you are buying the right printer that meets your needs.

## HARD DRIVES & CD-ROMS

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This new range of hard drives can be purchased just as a hard drive or can have the capability to be combined with a built in CD-ROM drive or other SCSI devices. The ICD Link II controller can link up to 7 separate SCSI devices.

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Calamus 1.09n	£59.99
Papyrus GoldNEW!	£109.99
Thats Write V.2	£109.99

## PRINTERS

All our printers come with ribbon or toner, paper & cables!!

**Canon**  
Canon BJ10sx £189.99  
Laser quality output. Large buffer, AUTO S/FEEDER £49.99.  
NEW! Canon BJ200ex £269.99  
New High speed Mono Inkjet, 100 page sheetfeeder, 720 dpi.  
Canon BJC600 Colour £434.99  
Canon BJC4000 Colour £345.99

## CITIZEN COMPUTER PRINTERS

Citizen printers have a 2 year guarantee  
ABC Colour printer £154.99  
simple (as easy as ABC) to use 24 pin printer. Comes as standard with 50 sheet auto sheet feeder. Tractor feed optional at £27.99  
only £134.99 if bought without the colour option.  
NEW! Project II Colour £254.99  
New inkjet printer with built in auto sheet feeder.  
Swift Auto Sheet feeder £79.99

## HEWLETT PACKARD

HP 320 mono £234.99  
HP320 auto sheet feeder £69.99  
NEW! HP540 mono £279.99  
HP 320/540 Colour upgrade £36.99  
NEW! HP 660 Colour £429.99  
All HP printers come with a 3 year warranty

**Star**  
The NEW! Star Range of dot matrix printers are here, featuring a built in 55 sheet auto sheet feeder

Star LC909 pin mono £109.99  
Star LC240 24 pin mono £125.99  
Star LC240C 24 pin Colour £144.99  
Tractor Feed for the new range only £15.99  
Star SJ144 Colour £239.99  
Stunning affordable colour printer. 3 PPM, low running costs

Special offer  
Papyrus Gold only £99.99 or  
Flexidump II only £35.99, if bought with printer.

## MEMORY MODULES

1 Mb 72 Pin SIMM	£39.99
2 Mb 72 Pin SIMM	£99.99
4 Mb 72 Pin SIMM	£149.99
8 Mb 72 Pin SIMM	£284.99
16 Mb 72 pin SIMM	£439.99
1 Mb 30 pin SIMM	£24.99
4 Mb 30 pin SIMM	£145.99
256 by 4 DRAM (DILs)	(each) £5.99
1 Mb by 4 ZIPS (1/2 Mb)	£32.99
256 by 4 ZIPS	(each) £5.99

Part Ex. available on your old memory, Call for pricing.

**Falcon 2.5" Hard Drives & Kits**

60 Mb	£129.99	Hard Drive bracket
80Mb	£139.99	£15.00
130Mb	£169.99	IDE Cable
240Mb	£249.99	£9.99

## CONSUMABLES

QTY	DS/DD DISKS	Branded DS/DD
10	£4.49	£5.49
30	£12.99	£14.99
50	£20.99	£22.99
100	£37.99	£42.99
200	£69.99	£79.99
500	£168.99	£190.99
1000	£324.99	£365.99

All disks are guaranteed 100%. All branded disks come with labels  
Disk labels 500 £6.99 1000 £9.99

**Ribbons**  
Citizen Swift/ABC mono ribbon £4.99  
Citizen Swift/ABC Colour ribbon £13.99

Star LC10/20/100 mono £3.69  
Star LC10/20/100 colour £7.99  
Star LC240C mono £8.49  
Star LC240C colour £13.99  
Star LC240 mono £5.99  
Star LC24-200/300 Colour £11.99  
Re-ink Spray for mono ribbons £11.99

**COVERS**  
Star dust cover £5.99  
Citizen dust covers £5.99  
Hewlett Packard dust covers £5.99  
Canon dust covers £5.99

**PREMIER Ink Refills**  
save a fortune in running costs with your ink/bubble jet. Compatible with HP, Canon, Star, Citizen & many others.

