

ISSUE 82 ■ MAY 1996 ■ £4.25

ST FORMAT

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REVIEWED

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opinion on NVDI 4
and MagiC 4

REVEALED

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REVIEWED THIS MONTH:

- MAGIC 4 ● EXTENDOS PRO
- NVDI 4 ● HD SENTRY ● ESCAPING FROM THE CASTLE OF MYSTERY
- SKYHAMMER ● MICHIGAN MIKE
- LET'S SPELL 1ST 500 WORDS
- MIDI-WIZ ● LOOK AND SEE
- LAZER ● AND MORE...



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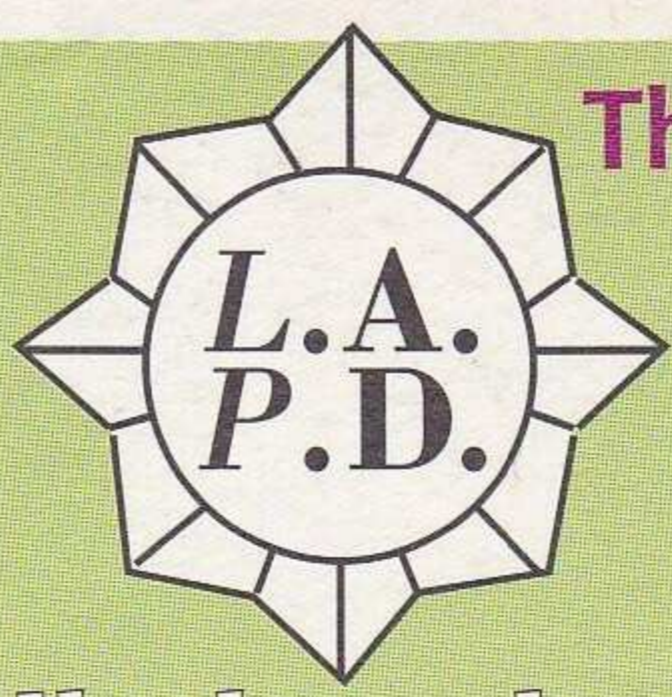
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L.A.P.D.



The faces behind L.A.P.D...

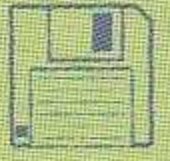


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ALL DISKS BELOW ARE ONLY £1.50 UNLESS OTHERWISE STATED



games

• • ARCADE • • • • •

- G.449 MICHIGAN MIKE & THE LOST CITY OF ZOROG: Super new platformer in the rain forest *NEW*
- G.454 TRAPPED II: Ten levels of fast 'Light Cycle' action (1Mb, STE, S/W) (Order G455 for STFM) *NEW*
- G.448 H.E.R.O.: Human Extraction & Rescue Operation: One time commercial platform game *NEW*
- G.450 THE ORIGINAL: Colourful 'Boulderdash' type diamond mining puzzle game *NEW*
- G.457 DEADLAND: Search and rescue mission 'Cannon Fodder' style *NEW*
- G.456 SUPER CHICKEN: Collect eggs with a giant chicken using escalators and ladders. *NEW*
- G.460 SKYDUEL: A single or multi-player air combat game; ballistic missiles, dogfights and ground attacks. *NEW*
- G.433 GENOCIDE: (1Mb, STE, S/W): Fast space 3D shoot 'em up.
- G.417 STAR VOYAGE: Intergalactic action - requires 2 joysticks (Ex Star Trek - TNG). (2 disks/£3.00, 1Mb)
- G.413 COMBAT: Fast action military shoot 'em up in style of Operation Wolf
- G.410 PACMAN ON E: One or two player classic 'PacMan' with sampled music (1Mb, STE)
- G.405 ULTIMATE ARENA: Beat 'em up in the style of 'Mortal Kombat' (STE, 1Mb, S/W).
- G.403 SQUARE OFF: The ultimate tumbling block 'Tetris' game (STE, 1Mb) (2 disks/£3.00).
- G.398 ASTEROIDIA (STE): Classic asteroid blasting action - order G399 for STFM version (1Mb, S/W).
- G.400 FRANTICK (STE): Superb fast action kinetic combat simulator - order G401 for STFM (1Mb) (2 disks/£3.00).
- G.395 DYNABUSTER: Bomb laying and dodging arcade game (STE, 1Mb).
- 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.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 action blasting flying Garfields. (STE).
- 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.110 LLAMATRON: 100 levels of fast arcade action with wicked sound FX.
- G.201 BLATI: 'Tetris' style three in a row, falling blocks with many added features.

• • FANTASY/ROLE-PLAY • • • • •

- G.425 ANORAKS OF DOOM: First person view fantasy role-playing game. (2 disks/£3.00)
- G.124 SPECTRAL SORCERY: Excellent game of battling wizards.
- G.172 HERO II: Detailed graphic role-play adventure (1Mb)
- G.416 DANGIMERE: Detailed fantasy role-playing game. (1Mb, 2 disks/£3.00)
- G.412 NISHIRAN: Classy sci-fi, first-person view role-playing game. (1Mb) (2 disks/£3.00).
- G.198 OMEGA: A large and complex wilderness and dungeon adventure with hours and hours of play (1Mb)
- G.431 REALMS OF REALITY: First-person view dungeon exploration and monster-bash.
- G.351 TOWERS: First-person view role-playing fantasy adventure game *NOW COMPLETE* (1Mb) (2 disks/£3.00).
- G.452 LAP OF THE GODS: Complex German language fantasy role play game (1Mb, mono, 2 disks/£3.00)
- G.308 WALLS OF ILLUSION: The ultimate 'Dungeonmaster' clone with English instructions (1Mb).
- G.426 WYRD WAYS: Magical combat in a maze of sliding walls (1Mb, S/W).
- G.5 MORIA: A complex fantasy D&D based role-play game. (1Mb).
- G.370 MINDMELT: Fantasy adventure with an overhead view.
- G.288 DARKLYTE: 'Space Crusade' type droids wargame.
- G.237 CHAOS: Madcap game of battling wizards by Martin Brownlow (1Mb or 0.5Mb)
- G.262 ALIENS!: Space Marines v Aliens strategy combat game.
- G.115 MYSTIC WELL: Complete 'Dungeonmaster' style adventure game.

• • PUZZLES • • • • •

- G.461 SHAPE UP (1Mb, STE): A puzzle game of placing coloured squares on a grid. *NEW*
- G.436 SHRINKING WALL SOLITAIRE (1Mb): Challenging and addictive 'Match it' type game. *NEW*
- G.443 WORD QUEST: Construct and play word squares. Over 50 puzzles on disk *NEW*
- G.446 THE FRENCH COLLECTION: Three puzzle games; MANCIOLA, QUINZAINÉ & MOLECULE.
- G.387 SPACESWEEPER: A challenging 'Minesweeper' game in three dimensions!
- G.311 JIGSAW: A computerised jigsaw puzzle (1Mb).
- G.269 QUIZMASTER: Multi-choice answer general knowledge quiz (STE).

• • TEXT ADVENTURES • • • • •

- G.158 LOTTERY: Adventure in the red light district of San Francisco
- G.462 CYBERCOP: Future cop murder investigation. *NEW*
- G.411 ROBOT REVOLT: A sci-fi text adventure.
- G.162 AROUND THE WORLD IN EIGHTY DAYS: Try to emulate Phineas Fogg.
- G.184 HEATHER'S EASTER EGG HUNT: Adventure for 7 to 12 year olds
- G.394 THE SECRET PARK: A text adventure with graphics for children 8 years upwards.
- G.362 MARCH OF THE MODS: Strive to become 'Ace Face' (contains mild swearing, violence and drug abuse)
- G.225 CAILYNVORN: D&D type fantasy adventure set on a far earth-like planet.
- G.140 A NIGHT ON THE TOWN: An adventure with the opportunity to meet the girl of your dreams and ...well, the rest is up to you.
- G.91 QUEST FOR THE HOLY GRAIL: Pythonesque madcap humour.
- G.202 UNNKULIAN UNDERWORLD: Highly rated large scale text fantasy adventure.

• • GRAPHIC ADVENTURES • • • • •

- G.383 MOBSTERS' CITY: Track down twelve gangsters.
- G.246 HYSULA: 3D virtual reality fantasy adventure.
- G.217 THE MAZE: 3D adventure game loosely based on 'The Crystal Maze'.
- G.321 INVESTIGATION: Graphic adventure in the style of Sierra On-Line (2 disks/£3.00)
- G.356 ENDURANCE (1Mb): Space station adventure in 3D virtual reality
- G.200 ANARCHY ACADEMY: 3D graphic adventure to blow up the school!
- G.222 GRANDAD AND THE QUEST...: 3D graphics adventure by Ian Scott. Shareware (1Mb).
- G.303 GRANDAD AND THE SEARCH FOR THE SANDWICHES: Graphic adventure (1Mb, 2 disks/£3.00).

• • STRATEGY & OTHERS • • • • •

- G.437 BINGO! (1Mb): Simulation of the seaside game with voice.
- G.438 RACE (1Mb): Try to succeed in the 'Rat Race' of life (Board game adaptation)
- G.432 MIDI-WIZ: Fantasy war game with similarities to 'Civilisation'. (1Mb, S/W).
- G.131 STAR TREK - THE GAME: Defeat the Klingon threat to the galaxy (1Mb).
- G.427 AIR TRAFFIC CONTROLLER: Control comings and goings at a busy international airport.
- G.386 STAR TREK - KLINGON WARS: A Starship Enterprise battle simulation (1Mb).
- G.431 REALMS OF REALITY: 'Dungeonmaster' type exploration and adventure (1Mb).
- G.421 WAR: A wargame construction kit (1Mb).
- G.290 SOFTWARE PROJECTS: Run a software company business sim.
- G.390 INTERNATIONAL MANAGER: European Nations/World Cup management game.
- G.391 ANCIENT GAME OF GO: Two computer versions of the Oriental game (Gnugo, Amigo).
- G.344 CHESS-MATE: A chess/draughts game analysis tool.
- G.332 CAESAR: Strategy game set around the Mediterranean in 200BC (S/W).
- G.330 GNU CHESS: French chess playing program for all levels.
- 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.324 IMPERIAL CONQUEST: Complex ancient Mediterranean game of conquest (S/W).
- G.325 SOCCER MANAGEMENT: A complex simulation of soccer management (S/W).
- G.173 PENGUINS: Move your penguins around the screen 'Lemming' fashion.
- G.10 VEGAS: Roulette, poker, blackjack and slots... without the Nevada sand!

budgie uk

- BU.119 FOOTBALL TACTICIAN 1: The original £19.95 Premier League version of the soccer management game!
- BU.111 INTERNATIONAL CRICKET II: Animated 3D game (1Mb).
- BU.90 MATCH IT: Possibly the most addictive game ever devised.
- BU.89 HORSE RACING SIM: Quality sim from the sale ring to the track.
- BU.86 QUATRIS: Superb 'Tetris' style puzzle game with falling cubes.
- BU.71 DARK WARS: Role-playing adventure with a 3D view.
- BU.70 PACMAN ST: The definitive version by Robert Leong.
- BU.50 SPACE INVADERS: Classic arcade action by Robert Leong.
- BU.30 QUEST FOR GALAXIA: The "Galaxians" return to your ST.
- BU.10 MONEYSPINNER: Slot machine action with nudges, holds, gambles and more.
- BU.8 SPECULATOR: True to life features market simulation.
- BU.5 PRO DARTS: Mouse controlled 501 match play.
- BU.4 OTHELLO: An immaculate implementation of the board game.
- PRO.1 ELECTRONIC BANK STATEMENT: Home money managing program.

ST FORMAT TOP 10 GAMES - ONLY £12.00

A special bargain bundle of the top 10 PD and shareware games as selected by ST Format magazine in issue 75. They are 4-7-11, Colortris, Drachen, Grandad and the Quest for the Holy Vest, Grandad and the Search for the Sandwiches, Llamatron, Ozone, Starball, Stello, Super Breakout and Towers.

dave munsie games

Munsie Games, some of the most playable and fun-filled games on the Atari, can now be registered via L.A.P.D.! Send us the code number from your game and we'll send you the pass-code giving access to extra lives, extra levels, etc.

Cost is just £6.00 per title.

Games that can be registered so far are Asteroidia, Frantic and Square Off. All registrations receive a FREE copy of Dave's SEA WOLF game! Pre-registered complete versions of these incredible games may also be purchased as follows:

- L119 ASTEROIDIA: The classic game 'Asteroids' with 3D rendered asteroids. (STE, £7.00).
- L120 ASTEROIDIA: The STFM version of the above (STFM, £7.00).
- L121 FRANTICK: Fast action kinetic combat simulator Frantick (STE, £7.50).
- L122 FRANTICK: The STFM version of the above (STFM, £7.50).
- L123 SQUARE OFF: Falling block puzzle game in the style of the classic 'Tetris'. (£7.50).

FREE MUNSIE DISK'O'ZINE

For a free copy of Dave Munsie's magazine disk with information and screen shots about his games just send a blank disk and an s.s.a.e. to the L.A.P.D. at the address below.

L.A.P.D. Licenceware Games

Possibly the best licenceware range on the ST

Licenceware means that for every copy you buy the author receives a royalty payment from L.A.P.D. This ensures that the authors receive suitable recompense for their hard work thus encouraging them to produce even more excellent programs for the Atari range of computers. It saves you all the fuss and hassle of shareware payments. Licenceware programs are complete and ready to run, there are no hidden fees!

strategy games

- L.138 EMPIRE STAR (£3.00): Science fiction wargame, similar to 'Empire' for 1 to 3 players. *NEW*
- L.137 INFINITE POWER (£3.00): Maintain an ecological and financial balance running a power station. *NEW*
- L.136 TRADER (£3.00): Sea trading game set in 14th century northern Europe *NEW*
- L.135 ANNEX (£4.95): 3D role-play inspired by 'Dungeonmaster' and 'Doom' *NEW*
- L.128 BLUDGEON V.2 (1Mb, £3.00): Computer moderated fantasy combat system for one or more players. Includes two free adventure scenarios.
- L.129 BLUDGEON ADVENTURES #1 (£3.00): Six additional solo adventures for the above BLUDGEON game.
- L.124 THE SANDS OF MARS (£3.00): Govern a Martian mining colony.
- L.132 SEA WAR (1Mb, £2.50): Hi-tech version of 'Battleships'. Design and fight your own fleet.
- L.105 CONQUEST 2 (1Mb, £3.00): Rule over a medieval kingdom's economy and armies.
- L.104 WAR OVER THE REICH (1Mb, £3.00): Plan and execute a campaign of WWII raids against twelve German cities.
- L.98 WORLD AT WAR (1Mb, £3.00): A game of economic and military strategy on a grand scale for one to seven players.
- L.22 GRAND PRIX MANAGER (£2.50): Simulation game of running a Formula One Grand Prix team.
- L.79 DARKLYTE II (1Mb, £3.00): A sci-fi space/strategy game in which you must destroy the Darklyte forces. Reminiscent of the 'Space Crusade' game.
- L.59 ARTHUR OF THE BRITONS (1Mb, £3.00): A strategy game with arcade sequences.

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e-mail: Clive@lapd.demon.co.uk or Leigh@lapd2.demon.co.uk

24 hour despatch on all orders No waiting around for disks to arrive!!

arcade games

- L.130 DESERT HAWK (1Mb, £3.00): Control a Black Hawk helicopter through different missions.
- L.87 STORM (1Mb, STE, £3.00): Arcade action clearing aliens from a stricken space-freighter.
- L.91 STORM (1Mb, STFM, £3.00): As L87 above but for the STFM.
- L.86 FLUFFIES (1Mb, £3.00): A platform game across many levels as you guide a blue fluffy creature in an attempt to rescue his girlfriend.
- L.117 FISH TANK (£3.00): A game for younger players who must find food for their fish without getting eaten.

adventure & role-playing games

- L.131 WANDERING SCIENCE (£2.50): Solve the puzzles on an alien vessel. A graphic adventure.
- L.125 PATHS OF GLORY (£3.00): A sword and sorcery role-playing game.
- L.115 DEMON II (1Mb, £3.00): A fantasy adventure game with an overhead view and detailed point and click interface.
- L.114 TIME MACHINE (£3.00): A classy text based adventure with over 100 locations and over 40 graphic screens.
- L.112 CRAGHAVEN (£2.50): High adventure in a fantasy land.
- L.97 STONE COLD SOBER (£4.00): A traditional adventure game but with a point and click interface.
- L.69 BIO-HAZARD (1Mb, £3.00): A first person perspective game to clear a space freighter of alien creatures.
- L.21 DEAD OR ALIVE (£3.00): A large, complex and humorous text adventure game.
- L.31 THE CURSE OF AZRIEL (2 disks, £4.00): A graphic fantasy role-playing/trading game.
- L.41 MURDER ON THE ORION EXPRESS (£3.00): A murder mystery game with an almost infinite variety of solutions.
- L.50 DEMON (£3.00): Trapped in a stone cell, your first task is to escape before the resident demon gets back. 3D view.

puzzles

- L.133 LAZER (£2.50): Use mirrors to direct a lazer around mazes.
- L.102 DCS COMPILATION #4 (£3.00): On this disk are: BRAIN DAMAGE, test your brain to the limit. SHAPES, make shapes from 16 different pieces. LINK, form a chain across the screen. QUIZICAL, multi-choice question and answer game.
- L.101 DCS COMPILATION #3 (£3.00): On this disk are: OUTRAGEOUS FORTUNE, a collection of logic and maths challenges. MATCH MAKER 2, match symbols on hidden cards. FRAME OF MIND, a gambling game. CRYPTOGRAM, based loosely on the TV program 'Countdown'.
- L.100 DCS COMPILATION #2 (£3.00): On this disk are: QUEST FOR KNOWLEDGE (1Mb), seek out 12 hidden icons from mazes. REBOUND, a bat and ball game. GALACTIC FRUITBOWL, a combination of the fruit machine and the trivia quiz. GREY MATTER, a word game.
- L.66 HEARTBREAK (£3.00): An infuriating and highly addictive puzzle game played on a 7 x 7 grid.

art & graphics

- A.99 MINIPICS II: All resolution picture converter and cataloguer (1Mb).
- L.77 AUTO-STEREOGRAM: Create your own 3D 'Magic Eye' pictures (1Mb) (£3.00).
- L.71 ARTIST FREEHAND: Complete art package with multiple screens, animation, etc (£3.00)
- A.107 ASCII ART: Hundreds of images rendered in ASCII characters.
- A.95 VISUAL ILLUSIONS: A collection of 24 'Magic Eye' 3D pictures.
- A.98 STEREOGRAM ANIMATIONS: Now see 'Magic Eye' pictures move!
- A.36 KOZMIC 4: Complete version of the stunning psychedelic pattern creator.
- A.1 ANI ST: Commercial quality animation program (once cost £60.00 to buy!).
- A.84 GEMVIEW: Load, view, convert just about any picture format (1Mb).
- A.45 CRACK ART: Demo version of the excellent German art program.
- A.75 POLYFILM by Martin Brownlow. Make films from multiple 3D polygon objects.
- A.44 FANTASY SLIDESHOW: Spectrum 512 pictures on fantasy theme (over 16's only).
- A.35 IMG UTILITIES: Convert Degas, Neo, Spectrum Mac and Tny files to IMG.

clip art

(Where PCX and IMG formats are offered you must state which you require)

- A.103 OFFICE CLIP ART: 33 IMG or PCX images of office related items.
- A.107 HANDS CLIP ART: Over 70 IMG images of hands; pointing, waving, writing etc
- A.100 ANIMALS CLIP ART (5 disks/£7.50): Over 170 IMG or PCX images of animals.
- A.101 ASTROLOGY CLIP ART (3 disks/£4.50): 36 IMG or PCX images of zodiac signs.
- A.102 SPACE CLIP ART: 38 images of the final frontier in PCX or IMG format.
- A.106 CHRISTMAS CLIP ART (3 disks/£4.50): Over 150 images in PCX or IMG.
- A.70 COMIC BOOK HEROES: 22 Superheroes in NEO format.
- L.26, L.27, L.28 TYPE WRITE CLIP ART: 4 disk sets of quality clip art in IMG format. (£10.00 per set).

authors: As a leading P.D. library for the Atari ST and Falcon computers we are always seeking to maintain a catalogue of the very best and newest titles around. If you wish to get maximum distribution for your work either as PD, Shareware or Licenceware then please send us a copy to the address above. We respond to ALL submissions and enquiries.

utilities

- U.86 BLITZSCHNELL (S/W): A hard drive defragmenter and optimizer from Germany.
- U.80 ZORG: A 'Disk Doctor' type organiser.
- U.77 THING: Alternative desktop (1Mb).
- L.111 SUPER HACKER: Replace a picture in almost any game or demo with your own! (£3.00).
- 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.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.

ST FORMAT PRODUCTIVITY PACK

(TOP 40 UTILITIES) FOR £25.00

A special bargain pack of the top 40 PD and shareware programs (excluding games) as selected by ST Format magazine in issue 75. The programs are: Atomik 3.6, Autosort, Cardfile, Chameleon, Compact Office Manager, Crack Art, DB Master, Easy Text, Elf Backup, ESS Code, Everest, Fast Copy 3, GEM Spool, GEM View, Hypergem, Idealist, Kivi Qwk, LHArc, Marcel, Magic Story Book, Mouse-ka-Mania, Movie Master, Octalyser, Opus, POV Ray Trace, ProCalc, Revenge Document Displayer, Sagrotan, Second ST Manual, Selectric, Soundlab, SpiritEd, ST Diary, Superboot, Sweet 16, Teddy Term, Teradesk, Tom Shell, Turbo 407 and X Control.

miscellaneous

- M.189 NATIONAL LOTTERY SIMULATOR: The fun way to pick your numbers. (1Mb, 2 disks/£3.00).
- M.177 LOTTERY COMPANION: Valued statistical assistance with your lottery entries.
- M.195 ELEMENTS PLUS: Information/help disk for chemistry students *NEW*
- L.134 FILM DIRECTOR ELITE: Multi-media language system - from slideshows to packages (2 disks/£4.95) *NEW*
- M.194 ROLL IT: Selects lottery numbers randomly and calculates chances of winning a prize *NEW*
- M.193 OUT OF THIS WORLD: A 'fun' typing tutor - type the tumbling letters before they crash.
- M.183 HOUSE EXPENSE MANAGER: Daily household expense management program.
- L.103 LEXICON: The ideal program for word game fanatics. Solve crosswords, anagrams etc (£3.00).
- L.111 SUPER-HACKER: Put your own picture into demos, games etc. (£3.00)
- M.146 AWARD MAKER: Design and print awards certificates.
- M.155 ROUTE FINDER: Route finding program for England, Wales and Scotland.
- M.161 THE GARDENER: A special database for gardening enthusiasts.
- M.175 FISHERMAN'S 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 names 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.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.26 GENEALOGY: Two 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.190 YALE STAR CATALOGUE & STARCHART: Programs for the serious astronomer.
- M.111 NORTHERN & EQUATORIAL STAR ATLAS: Superb serious astronomy program S/W.
- M.1 PLANETARIUM: Excellent, easy to use, astronomy program.
- M.8 ASTRONOMY & SKYWATCH: Programs for the technically minded sky watcher.
- M.173 THE BIBLE: Complete King James, Old and New Testaments (3 disks/£4.50).
- M.176 FUCHSIAS DATABASE: for the keen specialist gardener (or breeder of anything).
- L.89 GOLF: Database for the golfing sports-person. (£3.00)

programming

- U.85 EXTRA v3.21 (S/W): A powerful extension for the STOS language, 60 + extra commands. *NEW*
- F.53 STOSTERONE: A magazine disk devoted to programming STOS on the STE (issues 1 to 3 available).
- P.53 IMAGINARY WORLD: Easy to use language to write your own role-play adventures.
- M.107 RAMWORLD 2: Three dimensional object creator and viewer.
- U.76 LIBRARY CREATOR: An essential tool for GFA programmers to construct a single file.
- P.55 STOS CYBER EXTENSION: An extension to the STOS programming language
- P.44 GFA V.2: Full version of language with tutorial & compiler! (N.B this disk is not PD - L.A.P.D. have permission to distribute it.)
- P.16 GFA EXPERT: Massive text file and help routines for GFA-Basic 3.0
- 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.16 C ADVENTURE TOOL KIT: Write professional quality adventures in C.

how to order: By post: list the numbers and names of the disks you require on a sheet of paper and add your name and address. Payment may be by cheque, postal order or credit card. By telephone: have a list of the disk numbers you require and your credit card to hand. Orders may be left on our answering machines out of hours. By e-mail: as above BUT existing customers only who have ordered before and whose credit card details we already have may order this way. Do not send your credit card details by e-mail.

music

- S.160 GUITAR REFERENCE: Useful program for anyone learning or playing.
- S.4 YAMAHA PSS: Patch editor and facility to print tablature music.
- S.156 FINAL SCORE: A music score printing program (mono only)
- S.144 EKSEQ 1: A 100 track, 240ppqn sequencer with many features.
- S.145 OPTRONIX MUZAK: Rip and play music from other programs.
- S.8 NOISETRACKER: Soundtracker .MOD player with eight starter tunes.
- S.7 ACCOMPANIAST: 16 Voice Henry Cosh sequencer (full instructions on disk).
- S.19 ALCHIMIE JR: Impressive Swiss multi-window, multi-task sequencer (1Mb).
- S.158 SWEET 16 LITE: An easy way into MIDI sequencing.

business

- M.182 ST DIARY: A computer diary for the busy executive.
- W.25 EASY TEXT: Easy desktop publishing program.
- W.21 MARCEL: Super word processor with built in spell checker.
- M.106 ACCOUNTABILITY: Fully featured accounts program. 10 accounts, 2,000 transactions!
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ST THE NEW FUTURE COMES

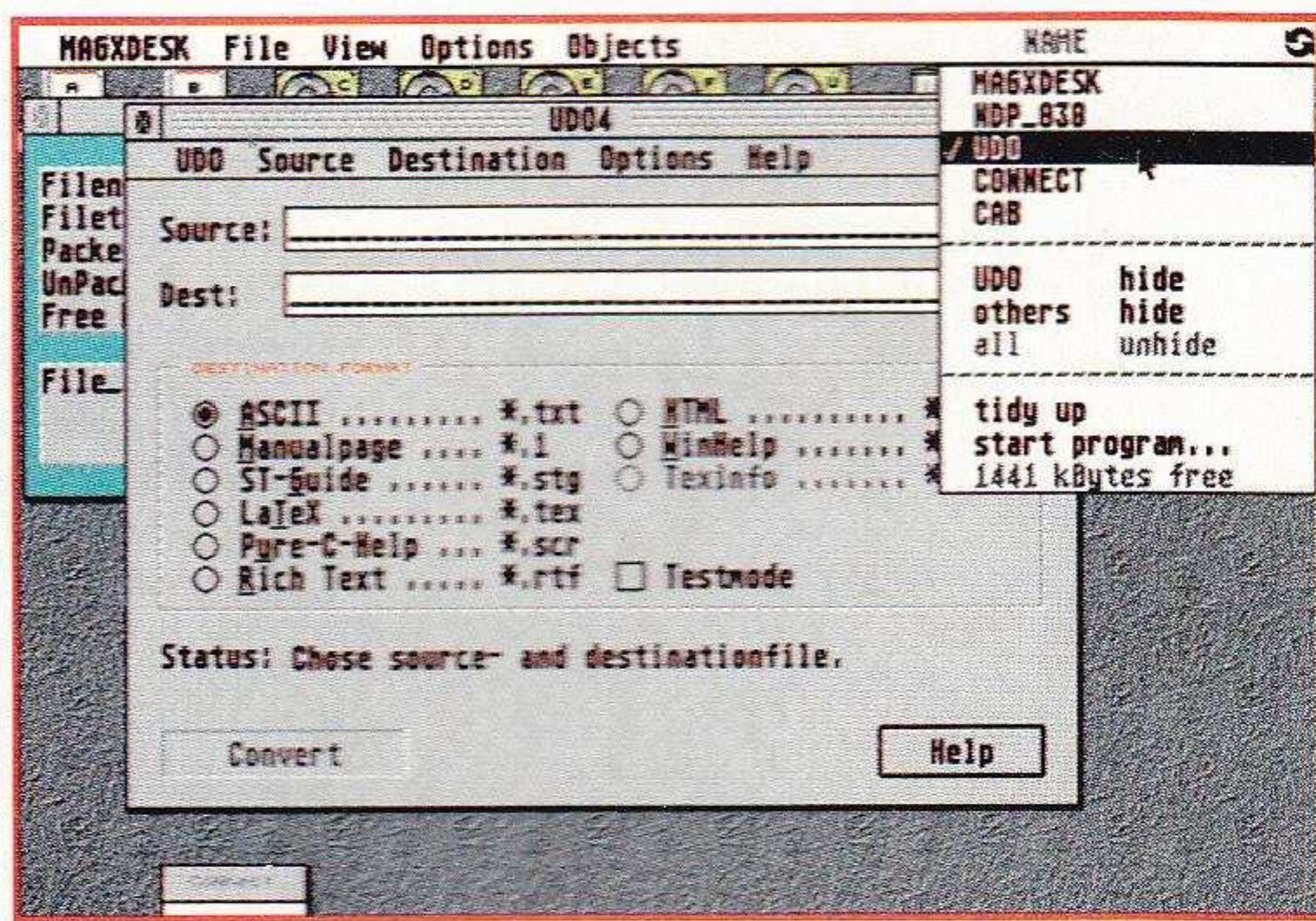
ISSUE 82 ■ MAY 1996

ST FORMAT

REVIEWS

22 MAGIC 4

This eagerly awaited update to the premier multitasking operating system boasts Falcon compatibility. But does it live up to its promise?



MagiC 4 revolutionises the way you use your ST, replacing your tired old operating system with a speedy alternative.

24 EXTENDOS PRO 2.3A

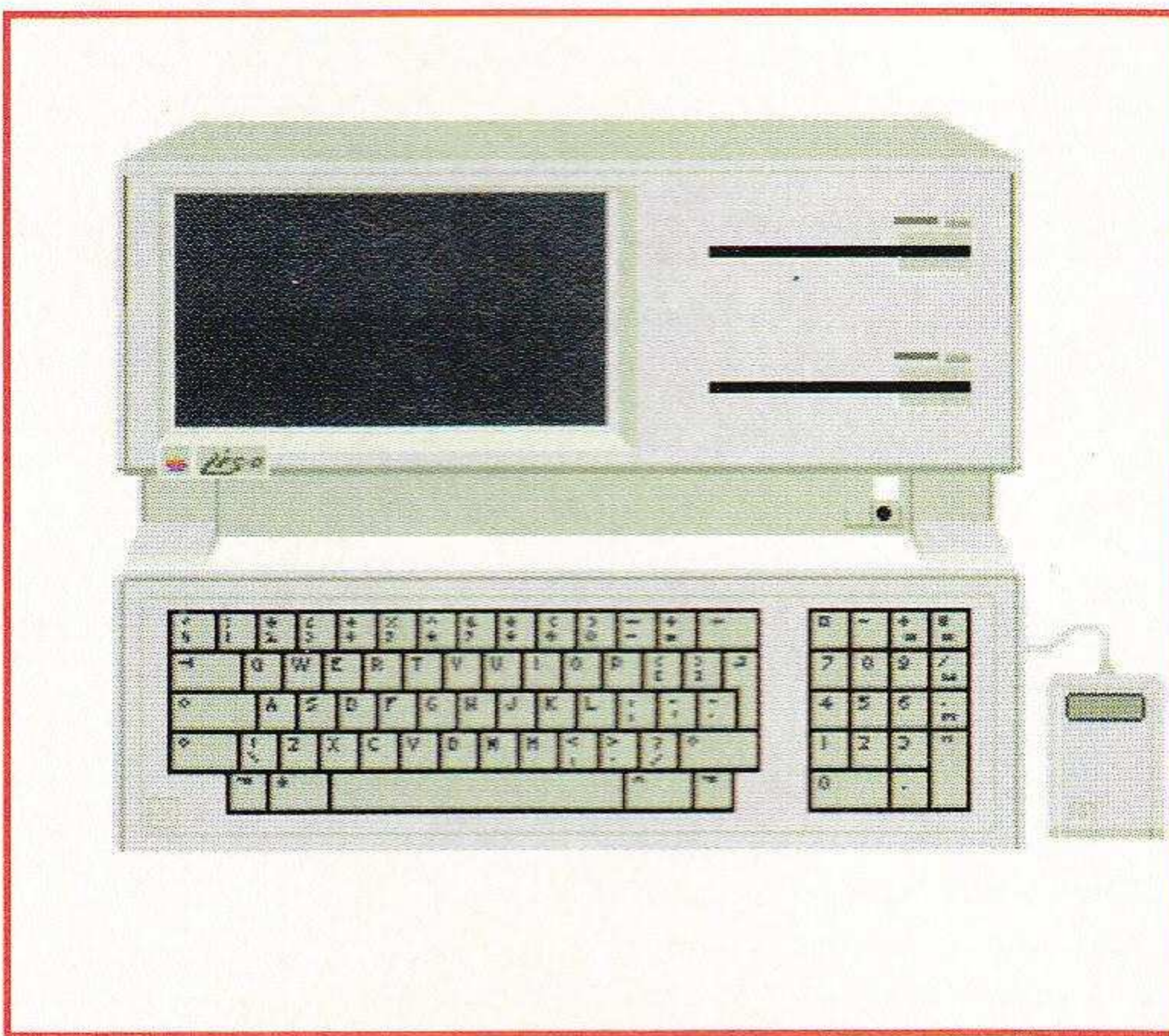
As CD-ROM drivers go, this is the best by far. We examine the latest update.

25 NVDI 4

Not only does NVDI speed up screen redraws, but also it offers superb font handling. Peter Crush looks at this attractive alternative to SpeedoGDOS.

26 HD SENTRY

Keep your hard drive in excellent working order with this efficient optimisation utility.



You'll be flabbergasted by the amount of information packed into Computer History. But what about that interface?



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27 COMPUTER HISTORY

Top Byte's massive database covers just about every computer ever made.

28 ESCAPING THE CASTLE OF MYSTERY

This new ST game claims the Longest Product Title of 1996 award. Size isn't everything, though.

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You've got *Zero-X*, a complete commercial game, a virus killer and lots more on this month's Cover Disk. Step this way for enlightenment.

10 NEWS

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58 NEXT MONTH

What we have in store for you in the next exciting instalment of *ST FORMAT*. Stay tuned, folks!

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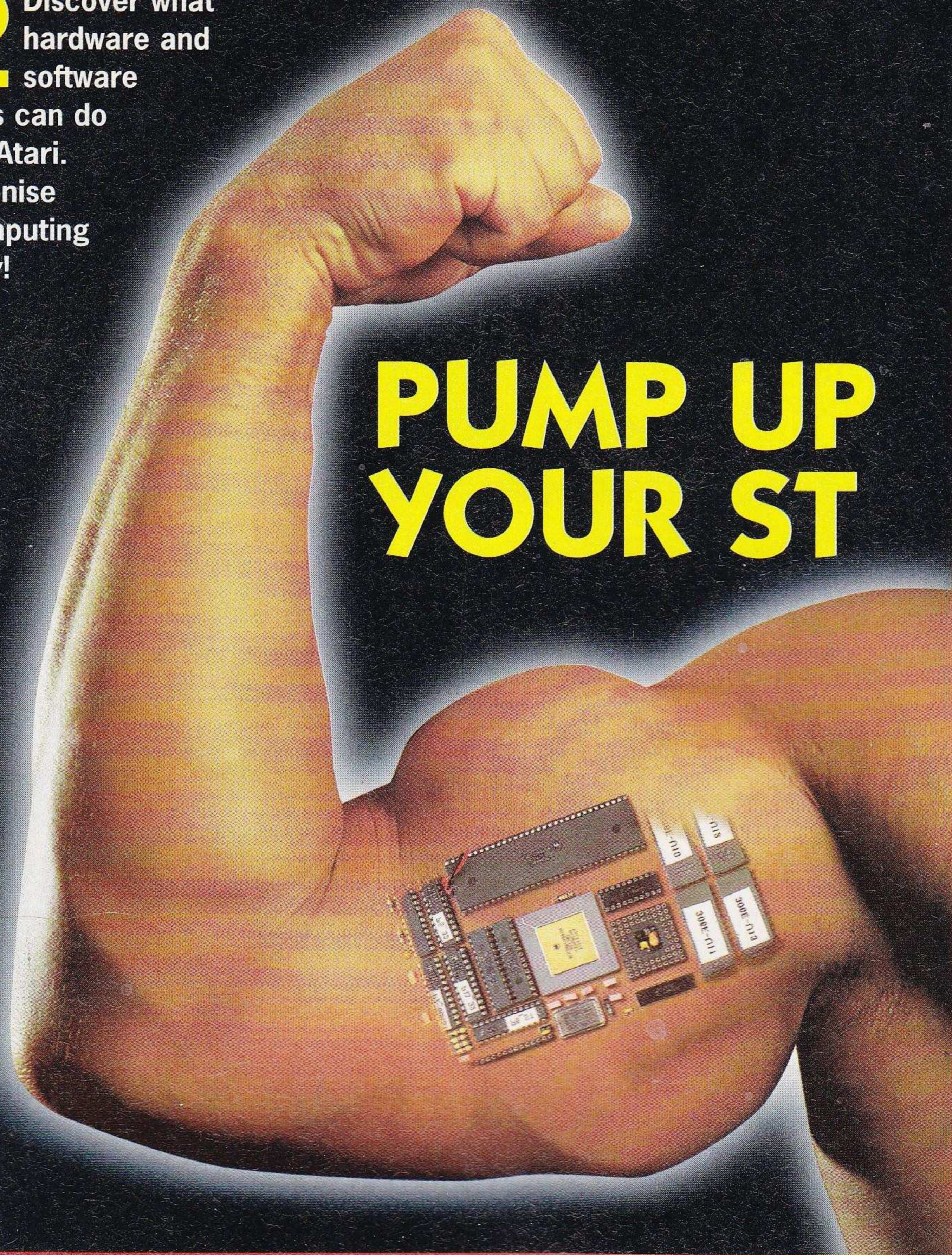
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PUMP UP YOUR ST

COVER DISK 81

THIS MONTH...



ZERO-X: Demo of the latest version of this top sample management program. All Ataris, high resolution (or Sebra) and 1Mb required. Uncompressed size: 346K

SNOBALL IN HELL: Complete ex-commercial game that combines the madness of *Breakout* with the mayhem of *Space Invaders*. Uncompressed size: 83K

ANTIDOTE 3.7: Powerful virus killing utility that protects your disks, drives and files. All Ataris. Uncompressed size: 113K

UDO 4E: Convert text into several formats, including HTML, *ST Guide* and RTF. All Ataris. Uncompressed size: 493K

STOS EXTRA EXTENSION 3.21: Many new commands for *STOS*. Uncompressed size: 137K

JAYFORMAT: Powerful and highly configurable disk formatting utility. Size: 24K

AVR SAMPLES: Five AVR samples to accompany *Zero-X*. Size: 175K

STARTGEM: Autoboot GEM programs on pre-TOS 1.4 machines. Size: 1K

FOLDER FIX: Fix the 40-folder bug. Size: 1K

BACKUP: Prevent catastrophe by backing up your Cover Disk. Size: 12K

FEATURES

12 PUMP UP YOUR ST

Your ST is immensely versatile, but you can really give it a boost with hardware and software upgrades. We show you what's available.

21 WIN £1,000 OF MEMORY UPGRADES

Analogic Computers is giving away no less than 100 1Mb upgrades to lucky *ST FORMAT* readers.

35 REAL SOUND

Dug Armstrong reveals why and how you can use audio samples to spruce up your computing.

45 ABSOLUTE BEGINNERS

Discover what an Auto folder does and how to use one. Peter Crush shows you all.

46 POSITIVE IMAGE

Retouch photographic images using Cover Disk 80's *Positive Image* demo.



Real sound

35 The Atari is the musicians' choice, but there's more to it than MIDI. Dug Armstrong reveals how sampling hardware and software can be used to bring real-life sounds on to your computer.



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This magazine comes from Future Publishing, a company founded just nine years ago but now selling more computer magazines than any other publisher in Britain.

A few words about the world's best-selling ST magazine:

ST FORMAT exists to give you all the information you need to get the most out of your ST, STE, Falcon and Jaguar. Our advice is reliable, easy-to-follow and honest, and unlike other magazines, *ST FORMAT* is completely independent, so we can say what we really think. That, we believe, is why more ST owners choose *ST FORMAT* than any other ST magazine: we're the best-selling magazine, because we're the best.

All our features, tutorials and news stories are written by experts. Our reviews offer crystal clear buying recommendations and information - how much something costs, what it does, how well it does it and whether you should buy it. And we always look at the price - we understand you're spending your own money, not waving a fat corporate cheque book.

Cover Disk

Compiling the Cover Disk can be a difficult job, but someone's got to do it. That someone is Nick Peers, it seems (*Quit snivelling and get on with it - Mary*).



ZERO-X 1.5

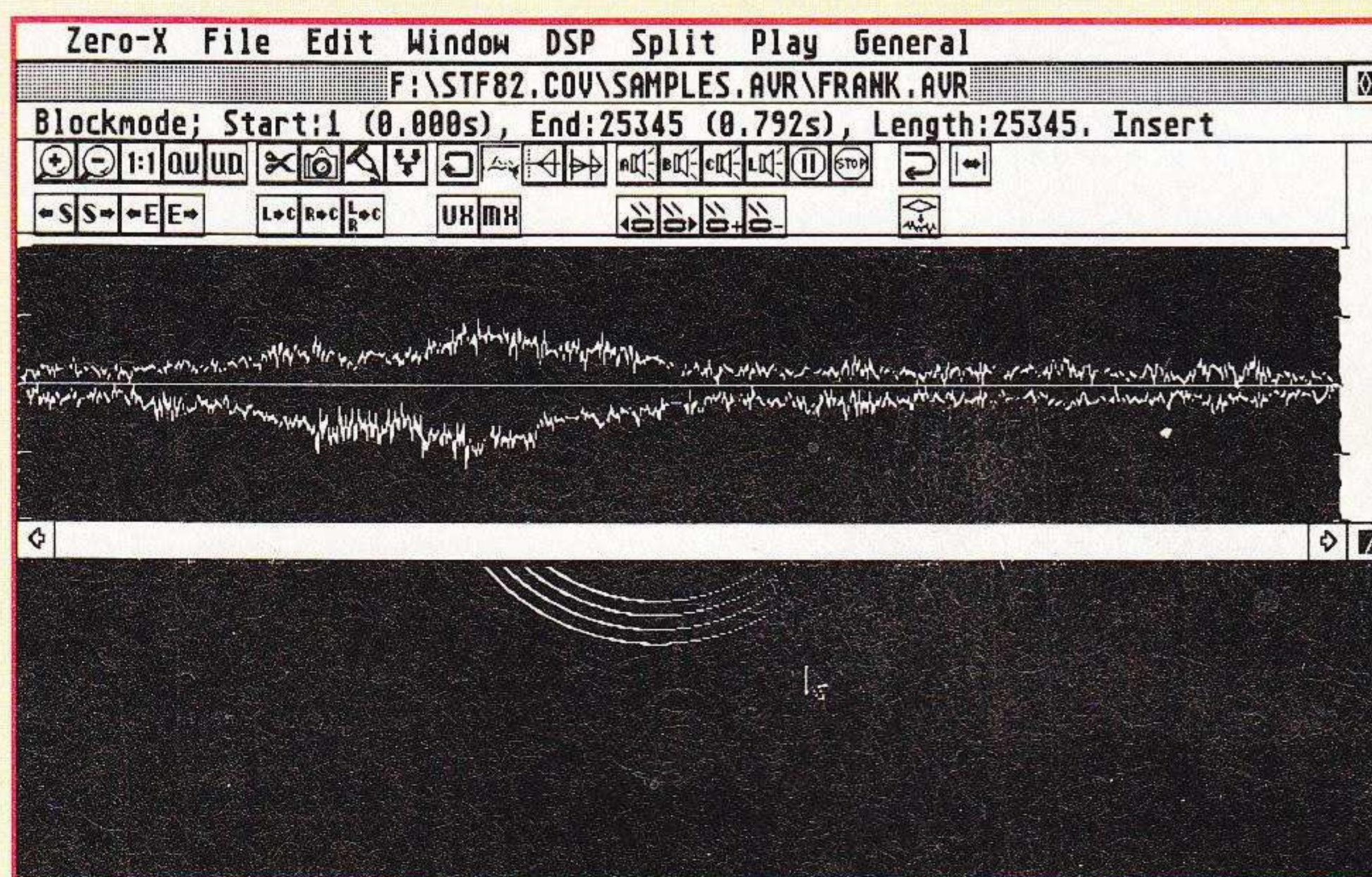
By: Copson DATA
Machines: All Ataris
(STE/Falcon recommended)
Memory required: 1Mb
Resolutions: ST high resolution (or Sebra)
Uncompressed size: 346K

Zero-X is the crème de la

crème of sample editors – our sister magazine *Future Music* awarded it 91%. Here's a working demo of the latest version for use with our sampling feature (page 35).

Looped and cut

Zero-X is a complete sample management suite. As well as importing and manipulating samples, you can find the optimum start and end points before looping a sample. You can convert samples to a variety of formats, including WAV, RAW and AVR (the demo only allows you to convert to the AVR format). It even enables you to transfer samples to and from samplers and sample players via the MIDI or SCSI ports (again, the demo only allows you to import samples



You can create looped samples. You can create looped samples. You can create looped samples. looped samples. amples.

from external sources).

So, why not slow down and reverse that sample of a key being dragged across a bass piano wire? Oh, the BBC Special Effects Department has done it already.

Editing samples

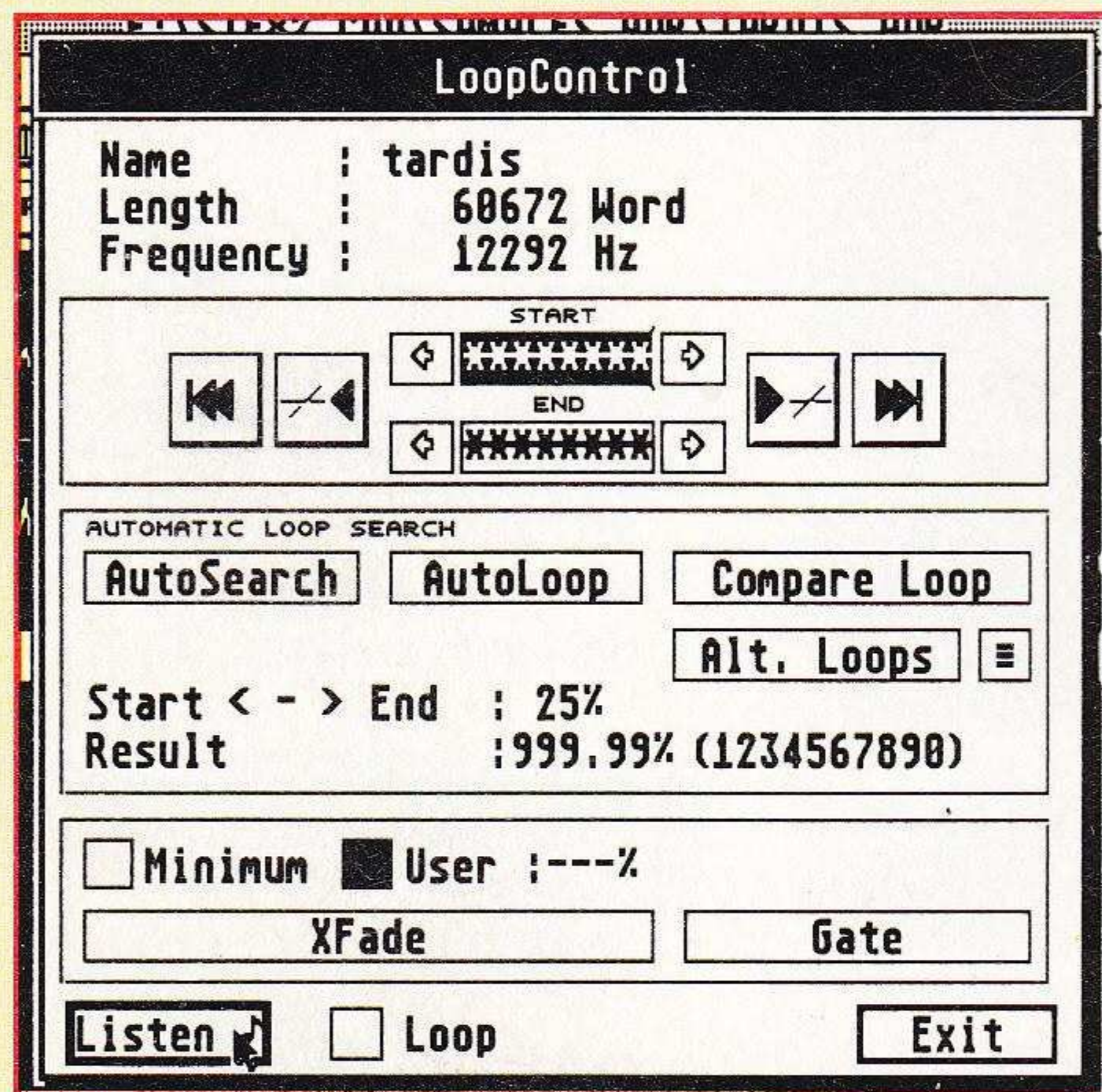
The heart of *Zero-X* is its sample editor. Once your sample has been loaded in, you can mark blocks and apply various effects to completely change its sound. You can even mix and match effects if you so wish – see the sampling feature on page 35 for more details, or look through the ZXDEMO_U.TXT file in the DOCS folder.

SEBRA

If you use a colour monitor or television, you'll need a PD program called *Sebra* to run *Zero-X*. We've included it on numerous Cover Disks, including Cover Disk 74.

All *Zero-X*'s Save functions have been disabled in the demo, so you can't store any of your changes.

The full version of *Zero-X* costs £149.95 and is available from System Solutions. Call 0181 6933355 for more details, or look through the ZXDEMO_U.TXT file in the DOCS folder.



Zero-X, so good that we just had to put it on our disk.

FREE SAMPLES

We've included five samples in the SAMPLES.AVR folder. They are a mixture of 8- and 16-bit mono samples and you can load them into *Zero-X*. Feel free to experiment with them. Note that STFM owners cannot, as yet, play samples with *Zero-X*. Use *Soundlab* from Cover Disk 69 or *AVR Play* from Cover Disk 76 to play these samples.

STOS EXTRA EXTENSION 3.21

By: Martin Cubitt
Machines: All Ataris,
requires STOS
Resolution: Any
Memory required: 512K
(1Mb recommended)
Uncompressed size: 137K

STOS Extra is the best extension to *STOS* you can get. This latest version features 60 new commands for use with *STOS*.

More power

STOS is a flexible programming language, but there are

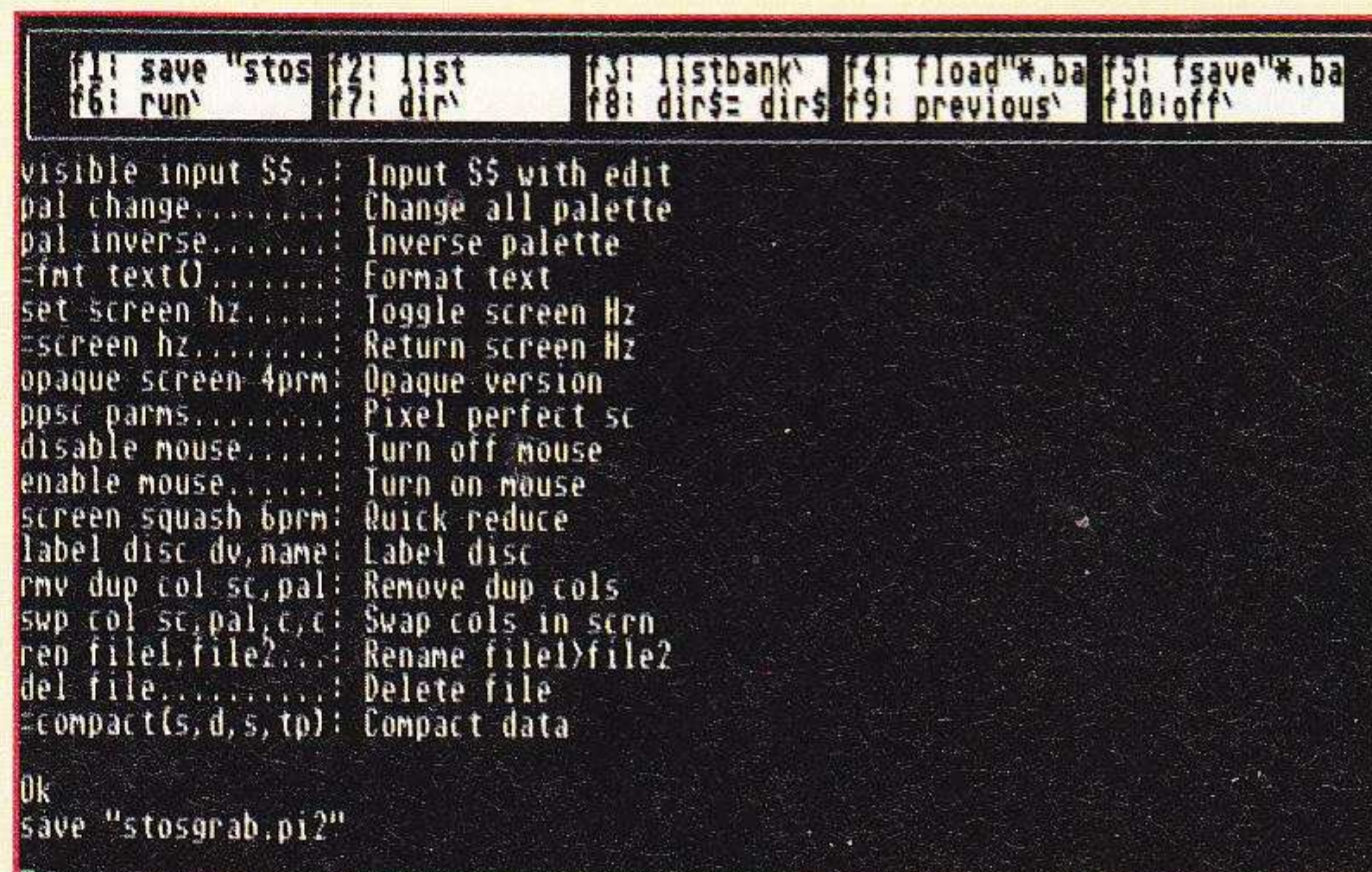
times when you might be forgiven for wanting even more versatility. *STOS Extra Extension* provides 60 new commands to make programming even easier.

The new commands facilitate palette switching, text formatting, unpacking, screen manipulation and even data compression. They are far too numerous to list here, but EXTRA321.DOC contains descriptions of each and every one of the new commands.

If you have *STOS*, you're

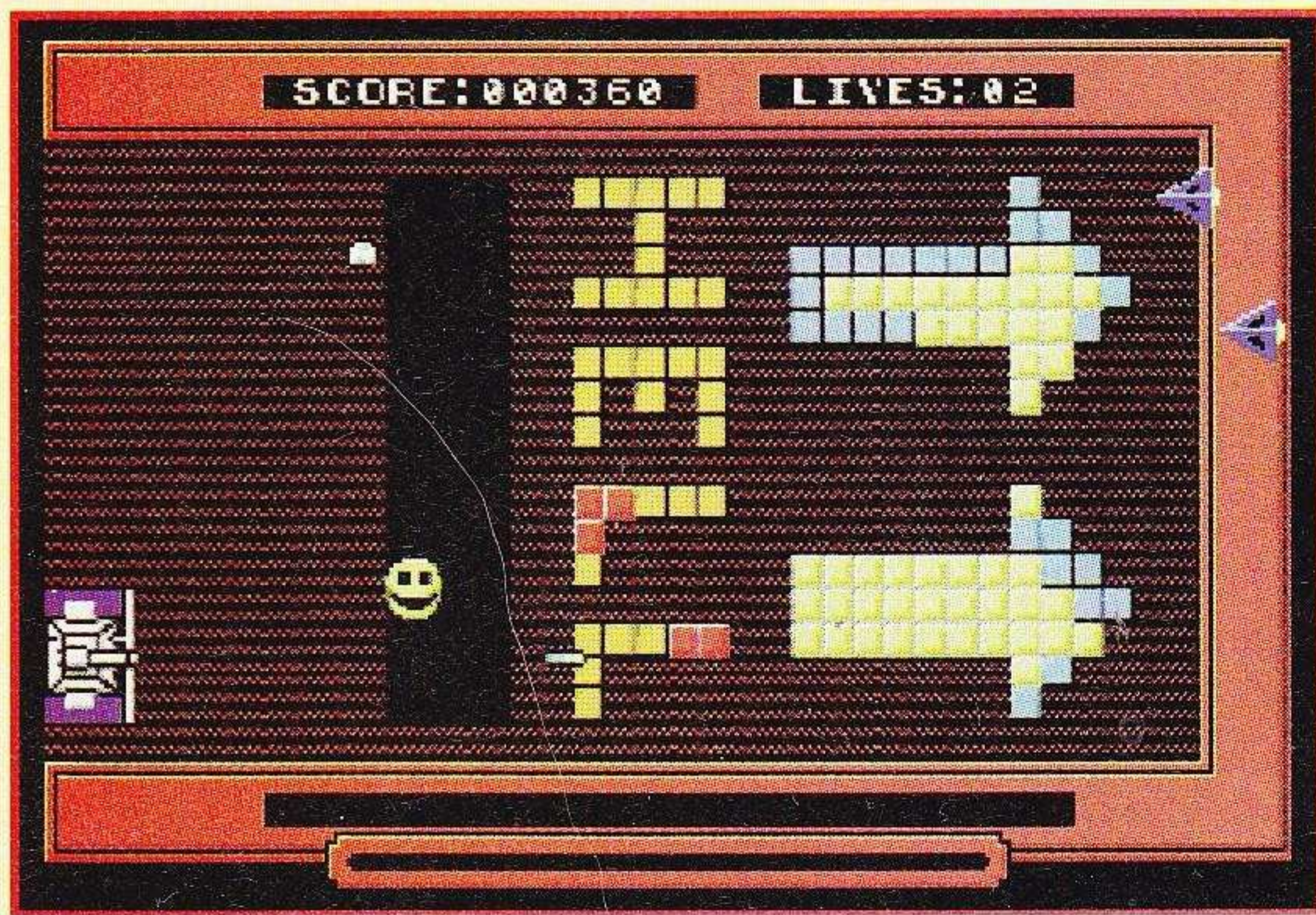
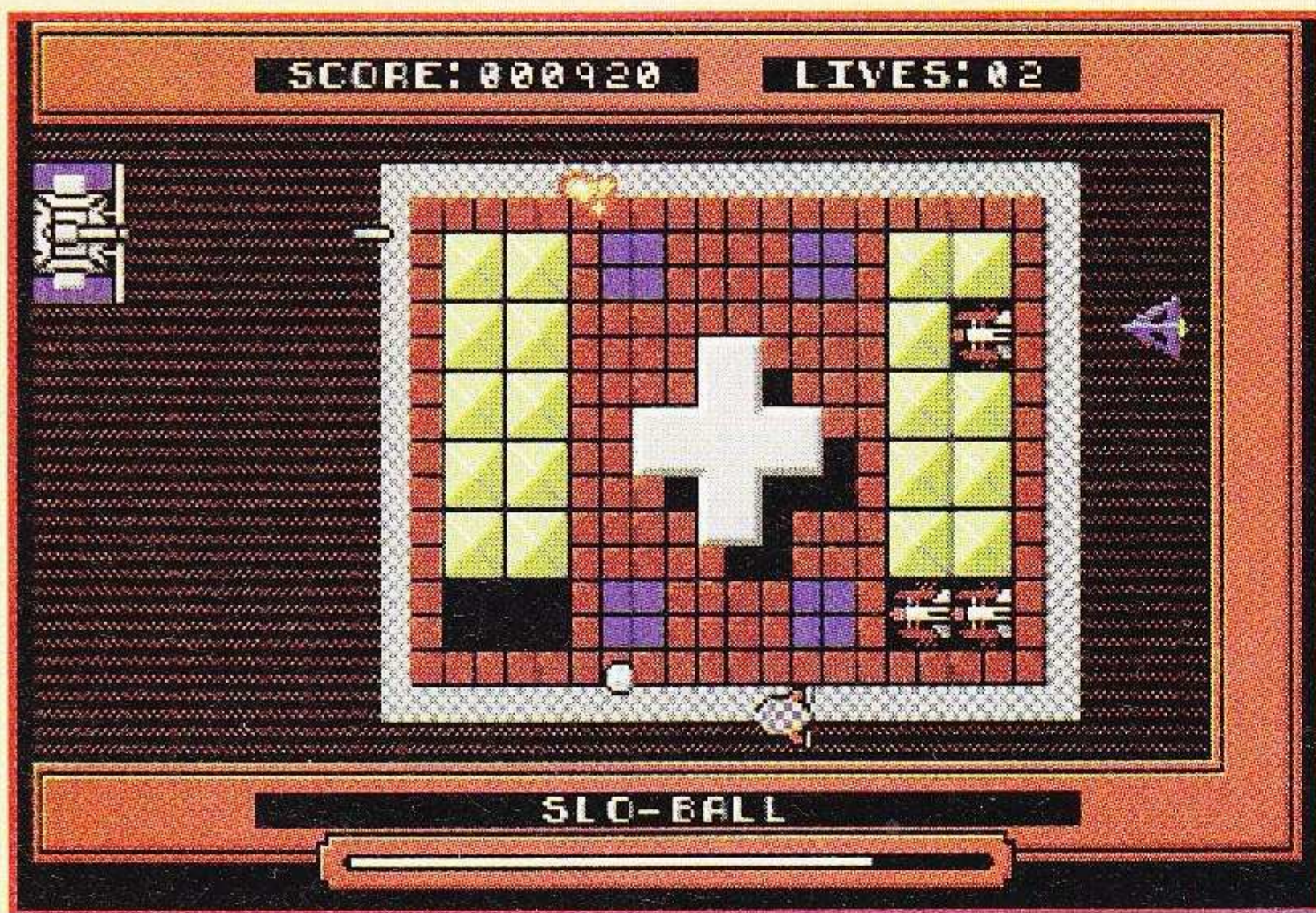
nothing without the *Extra Extension*. It's shareware, with upgrade deals for existing

users, so don't forget to register if you find it useful. See README.1ST for full details.



Just some of the commands provided by the *Extra Extension*, seen here installed with *STOS*.

Neat, petite and effective, *Snoball in Hell* has all the qualities beleaguered Cover Disk editors look for in a game.



Hint: avoid the skulls. They are bad. The smileys are good and will reward you.

SNOBALL IN HELL

By: Jim Gardner

Machines: All Ataris

Memory required: 512K

Resolutions: ST low or med

Uncompressed size: 83K

Snoball in Hell is the first full commercial game to appear on *ST FORMAT's* Cover Disk since issue 18. It's a clever combination of *Breakout* and shoot-'em-ups and runs on all Ataris.

Hot ice

"Hell is the testing ground for Earth's military resources," ran the blurb on the original cover of *Snoball in Hell*. The latest machine is the Snoball Battle

Tractor, and guess who's been volunteered to test it?

Sixteen levels of mayhem and madness await as you attempt to clear all the blocks with your ball, or missile as it's known, while simultaneously repelling wave after wave of alien invaders. The concept is a clever mix of horizontal *Breakout* and *Space Invaders* and it can be quite difficult to stay on top of things.

Once dearchived, *Snoball* is auto-booting. If you have problems running it this way, just delete the Auto folder and double-click on SNOBALL.TOS to proceed. Go get 'em!

CONTROLS

Snoball in Hell can be controlled using a joystick or the keyboard.

Joystick up or down [Q] or [A] Move tractor up and down.

Joystick fire [Space] Fire

Joystick right [P] Pause game

When you are paused, [Esc] quits the game and [Space] continues it.

[Space] also restarts the level when you are destroyed, or takes you on to the next level if you have completed a sector.

BEGINNERS!

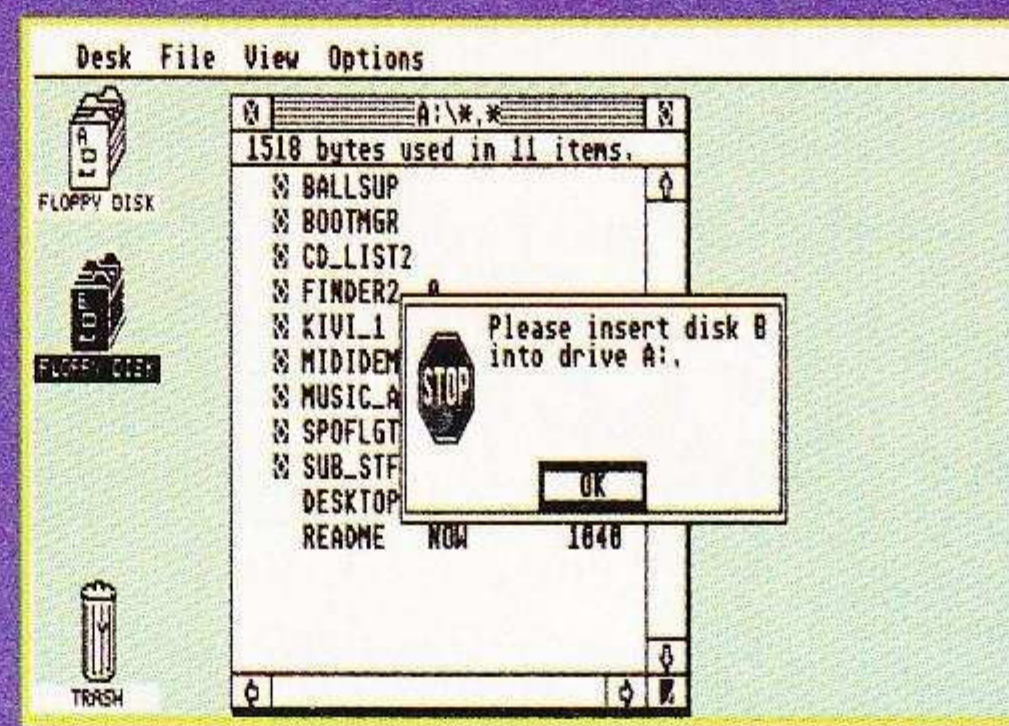
This month's Absolute Beginners feature describes various useful Auto programs, including *StartGEM* and *Folder Fix*. These two are included in the BEGINNERS folder.

StartGEM is designed for owners of old STFM's (TOS 1.0 or 1.02 machines). It enables you to auto-boot GEM

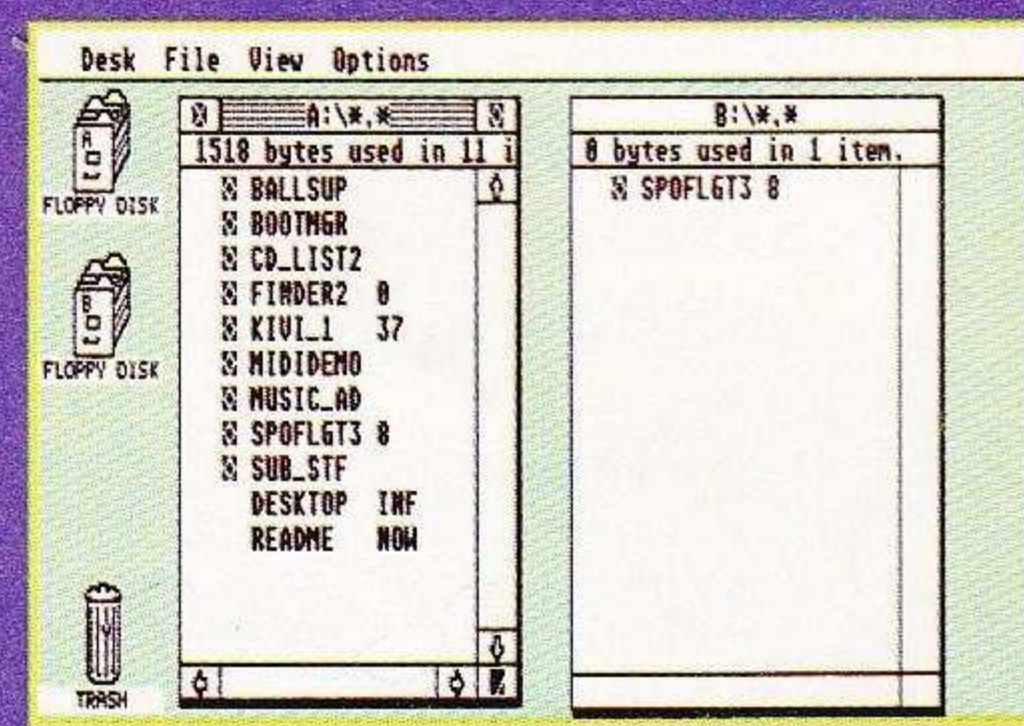
programs, such as *Papyrus* and *Vision*. *Folder Fix* fixes the old bug that creates problems after you've opened more than 40 folders in a single session. Both are self-explanatory; the documentation provides details.

To find out how to make the most of your Auto folder, turn to page 45.

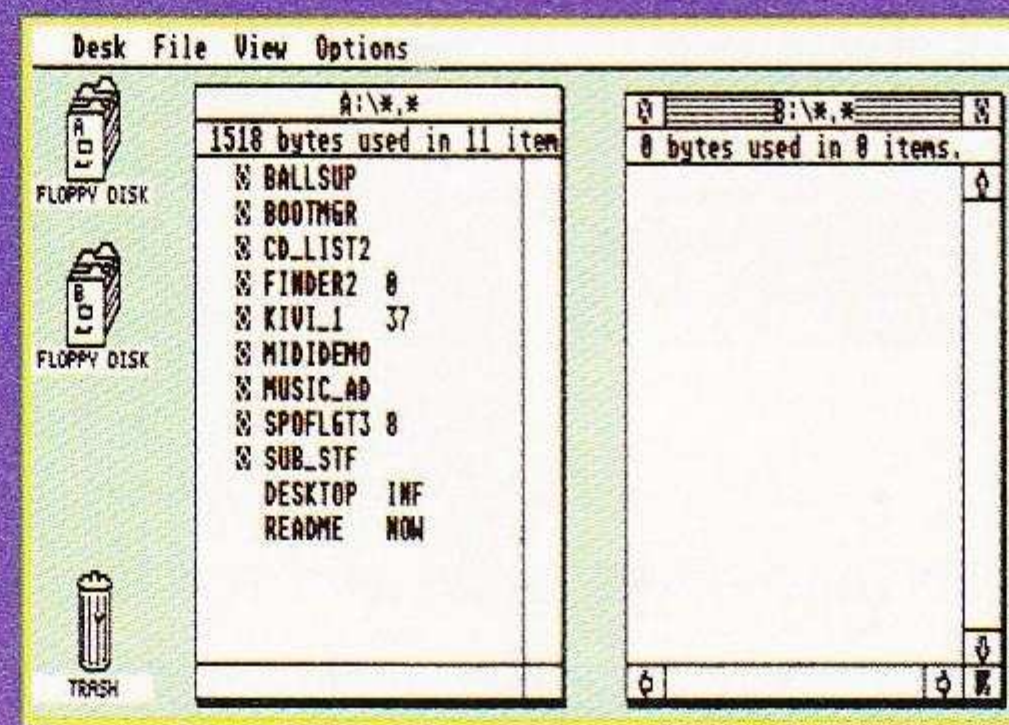
COVER DISK KNOW-HOW



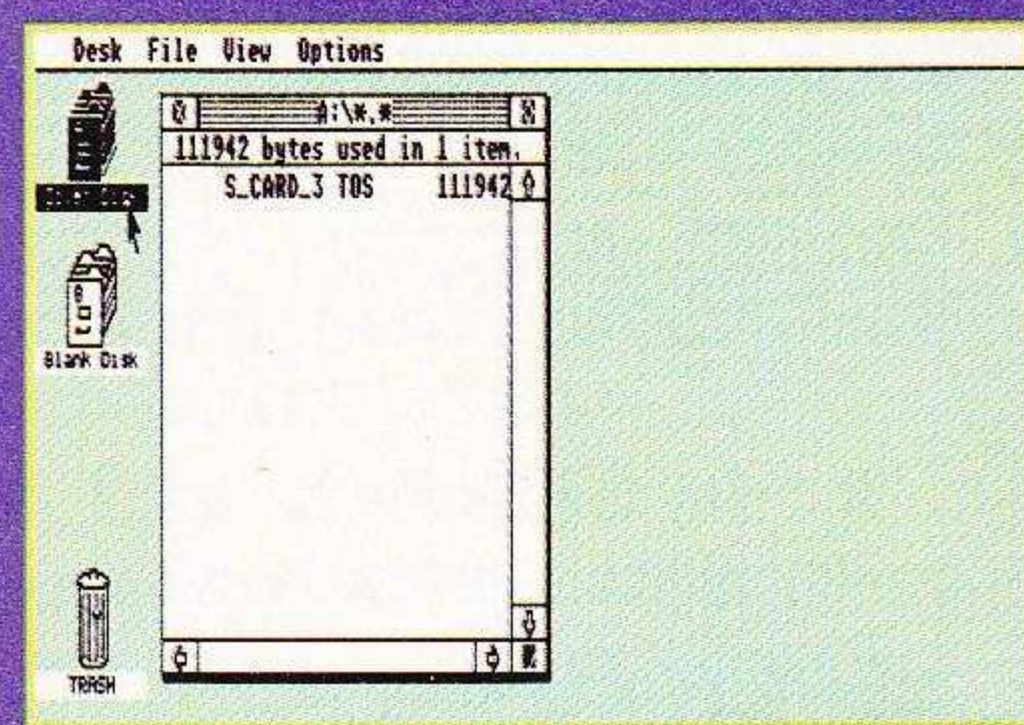
1 Assuming you have a single-drive system, insert your Cover Disk back-up into drive A. Double-click on the drive A icon to access it. Next, double-click on the drive B icon.



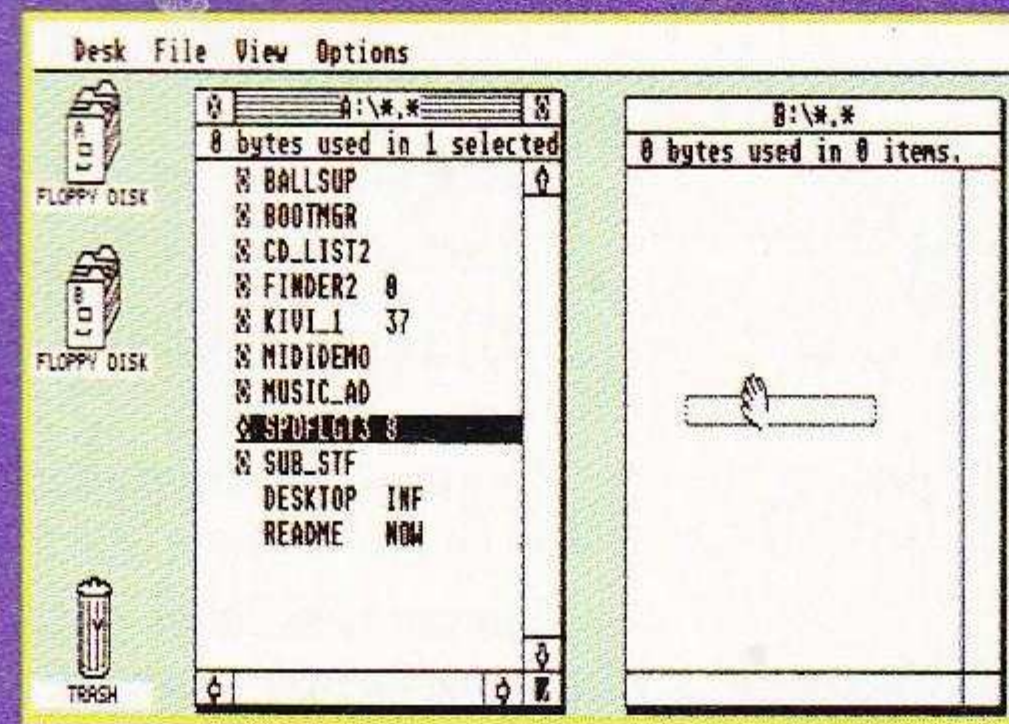
5 Just follow the instructions on the screen until the file or folder you wished to copy has been transferred. It'll be displayed in drive B's window. Now you're ready to dearchive your software.



2 When prompted, remove the Cover Disk and insert your blank disk into drive A. Click on OK and a separate window should appear with the contents of the disk within it.



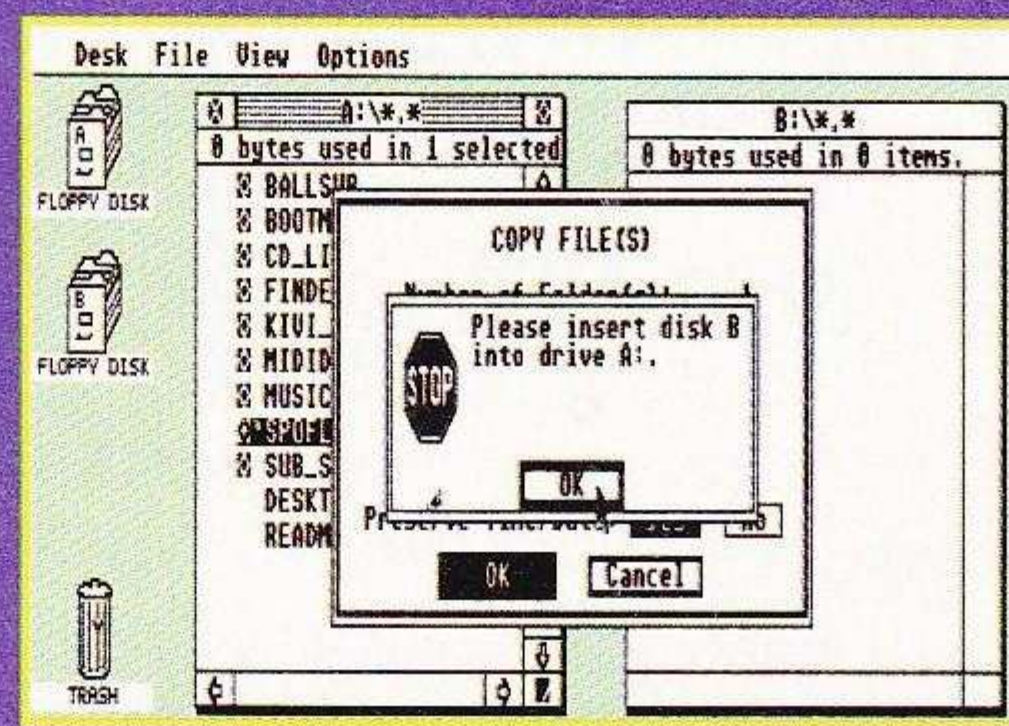
6 If the program you wish to run is a compressed TOS file, ensure your blank disk is in drive A and double-click on the drive A icon to open up its contents.



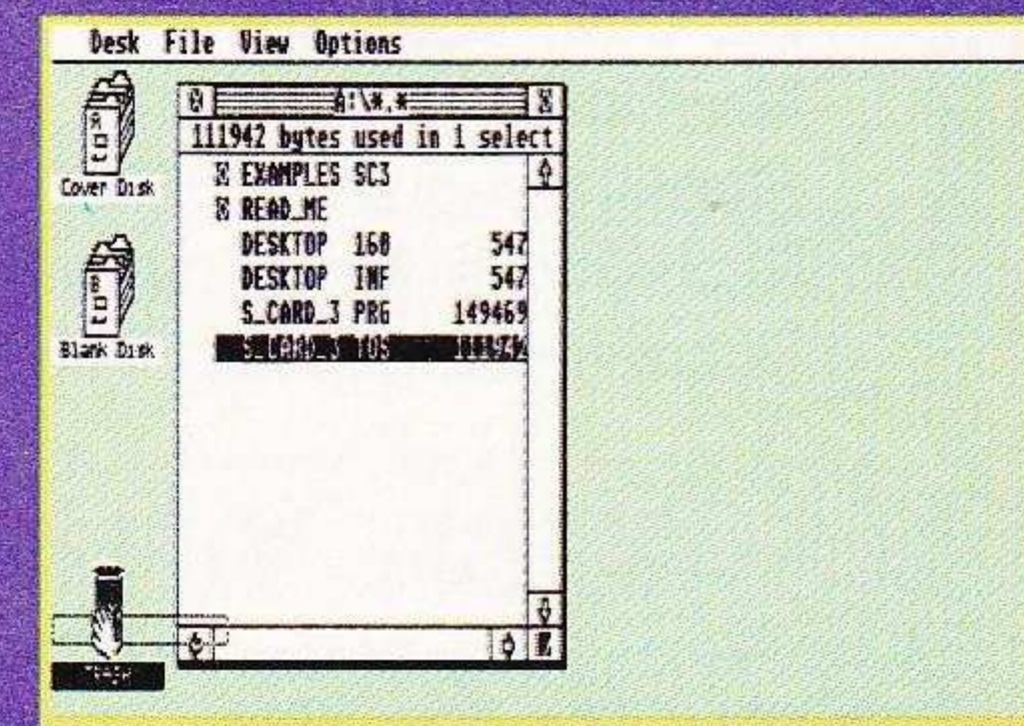
3 Next, click and hold down the left mouse button on the file or folder you wish to copy across to your blank disk. Drag the file over to the drive B window before releasing the button.



7 Double-click on the TOS file to begin decompressing it. A list of files will be displayed as they are decompressed. You'll then be asked to press any key.



4 An alert box will tell you to insert disk A (your Cover Disk). Do so, click on OK and follow the on-screen instructions.



8 The relevant folders and files should now appear in drive A's window. To free up more disk space, drag the TOS file over the trashcan icon to delete it.

PROBLEMS?

- Write-protect your Cover Disk. Slide the black tab so you can see through the hole.
- Make a backup using the *Back Up* program. Never run anything except *Back Up* directly from the Cover Disk.
- If you have an old STFM and can't read the Cover Disk, you need to upgrade to a double-sided drive.
- If you are having problems with a Cover Disk program, re-read the instructions and any DOC files. If you still have problems, call the Cover Disk Hotline on 01225 442244 on Wednesdays between 2pm and 6pm only.
- If you can't load, copy or back up your

Cover Disk, it may be faulty. Try calling our technical support line on 0891 715929 (weekdays 10am-12.30pm and 1.30pm-4.30pm). Calls cost 39p per minute cheap rate, 49p at all other times.

- Alternatively, send the disk, a padded self-addressed envelope and two stamps to: *ST FORMAT* May Disk Returns, Tib Plc, Tib House, 11 Edwards Street, Bradford BD4 7BH (if the disk is faulty we will refund the postage). Don't send faulty disks to our Bath or Somerton offices - we don't keep stocks of Cover Disks.
- If you have any other hardware or software queries, contact the publisher.

ANTIDOTE 3.7

By: Kai Holst
Machines: All Ataris
Memory required: 512K
Resolutions: Any except ST low resolution
Uncompressed size: 113K

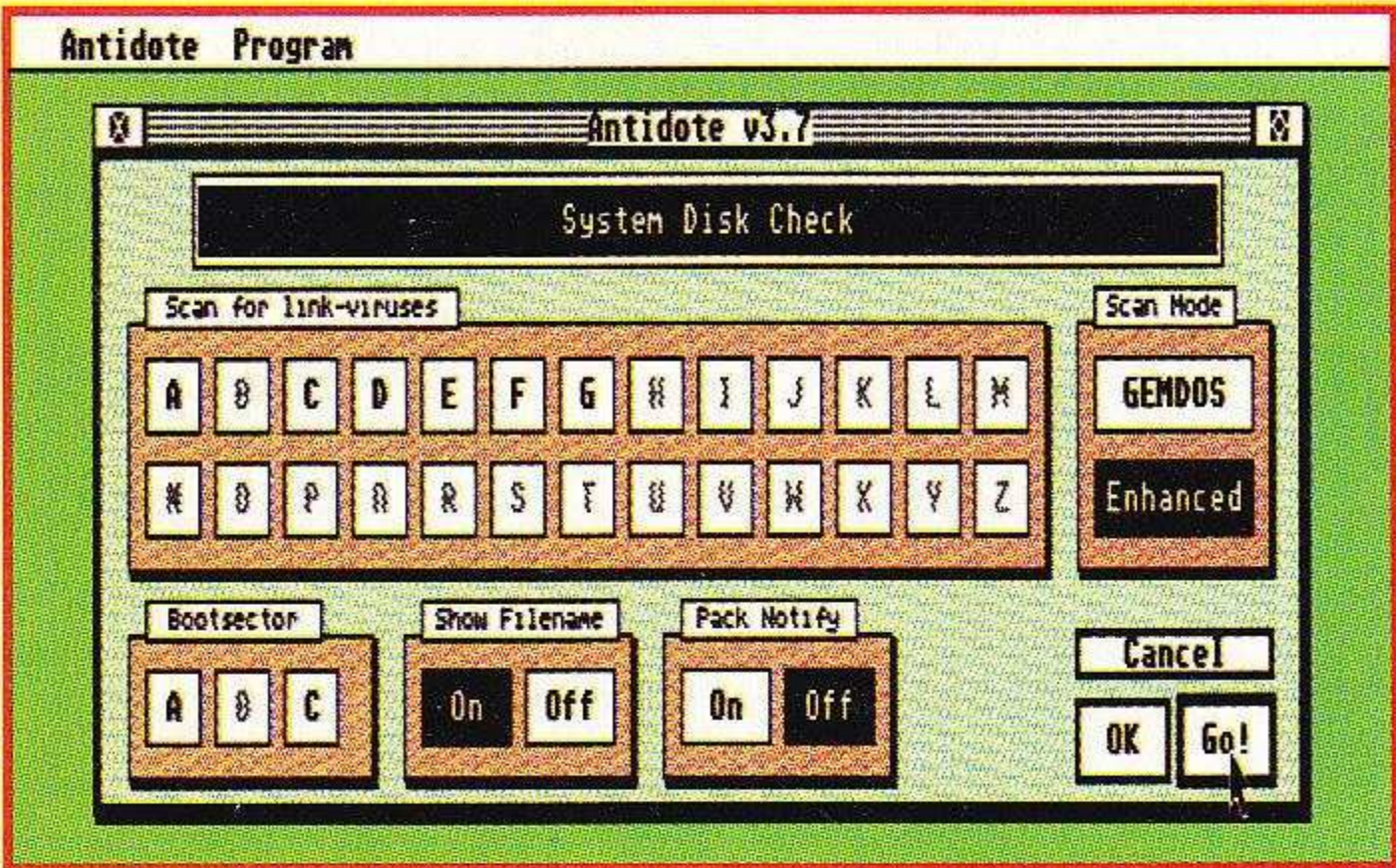
Antidote is an indispensable utility that protects your disks from viruses.

Infection alert

Viruses are nasty little critters. They're the product of disturbed programmers who find

it amusing to heap misery and anger on the rest of us in the name of vengeance and bad taste. Thankfully, programs

Select the drives you wish to scan for possible infection, then click on Go! It couldn't be easier.



such as *Antidote* can swing the balance back in your favour.

The most common type of virus is the boot-sector virus – a tiny piece of code that copies itself to memory whenever an infected disk is accessed. From there it spreads on to other unprotected disks and has a variety of disturbing effects. See issue 72, and the review of *Ultimate Virus Killer 6.6* in issue 77, for details. Link viruses are equally nasty, but attach themselves to executable files.

Antidote's main screen enables you to select the disks and drives to be scanned for possible viruses. Just highlight

the relevant drive(s), then click on the Go! button. Packed files can hide link viruses, so keep Pack Notify turned on.

The program reports its findings at the end of the scan, but don't assume 'unknown' boot sector means a virus is present. And don't use *Antidote* on the master disks of commercial software – many games are copy-protected using special boot sectors. *ST FORMAT* cannot be held responsible for any loss or damage caused by misuse of this program. Read ANTI-DOTE.TXT very carefully before you use the program.

JAYFORMAT

By: Jay Software
Machines: All Ataris
Resolution: All
Memory required: 512K
Size: 24K

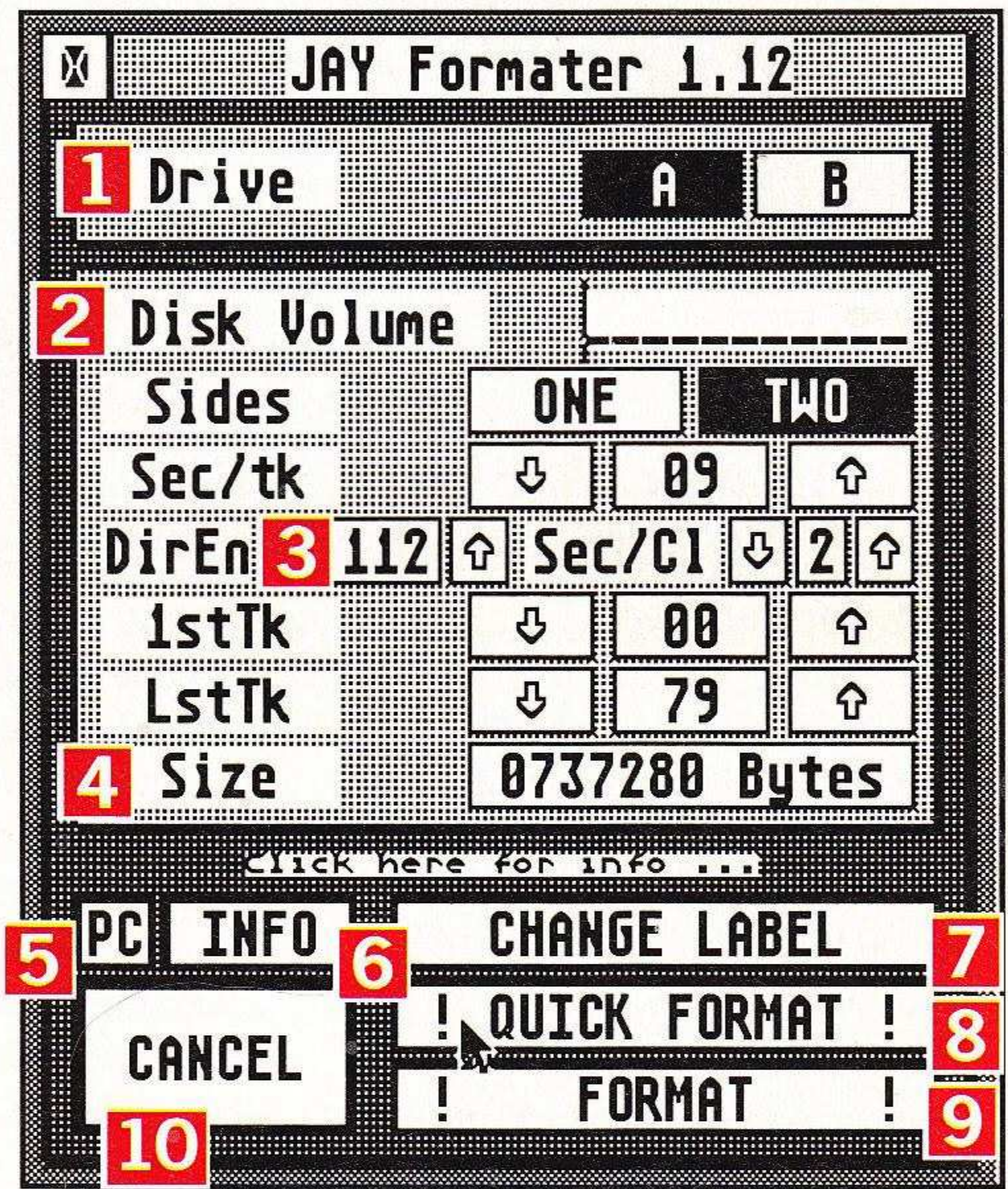
Jayformat is a fully functional disk formatter with all the expected options, enabling you to create extended disk formats.

Big is better

Jayformat is the latest in a long line of enhanced disk formatters. It enables you to

specify the number of tracks and sectors you wish to create, making it possible to create larger than normal disks. For example, *ST FORMAT's* disks are formatted to 80 tracks and ten sectors, enabling us to cram an extra 80K of software on to your Cover Disk every month.

Jayformat can also be used to create PC-compatible disks, enabling you to port files to and from a PC (and most Macintoshes). See the annotation for full details of the various options.



- 1 Select drive A or B (if you have two disk drives) for formatting.
- 2 Give the disk a label.
- 3 Information about the disk. *ST FORMAT* disks are set to ten sec/tk, 0 1stTk, 79 LstTk.
- 4 Amount of free space on the disk when formatted.
- 5 Create a PC-compatible disk.
- 6 Read the current disk's parameters.
- 7 Change disk label without formatting the disk.
- 8 Quick format – erases previously formatted disks.
- 9 Format disk properly.
- 10 Quit *Jayformat*.

UDO 4.0E

By: Dirk Hagedorn
Machines: All Ataris
Memory required: 512K
Resolutions: Med or greater
Uncompressed size: 493K

UDO is a versatile program which enables you to convert text into a wide variety of different formats, including the popular HTML, ASCII, *ST Guide* and RTF formats.

This way...

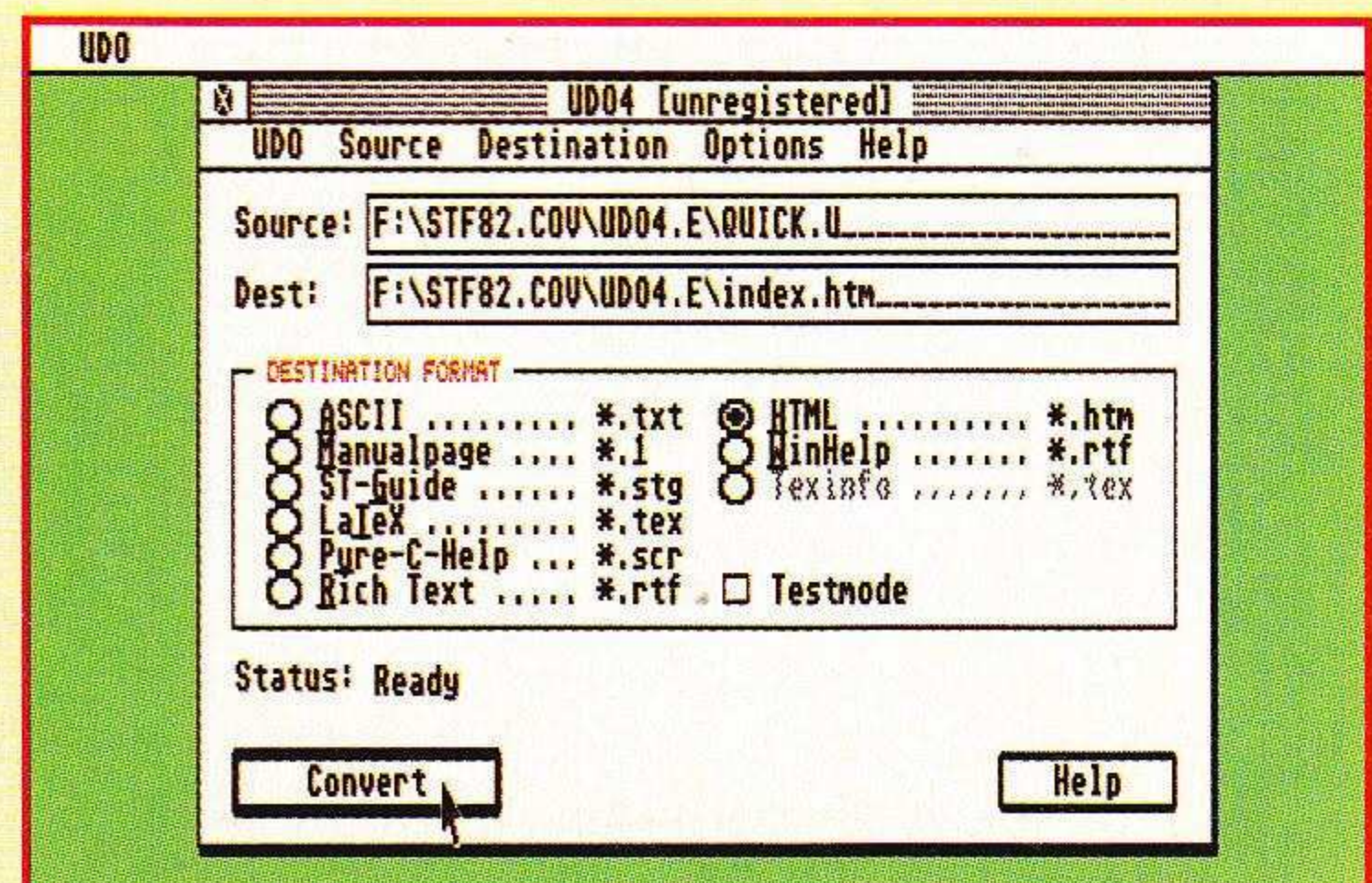
How do you port one text file across several different formats without having to type it in loads of different times? You use *UDO*, that's how. Using a text editor (try *SpiritEd* from Cover Disk 70) and a simple command language, you can create a file which can be converted into one or more formats and spread as far and wide as possible.

Put off by the idea of learning a new language? Think about it. HTML and *ST Guide* tags are completely different. Why learn two languages when you can get by with one?

Make sure you save your text file with a U extension so *UDO* can recognise it, then just run

UDO.APP. Select your file and its destination, select the format you wish your file to be converted to and click on Convert to proceed.

There isn't enough space to cover *UDO* in any depth on these pages, but we'll be looking at it in more detail in the coming months. In the meantime, everything you need to know is included in *UDO.ASC* (*ST Guide* users can install *UDO.HYP* and *UDO.REF*). Don't forget to register if you intend to use it regularly. *stf*



UDO's main dialog box is very straightforward.

WE WANT YOUR PROGRAMS

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

Name _____

Address _____

Daytime phone _____ Program title _____

_____ Total size in K _____

On a separate sheet, explain what the program does and why 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. Superman's powers 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 _____

THE UPGRADE SHOP TEL 01625 503448

All prices include VAT @ 17.5% but exclude delivery.

Orders can be placed by telephone quoting credit card details or by mail order.

Please make cheques and postal orders payable to "THE UPGRADE SHOP" 1 year warranty on all products unless stated.

MEMORY BONANZA

STe/Mega STe		STFM Marpet XRAM deluxe	
1/2 meg	£7.50	1/2 meg	£32.50
2 meg	£42.50	2 meg	£59.00
4 meg	£82.50	4 meg	£99.00

All kits are supplied with comprehensive fitting instructions, testing software and a free disk of useful PD / shareware utilities. Free technical support is available as is a competitively priced fitting service. Prices shown for memory products only include delivery.

MONITORS

All monitors include a Tilt and Swivel stand

TUS 14" Mono monitor for ST series without sound	£89.00
TUS 14" Mono monitor for ST series with sound	£99.00
TUS 14" colour for Falcon (0.28dp SVGA)	£229.00

All monitors include appropriate connecting leads

SPECIAL OFFER

Fax Modems
- ring for details

REPAIRS AND FITTINGS

Fully trained engineers for a reliable repair.
All jobs quoted for individually (no fixed prices).
48 hour turnaround on most machines.
Long 4 months warranty as standard.

We can fit any of the advertised products to your machine for a one off fitting charge of £15.00. This means that if you require say an upgrade and overscan fitted then the charge is only £15.00.

Please ring for an appointment before bringing your machine or call if courier collection is required.

Please ensure all parcels collected are adequately packaged.

FITTING SERVICE AVAILABLE ON ALL UPGRADES FOR £15.00

TOS 2.06 SPECIAL

TOS 2.06 kits come with full fitting instructions and TOS manual. Both kits allow manual switching between your old and new TOS for full compatibility.

STE SWITCHER	
Version 2. Simple solderless installation	£47.99
STF/STFM SWITCHER	
Version 2. DIY installation	£57.99
INTERNAL HIGH DENSITY DISK DRIVE	
High density controller module with full instructions	£25.00
High density controller and 2Mb disk drive	£58.00
SPECIALS	
STF/STFM TOS 2.06 + High density module + 2Mb Drive	£109.00
STE TOS 2.06 + High density module + 2Mb Drive	£99.00

HARD DRIVES

105MB ATARI DRIVES COMPLETE SYSTEMS

£149.00

INCLUDES CONTROLLER

CHEETAH HARD DRIVE SERIES

FROM £179.00 FOR 105MB TO £289.00 FOR 540MB

INCLUDES HOST ADAPTER AND SOFTWARE.

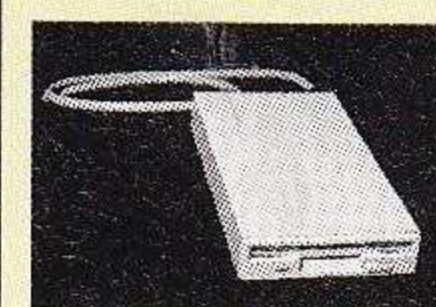
MANY OTHER SIZES AND VARIATIONS AVAILABLE

PLEASE CALL OR WRITE FOR A SPEC SHEET

PARTS

NEW PLUG IN POWER SUPPLY	
Includes power socket, switch and pedestal - no soldering	£32.99
INTERNAL REPLACEMENT DRIVE KIT	
1 or 2Mb Drive supplied	£39.99
KEYBOARD	£49.99
MOTHERBOARDS (Call for availability)	
290DPI replacement mouse	£9.99

HIGH DENSITY EXTERNAL DRIVES



Quality 'metal-cased' external Disk Drive with power supply. High Density drives read/write to both normal DSDD and DSHD disks with fully automatic switching.

High Density (2Mb) Drive with controller	£79.99
High Density (2Mb) Drive, no controller	£59.99
Double Density (1Mb)	£59.99

DELIVERY: Small items under £60 please add £3 p&p. Large items and orders over £60 add £7 courier charge.

Courier pickup for Upgrades and Repairs £7 Opening Hours Monday-Friday 9am-6pm Saturday 9am-2pm.

Technical support available - please call

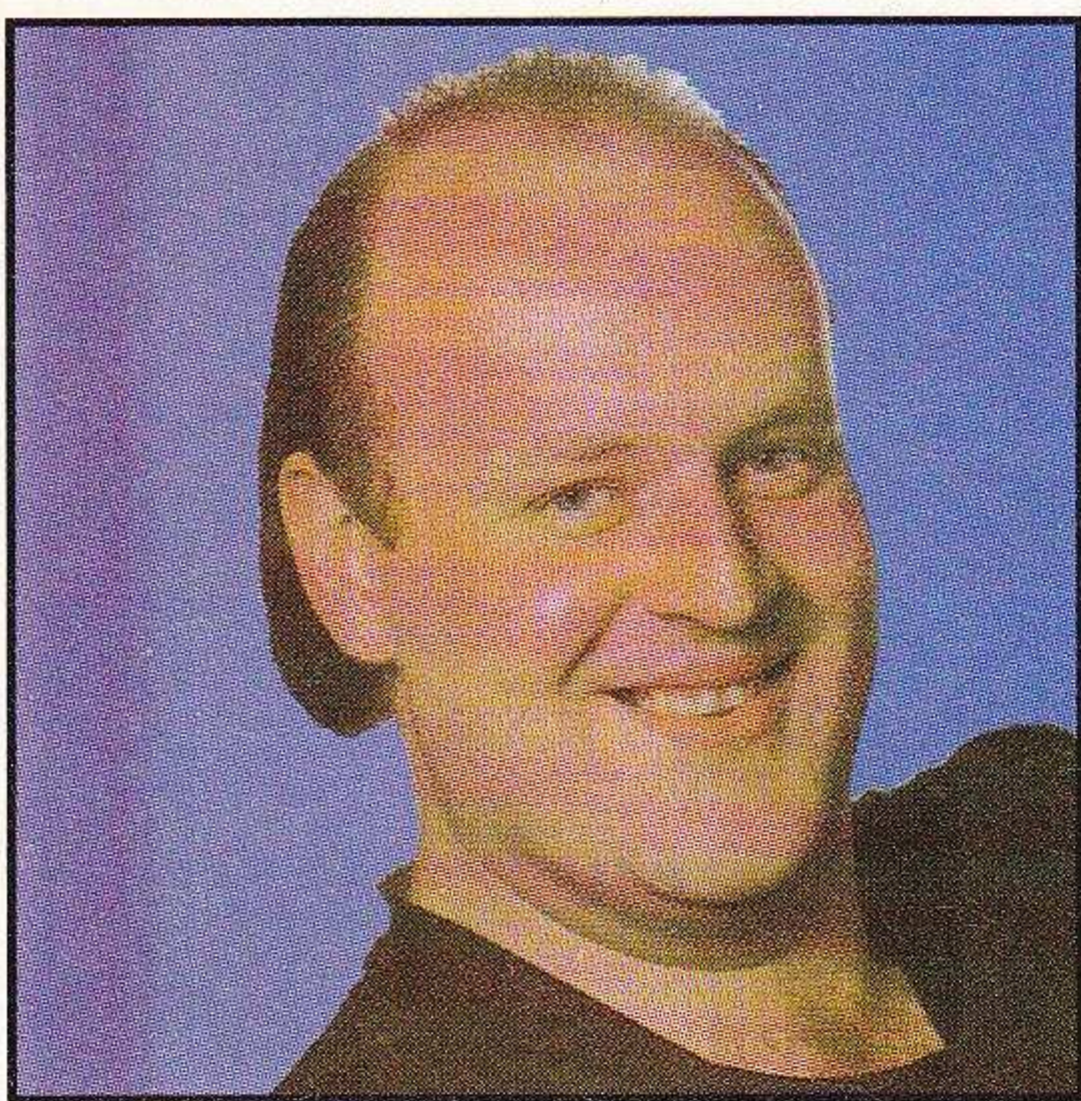
Same day service available for upgrades and most repairs. Please ring before you bring.



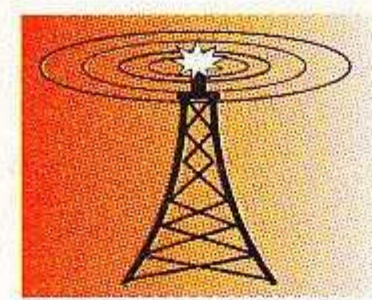
The Upgrade Shop

37 Crossall Street, Macclesfield, Cheshire SK11 6QF





STF News...



All change this month as Frank Charlton rounds up the latest happenings in the Atari scene.

SNIPPETS

Programmer Roger Burrows recently announced that registered users of the **ExtenDOS Pro CD-ROM driver** can pick up the patch which upgrades version 2.1 to 2.3a from the CNAM FTP site in France. The address you'll need is: [ftp.cnam.fr/pub/Atari/Atari/CD-rom/Drivers/epro_23a.zip](ftp://ftp.cnam.fr/pub/Atari/Atari/CD-rom/Drivers/epro_23a.zip).

On-line service **CompuServe** is now offering members the chance to subscribe to Mercury's One-2-One digital cellular phone network on-line. You can also purchase mobile phones and accessories. Access is through CompuServe's UK Shopping Network, or by typing GO ONETWOONE.

Zip Drive manufacturer Iomega has unveiled its new **Jaz drives**. They offer a jaw-dropping 1Gb of storage space per removable cartridge. The drive weighs a mere 2lb and belts along at a speed comparable to that of a standard hard drive. As with the Zips, it'll be a while before stock is available.

New product bonanza

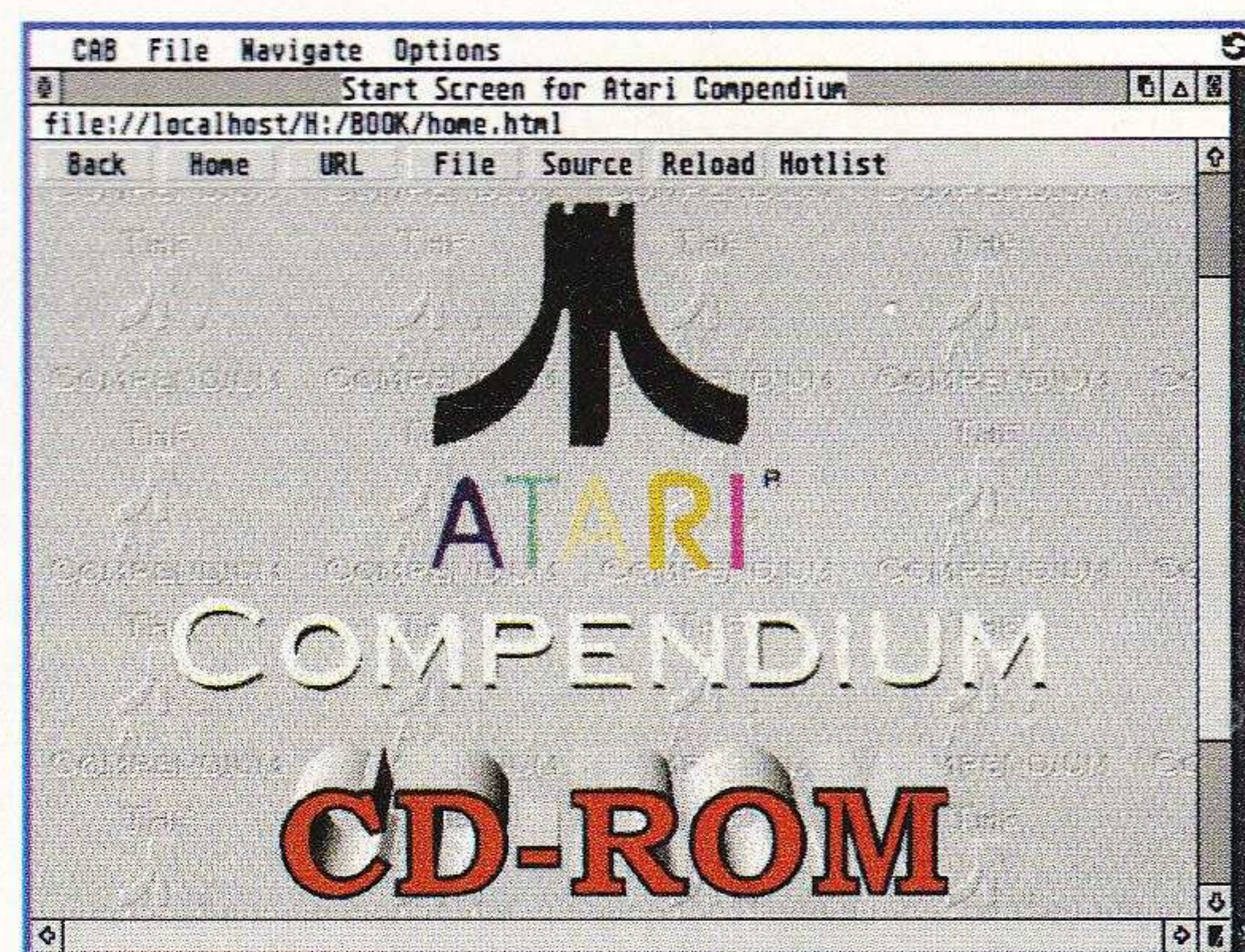
System Solutions continues its exhaustive Atari support this month with a number of new product announcements.

The *Ultimate Cubase* CD-ROM is packed with 605Mb of information for users of the flagship MIDI sequencer, including 240 drum loops, 1,200 samples and 300 MIDI files. Also new on CD-ROM is *The Atari Compendium*, the biggest work of reference for Atari computers. This superb 800-page book has been translated into the hypertext HTML format, enabling you to view it with a Web browser. CAB is also provided on the disc.

New hardware comes in the shape of Cartmaster Lite, an automatic cartridge port switcher for those MIDI

dongles, and limited special deals on triple-speed SCSI CD-ROM drives. System Solutions also unveiled a cost-effective six-speed IDE CD-ROM kit for all Ataris. It connects easily via the cartridge port and costs just £249.

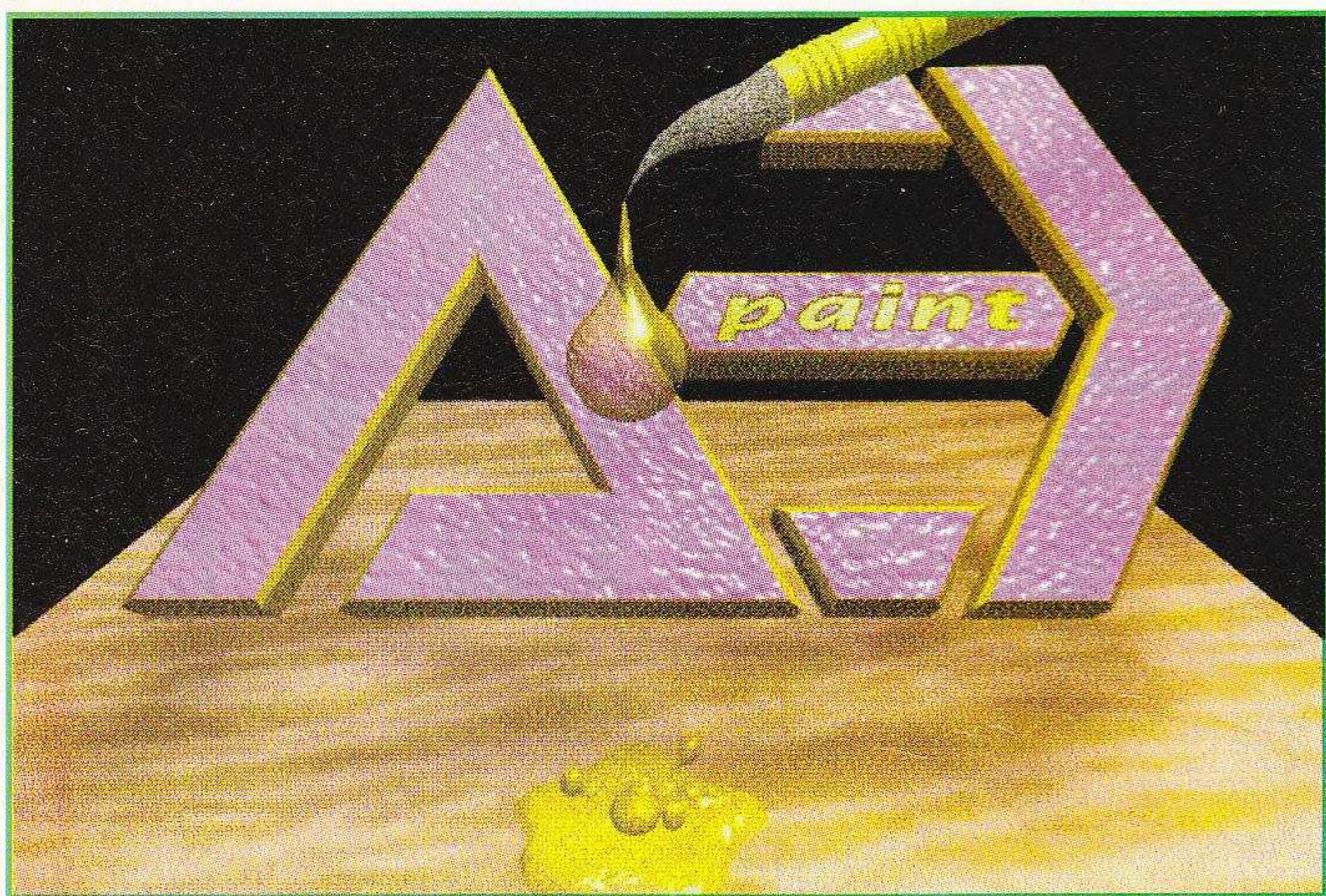
Call System Solutions on ☎ 0181 6933355 for more details about any of these products, and watch out for reviews in next month's *ST FORMAT*.



The excellent Atari Compendium goes multimedia in this latest CD-ROM release from System Solutions.

System Solutions

APEX 3 revealed



All we've seen of APEX 3 is the logo, but that certainly looks smart enough.

Not content to rest on their laurels, Titan Designs and Black Scorpion have revealed details about the forthcoming companion to their top-selling Falcon animation package.

Designed as a standalone

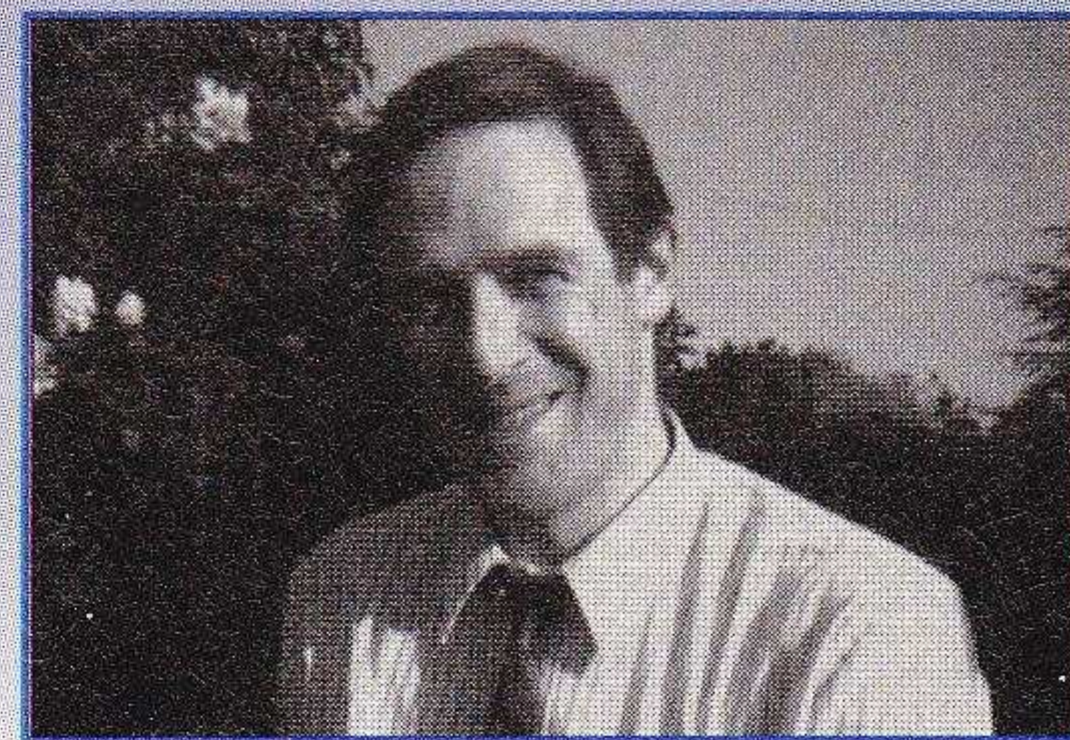
art program rather than an upgraded version of *APEX Media*, *APEX 3* has tools above and beyond those offered by previous versions. It runs as a separate program alongside *APEX Media* and boasts a long

BIGGER, FASTER

Just as we went to press, news came in from Titan about an exciting alternative to Falcon screen enhancers, such as the BlowUp FX card. Still at the prototype stage, the BSS hardware modification will offer high-resolution TrueColour support. Among the initial specifications are acceleration of the system bus and CPU to 24MHz and acceleration of the Falcon's DSP chip to 48MHz. The upcoming *APEX 3* will take advantage of these enhancements.

Titan expects to be able to bundle this hardware with *APEX 3*

for an additional £29.95, although this pricing is provisional. Titan's David Encill would like feedback from prospective users. Call him on ☎ 0121 6936669, or send e-mail to: 100345.2350@compuserve.com.



Titan's David Encill needs feedback on his new Falcon hardware project.

list of features for Falcon artists.

As well as the standard art tools, it offers fast 24-bit image editing, anti-aliased real-time block operations, Alpha-channelled tools and multiple filtering using a real-time

brush system. *APEX 3* looks set to wallop all the pretenders to the Falcon art package throne, and with an expected price of £99 sounds very good value indeed. Call Titan Designs on ☎ 0121 6936669.

ATARI SHOWS

MIST, the Mid-Indiana Atari Fest, notches up its eighth year on 13 July this year. Last year's show was held in the Best Western Waterfront Plaza Hotel and pulled in almost 350 visitors. For details, contact Charlie Shears over the Fidonet and Atarinet BBS networks at: 1:231/310.0 and 51:203/8 or via e-mail at: shuffman@ideanet.doe.state.in.us.

The Swedish Atari Users Association and NoCrew are

hosting the **Nordic Atari Show**, which takes place 14-16 June at the Lundby Gymnasium in Göteborg, Sweden. For more information about this year's show, contact Rolf Johansson (rojo@tripnet.se) or Ylva Budsjö (ylva@shewolf.ct.se), visit the show's Web site at: <http://www.dtek.chalmers.se/~d4reine/NAS.html> or send a letter to: The Swedish Atari Users' Association, Box 11416, 404 29 Göteborg, Sweden.

Moody Blues



The Bad Mood project has undergone further developments since last month's brief report. The Falcon-based viewing engine for *Doom* WAD files - intended to eventually become a full *Doom* game -

A *Doom* game capable of exploiting the Falcon's hardware capabilities? Let's wait and see...

can now display all the textures correctly and features full shading everywhere except in the sky. The latest binary-only version is 2.05 alpha, but the older 1.93 alpha still

includes the full source code.

If you're on-line, follow the latest news and download a copy by pointing your browser at: http://rand.thn.htu.se/cgi-bin/buildpage?bad_mood.

JAGUAR'S END?

Industry publication *Computer Trade Weekly* recently reported that Atari has reduced the price of the basic Jaguar system to \$49 in selected USA retail outlets. *CTW* speculated that Atari's latest move could be seen as an attempt to clear stocks before

dropping the Jag, but Atari insists it's a temporary measure and nothing more than a method of increasing the Jaguar's user base. So far, there's no official news of price reductions in the UK, but we are aware of some special offers - see Feedback for details.

Desktop video

HiSoft Systems is set to bring true full-motion video to the Falcon with its forthcoming Squirrel MPEG playback system. Designed as a SCSI device, the MPEG board will play the popular Video CD discs used by the Philips CDi machines as well as raw MPEG data and clear 16-bit stereo sound. Why settle for static images when you could have movies on your screen?

The Squirrel system should work with any Video CD-compatible CD-ROM drive (in practical terms, this means most SCSI drives). It can also

be used without a computer, by connecting the board and your CD-ROM drive to an

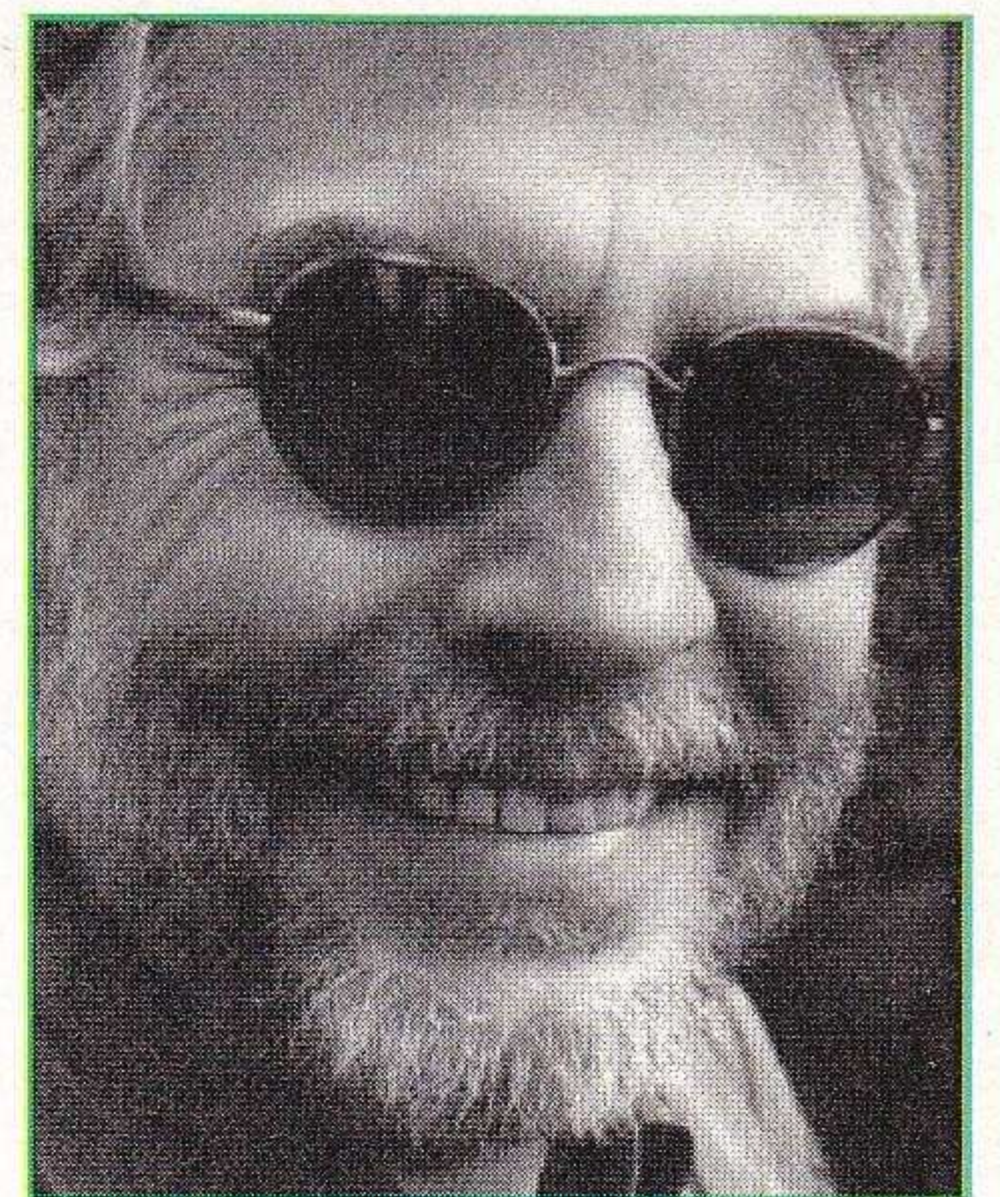
existing television, video and hi-fi setup. For more details, call HiSoft on ☎ 01525 718181.



Watch movies on your Desktop with HiSoft's MPEG board. You can even play *Star Trek: Generations*. Assuming you like *Star Trek*, that is.

Nolan who?

The USA newspaper *The San Jose Mercury News* recently revealed that Nolan Bushnell - father of Atari and creator of *Computer Space* and *Pong*, the games that started the whole revolution - attempted to buy back the arcade division of his former company. The arcade division, not to be confused with the consumer division responsible for the ST and Jaguar range, was sold to WMS Industries (makers of coin-ops and pin-ball tables under the Williams, Bally and Midway names). This sale, coupled with Atari Corporation's recent merger with JTS (see News, *STF* 81), means the near future could



The man who started it all: Nolan Bushnell, father of the original Atari.

see the Atari brand name vanish from the computer and video game industry.

NET NEWS

Nottingham's **FaST Club** is now on the Web. You can browse its catalogue, as well as samples from its HTML magazine *ST Applications*. Hook up to: <http://www.compulink.co.uk/~sta> for a look.

System Solutions has unveiled its new Net presence at: <http://www.ssolutions.com/>. You can send e-mail to: ssolutions@cix.compulink.co.uk too.

Don't forget **Futurenet** (<http://www.futurenet.co.uk/>), now featuring the HTML of ex-editor Karen Levell on the *arcane*, *Comedy Review* and *SFX* pages.

FaST Club



ST Club

Catalogue Number 15

Atari News

Atari Links

Check out the FaST Club's catalogue and magazine next time you're on-line.

USA surfers can check out the range of ST goodies on offer at **Bravo Sierra Computers** by pointing your browsers at: <http://www.teleport.com/~bensmith/bscomputers.html>. Say howdy-doddy from us.

PD AND SHAREWARE

New Beat Development has released a demo of its new Falcon game, *Willie The Adventurer*. A platform game featuring enhanced colour, eight-channel sound and support for the Joypad, *Willie The Adventurer* is available from the FaST Club (☎ 0115 9455250) on disk NW.44 or from the FTP sites: <ftp://cnam.fr> and <ftp://uni-kl.de>.

If you need access to PostScript files produced on other computers, you'll be pleased to hear that **GhostScript**, the freeware interpreter for Atari computers, has been upgraded to version 3.53. You can pick it up from the FaST Club on disks WP.703 to 705.

Is your ST a seven-stone weakling? Do bullies kick sand in its face? Take remedial action with Andy Curtis and Frank Charlton.

Be honest, how long is it since you spent some of your hard-earned cash on your faithful ST? You may think there's nothing you need, but there are plenty of upgrades which can add power to your Atari system without costing you an arm, a leg and most of the bits in between.

Even the PC market is helping us as PC owners ditch their Atari-compatible 30-pin Single In-line Memory

Modules (SIMMs) to feed their memory-hungry Windows 95 installations with bigger 72-pin SIMMs. The result is a

plethora of cheap ST memory in the secondhand market.

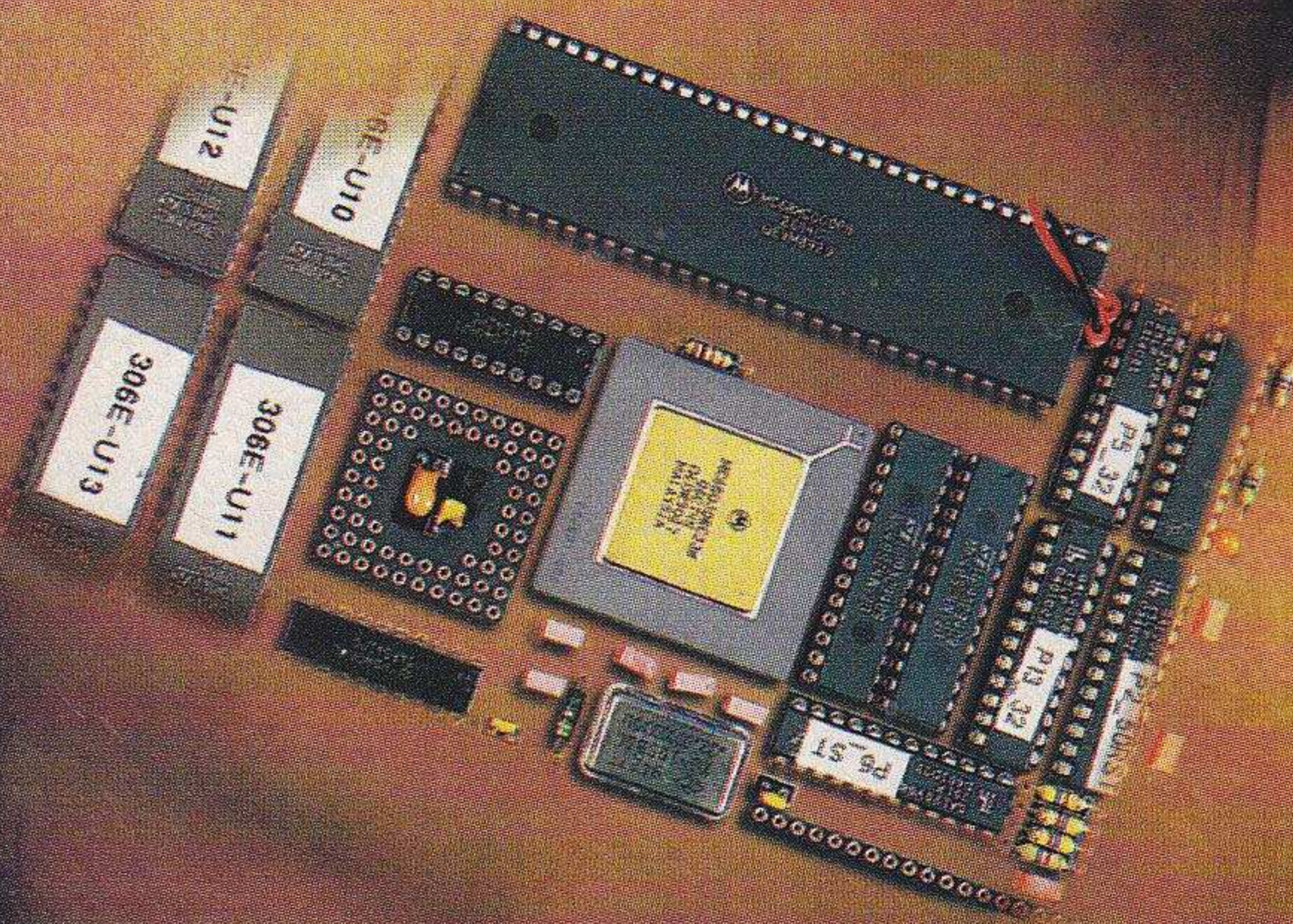
SCSI drives are now cheaper than ever before, putting them within reach of almost every ST user. If you fancy fast access to your favourite ST programs, now is a good time to buy.

As well as these basic hardware upgrades, there are many specialised add-ons which can transform your ST almost beyond recognition. A graphics card enables you to enjoy high-res colour graphics on a colour VGA monitor. Colour ray tracing becomes a reality, as does full-colour DTP. Modern document processing software enables you to view colour images on the page alongside your text, then print them out on a colour printer.

A speed accelerator is just the job if you're tired of waiting for archives to compress or files to copy. An injection of speed will also make all your other programs load and run more rapidly, and after a couple of hours with an accelerated ST, you won't want to go back to a factory-standard 8MHz machine. That's a promise.

Upgrades can change the way you work with your ST forever, so why miss out? Check out the possibilities and decide exactly what you need to make your ST easier to use, faster and more efficient.

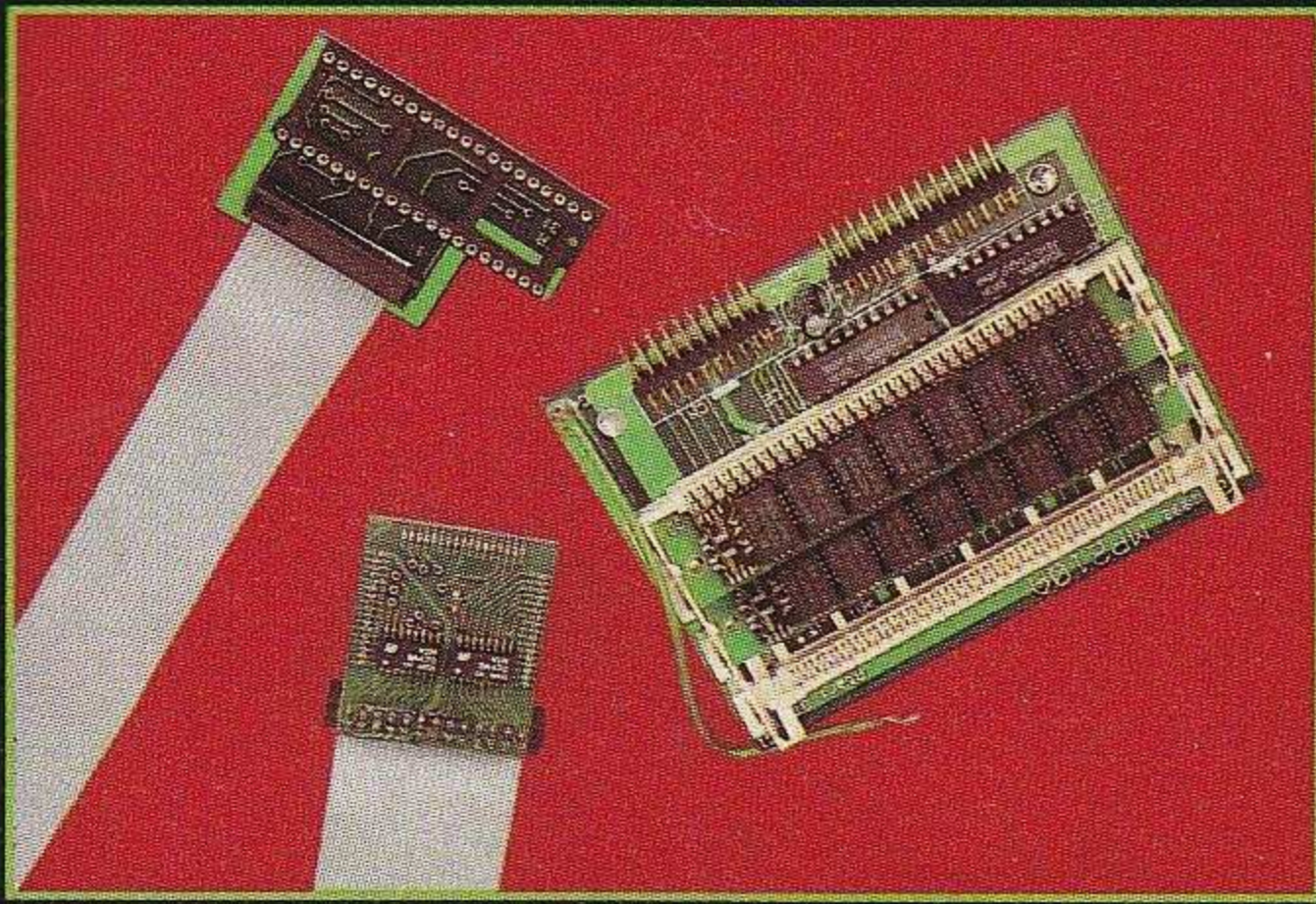
PUMP UP YOUR ST



Essential system upgrades

Essentials

If you've never added anything to your ST, start here. Bend, stretch...



Marpet's memory upgrade enables STFM owners to add industry-standard SIMMs to their machine.

Not everyone has pots of money to invest in their machine, so it's important to work out which upgrades will bring the most benefits. Hard drives, graphics cards and accelerators are very nice indeed, but there are a couple of more mundane items you should consider first.

The word 'RAM' may not fill you with an uncontrollable urge to reach for your wallet, but a RAM upgrade will improve the performance of almost all your programs. A TOS upgrade also brings smoother and faster performance. If you have a very old version of TOS installed, it's an absolute necessity.

RAM

Your ST uses random access memory (RAM) to hold the programs you load from disk. As you may have discovered, some programs use more RAM

than others, and the majority of programs run more efficiently when a greater amount of RAM is available.

If you still have an original 520ST, you will only have a measly 512K of RAM. Many games, and most serious applications, simply will not run on your machine. Even 1040STs, with twice as much RAM, will be unable to get the best from numerous pieces of software. The solution is to kit yourself out with a shiny new RAM upgrade and take your machine up to the dizzy heights of 2 or 4Mb, or even a whopping 14Mb for Falcon owners.

If you have an STE it is very easy to clip in the extra RAM chips. The same is true for Falcon owners, because the upgrade is a fairly straightforward press-into-place board. Alas, STFM owners have the hardest machine to upgrade. Some STFM boards can accept a plug-in upgrade, but others require soldering. If you are reluctant to mess around inside your machine, a number of companies will fit extra RAM for you.

TOS

The original TOS 1.00 had a great many problems and bugs, and if your STFM boasts

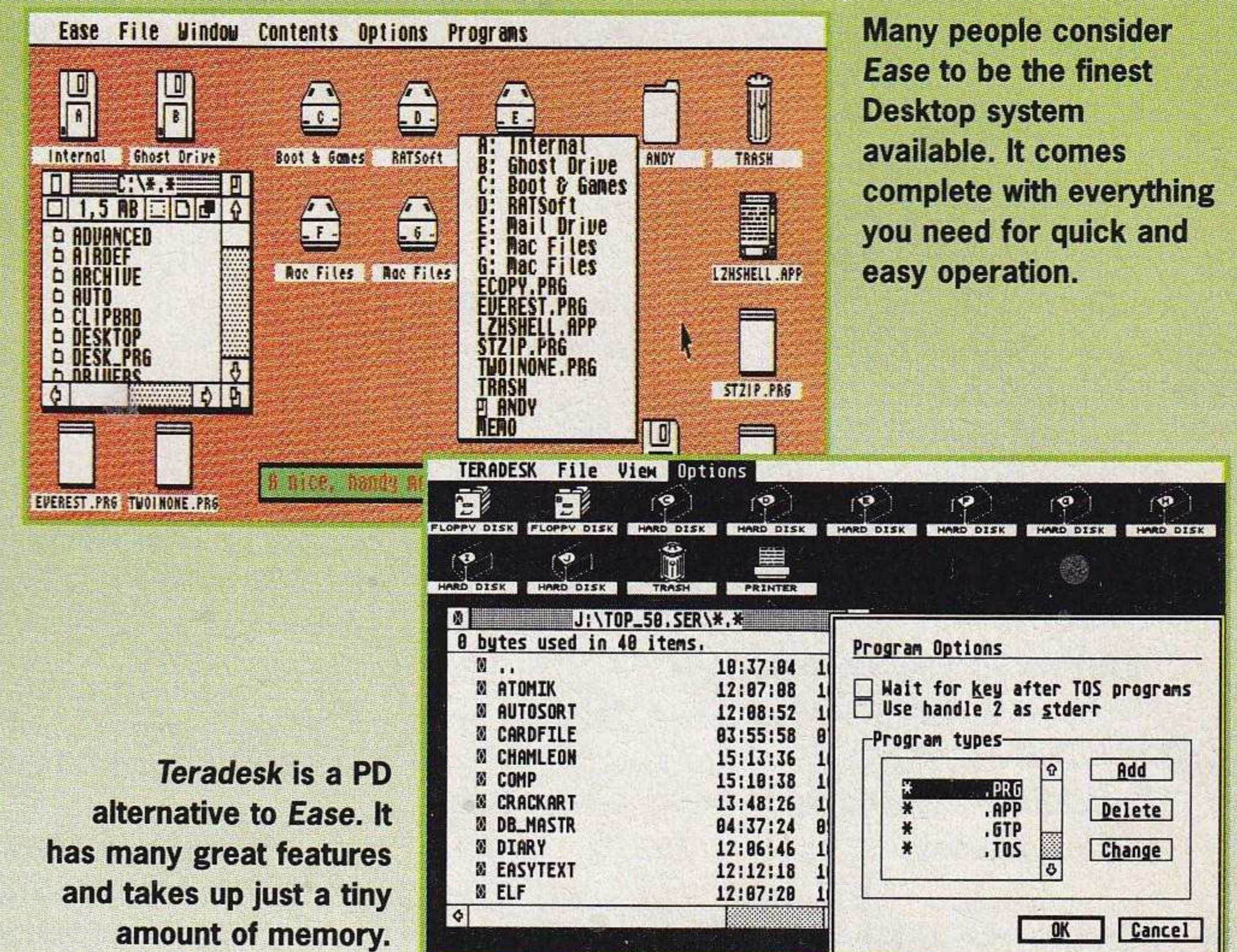
DESKTOP REPLACEMENTS

If you have a reliable version of TOS (such as 1.4 or 1.62) and don't want to upgrade to TOS 2.06, you can upgrade your desktop to TOS 2.06 standards by replacing the Desktop. Replacement Desktops, such as *Ease*, *Neodesk 4* and *Teradesk*, are a joy to work with and may well lure you away from the plain TOS Desktop forever. They enable you to launch programs from function keys, load files into your favourite text editor and do many other clever tricks that TOS is

incapable of. See issue 81 for a Desktop head-to-head.

Unfortunately, these Desktops only really come into their own if you use a hard drive. If you don't have one, a TOS 2.06 upgrade is a much better option. It takes no time at all to load and requires no extra memory.

- *Ease 4*, £49.95
System Solutions
☎ 0181 6933355
- *Teradesk (Disk U53)*, £1.50
LAPD ☎ 01773 761944



Many people consider *Ease* to be the finest Desktop system available. It comes complete with everything you need for quick and easy operation.

Teradesk is a PD alternative to *Ease*. It has many great features and takes up just a tiny amount of memory.

this museum piece, it really is time to upgrade to TOS 1.4 or 2.06. While many of the bugs were fixed in TOS 1.62, which is fitted to most STEs, the upgrade to TOS 2.06 gives much greater flexibility on the Desktop and offers improved file handling.

All TOS upgrades greatly increase your computer's ability to work with a hard drive as well as enhancing the file selector and overall speed. Many of the advantages of a

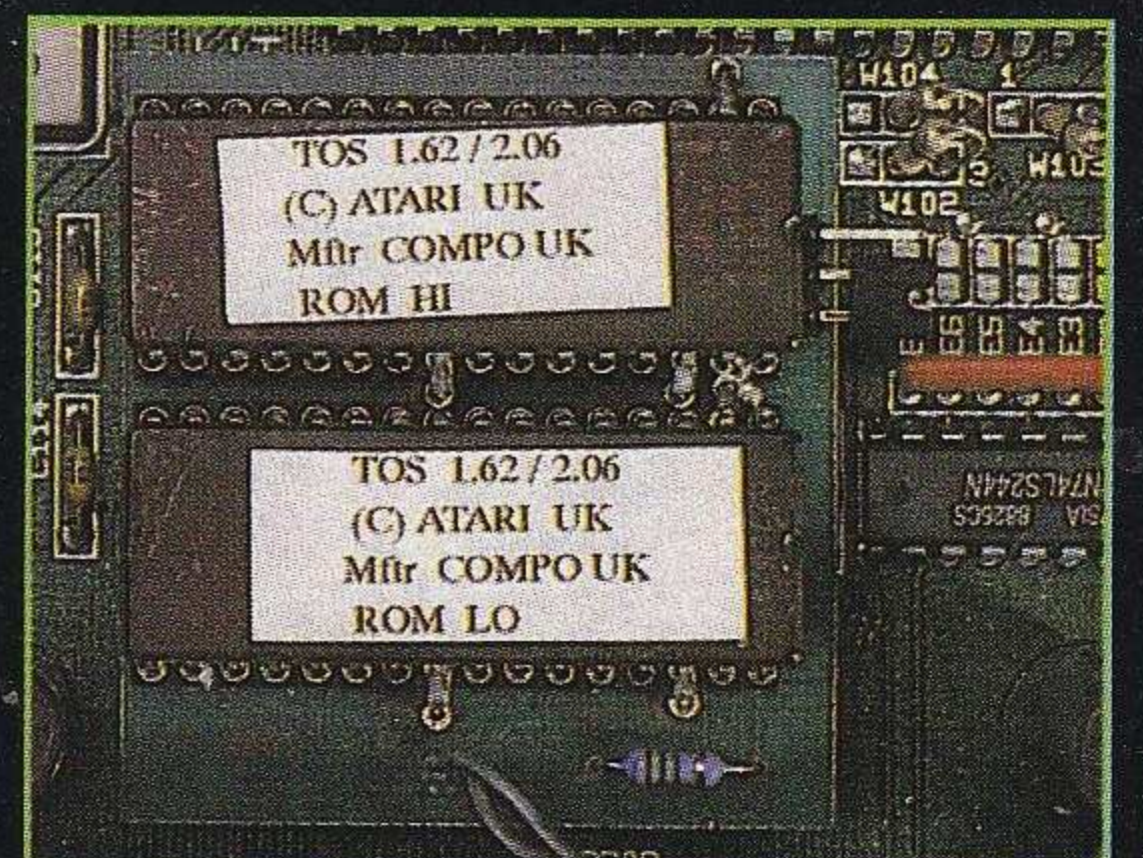
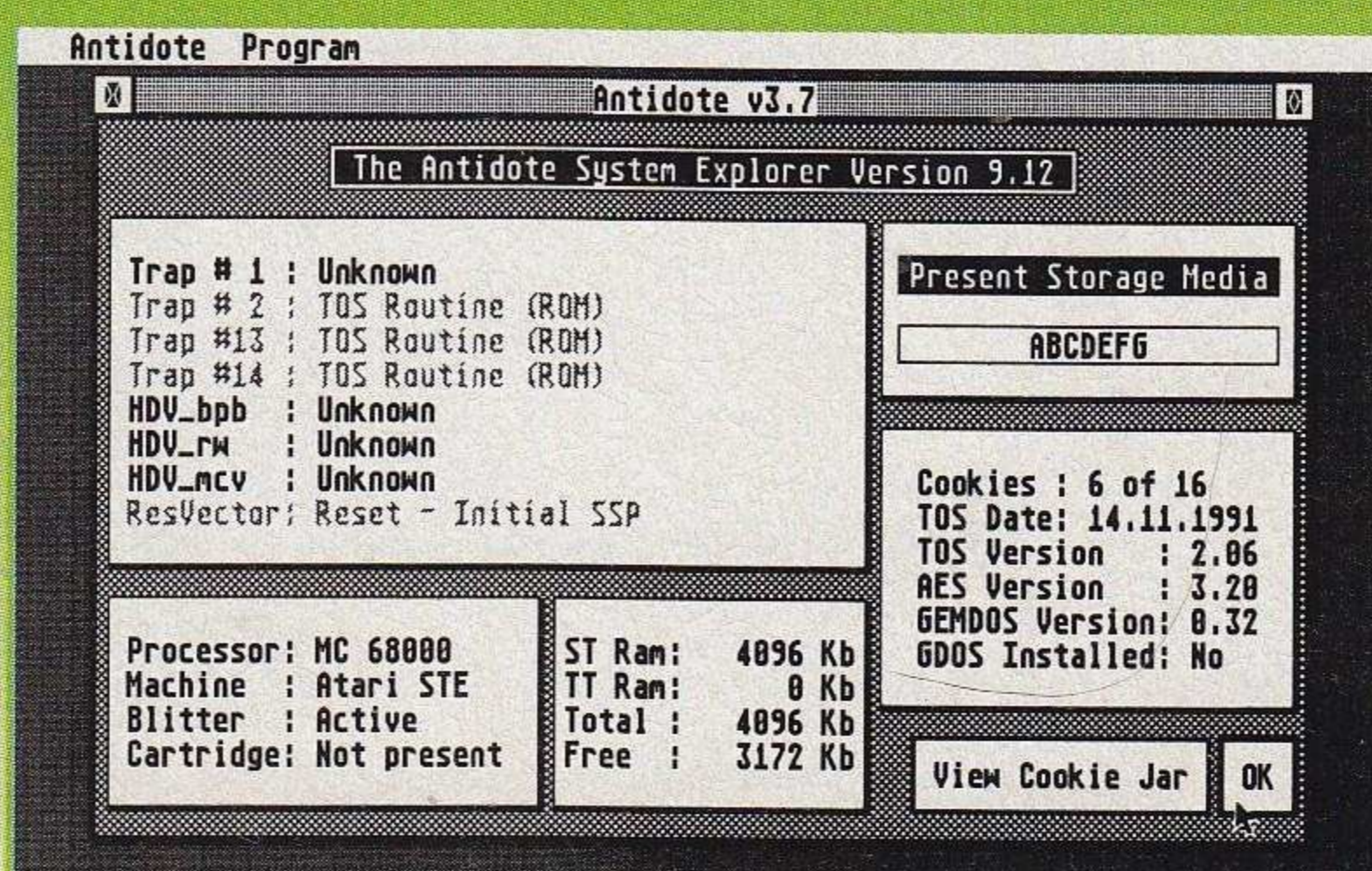
TOS upgrade are not immediately obvious, but you will notice that programs run faster and more reliably.

- **RAM upgrades:** From £9.99 for STE and £34.99 for STFM. Try First Computer, Analogic, Gasteiner, The Upgrade Shop or our Reader Offer pages.
- **TOS upgrades:** TOS 1.4 is available from Compo for £19 (☎ 01487 773582). TOS 2.06 is available from all major hardware dealers.

TEST THAT TOS

The best way to find out which version of TOS you have is to use *Antidote* from this month's Cover Disk. Once booted, it gives you a useful systems analysis screen where you can find out which version of TOS and how much memory your ST has. An external program is needed because Atari, in its wisdom, did not see fit to simply include the information in the TOS desktop.

Antidote's system analysis screen shows you which version of TOS is fitted to your ST.



TOS 2.06 is the latest and best version of TOS for your ST. It loads instantly at boot-up and takes up no RAM at all.

Extra storage

Once the basics are in place, develop your storage capacity with a drive upgrade. Left, right, left, right...

EXTERNAL FLOPPY DRIVE

This is the cheapest upgrade of the three and it offers many advantages compared to a single-drive setup. First and foremost, you can copy disks without all that ghastly disk swapping. Simply insert the blank disk in drive B and drag any files you wish to copy from drive A on to the drive B icon.

Some large programs do not fit on to a single 720K floppy disk, but may run if some of the files are stored on a disk in drive B. One such example is *That's Write 3*, which will load on a twin-floppy system, but struggles if you only have one drive.

If you can afford a little extra, you can upgrade to a high density drive. Installing the controller circuit board requires a little expertise, but the end result is a floppy drive which can store 1.4Mb of data, nearly twice as much as a standard 720K drive. The high density drive also makes it easier to transfer files to and from PC and Mac disks, which are almost always high density these days.

ADVANTAGES

- Cheap
- Easy to fit
- Reduced disk swapping

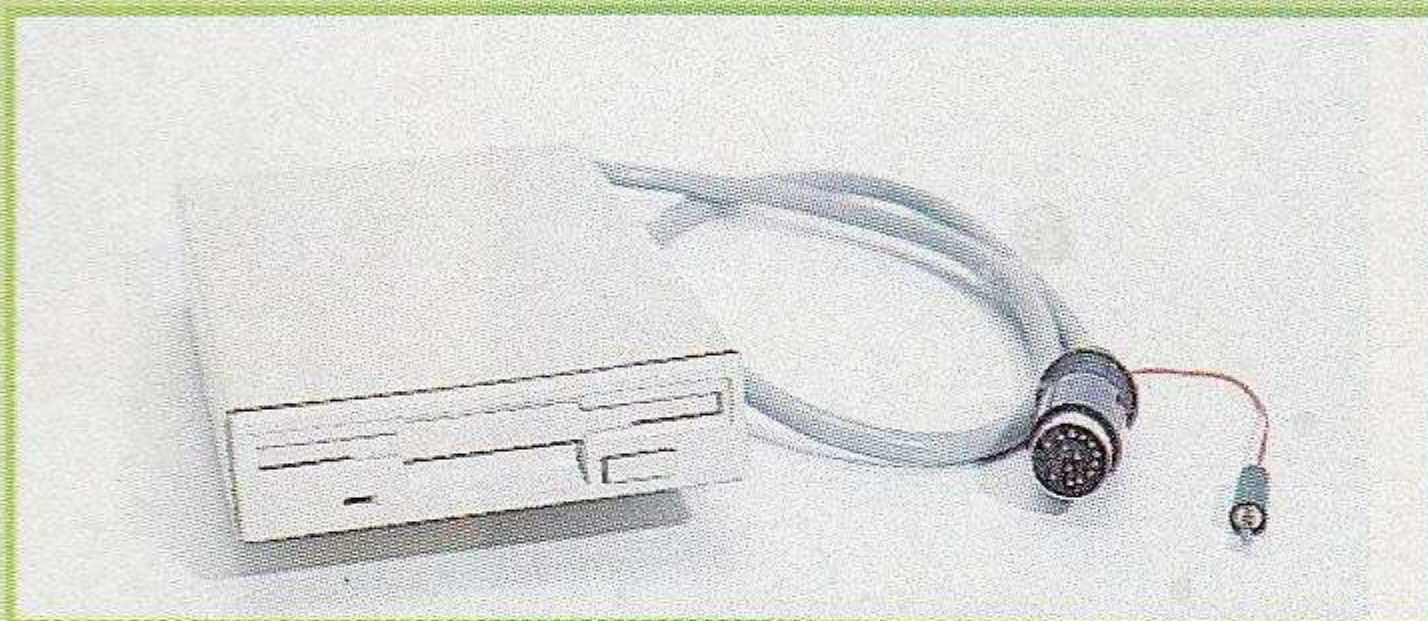
LIMITATIONS

- Small storage capacity
- Slow access

● 720K external drive, £59.99



An extra floppy drive is cheap and will enhance the way you work. It's a very worthwhile investment.



If you're interested in reading PC and Mac high density disks, you can add a HD drive to your machine.