Single refills (22ml) £6.99  
Twin refills (44ml) £12.99  
Three colour kit (66ml) £19.99  
Full colour kit (88ml) £27.99  
Bulk refills (125ml) £24.99

**Cartridges**  
Canon BJ10sx/SJ48 cart. £19.99  
Canon BJC200/200ex mono cart. £19.99  
HP520/540 D/life mono cart. £24.99  
HP550/560/660 Col. cart. £24.99  
Star SJ144 mono or colour (3 pack) £21.99

**Miscellaneous**  
Printer Switch Box 2 way £12.99  
Printer Switch Box 3 way £17.99  
Printer Stands (Universal) save on space £4.99  
3 Metre printer cable £6.99  
5 Metre printer cable £8.99  
10 Metre printer cable £12.99

## GENLOCKS

**HAMA TRI-LOCK**  
VHS VHS-C SVHS SVHS-C Video8 Hi8  
£349.99  
NTSC/PAL COMPATIBLE, CALL FOR DETAILS.

## Marpet RAM

**STFM Deluxe SIMMS modules**  
4 Mb unpopulated £24.99  
4 Mb populated to 512k £34.99  
4 Mb populated to 2 Mb £74.99  
4 Mb populated to 4 Mb £114.99

Marpet products come with a 12 month warranty.

**Prima RAM expansion**  
512K STe £9.99  
2 Mb STe £42.99  
4 Mb STe £84.99  
14 Mb unpopulated for the Falcon £49.99

The Falcon board uses 72 pin SIMM modules, so just add the cost of the SIMMS to get your populated price.  
Prima products come with a 2 year guarantee

## USRobotics

Amazing price reduction on  
Courier Dual Standard V34  
Fax  
Now only £327.99

## OTHER PERIPHERALS

**The Zy-Fi Stereo System**  
only £36.99

This is a powerful speaker system with built in stereo amplifier. It will plug into an Atari STE, Commodore Amiga or Acorn Archimedes. Complete with its own power supply the Zy-Fi system can also be powered by batteries

**The Zy-Fi Pro Stereo System**  
only £57.99

Higher specification version of above

**Forget-me-Clock 2** only £19.99

Real time clock that plugs into cartridge port. Software for setting time & date. 2 year guarantee.

**ROBOSHIFT MK-I**  
Automatic Mouse/joystick switcher  
now only!! £9.99

**Monitor Switcher Box** £17.99

switches between mono & colour monitors, such as SMI44 & 8833 MK2

## MISCELLANEOUS

Quality Mouse Mats	£3.99
10 Capacity Disk Box	£0.99
20 Capacity Disk Box	£2.99
40 Capacity Lockable Disk Box	£3.99
100 Capacity Lockable Disk Box	£5.49
*90 Capacity Stackable Banx Box	£9.99
*150 Capacity Stackable Posso Box	£17.99
*add £3.00 delivery if purchasing just one Posso or Banx box. Normal delivery when purchased with other product or when buying 2 or more.	
14" Monitor cover	£6.99
Keyboard Membrane Covers	£14.95
Atari to Scart Cables	£9.99
STD 1.8 MTR printer lead	£4.99
Modem/null modem cables	£9.99
STFM/STE Power Supplies	£39.99
Key Boards	£49.99
Internal Disk Drives	£49.99
STe or STFM Cases	now only £4.99
2 way Parallel port sharer	£19.99
Joystick/mouse extension leads	£4.99
Atari 520/1040 dust cover	£3.99
DMA chip	£POA
MMU chip	£POA
Video Shifter chip	£POA