● 1.4Mb external drive with controller, £79.99
The Upgrade Shop ☎ 01625 503448. Also available from First Computer Centre and Gasteiner.

Your ST comes with an internal floppy drive fitted, which is all very well if you simply want to play games which can be loaded from a single drive. If you require any more from your system, you'll need extra storage capacity.

Some programs are far too big to fit on one 720K floppy disk, meaning that even if you have enough RAM to run them, your storage capacity prevents you from doing so. Almost all serious applications require you to save data to disk as you work, which means taking your program disk out of your internal drive and inserting a data disk. This disk swapping can become really tiresome.

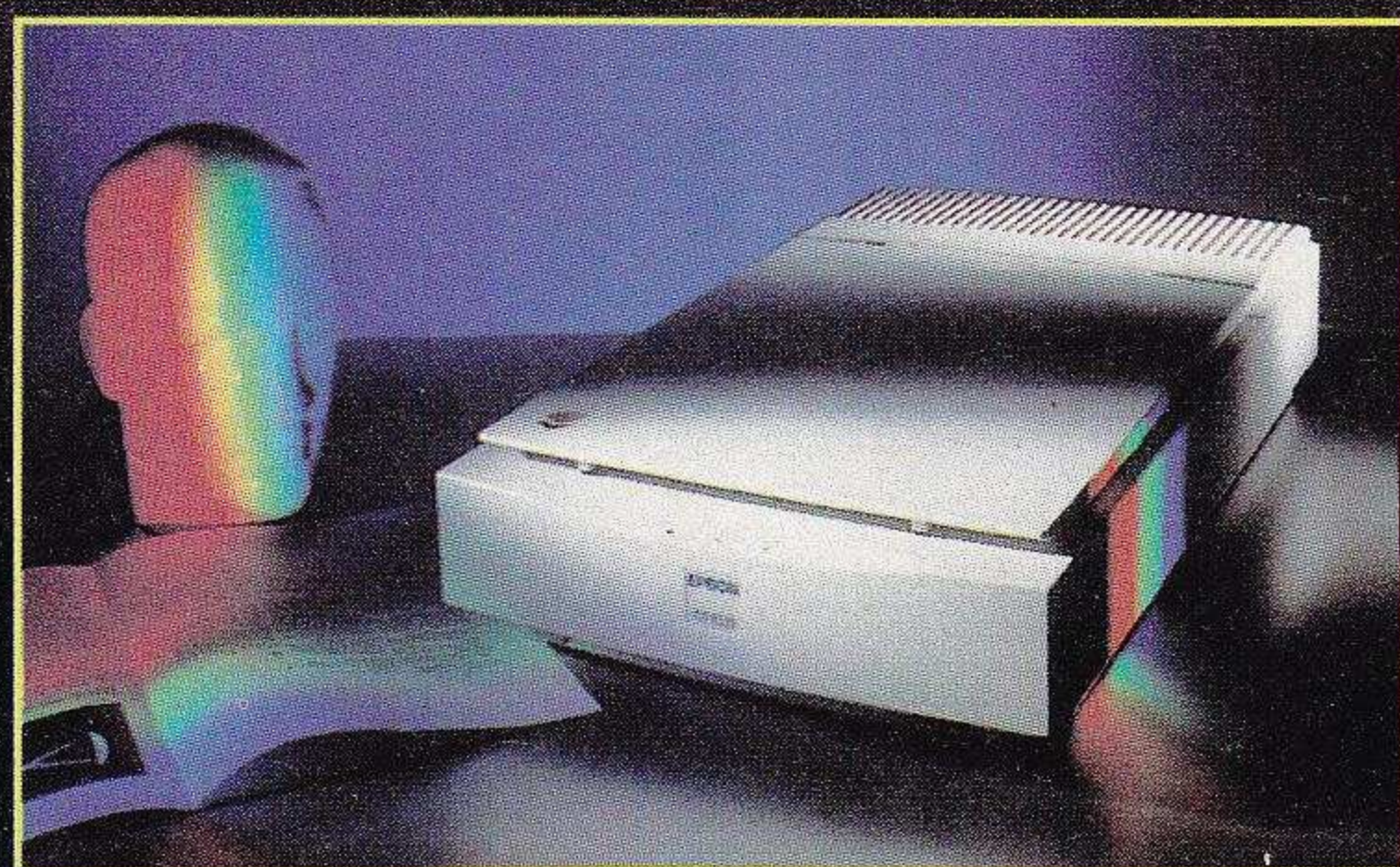
The simple solution is to obtain some extra storage, in the form of an external floppy drive or hard drive. A third option is one of the new removable media drives, such as the Iomega Zip Drive and Syquest EZ 135.

Each different drive upgrade has its own set of limitations, so think carefully before you decide which one is right for your pocket, and your system. The three boxes on these pages cover the drive expansion options and will help you make a decision.

Input devices

A less obvious way to upgrade your ST is by adding more input devices – video digitisers, scanners, sound samplers and graphics tablets. Sound sampling gets the full treatment on page 35, and we'll be covering other input devices in a forthcoming issue.

Video digitisers can grab still images



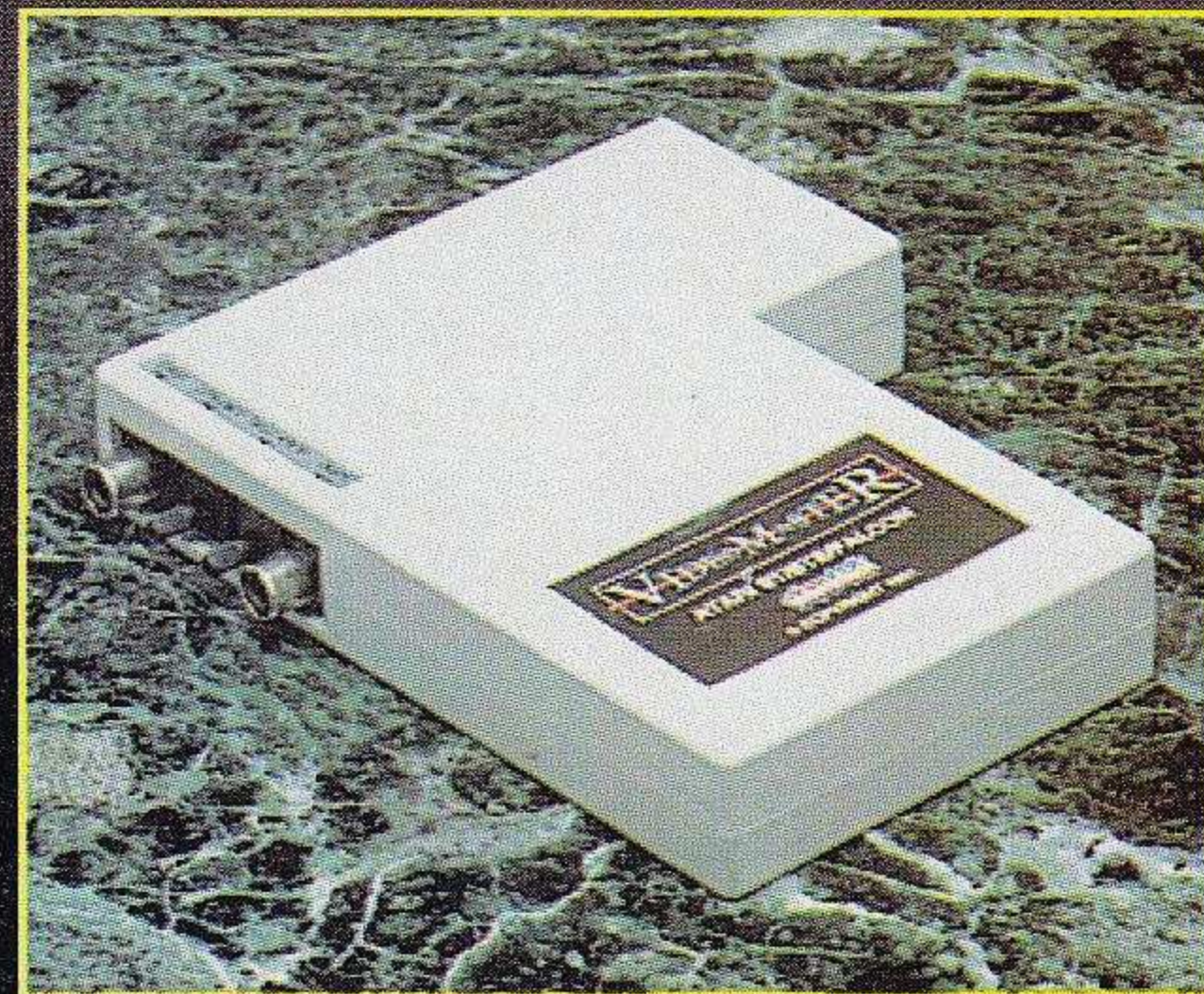
Epson's GT scanners can digitise A4 images in full colour.

and moving footage from any video source, such as a video recorder or camera. As well as creating animations, you can use still frames in DTP work, Web pages and even games. HiSoft's VideoMaster (STF 42, 92%) can snatch small images and sound simultaneously, while the Vidi 12 grabber (STF 54, 80%) can produce full 512-colour pics on any ST.

Scanners enable you to convert printed images into digital data.. Hand scanners such as the PowerScan (STF 75, 89%) can grab small grayscale images, while the Epson GT flatbed scanners (STF 77, 85%) can scan an entire A4 page in full colour. We covered scanners in detail in issue 75.

Mouse alternatives such as the Tabby graphics tablet (STF 54, 86%) enable you to draw more naturally.

- VideoMaster, from £79.95
HiSoft ☎ 01525 718181
- Vidi-12-ST, £69.99
First Computer Centre ☎ 0113 2319444
- Power Scanner, £99.99
First Computer Centre ☎ 0113 2319444
- Epson GT flatbed scanners, from £699
System Solutions ☎ 0181 6933355
- Tabby, £49.99
First Computer Centre ☎ 0113 2319444



The VideoMaster can grab moving images.

HARD DRIVE

For many years a hard drive was an impossible dream for ST owners. The vast storage capacity and high-speed access was attractive, but the price was prohibitive. Now, with prices for a complete 100Mb unit as low as £149 (The Upgrade Shop), a hard drive is an attainable goal for most people.

The most impressive facet of hard driving is the sheer speed at which your programs load. You can load applications in just a few seconds, and it's easy to switch between programs.

The other advantage is the extra space for large applications. Without a hard drive, DTP giant *Calamus SL* cannot make use of all its files and modules. With a hard drive, you can expect to install any serious application and simply run it from the desktop. You can also consider using one of the PD or commercial desktops to further enhance your system. Ease

loads from hard drive in less time than it takes to say, "Nick Peers, Boy Wonder." Regardless of your version of TOS, you can have as many Desktop enhancements as you want.

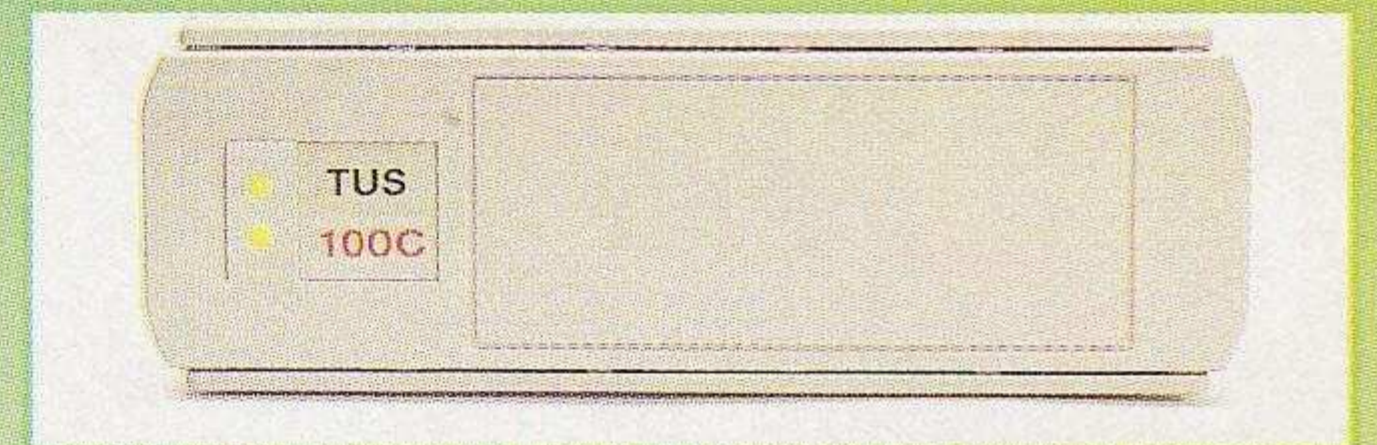
ADVANTAGES

- Speed of loading
- Available space
- Relative cheapness

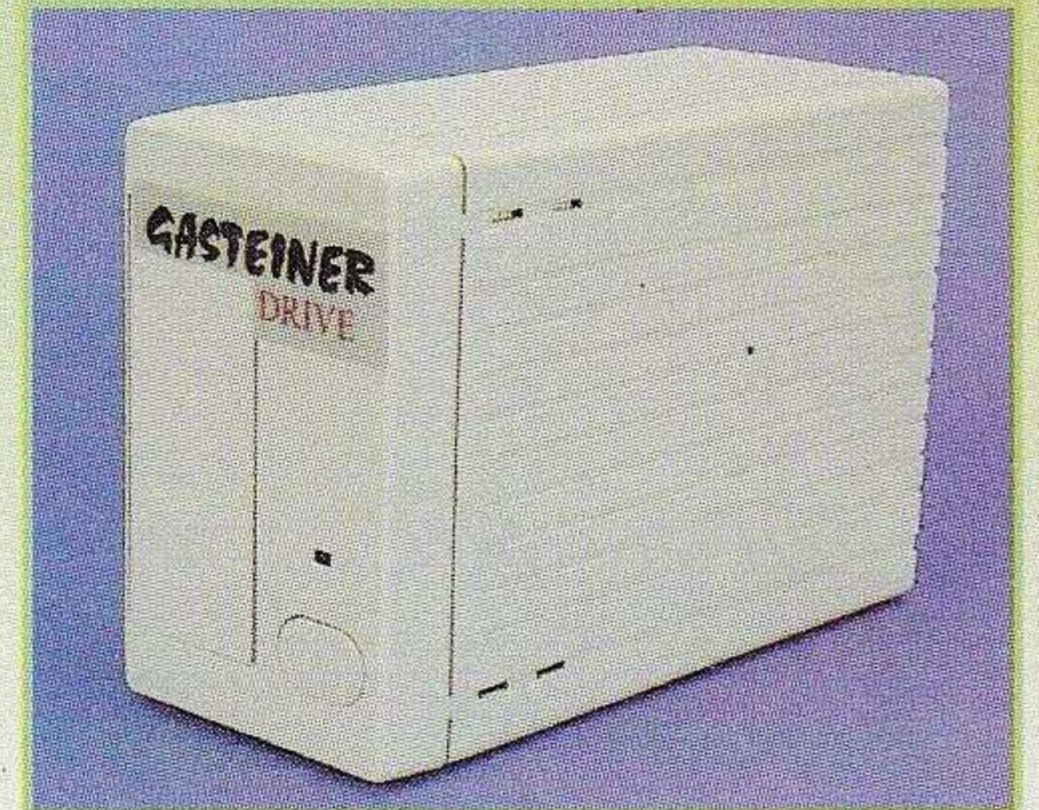
LIMITATIONS

- Less portable than floppies
- Don't drop it

● Hard drives: Price depends on make and storage capacity. Be sure to ask about SCSI controllers if applicable. See issue 73 for details, or try The Upgrade Shop, Analogic, Gasteiner, First Computer Centre and System Solutions.



Hard drives offer lightning fast access to your programs and enable you to store large volumes of data.



REMOVABLE MEDIA DRIVE



Omega's Zip Drive is a small removable media device that uses inexpensive disks each holding around 100Mb.

The new generation of removable media drives has brought us both high capacity and cost effectiveness in one fell swoop.

SyQuest's EZ Drive 135 (STF 81, 91%) is quiet and eminently affordable. It uses 3.5-inch disks which each hold about 128Mb and cost

around £15 each. The mechanism will cost you just over £200, but once you have it, you can expand your system very cheaply indeed. If you need a lot of hard drive capacity this is really the best way to get it, because the more disks you buy, the cheaper the price per megabyte. For example, 2Gb worth of disks would cost about £240, but a 2Gb hard drive mechanism costs twice that. The only advantage of the hard drive is that you have instant access to all your data without having to change disks.

Omega also produces a drive based around the same principle, the Zip Drive. The disks and mechanism are slightly cheaper and the storage capacity of each disk is about 95Mb. In reality, there is little to choose between the Zip Drive and EZ Drive 135.

ADVANTAGES

- Cheap disks



SyQuest's EZ Drive was rated very highly in issue 81.

- Fast access
 - Expandable storage
 - Portable
- LIMITATIONS
- More expensive initially than a hard drive

● Zip Drive, from £199
HiSoft ☎ 01525 718181
● EZ Drive 135, from £199
Gasteiner ☎ 0181 3456000

Storage

Misc

Speed

Graphics

Essentials

Multitasking

Your basic operating system, TOS, can run one program at a time. Although Desk Accessories enable you to access other mini-programs while an application is running, they don't provide the benefits of a fully multitasking environment. A multitasking operating

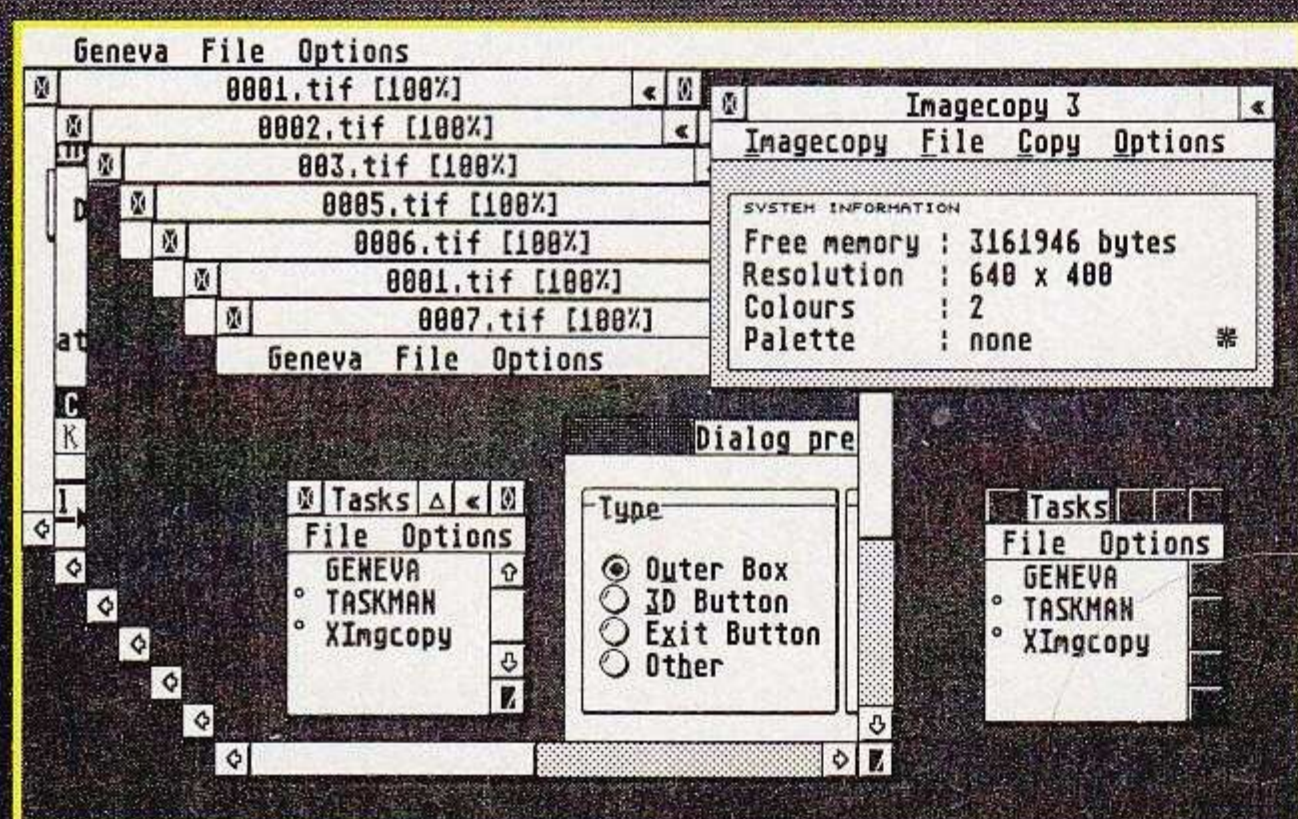
system enables your ST to run multiple programs simultaneously.

The multitasking system divides the central processor's time up into 'time slices' and rapidly switches between the applications you have running, creating the illusion that they're all running at once. Once you've used a multitasking Atari, the benefits are obvious. Rather than closing your graphics program to write a letter, send a fax or pick up Internet e-mail, you can just launch the new program, complete the chore and then switch back.

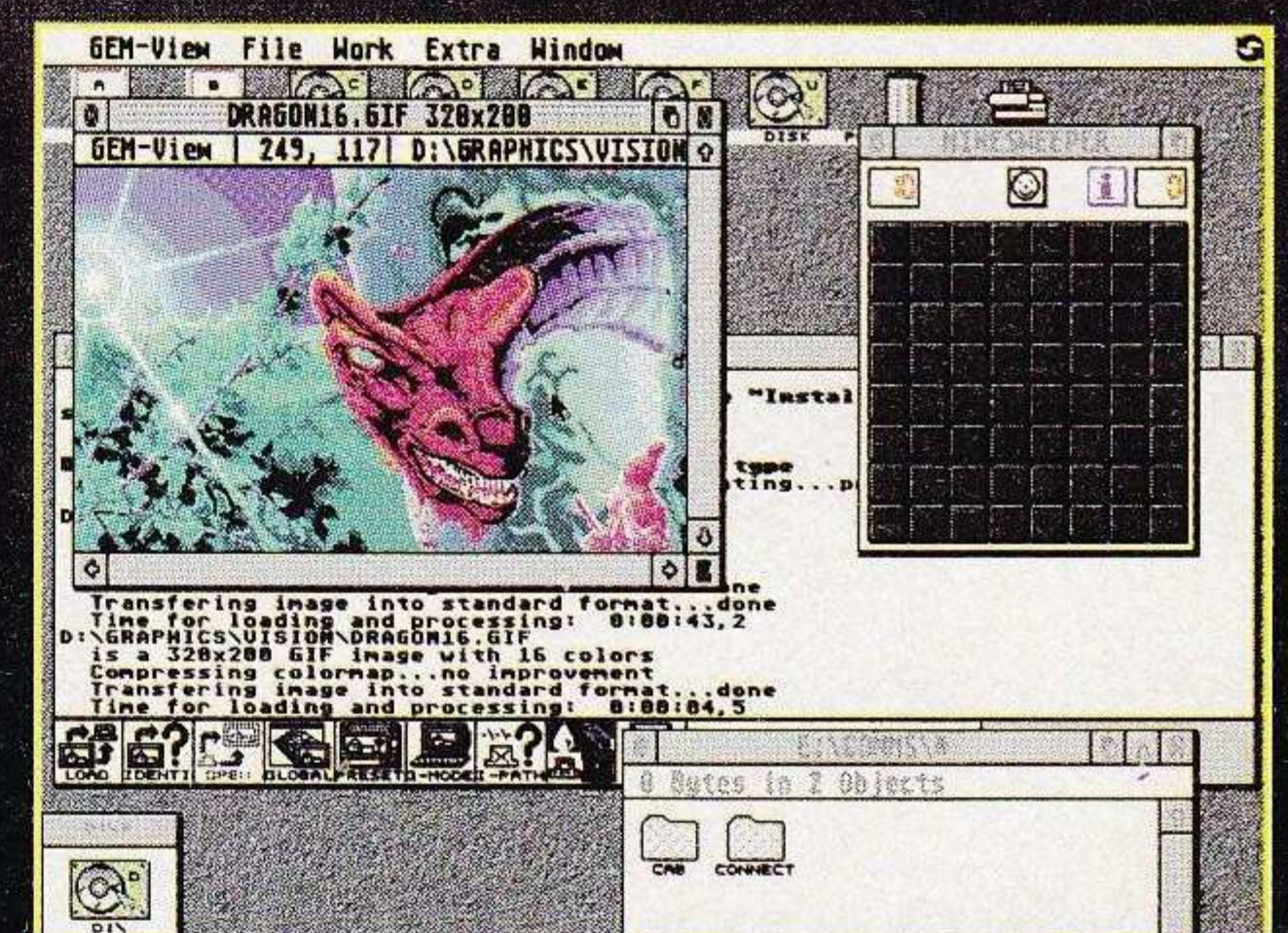
There are two options. Gribnif's *Geneva* (STF 55, 93%) runs on any ST, no matter how humble. It's good, but not quite as fast as the alternative, *MagiC* from System Solutions. *Geneva* offers co-operative multitasking, which means a badly written program can hog the CPU

time, halting everything else, whereas *MagiC*'s pre-emptive system distributes the processor time more smoothly. With the release of version 4 (reviewed on page 22), *MagiC* is finally available for Falcon owners, too.

● Geneva, £59
Compo ☎ 01487 773582
● MagiC 4, £69.95
System Solutions ☎ 0181 6933355



Geneva runs on all STs. It offers co-operative rather than pre-emptive multitasking.



MagiC's pre-emptive multitasking system distributes processor time smoothly.

The need for speed...

Size matters. And so does speed. Got that? Good. Now hurry up, you at the back. Work those legs...

No matter how fast your computer is, it's always one per cent slower than you really need it to be. This might sound like a marketing scam to get you to buy hard-

ware and software you don't really need, but it makes sense – your ST really will benefit from a set of go-faster stripes, no matter what you use it for.

Add up all the time you waste waiting for the ST's CPU

to finish a task before you can do something else. Granted, it isn't a huge chunk out of your life, but it's still a chunk you could use more profitably.

In the fast lane

A faster ST is nicer to use, too. Archivers compress files more quickly, programming languages compile your work in less time, and so on. Complex tasks such as image processing

and rendering or raytracing can tie up your processor for hours at a time. Give your ST a speed boost, though, and you'll spend less time twiddling your thumbs and more time actually working. Multitasking systems such as *Geneva*, *MagiC* and especially *MultiTOS* will also run more smoothly.

You don't need to be a dab hand with a soldering iron or have a fat wallet, either. Even a well-written piece of software can grease the wheels of your ST. While a dedicated hardware accelerator undoubtedly produces more startling improvements, don't ignore the software option.

Accelerators

For a serious speed injection, dedicated hardware accelerators produce superb results. Some may simply accelerate the clock speed of your ST's processor, which normally runs at 8MHz. More ambitious models replace the processor with a newer, enhanced version, such as the 68030 used in the TT and Falcon. Whatever you use your ST for, a

HARD HARDWARE

You may not be able to afford a full-scale hardware accelerator board, but all isn't lost – there are still some small hardware tweaks you can use to enhance your system, even if your budget is relatively modest.

Falcon owners can add the Motorola 68882 maths co-processor chip, often called an FPU (Floating Point Unit). This chip handles complex calculations for software that supports it, such as the graphics programs *Xenomorf*, *Studio Photo* and *NeoN*, and can speed graphical operations considerably. It's easy to fit, too – open your Falcon, remove the



It may look like a black plastic square, but this chip is dead good at maths.

screws holding the power supply, and drop the chip into the available socket.

STFM owners lusting after the

STE's enhanced Blitter graphics chip also have a possible hardware upgrade. Compo has a few of these chips available for retrofitting into the older STFM. While adding one of these chips won't turn your machine into an STE – you'll still be missing the expanded palette and DMA sound system, among other things – it can speed up the redrawing of GEM windows and dialogs. Contact Compo, but hurry, because stocks are limited.

- Maths co-processor, £29.99 Compo ☎ 01487 773582
- Blitter for STFM, £49 Compo ☎ 01487 773582

Virtual memory

OUTSIDE V3.20 Configuration

(C) 1993 by Uwe Seimet

C: 6	D: 74	E: 62	F: 93	G: 102	H: 51	I: 0	J: 0
K: 0	L: 0	M: 0	N: 0	O: 0	P: 0	Q: 0	R: 0
S: 0	T: 0	U: ---	V: 0	W: 0	X: 0	Y: 0	Z: 0

Page size: 8 KByte 16 KByte 32 KByte

Virtual memory in MByte: 30. Alternative memory in MByte: 2.0

ROM to RAM, write protection ROM to RAM, no write protection

Compatibility mode Memory maximum Lock cartridge

Lock program Unlock program

OK Cancel

Atari's hardware designs limit you to 4Mb of memory on an ST and 14Mb on a Falcon. In most cases you'll find this adequate, but extra memory is always handy for large tasks or for multitasking operating systems such as *MagiC*. If you need more memory, or can't afford the real thing, virtual memory may be an option.

Virtual memory fools your machine into thinking it has more memory by using hard disk space as temporary storage. When more memory is needed,

the virtual memory program 'swaps' an unused portion of RAM to hard disk, then retrieves it when needed. It does slow your system down though, especially with a slower hard drive. Because the ST uses the older 68000 processor, it doesn't support virtual memory – a 68030 chip is required.

The most popular virtual memory system is 16/32's *Outside* (STF 71, 89%), which provides anything up to a whopping 500Mb of extra memory, presuming you can spare sufficient disk space. If you have a Falcon, TT, or ST fitted with a 68030 card, such as the PAK/68, virtual memory can get you out of some tight spots.

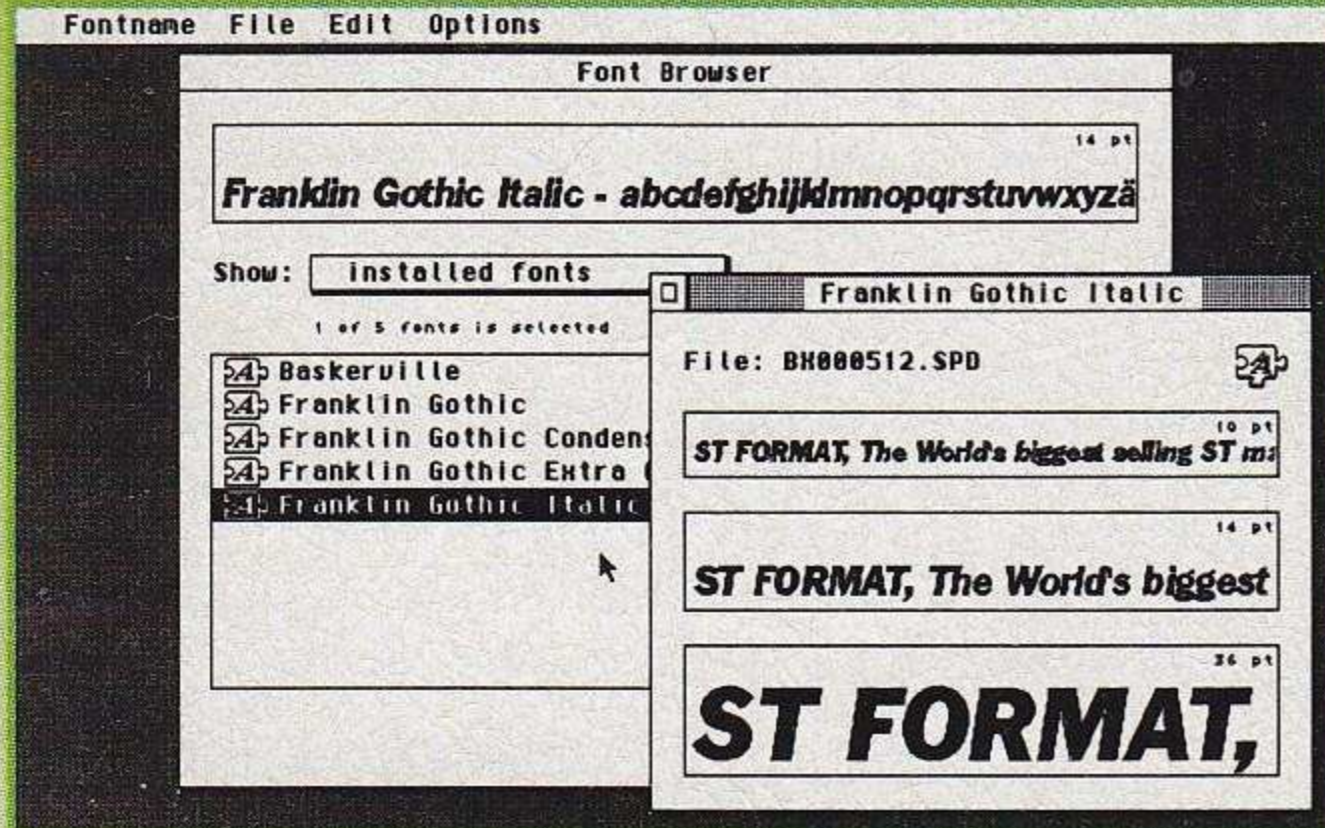
- *Outside*, £69 16/32 Systems ☎ 01634 710788

Virtual memory is an excellent compromise between speed and lack of memory, but you'll need a 68030 processor and hard drive to make use of it.

SOFT OPTIONS

Don't be fooled into thinking that you have to buy expensive hardware to soup up your ST. One of GEM's biggest let-downs is the slow code which handles the drawing of menus, dialog boxes and the like. Because it's written in C, which can be slow, replacing the relevant bits of code with specially written routines in optimised assembly language gives your display a hefty kick up the rear. It may sound complicated, but it's as simple as installing a piece of software.

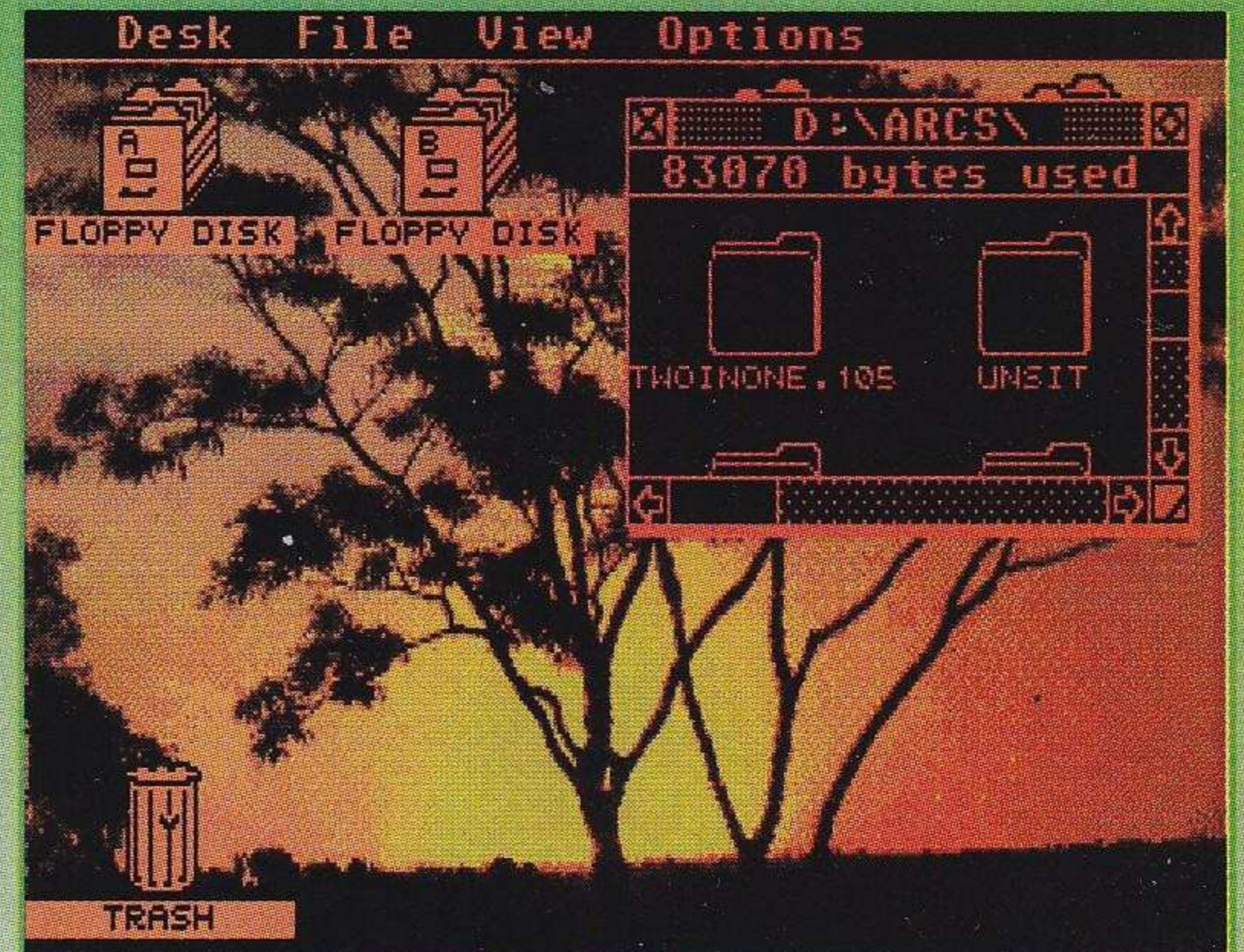
The best option is *NVDI* from System Solutions. Now up to version 4 (see page 25 for



Without doubt the best screen accelerator that money can buy, *NVDI 4* also offers impressive font handling.

a review), *NVDI* replaces the VDI, or Virtual Device Interface – the slow sections of GEM which deal with the display – producing lightning-fast screen updates. Every release of *NVDI* has scored highly, and newer versions add a vector font engine for superb font display and printing. If you can only afford one piece of software for your ST this year, make it this one.

The FaST Club's *Warp 9* (£29.95, FaST Club) doesn't provide quite the same raw increase in screen redraw speed, but it's a lot cheaper. It's still one or two notches above the standard GEM routines and throws in some fancy extras. You can load images as Desktop backdrops, for example, and it comes with a built-in screensaver module to protect your monitor. It doesn't provide a full font system like *NVDI*, but it does let you replace the boring ST system font with something more exciting. Extra screensavers and Desktop fonts are available from PD Libraries and bulletin boards, enabling you to customise your drab Desktop.



Although nowhere near as developed as *NVDI*, *Warp 9* offers a low-cost solution to improving the speed of your screen updates. It can also make your desktop brighter and more cheerful.

- *NVDI 4*, £49.95
System Solutions ☎ 0181 6933355
- *Warp 9*, £29.95
FaST Club ☎ 0115 9455250

hardware accelerator can give it some serious punch.

The 32-bit PAK/68 card (*STF 70*, 93%) replaces your ST's 68000 processor with the faster 68030 chip. It produces a serious turn of speed and is compatible with almost all software. It can be difficult to fit, but System Solutions will install it for you if you want.

The PAK/68 board is largish, so you really need to rehouse your ST in a larger case. Again, System Solutions

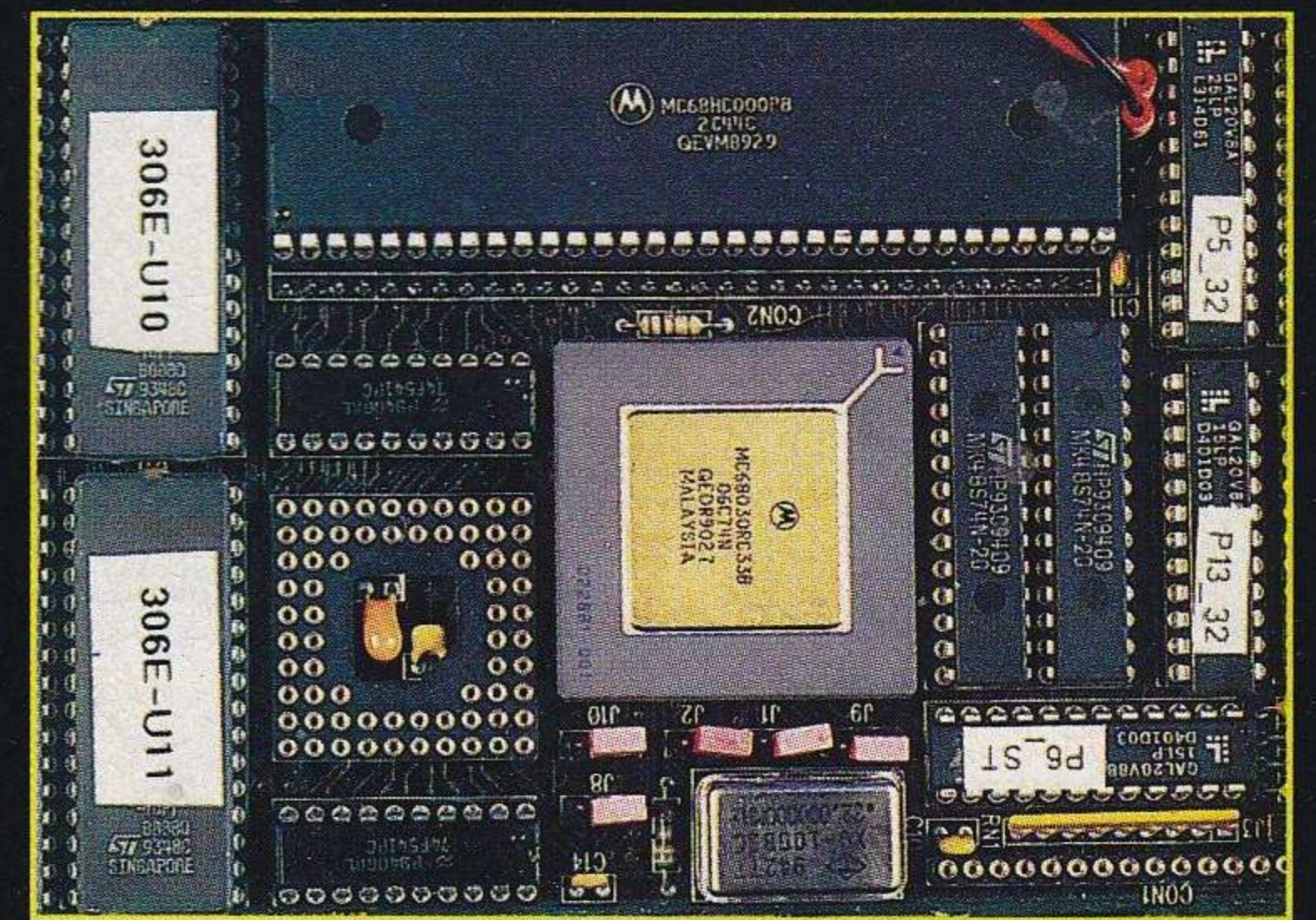
has a range of options, including the Desktopper and rack-mounting cases for use in professional musical studios.

Armoured vehicles

If you don't need the raw power offered by the PAK upgrade, System Solutions also sells the T28e and T36e cards. Despite sounding like Russian tanks, they drive your ST's 68000 up to a scorching 28 and 36MHz. You don't need a new case either, and they can be

switched back to 8MHz to avoid compatibility problems.

- PAK/68, £249–399
System Solutions ☎ 0181 6933355
- T28e, £179–199
System Solutions ☎ 0181 6933355
- T36e, £239–259
System Solutions ☎ 0181 6933355



The Pak/68 not only gives your ST a speed boost, but also provides a 68030 processor, as found in the Falcon and TT.

Storage

Misc

Speed

Graphics

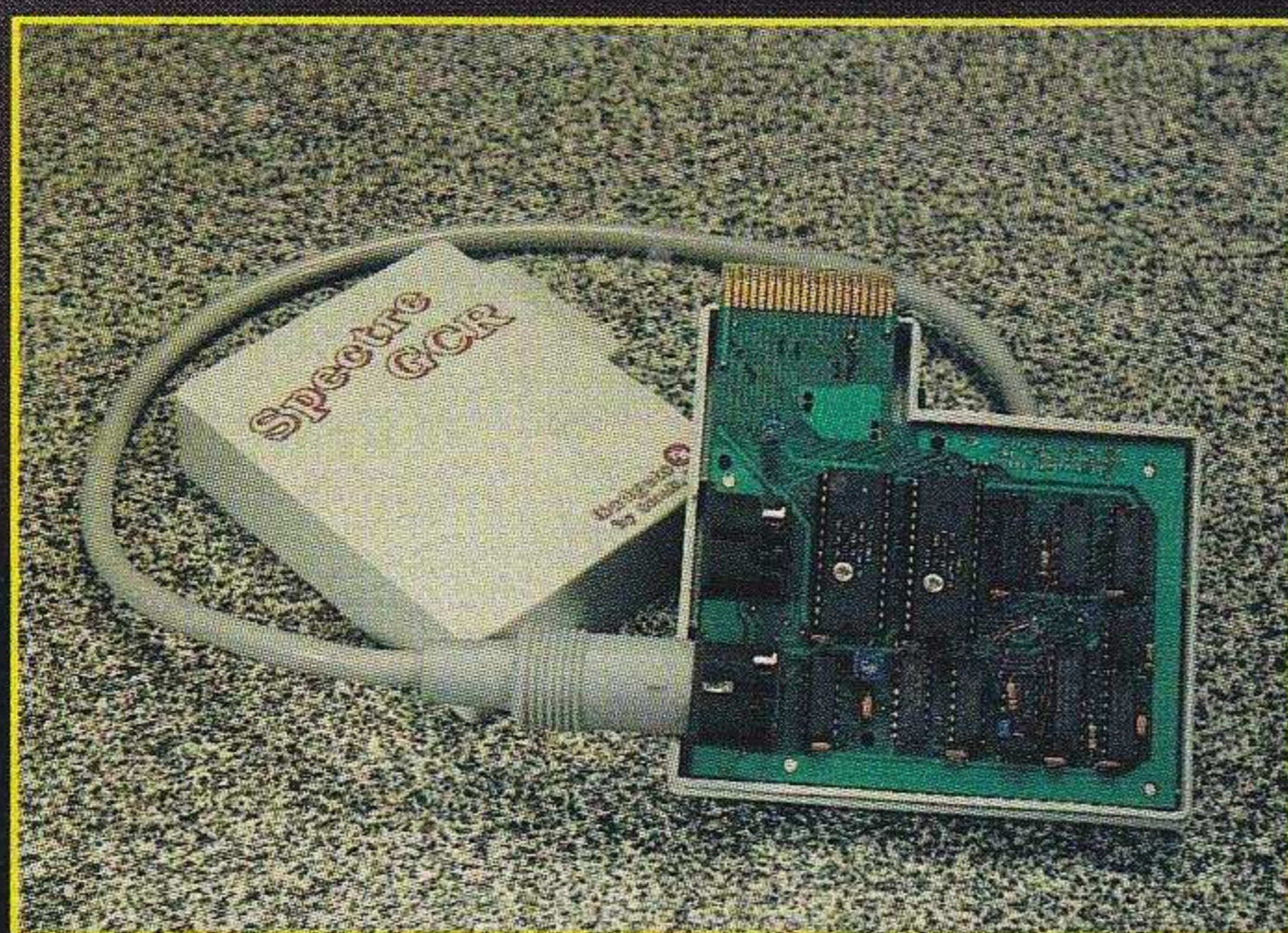
Essentials

Emulators

Although there's plenty of excellent Atari-compatible software, there will probably come a time when you spot an application on another computer

that just isn't available for the ST. Fortunately there's a way round this problem.

Emulators are hardware devices that make your ST behave like a different type of computer, enabling you to run software which wasn't written for the Atari range. Using an emulator isn't as good as owning the other computer, but emulators can unlock useful software and increase your productivity.



No longer available new, the Spectre GCR Mac emulator is far more effective than any of the PC emulators.

They won't break the bank or fill your house with more computer gear, either.

Apple Macintosh wannabes only have one option, the aging Spectre GCR Mac emulator. Now sadly unavailable, it only runs the older version 6 of the Mac's operating system, which reduces its usefulness in today's market. That said, it reads and writes Mac disks and performs very well. You'll need to watch for it in the secondhand market, though.

If you want to emulate a PC, you have several options. Compo offers a range of hardware devices which make an ST or Falcon behave like an ancient 8086 (XT) or slightly more modern 286 (AT). They won't run much apart from older DOS applications, but they do certainly work. You



Falcon Speed turns your groovy Falcon into an aged 286-alike, enabling you to run old DOS and Windows software.

could almost certainly buy a secondhand 286 for between £100 and £200, though.

- Spectre GCR
Try Reader Ads, page 52
- PC Speed, £55
Compo ☎ 01487 773582
- AT Speed, £129
Compo ☎ 01487 773582
- Falcon Speed, £199
Compo ☎ 01487 773582

Graphics cards

Eye up some fancy new cards and give your ST better vision. Eyes left, eyes right. Eyes left...

While your ST's basic 16 colours may be enough for playing games and using fairly simple art packages, you can open up a whole new world by expanding your ST's graphical

capabilities. Some art packages support 256 or more colours, and image viewing utilities such as *ImageCopy* also cater for this enhanced palette.

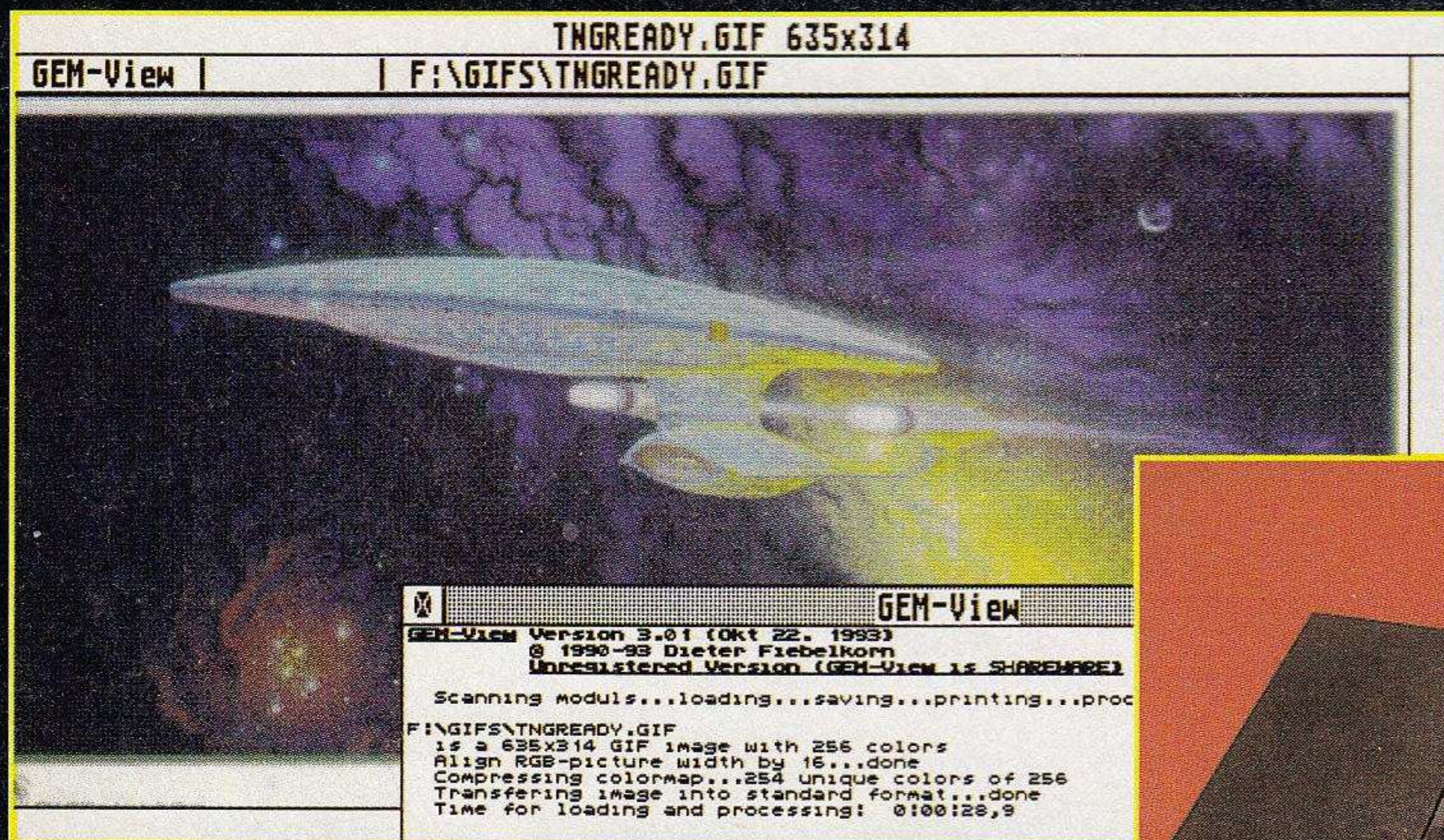
Image processing packages such as Floppyshop's *Positive Image* can work with more

than 16 colours, turning your ST into a graphics mean machine capable of manipulating complex photographic images. DTP packages *Calamus SL* and *Papyrus Gold* also drive the enhanced colour displays.

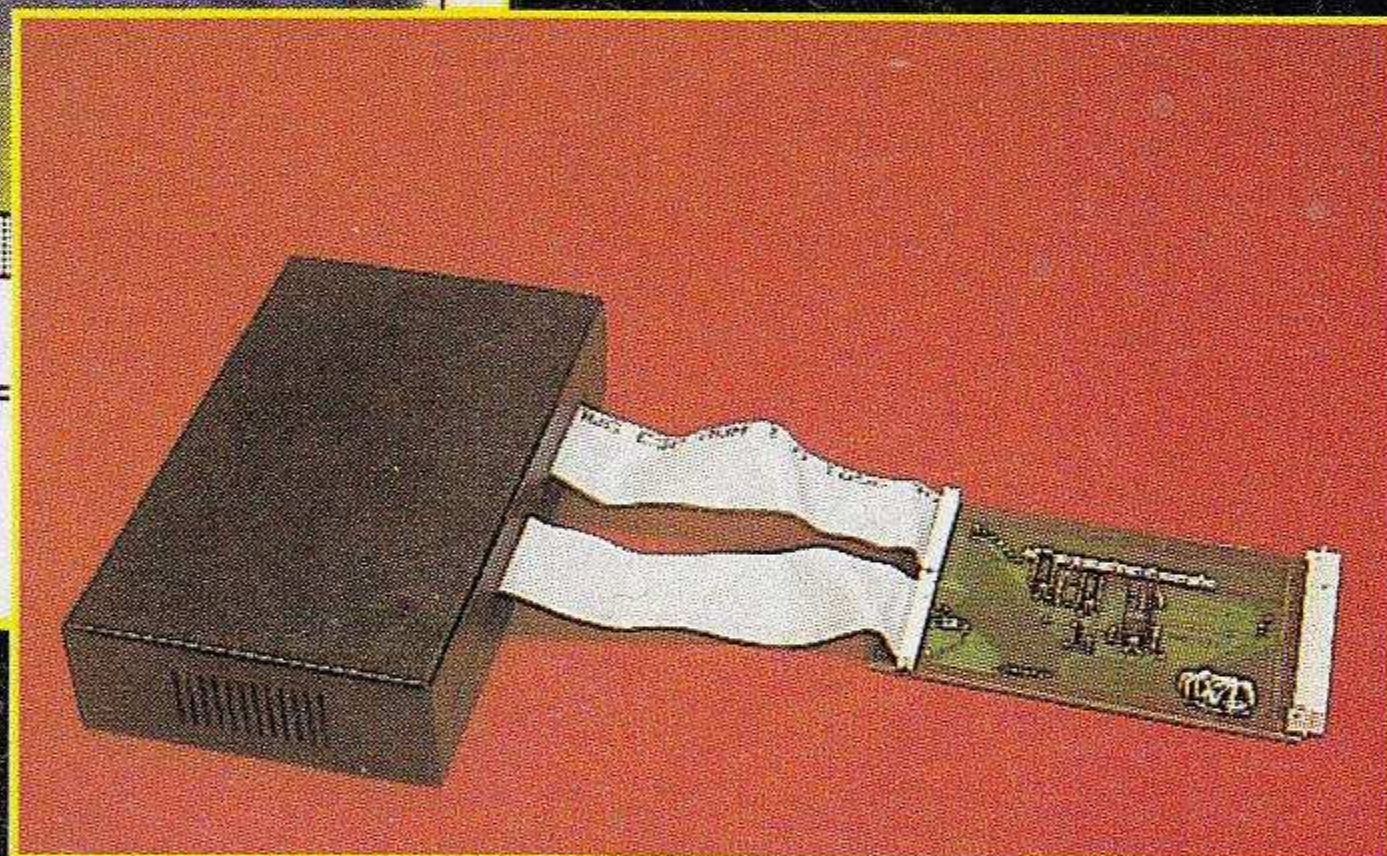
Graphics boards usually require a dedicated monitor – either a PC SVGA monitor or a multisync display – because they won't work with a TV connected to the ST's modulator output. Fitting a graphics card can be tricky, and may involve purchasing a new case for your ST.

Lexicor's Nova graphics card fits into a MegaST,

Sadly, the Nova graphics card is no longer readily available. 16/32 Systems occasionally has refurbished boards.



Graphics cards, such as the Nova, enable ST users to view 24-bit colour images with a dedicated monitor. Certain applications, such as GEM-View and Calamus SL, really benefit from this.



MegaSTE or TT easily, thanks to the additional expansion bus. It drives an SVGA monitor and endows your ST with up to 16.7 million colours (more colours than a standard Falcon can give you).

Owners of standard STs will also need a MegaBus expansion unit, and it's a re-casing job due to its size. Sadly, the Nova seems to have all but disappeared, although 16/32 Systems does occasionally have secondhand units.

The Panther card, due soon from System Solutions, should be an exciting new option for graphically starved STs. The Panther system also drives a multisync monitor and provides a 24-bit display. These dinky boards fit into your existing case. They come with 1Mb of on-board memory, so you don't need to add a separate accelerator to your ST's CPU.

System Solutions also hopes to have a 2Mb version, which should provide an even smoother ride. Watch for more news and full reviews in future issues of *ST FORMAT*.

- Nova, phone for details
- 16/32 Systems ☎ 01634 710788
- Panther, £259–299
- System Solutions
- ☎ 0181 6933355

Screens

While your ST works perfectly well with a standard television, a dedicated monitor makes for a much better display. A television is fine for playing games and dabbling



The TUS 14-inch mono monitor provides a good display for high-res work.

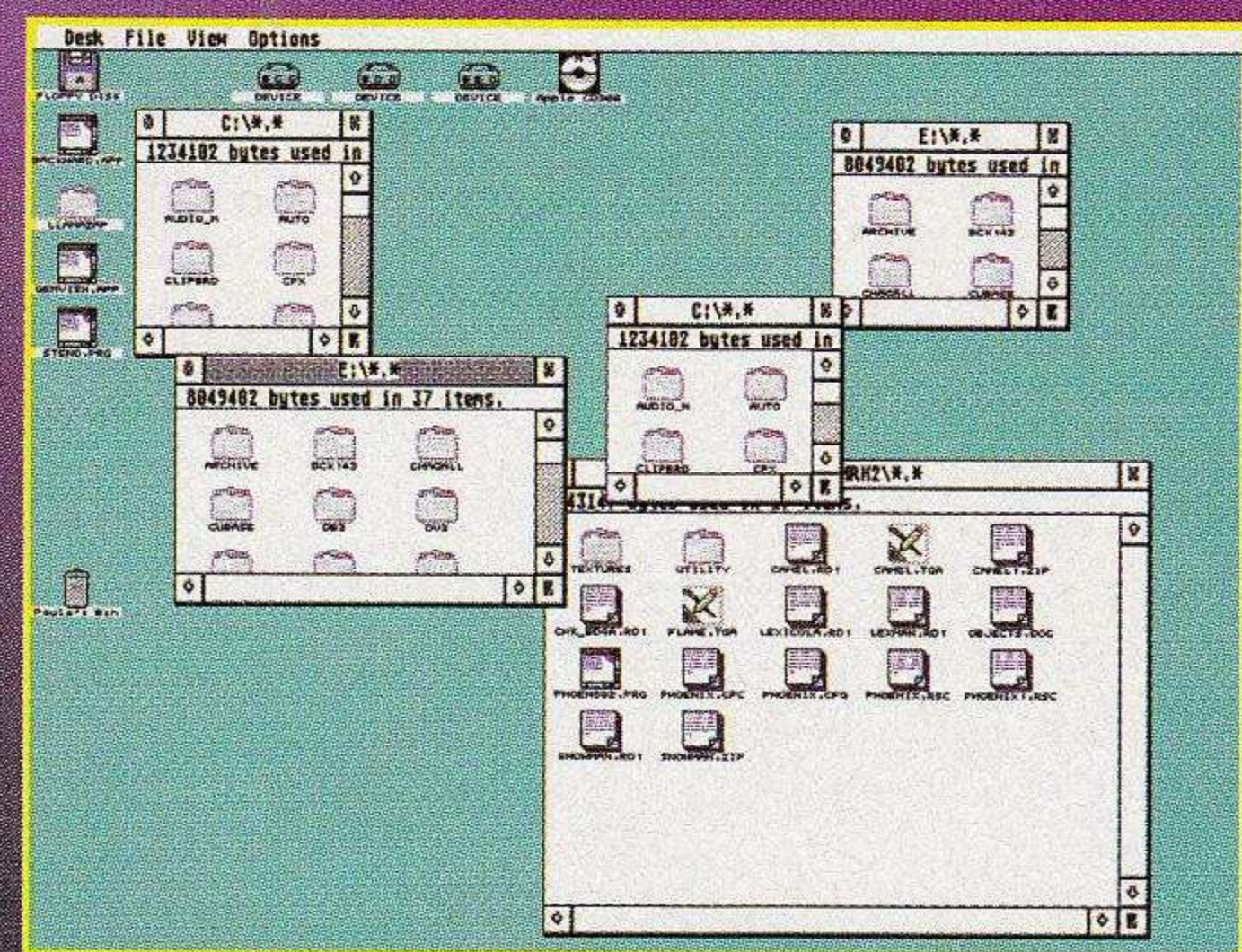
with other programs, but a crisp monitor reduces eye-strain and makes serious work easier and more comfortable.

ST owners will find a high-resolution mono monitor superb for serious work. Some software, such as *Calamus*, will only run in high res, and all serious software looks much better on a high-res screen. You can't buy new Atari monitors any more, so replacements such as the Prima AM1448 and TUS 14-inch mono monitor (STF 71, 80%) are the best choices. If you're a Falcon owner, a colour SVGA monitor such as the Prima MPR2 brings high-res colour at an affordable price.

It's also possible to increase your screen size. Compo offers STFMs (but not STE) owners the excellent Overscan hardware board, and Falcon users can enjoy massive screens with the Screenblaster (STF 65, 90%) and BlowUp (STF 54, 88%) boards.

It's best to get these upgrades installed professionally. Compo and System Solutions offer fitting services.

- Prima AM1448, £99.99
- First Computer Centre
- ☎ 0113 2319444
- TUS 14-inch mono, from £89
- The Upgrade Shop
- ☎ 01625 503448



Screenblaster on the Falcon enables you to work in resolutions you previously only dreamed of.

- Prima MPR2, £192.99
- First Computer Centre
- ☎ 0113 2319444
- Overscan, £49
- Compo ☎ 01487 773582
- Screenblaster 2, £69
- Compo ☎ 01487 773582
- BlowUp, call for details
- System Solutions
- ☎ 0181 6933355

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Amstrad PCW8256/8512/LQ3500	2.85	2.70	2.50	2.30	Panasonic KXP2123/2180	4.95	4.80	4.60	4.40
Brother M1009/1024/1109/1209	3.90	3.75	3.55	3.35	Seikosha SL90/92/95	5.70	5.55	5.35	5.15
Citizen 120D/LSP10/Swift 24/9	2.85	2.70	2.50	2.30	Star LC10/20/100	2.29	2.14	1.94	1.84
Commodore MPS1220/1230	4.50	4.35	4.15	3.95	Star LC200	3.00	2.85	2.65	2.45
Epson LQ100	4.10	3.95	3.75	3.55	Star LC24-10/200	2.86	2.71	2.51	2.31
Epson LQ400/500/800/850	3.45	3.30	3.10	2.90	Taxan Kaga KP810/815/910/915	3.14	2.99	2.79	2.59
Epson FX/MX/RX80/FX/LX800	2.90	2.75	2.55	2.35	COLOUR				
Epson FX/MX/RX100/FX/MX 1000	3.36	3.21	3.01	2.81	Citizen Swift 24	11.95	11.80	11.60	11.20
Epson LX80/86/90	2.12	1.97	1.77	1.67	Panasonic KXP2123/2180	10.63	10.48	11.60	9.88
Mannesmann Tally 80/81	3.90	3.75	3.55	3.35	Star LC10/20/100	6.00	5.85	5.65	5.25
NEC Pinwriter P2200	3.03	2.88	2.68	2.48	Star LC200	9.78	9.63	9.43	9.03
OKI ML182/183/192/193/195	3.17	3.02	2.82	2.62	Star LC24-10/200	9.63	9.48	9.28	8.88

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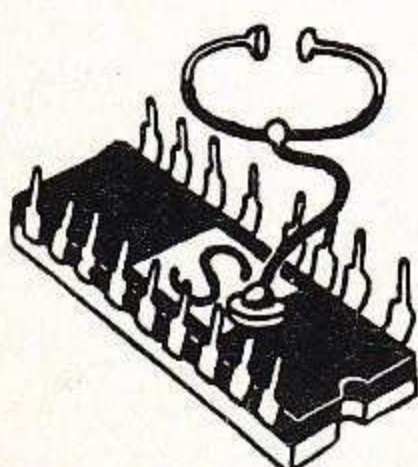
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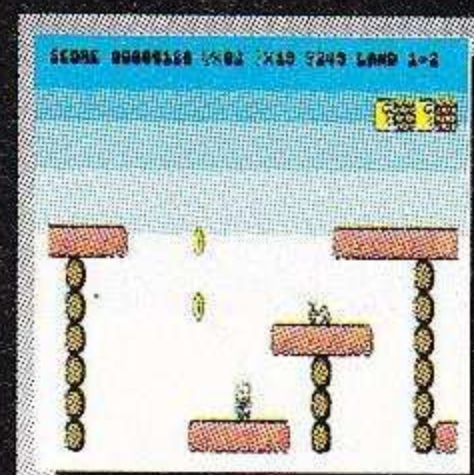
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Win £1,000 worth of memory

Analogic is giving away no less than 100 memory upgrades in this month's fantastic competition.



Together with award-winning hardware company Analogic Computers, we are offering no fewer than 100 lucky ST owners the chance to upgrade their STE – or STFM with unpopulated Marpet board – to 1Mb free of charge!

If you only have a 512K machine, there is so much you are missing out on. Many serious applications and games now require 1Mb or more to run, and upgrading will also give you access to a host of new software from past Cover Disks. As our Pump Up Your ST feature demonstrates, memory is one of the most important upgrades you can

get for your machine.

All you need to do to win one of these prizes is answer the following three questions:

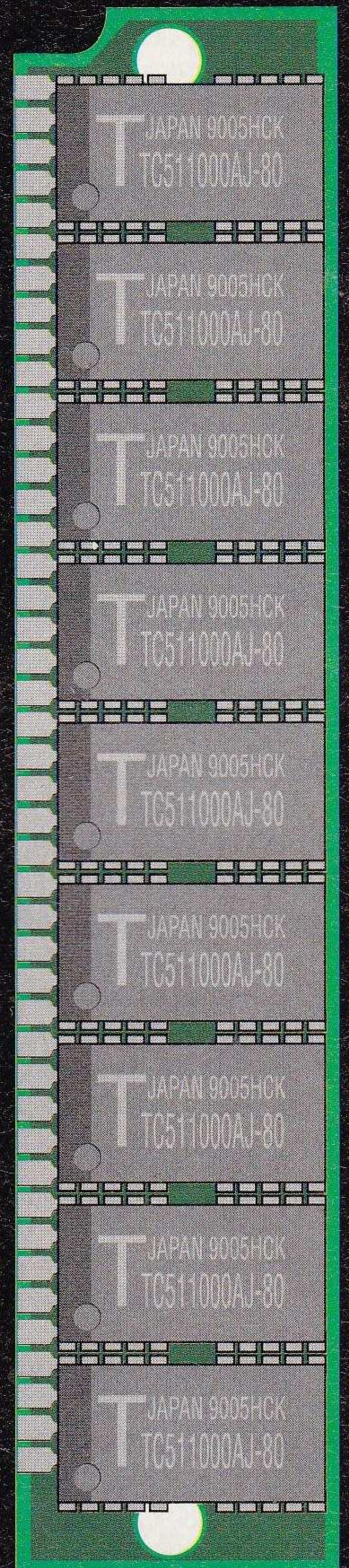
- 1** What program from this month's Cover Disk can be used to find out how much memory you have?
- 2** What is the maximum amount of memory you can have in a STFM?
- 3** Who won the *ST FORMAT* Reader Award for 'Best Repair Company' in 1995?

Send your answers on a postcard or the back of a sealed envelope to: Analogic

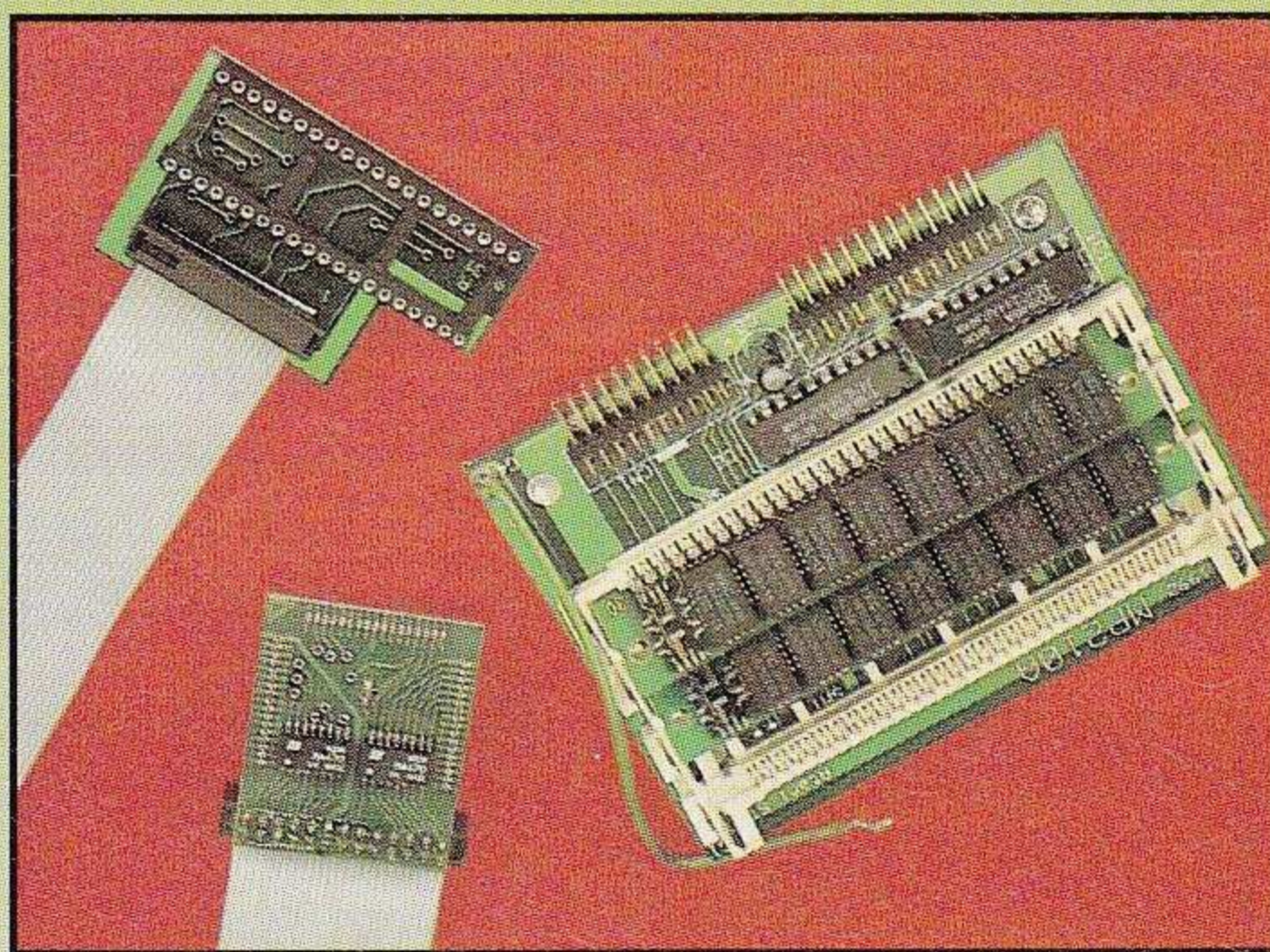
Competition, *ST FORMAT*, 30 Monmouth Street, Bath, Avon, BA1 2BW. The closing date for the competition is Friday 10 May 1996.

RULES

- 1** Entries must arrive by Friday, 10 May 1996.
- 2** The judge's decision is final. No correspondence will be entered into. A list of the winners will be printed in a future issue of *ST FORMAT*.
- 3** Employees of Future Publishing and Analogic Computers are not eligible to enter.



I HAVE AN STFM!



STFM users can use one of the 100 1Mb upgrades on offer in conjunction with a Marpet board.

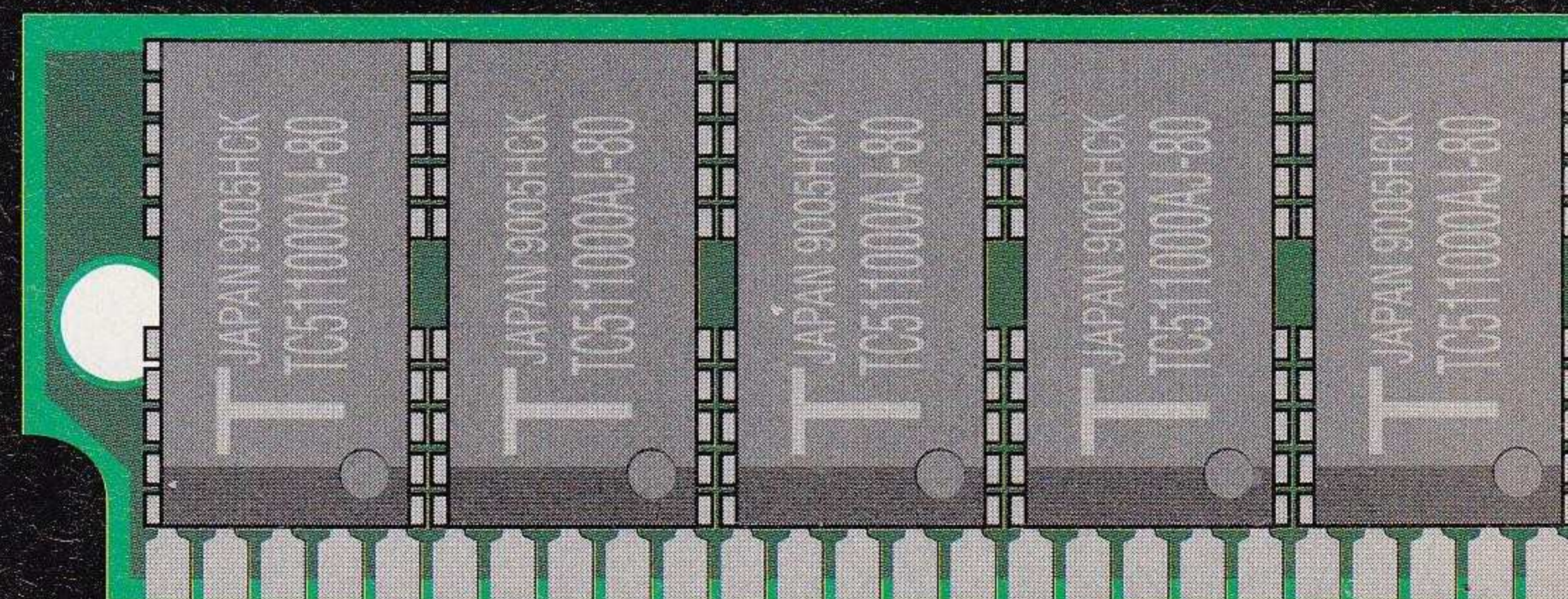
Never fear! You can use the 1Mb memory upgrade in your machine, but you will need to install an unpopulated Marpet memory board first. Analogic can provide you with one for just £24.99 (plus £3.50 P&P). Call ☎ 0181 546 9575.

ANALOGIC COMPUTING

Analogic, the company which has generously donated 100 1Mb upgrades, is very well respected in Atari circles. It won our 1995 Reader Award for Best Repair Service, and also stocks a wide range of hardware, including storage devices such as hard and

CD-ROM drives and memory upgrades. You can also order many accessories, such as a replacement mouse or TOS upgrade, at the same time.

Look out for more special offers from Analogic in future issues of *ST FORMAT*.



MagiC 4

At long last, the best multitasking operating system for the ST arrives in a Falcon-compatible version. Can it pull the rabbit out of the hat?

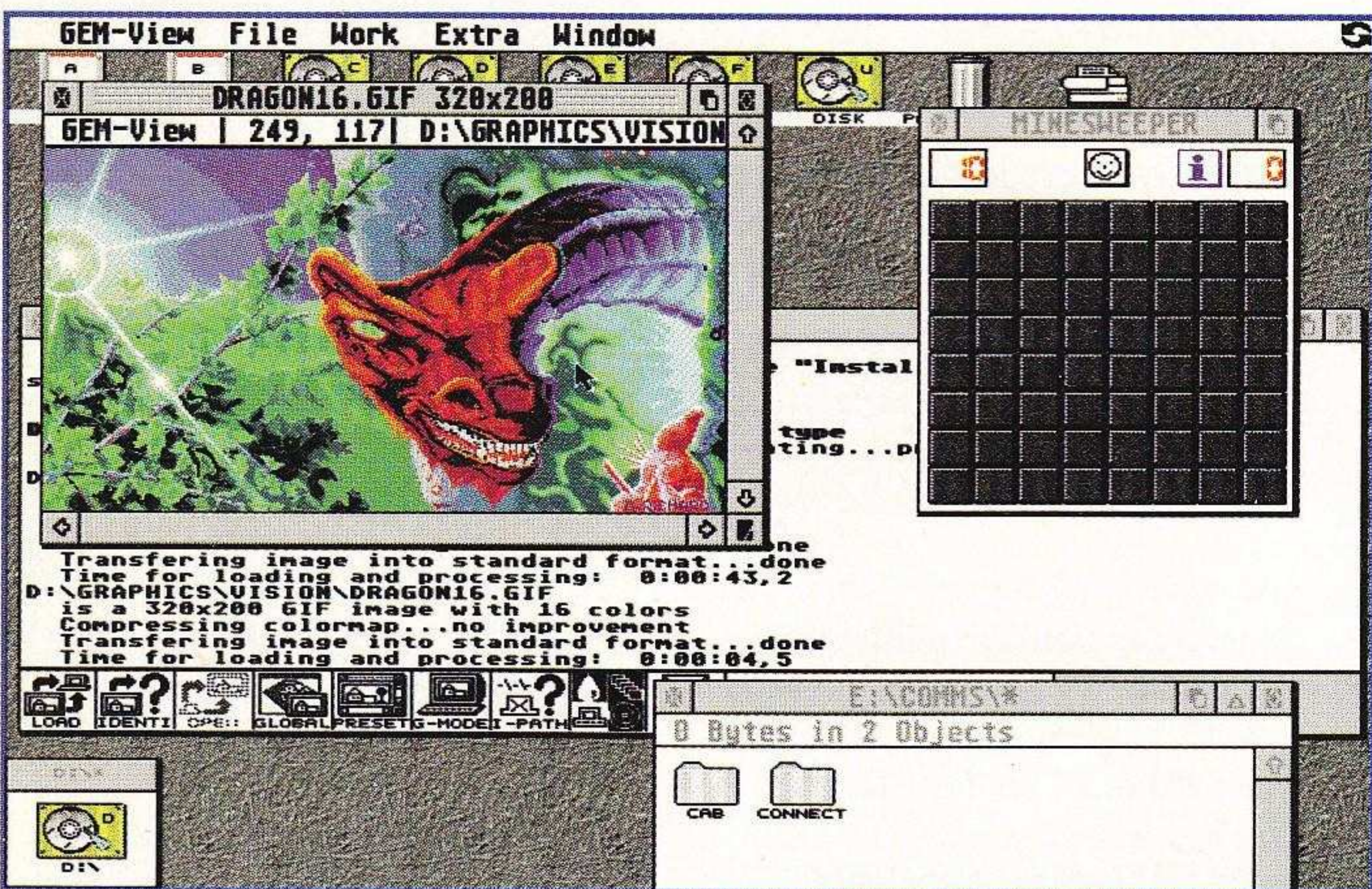
If any piece of software can be described as being more eagerly awaited than the Second Coming, contact with aliens and a big fat lottery win all in the same week, this is it. When we first saw *MagiC 2* almost two years ago, we fell in love with it instantly, as did almost everyone who tried it.

A true multitasking operating system which completely replaces TOS, *MagiC* proved you don't need to spend a fortune to get a superb working environment. There was one problem with *MagiC 2*, though – it didn't run on the Falcon unless you were prepared to fiddle with third-party patch programs. Even then, it didn't have support for the 030 machine's enhanced graphics and DSP chip, so Falcon owners worldwide

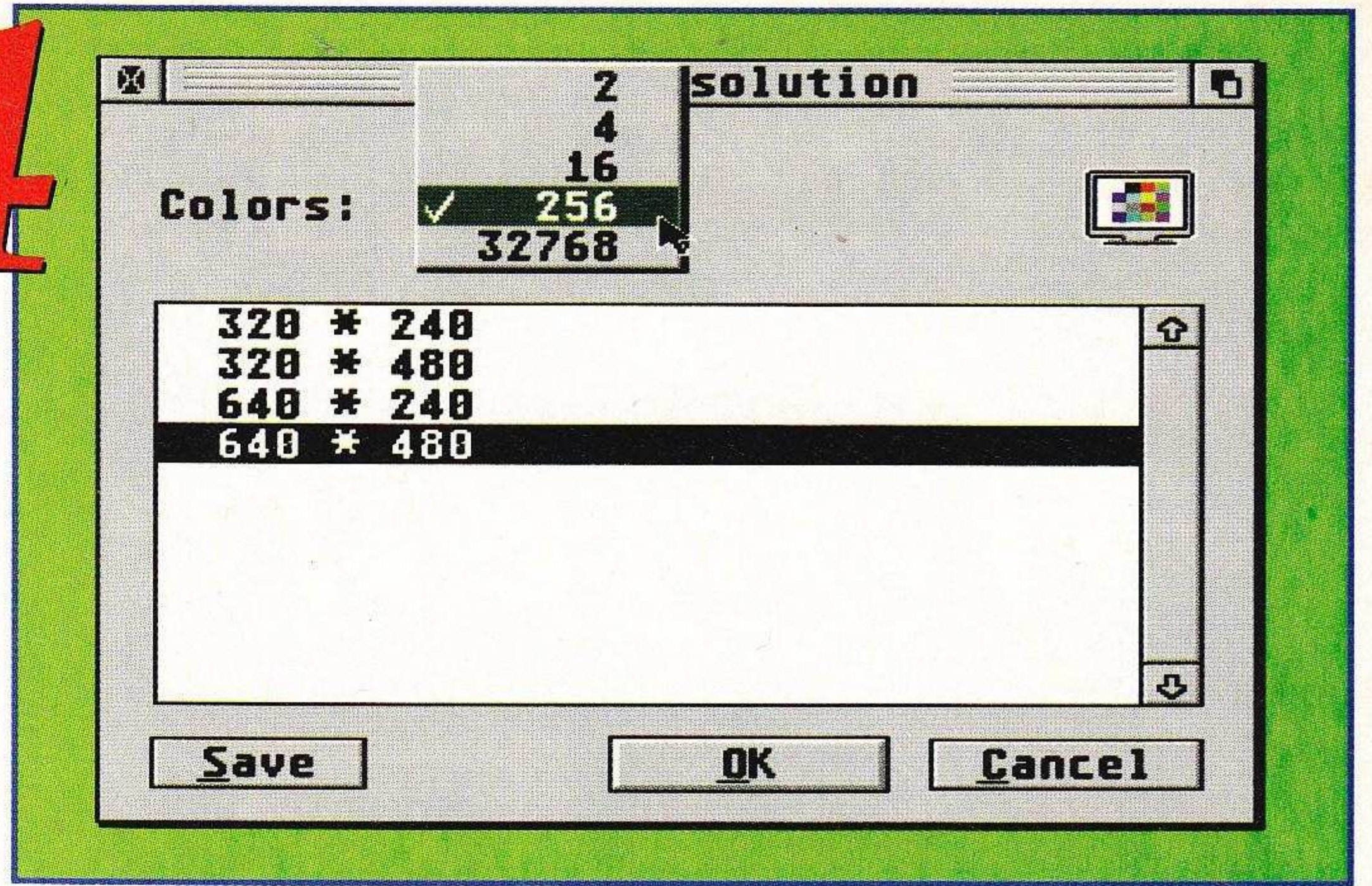
have been positively drowning in their own drool at the prospect of this, a fully Falcon-compatible version of *MagiC*.

Installing *MagiC 4* to hard drive is a piece of cake, thanks to the special installation program. As well as installing the core multitasking system, you're given the option of adding a few extras – mostly small applications such as an on-screen clock and a program which gives you a magnified view of whatever's under the mouse pointer. After a few minutes, you're ready to boot into the *MagiC* environment.

If you're using a boot manager, such as *XBoot* or *Superboot*, you'll always have the chance to disable *MagiC* before it runs. This is useful, because some pieces of software – games in particular – won't be happy under *MagiC*.



If you have too many programs cluttering your screen, you can reduce some windows to icons in the bottom left corner of the screen.



MagiC 4 uses a very Mac-like system for switching display resolutions.

All isn't lost if you don't own a boot manager though, because *MagiC* can be disabled at boot time by keeping both [Shift] keys held down.

That's MagiC

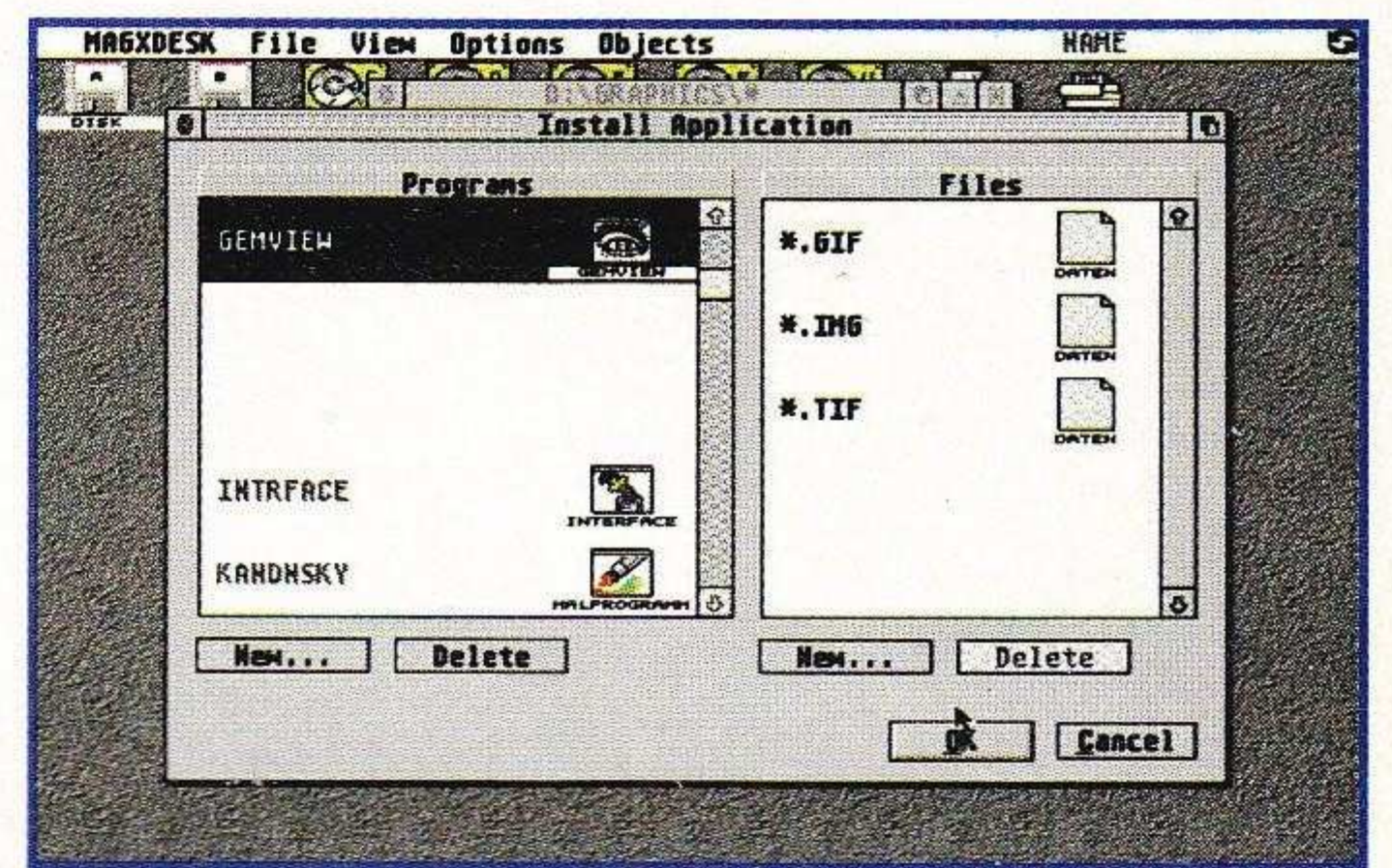
Like its predecessor, *MagiC 4* includes a replacement Desktop called *MagiCdesk*.

Because a multitasking system takes control of your ST at a very low level, you can't just run the standard GEM Desktop. On top of that, the Desktop needs to be aware of some of *MagiC's* special features to take full advantage of the multitasking.

MagiC 2's *MagiCdesk* wasn't very

good. It was better than the GEM Desktop, but it lacked the flare and features of *NeoDesk* and *Ease*. There's obviously been a lot of water under that particular bridge though, because the current version of *MagiCdesk* is worlds apart from its clunky ancestor.

As well as working in the Falcon's colour resolutions, *MagiCdesk* has been upgraded to bring it closer to modern market leaders. It still isn't as good as *Ease* or *NeoDesk 4*, but



Application installation is handled by a separate program called by *MagiCdesk*. You can set file types for each program and change the default icons.

it is very smart. In the past, *Ease* was often recommended as the best Desktop replacement for use with *MagiC*, and we presumed this would still

The current version of MagiCdesk is worlds apart from its clunky ancestor

be the case. However, *MagiC* author Andreas Kromke says *Ease* isn't optimised to take particular advantage of

MagiC 4. Consequently he recommends sticking with *MagiCdesk*, or using the shareware *Gemini* Desktop.

Crash course

So how well does the current incarnation multitask, and just how Falcon-compatible is it? After such a long wait for the English version, we hoped any niggles would have long since been ironed out. It doesn't look as if is the case, though – at least not in this UK version.

A TRIP TO THE CO-OP

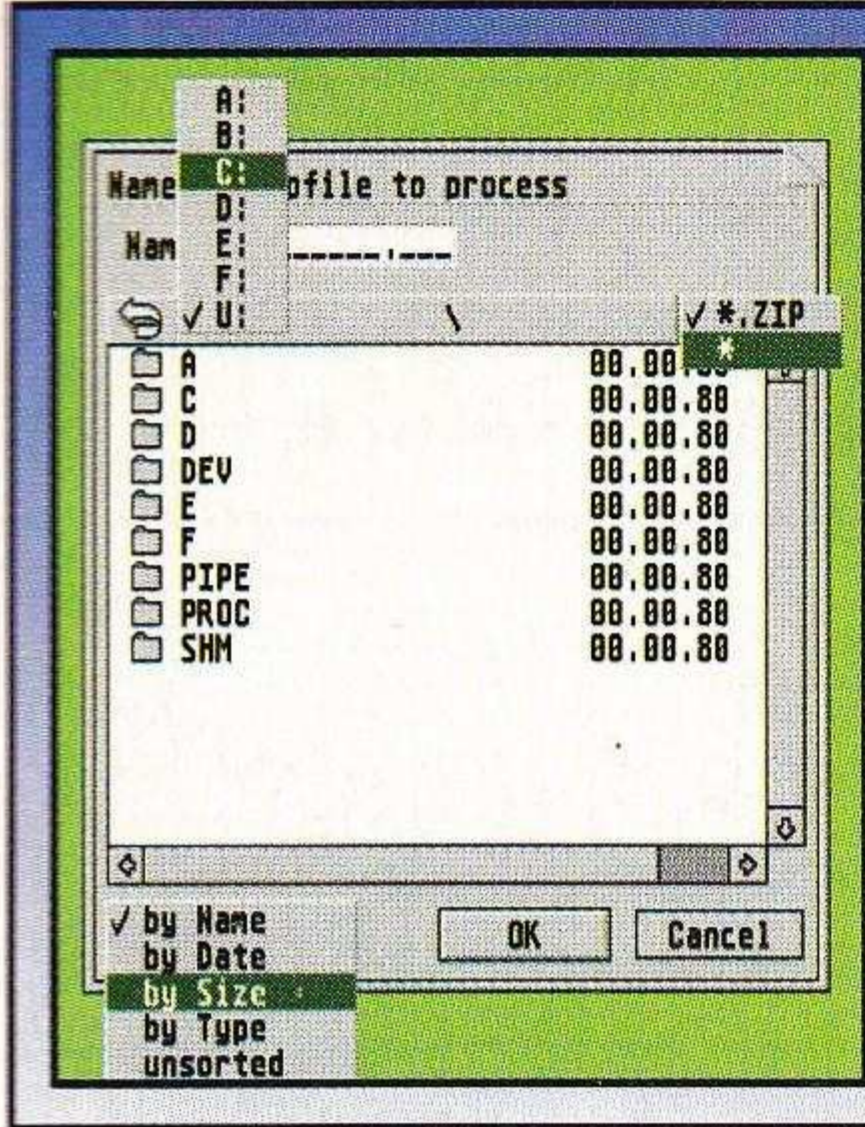
MagiC offers pre-emptive, rather than co-operative, multitasking. So, what's the difference, and which one is best?

Put simply, co-operative systems are a bit of a workaround. In a co-operative environment, the multitasking engine relies on programs behaving properly with each other, or co-operating. If you have a time-consuming

task, such as a ray tracer, running in the background and another program pops an alert box on to the screen, the background program can be frozen. If you're away from the machine when it happens, all processing is effectively suspended until you clear whatever has the sole attention of your ST's processor.

Co-operative systems perform the rapid

task-switching using operating system calls, leaving themselves at the mercy of rogue programs. A pre-emptive system uses the CPU's hardware timer interrupts as well. The result is that background programs continue to run, even when a processor-hogging program wants your attention. Pre-emptive multitasking is real multitasking, and it's by far the best option.



SELECTORS

We all know that the GEM file selector is a useless, ugly dog, but fortunately *MagiC 4* kicks it right out. *MagiC's* file selector isn't as comprehensive or fully featured as third-party alternatives such as *Freedom*, but it's stable, compact and does the job very well. As you can see from our trick screenshot (it's amazing what you can do with cut and paste), it offers a lot more than the standard GEM selector, including several pop-up menus.

MagiC 2 was probably the best-behaved multitasking system on an ST. While some programs – notably the MIDI sequencer *Cubase* – always had problems, almost everything else ran smoothly. However, this is not the case with *MagiC 4* on the Falcon. Note that we ran all tests on a 'clean' Falcon, with no other Accessories or Auto programs to confuse the issue.

The most obvious clash was with the FaST Club's screen-grabbing, viewing and printing tool *ImageCopy 4*. Using the latest version with *MagiC 4* caused innumerable problems, crashes and lock-ups. When we tried to configure *ImageCopy's* settings, the dialog box didn't appear, and *MagiC* crashed horribly.

Round the houses

Pre-configuring *ImageCopy* under normal TOS and then using it under *MagiC* wasn't easy, either. Whenever we tried to grab the current screen to disk, *ImageCopy* crashed. Again, *ImageCopy* has always behaved well under *MagiC*, so this sudden incompatibility is disappointing. Perversely, the same version of *ImageCopy* runs flawlessly on a Macintosh Quadra 630 under *MagiCMac*.

Discussions on the Internet have revealed that we aren't the only people to have these problems. Some users complained that *APEX Media* locked their Falcon solid under

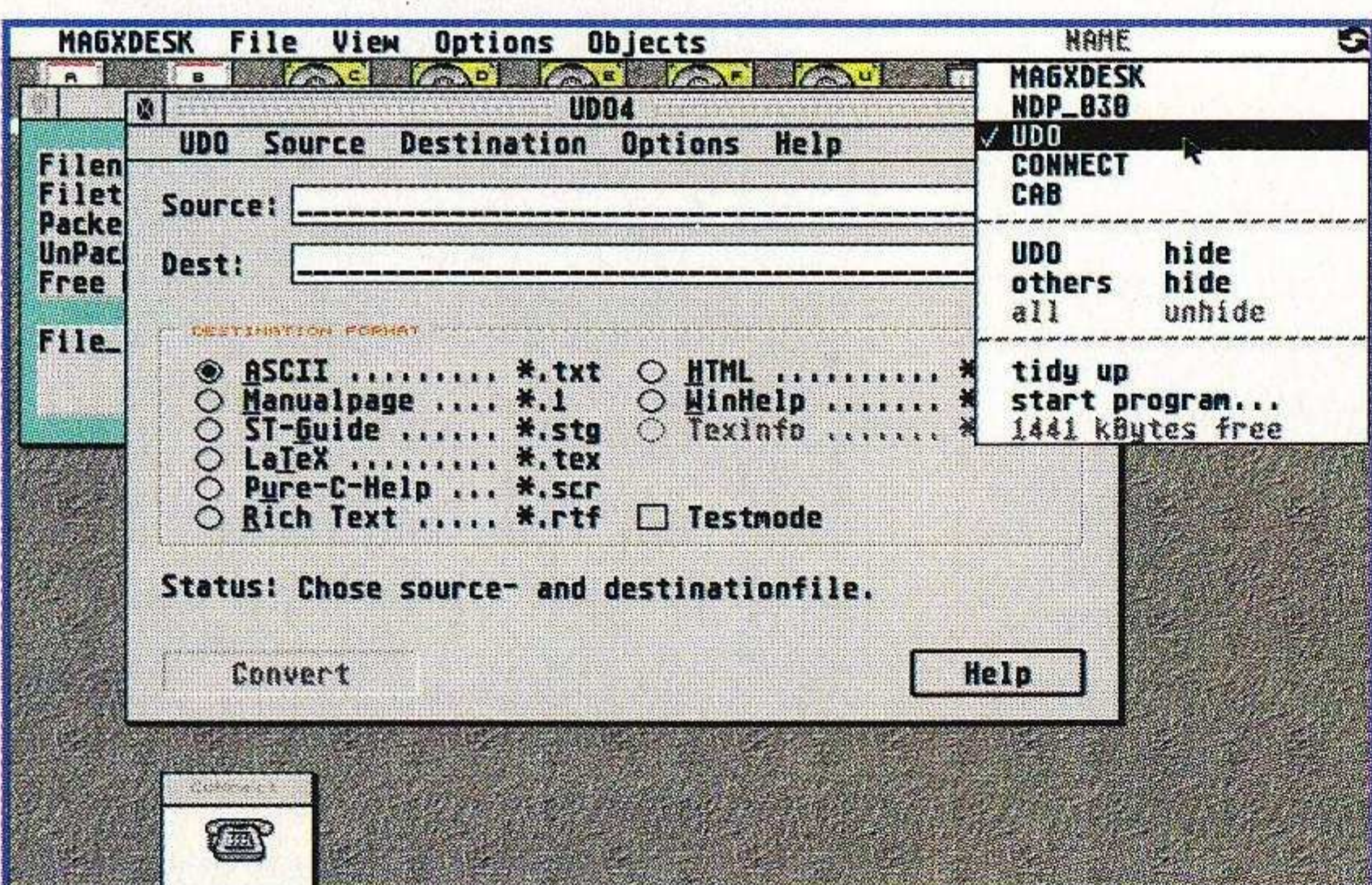
MagiC, and yet it behaved perfectly for us. Other non-GEM programs, such as *Rainbow 2*, worked well, but caused problems when we quit – nothing *MagiC* couldn't tidy up, though.

Happier times

In general, we found that most well-written GEM programs behaved well and seemed stable. Even awkward non-GEM programs can be persuaded to work by telling *MagiCdesk* to execute them as singletasking programs. That said, we sometimes suffered unpredictable crashes for no apparent reason.

We were able to unpack a self-extracting archive created with *LHarc 3.1* about 85 per cent of the time. The rest of the time the 'TOS in a window' VT52 program crashed, leaving the archive's screen output splattered all over the place.

Once you get beyond the problems and incompatibility issues, *MagiC 4* performs smoothly. As well as enabling you to multitask your applications, it provides an enhanced working environment. Like *MultiTOS*, it reduces applications and windows you aren't using to small icons at the bottom left of the screen. Clicking the icon expands the window to the previous size. This



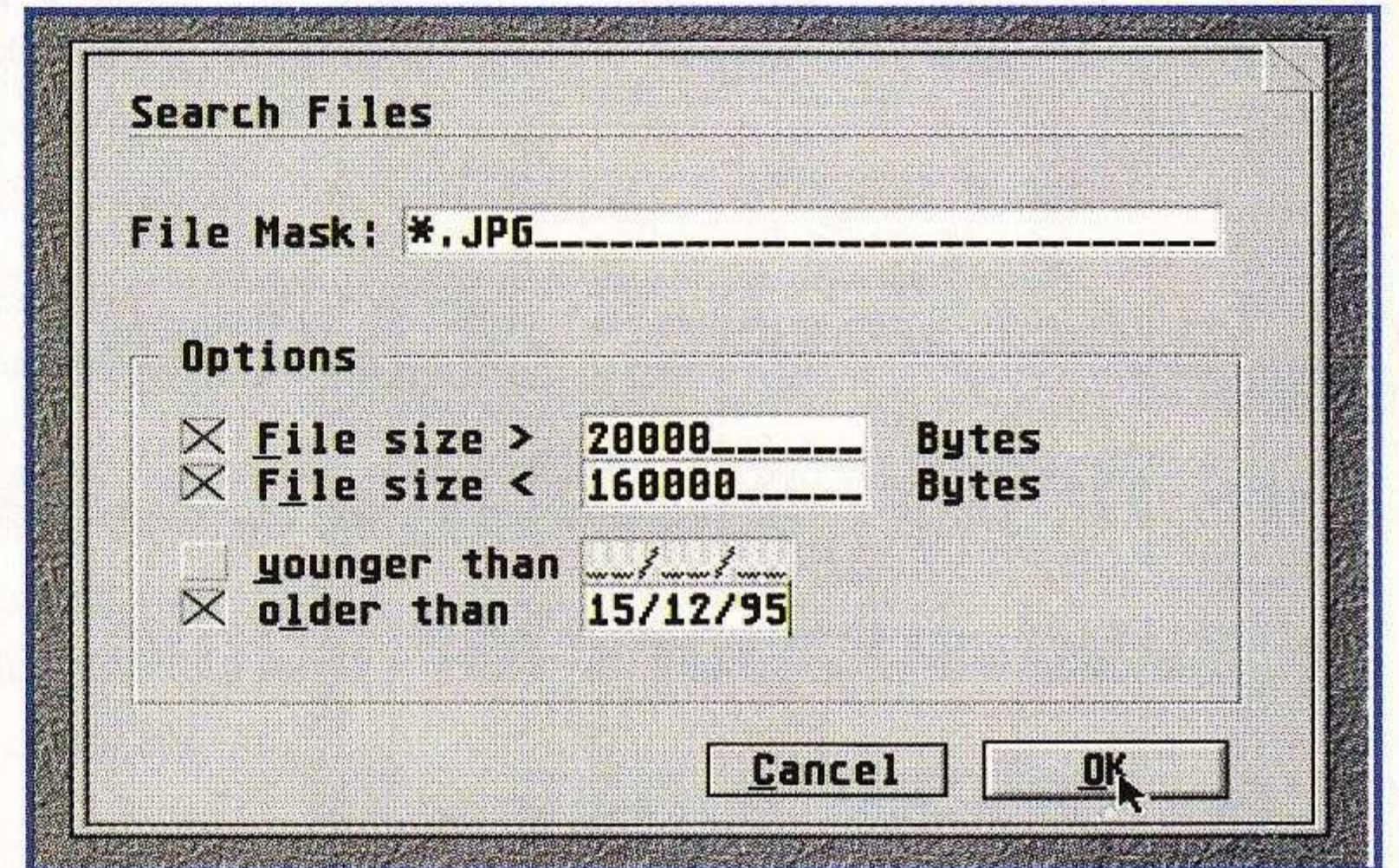
The *MagiC* menu is always available. You can use it to switch between active programs or tidy up blots left on the screen by a rogue program.

0	MAGXDESK	waiting kb bt	ms	MENU MOUSE KBD	148452 Bytes
1	SCREENGR	running kb bt n1	ns		1182152 Bytes
2	MAGXCONF	waiting	ns		8728 Bytes
3	NDP_030	waiting bt	ns		68886 Bytes
4	UDD	waiting kb bt	ns ti		765552 Bytes
5	CONNECT	waiting kb bt	ns ti		722936 Bytes
6	CAB	waiting kb bt	ns		419688 Bytes

cur_up: prev | Space: OK | F: Freeze | C: Control
 cur_dn: next | Return: Switch | U: Unfreeze | Del: Terminate

The program manager is called with the [Alternate] [Control][Esc] key combination. No matter what's happening, you can use this key press to freeze and even quit programs.

MagiCdesk has an excellent file finder. Search parameters can include filename, size and creation date.



facility makes it much easier to deal with multiple applications on a small monitor.

It's extremely fast, too. Like *MagiC 2* before it, version 4 replaces the slower TOS routines (written in C) with custom assembly language code, making for a very fast system. *MagiC 4* runs programs faster than TOS, and your new envi-

ronment is so speedy and efficient that the multitasking almost seems like a bonus.

You now have to tell

MagiC to shut down, rather than just switching off your ST. This makes sure any outstanding files are closed properly. It's a very Mac-like approach.

MiNT sauce

One eagerly awaited feature is the ability to run some of the smarter parts of *MiNT* and *MultiTOS*, such as loadable file systems and device drivers. In theory, we now have an extendible multitasking system which doesn't slow a bare ST or Falcon down to a crawl. The manual mentions briefly that this can be done, but that's it – no matter how hard we looked on the installation disks and in the manual, we could find no documentation whatsoever for this feature. Judging from the plaintive messages bouncing about the Net, we're not alone in this.

Incidentally, *MagiC 4* runs equally well on a standard ST.

We've reviewed it with a certain amount of Falcon bias, because 030 owners are the ones who have waited so long for it. ST compatibility is as good as it ever was, which suggests that *MagiC's* handling of the Falcon isn't quite as it should be. This is a shame, and coupled with the patchy documentation it has just nudged *MagiC 4* down from an *ST FORMAT* Gold award. As later versions or upgrade patches arrive to address these issues, we'll cover them. As it is, it's a case of so near, but not quite there yet. *stf*

FRANK CHARLTON

Product: *MagiC 4*
Price: £69.95 (upgrade from *MagiC 2* £39.95)
Contact: System Solutions
Tel: 0181 6933355
Min system: All Ataris, hard drive and 2Mb RAM recommended

VERDICT • STIF VERDICT • STIF VERDICT • STIF VERDICT

Magic 4

HIGHS

- Superbly fast multitasking
- Improved Desktop
- Easy to set up and use

LOWS

- Numerous problems with Falcon compatibility
- Patchy documentation

In short...
MagiC for the Falcon – at last – but it needs a few tweaks in some areas. **89%**

ExtendDOS Pro 2.3

The latest version of *ExtendDOS Pro* offers better performance and improved support for audio CDs. Drive it away today.

Anodyne Software's *ExtendDOS Pro* has long been the CD-ROM software of choice for discerning Atari users. The release of version 2.3 sees several new features added to its already impressive specification.

With the growing number of Atari CD-ROMs on the market, and the steadily falling cost of drives, more and more Atari users are adding a CD-ROM drive to their setup. The massive storage capacity of CDs – 600Mb on a single disc – makes them ideal for large files, such as graphics or samples, and there are several discs containing vast collections of PD and shareware.

You can't, however, just plug in your CD-ROM drive and go. You need special software to make the whole thing work, and here *ExtendDOS Pro* from Anodyne Software is the undisputed king.

For those unfamiliar with *ExtendDOS*, the main package

consists of a CD-ROM driver, which goes into your Auto folder, and an audio CD player, which runs as a Desk Accessory or standalone program. The CD-ROM driver enables your ST to read the data stored on any standard ISO 9660 format CD-ROM and the audio CD player plays music CDs. You'll need to hook up an amplifier and

speakers to make the most of this, though.

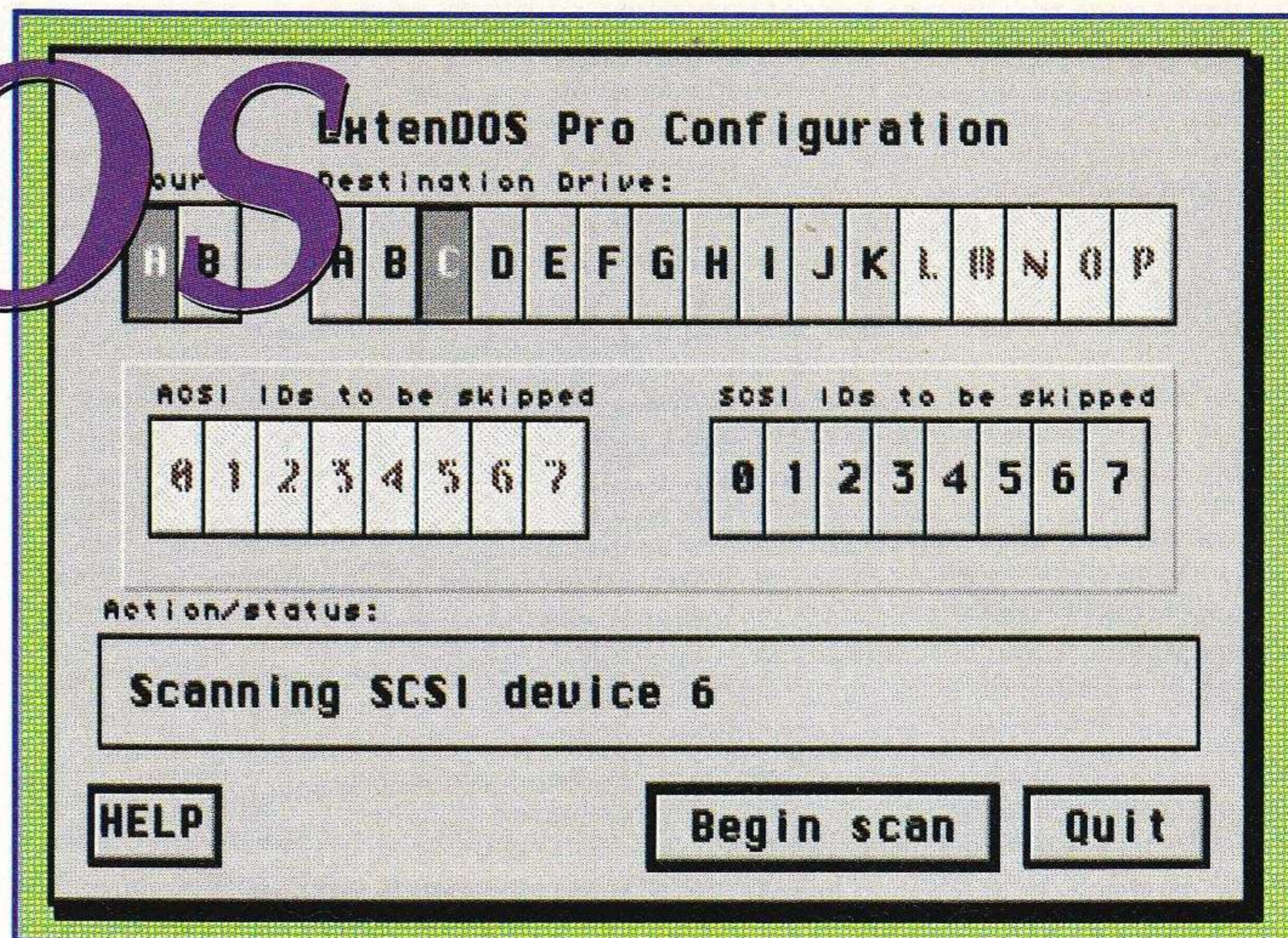
Installation is handled by a custom set-up program. You simply select your destination drive or

floppy. The installer finds your CD-ROM drive automatically, then prompts you for set-up options and creates all the necessary files and folders.

Audio delights

By far the major improvements in version 2.3 are the upgrades to the audio CD player, which now boasts a scan function that plays the first 10 seconds of each track. It's useful if you want to skip through a CD to

If you are buying a CD-ROM drive, this is the driver package to go for



The *ExtendDOS* install program makes it easy to set up and configure your CD-ROM drive. Simply select the destination drive; the installer finds your CD drive automatically.

find a particular song. You can also set start and end points for playback and repeat the marked area over and over.

In addition, a new feature called D2D Record enables you to record audio data from a music CD on to your hard drive in AVR format. This option is of particular interest to Falcon owners using *Clarity 16* or *Cubase Audio*. Be warned, though: only a limited number of CD-ROM drives support this function. However, D2D Record works well if your drive has a Sony 561 mechanism.

Internally, the upgrade fixes several of version 2.1's bugs and is more compatible with third-party programs such as *PowerDOS* and *CDPLAY*. It also adds support for a wider range of drives, from older single-speed units to the latest quad-speed and multi-changer mechanisms, and provides Photo-CD support for some older drives. The package includes a diagnostic program for tracing faults and a ZIP file listing of over 1,000 CD-ROMs that can be read on your ST.

Drive on by

If you are considering buying a CD-ROM drive, this is without doubt the driver package to go for. The superb installation program removes the need for complex editing of configuration files and the increased compatibility and extra functions ensure easy, hassle-free operation. For existing CD-ROM users, *ExtendDOS 2.3* is a must. The



The audio CD player in action. Falcon owners and users of the Geneva operating system now have groovy 3D dialog boxes.

enhancements to the audio player alone justify upgrading, and serve to make an excellent product even better. *stf*

RICHARD MANLEY-REEVE

Product: *ExtendDOS Pro* version 2.3 from Anodyne Software
Price: £39.95 (Upgrades £4.99-15)
Contact: System Solutions
Tel: 0181 6933355
Min system: All Ataris, 1Mb

FREE UPGRADES

If you have access to the Internet, you can download the upgrade package via FTP, thus saving both time and money. You will need your original master disks in order to carry out the upgrade, but the procedure is straightforward and you end up with a set of upgraded master disks

for future installations.

To download the upgrade, simply point your FTP client at: ftp://micros.hensa.ac.uk/micros/atari/tos/q/q187/epr0_23a.zip. Remember to download the file in binary mode. Extract the ZIP file using *STZIP*, then follow Anodyne Software's instructions.

ExtendDOS Pro 2.3

HIGHS

- Thousands of CD-ROMs supported
- Scan function for audio CDs

LOWS

- Audio CDs can only be played on selected drives

In short...

Upgraded and improved, *ExtendDOS Pro* is a must-buy for CD-ROM owners. **88%**

NVDI 4

Looking for faster screen functions and fancy font features? Check out the latest version of the ultimate GDOS replacement.

The latest version of NVDI is the ideal tool for harnessing current PC and Mac font technology for your ST and its printer. It also accelerates your screen display, giving you two utilities for the price of one.

Sprechen zie... Although NVDI 4 originated in Germany, the program and manual have been translated into English. Setup is handled by an installation program which copies everything to your hard disk's boot drive. You'll need about 1.5Mb of free hard disk space to

accommodate everything, including all the fonts and associated utilities, but only 300K for NVDI alone. The program only takes up 200K of memory, but this figure rises quickly if you install a large number of fonts.

Nine fonts are supplied with the package. If you want more, there is no shortage of public domain fonts. Disks of professional-quality fonts are available, albeit at commercial prices, from System Solutions, HiSoft, Compo and other software suppliers.

NVDI 4 makes use of Bitstream's 4-in-1 processor technology and can interpret Speedo and TrueType vector fonts. If you want to use PostScript Type 1 fonts, you must buy an optional software

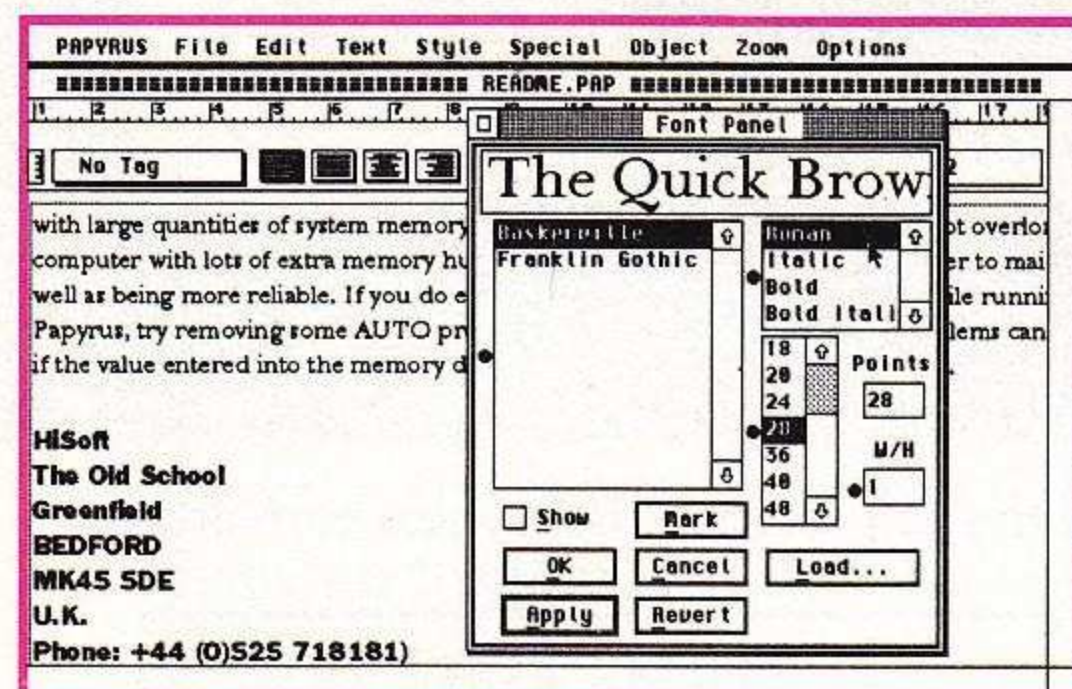
module for £24.95 extra. All three formats provide good-looking scalable characters.

PostScript is the standard for professional DTP, but TrueType and Speedo fonts are more than adequate for day-to-day work.

One for all The program runs on any ST, TT or Falcon and there are special versions for Ataris equipped with ET4000, Matrix CX or Matrix TC graphics cards. You can even change resolution without re-booting if NVDI 4 is used in conjunction with MagiC, System Solution's alternative

ST operating system (see page 22). NVDI 4 couldn't be easier to install and use. All the usual complications that scare most users off GDOS, such as ASSIGN.SYS, font handling and so on, are taken care of

NVDI is the ideal tool for harnessing current PC and Mac font technology

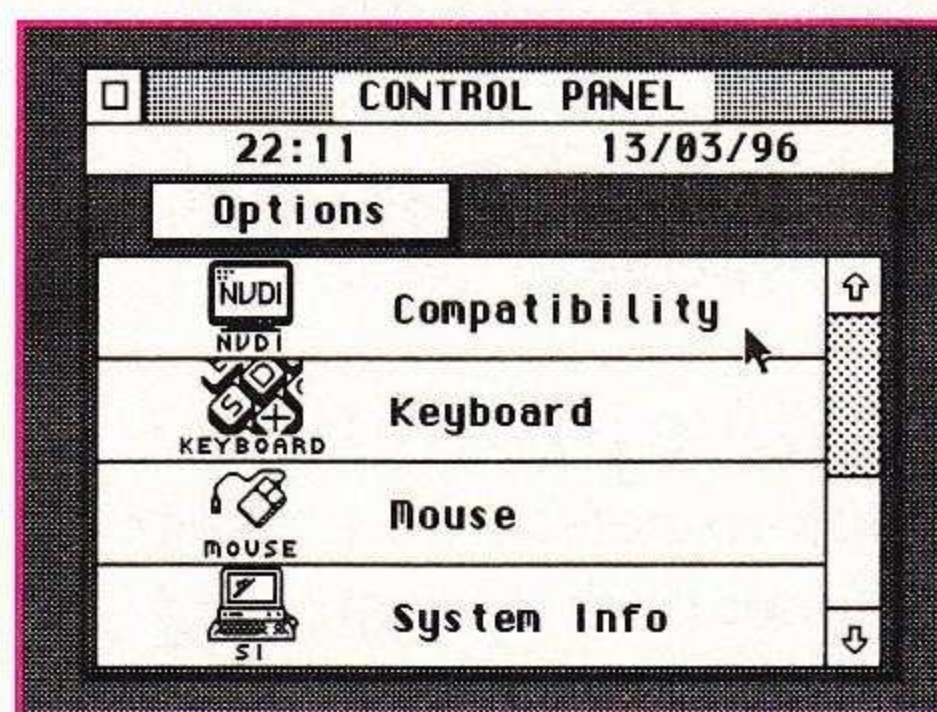


NVDI 4 works well with Papyrus, HiSoft's high-end word processor. This document uses some of the text faces supplied with NVDI.

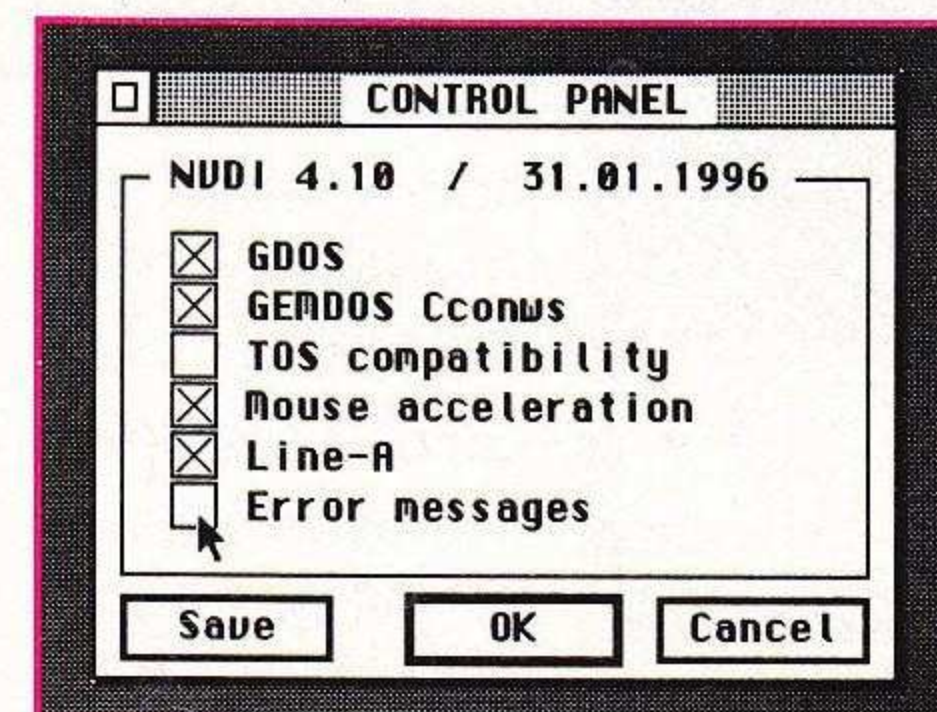
NEW VDI

The ST's operating system, TOS, has never been able to handle fonts and graphic output properly. Because of this hardware omission, Atari provided a software patch called GDOS (Graphical Device Operating System) with every ST. GDOS was gradually upgraded and the final version, known as SpeedoGDOS, enables you to use scalable fonts on screen and when printing.

Meanwhile, a group of German programmers decided they could do better and produced NVDI, which not only replaced GDOS but also took over the ST's VDI (Virtual Device Interface) functions. This resulted in a significant speed gain. Any programs that use GDOS will in theory work with NVDI, but better and faster.



XControl CPX accessories enable you to set a range of parameters, such as printers, compatibility, mouse speed and so on.



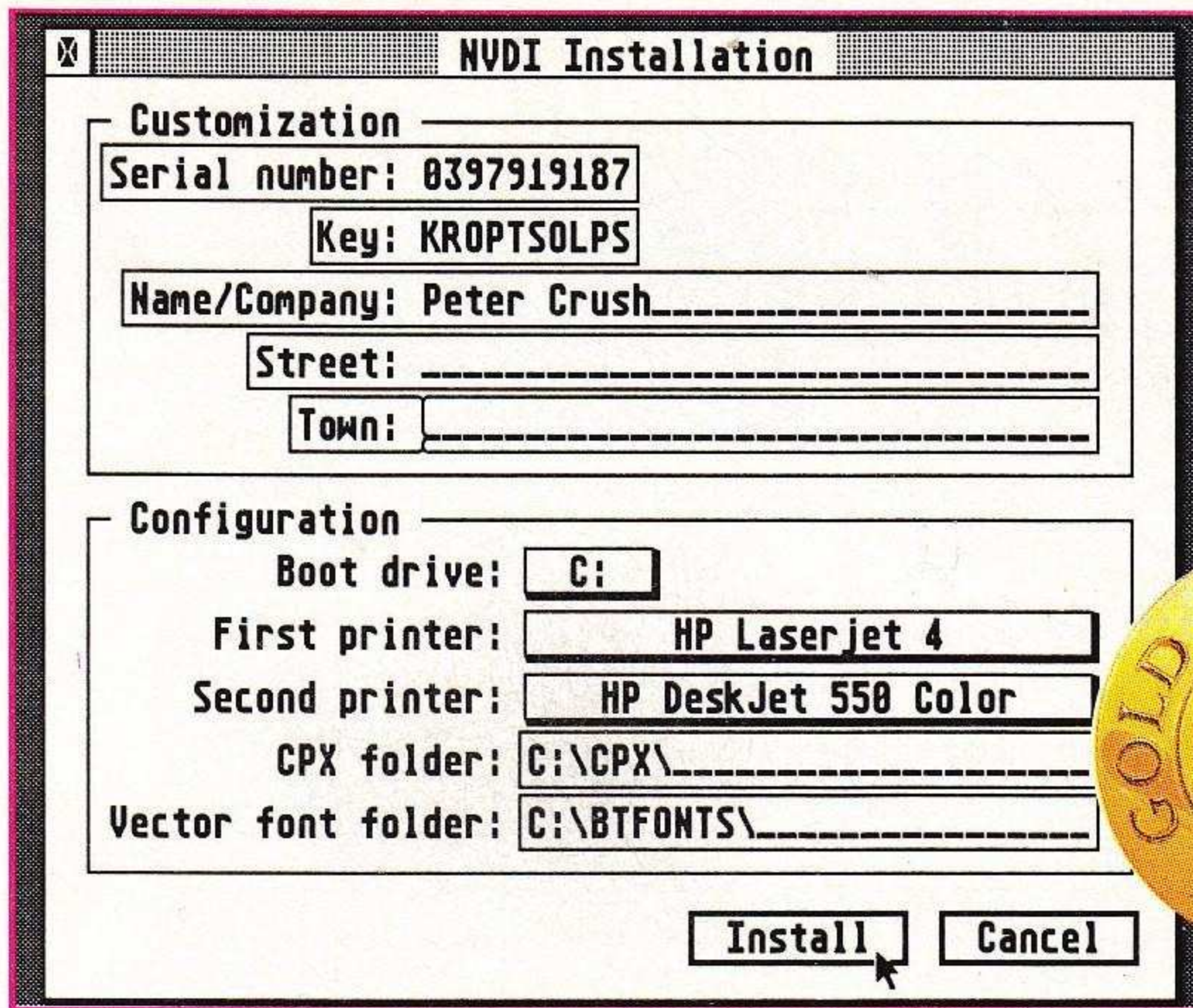
This control panel CPX can be called at any time to adjust these compatibility functions, all of which are explained in the 32-page manual.

NEW FEATURES

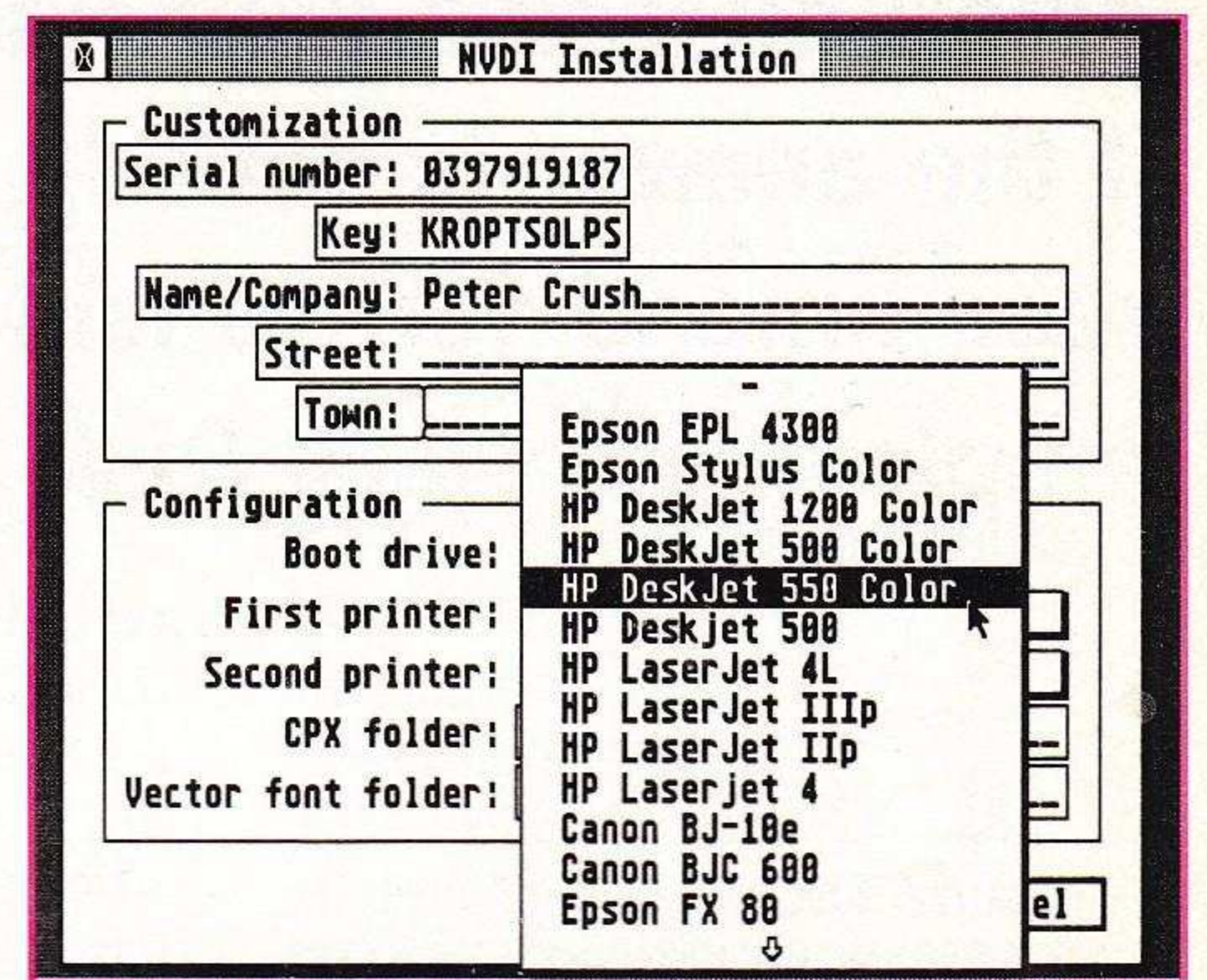
- Fonts can be installed without re-booting the computer.
- Enhanced facilities for colour printing, including fine control over saturation and graduation.
- Better printing routines for faster output and numerous improved printer drivers.
- A font-handling utility

enables you to preview and list fonts on the screen, whether or not they are installed.

- Supports Windows 95 TrueType fonts as well as the new UNICODE font format, which enables up to 65,000 characters to be held in a single font file.



NVDI 4 is easy to install and use and allows you to set up two separate printers. And no, these numbers aren't genuine.



You can install your printers from NVDI 4's pop-up menu.

behind the scenes. You don't need to be a techie to use it, but the manual goes into detail for those of you who want to delve deeper. It does speed up your screen display noticeably.

NVDI 4 is a must if you want to modernise your Atari so it can take advantage of the best font technologies. *stf*

PETER CRUSH

Product: NVDI 4
Price: £59.95 (upgrades £19.95-39.95)
Contact: System Solutions
Tel: 0181 6933355
Min system: Any Atari with a hard drive, 2Mb recommended

VERDICT • STIF VERDICT • STIF VERDICT

NVDI 4

HIGHS

- Extremely user-friendly
- Highly compatible and stable
- Brings industry-standard fonts to your ST

LOWS

- Memory hungry, like all vector font utilities

In short...
 NVDI 4 will give your ST a new, speedier lease of life, especially for page layout. **93%**

Hard Disk Sentry

Who's guarding your hard drive? If the answer is nobody, we recommend you consider employing a *Hard Disk Sentry*.

Hard drives may not cost much, but the data on them is of incalculable value. The cost of replacing the drive unit is generally under £200, but how could you

replace years of work and data? If you couldn't do it at all, you ought to be taking care of your drive.

As your drive fills up, files become fragmented. The drive mechanism has to work harder, data loads more slowly, and the possibility of

errors increases. Fortunately, you can tidy up your files with American disk utility *Hard Disk Sentry*, now available in the UK from 16/32 Systems.

There are four programs on the disk. The main program, *SENTRY*, analyses your drive and can repair and optimise it if necessary. *QUICKOPT* carries out optimisation via a TOS-Takes-Parameters (TTP) interface,

enabling quick, automatic operation. *DT* looks for sector errors and optionally maps them out. Finally, *PCDBOOT* is only of use to owners of *PC Ditto*, an early MS-DOS software emulator for the ST.

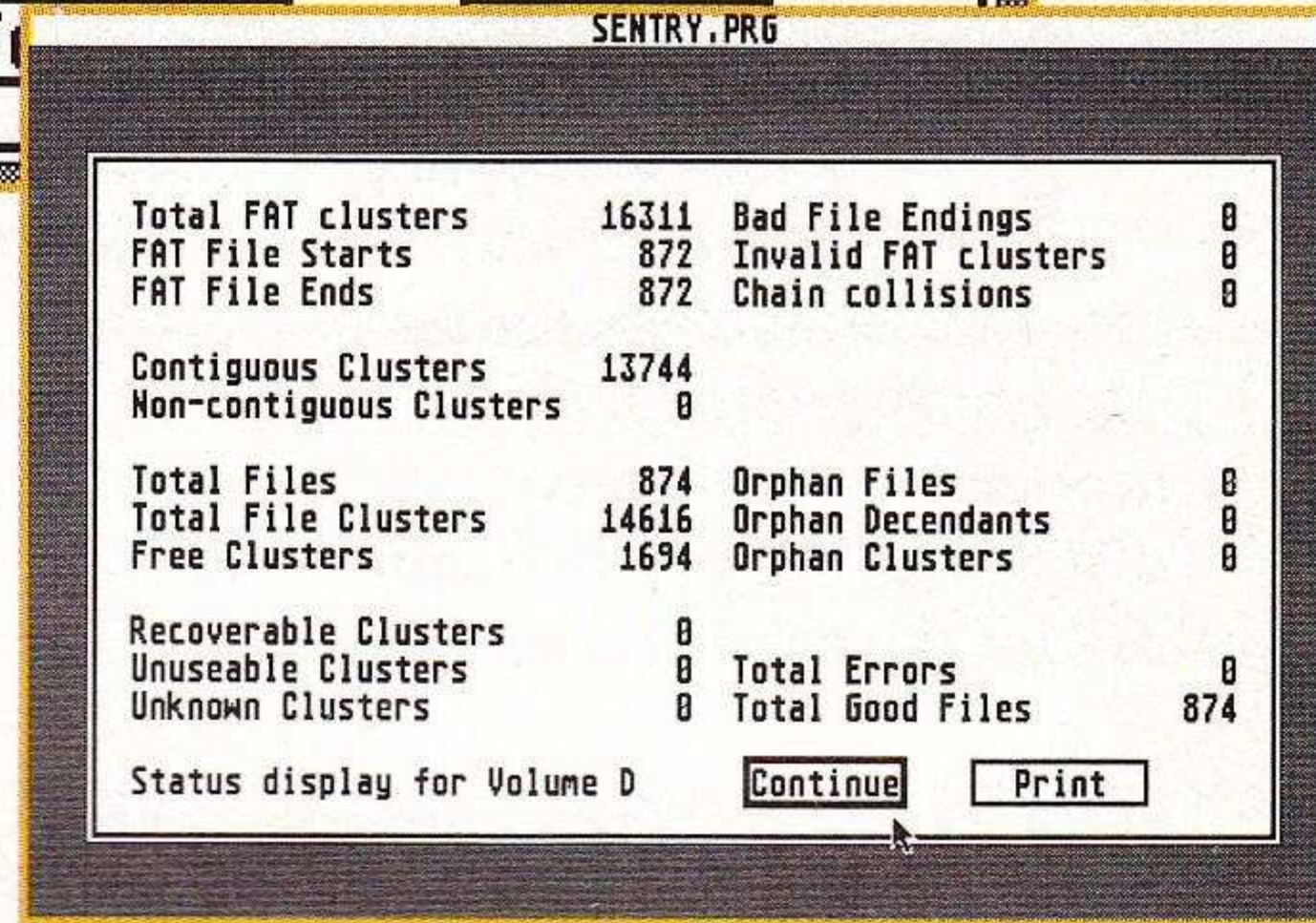
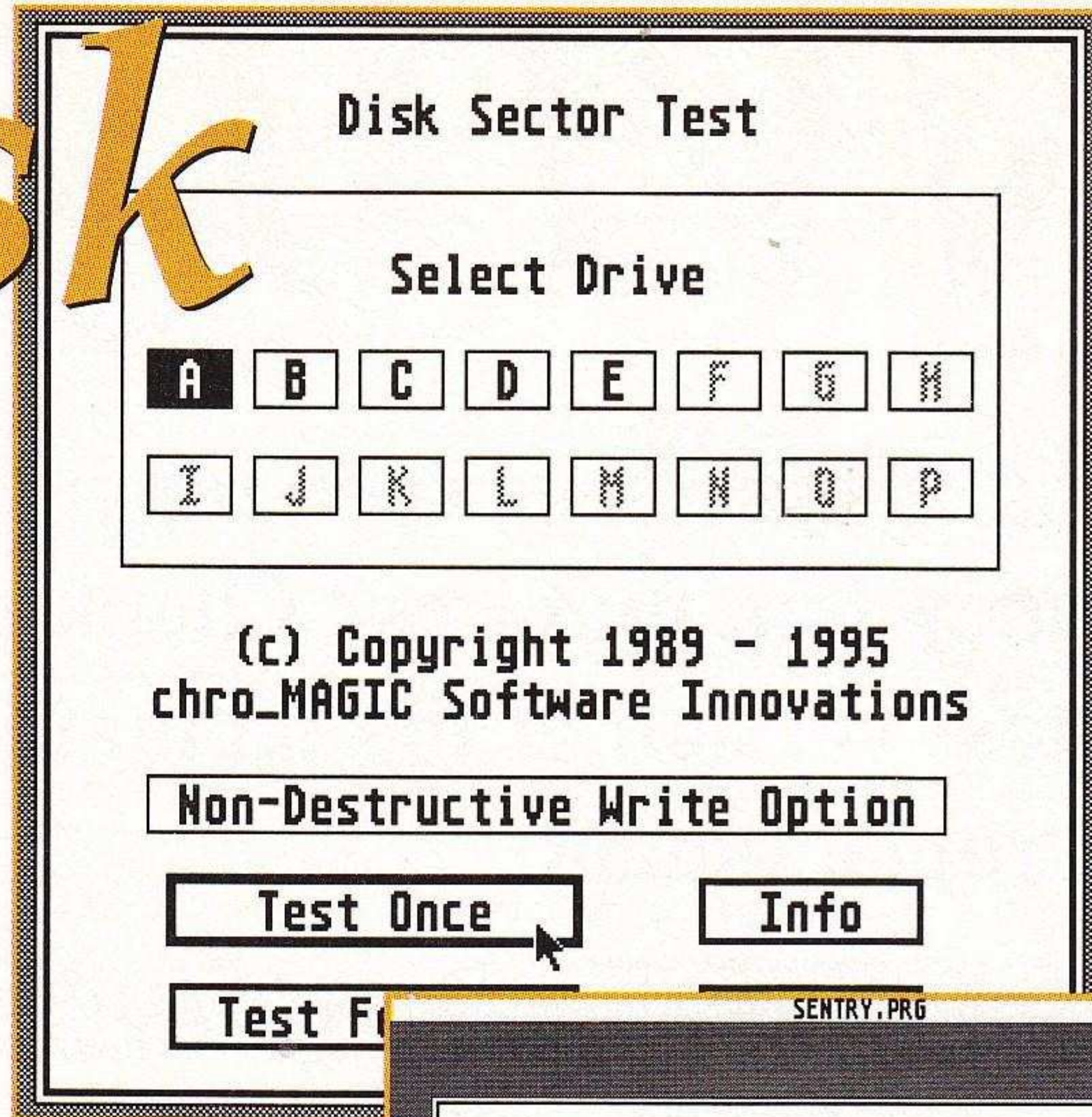
Optimising our hard drive increased the speed of disk-access operations

None of these programs give you direct low-level access to the data on your drive, so you'll need a dedicated package, such as *Knife* or *EdHak*, if you want to mess with your files. However, you need to know exactly what you're doing with these utilities, and we recommend that inexperienced users leave them well alone. *Hard Disk Sentry* scores here because you don't need specialist knowledge to use it.

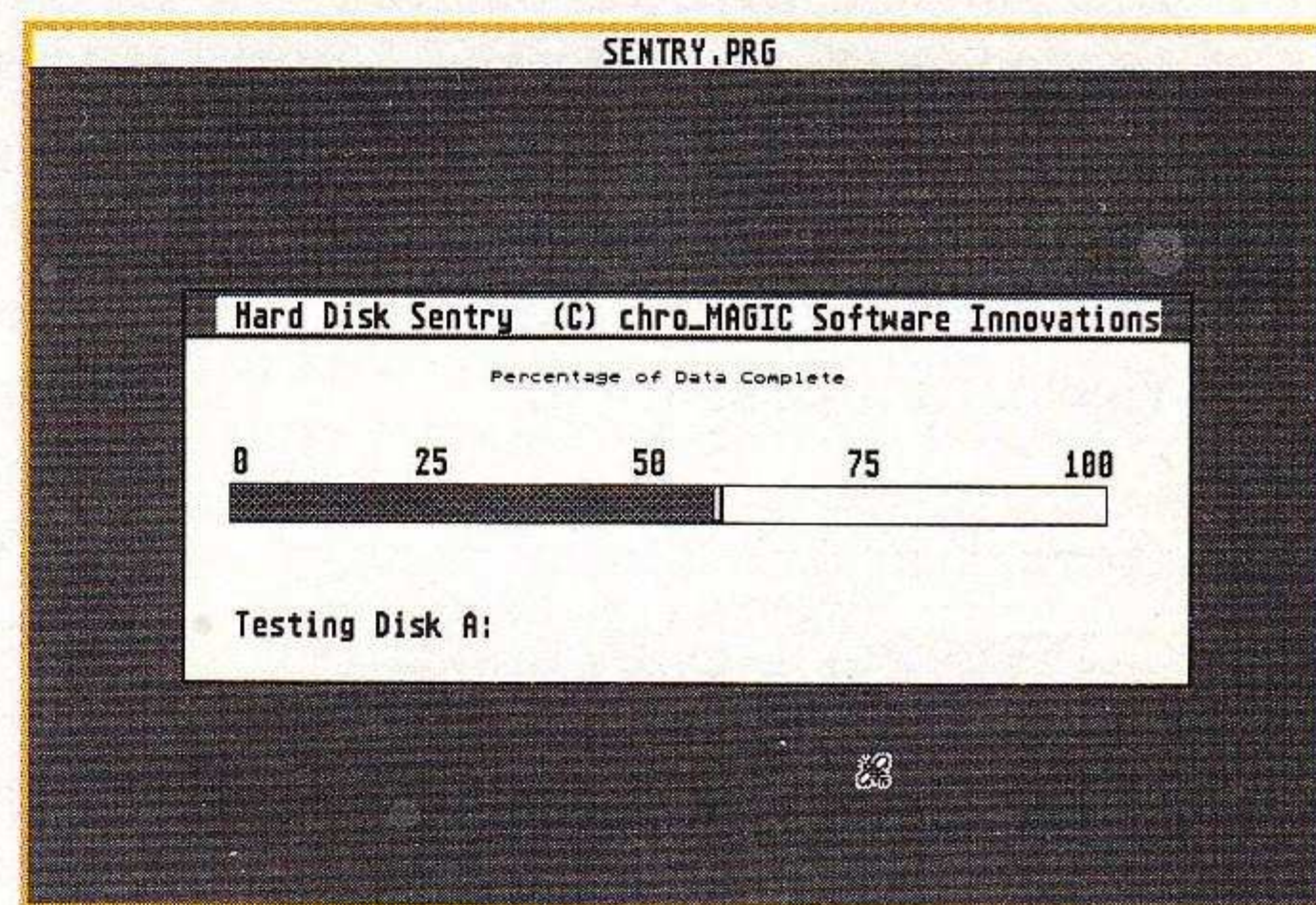
Safe optimising
Unfortunately, the package cannot back up your hard drive. This means you'll need to use another program, such as FaST Club's *Fastcopy Pro*, to make a backup before you optimise your drive.

Optimising our hard drive made a huge difference to the speed of disk-access operations. It is well worth doing, and it's good to be able to check your partitions and see whether everything is okay. If you want a quick, easy way to spring clean - and speed up - your hard drive, call for the *Hard Drive Sentry.stf*

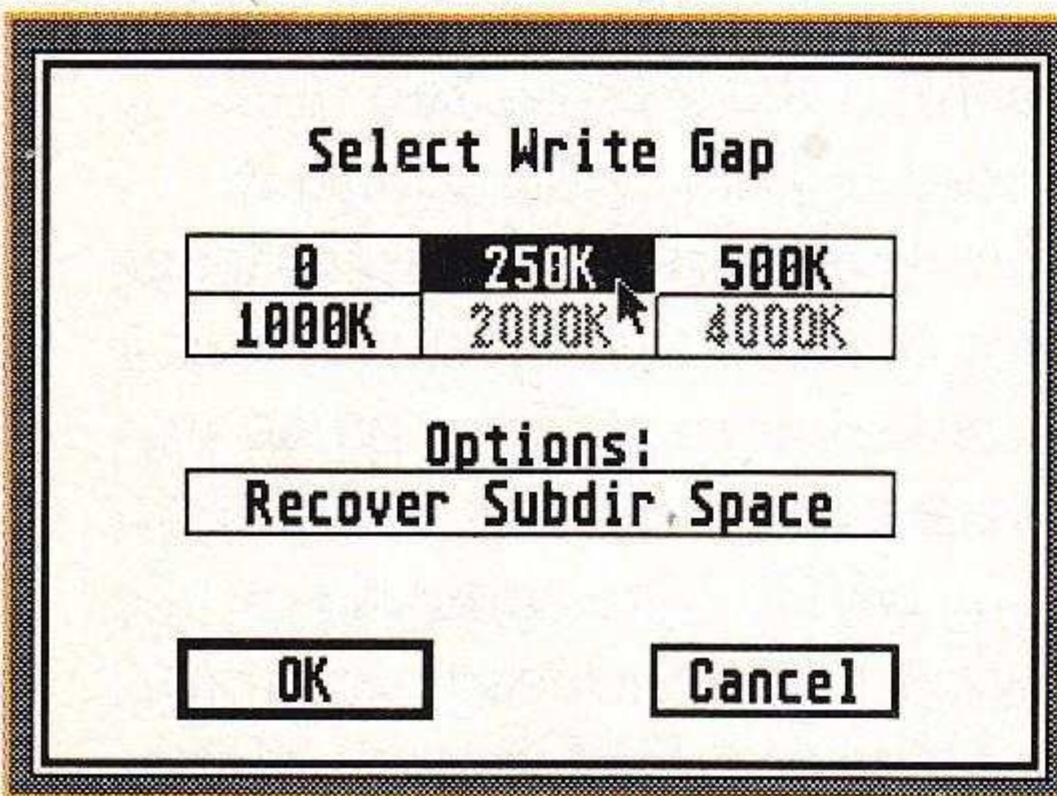
PETER CRUSH



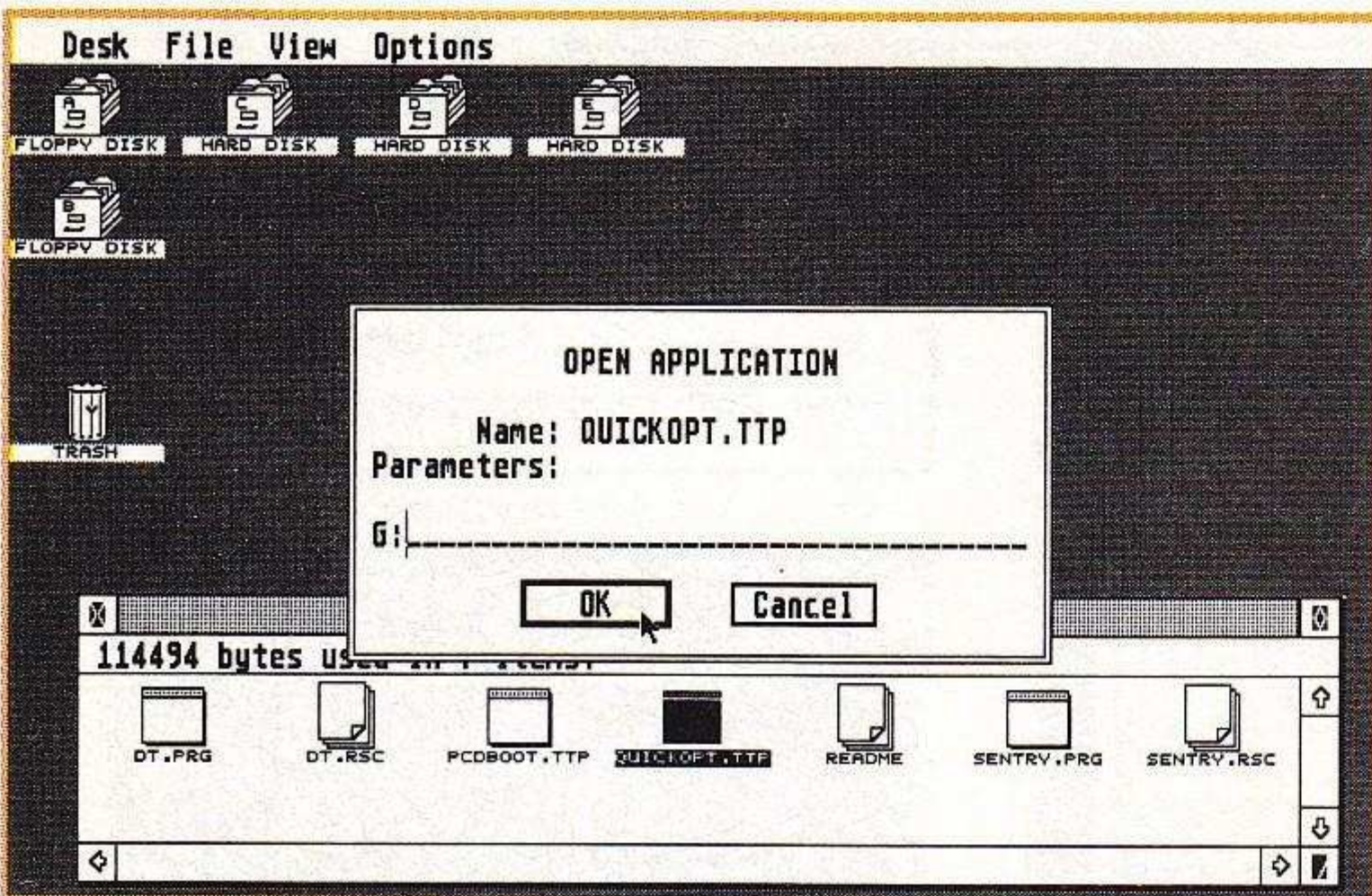
Look at all those neat contiguous clusters. This useful report can also be output to your printer.



Hard Disk Sentry can test both floppy and hard drives.



When you optimise your drive partitions, you can select the gap to leave between directories and data files.



The alternative TTP interface is leaner and meaner and enables you to carry out regular optimisations quickly.

FRAGMENTATION

When you first get your hard drive it seems so fast you can't stop telling everybody about it. Then you get used to its speediness, and then, suddenly, it just doesn't seem fast at all.

It isn't your imagination playing tricks, the drive really is getting slower. As the disk fills up, your operating system starts breaking files up and scattering the pieces all over the surface of

the drive. The more you write and re-write your data, the more fragmented the drive becomes. Loading and saving data takes longer because the drive heads have to hunt for all the bits.

However, if you defragment or optimise your drive, all the fragments are reunited. Data can be loaded more quickly and the drive seems almost as fast as when it was new.