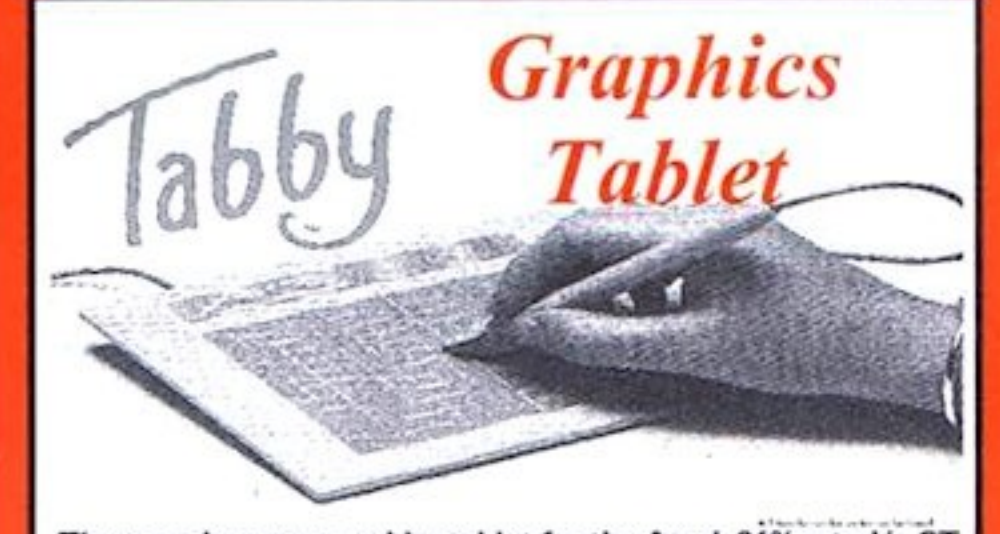
## VIDI 12 ST BY ROMBO

As official dealers for Rombo, we are able to offer this excellent package at a great price. Vidi 12 ST replaces the famous Complete Colour Solution with a higher specification but a lower price!  
£69.99

Contents include multimedia digitiser, software, manuals and phono cable

## Main Features:

Both colour & mono image capture, no separate RGB splitter or filters required, fully functional animation workstation, mix images to almost any resolution, all Atari colour modes are supported, many image processing effects, file formats include IMG, ART, IFF, IFF, SPU, SPC, NEO, BMP, TIFF.



**Tabby Graphics Tablet**  
The amazing new graphics tablet for the Atari. 86% rated in ST Format January issue!

**NEW LOW PRICE!**  
now only £49.99

## MONITORS

All our monitors are UK spec. All monitors come complete with a free Amiga lead\*

**PRIMA Trust Hi-Res**  
High resolution 14" mono monitor. 640 \* 400 resolution. Stable image and razor sharp quality. Comes with built in tilt & swivel monitor stand.

**Now Only £99.99!**  
Atari 1438 colour monitors  
We now have a limited supply of original Atari 1438 colour monitors, full 12 month warranty.  
only £199.99 very similar to CM8833 MK2

**NEW! Philips 8833 MK2**  
This famous Stereo, colour monitor is back. Complete with 12 months on site maintenance

only £239.99  
tilt and swivel stand  
only £9.99 with monitor

## DISK DRIVES

**Zydec 3.5" Drive**  
only £59.99  
1 meg external drive, high quality low noise drive. Inc PSU

**Power 720B 3.5" Drive**  
only £69.99  
This 1 meg external drive comes with Virus checker, built in Blitz turbo and boot switch for drive B. Includes PSU

## ATARI REPAIRS

We offer a FREE quotation on your Atari or any peripheral (monitors, printers etc). A delivery tariff of just £5.00 is charged for return delivery or alternatively you can visit our showroom. We will also install any upgrade software or accessory from our main advert.

All work is carried out by our highly qualified engineers in custom built premises. We will also install any upgrade software or accessory from our main advert.

All repairs are covered by a 90 day warranty.