Product: Hard Disk Sentry
Price: £25
Contact: 16/32 Systems
Phone: 01634 710788
Min system: Any Atari

Hard Disk Sentry

HIGHS

- Successfully optimises drives
- Easy, non-technical operation

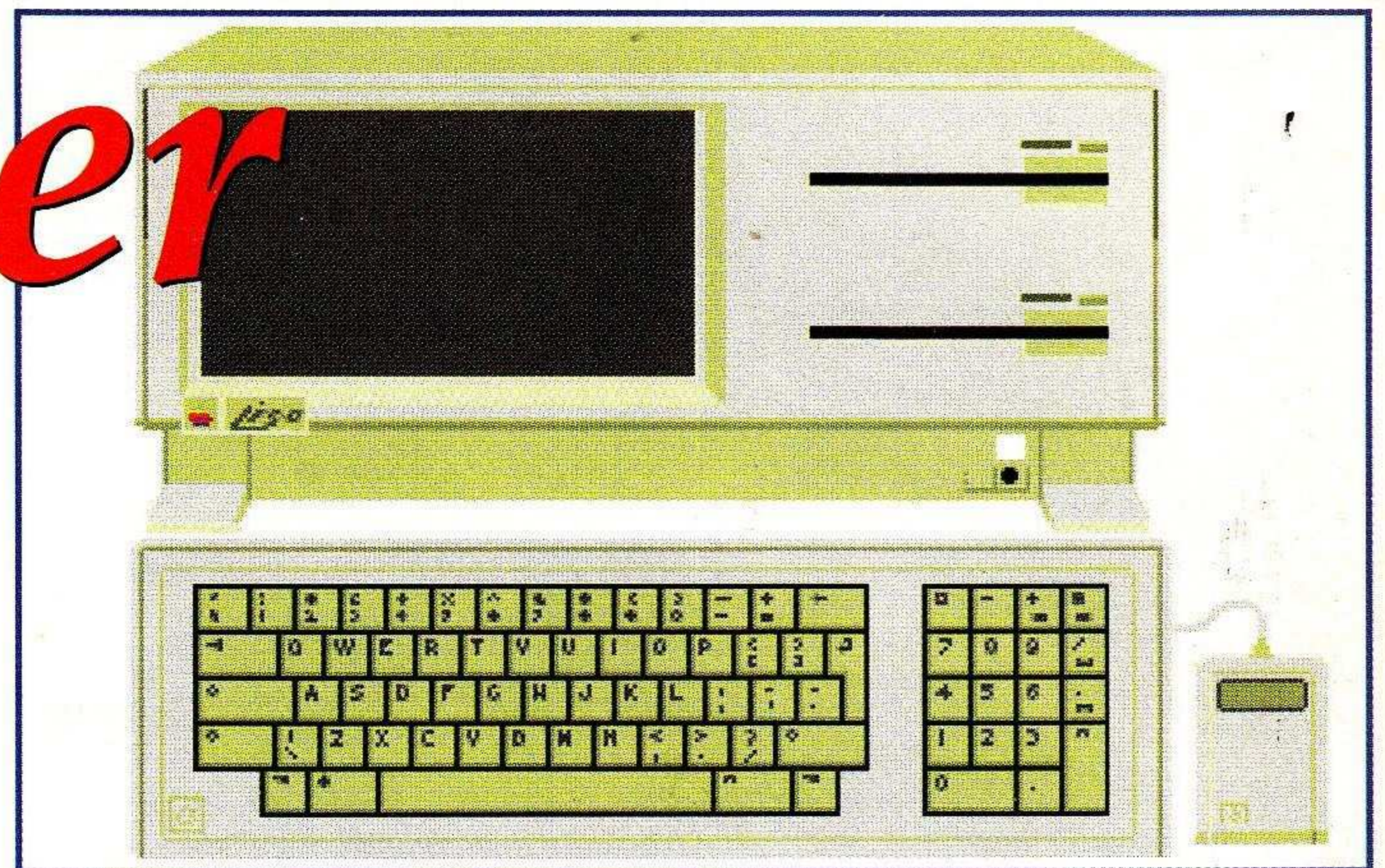
LOWS

- You'll need a separate back-up program

In short...
 User-friendly defragmenter that spring cleans and speeds up your drive. **80%**

VERDICT • STIF VERDICT • STIF

Computer History



Hey, it's a computer. The hand-drawn graphics are well done, if a little lacking in depth.

Learn the ins and outs of thousands of different computers with this new customised database from Top Byte.

While you can count the major computer platforms – ST, Mac, PC and so on – without removing your shoes and socks, the number of different machines manufactured over the years extends upwards into the thousands. Finding information on a particular computer usually involves rustling the pages of reference books or old magazines.

Top Byte's latest product is an attempt to collate this mine of information. *Computer History* provides data on no less than 1,500 models of computer – everything from desktop models such as the ST through to games consoles and even some arcade machines.

It arrives on three disks and offers no support for installation to hard drive. The

main program occupies the first disk, and expects to be loaded from the Auto folder. The remaining disks are stuffed with data files, and all three disks contain a tiny file which identifies the disk number. You can't copy three files with identical file names to the same hard drive partition, and the program chokes badly if you don't bother with them, so you're stuck with running from floppies.

Falcon fiddling

Top Byte's claim that it runs "on any ST" may well be true, but *Computer History* doesn't like the Falcon – at least, not without some work on your

Everything from desktop models to games consoles and arcade machines

part. The program itself has to be unpacked, whereupon it jumps in size from 300K to almost a megabyte. It must then be fed through the old standby, *STOSFix 3*. And because *Computer History* resolutely refuses to run from hard drive, it then needs to be saved back to a floppy – a high-density one, unless you pack the program again. Top

Byte should have provided a separate version for Falcon customers.

The database itself is controlled from a single main

screen which bypasses GEM and uses its own interface. It's minimalist, offering only a list of entries on the left and an icon bar on the right. The list is scrolled using up and down icons or the cursor keys. Once you've found the computer you're looking for, hit [Return] to open the data screen.

The first screen offers information on processor type, memory, built-in software and so on. Further information can generally be had by clicking the More button, and a large proportion of the entries have an associated image – click on the eye icon to view it.

Picturesque

The graphics are hand drawn in 16 colours. A little more verve in the graphics department wouldn't go amiss, but we appreciate how much more disk space would be required, and three disks is enough, thanks. Still, the graphics are well drawn and must have taken half a lifetime, given the number involved.

If you're looking for information on a particular

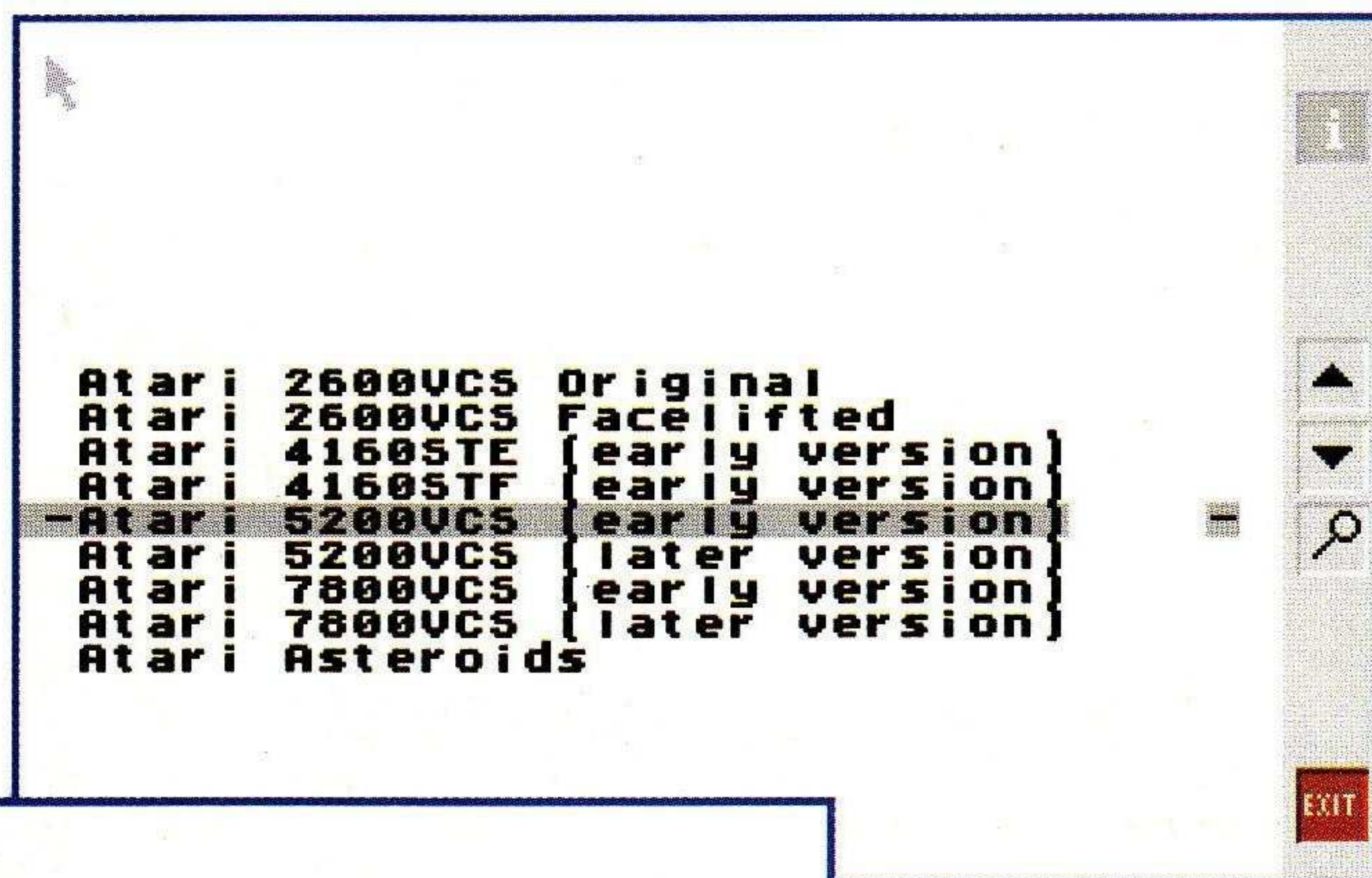
machine, *Computer History* offers a rudimentary search tool to find applicable references. However, it quite often fails miserably. It seems to work if you're at the top of the list among the 'A' entries, but refuses to function in reverse.

Fond memories

There has obviously been a phenomenal amount of work done to get the information and images for each computer – the research alone must have taken ages. It's such a shame the interface is unfriendly and the search function unreliable. Rather than waste all that work, we'd like to see *Computer History* polished until it shines. Meanwhile, though, it's little more than a bit of fun and nostalgia. *stf*

FRANK CHARLTON

Product: Computer History
Price: £11.99
Contact: Top Byte
Tel: 01622 763056
Min system: Any ST with 2Mb of RAM, Falcons with *STOSFix*.



The basic interface is a little too basic. Time to bring in a dedicated artist, perhaps?

The program's massive database contains information about 1,500 computers.

Computer History

HIGHS

- Very well researched
- Some useful information

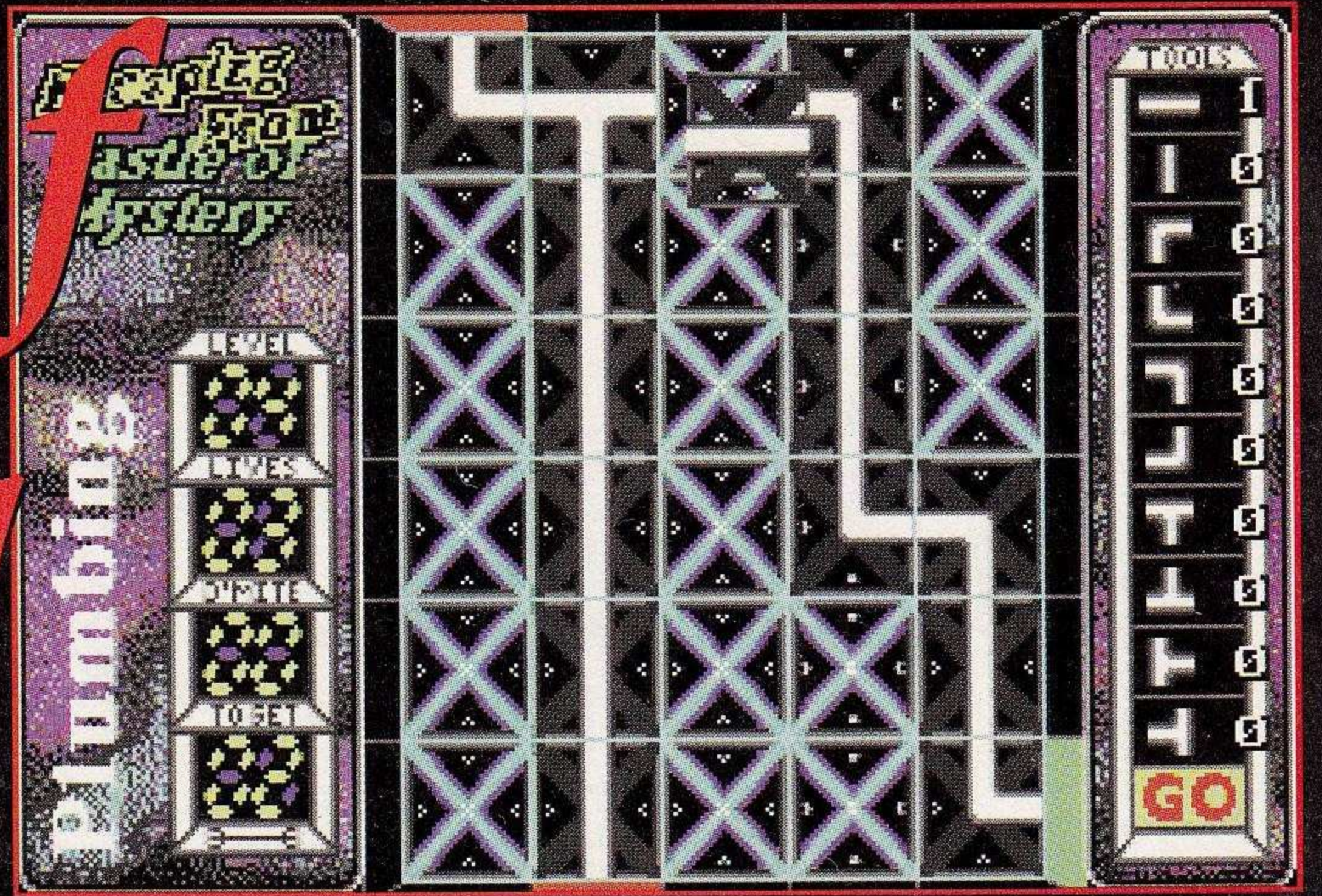
LOWS

- Clumsy interface
- No hard drive support
- Search function unreliable

In short...
 A brave stab at creating a useful work, but it lacks too much to be of real use. **48%**

VERDICT • STIF VERDICT • STIF VERDICT • STIF VERDICT

Castle of Mystery



Remember, folks, don't try this with your plumbing at home. Stick to changing washers.

Gambling is a sin. Rock music promotes the devil. Plumbing is a job for the professionals. Walking around in the dark is just stupid.

Four years after you were trapped in the Castle of Mystery, it occurs to you that escaping might be a good idea. There's only one way to do this: blow your way out with dynamite from the four zones.

Richard O'Brien's voice rings faintly in the background as you contemplate the gambling, musical, plumbing and staggering-about-in-the-dark zones. Each provides a separate puzzle game, and each enables you to earn a piece of dynamite. They are accessed via a menu, enabling you to attempt them in any order. So, on with the zones.

Take the box

The gambling zone takes the form of a fruit machine and a version of that hi-lo game no-one has a name for. Both are fairly (okay, very) simplistic games, the outcomes relying

largely on chance. As you bet more cash you win more back, enabling you to purchase the dynamite dispenser's sticks.

Like the other zones, the gambling zone is split into levels. The two games gradually get more expensive, forcing you to wager more cash as you progress. This makes the whole thing much more difficult. Or, rather, it would.

Because the gambling games are based on luck, not skill, the manual explains, there's a built-in cheat that works every time, forcing the fruit

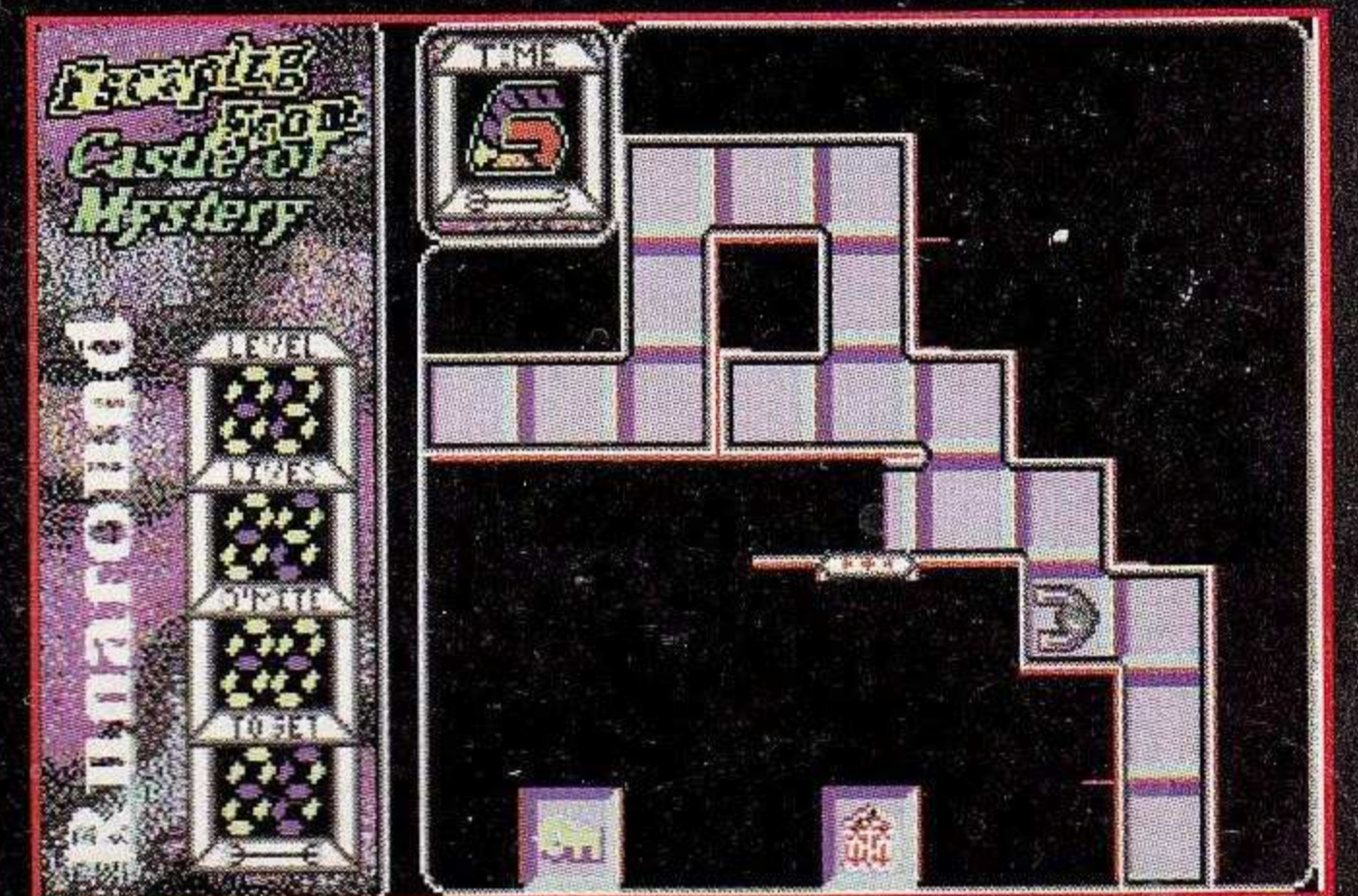
machine to win on all three reels. In other words, this is a gambling game with absolutely no element of risk. What's the word for it? (Audience roars back.) "Pointless!"

In other words, this is a gambling game with absolutely no element of risk

common in PD and shareware, even meriting a few full-price releases. This time, though, there's no time limit – you're free to sit and think about things.

There's also a strict rule requiring you to lay down all the pipes. And your success is calculated by checking to see whether certain pipes are in certain places. Configurations that quite patently won't work can win the level, while an absolutely correct solution

may be disqualified. What's the word? (The audience sits in stunned silence.) What's the word? Anyone?



Yo, snazzy hat, fellah. It's especially suited to your current task – searching for the light switch.

be learnt, requiring pencils and paper rather than initiative. What's the – oh, forget it.

I do so hate having to put down people's efforts (no, really), but *Escaping from the Castle of Mystery* really isn't any good. You'll have more fun gambling, jiving or fixing that leaking tap. Or walking around in the dark. *stf*

DAVE BARRINGTON

Hit the auth... notes

On to the music zone, where you can watch Dynamite Dan and His One Man Band select an instrument and take the stage. When a note is displayed, you must hit the correct key or combination on the specified input device – keyboard, keypad, mouse or joystick – within three seconds. If you fail, you lose a life.

To win. You must. Do this. Over. And over. Again. Hundreds. Of. Times. What's that tune? (Audience starts to mumble into its popcorn.)

In the dark

At last, a varied challenge without fatal flaws. You must solve the maze within the time limit, uncovering each square as you step on to it. Because, obviously, they're designed to confuse, these mazes have to

M for Mario

Next, we visit the plumbing zone, where you must connect up a set of start and finishing points with various pieces of pipe. This is a game design that's



Tip for life: bet heavily, then fold. Or use the built-in cheat.

Dynamite Dan, shortly before the chocolate bar incident.

Product: Escaping from the Castle of Mystery
Price: £7
Contact: CBS, 41 Craiglond Gardens, Balloch, Dunbartonshire, G83 8RP
Min system: All STs

VERDICT • STF VERDICT • STF VERDICT

Castle of Mystery

HIGHS

- Erm...
- Look, a flying saucer!

LOWS

- How long have you got?

In short...

Ill-conceived, badly flawed and nothing like our idea of a good time.

20%

Avoid.

Skyhammer

The future: hostile tanks roam the streets and office blocks sport laser cannons, but there's no more Dale Winton. And no supermarkets.



Gravity isn't a concern and you don't have to be too careful – just fly and fire.

There is no more government. The Earth's cities are carved into sections controlled by corporations, which are all warring with each other. As a skyhammer pilot, you're in the business of taking missions from anyone willing to pay, screaming your craft through hostile streets in search of lost items, hostages or specific unfriendly craft and doing whatever it takes to complete the brief and collect your cash.

The skyhammer is a fast, powerful and heavily upgradable aircraft. It's only just capable of navigating street corners and roof tops and is supported by building-mounted fuelling depots and occasional shield bonuses. You control the craft as you would an aeroplane, using climb, dive and banking controls in conjunction with rear thrust to do your stuff. Large quantities of

cash buy more powerful engines, giving you reverse and enabling you to strafe in four directions. Similarly, the weapon systems become more advanced as you throw more cash at your aircraft.

Blam

Ah yes, the weapons. Gravity isn't a concern – you won't plummet if you stop in mid air – so games tend to be fast paced and destruction laden. Your craft is equipped with a machine gun, bombs and mini, homing and smart missiles, all linked to an intelligent targeting system that identifies friend or foe. You can fly

straight towards something, fire a missile at the last possible moment, zip through the resultant cloud of debris, dip

over the edge of a building to give an unsuspecting plane a spray of machine-gun fire and then follow it as it spins uncontrollably towards the ground. This is fun!

And that's the point: there aren't any pre-defined courses, so you can (and may have to) fly across rooftops, at street level, vertically and even

upside-down. Each route is sufficiently packed with guns and enemies that any approach will produce plenty of pyrotechnics.

It's here that a few problems begin to creep in. Although the game has a degree of overall strategy, because you have to find routes into some heavily protected strongholds, using the scanner to avoid ground tanks, guns and what-have-you, slowing down isn't a good idea. Apparently Atari stipulated that if you hang



There are plenty of opportunities to wreak mayhem.

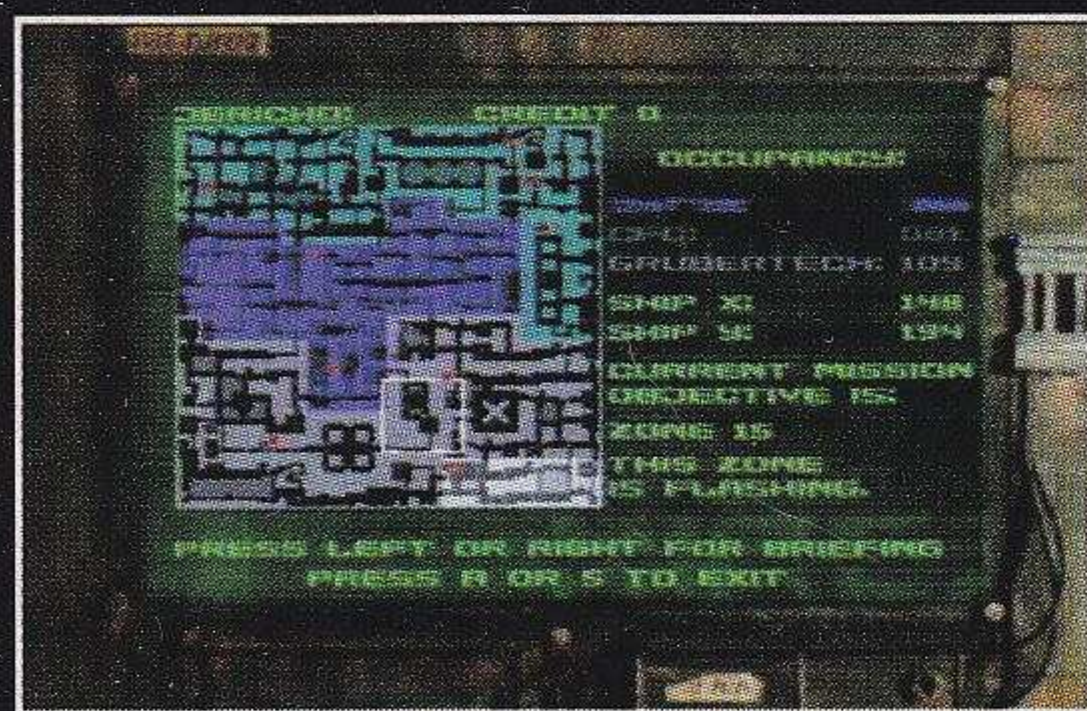
around on a rooftop, you get unfair amounts of grief from the artillery up there, forcing you to move on. If you slow

down in the streets, you get a plane holding an obscure angle, firing at you until you manage to find it and kill it. It's possible to tell, from the lighting in your cockpit, where the damage is coming from, but it's all too easy to spend a long time tracking it down.

Surgeon's hands

The other problem is the precision required to fly the craft. Though buildings don't do any harm when you hit them, it's impossible to scrape them without stopping dead. On a rooftop, this means you're suddenly sitting there, right in front of the big enemy guns, until your gradual acceleration finally kicks in. On other

Gravity isn't a concern, so games are fast paced and destruction laden



Flick to the scanner screen to receive a full mission briefing.



The red box indicates that your missiles are targeted.

The game's explosions are all fairly pleasing.



occasions, you'll have to stop – the power-ups and other collectibles are small enough to be missed several times. You must fly straight through these tiny objects to pick them up.

Take that, you

That said, *Skyhammer* is a lot of fun. It may not be the most sophisticated flight sim, but it's not supposed to be. It's a chance to hoolie around a pretty but well-defined *Bladerunner*-style city firing big guns. Top. *stf*

SIMON FORRESTER

Product: Skyhammer
Price: TBA
Contact: JTS Atari
Tel: 01753 533344
Min system: Jaguar

VERDICT • STF VERDICT • STF VERDICT

Skyhammer

HIGHS

- Cool graphics
- Fun destruction

LOWS

- Annoyingly picky at times

In short...

A deep game with loads of missions over three cities. Fun, but not quite flawless. **85%**

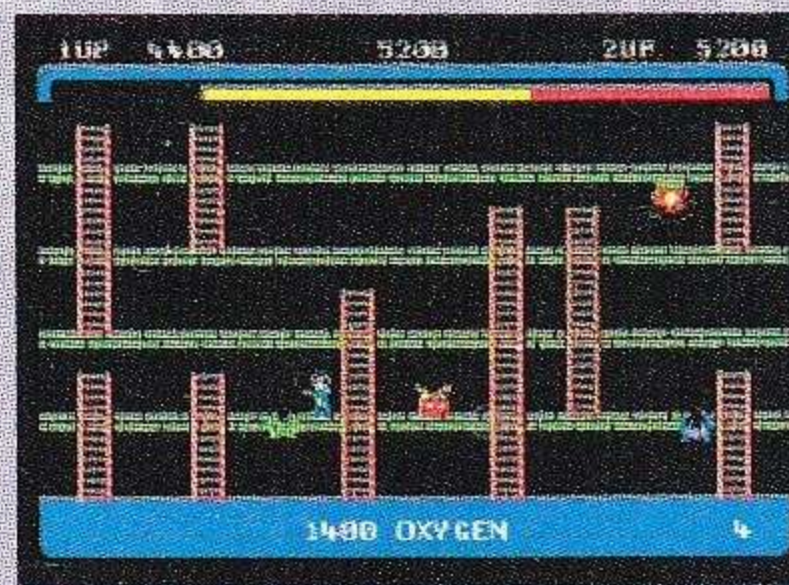
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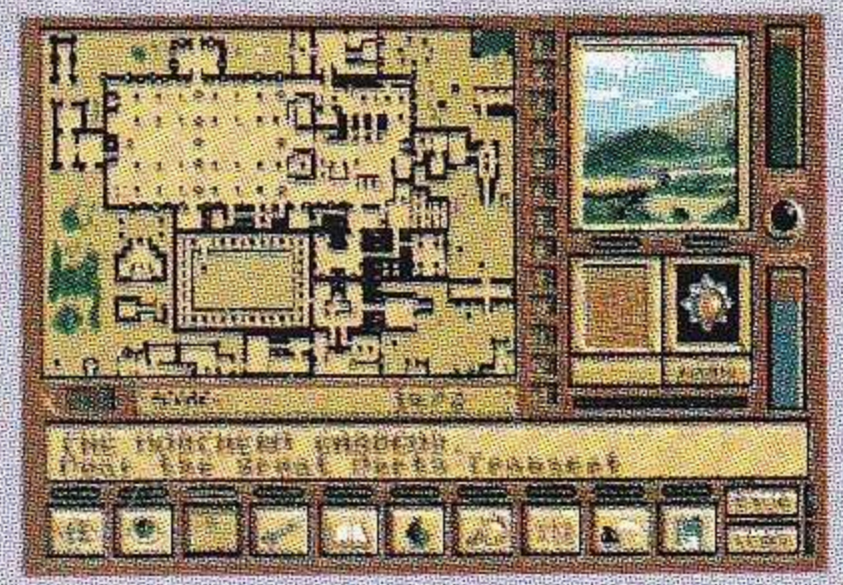
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PD & Shareware

PD and shareware, isn't it? Marvellous! Northern pauper Andy Curtis gets all excited about this month's low-cost releases.

Michigan Mike

LAPD, Disk G459
All ST's, low res only

Michigan Mike is a charming and well-written platform puzzler. The eponymous Mike is an explorer chappie, and he has discovered the Lost City of Zorog. You join him in the middle of the city; he has no idea how to get out.

Your task is to get him out of each area he wanders into, collecting as much treasure as possible. There are the usual snares to beware of, including metal spikes which shoot out from above you and fluorescent green, slimy worms

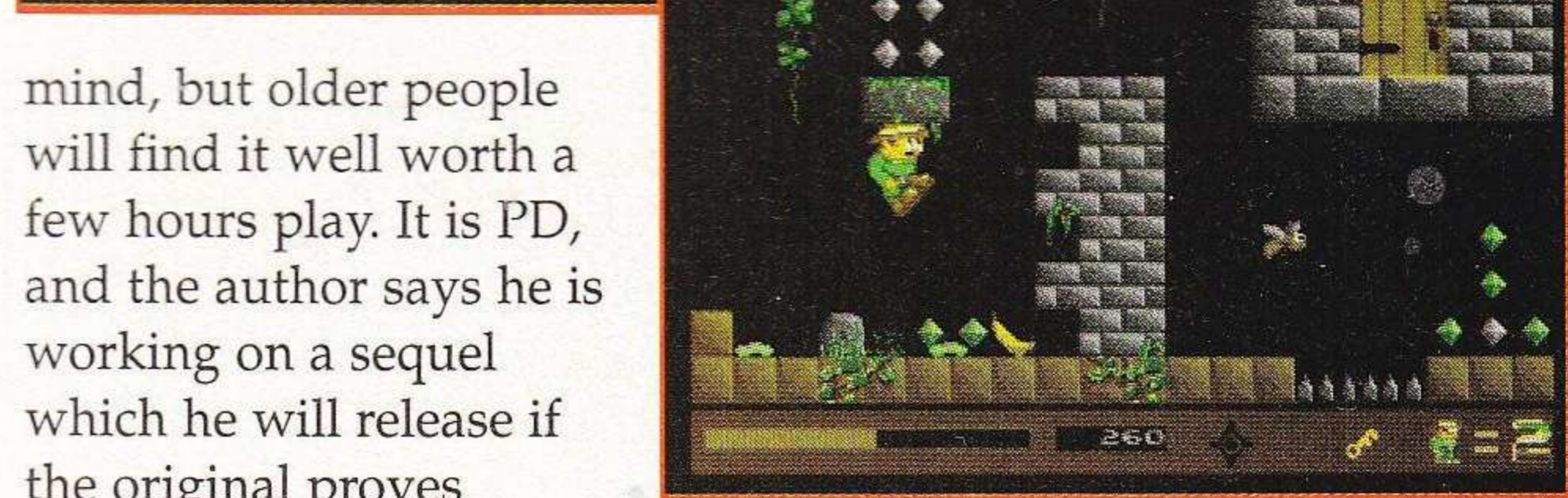
crawling all over the place. These nasties diminish your strength, but won't kill you right away. However, the metal spikes pointing up from the ground will finish you off instantly. If you land on any of them, you lose one of your three lives.

Michigan Mike was created with the aid of the *GFA Sprite-Works* package (STF 74, 90%). It demonstrates how powerful this package is and how smooth the results can be.

This game is perfect if you want some straightforward but entertaining platforming. It is written with children in



Losing all your energy kills you, but in a rather spectacular fashion. Nice.



mind, but older people will find it well worth a few hours play. It is PD, and the author says he is working on a sequel which he will release if the original proves popular. Super.

STF RATING: 89%

It may look a little dim, but you are, after all, deep inside the Lost City of Zorog.

Let's Spell

Wonder Disk 82, or Goodmans Disk GD1771
All Ataris (TOS 2.06 and Falcon with STOSFix),
1Mb required

Let's Spell 1st 500 Words Intro is an updated version of a program originally released in 1992. It aims to teach spelling to young people in a friendly and colourful environment.

The demo has just a few categories active, including bathroom, clothes shop and farmyard. Simply click on the category you wish to use and a picture is displayed. Clicking on any element of the picture takes you to the spelling screen. Underneath

a larger version of the selected item is a row of letters; click on them to spell out its name. A child's voice pronounces each selected letter.

When you've finished spelling a word, click the Finish button to find out whether your answer is correct. The program keeps track of the number of words attempted and the number spelt correctly.

Let's Spell was obviously written by someone who understands the need for easy-to-use interfaces in children's programs. Extensive instructions are provided, but aren't really required. The options do

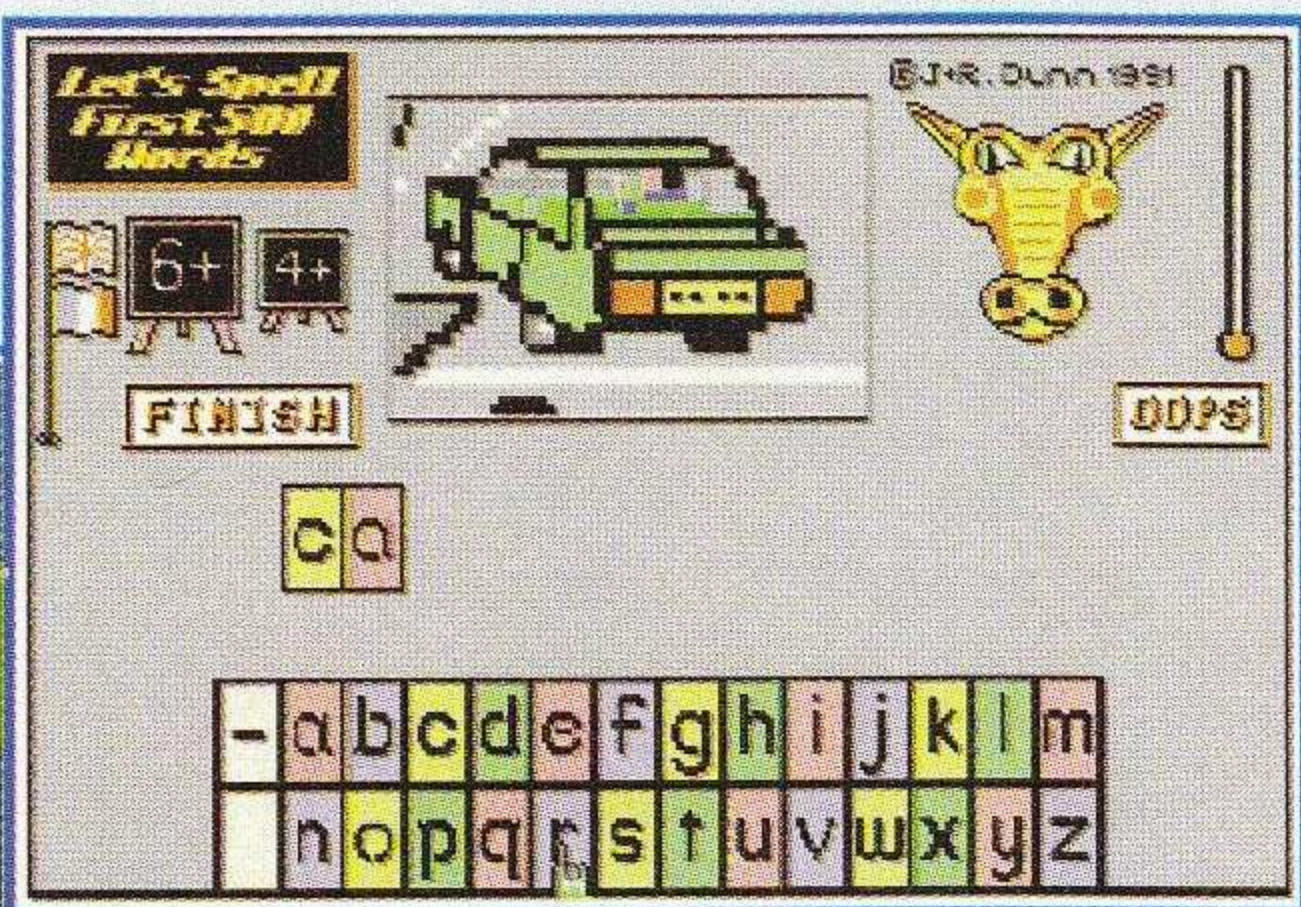
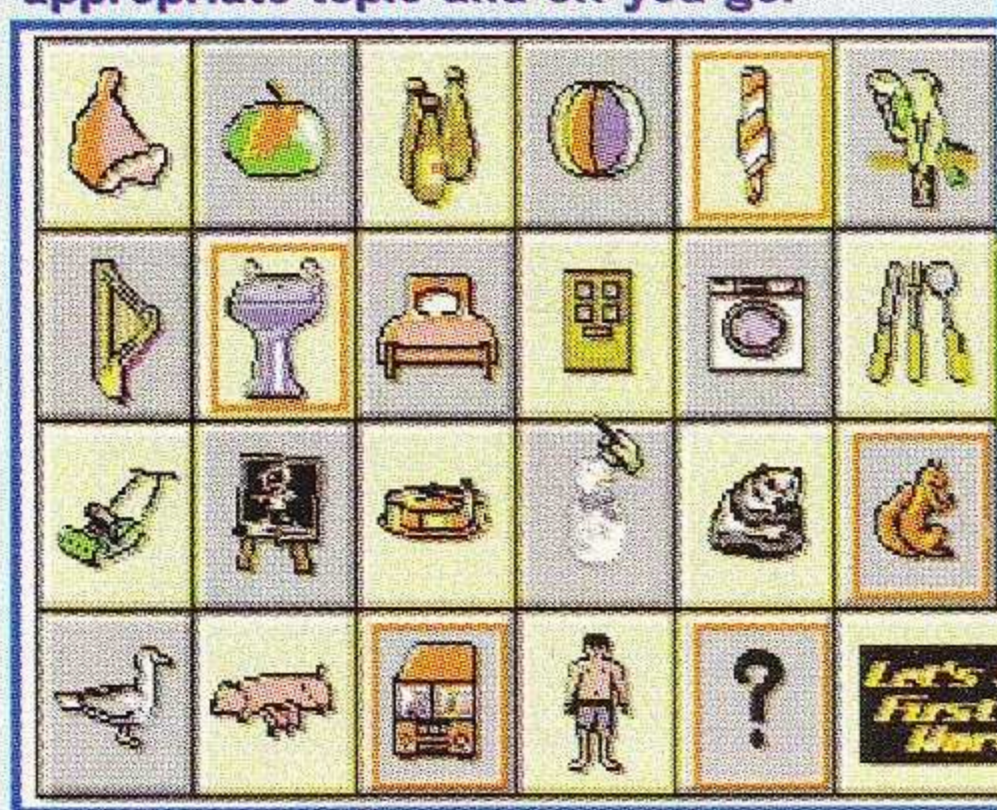
exactly what you expect and it is therefore very useful as a teaching tool.

The full version costs £10 and includes all 500 words in both English and French. It also enables you to add words and create new categories. *Let's Spell* is an excellent package which is of genuine use to parents and teachers as they seek to educate young people.

STF RATING: 96%



Let's Spell is very easy to use: simply click on an icon to select the appropriate topic and off you go!



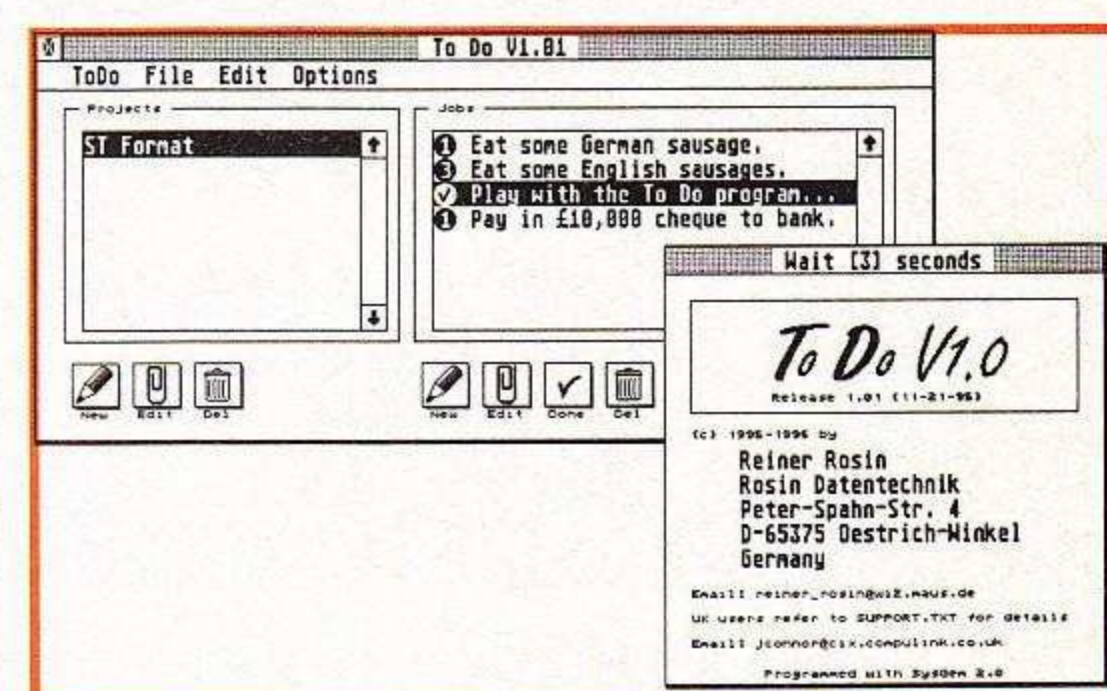
As you click a letter, a child's voice pronounces it, making the program very attractive to youngsters.

To Do

Wonder Disk 82, or HENSA
in /micros/atari/tos
All Ataris, mono monitor
required

To Do 1.01 is an appointments organiser which enables you to list all your jobs in order of priority. Projects can be set up by name or date so you can see clearly what needs to be done on a particular day or for a particular event.

It's very easy to use: simply give your project a



To Do is just the job if you need to keep track of all your jobs and appointments.

name or date and make an entry for each job you have to carry out. When the program loads (you can install it as an Accessory, too), all your projects are displayed in the left-hand column. The jobs associated with each project

are shown in the right-hand column, and double-clicking on any job brings up a box showing what has to be done. *To Do* is clearly laid out, transparent in use and very stable. Recommended.

STF RATING: 89%

Lazer

LAPD, disk L133 (£2.50)
All colour Ataris (TOS 2.06 and Falcon with STOSFix)

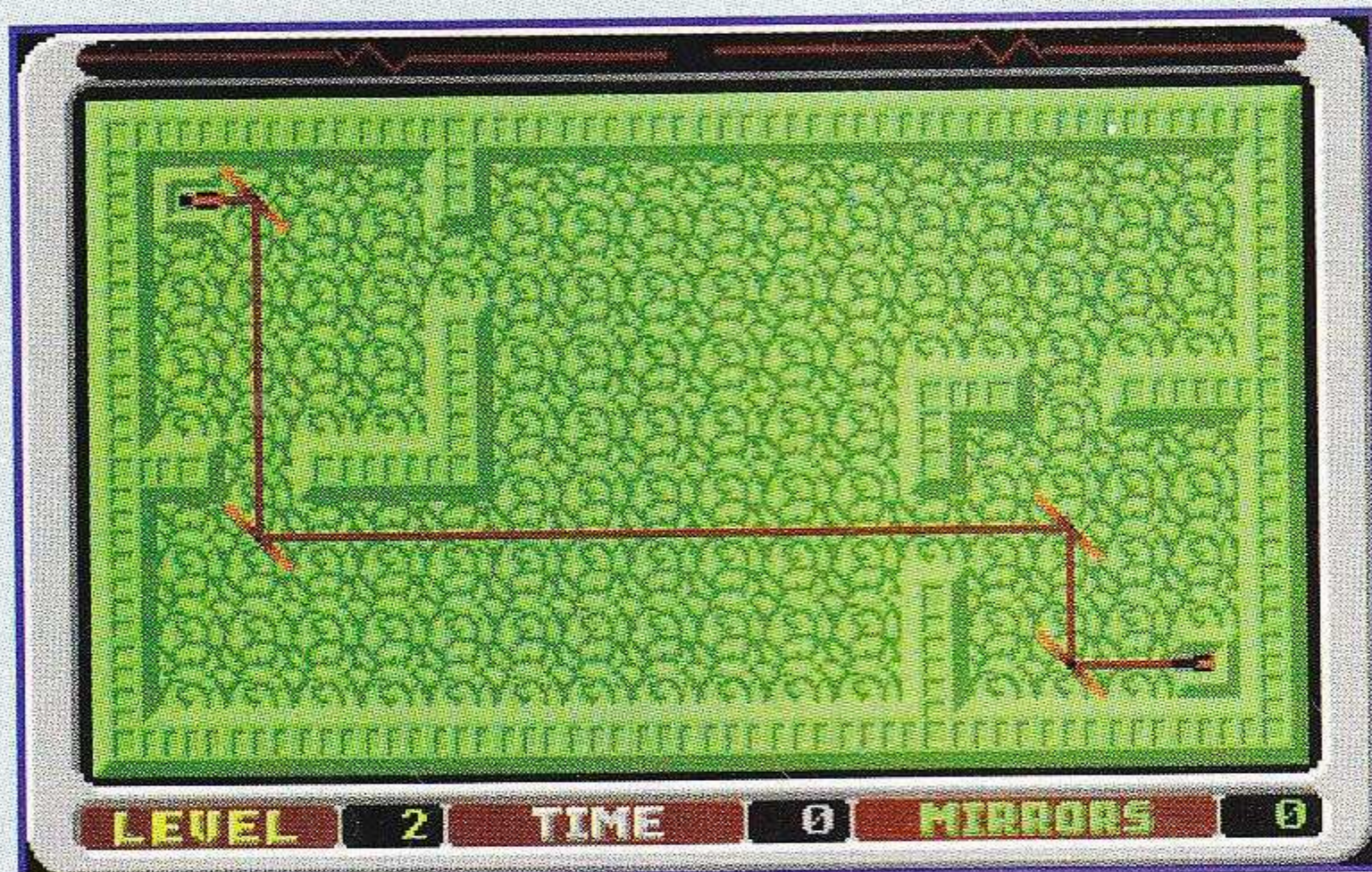
Many laser games have appeared over the years, and sadly, this one has little new to offer. Two different mirror angles are available, and you have to direct the laser beam so that it joins the two home stations. It works on the principle that light always reflects off a mirror at a 90-degree angle, so if you set the mirrors up correctly, the light will bounce around the screen until it hits the other home station.

out the solution and can place the mirrors with sufficient speed. A skill-level system would have removed this annoyance, giving more time to the beginners and less to the skilled players. Instead, inexperienced players may not persevere with the game while skilled gamers will quickly outgrow the challenge of *Lazer*.

Nevertheless, if you're a dab hand at mouse control and can think at the speed of light, *Lazer* is worth a look. It even comes with a free game (see below) for those who find it too challenging.

STF RATING: 73%

Although this version is well written and straightforward to play, the enforced time limits are way too short. You are given just ten seconds to complete the first few screens, so you'll need to practice until you've worked



Position the mirrors so the laser beam hits the second home station, and do it quickly - you only have ten seconds.

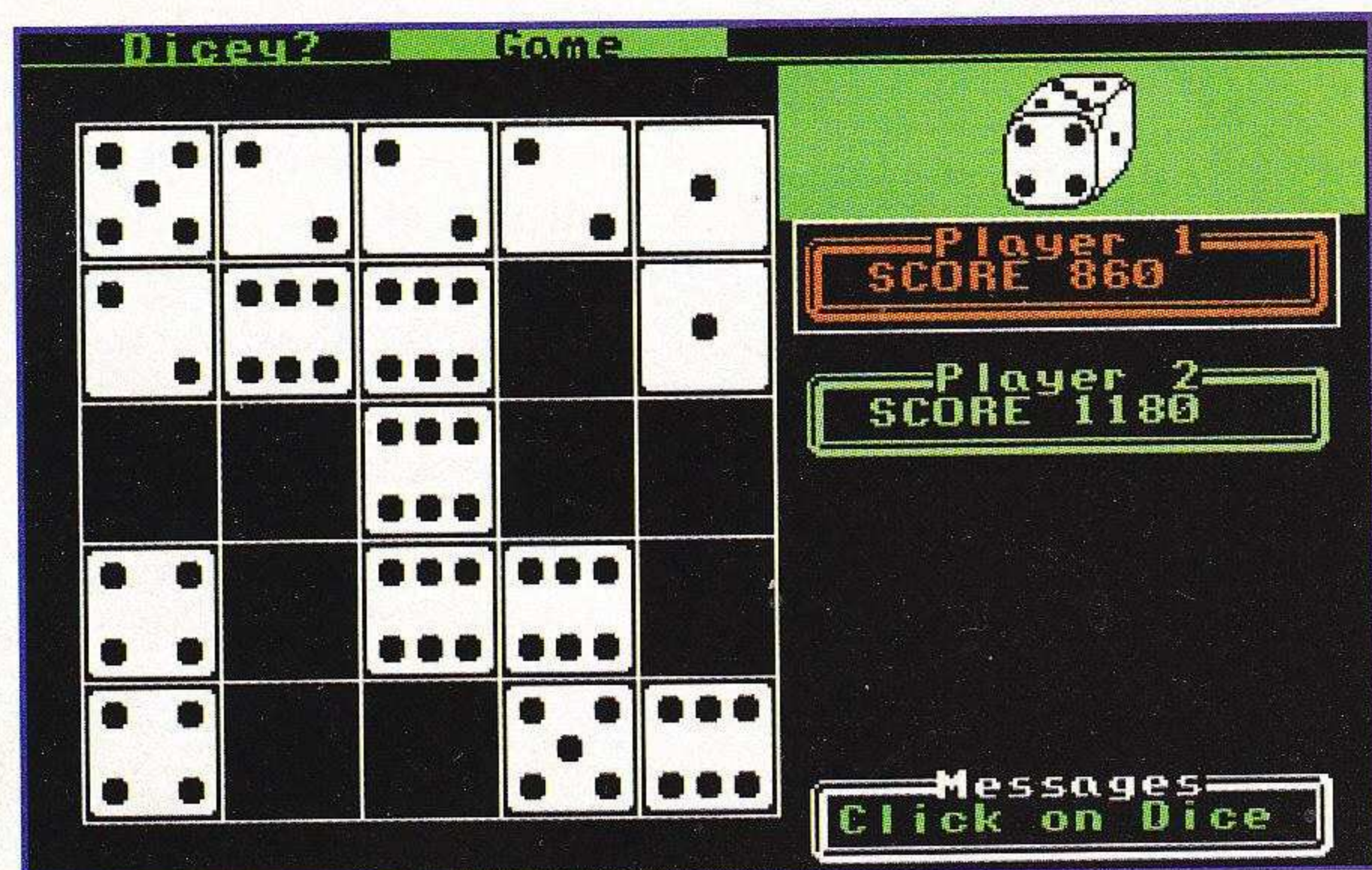
DICEY?

If you buy *Lazer* from LAPD, you get an extra game, *Dicey?*, thrown in. It's very simple: you play against a friend or the computer and click on the dice. You score the face value of the dice multiplied by ten.

You then place your dice throw on to a grid, where points are allotted according to the number of identical dice in

horizontal, vertical or diagonal rows. It may not be *Doom 2*, but it will occupy you for at least as long as it takes you to work out that the computer is cheating. Argh, technology, what would we do without it? Nevertheless, it's hard to argue with something for nothing, and *Dicey!* is a nice little extra.

STF RATING: 68%



Spend a few idle moments trying to outsmart the computer in *Dicey?*, a surprise, but welcome, extra on the *Lazer* disk.

Sea War

LAPD, Disk L132 (£2.50)
All colour Ataris (TOS 2.06 and Falcon with STOSFix)

Sadly, this is not a spectacular sea-based shoot-'em-up. Instead, you are presented with annoying music, a clumsy interface and very uninspiring gameplay.

The idea is to build up a fleet of ships by buying hulls, engines

and weapons, then blow up your opponent. All sections of the game are both hard to see on screen and near impossible to negotiate with just a joystick. We didn't have the time to hang around, but the accompanying text file assures us that, in the end, someone's fleet is completely destroyed. Hurrah. Avoid.

STF RATING: 12%



This start-up screen is the best bit of *Sea War*. The game itself is dreadful.

MIDI-Wiz

LAPD, Disk G432
All colour Ataris,
1Mb required

MIDI-Wiz may well be a very good game indeed. It is, however, very complex and the documentation is very German. There is an English translation, but it's much shorter than the original and the essential 'how to play' section is missing.

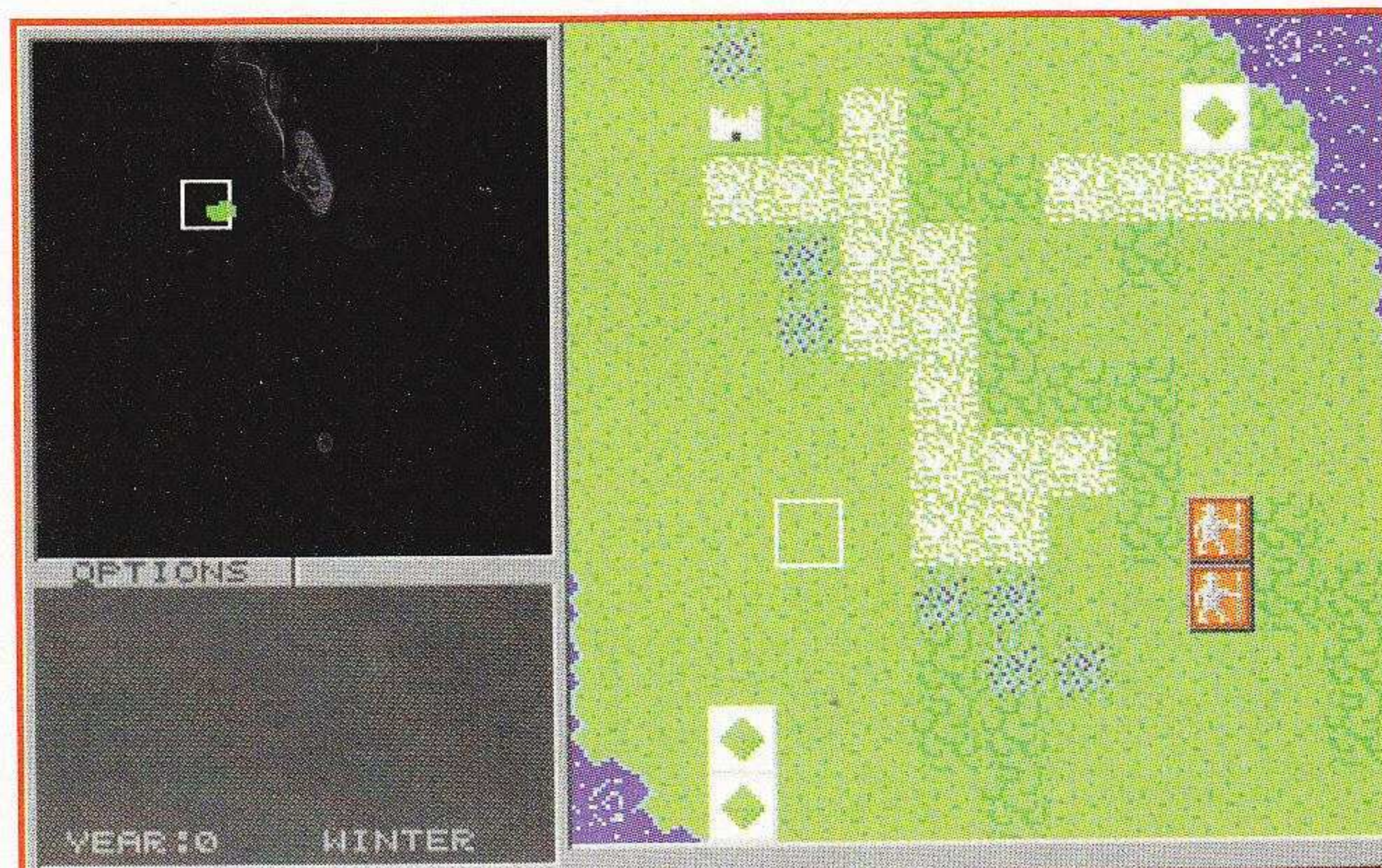
The game is set on a planet not unlike our own, in a time of knights, castles and magic. The object is to build your kingdom and tackle other players, who can join you over a MIDI network. The registered version (20DM)

supports up to six players; the shareware version has no high-score facility and only three people can play at once.

The game itself is in English, so those of you with sufficient patience should be able to work out the rules. However, without the detailed instructions provided in the German documentation, there is no quick way to play.

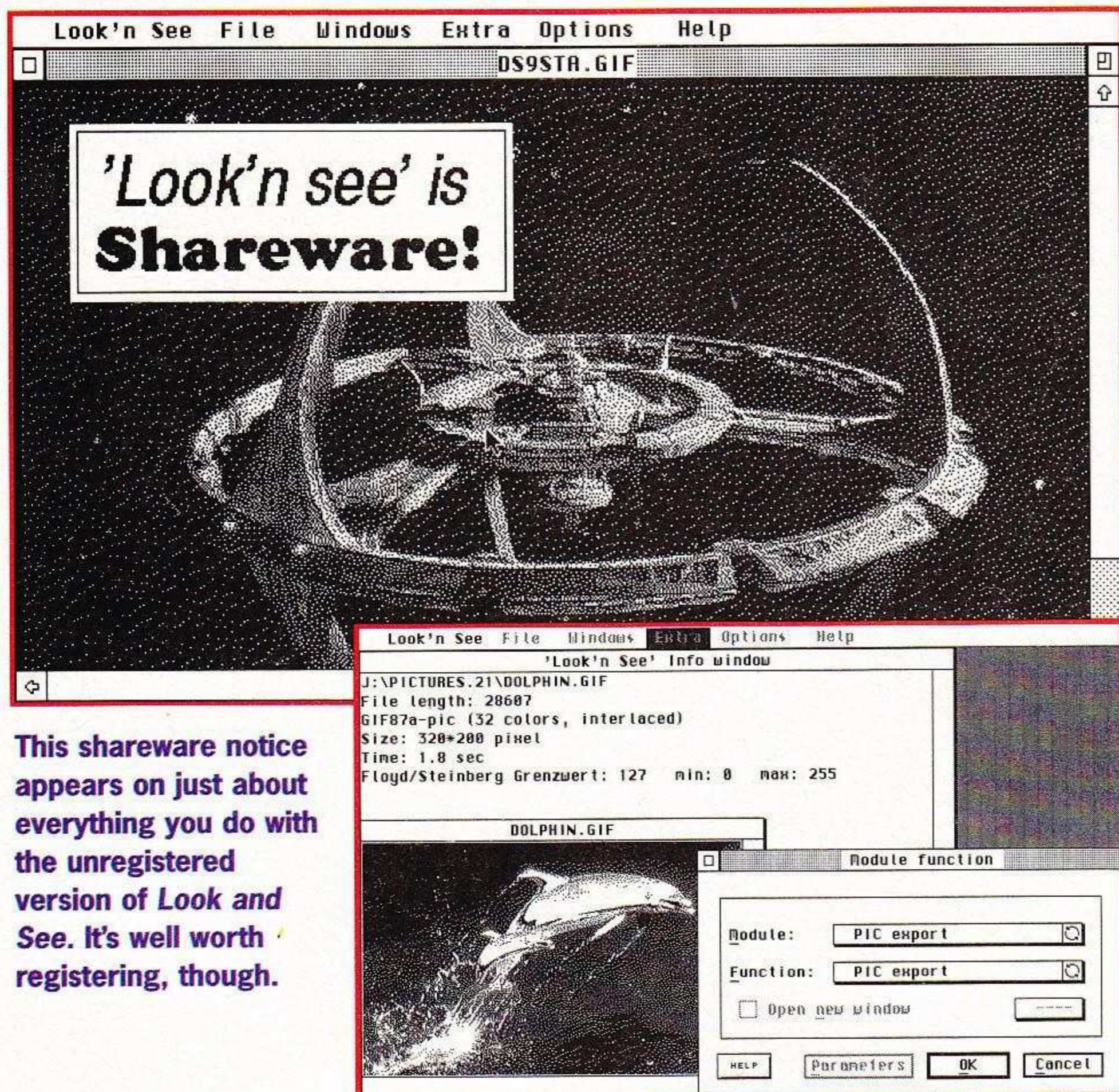
LAPD would be delighted to hear from anyone who can translate the text files. The text includes an e-mail address for the author, so you may be able to get some help over the Net. It's worth a try, because this looks to be an excellent game.

STF RATING: 70%



MIDI-Wiz appears to be a superb empire-building game with full MIDI-link support, but the minimalist English documentation makes it difficult to get into.

Look and See



This shareware notice appears on just about everything you do with the unregistered version of Look and See. It's well worth registering, though.

Pictures can be exported in a variety of formats, including TIFF and GIF.

**HENSA, in /micros/atari/tos
All Ataris, 1Mb required**

GEMView has long had a stranglehold on the shareware image-viewing market, but all that may change with the first English language release of *Look and See*. It is much more than a picture viewer and can also display text files and play sound samples.

A wide range of formats is supported via a modular system which enables third-party programmers to develop future support for additional formats. Most common graphics file formats are supported, with export options, but the AVR format is sadly notable by its absence from the sample department.

There are the usual dithering options for ST high resolution users, as well as a number of image-processing options, enabling you to lighten images or change their size. The text loader supports the loading of 'virtual' files, enabling you to load very large text files even if there isn't enough memory to load the whole document.

Look and See works well under *Magic 3*, where it has smart 3D dialogs, and also under *MagiCMac*. If you have 2Mb or more of RAM, you can even run *Look and See* as an Accessory, whereupon it runs alongside most well-written GEM programs.

The shareware version displays a "Look and See is Shareware" banner over every image and text file. UK users can register the program (£20) through Joe Conner. And so you should – it's well worth it.

STF RATING: 81%

Efan

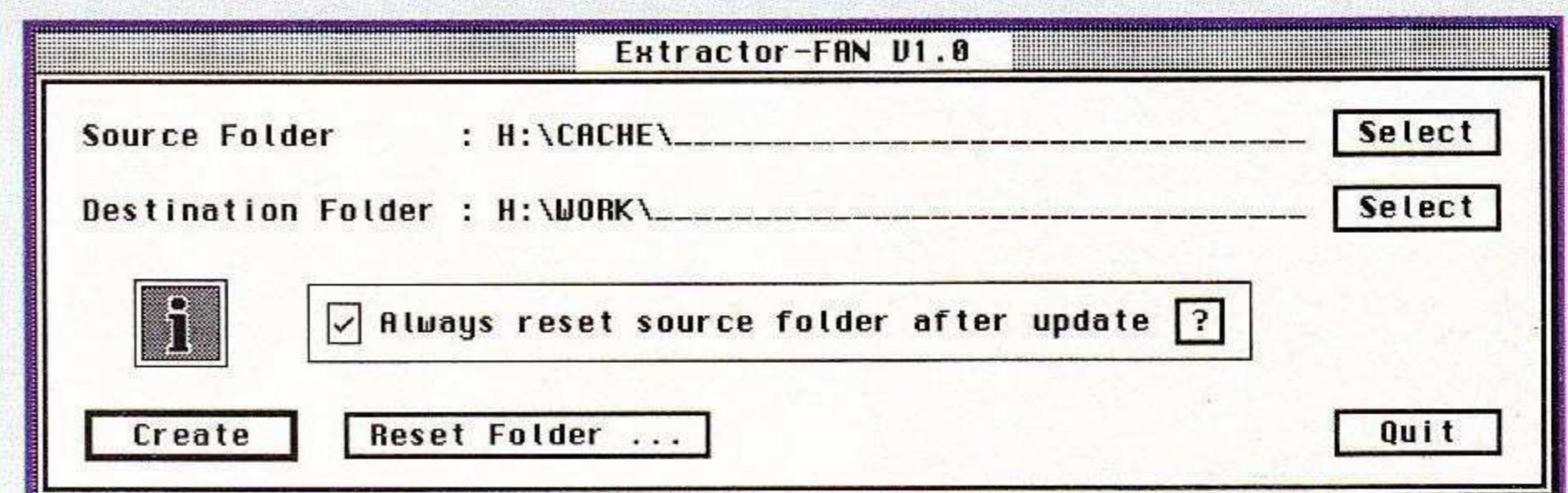
**HENSA, in /micros/atari
All Ataris**

Extractor Fan is a utility which helps you keep two directories in sync. A typical example is updating Web pages: after you complete all the files required for a good page, you'll probably gather them into a single directory. Later, you may need to update some of the files. You don't want to upload the whole lot every time, so *Efan* 'looks' at the full directory, selects the changed

files and copies them to a new directory. You can then upload them with your FTP software, secure in the knowledge that all the updated files are in one place. You can also use it to synchronise files on two separate computers.

Efan works by marking changed files, then copying them to a new directory. After uploading, you can reset the folder, ready for next time. Simple, small and efficient, *Efan* is a very handy program.

STF RATING: 79%



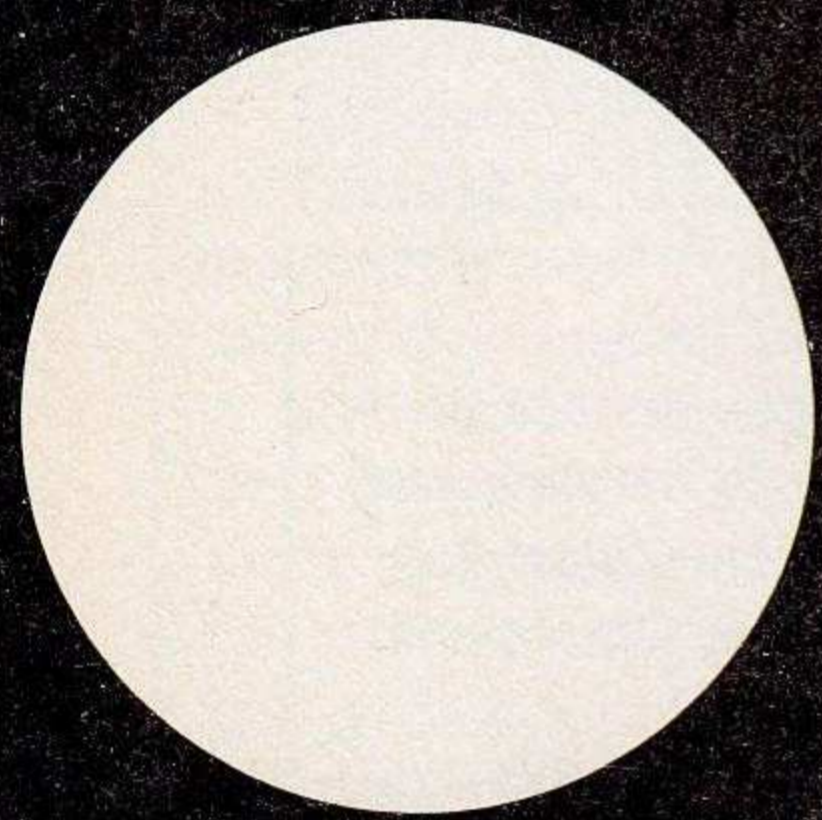
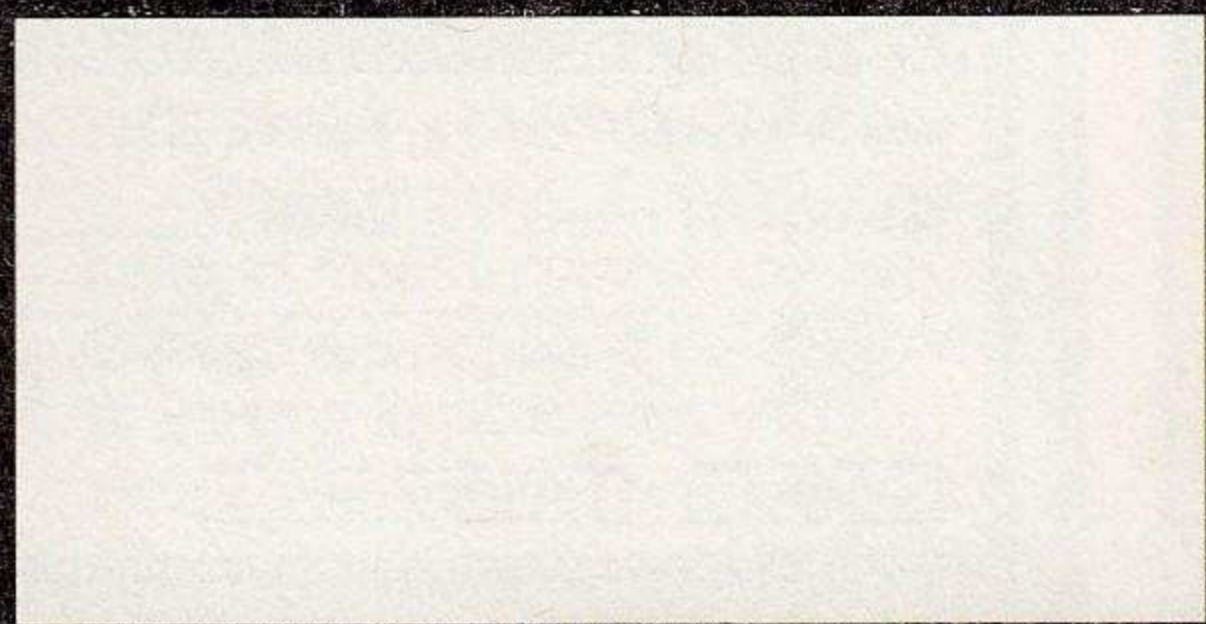
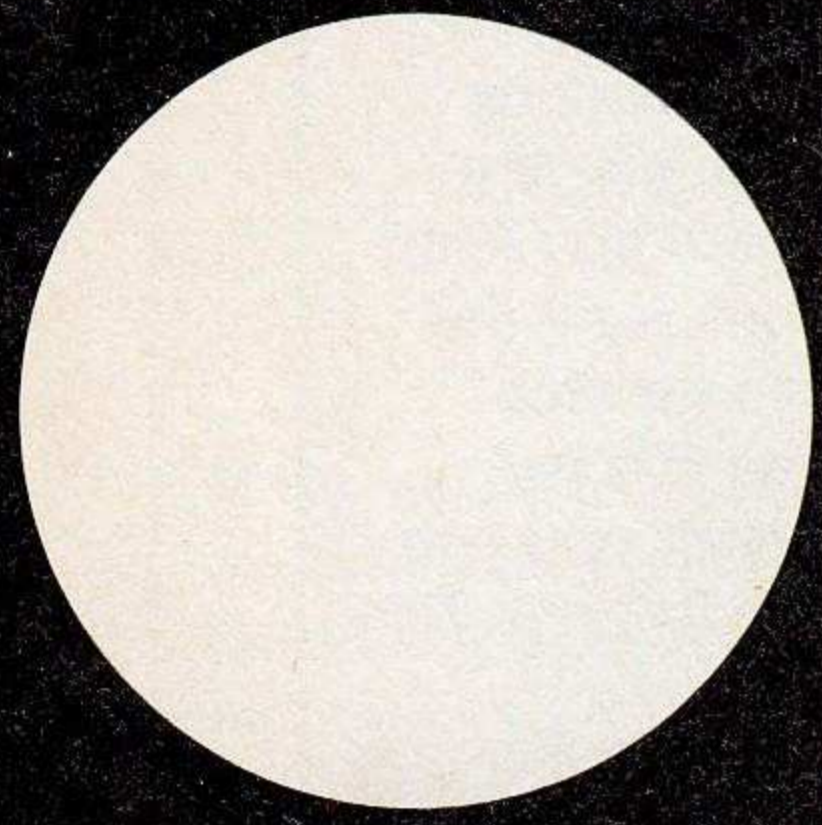
This single dialog is all you will ever see of *Extractor Fan*. It enables you to locate updated files and copy them from one folder to another.

Several of this month's programs have been listed as being available via the HENSA software archives. If you have access to FTP software (see last month's Cover feature for more details), you can download them from <ftp:micros.hensa.ac.uk/micros/atari/tos>. Alternatively, try your favourite PD library: Floppyshop, Goodmans and LAPD are most likely to have these programs.

PD & SHAREWARE ROUND-UP

Missed an issue? Shame of you! Find out what we've reviewed with this handy round-up of the top PD releases from the past four months.

TITLE	PD LIBRARY	TYPE	ISSUE	RATING
Warp 4	Keefy	Diskmag	80	94%
EKO System Demo	Falcon Owner's Group	Falcon demo	81	94%
Isle of Glass	Goodmans PDL	Game	80	92%
Take 500	Floppyshop	TG500 editor	78	91%
Deadland	Merlin PD	Game	79	91%
PicScan 2.7e	LAPD	Graphics utility	79	90%
Internet Access Pack 1.15	HENSA	Internet utility	79	90%
PacShell 2.62	Goodmans PDL	Archiver shell	80	90%
Space Monsters	Goodmans PDL	Game	80	90%
Two-in-One 1.51e	Wonder Disk 81	Archiver shell	81	90%
Genocide	LAPD	STE/Falcon game	78	89%
Psygham	Floppyshop	Utility	78	89%
Nishiram	LAPD	Game	81	89%
Songz 1.90	HENSA	Music database	81	89%
Falcon STOS Extensions	Floppyshop	Falcon STOS	78	88%
AstroGuide 4	Goodmans	Astronomy utility	81	88%
Nova 9	James Bird	Diskmag	79	87%
National Lottery Simulator	Floppyshop	Guess	78	85%
Thing Backgrounds	Ad.Lib	IMG files for Thing	79	85%
Zorg 2.01	LAPD	Disk utility	80	85%
Craghaven	LAPD	Game	78	84%
Emperor	LAPD	Game	78	84%
Towers 1.5	LAPD	Game	79	84%
Third Dimension 20	Floppyshop	Diskmag	79	83%
Train Set 2	Goodmans PDL	Game	80	83%
Paula 2.4	Goodmans PDL	MOD player	79	82%
Route Finder 2.2	Wonder Disk 80	Route planner	80	82%
Rollercoaster Experience	Goodmans	Game demo	81	82%
Muzak Player 2	Floppyshop	Music player	78	81%
Pack CDK	Goodmans PDL	Calamus utility	79	81%
List Font 2.1	FaST Club	Font utility	81	81%
Annex	LAPD	Game	81	80%



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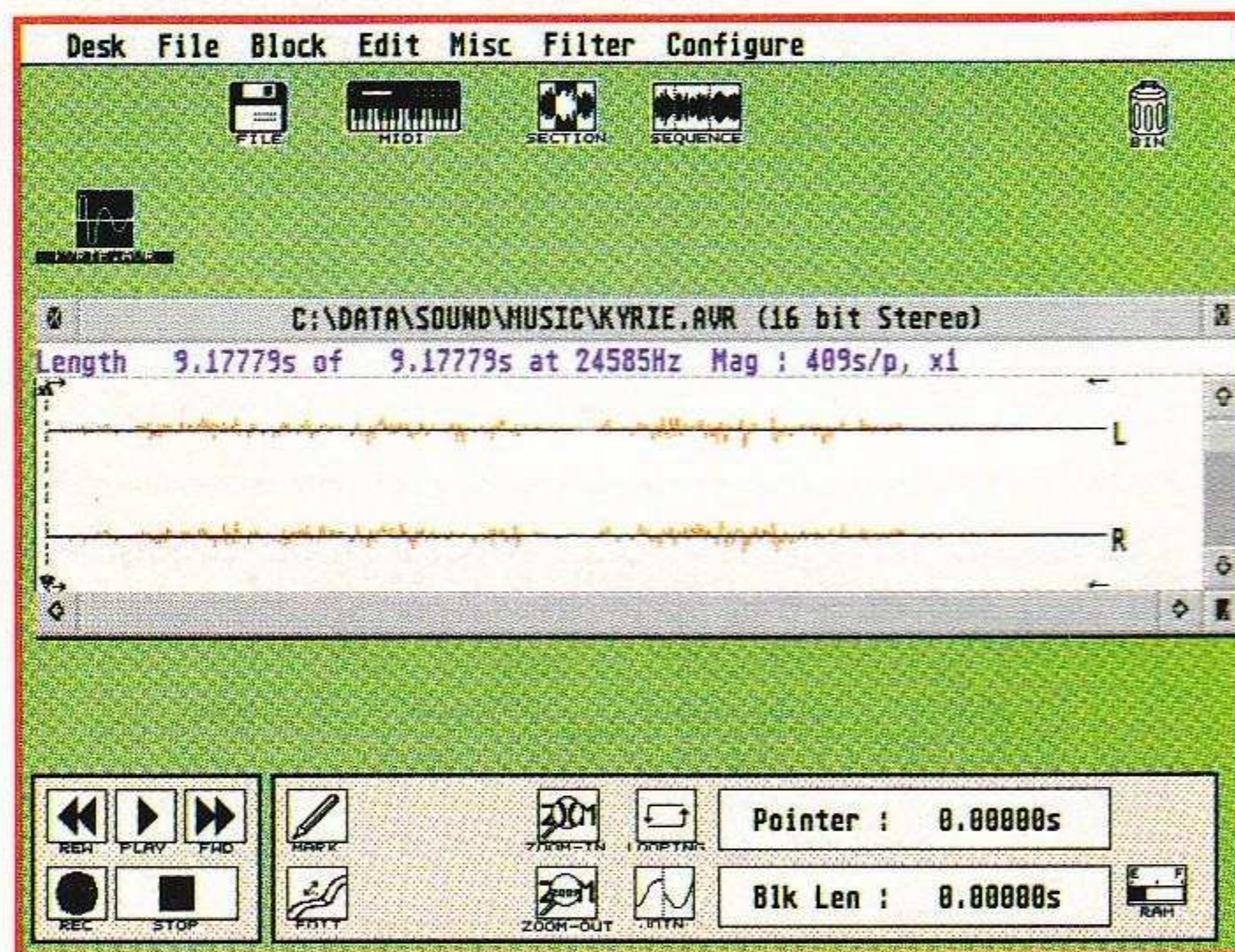
<http://www.futurenet.co.uk/>



We all know the ST's musical ability is worth shouting about, but where do all those instrument sounds and in-game noises come from? Join Dug Armstrong as he investigates sound sampling.