Tel. 0113 2319444

## MICE & TRACKBALLS

**Alfa Data Mega Mouse**  
£13.99  
90% rating for 400 Dpi version

**Zydec Trackball** £29.99  
**Alfa Trackball** £34.99



On this month's...

# ST FORMAT

## GUARANTEE OF QUALITY

TESTED FOR MAXIMUM COMPATIBILITY WITH STS  
AND FALCONS, AND GUARANTEED VIRUS-FREE.

# COVER DISK

## 8

### SPARKLING PROGRAMS

PLUS  
BACK UP  
AND MENU  
PROGS

#### ALIEN THING

Exclusive level of this splendid arcade blaster from 999 Software. Runs on all STs and Falcons with 1MByte of memory or more.



#### DISK OPUS



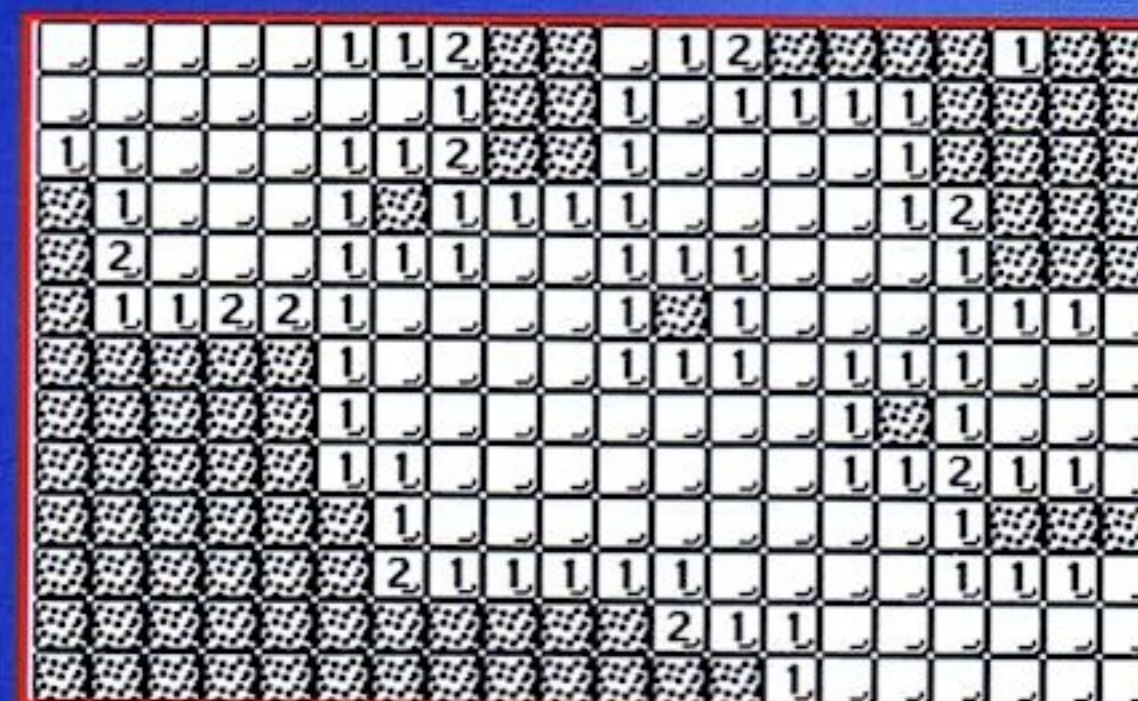
A whole host of disk utilities rolled into one. Manipulate, view and run files with the greatest of ease and flexibility!

#### TESSERA

Demo of this colourful, brain-busting puzzle smash from Dolphin Software. Can you save the gods themselves? Runs on all Ataris.



#### THE DEMINER



Make the grid safe in this explosive Minesweeper clone for all Ataris. Requires high res monitor or Sebra emulator.

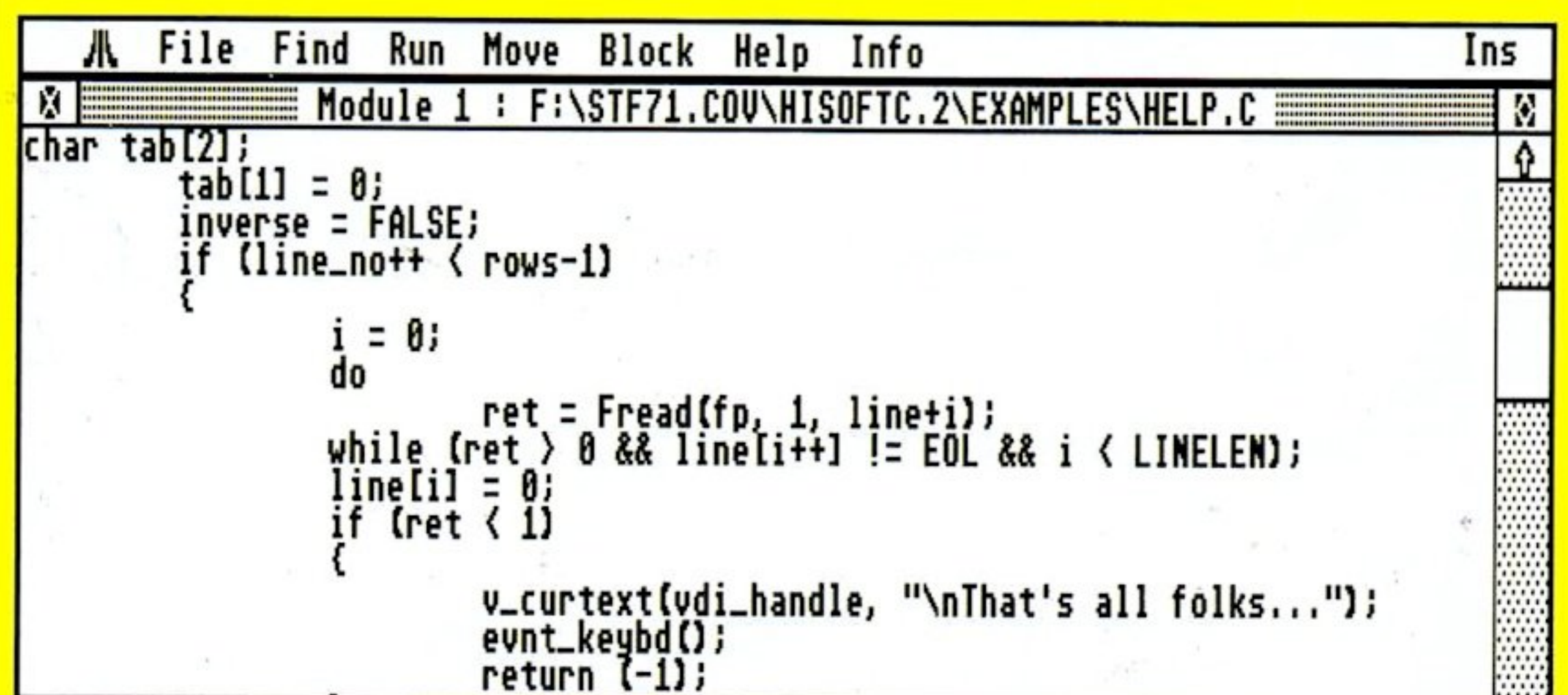
#### MUSIC BOX 2.6

Keep track (sic) of your music collection - be it CD, vinyl or tape - with this handy database all the way from Sweden. As they say, 'Let's rock!'



## HISOFT C INTERPRETER

The complete version of this designer programming language - worth £20.



#### MAGIC SHADOW

Archive entire disks on to a single, compressed file. Great for saving space without fuss.

#### FAZE

Small and unobtrusive freeware screensaver. Prevents damaging your monitor when it's left on for long periods.