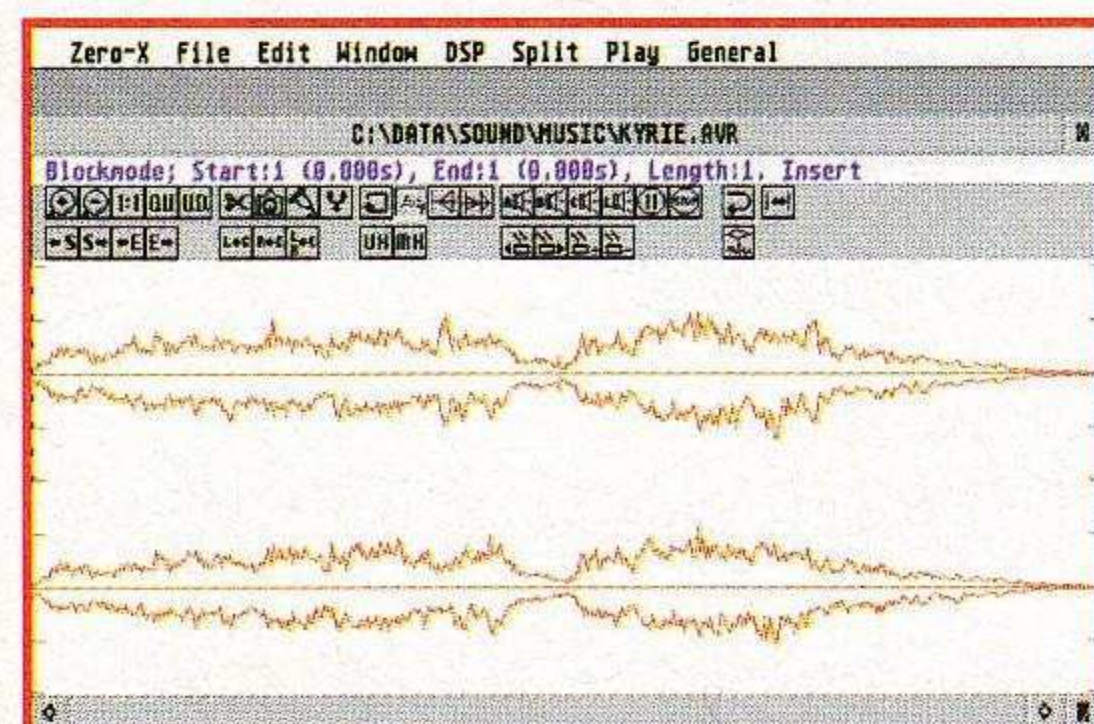
Real sound



The Replay 16 cartridge puts low-cost 16-bit sampling within the reach of all ST owners.

In the high-tech world of MIDI sequencing, the humble instrument sound is the basic building block of every composition. Whether the sound comes from your ST or an external sound device, such as a tone generator or dedicated sampler, chances are it started out as a digital recording of a real-world sound.

You can use samples to create music, or to spice up your computing life. Start your day with the theme tune from



Step into the mysterious world of sample editing, courtesy of Zero-X, a new sound manipulation program for all Atari machines.

your favourite television show, surprise your friends with a choice clip from your *Simpson's* sound file collection or add voice-overs to a multimedia presentation. Sampling does have some more serious uses, but for the most part it's just really good fun.

Although the ST is well known for its instant affinity with musical applications, thanks to the built-in MIDI ports, some extra hardware is required to sample sounds. We'll be looking at Replay 16, one of the best-value samplers available, and the only one which allows ST owners to produce 16-bit samples at ridiculously low cost. Falcon owners already possess the necessary hardware for direct-to-disk (D2D) recording of digital sound.

Sampling basics

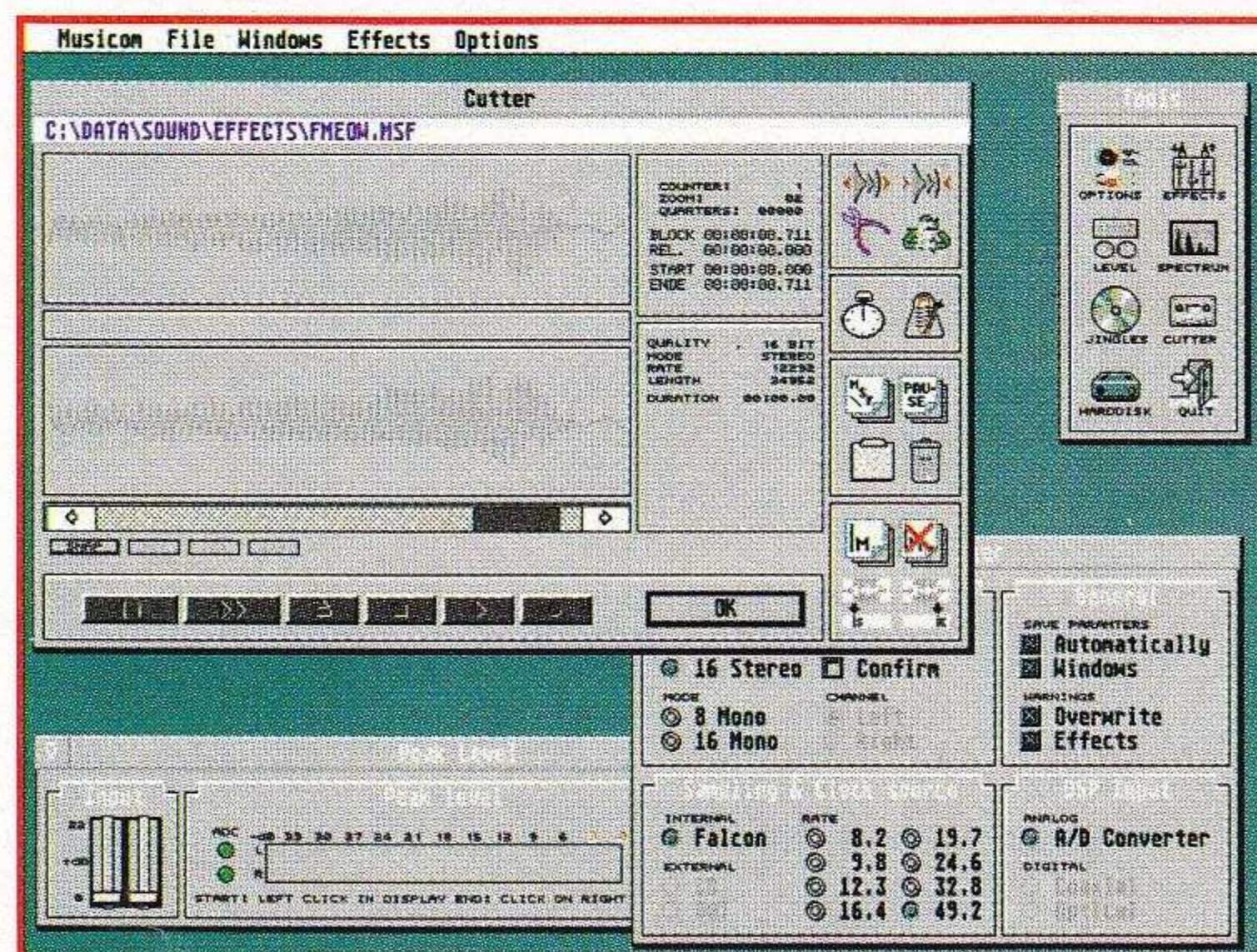
Sampling is all about recording sounds, using your ST's memory as a medium. The sampling hardware takes millions of tiny snapshots of the incoming noise every second, then creates a digital copy in RAM by stringing these slices together. The quality of the final sound (and the size of the sound file) is determined by the rate at which the slices are taken (the sampling frequency) and the amount of detail in the

slice (the resolution, in bits).

Once you have your sound sample, you can play it through the monitor speaker or an attached amplifier, output it to tape or even download it into a dedicated MIDI device. However, the real power of sampling lies in the software, which enables you to manipulate the sound

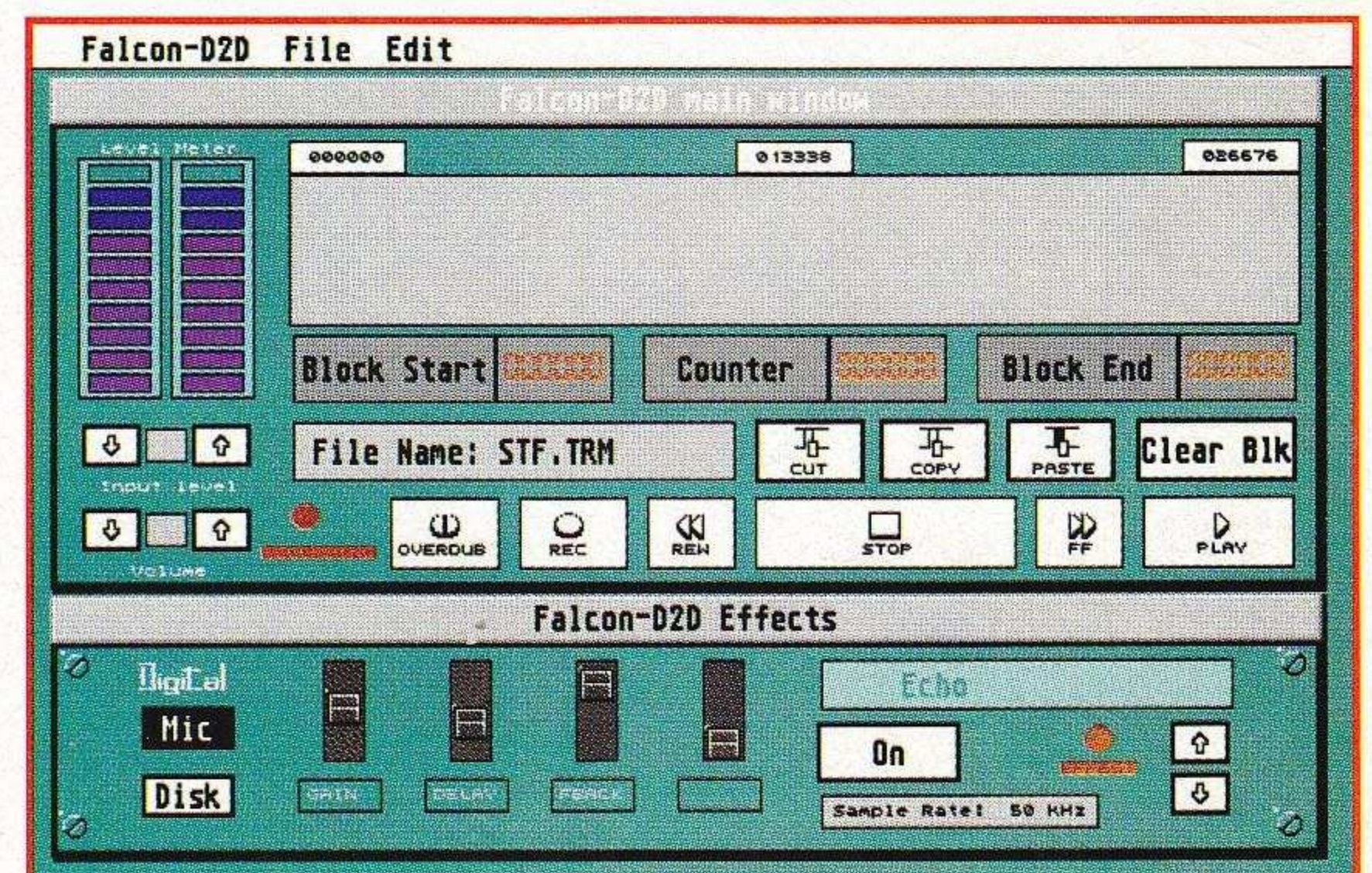
in digital form. You can rearrange portions, apply effects such as Echo or Reverb or combine several sounds. Over the course of the feature we'll be taking a look at some of the best sample editors, including various shareware and freeware utilities and the exciting new *Zero-X*, as seen on this month's Cover Disk.

You can use samples to create music, or to spice up your computing life



The Falcon's built-in sampling hardware is far too good to ignore, especially if you have the monumental *Musicom 2*.

Falcon D2D is a superb direct-to-disk utility included free with all Falcons.



Grab that sound

As Mrs Beeton might have said, first catch your sample. Here's how to trap a perfect specimen.

Before you begin sampling, ask yourself a few basic questions. First and foremost, where do you plan to use the sound? If you just want a fanfare whenever you boot up your machine, there's little point recording a long, high-quality sample which won't fit on a single disk. On the other hand, a quick-and-dirty sample which sounds fine through the monitor speaker may not be good enough to re-record to tape. Either way, a little planning can save hours of work and produce much better results.

One thing certain to help you get the best out of your sampling gear is a good-quality sound source. The best sampler in the world can't turn a distorted, hissy noise into a crystal-clear sample, so make sure your target sound is clear before you boot up your ST. Try to standardise your equipment, too. Although CD players, amplifiers, videos and radios can be connected to most sampling hardware, using a standard tape deck

means you only have to juggle with one set of leads and input levels.

Replay it again

Setting the correct sound input level is always the first step in taking a sample. Replay 16 handles this by displaying an oscilloscope-style curve in real time. When you load up the editor and hit the Rec button, you'll see the Record Control dialog. Start your tape and press the Monitor button. If everything is connected correctly, you should hear the sound being played through the monitor speaker.

Now hit Set Volume and a moving curve will appear in the window. Adjust the tape volume control (or the sensitivity adjuster on the side of the cartridge) until the curve is just contained in the window, with no flattening at the peaks. You have now found the optimum input level for recording your sample.

Take a step back by hitting the Cancel button. You now need to create a blank sample window for your sound.

EQUIPMENT

If you're already into music, you'll no doubt have mixers, amplifiers and enough phono leads to sink a medium-sized frigate. However, if all you have is a micro hi-fi system and a Walkman-style tape player, you may need to invest in some cables to get the best out of Replay 16.

It's a mono sampler, so you need some way to connect the dual left/right inputs from the tape deck to the single input on the Replay 16 box. Similarly, to get the best output from your hi-fi you need a cable which will deliver the mono output to both channels of your amplifier.

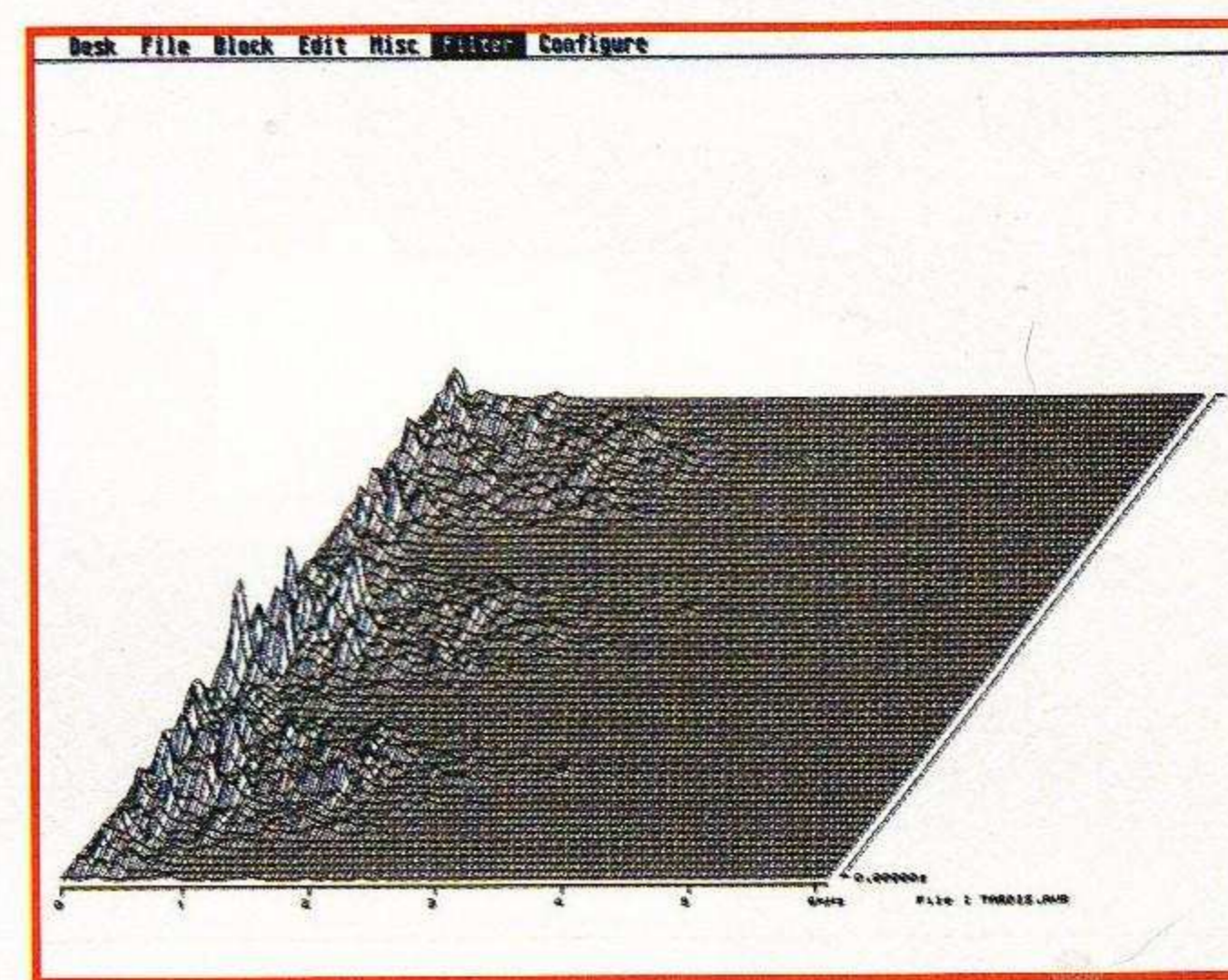
Luckily, most hi-fi shops carry

mono/stereo convertors which do the job for phono connections, although you might have to get a cable made up if your equipment uses mini-jacks.

Falcon owners have a slightly easier time of it. You can use full-blown stereo audio leads to connect your computer to the sound source and amplifier, but you should connect your audio input to earphone or headphone outputs rather than line-level ones. Use the volume controls to adjust the levels. Plugging a microphone directly into the audio input isn't recommended - record the sounds to tape first or use a pre-amp of some kind.

Decide on the duration and quality first, taking into account your sampling hardware and the amount of memory you have. On a standard ST, 12/16-bit mono will give the best results, so set these options and type in the number of seconds on the Length box. You should see a window with a straight line across the middle appear on Replay's desktop.

Now go back to Record Control, and hit the Monitor button. Listen to the incoming sound and press the [S] key when you get to the bit you want. You should now see your sample in the previously empty window, together with some handy information about the sound. Pressing the Play button will replay the sample. If you aren't happy with the result, check all the settings and try again.

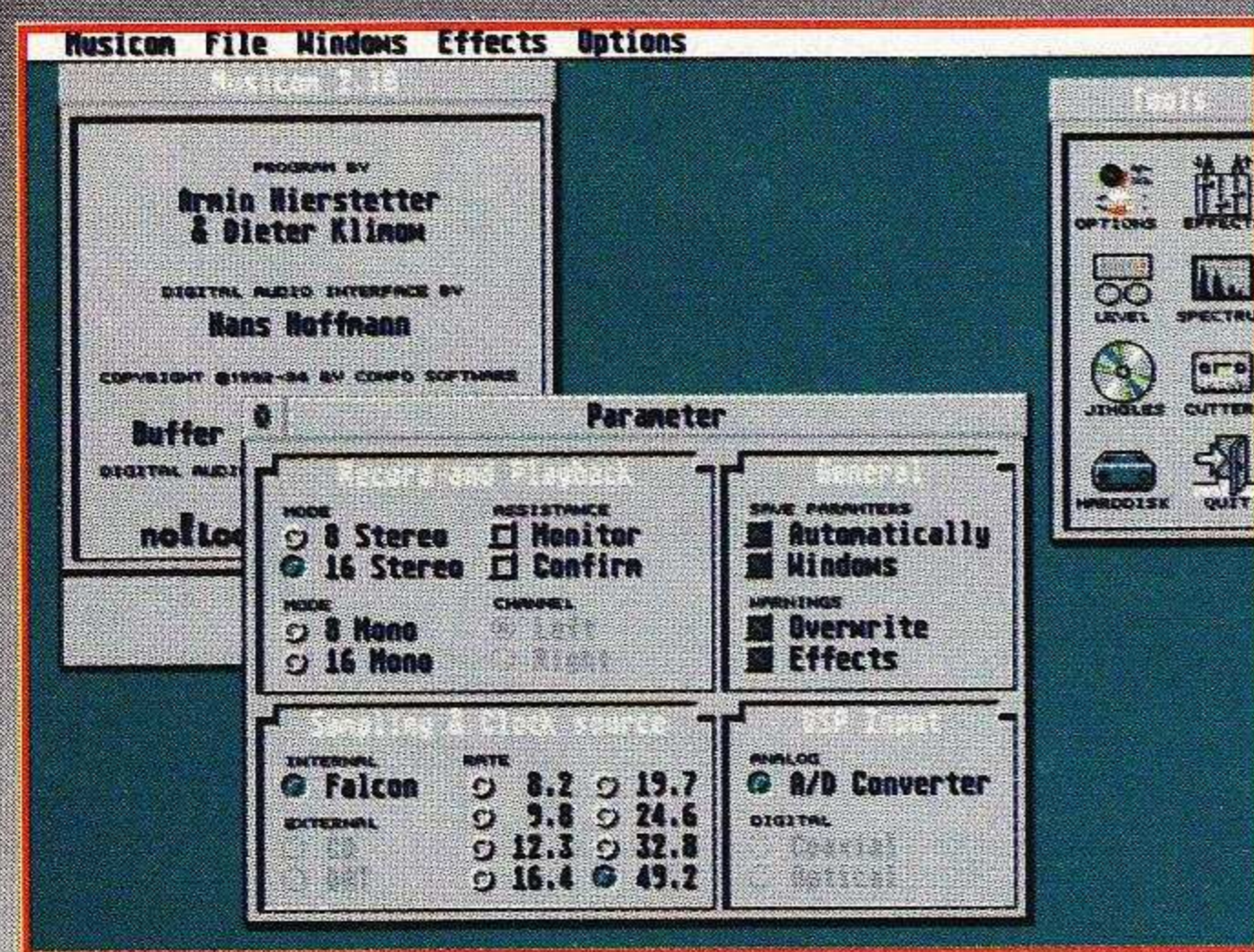


The Replay 16 software offers several sound processing utilities, including this 3D Fourier Analysis display.

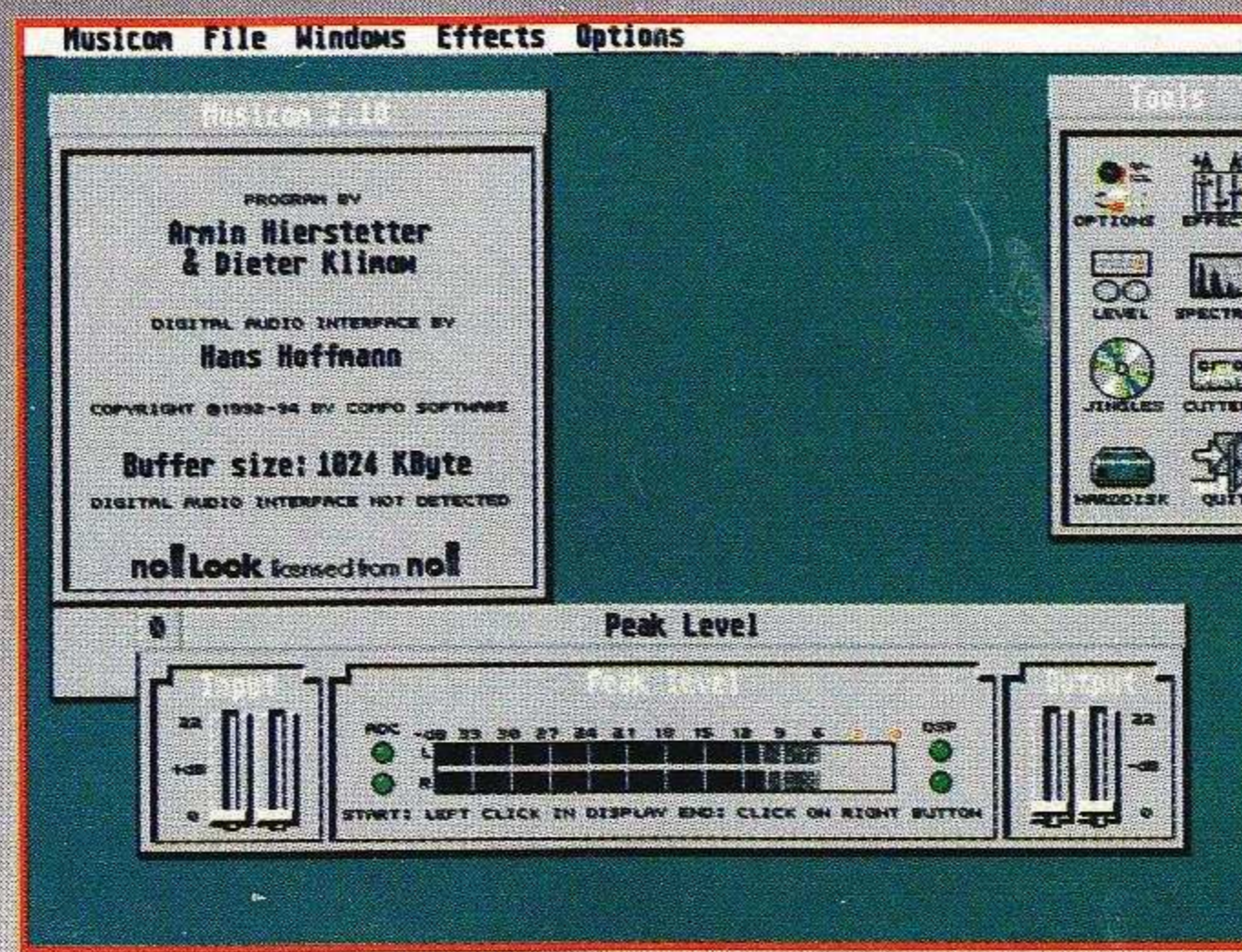
Turning green

Falcon owners aren't limited by memory, because it is very easy to record direct to disk on this machine. All you need is a little software and a lot of hard disk space. There are many freeware utilities, including *Falcon D2D* (which is included in the bundled disk set). However, for sheer ease of use and great results, you could do worse than invest in *Musicom 2* from Compo Software.

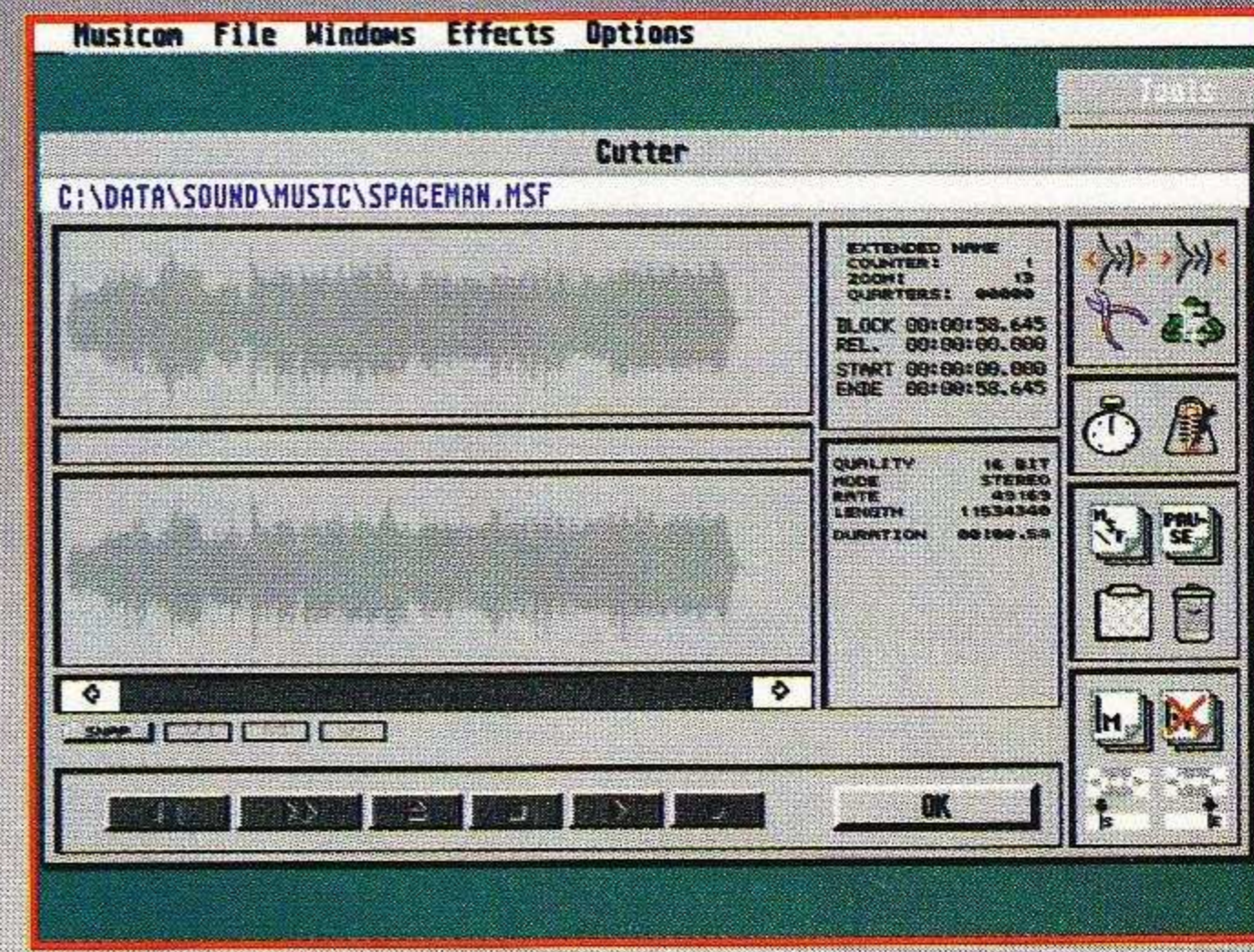
DIRECT-TO-DISK RECORDING



1 Musicom 2 allows for a range of sampling frequencies. These are the best quality settings on a standard Falcon, but make sure you have plenty of hard disk space available.

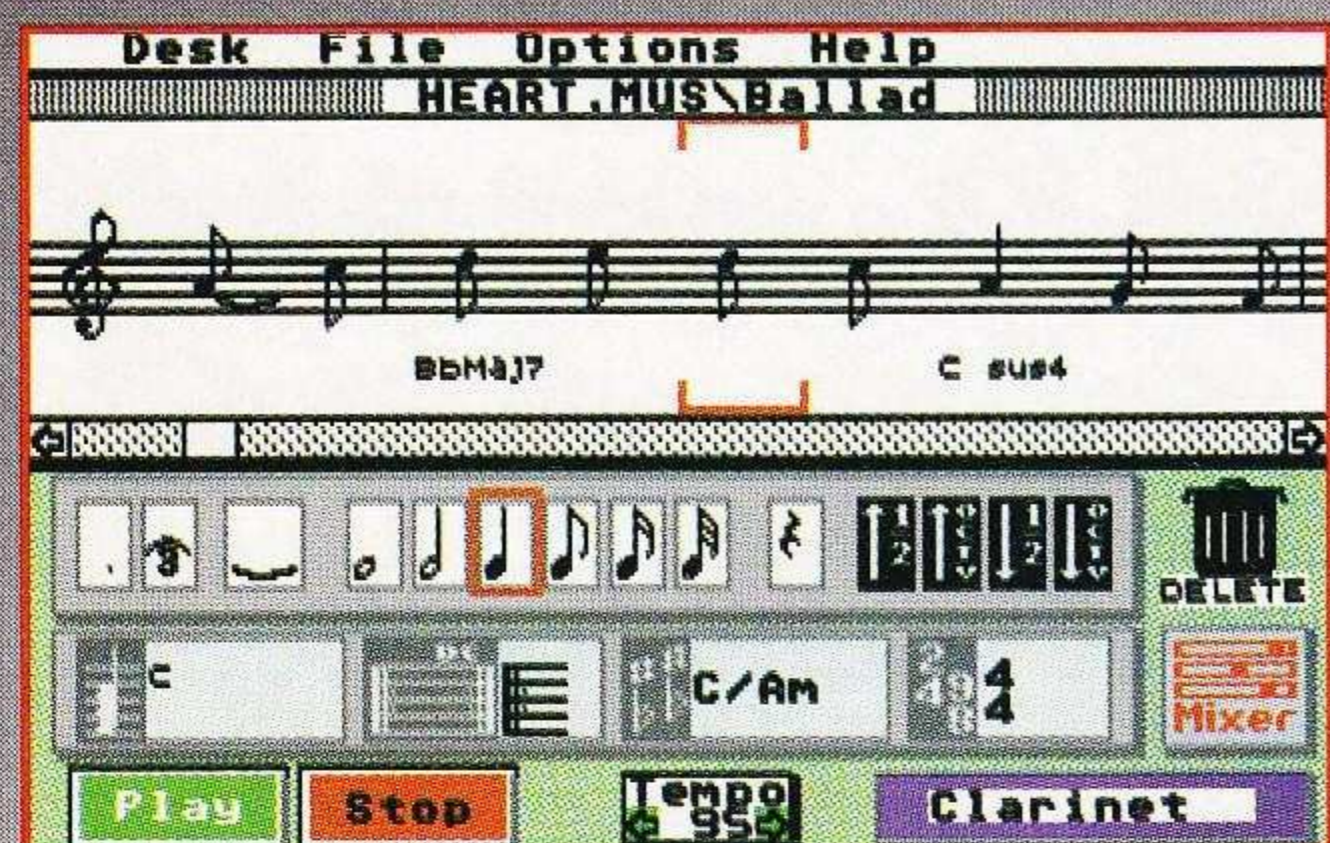


2 The level meter is invaluable for eliminating audible distortion. Play through a representative section of your sound, adjusting the input and output until all the indicators remain green throughout.

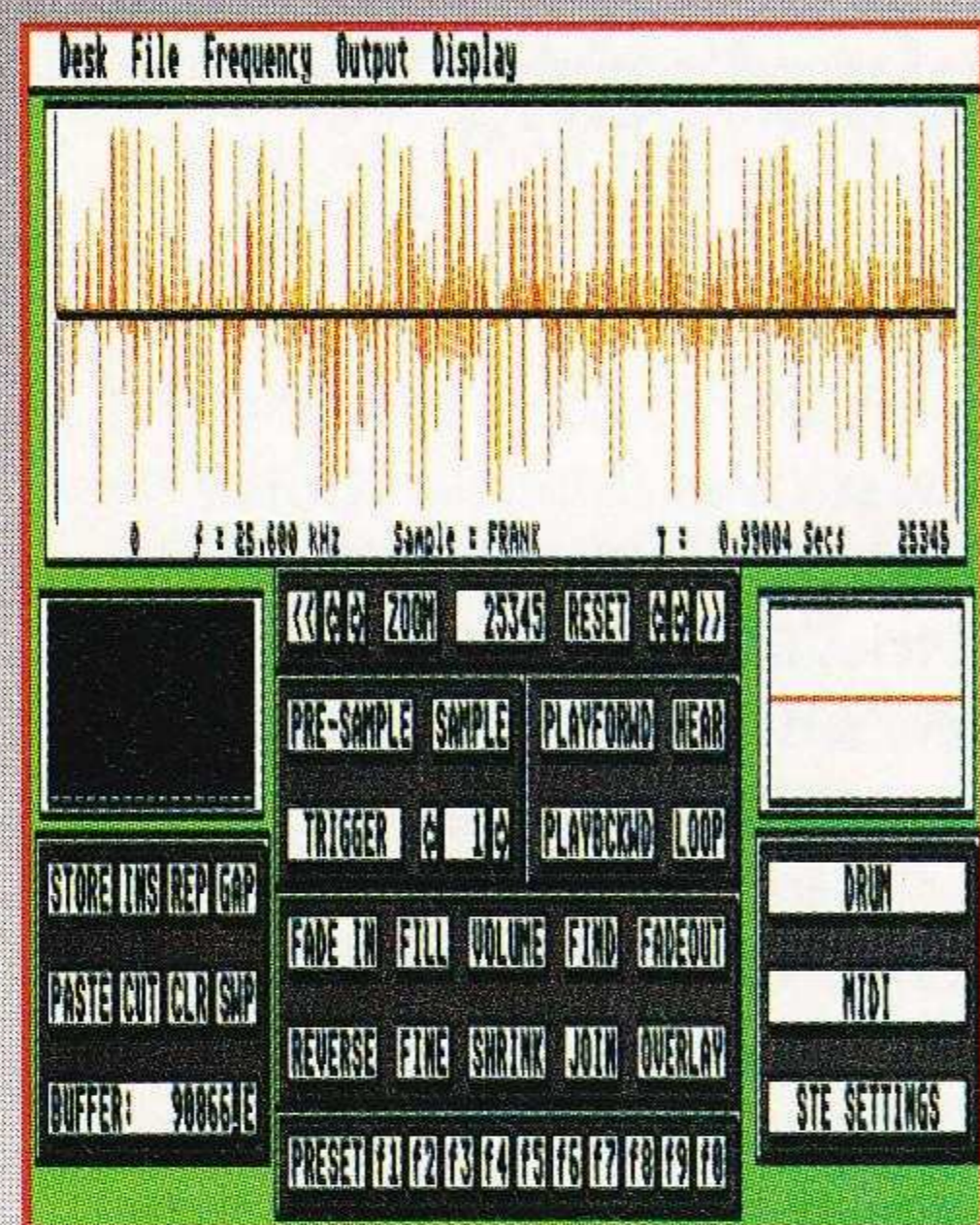


3 This 58-second sound occupies over 11Mb of disk space. The second part of our feature explains how you can reduce this overhead without compromising the sound quality.

INTRODUCTION TO SOUND AND MUSIC



Music Maker Plus is a complete composition tool with MIDI support...



Compo's low-budget Introduction To Sound and Music (ITSM) bundle raised a few eyebrows when it arrived, because it not only boasts revamped versions of *Sample Master* and *Music Maker*, but also includes a full 8-bit sampling cartridge and some very friendly documentation. ITSM is presented as a complete system for building sound effect libraries, instrument sounds and musical sequences, and in this respect it does a very good job. The results may not be quite state of the art, but for the price it's virtually unbeatable. Highly recommended if you're looking for an easy way into ST audio.

...and *Sample Master* enables you to record 8-bit samples.

To record a sample with *Musicom 2*, first set the sampling frequency and sound parameters via the Options dialog. Sampling in 16-bit 49.2kHz stereo provides the best sound quality, but requires a lot of disk space. If there are any PC owners in the room, pause to watch their faces turn green.

Next, set the input (and output) levels using the handy level meter, a real-time display which works just like its equivalent on a hi-fi. The idea is to get the left and right channel bars as close to filling the box as possible while keeping the LEDs green. If they turn red, the sound is being distorted.

When this is done, move to the Cutter tool and press the Record button. You will be prompted for a filename. Notice that *Musicom 2* plays the incoming sound continuously, giving you an audible cue at all times. When you click the file selector's OK button, recording will start.

It's always a good idea to start a couple of seconds before the target sound begins,

because there is a slight delay before recording kicks in. The final sound will now appear as jagged shapes in the left and right channel windows, to be dealt with as you see fit. Note that you don't have to actively save the file, because it has already been created on the hard disk. The MSF file can be converted to the more standard AVR format with the *MUSICONV* utility.

Moving on

Yes, it's really that simple to create your own high-quality digital sounds. But what use is it? Once you've listened to Babylon Zoo's *Spaceman* intro for the umpteenth time, you might wonder what all the fuss was about.

But digital sounds aren't just for playback. The next part of our feature looks at sample editing, which allows you to modify sounds and produce some startling effects. If you don't have access to sound-sampling hardware, despair not. The SAMPLES.AVR folder on the Cover Disk contains a few sounds to get you going.

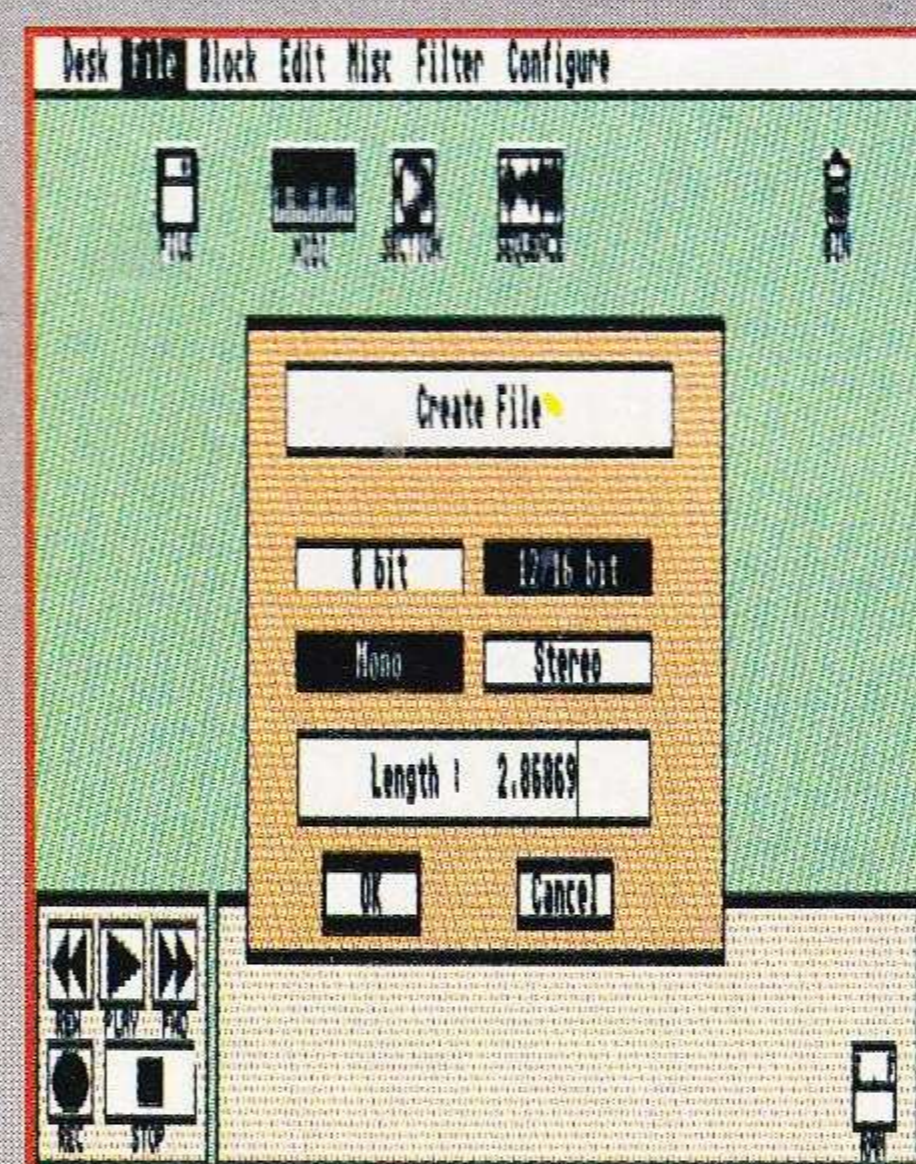
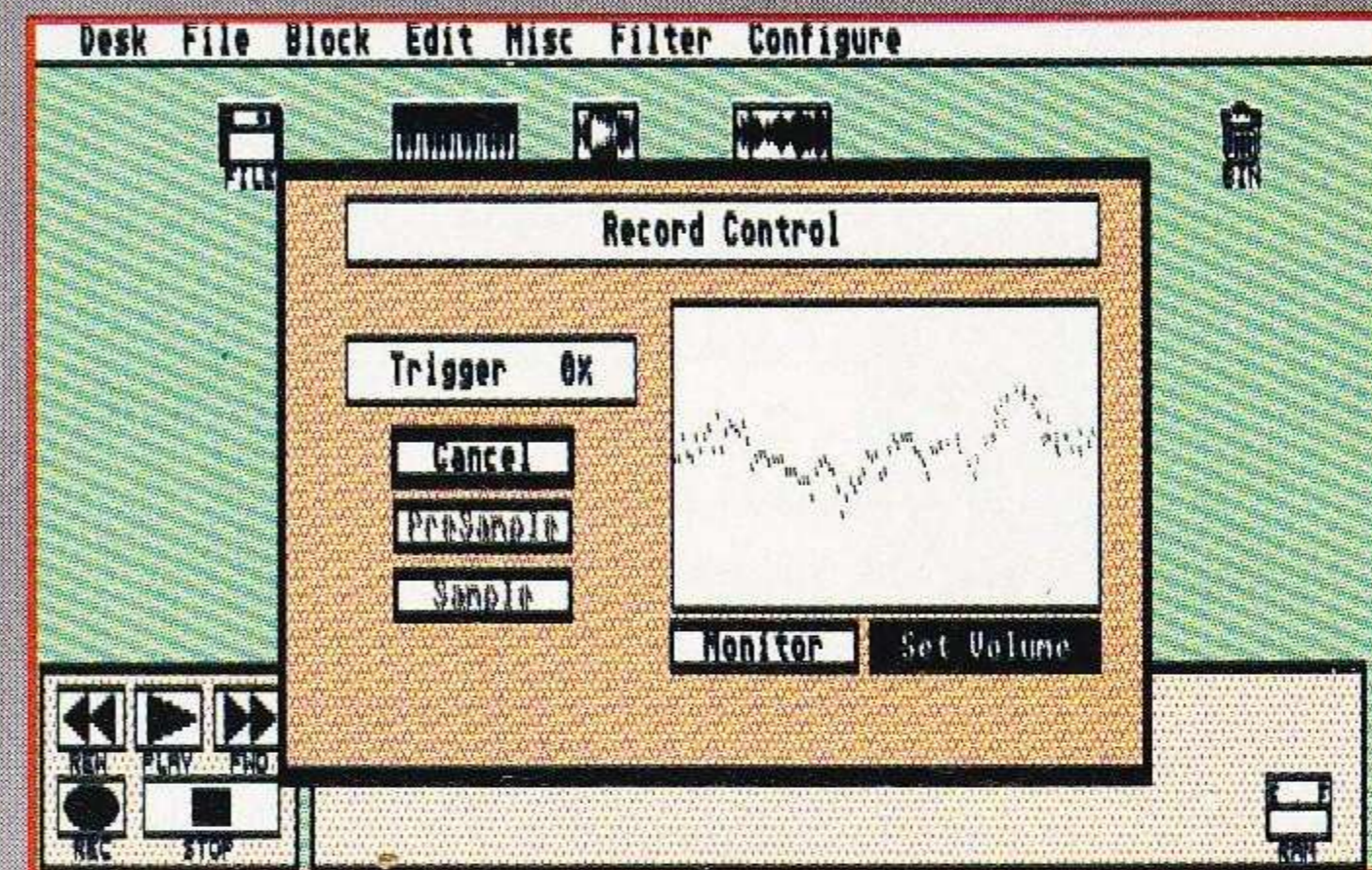
A little planning can save hours of work and produce much better results

SIMPLE SAMPLING



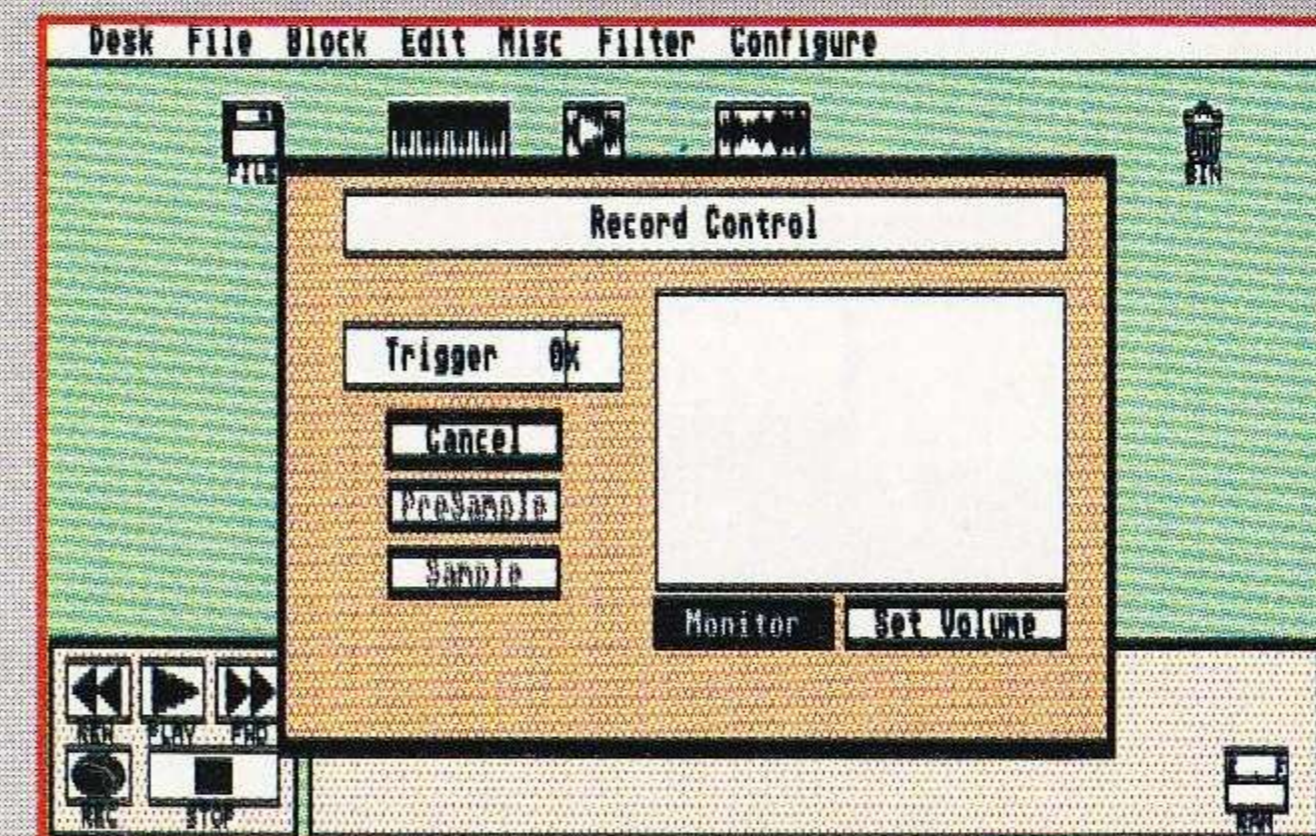
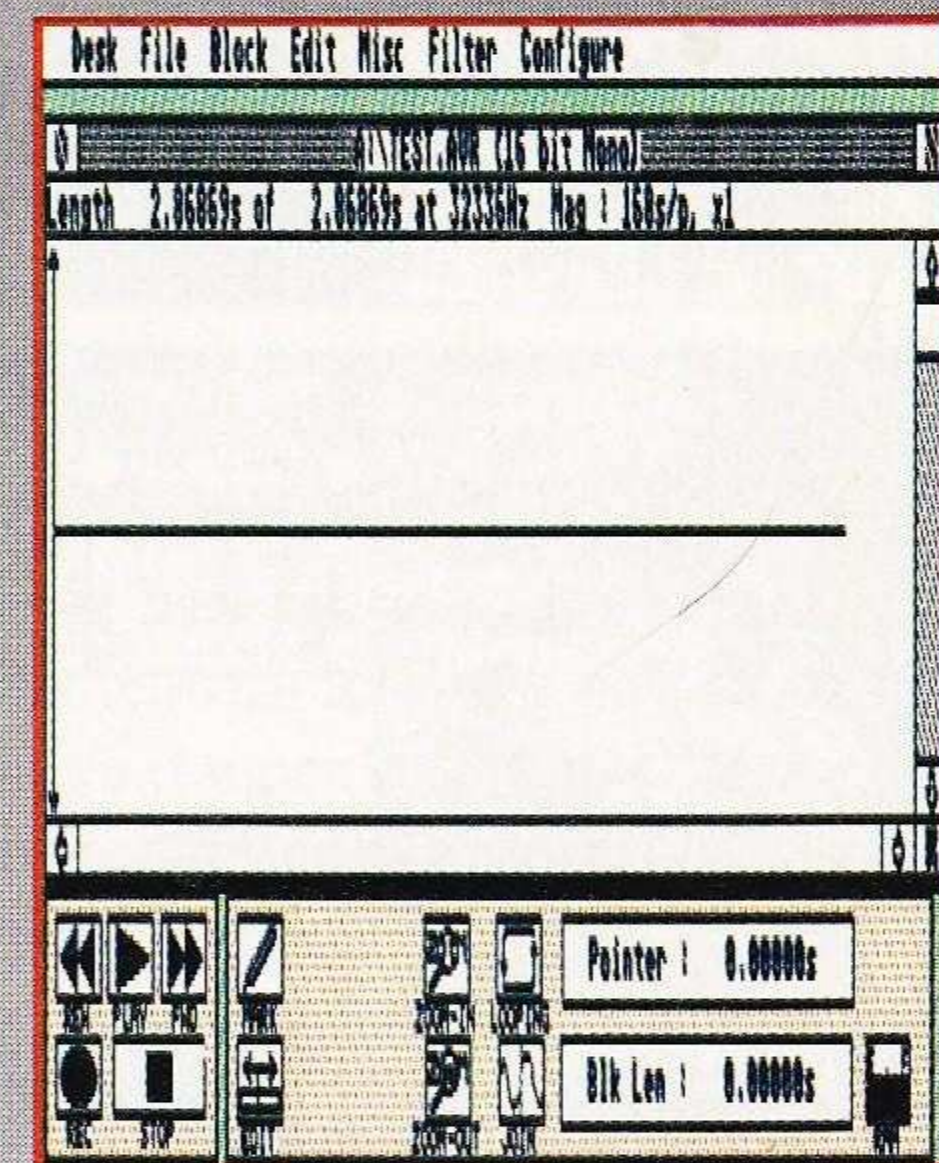
1 The sampling frequency is set via the Configuration screen in the Replay 16 editor. For this example we can leave it at the default 32kHz, a fairly high quality setting.

2 Pressing record brings up the Record Control box. To set the correct input level, press Set Volume and adjust the input sound until the wave fills the box without hitting the edges.



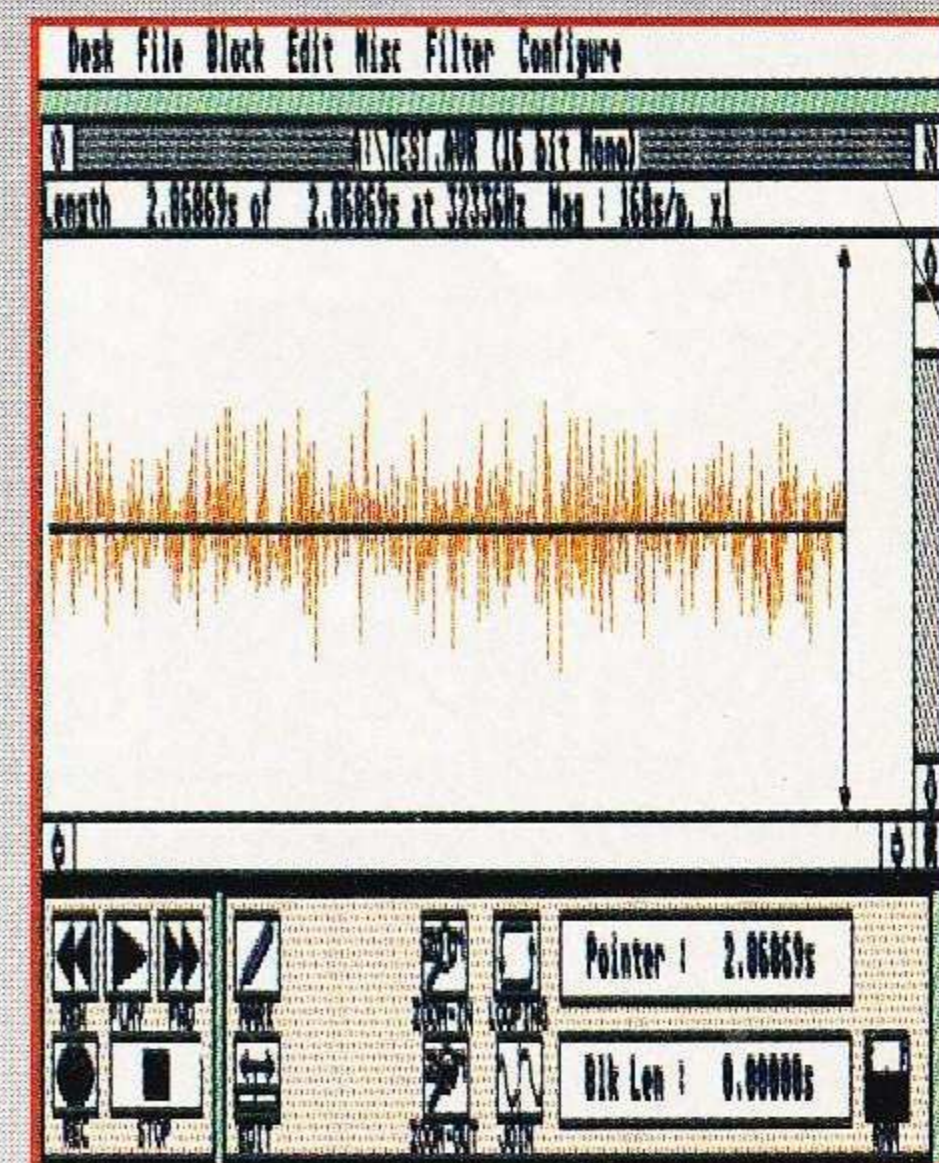
3 Now go back a step and choose New sample from the File menu. The default resolution and duration will create a 16-bit sample of around 2.8 seconds.

4 The resulting 'blank' sample window is ready to receive your input sound. Note the handy memory gauge (bottom right) which gives you an idea of the memory required for the sample file.

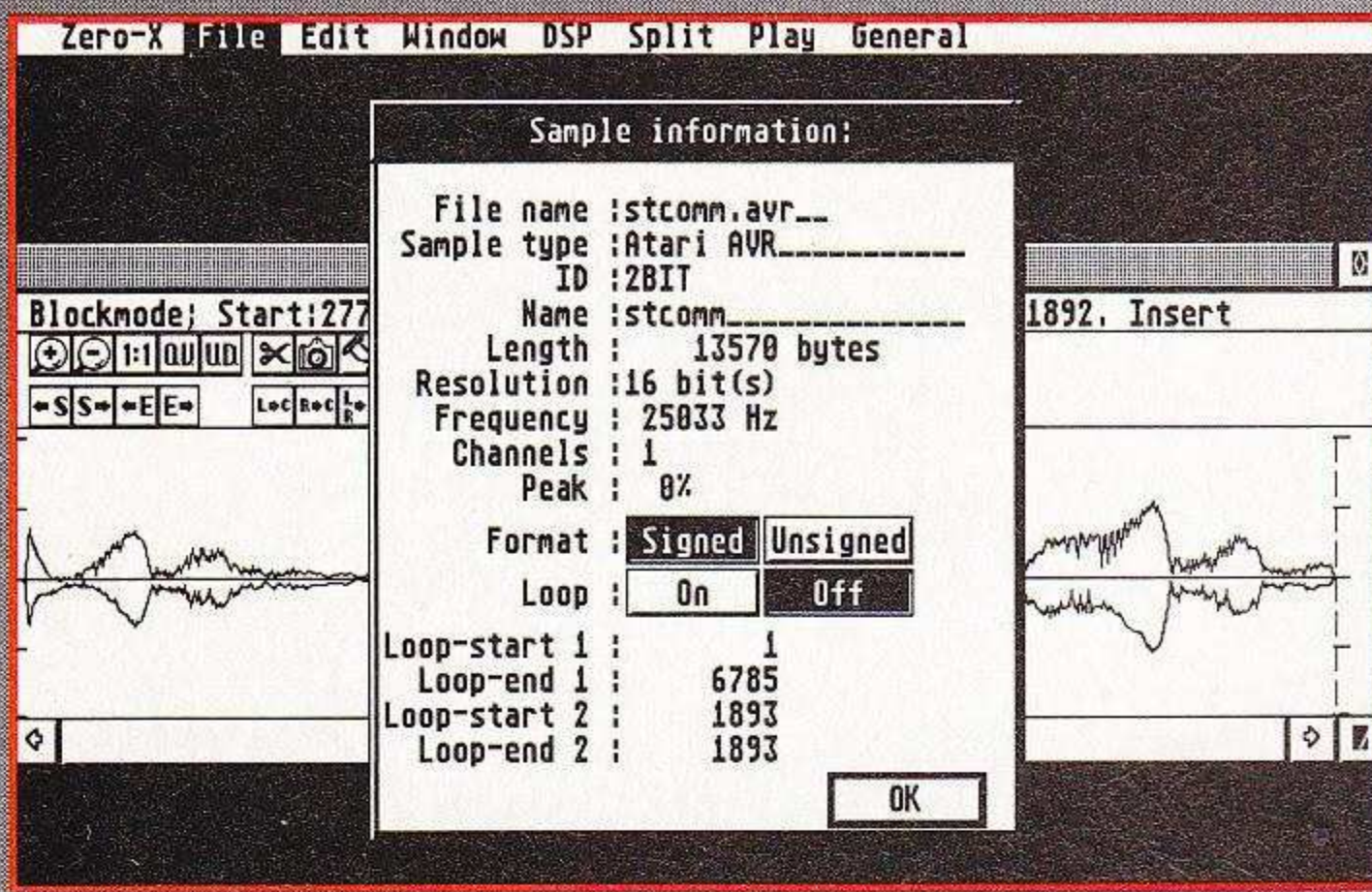


5 Go back to Record Control, where you can use the Monitor button to provide an audible cue. Just listen to the sound and press [S] when you get to the good bit.

6 The captured sound segment now resides in the sample window, where it is represented by the red waveform. Don't forget to save it before you start messing around.

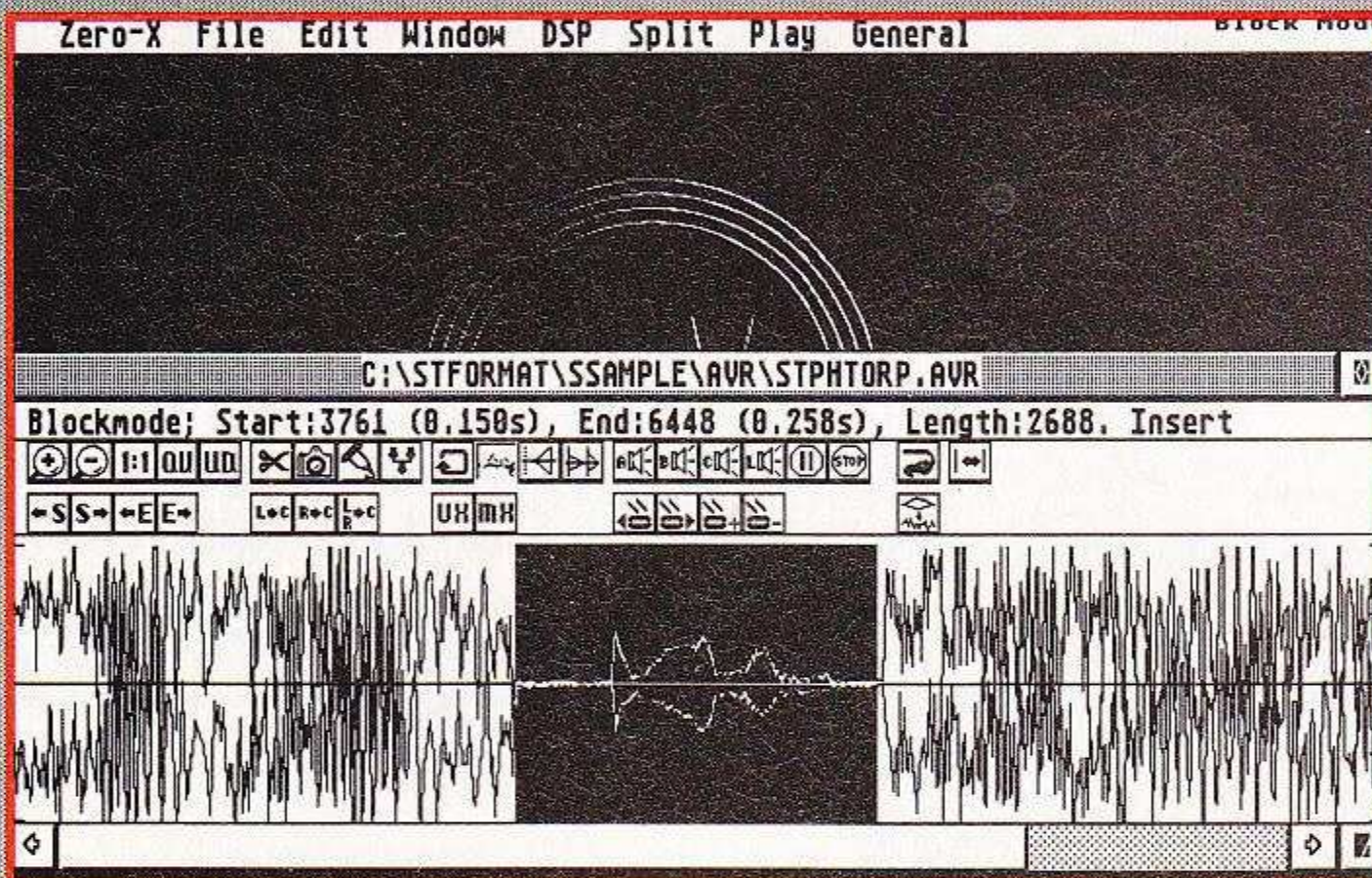
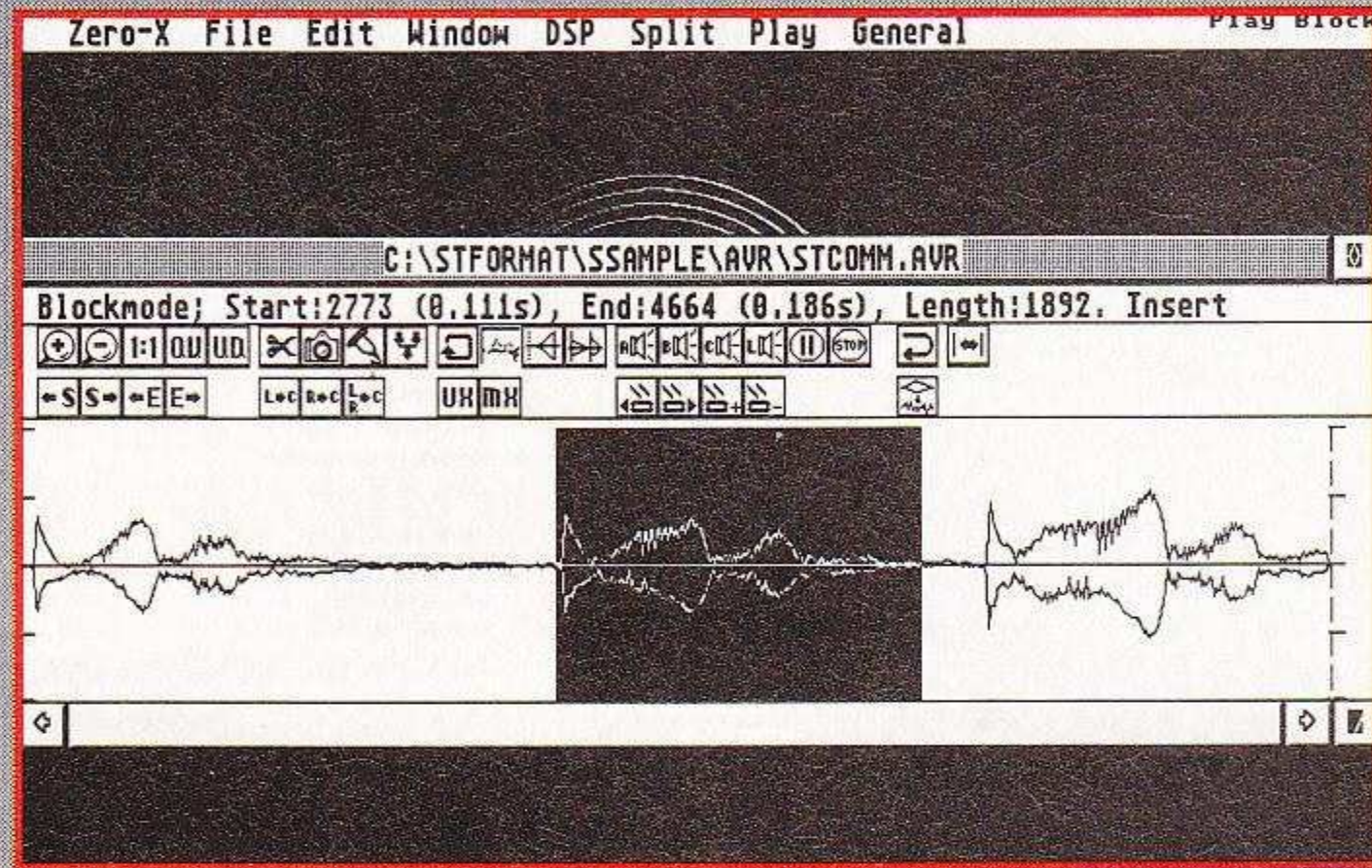


MANIPULATE SAMPLES WITH ZERO-X



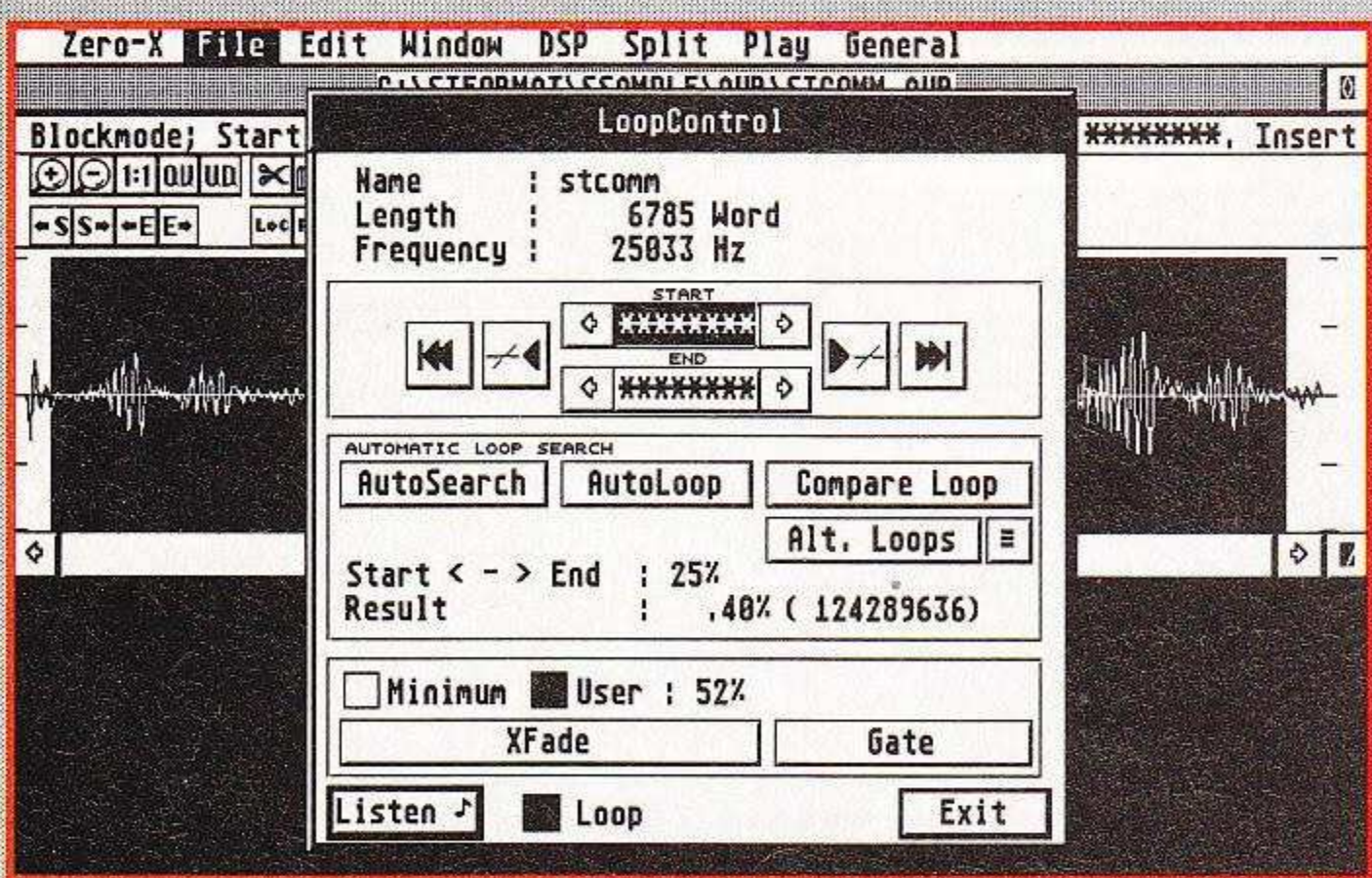
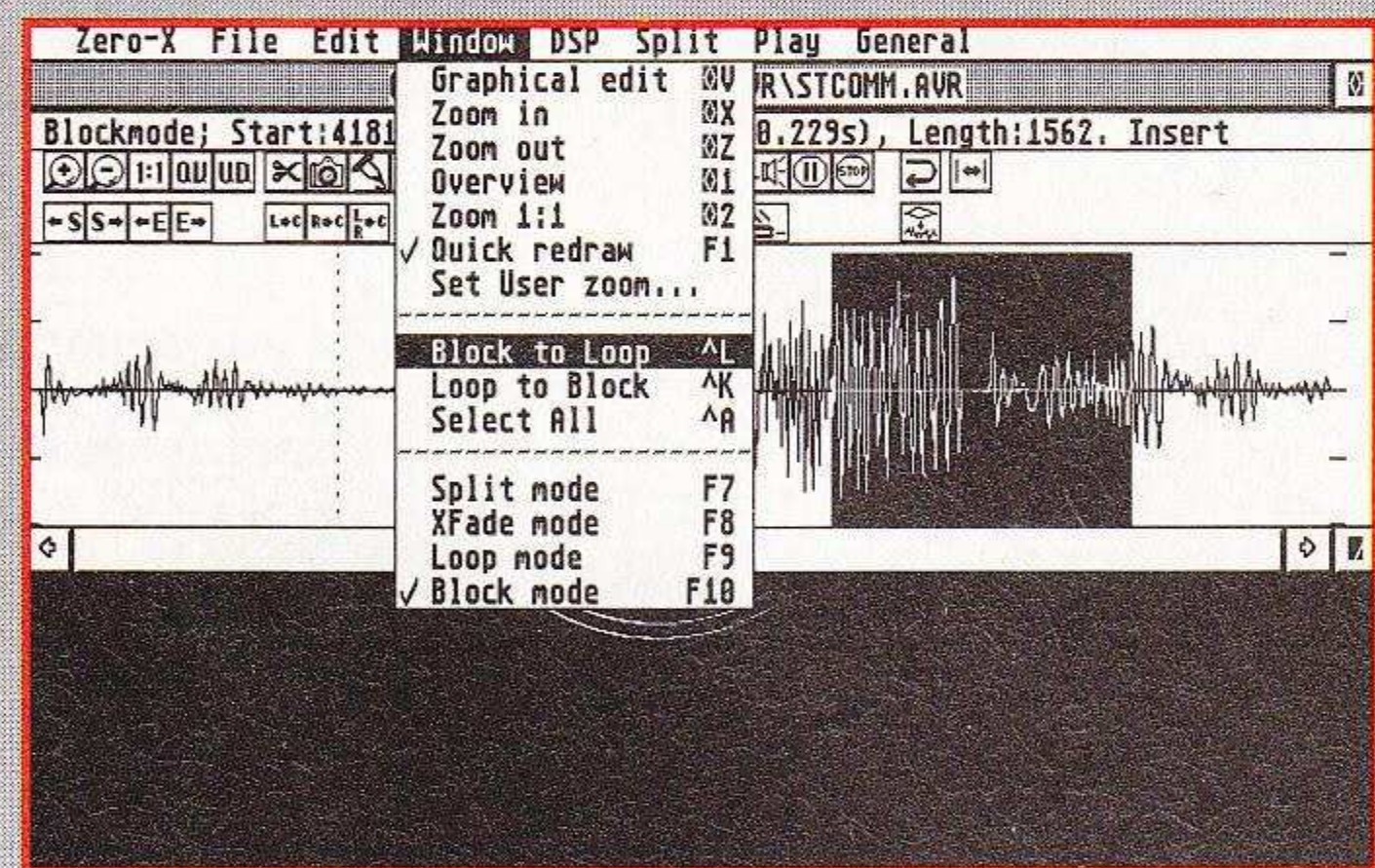
1 Zero-X reports useful information on sample resolution, frequency and format. The demo version on the Cover Disk only accepts AVR files.

2 The Block function enables you to cut or copy a section of sound. Left-click and drag out an area, or use Select All to define the whole sample as a block.



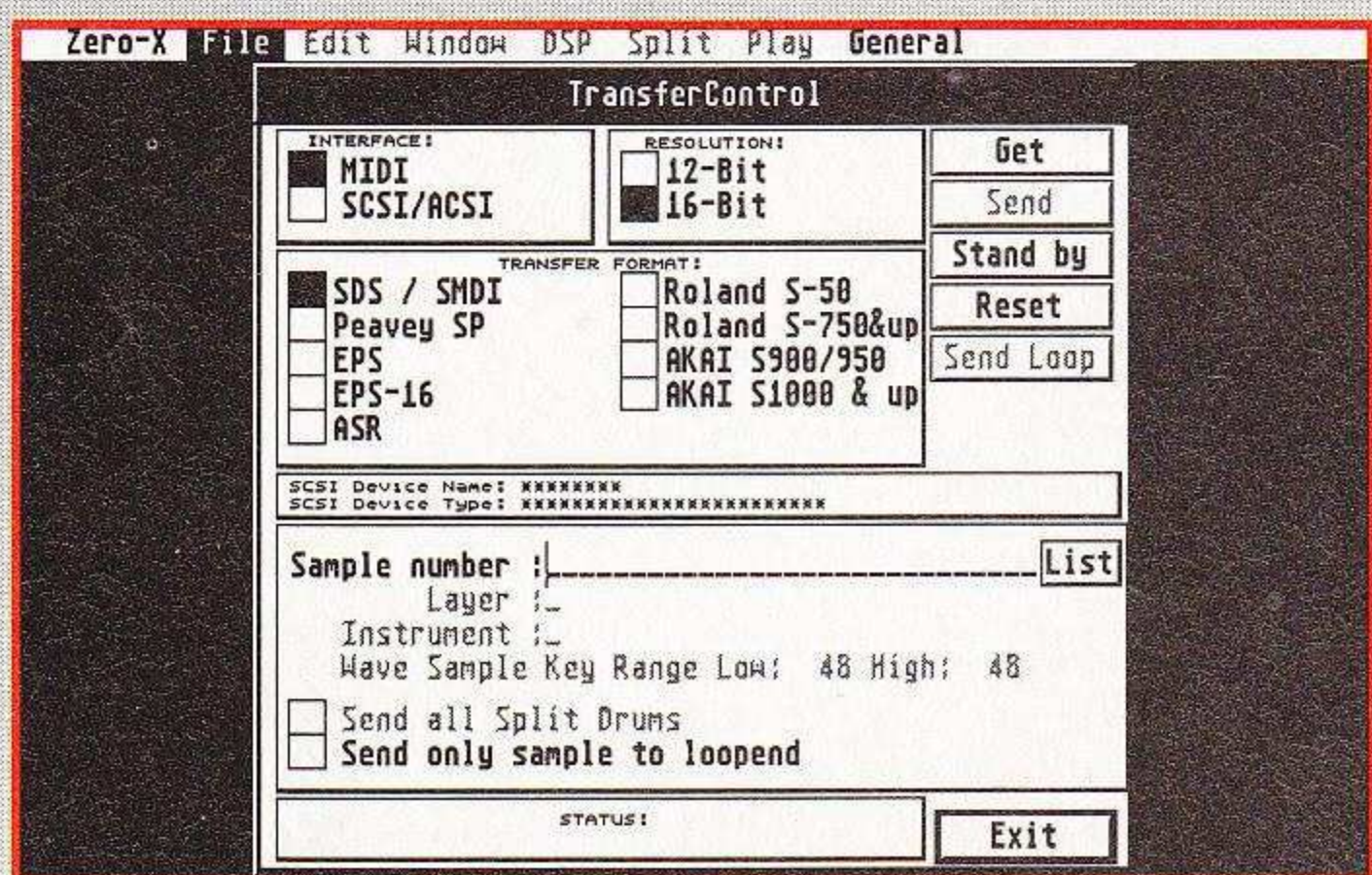
3 You can drop the block into another sound, inserting it, replacing part of the second sound, or mixing the two together. Both sounds should be at the same frequency before mixing.

4 Any highlighted block can be made to repeat ad infinitum with the basic Loop function...



5 ...and the sophisticated Loop Control takes the hard work out of finding the optimum looping points.

6 MIDI fans will be relieved to hear that the full version of Zero-X supports output to a range of samplers via MIDI and SCSI interfaces.



Audio engineering

Once your target sound has been sampled and saved, you can start distorting and manipulating it.

Now you've mastered the creation of sample files, it's time to see exactly what you can do with them. Sample editors are often included with a sampling system, and the Replay 16 software has some powerful editing capabilities. You can also buy dedicated sample editors, and the new Zero-X from System Solutions looks very impressive indeed.

You'll find a demo version of Zero-X on this month's Cover Disk. It only runs in high res on an ST, so you will need to run the mono emulator *Sebra*

(Cover Disk 74) if you don't have a suitable monitor. We've also included a few samples to get you started. Any of these sounds can be loaded, and, if you have an STE or Falcon, played back straight away. Unfortunately the demo doesn't support

playback on an STFM, so you will have to use a player utility, such as *Soundlab* (Cover Disk 69) or *PlayAVR* (Cover Disk 76). All the samples were created with a Replay 16 sampling cartridge.

Get on with it

When you load a sound into Zero-X it appears as a waveform in a window. Use the Info command to find out more about it.

The Toolbar contains the

Looping sections of your sample can create interesting continuous effects

most frequently used commands. If you aren't sure what a button does, move the pointer over it to see the hint line description (top right). In

the default Block mode, you can left-click and drag within the sample window to define a block, and apply operations only to that section. Some effects – such as Digital Noisegate, which removes background noise – work across the whole sound.

FILE FORMATS

Here's a quick guide to most popular sound sample formats and the programs which use them.

- SND:** An older format used by the original Replay sampler. Now superseded by the more flexible AVR.
- AVR:** The closest thing to an 'industry-standard' sample format across all Ataris. Replay 16 and Zero-X can use this format directly.
- MSF:** Used only by *Musicom 2*, and not much good for anything else. However, an MSF to AVR (and vice versa) convertor is supplied with the program, so you can still use samples created by other programs.
- RAW:** Raw, unformatted sample data. Mainly used to transfer samples to or from other systems.
- MOD:** Not a sample file at all. The MOD file consists of a set of samples plus sequencing data, encapsulating a complete 'song' which can be played by various Tracker programs (see the On the Right Track panel).

The samples provided in the SAMPLES.AVR folders on the Cover Disk are a mixture of 8 and 16-bit mono AVRs at various frequencies, and can be loaded and played by most sample editors, even on a 512K STFM.

BUYER'S GUIDE

Replay 16	£99.95	Software Technology	0161 2362515
Musicom 2	£49	Compo Software	01487 773582
Introduction to Sound and Music	£19.99	Compo Software	01487 773582
Protracker 2	£15*	Merlin PD	01452 770133
Zero-X	£149.95	Digital Media	01422 340875

* Shareware

Sound Lab 1.1 appeared on Cover Disk 69.

It's often difficult to get your samples to start and finish cleanly, with no clicks or hisses, especially for looping operations. The Fade function on the DSP menu can be used to good effect here. Highlight portions at the beginning and end and fade them in and out respectively.

Blocks can also be cut, copied and pasted to different locations in the window, or even to different samples. To overlay two samples and combine the sounds, select one complete sound as a block and copy it. Load in the second sound, select it and press the Mix Clipboard button. The two samples become one. This technique could be used to add speech over music, or to create composite effects, such as thunder and lightning. You should first check that both samples have the same resolution and frequency, though.

Over and over

Repeating or 'looping' sections of your sample can create interesting continuous instrumental effects. To create a loop, highlight a block and select the Block to Loop command. Now click on the Loop On/Off button and play the sound. The defined section plays repeatedly until you hit [Space]. If your sound isn't looping smoothly,

try the more advanced Loop Control functions, which help you calculate the optimum looping points.

Although the demo version is restricted to the AVR format, the full version of *Zero-X* enables you to load and save samples in a variety of formats, and even supports downloading to dedicated samplers, such as the Roland S-50 and Akai S-1000.

Cutting edge

Falcon owners will be delighted to hear that *Zero-X* and all of its functions, including full 16-bit playback, are fully operational on the 030. However, you can also exploit the power of the DSP and apply effects in real-time with *Musicom 2*.

Any of the effects can be applied to both incoming and outgoing sound. The Equaliser effect gives you a 10-band graphic equaliser with independent or linked channel control, while the Flanger effect is more suited to electric guitar output. There's even a Karaoke effect, should you wish to sing along and 'entertain' your friends.

These same effects can

You can create composite effects, such as thunder and lightning

also be applied to samples permanently. Just load up a sample, set up an effect and click the Recycling icon. The effect will then be applied to

the disk file directly. This is a very powerful feature which can also be used to overlay multiple effects on the same sound sample.

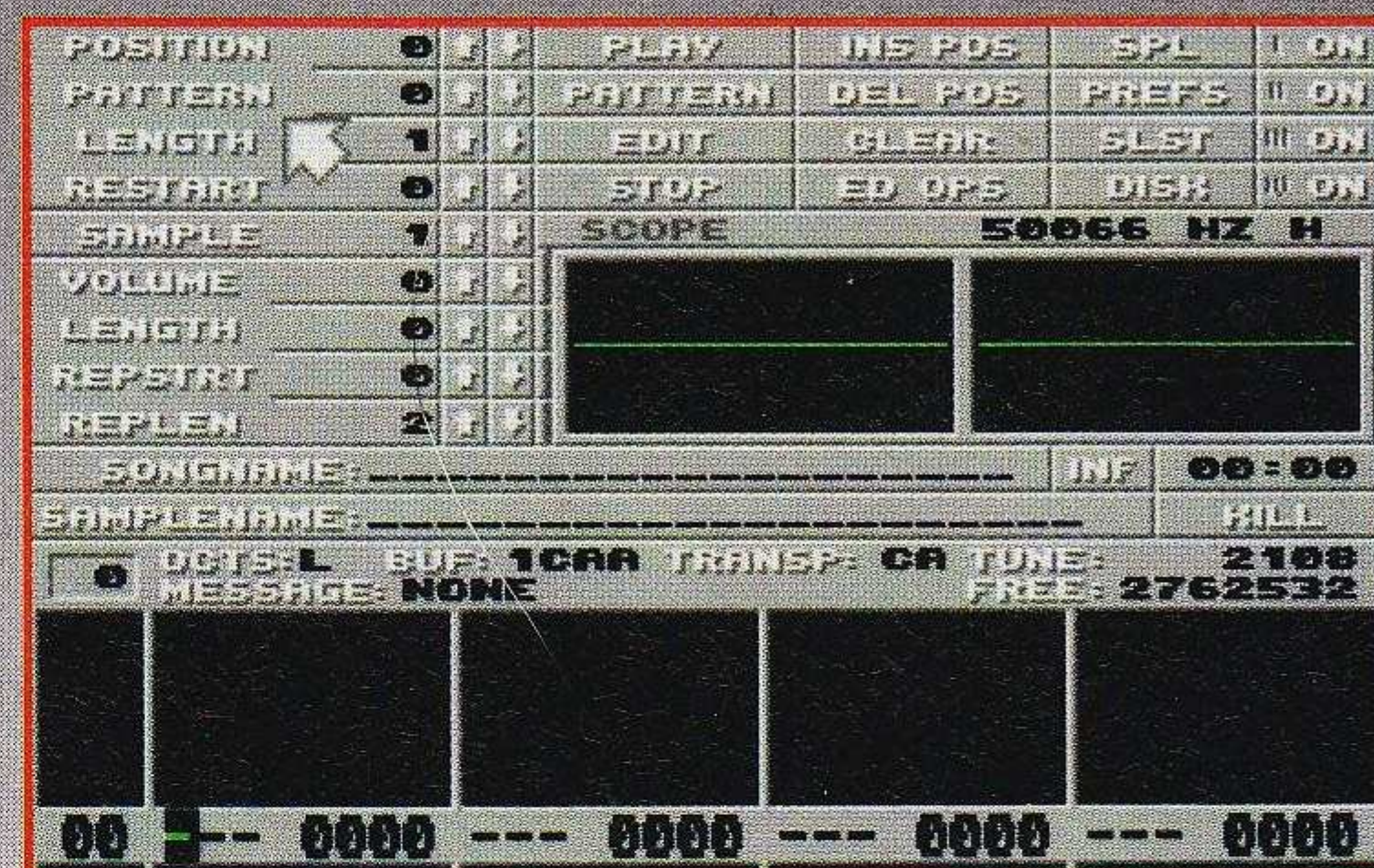
However, large samples take a while to process.

The Oversampling function is also worth a mention. It is concealed beneath the 'pliers' icon and is accessed with a right-click. It records a new copy of the loaded sample to disk under a different file name, altering the frequency and resolution as requested. This can considerably reduce

look no further than the shareware title *Protracker 2.0*, the latest in a long line of tracker programs and arguably the best on the ST. *Protracker* is available for all Ataris, but works particularly well on the STE and Falcon.

Trackers offer a low-cost route to the creation of high-quality music, so check them out. You may be surprised how good MOD tunes can sound with the right software.

ON THE RIGHT TRACK



Protracker 2.0 is an excellent MOD file player/editor, and it's shareware.

MOD files have been around for a while and provide a neat way to create music. They incorporate a set of samples and the patterns used to play them. The 'song' uses the samples as instrument sounds, and plays them according to the encoded arrangement.

You'll find MOD files and player programs for all Atari machines in abundance on most BBSs and in PD libraries. If you want to create your own MODs,

the file size, without much loss of quality. In fact, sampling at 49kHz and then oversampling at 12.3kHz gives a far better end result than sampling directly at the latter frequency.

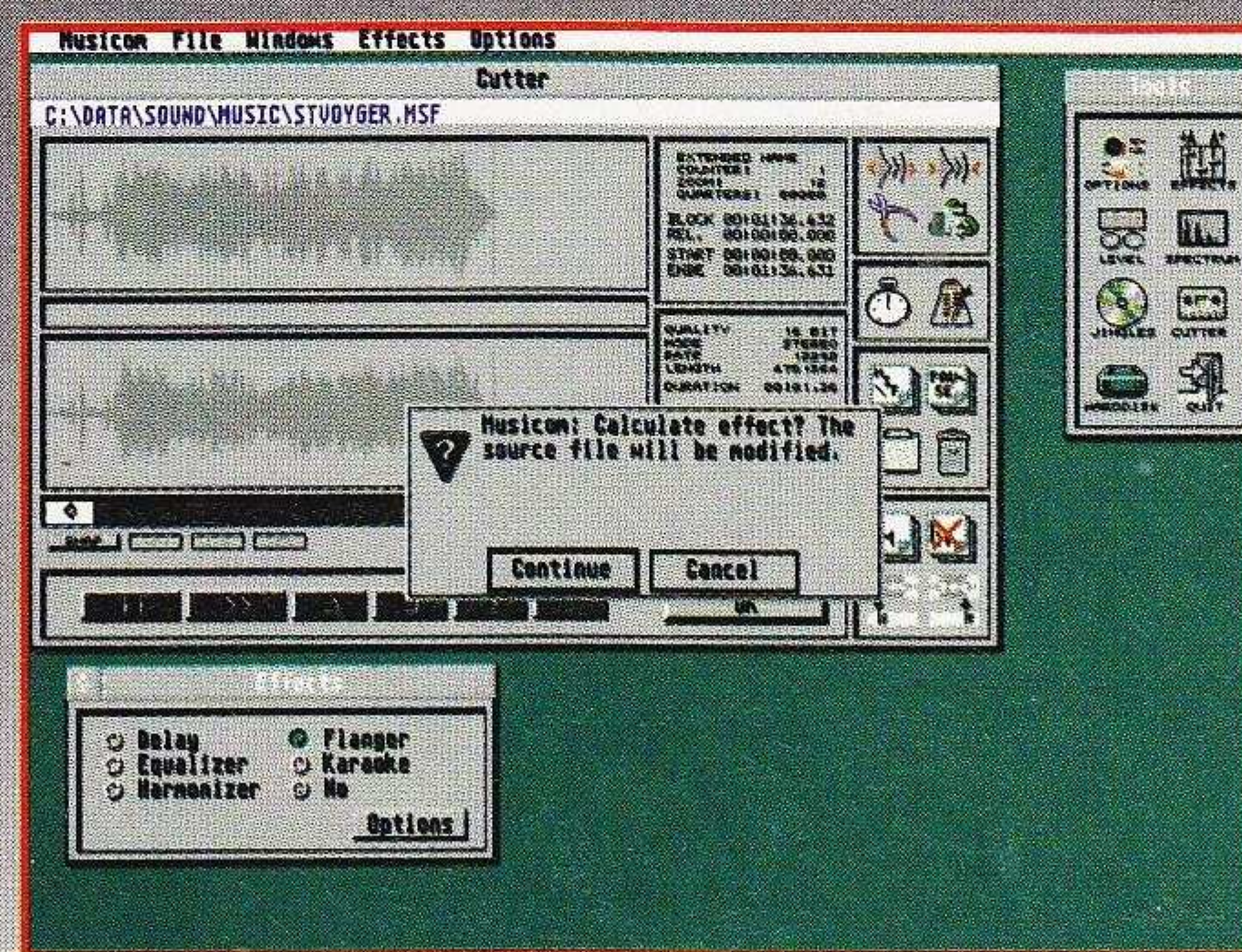
One more time

Digital sound programs on Atari machines are still in abundance, playing on the strengths of the hardware and undercutting more expensive dedicated systems. We hope this feature inspires you to delve deeper into one of the cornerstones of music and multimedia applications, and we look forward to hearing some of your compositions. And if that sounds too much like hard work, you can always just fill up your disks with Monty Python clips, pet vocals, sound effects and 1970s sci-fi theme music. *stf*

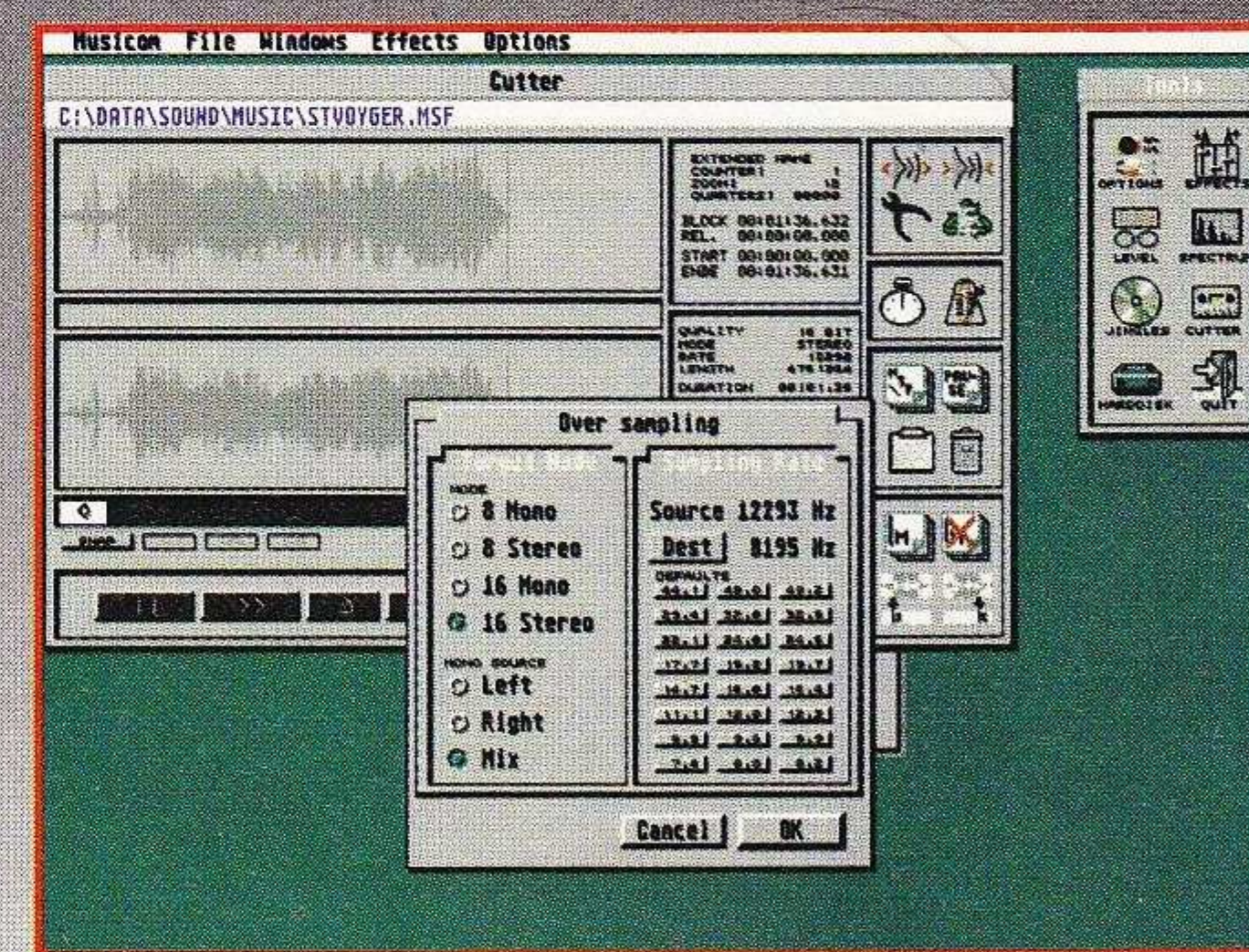
RESAMPLING WITH MUSICOM



1 Ever wished your Walkman had a 10-band graphic equaliser? Well, now it can have, courtesy of your Falcon and *Musicom 2*.



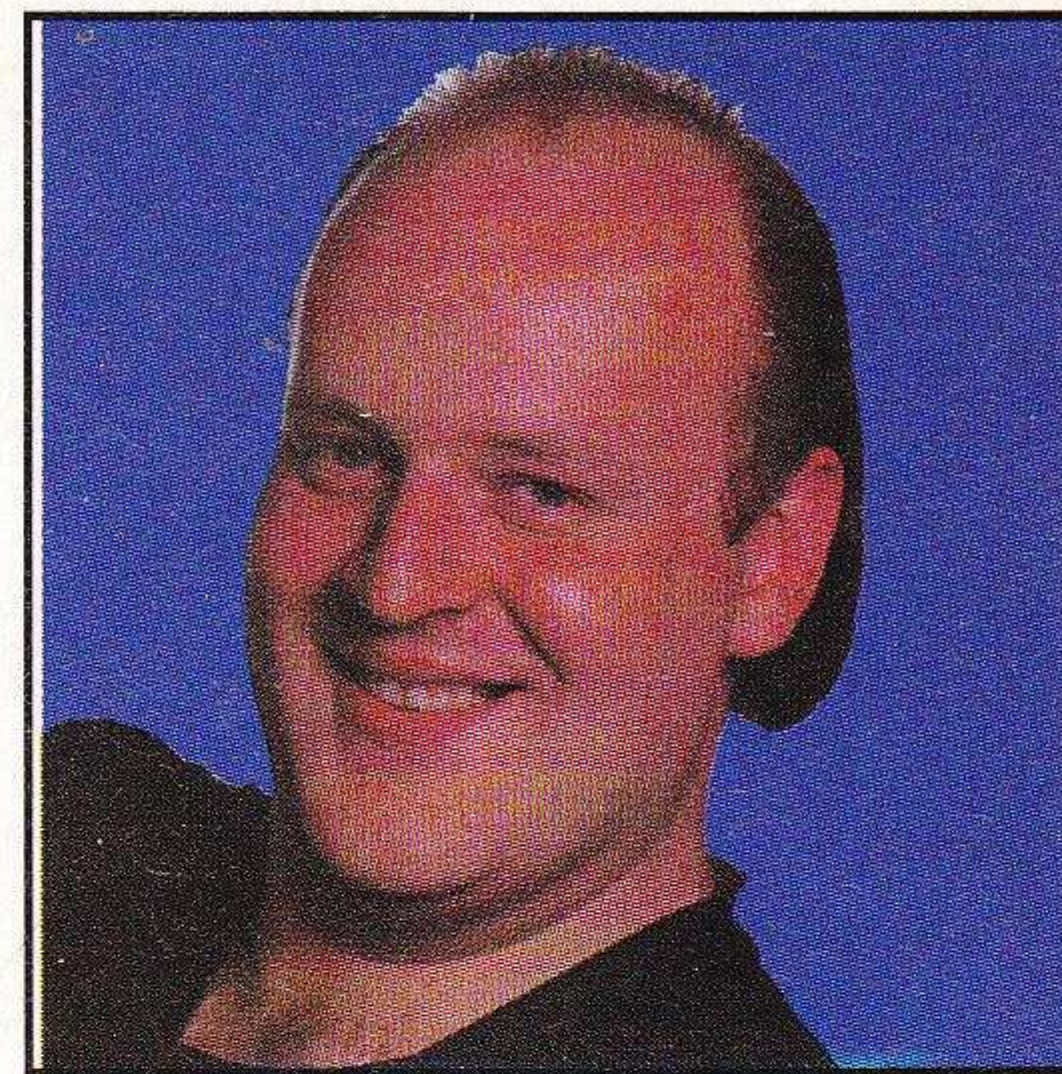
2 The Recycler applies the chosen effect to the sample permanently, changing the original disk file as it goes. Don't do this until you're sure it sounds right.



3 Oversampling changes the frequency and resolution of a sample. Some settings work better than others, so listen to the copy before deleting the original.

ST Answers

Fresh from watching *Space: Above and Beyond*, our man Frank Charlton jumps head first into the postbag. Mac Marsden looks on and laughs.



MEDIUM WAVE

Q I am having problems saving the Desktop on my 1040STE. I can only save it in low resolution. My other Atari, a 520STFM, saves the Desktop in medium res fine. Most of the programs I use run in medium res, but I can't save the Desktop in this mode.

Is there something I can do about this? Also, can someone tell me what a Blitter is?

Ray Guardione, Yokine, Western Australia

A Early versions of the STE were fitted with TOS 1.6, which generously included a free bug – it can't save the Desktop in medium resolution. This bug was fixed in the subsequent TOS 1.62, fitted to most STE machines.

Thankfully, there's an easy solution. If you place the patch program *STE_FIX.PRG* in your Auto folder, it alters TOS to

correct the bug every time you boot up. You should be able to pick it up from any PD library.

As for the Blitter, it's a custom chip inside your STE. It was designed to shunt chunks of graphical data at a higher speed than a standard STFM can manage. You can switch the Blitter off if you want to see how slowly the Desktop's GEM windows are drawn without it.

ON THE BUSES

Q Is it possible to build an Atari-compatible machine with a PCI bus, enabling us Atari users to plug in Soundblaster cards, graphics cards etc?

Brian Boothe, via e-mail

A Short answer – no. Slightly longer answer – not as far as we know. There was talk of the much-discussed Eagle machine being able to support hardware from

other platforms, but since nobody seems to know whether the Eagle still exists, it's difficult to say what's happening on that front.

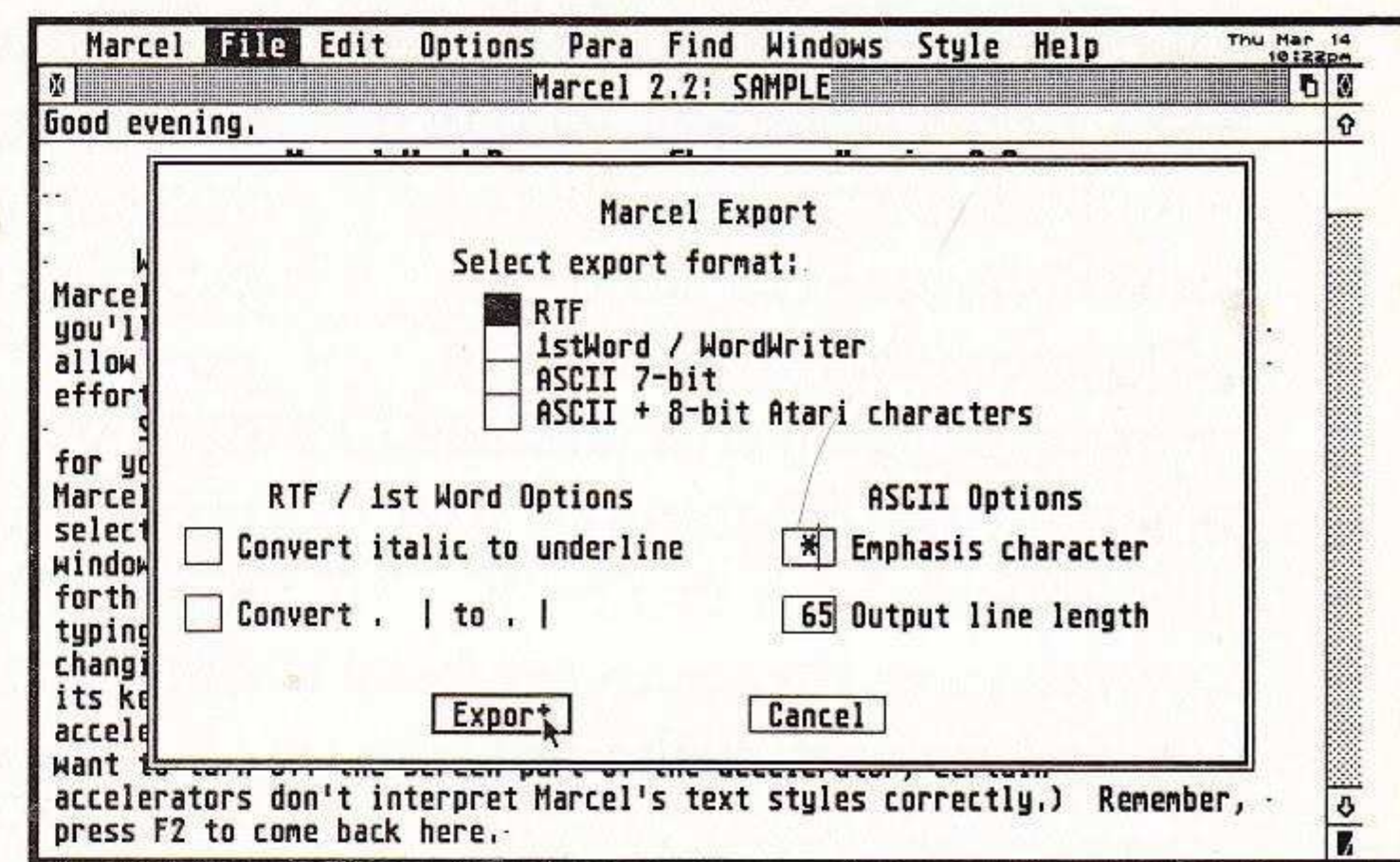
BLOCKBUSTER

Q I have large text files which I would like to save in a form that can be read by a PC. It's important that none of the formatting, such as paragraphs, indentation and line spacing, is lost.

I'm an amateur writer, and I would like to submit a disk rather than a manuscript. However, publishers only accept Mac or PC disks. I've no wish to swap my trusty STFM for a PC, and I'll dedicate my first blockbuster to you if you can help.
T S Ionta, Cumbernauld

A In our experience, most publishers prefer straight ASCII files to pre-formatted ones. Their in-house staff will handle the layout. It's always best to find out exactly what a publisher wants before submitting your masterpiece.

If your publisher does need formatted files, you can use a word processor which supports the RTF file format. RTF means Rich Text Format, and was designed to help smooth the path between different computer



Marcel can output RTF files for use with PC word processors. Most of the formatting, including bold and italics, is preserved.

HISOFT C CENTRE with Mac Marsden

If you have any questions for Mac, write to: HiSoft C Centre, ST FORMAT, 30 Monmouth St, Bath, Avon BA1 2BW or send an e-mail to mac.marsden@dial.pipex.com.

CHARACTER TESTING

Q As an exercise, I would like to write a small text editor using HiSoft C, but I have had no experience with this language (I can program in GFA Basic, though). Could you print a list of the

relevant C keywords? I am in the process of buying the HiSoft C Interpreter manual but could still do with your help.
James Featherstone, Chester-le-Street, Co Durham

A James, I hope the manual helps, but in the meantime, here is a comprehensive list of the character functions that HiSoft uses in the Interpreter. Good luck with your program.

PANEL ONE

```
/* program to use the equals operator */
main()
{
    int x, f;
    x = 8;
    for(f=0;f<11;f++)
    {
        if(x == 8)
        {
            printf("\nThe number is now 8");
        }
    }
    evtnt_keybd();
}
```

Function	Tests if character is:
isalpha	alphanumeric
isalnum	numeric
islower	lower case
isupper	upper case
ispunct	a punctuation symbol
isspace	a space
isdigit	a digit
isxdigit	a hexadecimal digit
iscsym	valid in C identifiers
iscsymf	valid at the front of C identifiers
isprint	printable
isascii	a valid ascii character
isgraph	a graphics character
isctrl	a control character

Also, *tolower* converts to lower case; *toupper* to upper case; and *toascii* to ascii.

VARIABLE VANITY

Q Can you please explain the difference between $x = 12$ and $x == 12$. I cannot seem to understand the explanations in the HiSoft manual.
Mark Jones, Edinburgh

A Don't worry Mark, that's what I am here for. The expression $x = 12$ means 'Give x the value 12.' If you then printed x on screen using: `printf("%d", x);` you would see 12 written on the screen.

The line $x == 12$ compares the value previously given to the variable x with the number 12 to see if they are equal. This expression would be used in an if statement. I have included a small listing (Panel One) to help you get to grips with both commands.

Mark, try changing the $x = ?$ and $x == ?$ values to see how this works (keep them both between 0 and 10). If you still have trouble, drop me another line and I'll see what I can do. I have also listed the other comparison operators below:

!=	not equal (the opposite of =)
<	less than
>	greater than
<=	less than or equal to
>=	greater than or equal to

CD CALAMITY

Q When you reviewed the Aiwa ACD-300 CD-ROM drive, how did you get it up and running in no more than ten minutes? I have found it and the supplied software (ExtenDOS Pro) very difficult to configure. Because I had no luck with it, and your review misinformed me about how easy it was to set up, HiSoft has provided a refund.

I have a Protar hard drive containing 50 and 240Mb mechanisms, and no matter which SCSI ID I gave the Aiwa, it assumed a different ID when it showed it was connected. There was also considerable disruption in my hard disk partitions. It would also appear that the instructions for setting up the EXTENDOS.CNF file are incorrect.

I am still interested in buying a CD-ROM drive, but only if I get explicit instructions for setting it up.

R E Golding, Ashford

A I'm sorry to hear that you had problems with the Aiwa. When I reviewed it, I tested it on no less than three machines – two STs and a Falcon. In all cases, ExtenDOS Pro took very little setting up. We checked the ID on the Aiwa – it was set to 5 – and adjusted EXTENDOS.CNF to match. We continued using the drive for some time and it performed perfectly.

Your experiences suggest that the Aiwa drive isn't happy with your Protar drives. It seems that either the Protar host adaptor or the drive's software doesn't like ExtenDOS. Is your Protar software the most recent version? If you bought your drive from Protar's UK distributor Analogic, call its technical support people on ☎ 0181 5469575, and see if they can help.

To be honest, of all of the host adaptors available, Protar's always seems to be the least friendly towards other devices in the SCSI chain. It might help you to know that Analogic also sells



We still believe the Aiwa ACD-300 is a smart CD-ROM drive – if your host adaptor doesn't argue.

SCSI CD-ROM mechanisms – if its CD-ROM drive won't work with your hard drives, I don't know whose will. As for a 'from the ground up' tutorial on connecting a CD-ROM to your ST, it sounds like a good idea to me. Watch this space.

platforms. On the ST, both AtariWorks and Papyrus (HiSoft, ☎ 01525 718181) support this format, as does the shareware word processor Marcel.

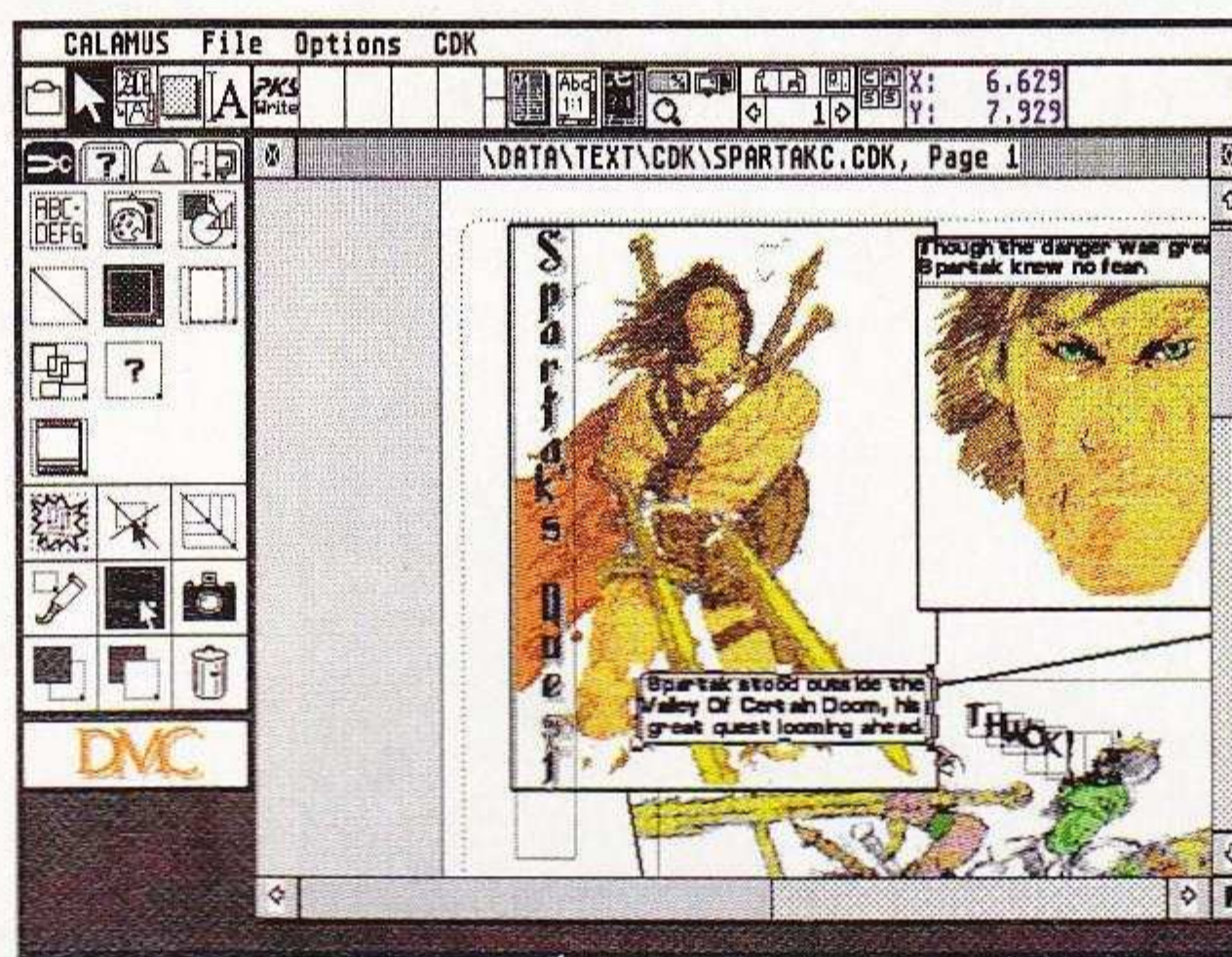
As for PC disks, there are many PD disk formatting utilities which will format a disk to standard PC specifications. Your ST can read from and write to these disks (as can an Apple Mac), so transferring the files isn't a problem. By happy coincidence, there's just such a program on this month's Cover Disk. Jayformat enables you to create both high (1.44Mb) and double density (720K) PC-compatible disks.

Oh, and don't worry about the dedication – a healthy royalty percentage will be just as nice.

IN COLOUR

Q I recently purchased an Epson Stylus Colour II printer. It won a well-deserved ST FORMAT Gold award in issue 79, but I have so far failed to tame the beast. I can output some excellent colour pictures via ImageCopy 4, but I am unable to print text and graphics together. I have Pagestream 2.2, but it doesn't have a driver for the Stylus.

I have considered buying Calamus SL, but have been unable to ascertain as to whether or not it has a suitable



Colour output from the Epson Stylus with Calamus SL? No problem, as our Comic Capers feature showed.

driver. Can you help?
John E Nicholls, Solihull

A Dug Armstrong, who reviewed the Stylus Colour II, also used this printer to produce colour DTP

output for our Comic Capers feature in issue 77. The software he used? Calamus SL, no less. Give JCA Europe a ring on ☎ 01734 452416 for more information.

WEBSLINGER

Q I'm writing from Spain for some help with comms. You reviewed the Linux CD for the Falcon – does this have a navigator, and is this navigator compatible with the HTML 3 standard? Is it compatible with the Falcon's Modem 2 port? Will it work with a 28,800bps modem? Is the CD difficult to install?
Jacobo Morro, Spain, via e-mail

Try using some of these expressions in place of = = in the listing.

PROPER, LIKE

Q Is there a 'proper' way to write a program? I know this is a silly question, but I have been programming for a little while now and I keep getting lost. I can't keep track of which function does what and in what order. Please, I need any help you can give me.

Mary Pacer, Humberside

A Mary, it isn't a silly question. I like to work everything out on paper (I know I have covered this in the past, but it is the most efficient and easiest way to complete the task). Begin with an algorithm – an overall look at what you want to do – as shown in the first part of Panel Two.

Once you've done this, the next step is to break down each event into another algorithm. For example, the second part of Panel Two looks at the keyboard event. Eventually, you will end up with the code, which you can then enter. The last part of Panel Two gives the final code for your program's keyboard section.

You need to repeat this procedure for each of your program's functions. Doing it this way

PANEL TWO

Part one: Algorithm

create a menu
create the dialog boxes
open the windows
While we haven't finished do the following
wait for an event
Depending on the type of the event
if it is a mouse event
deal with the mouse event
if it is a keyboard event
deal with the keyboard event
if it is a menu event
deal with the menu event
if it is a window event
deal with the windows event
Close the window
Remove the menu

Part two: Keyboard section

Keyboard event detected
if the key pressed is 'a'
do key option 'a'

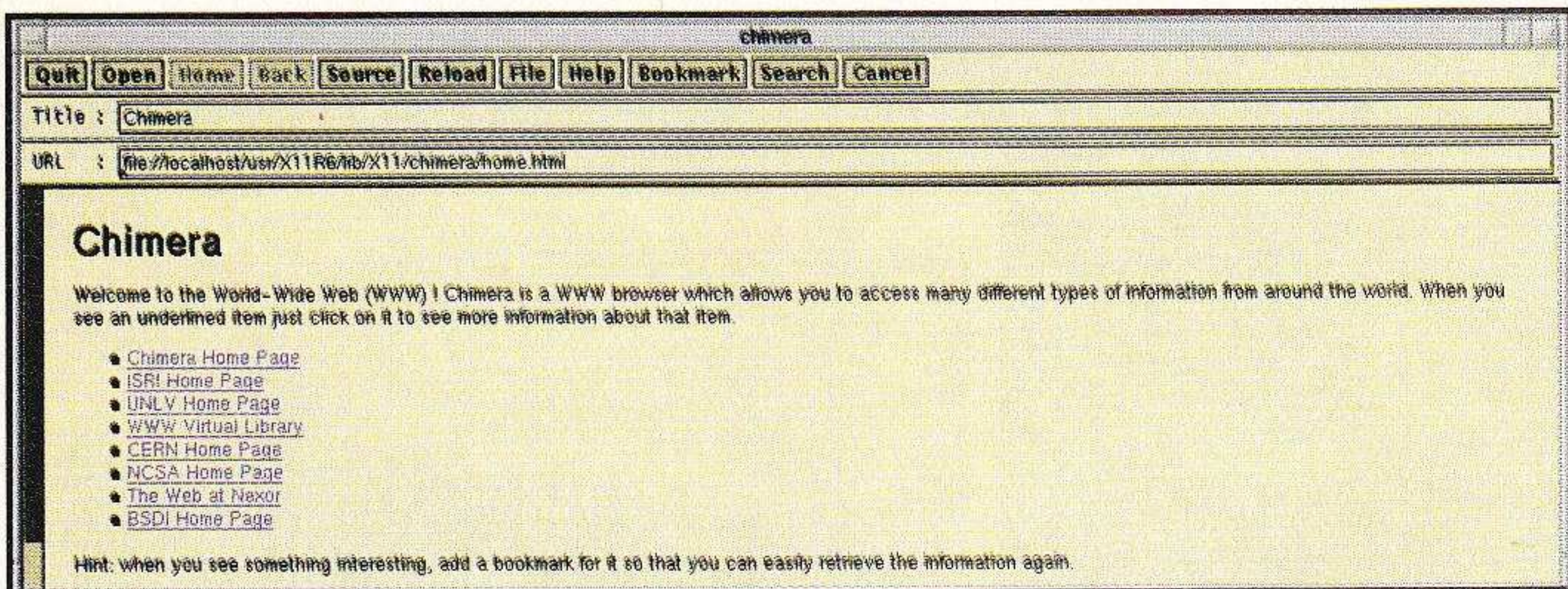
if the key pressed is 'z'
do key option 'z'
Return to menu

Part three: Keyboard code

```
keyboard_function(char x)
{
    int x;
    if(x == 'a')
    {
        printf("The letter 'A' has been
        detected");           (all one line)
        /* the rest of your program */
    }
    if(x == 'z')
    {
        printf("The letter 'Z' has been
        detected");           (all one line)
        /* the rest of your program */
    }
}
```

keeps you in touch with what is going on and helps you when you are debugging your program

– at least you know which area to look in (It also helps if you keep all the pieces of paper – Mary).



Linux features a graphical browser, Chimera, but CAB is still our favourite.

A Presuming you mean Web browser when you say 'navigator', the answer is yes, the Linux installation CD-ROM from System Solutions does include a browser. It's called Chimera, and it works under the Linux version of the XWindows graphical interface.

Chimera doesn't support HTML 3, but it is fully compatible with the HTML 2 standard, and will ignore any HTML tags it doesn't understand. You'll still be able to view pages graphically,

but they won't appear the way the author intended them to if he has used the newer extensions to HTML. Linux 68K supports the Falcon's modem ports and works well with a V.34 modem.

If you pick up the component parts of Linux from FTP sites, it can be a complete pig to install. The CD-ROM, on the other hand, comes with a GEM program which holds your hand through the whole process and cuts the installation time down drastically. If you're careful when you fill in



If you're thinking about getting a hard drive, you might also want to consider the new removable media drives. The SyQuest EZ 135 scored 91% in issue 81.

the initial dialog boxes, it's a painless procedure and shouldn't cause you too much hassle.

so could you please tell me where to write to?
Dr Otto Pilar, Austria

HARD DRIVIN'

Q I don't have a hard drive for my ST and I am thinking of buying one. Do I have to change my TOS? I have a 1040STFM. What is the cheapest option?
Alexis Papadimitratos, Athens, via e-mail

A Strictly speaking, the answer is no – you can use a hard drive with any version of TOS fitted to your ST. However, your machine probably has TOS 1.2 installed, which makes hard drive access slow. Upgrading your ST to TOS 2.06 isn't essential by any means, but it's worth doing when you can afford it. The hard drive access routines were updated from TOS versions 1.4 onwards, and the difference is noticeable in most cases.

As for the cheapest upgrade, check out this month's main feature for a guide to storage devices.

FREE OCR

Q In issue 75 you mentioned an AlphaScan package which includes MiGraph's Full OCR software. I'd like to get one, but I can't find the address of the firm selling this article. I want to send a written order,

A First Computer Centre carries various hand scanners for the ST and Falcon, including the AlphaScan package you mention. It includes Full OCR, the excellent TouchUp scanning package and Merge-It, a utility which enables you to create bigger images by joining separately scanned chunks of the same picture. It costs £139.99, and you can write to: First Computer Centre, Dept STF, Unit 3, Armley Park Court, Stanningley Road, Leeds LS12 2AE, UK. If you need to call from Austria, the number is +44 113 2319444. Alternatively, you can fax First Computer Centre on +44 113 2319191.

PALETTE PALAVER

Q I know the STFM can only display 16 colours at a time, so why is it that when I run my version of the NeoChrome art package there are more than 16 colours displayed in the palette window? I am quite a keen programmer – could I use this 'trick' in my own programs?
Nicholas Woolley, Derbyshire

A A number of art packages use this trick, and some, such as NeoChrome Master, even let

GFA WORKSHOP with Mac Marsden

If you have any questions for Mac, write to: GFA Workshop, ST FORMAT, 30 Monmouth St, Bath, Avon BA1 2BW or send an e-mail to: mac.marsden@dial.pipex.com

Mystical memory

Q I keep hearing and reading about the Basepage of the GFA Interpreter. Could you

possibly explain what and where this mystical thing is and how I could find out what is in it?
Frederick Travis, Stockton-on-Tees, Cleveland

A Frederick, the Basepage is an area in memory. It is the address of the GFA Basic Interpreter and is a 256-byte long storage area. The Basepage Contents panel lists all the

BASEPAGE CONTENTS

Current program information is held in the GFA Basic Basepage storage area. You're unlikely to need any of these addresses, but it is nice to see what's there.

Bytes	Contents
0-3	Address of the start of the Transient Program Area (TPA)
4-7	Address of the end of TPA plus 1
8-11	Address of the text segment of the program
12-15	Length of the text segment
16-19	Address of the data segment
20-23	Length of the data segment
24-27	Address of the Block Storage Segment (BSS)
28-31	Length of the BSS
32-35	Address of the Disk Transfer Address (DTA)
36-39	Address of the Basepage of the calling program
40-43	Reserved
44-47	Address of the environmental strings
48-127	Reserved
128-255	Command Line (first byte specifies the length of command text)

information held there.

We could display the complete Basic environment using the following routine:

```
a% = {BASEPAGE + &H2C}
DO
a$ = CHAR(a%)
EXIT IF LEN(a$) = 0
PRINT a$
ADD a%, SUCC(LEN(a$)) ! SUCC = Next
higher integer (all one line)
LOOP
```

String conversion

Q How can I convert a string or string array which contains numbers and then use the value in a numerical variable?
Mark Oliver, Planet Earth

A Mark, the command that you are searching for is VAL(x\$), which turns a character string into a number. If VAL() meets a non-numerical character that it cannot interpret, the conversion stops at that point and the function only returns the characters it has successfully converted. If no numbers are found, VAL() returns a zero.

Adding the correct prefix – hexadecimal, binary or octal – to the string array enables you

you draw on the screen with more than 16 colours. The cheat is called palette switching, and it involves switching the colours in the on-screen palette very rapidly, to create the illusion of more than 16 colours at once. It's a task that requires a bit of assembly language programming, because the timing needs to be tighter than high-level languages like Basic can manage.

All isn't lost though, because little assembly routines which handle the switching are available as add-ons for almost every language, including STOS and GFA Basic. Any PD library, BBS or Internet FTP site which has a collection of programming files should be able to provide you with these bits of code. You shouldn't need an assembler or any knowledge of 68000 assembly language either, because most of these routines are simple pre-assembled pieces of code which you call from within your own program.

TOP PRINTERS

Could you recommend a high-quality printer which doesn't cost the earth for my 1Mb STFM, please? Second, which do you think is the best word processing package for my machine? Can you also recommend either a club or shop which sells a vast array of ST games and programs, because all the shops here in Bolton

have gone off ST games.

Finally, if I installed a PC emulator, would I be able to play games like *Championship Manager 2* without program limitations such as poor graphics? Also, would I need to buy a monitor and improve the operating system?

Adrian Gerrard, Bolton

Without knowing how much you can afford to spend, it's difficult to recommend a printer. It also depends on what you want to do with the printer – for program listings and the odd letter, a dot-matrix model would probably suffice. If you're serious about good-looking documents, an inkjet or bubblejet is the cheapest route to decent quality. Keep an eye on our reviews pages, because we regularly cover the latest inkjet printers (see issue 78, for example, for a review of Hewlett Packard's ST FORMAT Gold-winning DeskJet 600, which scored a creditable 91%).

Again, it's hard to recommend a word processor without knowing how heavily you'll be using it. Think about starting with a shareware program, such as the excellent Marcel (available from any PD Library). If you quickly outgrow it, you might want to look at the big three commercial packages – Papyrus Gold (£120, from HiSoft ☎ 01525 718181), Protect 6 (£79.95, from Compo ☎ 01487 773582) and

HELP, MUM!

I am new to computing in general, and I simply haven't a clue. Could you please help by answering these questions:

1 Why can't I run 1Mb programs on my 520ST? 2 How can I write a story, save it, then access it and save it again? 3 Where is my nearest Atari stockist? 4 What is a hard drive? 5 What are MOD, CPX, ACC and TOS?
Greig Brown, Rutherglen

Welcome to the wonderful world of computers, Greig. To take your questions in order:

1 Have you ever tried to pour two pints into a one-pint glass? Your ST's memory only has a capacity of 512K – like the pint glass, if you like. When you try to run a program which requires 1Mb or more of memory, it simply won't fit – just like the two pints of water (Water? – Nick). The solution is to install a memory upgrade in your ST. Amazingly, if you turn to page 21, you could be in with a chance to win one of 100 1Mb memory upgrades from Analogic in our bumper RAM competition.

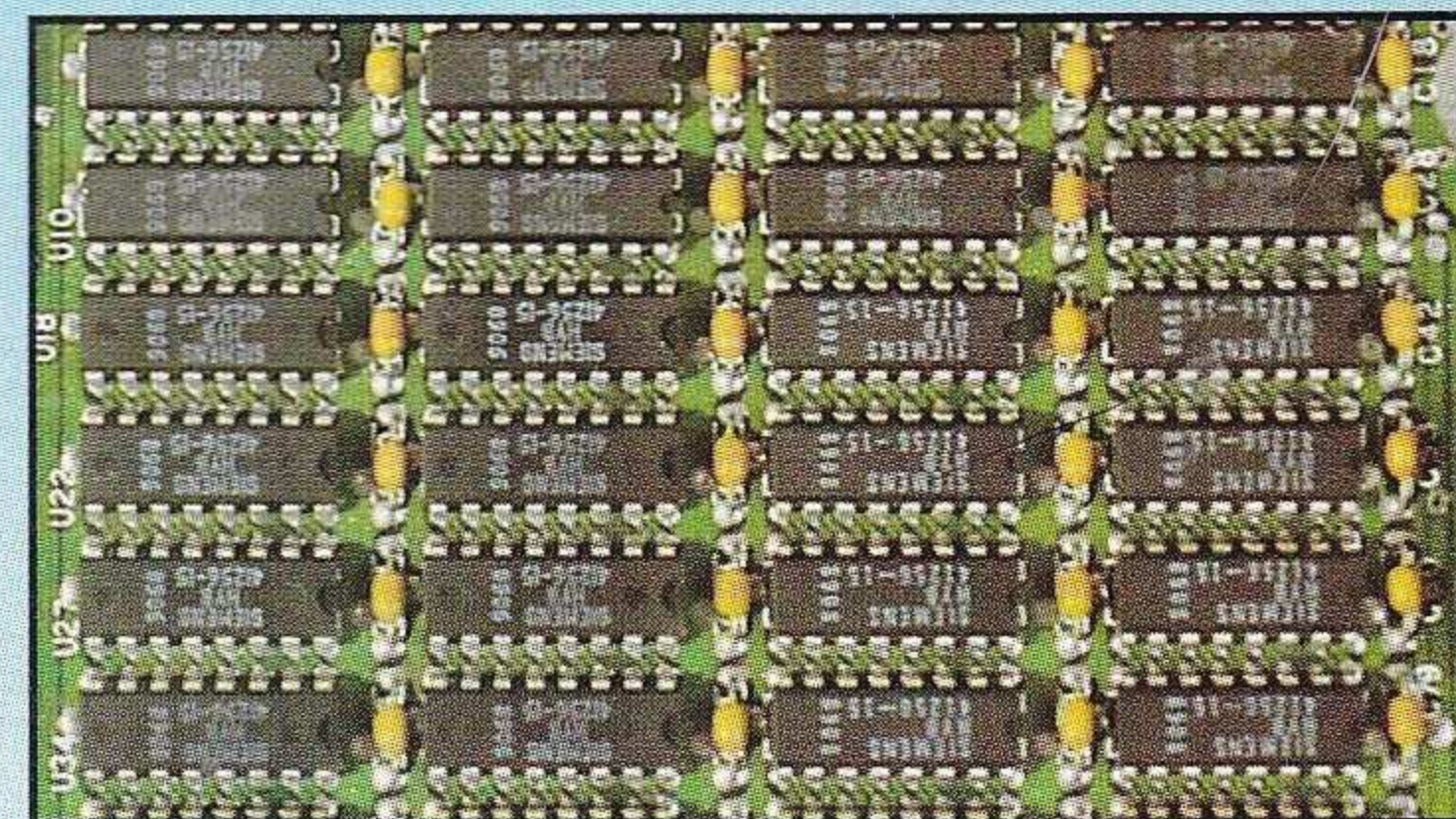
2 Any word processor or text editor will do the job. Just save it to disk using the Save command – usually found in the drop-down menu called File or something similar. When you next want to use

it, load the word processor and load the file from the same menu.

3 As far as we know, there aren't any ST-friendly dealers in your neck of the woods. Mail order is your best bet, and you can find the addresses you need by searching through the ads in any copy of ST FORMAT.

4 Very simply, it's a very big, very fast version of a floppy disk. It lets you store a lot more programs and data than a single floppy, and it runs much more quickly, too. Again, check the ads in ST FORMAT for prices. We featured hard drives in issue 73 – see page 50 to order a copy.

5 The three-letter 'stub' at the end of a filename is called a file extension, and it helps your ST work out what the file contains. A MOD is a music file used by a soundtracker program; a CPX is a Control Panel eXtension used by the XControl desk accessory; an ACC is a Desk Accessory; and a TOS file is a program which uses text for input and output, rather than the graphical GEM system.



See those chips? They have a finite capacity, and you can't run programs which require more memory than you have.

to use different bases (see the Bases panel).

You can also use VAL?(x\$) to return the number of convertible characters. Once again, a zero is returned if there aren't any numeric characters in the string.

Executive question

I am finding it difficult to use the EXEC command in GFA Basic. The problem I think is that I do not fully understand the actual command and its parameters. Any help or explanation would be very helpful.
Brian James, Taunton, Somerset

Yes, this is a tricky one until you can get to grips with it. The main thing people forget to do is to reserve enough memory for the loaded program, including enough space for any data files it may load. The command EXEC has four parameters, two of which may be ignored.

The main use of EXEC is to load or load and run another program on top of the program already running. When it has finished, control returns to your original program. The command syntax is:

```
EXEC(mod, nam, cmd1, envs)
```

The parameter mod (MODE) specifies one of the two modes you can use:

0 Load and run the program

3 Load the program only

The second parameter, nam, contains the filename of the program to be loaded.

The next two parameters can normally be ignored. Parameter cmd1 contains the command line, which is registered in the Basepage (see the Mystical Memory question, above). Normally a dummy character (*) is inserted. The final parameter, envs, contains the environment. This is a string terminated by CHR\$(0). For a C program the environment is a series of strings each terminated by CHR\$(0). The whole lot is then terminated by two CHR\$(0) which are added automatically by GFA Basic.

I have included an example program (Panel One) which uses the EXEC command.

PANEL ONE

```
! Example program to use the EXEC command
(all one line)
FILESELECT "\*.PRG", "", f$
RESERVE 100
SHOWM
a% = EXEC(0, f$, "*", "")
RESERVE
PRINT "Back in GFA Basic."
```

BASES

Denary or decimal (base 10):
Counts in blocks of 10 (0-9)

Binary (base 2):
Counts with just zeros and ones (010101 and so on). The number 10 (base 10) becomes 1010 (base 2).

Hexadecimal (base 16):
Counts in blocks of 16 (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F). The number 17 (base 10) becomes A1 (base 16).

Octal (base 8):
Counts in blocks of eight (0-7). The number 24 (base 10) becomes 30 (base 8).

These four mathematical bases are the most popular counting systems in computing. Hexadecimal is used more often than the others, because you can count up to 255 (FF) using just two characters. Octal uses three (363) and binary eight (11111111).

The great thing about counting in binary is that you don't have to take your mittens off. Hex necessitates plastic surgery (Groan – Nick).

That's Write 3 (£129, also from Compo). Our favourite for general use is Papyrus.

Since most shops have dropped support for ST games, your best bet is to use a mail order house, such as Premier Mail Order (☎ 01268 271172).

And as for PC emulators, our advice is to forget it. They're very unstable if you're trying to run games and don't upgrade your ST's graphics capabilities, so installing an emulator wouldn't improve your display.

ST TO PC

Is there any way to convert files written in First Word Plus on my

ST to a format that a PC word processor can use?

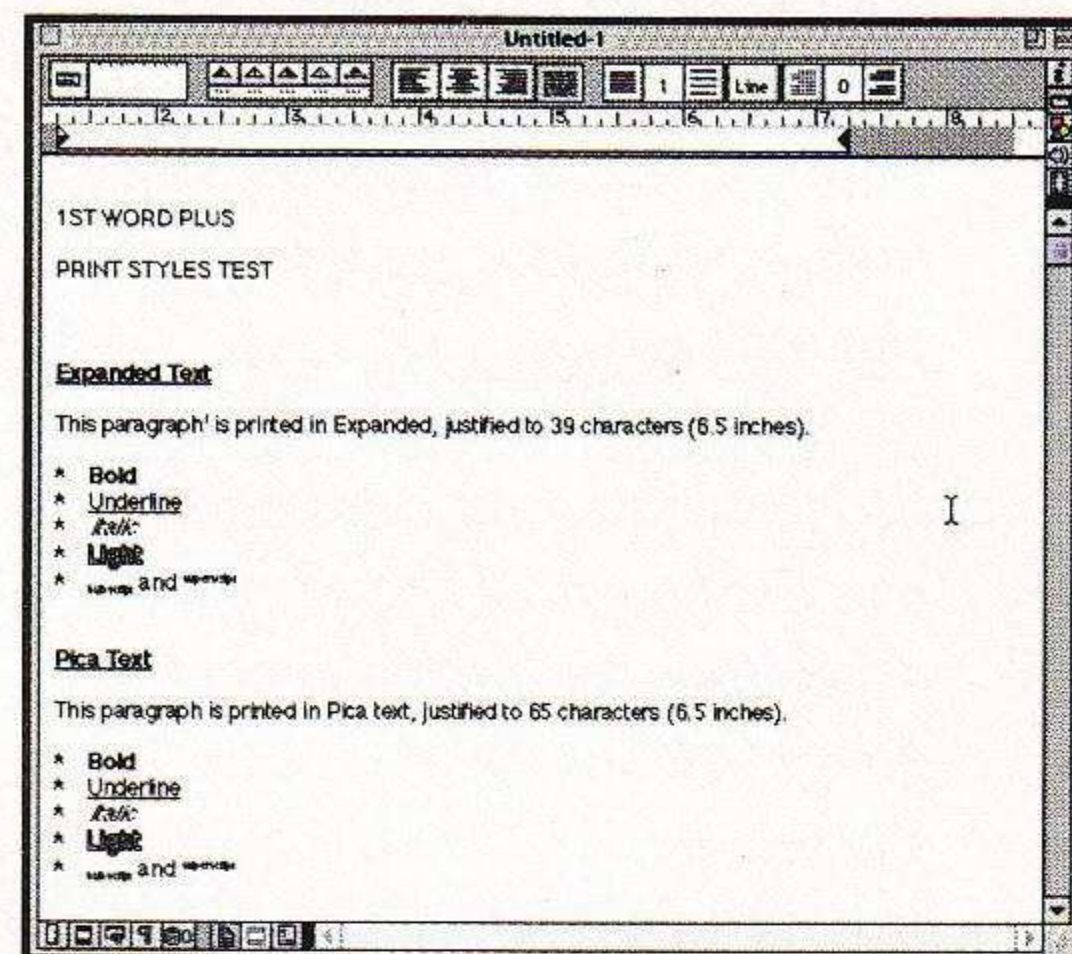
Mike Paxman, via e-mail

First, apologies for taking so long to answer this one, Mike. It got lost among the weeping love letters from Karen (I think you missed the point, Frank, she was trying to soften the blow – Mary) in the bottomless pit that passes for my e-mail folder. Anyway, if you've still got your ST, the simple answer is to save them as ASCII files from within First Word, then copy them on to a PC disk (see the Blockbuster question on page 40 for details).

If you no longer have access to the ST or First Word, all is not

lost. Indeed, the second solution is more elegant than the first, because it preserves most of the formatting commands from the original text. You need a nifty program called WP2RTF, which converts the First Word originals to the RTF format, which almost any PC word processor can read. The best thing about it is that it's available in ST, PC and even Mac versions, so you can unlock all of those old files even if your ST has turned up its keyboard and gone to the great slab full of stars in the sky. You can get hold of it over the Net by pointing your copy of CAB at <http://www.cs.vu.nl/~js>, or you can call the FaST Club on ☎ 0115 9455250 and ask for disk WP.205. stf

Send your questions to Frank at: ST Answers, ST FORMAT, 30 Monmouth St, Bath, Avon BA1 2BW, or send an e-mail to: de18@dial.pipex.com (please put STA in the subject line).



Converting First Word files for other machines, such as the Mac, is a doddle.

ALT.COMMS.STF@ with Frank Charlton

If you have any questions, write to: alt.comms.stf@, ST FORMAT, Future Publishing, 30 Monmouth St, Bath, Avon BA1 2BW, or send an e-mail to de18@dial.pipex.com. Please put STA in the subject line.

Internet Relay Chat

Following on from last month's introduction to the Internet (turn to page 50 if you missed it), this month's comms column focuses on the quirks and foibles of the odd phenomenon that is IRC, or Internet Relay Chat.

IRC enables you to chat via your keyboard, in real-time, to like-minded souls across the world. It's a text-based medium, so you can have a go with any kind of computer, as long as you have an Internet connection. There are two basic methods: you can use a specially written 'client' program, or the old Telnet protocol (described last month). For now, we'll be concentrating on Steve Adam's textual IRC client, IRC.TOS, which is provided with the STiK package.

Get set up

The first thing you need to do is make a few changes to STiK's DEFAULT.CFG file. (We're presuming you've already configured STiK to get on-line. If you haven't, check out last month's Internet feature for instructions.)

Open the file in a text editor and skip through until you hit the entries for IRC. The first thing you'll need is a nickname. This can be anything you like – mine is Tachyon. Next, you need to enter the details of the IRC server you wish to use. A server is a machine which handles the hard work of an IRC connection.

STiK is preconfigured for a large number of servers from all across the world. Check through

```

<andrew> re
<ip> Flinn, that's a good way to ruin a good monitor. :)
<flinn> Hi Andrew!
<markb> flinn, OK
* GeeK still wants GEM IRC, too! :)
<ip> andrew, hello
<markb> ip, :)
<flinn> ip, what is?
vitus_ has joined channel :#atari
<GeeK> B!W, thanks to everyone who helped me with MiNT last
<flinn> GeeK: being worked on as you speak :)
<vitus_> GeeK: you got KQMD?
<markb> geeck, you get it working in the end?
<matrixx> hey vitus!
Tachyon has joined channel :#atari
<ip> Flinn, taking screen shots. :) ie! gun he he
<Smooze> anybody know anyway of testing a ny SCSI setup on n
<vitus_> anyone want the new falcon game rein of somethin wh
(demo version)?
<flinn> Hi Tachyon :)
<vitus_> mat: hey!
<flinn on Server = stork.doc.ic.ac.uk
<atari:
    
```

Text from other users is prefixed by their nickname, so you can identify them.

The /whois command gives you information about other users.

```

<flinn> ahhh Tachyon on demon!! mega lagg!
<flinn> andrew: I talk more usually :)
<Fugazi> has joined channel :#atari
<ip> Anyone know if there is an IRC client that has a functioning 'identd' built
into it for the Atari? I need one.
<Tachyon> andrew: I s'pose not :)
<GeeK> markb/vitus: I did get MiNT running, then, through the ultimate act of
rupidity, deleted everything in /usr/bin! :( I gave up. Will run Linux when
can afford to! :)
Tachyon ~frank.support.tachyon.co.uk * :Tach is Back!
Tachyon :#atari
Tachyon dlsnayl.demon.co.uk :Demon Internet, London, United Kingdom
Tachyon :End of /WHOIS list.
<Fugazi> yawn...
andrew andrew.demon.co.uk * :Andrew Whittaker
andrew :@atari
andrew dlsnayl.demon.co.uk :Demon Internet, London, United Kingdom
andrew :End of /WHOIS list.
<ip> Fug, Hello!!
<matrixx> Geeck: buy CD
<vitus_> GeeK: well i got it all but the shell running... i an about gto give u
on it
<vitus_> hey Fug
<flinn on Server = stork.doc.ic.ac.uk
<atari:
    
```

gather for a bit of a natter. Before you start, though, check out the Commands panel, which explains how to use IRC.

To join the Atari channel, type /join #atari and hit [Return]. Within a few seconds

the config file, and if one of the servers is close to you, remove the # symbols before the lines. If you're in the UK, you'll probably want to use Demon Internet's server (you don't have to be a Demon customer). Set the IRCSERVER line to irc.demon.co.uk and the IRCPORT value to 6667. Save your DEFAULT.CFG, and you're done.

Channels

Once you launch IRC.TOS, you'll be connected to the server and the screen will fill with the server's 'message of the day', which provides information about how many users are connected and suchlike. At this point, you're not actually connected to IRC itself, because you need to join a channel.

IRC works like an old CB radio, in that it's divided up into channels, each with a specific name and subject. The best place to start is the Atari channel, where ST users across the world

you'll see a list of the people currently on-line, and you'll be ready to chat. Type a simple message, such as Hello, and hit [Return].

You'll notice that the STiK client is divided into two windows: a small one at the bottom, where you type your outgoing messages, and a larger one at the top, which shows you any text which comes from the current channel.

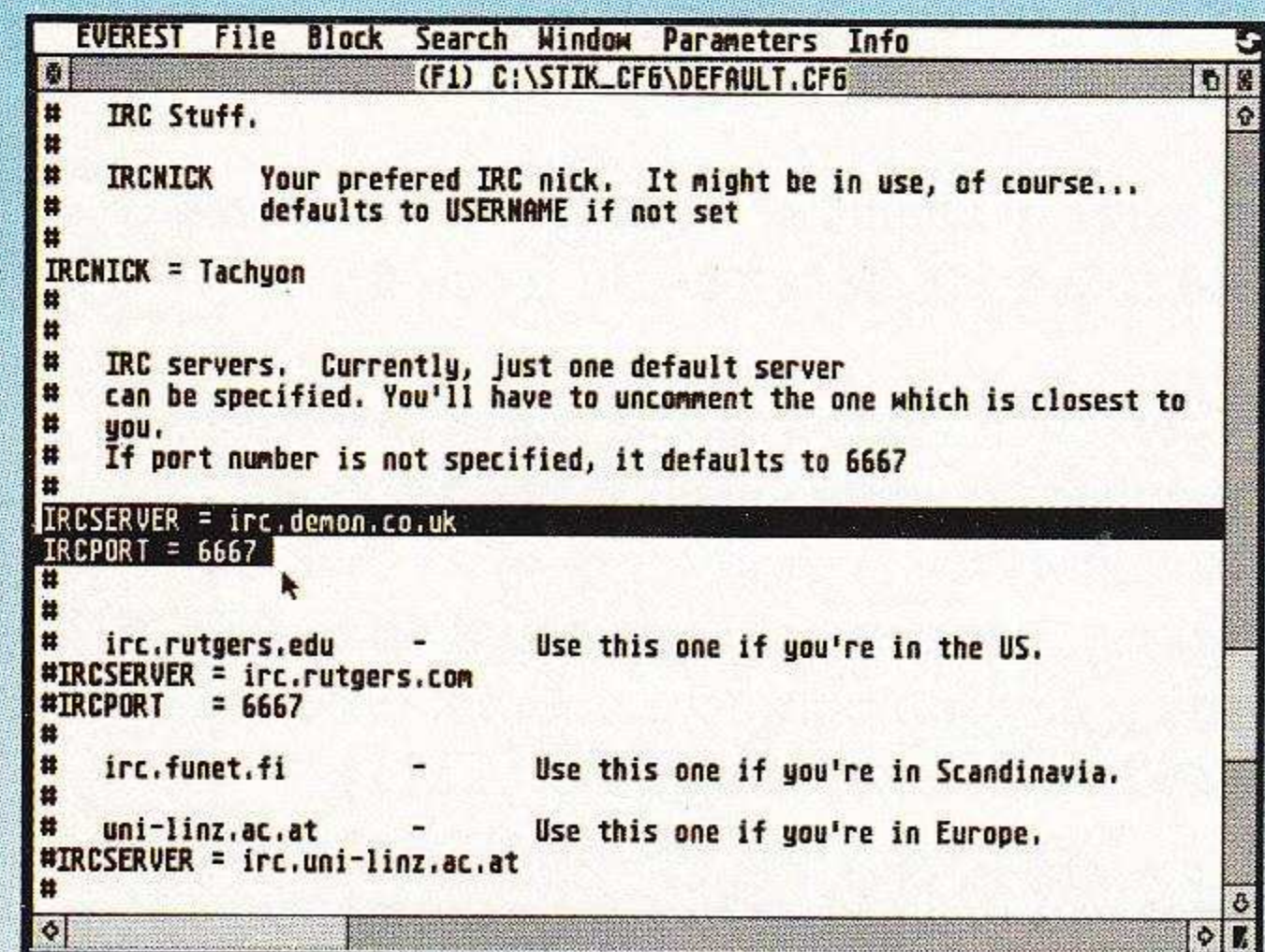
You'll quite often see users refer to something called 'lag', and someone may not respond to your message right away. Because of the huge amount of IRC traffic, servers sometimes get behind, and you'll feel everyone is ignoring you. There's not much you can do other than quit and change to another server, so just grit your teeth and wait for it to clear.

The #atari channel is often busy, and you could bump into some well-known figures in the Atari world. I usually lurk in there on Saturday nights, so why not drop in and say hello?

BASEPAGE CONTENTS

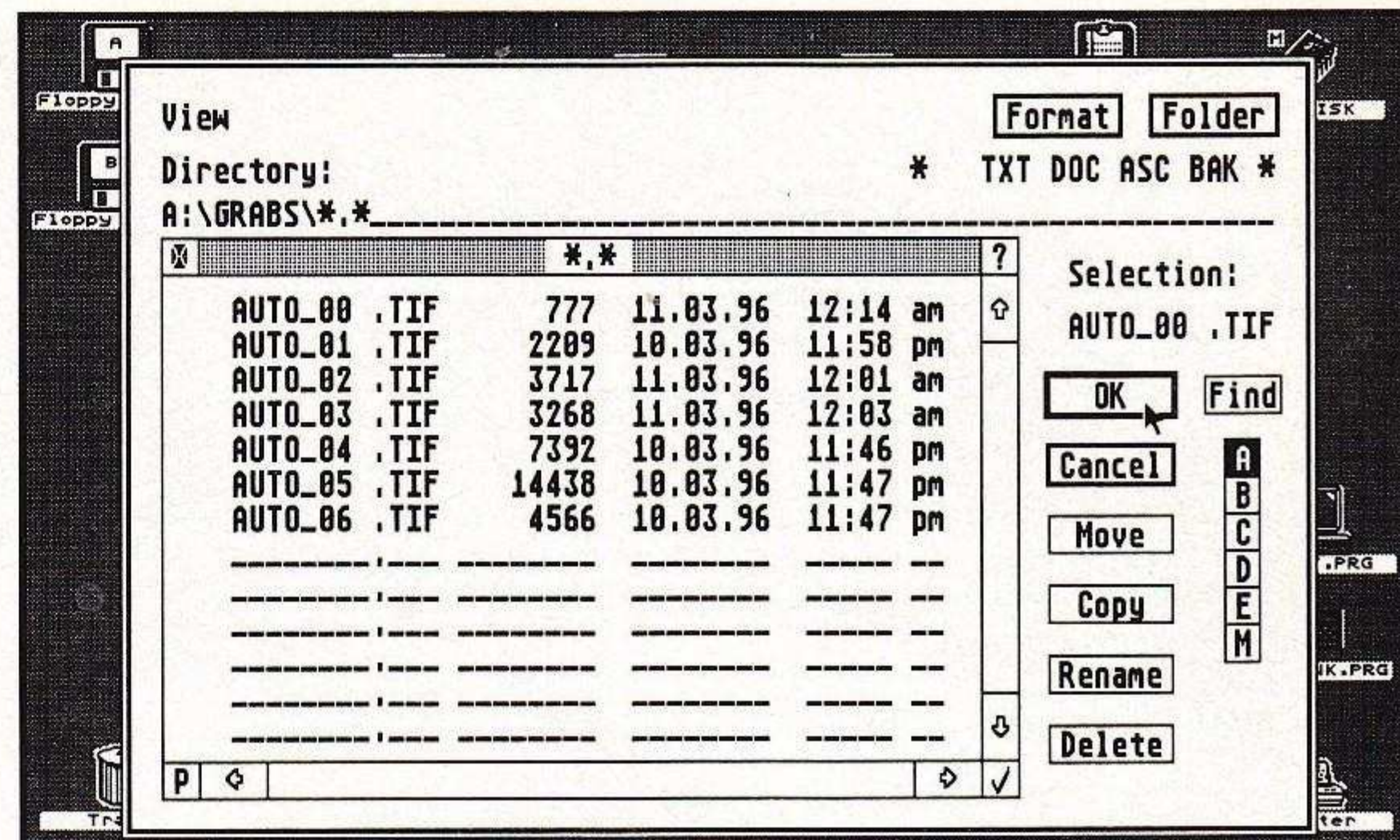
Anything you type into the IRC window is transmitted to the current channel as you hit [Return]. If you need to issue a command, you prefix it with the / character. Here are some of the commands you'll need:

- /join #channelname: Connects you to the IRC channel specified by the #channelname variable.
- /leave #channelname: The reverse of the /join command.
- /who #channelname: Shows who is on a particular channel, whether or not you're connected to it.
- /whois nickname: Tells you a bit about the person using a particular nickname, whichever channel they're currently on.
- /quit: Disconnect your IRC session and leave the STiK IRC client.
- /msg nickname text: Sends a private message to the person using a particular nickname. Anything you type after the 'nickname' entry is sent as the message, for example: /msg tachyon hello there
- /action actionname: Typing /action drinks his coffee will send a message to the current channel saying 'Tachyon drinks his coffee', so you can tell people what you're doing.



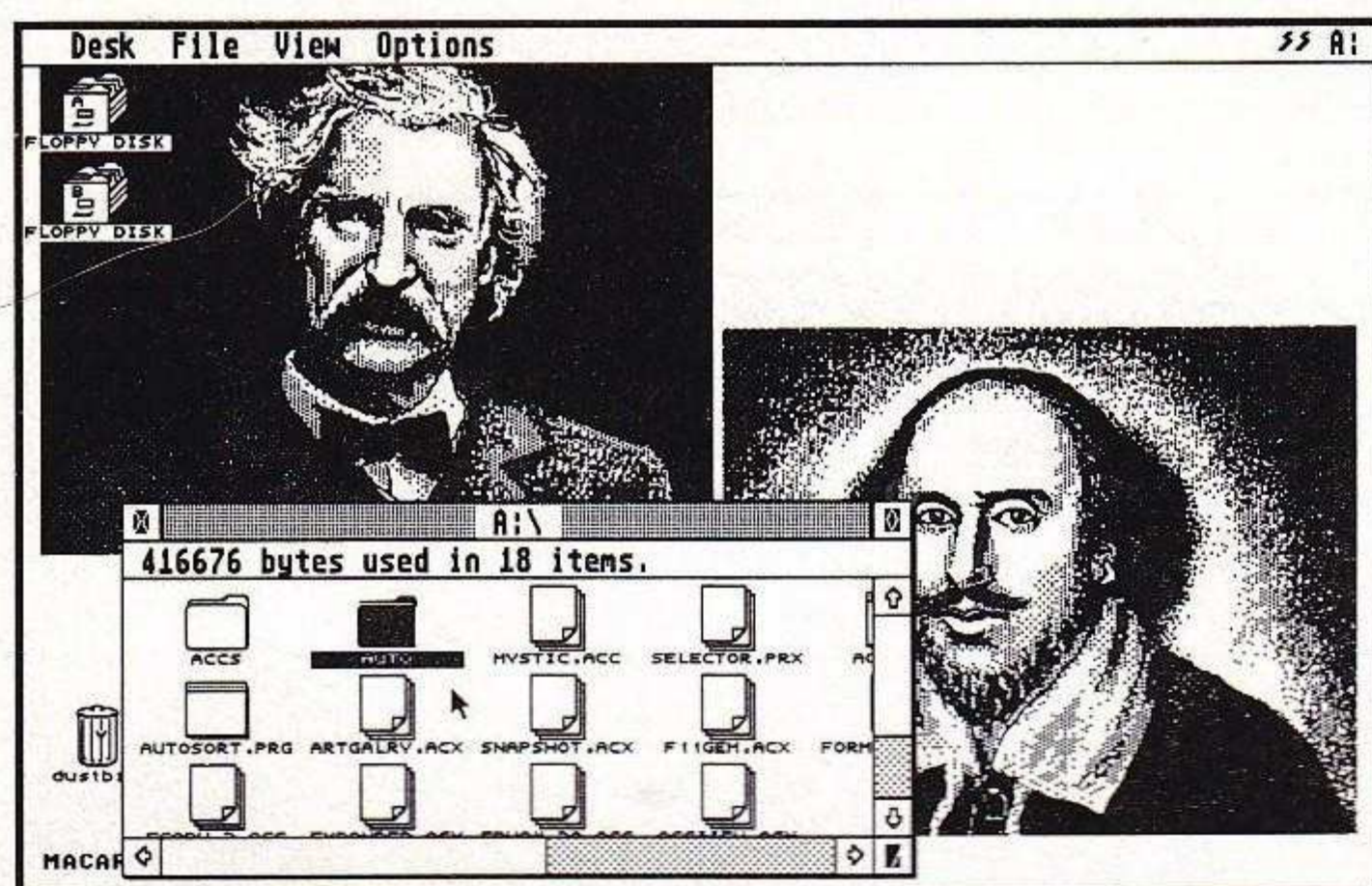
Here's the IRC section of STiK's configuration file.

Absolute beginners



Universal Item Selector can be called at any time using the supplied Desk Accessory. It's well worth £14.95. Contact FaST Club on ☎ 0115 9455250.

The Auto folder on your boot disk can work all sorts of marvellous tricks. Peter Crush explains how to make the most of it.



DEG_DESK puts any mono Degas picture on to your Desktop. Bill and Albert might inspire you to scientific or literary heights, or simply encourage you to spell better.

Your ST has the ability to store programs and files inside folders, those little icons on your Desktop that look just like... folders. When you double-click on a folder's icon a window opens, revealing its contents. It's just like peeping into a conventional cardboard folder.

ST folders are handy because they enable you to keep groups of related files neatly in their place. However,

there is a special type of folder, called the Auto folder, which can be set up on your boot disk. Auto folders perform many useful tricks. (If you don't know what a boot disk is, read last month's Absolute Beginners, which explains all.)

Strangely enough, this handy feature of the ST is very poorly documented in the official handbook and other books on the ST, so not many owners realise the potential of their Auto folder. If the whole thing seems a bit of a mystery, read on, because we're going to explain how to create and utilise an Auto folder. It's very easy, and most of the software mentioned is freely available in the public domain.

The most obvious reason for having an Auto folder is to automatically run programs

you use often, such as your word processor. If it is situated inside your Auto folder, it will run automatically when you boot the ST, rather than waiting until you double-click on it. (Note that unless you have an STE, or an ST with TOS 1.4 or higher, you cannot run a GEM program from the Auto folder. There are ways around this, though, such as *StartGEM* – see below.)

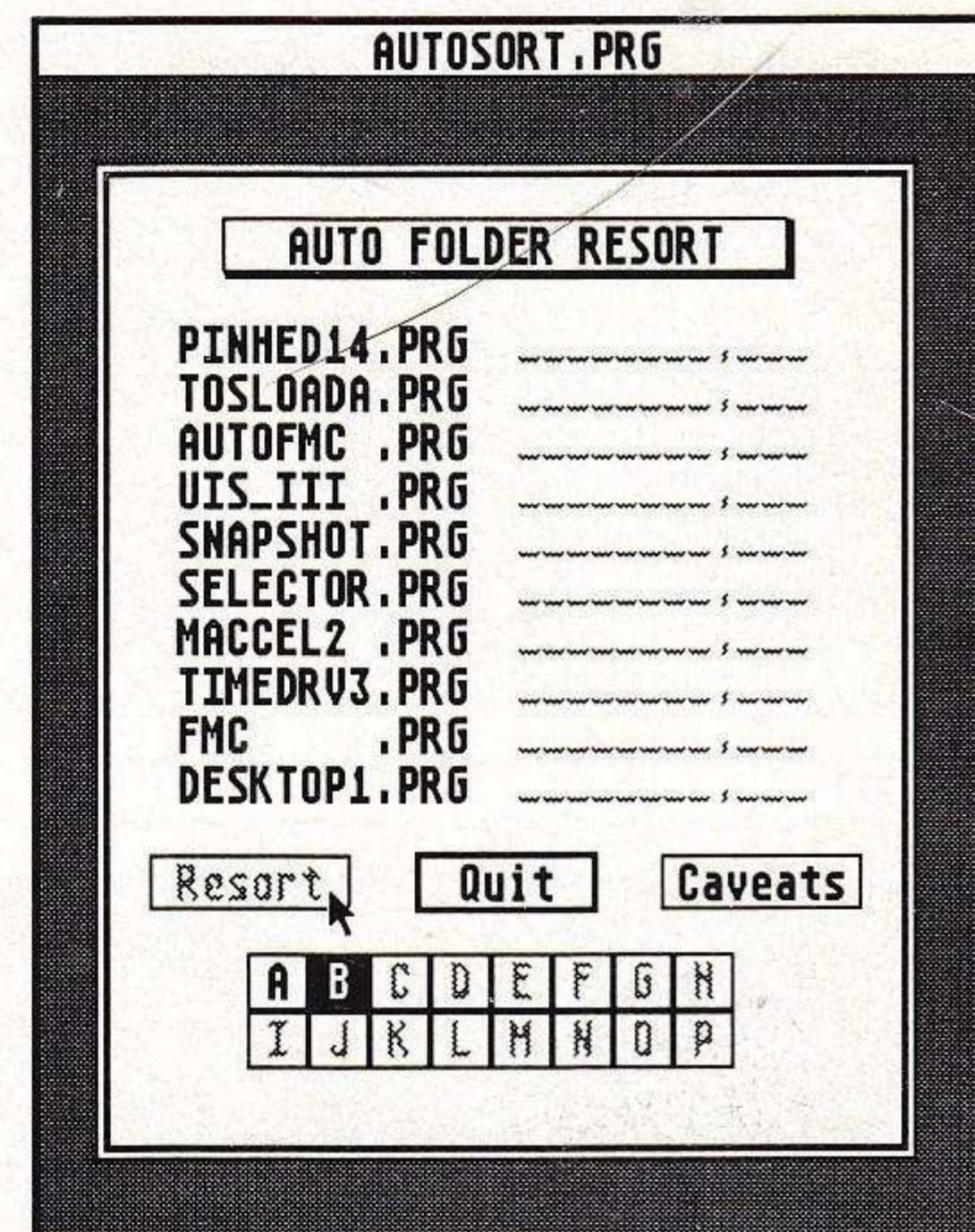
There are plenty of other reasons for having an Auto folder. It enable you to have a number of useful programs load and perform vital tasks, often in the background. Such programs can:

- **Fix a bug:** *Folder Fix* is indispensable if you regularly use a lot of folders. It cures a bug which causes unpredictable behaviour after you have opened more than 40 folders. You'll find a copy on this month's Cover Disk.
- **Add new features:** *Universal Item Selector*, one of many alternative file selectors for the Atari, can be popped into your Auto folder. *UIS* then appears in place of the usual Atari file selector.
- **Enhance performance:** *StartGEM* enables you to auto-run GEM programs from the

Auto folder on pre-TOS 1.4 machines. When loaded it looks for the *STARTGEM.INF* file, which should contain an ASCII text list of the programs you want it to run. *StartGEM* is on this month's Cover Disk.

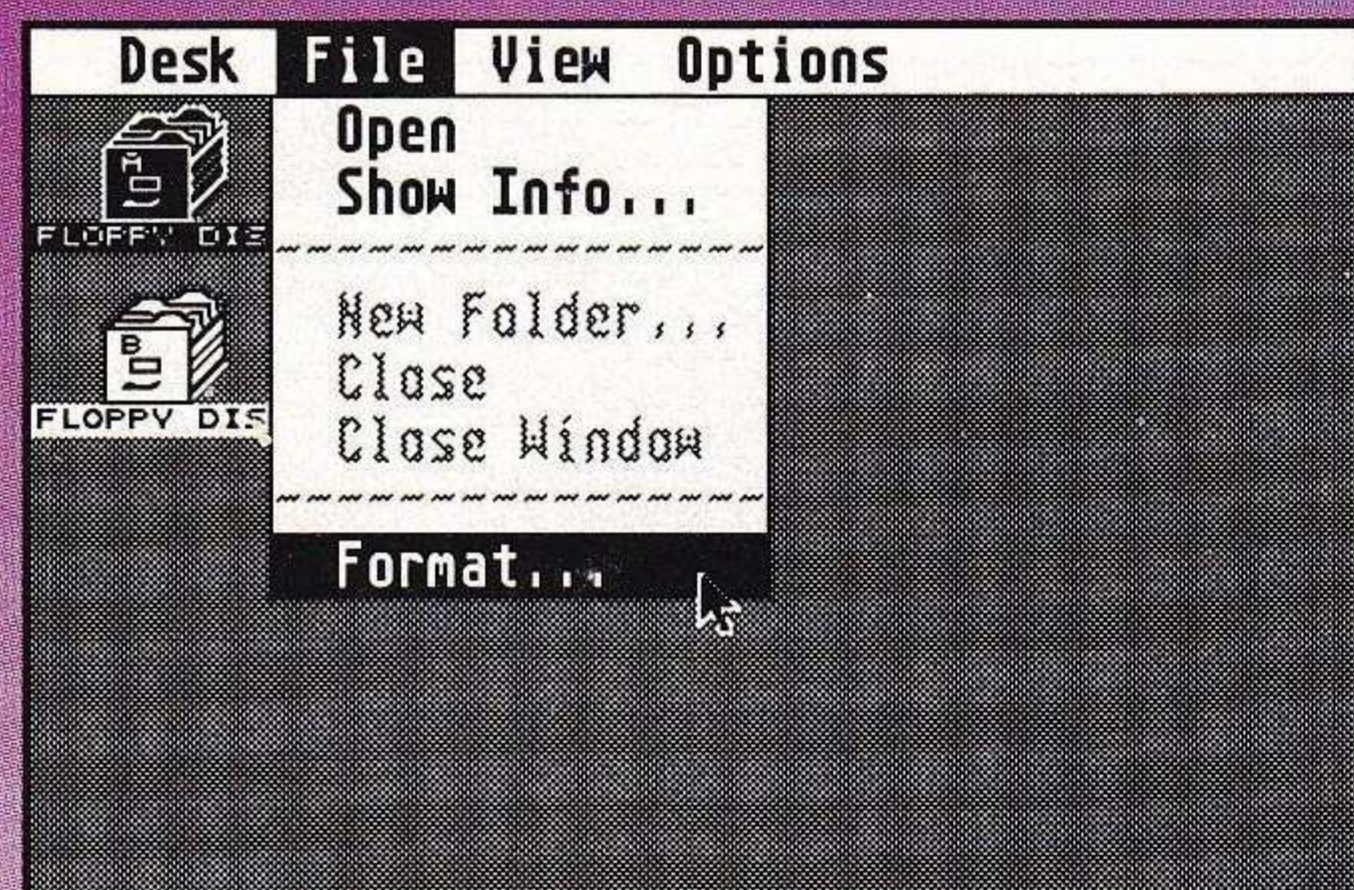
● **Customise your ST:** *DEG_DESK* enables you to replace your boring plain grey Desktop with any *Degas* P13 picture. Your disk drive and rubbish bin icons appear on it.

There are many more useful programs in the public domain. Check through your old Cover Disks, or ask your PD librarian for advice. *stf*

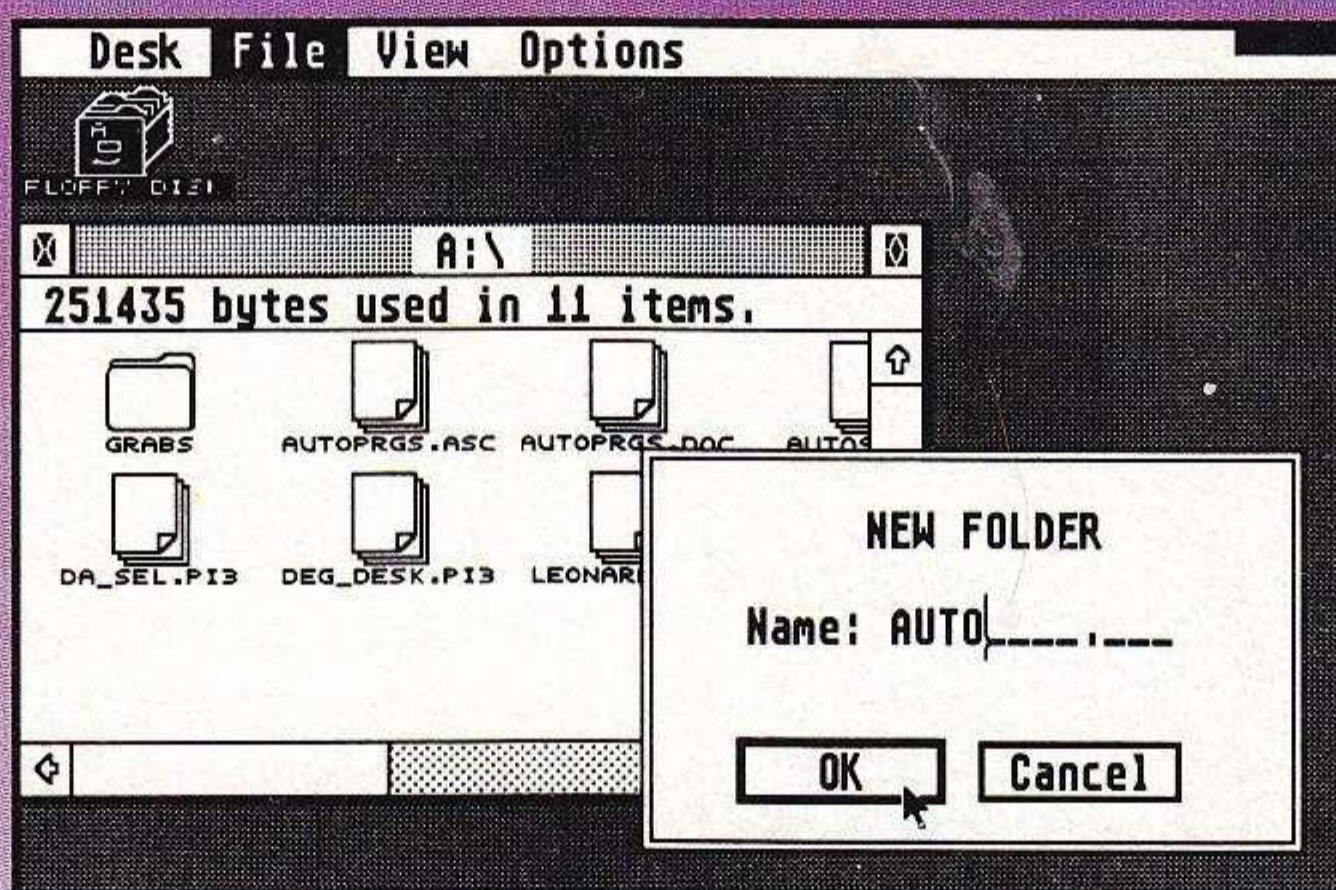


Sorting out your Auto folder is dead easy with AUTOSORT. Just use the mouse to move the programs into the correct order.

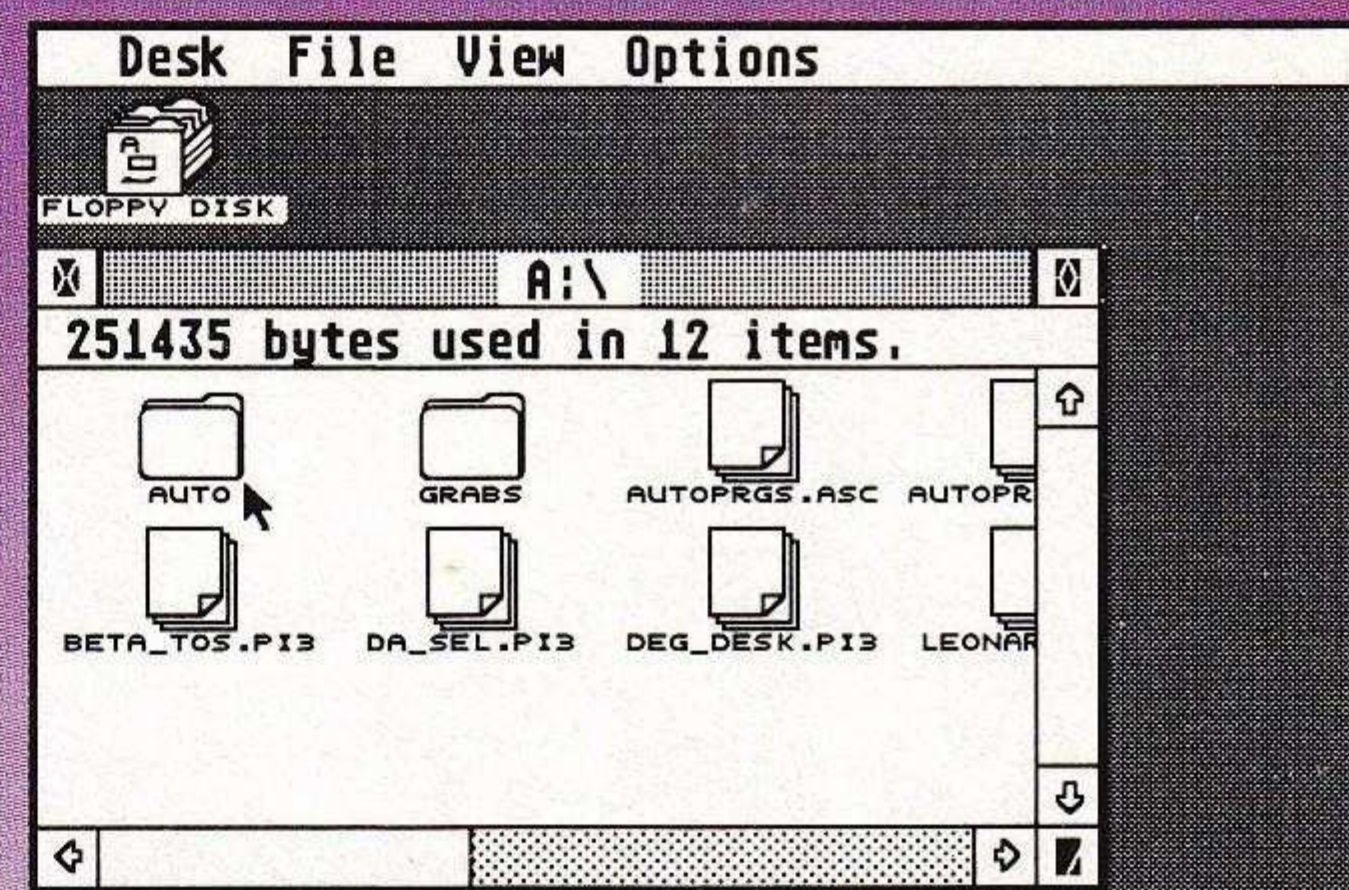
CREATE AN AUTO FOLDER



1 Take your boot disk and put it in your ST's internal drive A. (If you don't already have a Boot disk, use a new blank disk and format it by clicking on the Drive A icon, then clicking on the Format option in the File menu at the top of the screen).



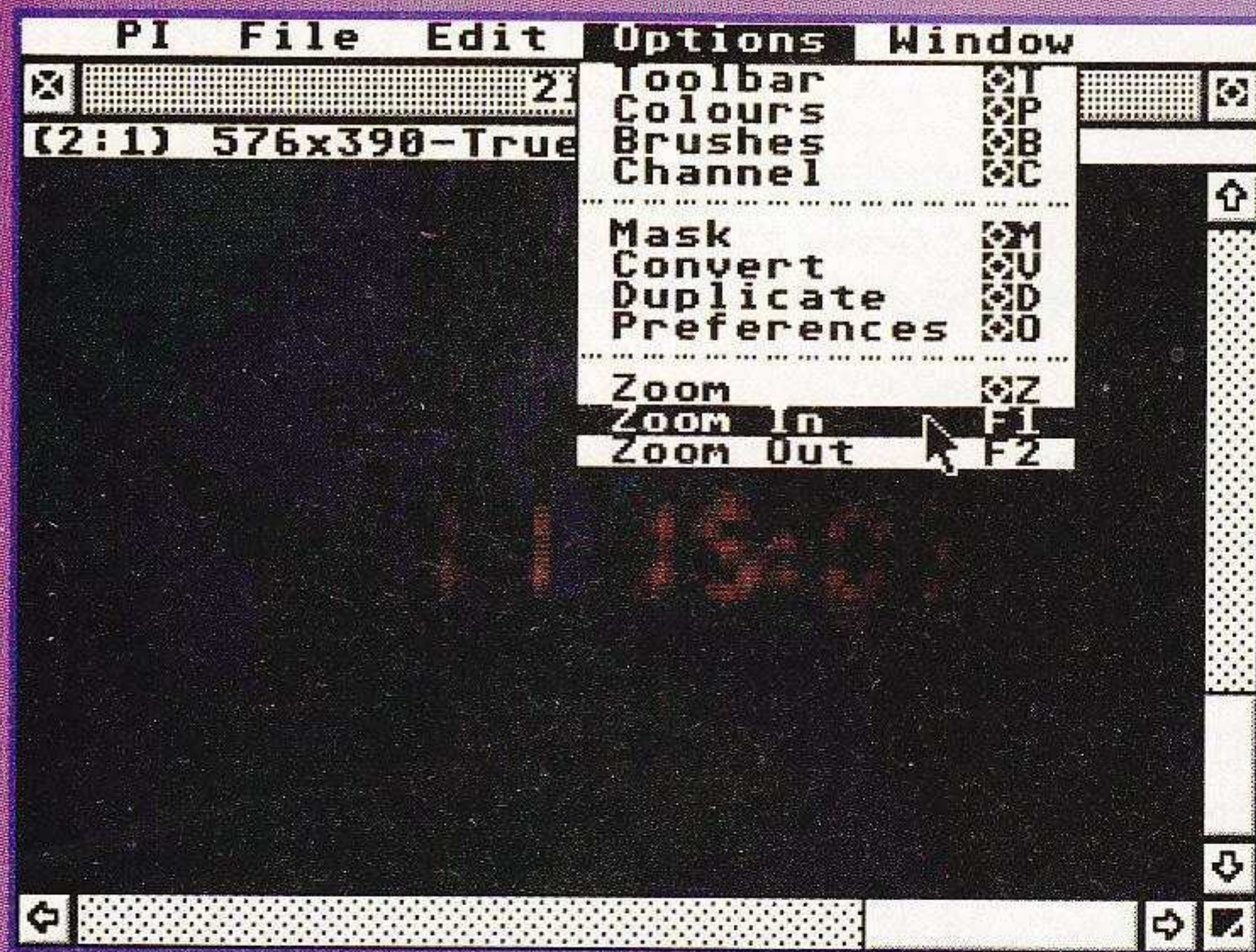
2 Double-click on the Drive A icon to open a window for the boot disk. Click on the File menu's New Folder option. A dialog box appears on the screen. Enter AUTO (in caps) for the name of the folder to be created, then press [Return].



3 A folder called AUTO is created and written on to your boot disk. It appears as a little folder icon in the window on screen. There is nothing inside it yet, but if you copy programs into it, they run automatically when you re-boot your ST.

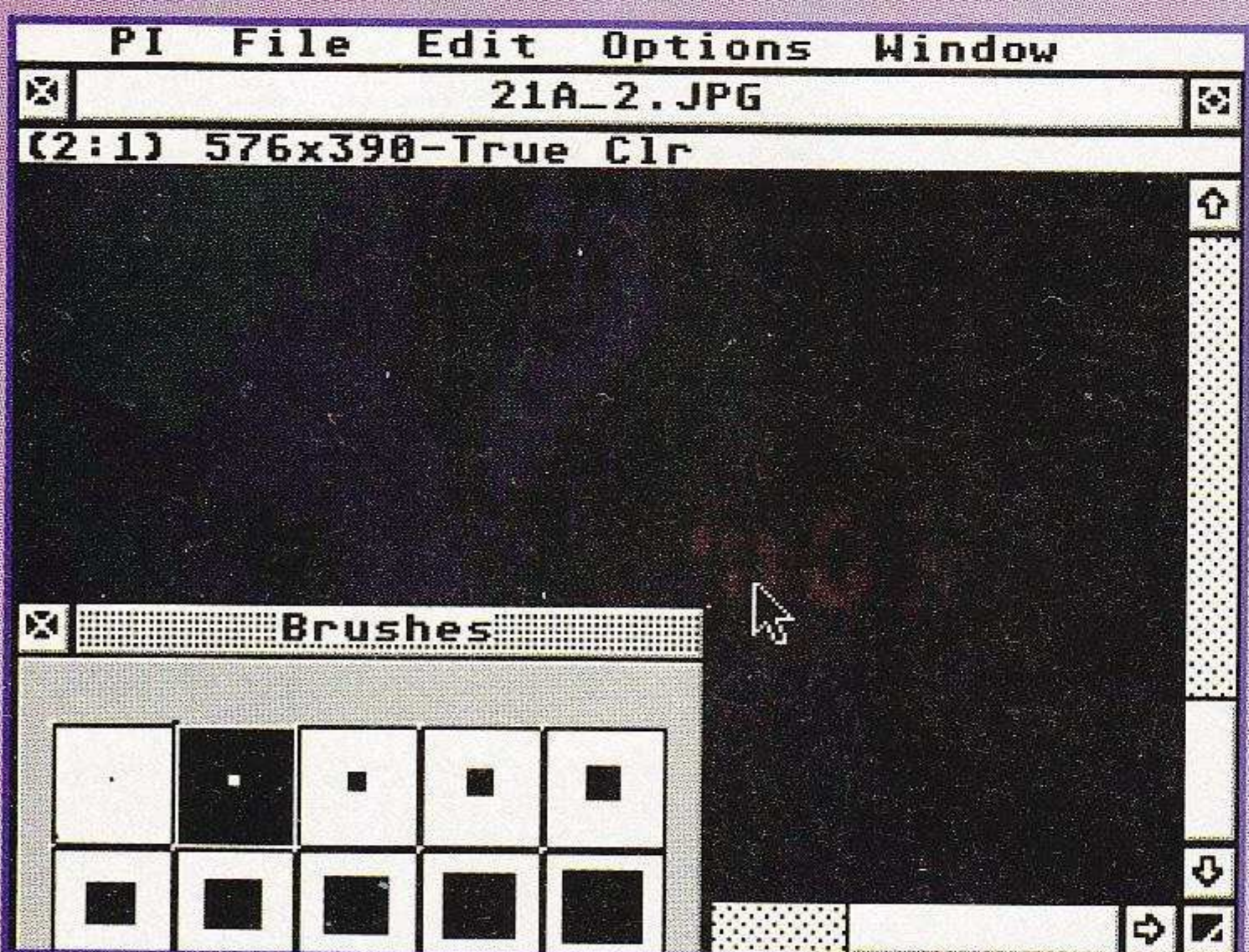
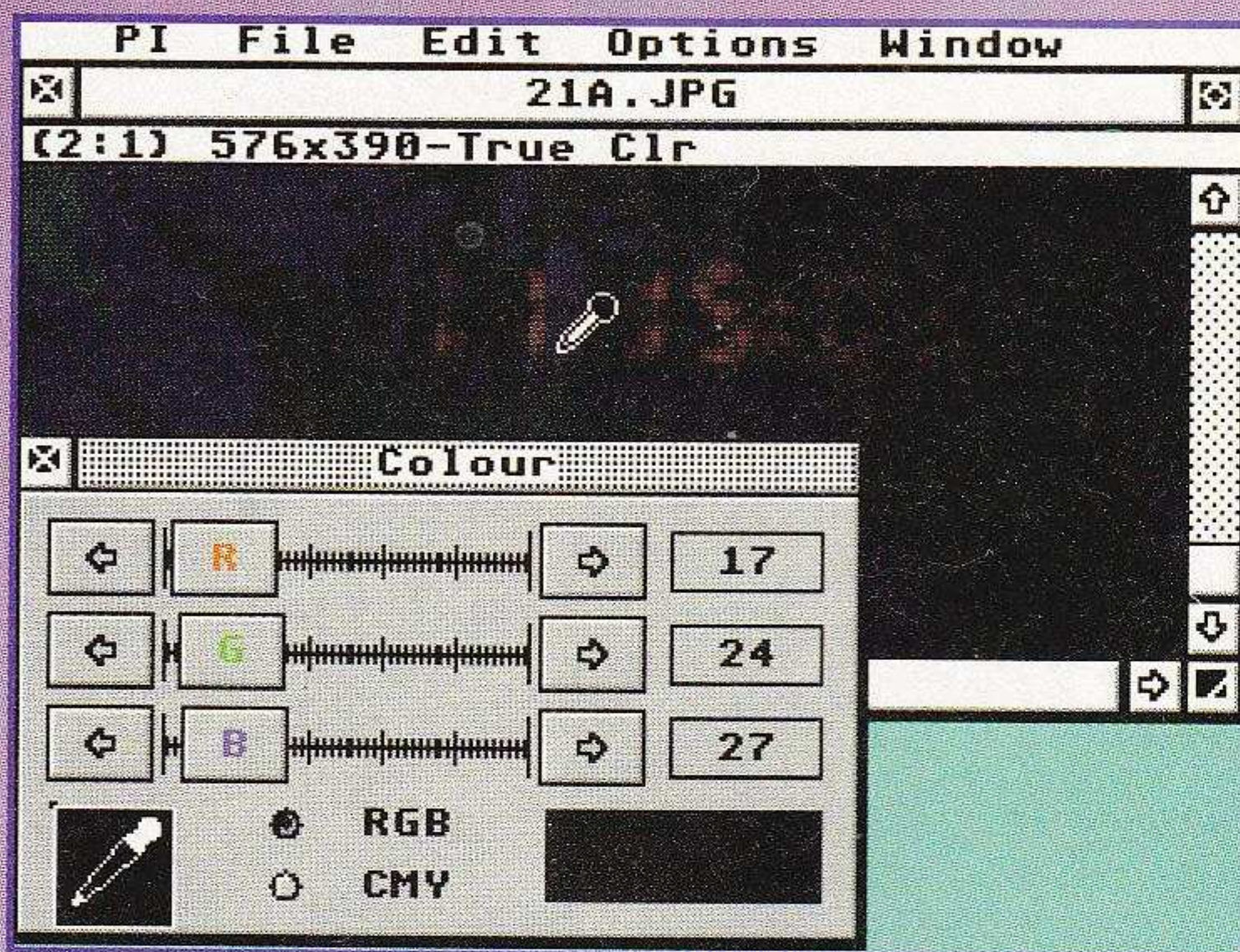
REMOVING MARKS

No photograph is ever perfect. No matter how tremendous your photographic skills or expensive your camera, there are lots of things that can affect your finished image: scratches, dust, blemishes and so on. In this case, the photographer forgot to switch off the camera's databack function, leaving an obtrusive date stamp on each picture. All isn't lost though, because some careful tinkering in *Positive Image* can remove all traces of the unwanted date.



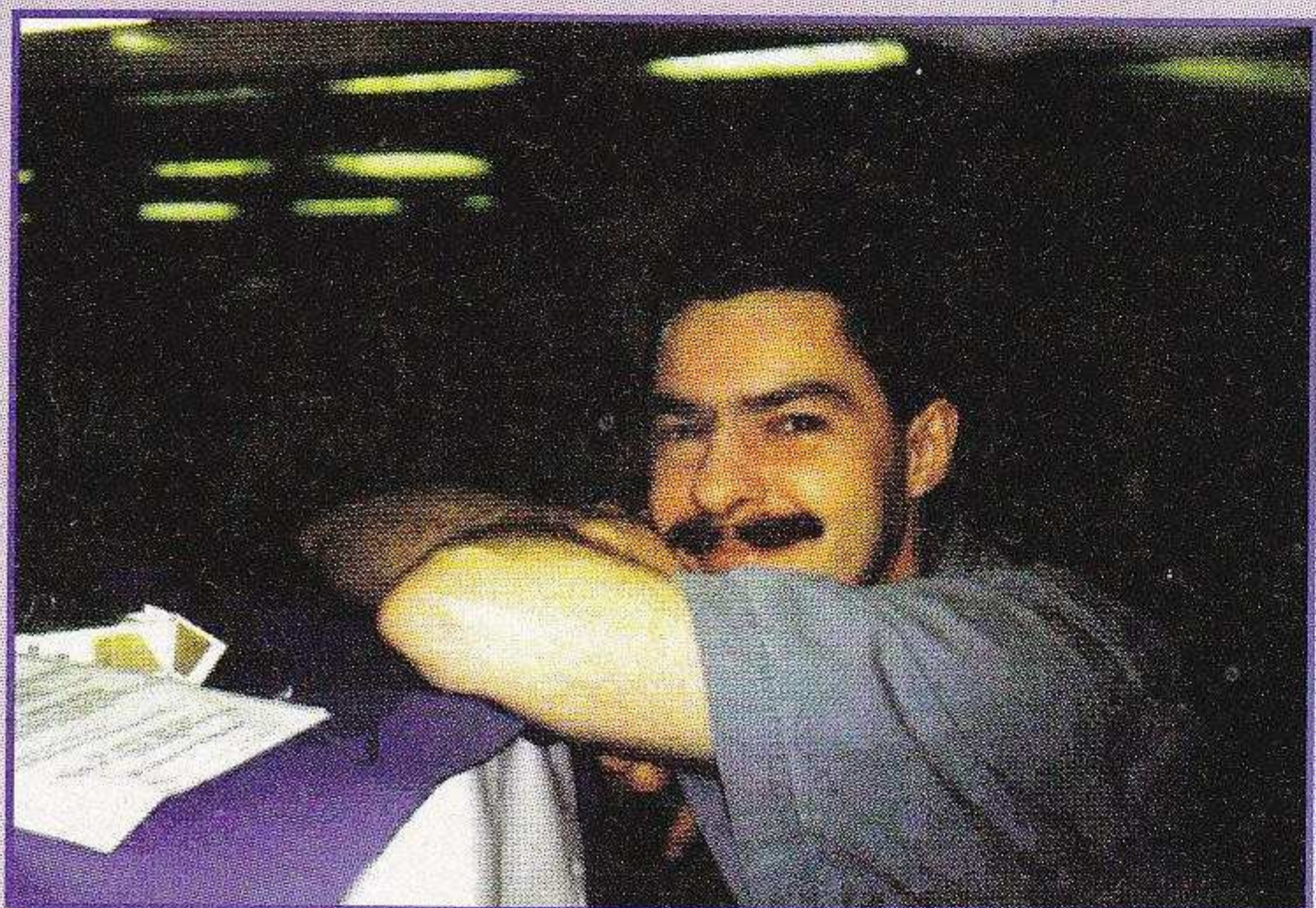
1 We're only dealing with a small area of the image, so we've zoomed right in on the affected part. Press [F1] to zoom in, and adjust the window shape and size so you can see the work area. Don't worry too much about the blocky appearance - it'll all look much better when it is viewed normally.

2 Open the Colours window and click the small eye-dropper icon. This tool picks up a sample of colour from the area of the picture you click on, making colour matching very easy. Grab the colour from the area just next to the blemish. We'll use it to cover up the unwanted elements.



3 Open the Brushes window. Select the size of brush you need - start with a larger brush, then use a tiny brush to touch up blocky areas or sections coloured by mistake. Carefully brush over the blemish, then select a new colour with the eye dropper and blot out some more errant pixels.

4 Eventually, you'll have removed the entire blemish. The full version of *Positive Image* offers other retouching tools, such as the Rubber Stamp, which can 'clone' selected areas of an image - an effective technique for removing larger, more complex blemishes.



Positive images

Remove unwanted elements from your family snaps with issue 80's *Positive Image* demo. Darkroom technician Frank Charlton wipes out Great Aunt Emily...

By now you've had two months to explore the powerful image-editing facilities of Floppyskop's *Positive Image*, thanks to the exclusive demo we gave you on the Cover Disk 80 (turn to page 50 if you missed out).

Positive Image has a large armoury of built-in filters for carrying out standard tasks, and the normal drawing and retouching tools are very useful too, especially when it comes to enhancing an image or removing unwanted details and blemishes.

Ol' red-eyes...

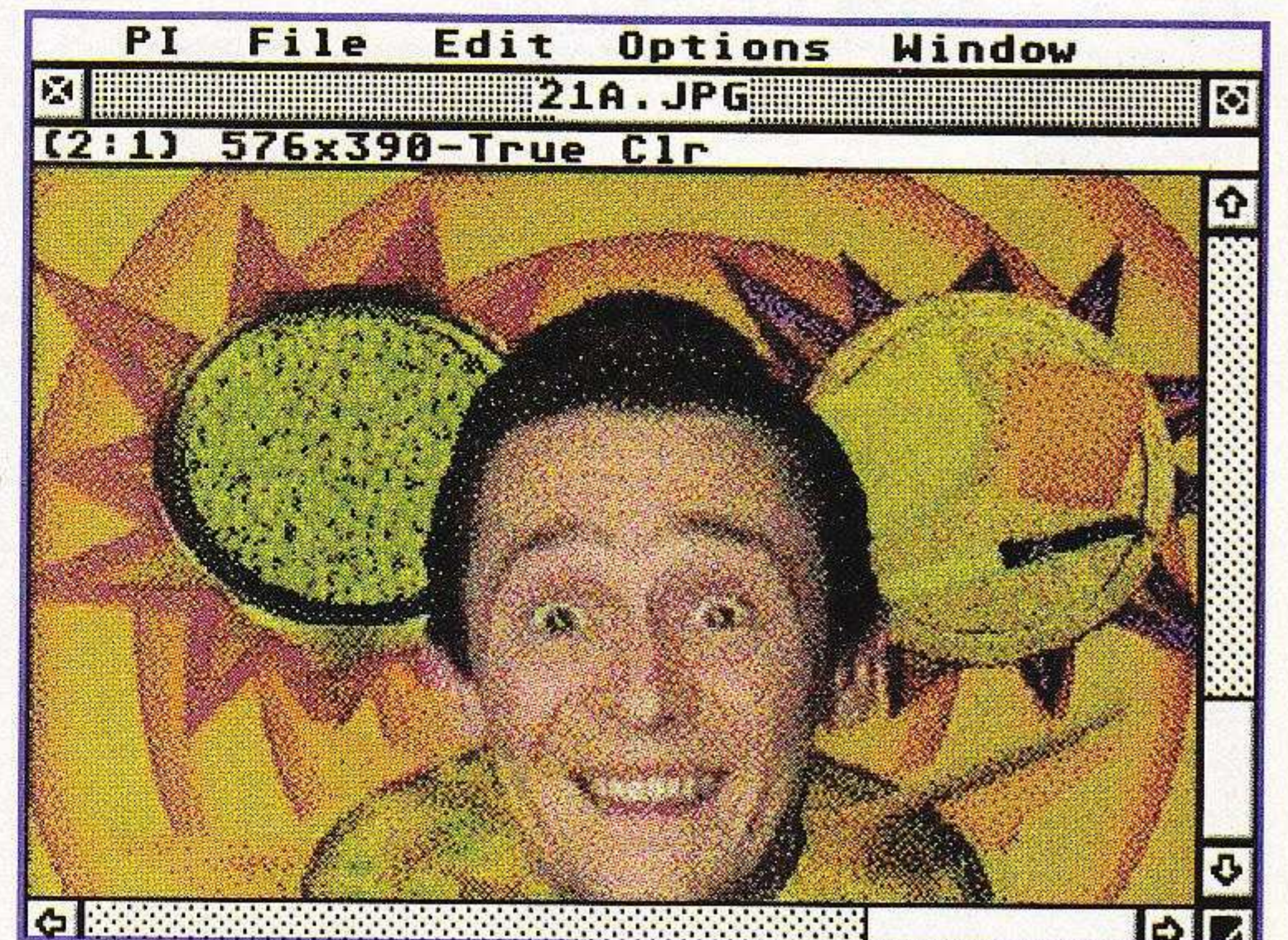
We all have photographs which didn't turn out quite as we intended, whether it be because of dust on the camera lens, a bad batch of film or just poor composition. Once you have a digital copy of your precious family photo, *Positive Image* gives you the power to take complete control over it, effectively enabling you to recreate it in any style you want. Cleaning up dodgy areas and removing blemishes is relatively straightforward and can greatly improve the appearance of your photographs. And if your indoor portrait



While *Positive Image* runs happily on a mono ST, touching up small specific areas of a picture is a bit fiddly - unless you have bags of patience, that is.

pictures suffer from that dreaded red-eye syndrome that makes everyone look like extras from *The Exorcist*, you can do something about it.

Retouching images isn't cheating, either. Admittedly, you can blow the old 'camera never lies' cliché right out of the water with some careful editing, but just about every professional publication makes use of image-editing software. Everyone from us here at *ST FORMAT* to fashion magazines and top-shelf titles manipulates at least some of



ST low resolution reveals the basic colour structure of your image, but a fair amount of guesswork is still required for detailed tasks, such as red-eye removal.

BRIGHTNESS AND CONTRAST

Don't underestimate the effect of simple global operations carried out on the entire image. *Positive Image* provides some excellent tools to tweak

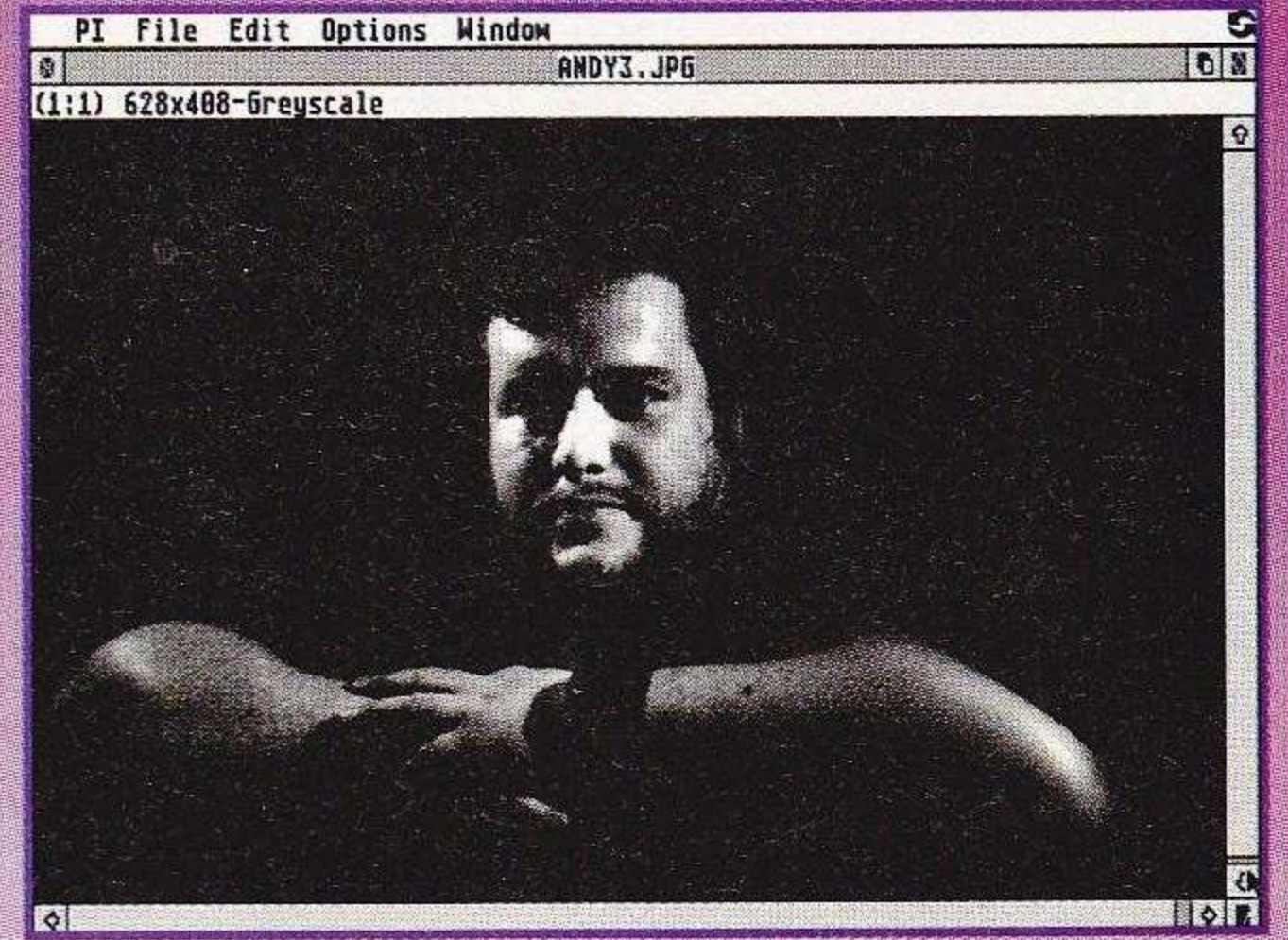
the brightness and colour contrast of a picture, and they're easy to use. Often a few minor adjustments can greatly improve your picture.



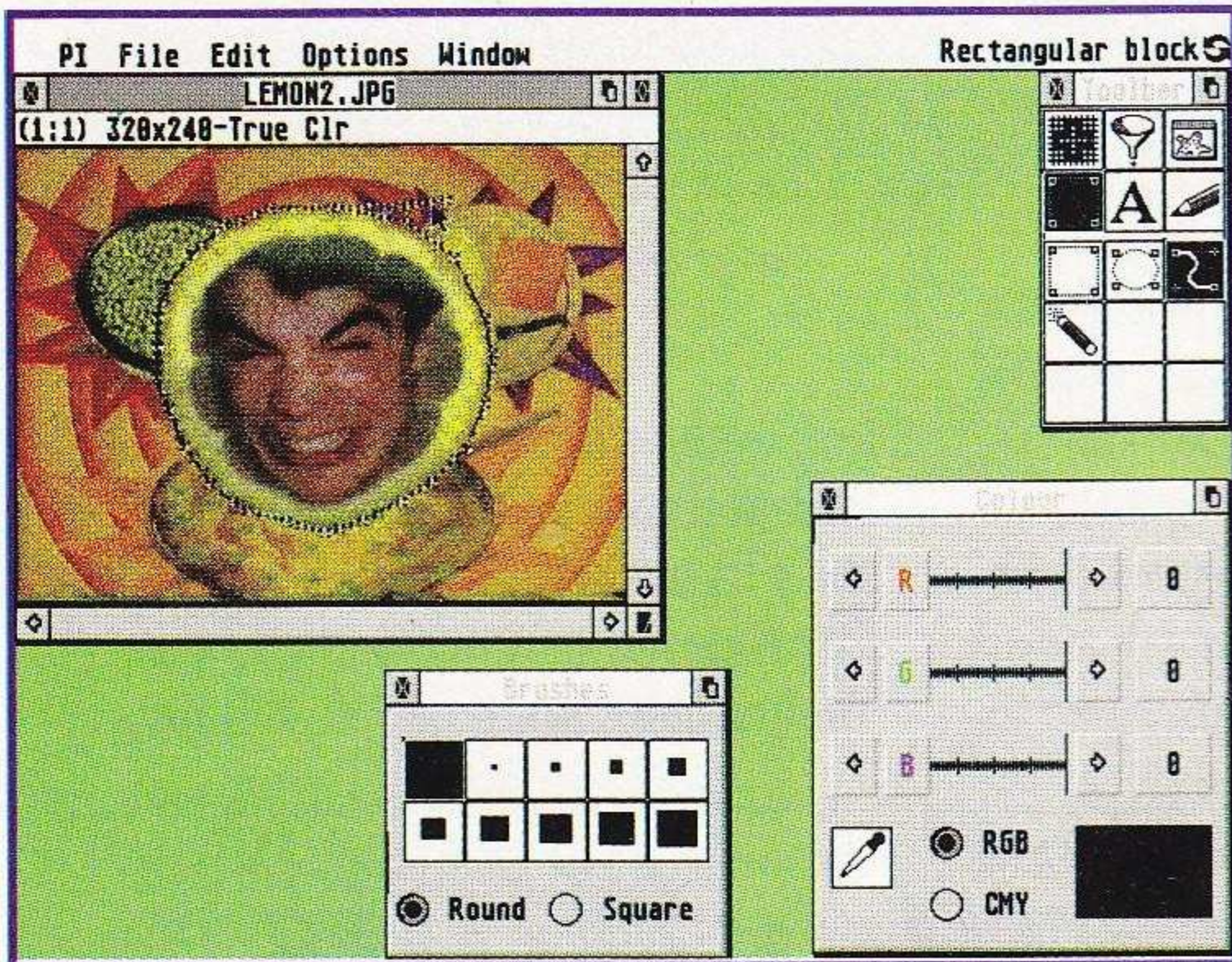
1 As you can see, the initial scan is very light, and suffers from a patchy, dithered appearance. First, use *Positive Image*'s brightness tool to make the image more like the original black and white print. To begin with, adjust the brightness in increments of five per cent – it's best to do it in stages and check as you go.



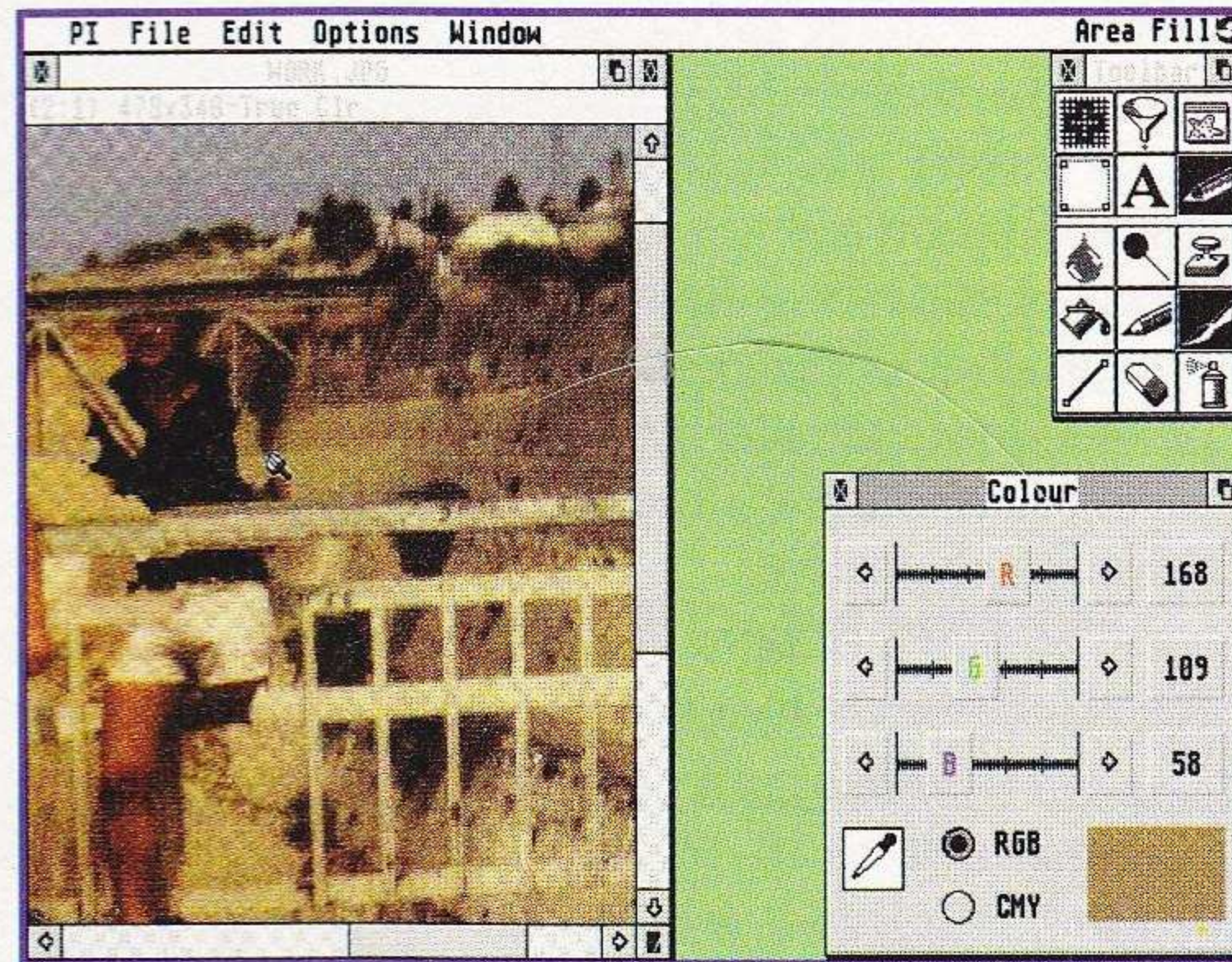
2 Careful use of *Positive Image*'s Smooth filter can work wonders. We've used it more than once to take away most of the image's harshness, producing a much more pleasing effect. Again, do it in stages, because your image can look blurry very quickly if you over-use this function.



3 Use the standard brush tool to enhance the overall effect. Few scanners are capable of reproducing the solid black background of the original print, so there will often be stray dots and areas of gray. With a simple brush set to solid black, paint around the figure to reproduce the stark effect of the original photograph.



With careful use of the Bezier Block function, you can easily paste irregular shapes. Or irregular people, for that matter.



With practice, you can blot someone out of a picture altogether. It takes patience, though. Out, damned ex-girlfriend, out I say.

their images. As long as you aren't faking evidence or official papers (continued in a future tutorial... not), retouching images is a fun and productive way to use your ST.

Sex, lies and images

This tutorial concentrates on using *Positive Image* to remove a small area of unwanted detail from an image. We're using a Falcon because its display is capable of doing the images justice, but the work could be carried out on a standard ST. You really need a bit more patience though, because you'll need to check your work with a viewer which can fool your ST into displaying more than 16 colours. *Speed of Light* from Cover Disk 72 is a good example. You're not limited to *Positive Image*, either – any of the art and image processing packages covered in issue 80's *Altered Images* feature will work just as well.

So how do you get your

photos into a digital format that *Positive Image* can work with? The most obvious way is to use a scanner attached to your ST or Falcon.

Sadly, the only colour hand scanner available for the Falcon, MiGraph's excellent ColorBurst, seems to have vanished from the face of the Earth. It's not all doom and gloom on the scanner front, though. Any standard mono

scanner can produce smart grayscale images if you have a copy of MiGraph's *TouchUp* software, because it can convert a dithered monochrome image into a grayscale one by interpreting the dot patterns and converting them to shades of gray. *TouchUp* is often bundled with hand scanners, including the AlphaScan Plus (£139.99, from First Computer Centre

0113 2319444). Flatbed scanners capable of digitising A4 images in 24-bit TrueColour are getting cheaper all the time, too. Check our round-up in issue 75 for details.

If you have a CD-ROM drive, you can make use of the digital PhotoCD image format. A standard 35mm film can be processed by a PhotoCD-aware photographic shop, producing a disc full of crystal-clear digital versions of your snaps in 24-bit colour. Multiple versions of the same image are available at varying sizes and resolutions, so you can easily find an image that's right for the job at hand.

Candid camera

At a push, you can even point a camcorder at your photo and grab a digital version with a video digitiser, such as Titan's Exposé. You'll need to ensure the light is good, with no stray reflections. You can then follow our step-by-step guides to improve the image. *stf*

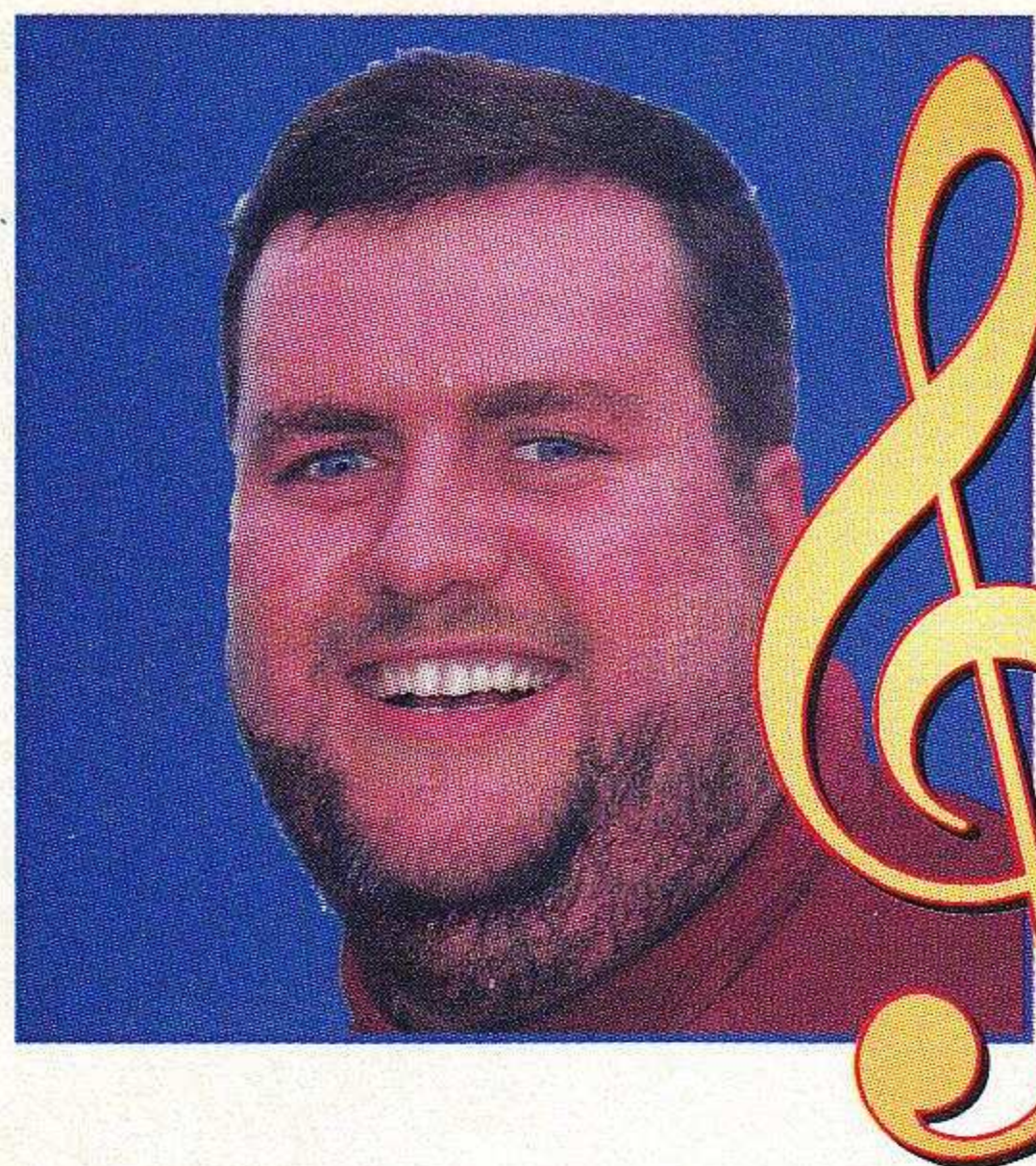
COLOUR OUTPUT

While printers capable of producing true photographic-quality output are way out of the price range of most of us, excellent results are still possible with the modern colour printers. The Epson Stylus Colour 2 (STF 79, 91%), for example, can produce very striking results, especially when used with coated high-resolution paper. Once you've printed a proof copy on normal paper and you're happy with it, a printout to the quality paper reveals all the details.

We regularly review the new breed of colour printers in *ST FORMAT*, so check your back issues and keep your eyes open for the unbiased facts.

Alternatively, you can send your files to a DTP bureau for high-resolution output. We covered bureaux in issue 74.





The Score

Rock on, get down, waggle those hips and get ready for a fearless jive through all your most perplexing musical questions. Andy Curtis spins the disks.

Alesis ADAT-XT

The next generation of digital mastering machines has arrived, in the form of Alesis' ADAT-XT eight-track offering. As with the original ADAT, the XT makes digital recordings of up to eight simultaneous inputs on to a standard S-VHS cassette, which provides up to 60 minutes total recording time.

The new model boasts a host of enhanced features, including vastly improved tape transport control. It now accesses marker points up to four times faster than the original model. The digital audio conversion side is also much

improved, with 18-bit, 128 times oversampling analog-to-digital converters.

The XT is also endowed with a number of digital editing functions similar to those you might find on a direct-to-disk recording system. Tracks can be cloned or sections (such as choruses) repeated at different times throughout a piece.

The real power of the ADAT system is that it is



Alesis' new ADAT-XT takes digital multitrack mastering to new levels of excellence.

expandable: you can add extra ADAT machines and synchronise them, giving up to 128 tracks of multitrack digital recording. If you own the original ADAT and want to buy an ADAT-XT, you'll be pleased to

know the synchronisation system works perfectly between the old and the new machines. For details, contact Sound Technology on ☎ 01462 480000.

MixPad 9

Modern mixing desks add very little noise or distortion and the control they give is absolutely vital. If, however, you have a very limited setup with just a few sound sources and do all your multitrack mixing via the computer, you don't need a big and bulky professional mixer. Up until now the alternative has been a low-end public address mixer, which never quite fits the bill.

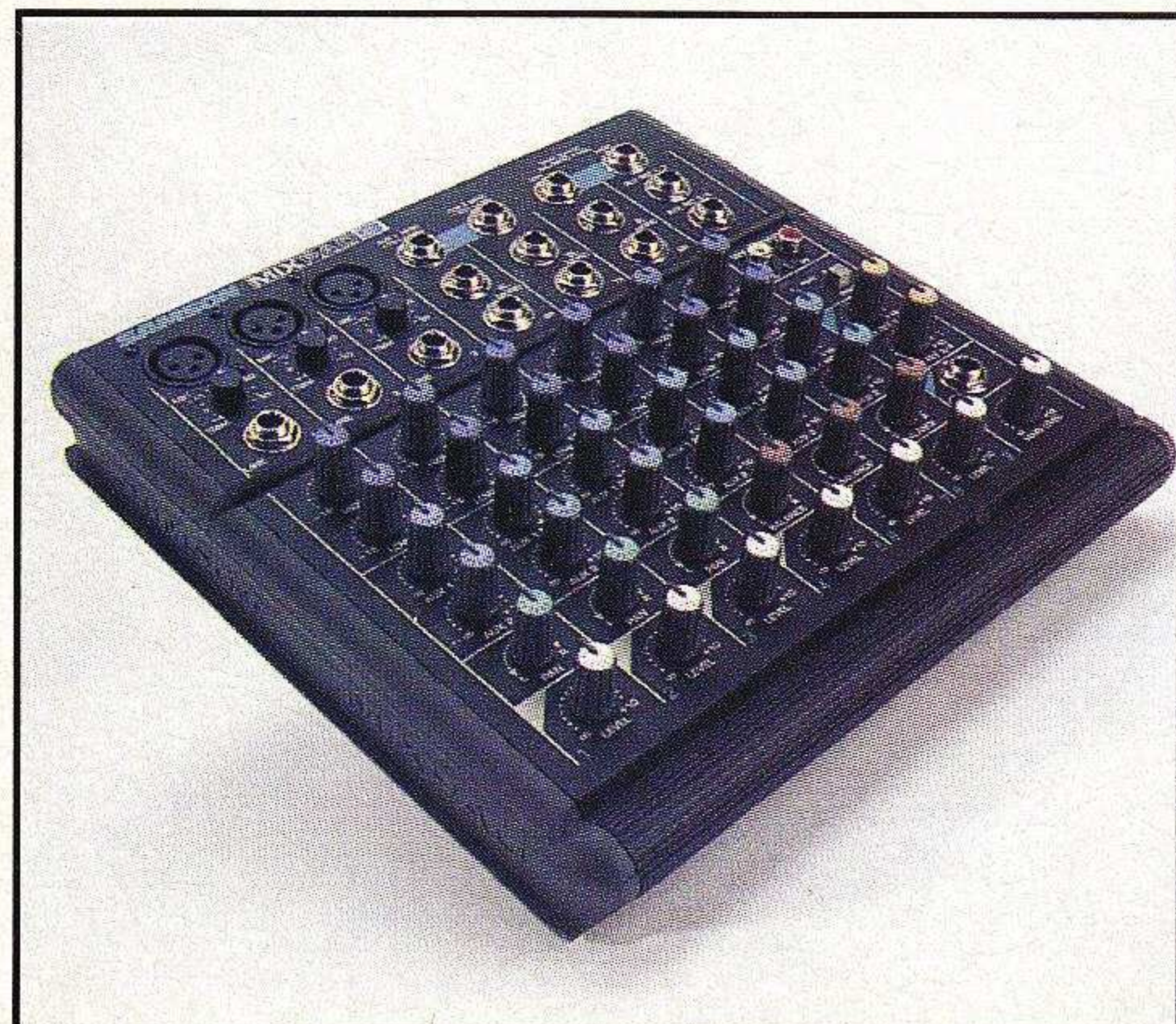
The MixPad 9 is set to change all this forever. It is a fully self-contained stereo

recording mixer that will easily fit on your desktop. It has three mic or line inputs and three stereo inputs, giving a total of nine channels. Each channel is equipped with treble and bass EQ and two auxiliary sends, for effects loops.

Unlike PA mixers, the MixPad 9 features phantom powering for condenser mics. This makes it a viable vocal recording mixer, which is handy if you mix direct to hard disk on a Falcon.

The biggest marvel, though, is the MixPad 9's price tag: a wallet-friendly £199. Look out for a full review in The Score very soon, or contact Sound Technology on ☎ 01462 480000 for further details.

If you need a powerful mixer for stereo and mic sources that's easy on the pocket, the MixPad 9 could be the answer to your prayers.



Quick questions

SILENCE IS...

Q Cover Disk 79's *Breakthru* sure is impressive. However, when I load a piece of music, and press the Play button, I don't hear any sound! *Breakthru* is supposed to output sounds through the speaker in the monitor, right? How do I turn up the volume? Please explain!
Aljo Wijnands, Netherlands (via e-mail)

A We're delighted that you like *Breakthru*, Aljo, but you seem to have made one of the most common mistakes in MIDI sequencing. When you load a sequence into *Breakthru*, it outputs data through the MIDI OUT port on the left-hand side of your ST. This information tells your synth or module which notes to play. It is not sound data.

To get sound from your ST, you have to associate a track of MIDI data with a sample which you have previously loaded into the program. The MIDI track

then 'plays' the sample as if it is an external sound source.

Breakthru enables you to load up to four samples and play them back via standard MIDI tracks. This feature can be very useful if you want to include voice samples or sound effects in your music. Using samples as musical instruments is less than ideal, but you can get it to work, to a limited extent, if you choose your samples carefully.

YEA OR NAY?

Q I hope you haven't been pestered by all and sundry since your article in the January issue, but as a lonely outposter who doesn't read *ST FORMAT* until almost two months after UK readers, I must ask – any news of the DSP cartridge? It is the most exciting 'rumour' I've heard since... the last exciting rumour. Seriously, it would be so good to have digital audio recording on the ST.

The other thing I'm holding my breath over is whether



RACK THAT FALCON

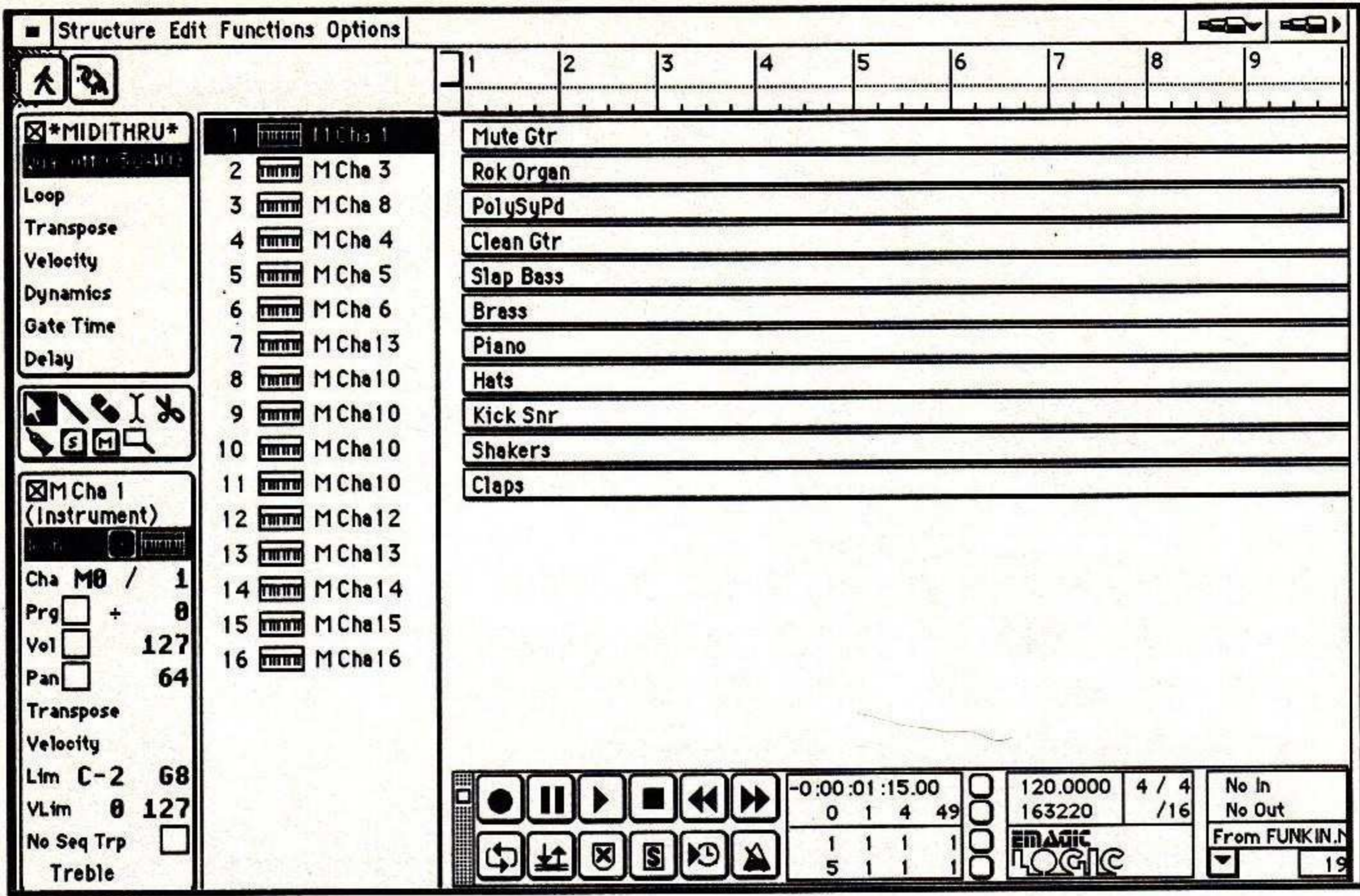
Many musicians like to have their gear in nice neat racks, rather than cluttered around on a desktop, so a rack-mounted Falcon is an attractive idea. The Space Case system enables you to mount the contents of your Falcon's case into a rack with a separate keyboard. If you have an extra SCSI hard drive mechanism, you can also use the supplied cables and fixing brackets to mount it inside the case.

Once the case is assembled your cartridge ports and MIDI ports are at the back and a single

cable leads from the case to the keyboard. Unfortunately, the FreeKeys keyboard still has the mouse ports located underneath it, so it is not completely independent. There are other keyboard systems available from System Solutions, but these cost a little extra.

You can also have your Falcon fitted into the Space Case for an extra £50.

● The Space Case, from £284.75
System Solutions
☎ 0181 693 3355



Logic 2.5 has particular appeal for owners of previous versions, but it's also suitable for those who want to launch into top-level sequencing from scratch.

it will be compatible with Notator SL, which is notoriously unfriendly to lots of other software. If it is compatible, I guess I'd need a double cartridge adaptor to accommodate the Notator dongle. I would appreciate any news you might have.
Ariad Wright, Australia
(via e-mail)

A According to the developers, work is in hand and there should be news very soon now. What I can tell you is that the direct-to-disk recording through this DSP cartridge will only work with the custom software, and not with any existing software packages.

You're right, though, it is a very exciting development and we are looking forward to printing a full preview as soon as more details are available.

LOGICAL?

Q I use Logic Audio on an Atari Falcon 030 (I think it's better than Cubase Audio), but I have synchronisation problems when I play more than four audio tracks. Do you have any solution? And is it true that Emagic is going to abandon the Atari market?
Albini Walter, Switzerland
(via e-mail)

A The good news is that Emagic has produced version 2.5 of Logic for the Atari ST and Falcon. It includes most of the features found in the Mac and Windows versions. If you are a version 2 owner and want to upgrade, you should give Sound Technology a ring on ☎ 01462 480000.

There is no definite word on whether this version of Logic Audio will also be upgraded, but we'll have news on that very soon. Emagic will continue to give support to its new product, although it does acknowledge that the market share for Atari products is bound to continue diminishing, because new machines are getting scarce.

Your playback problems are indicative of the inconsistencies in Atari Falcons. If you use one of Atari's machines (rather than a C-Lab Falcon), you will need all the available upgrades to ensure the best possible performance. It is also important to have TOS 4.04 for greater stability.

System Solutions does a complete Falcon hardware upgrade to optimise the machine for audio use. The audio upgrade MOD changes the audio input socket to standard line level (instead of mic level) and removes the unwanted bass boost feature. Also included is a CPU Clock Buffer modification which vastly increases SCSI port reliability. The complete

modification costs £99.95 and the upgrade is not a DIY job, so you will need to send your Falcon off to System Solutions. Call ☎ 01753 832212 for details.

It is important to have the 14Mb RAM upgrade if you are using audio extensively. You should also check that your hard drive has fast access and data transfer times. Figures of 11ms and 2.5Mb/s respectively are acceptable for audio applications.

MID OR MOD?

Q I consider myself fairly experienced with MIDI equipment and sequencing on an STE, but I am starting to develop an interest in writing music for computer games. I have written music for a game on CD-ROM which, from a musician's point of view, was easy; it just involved mixing the finished tunes on to DAT.

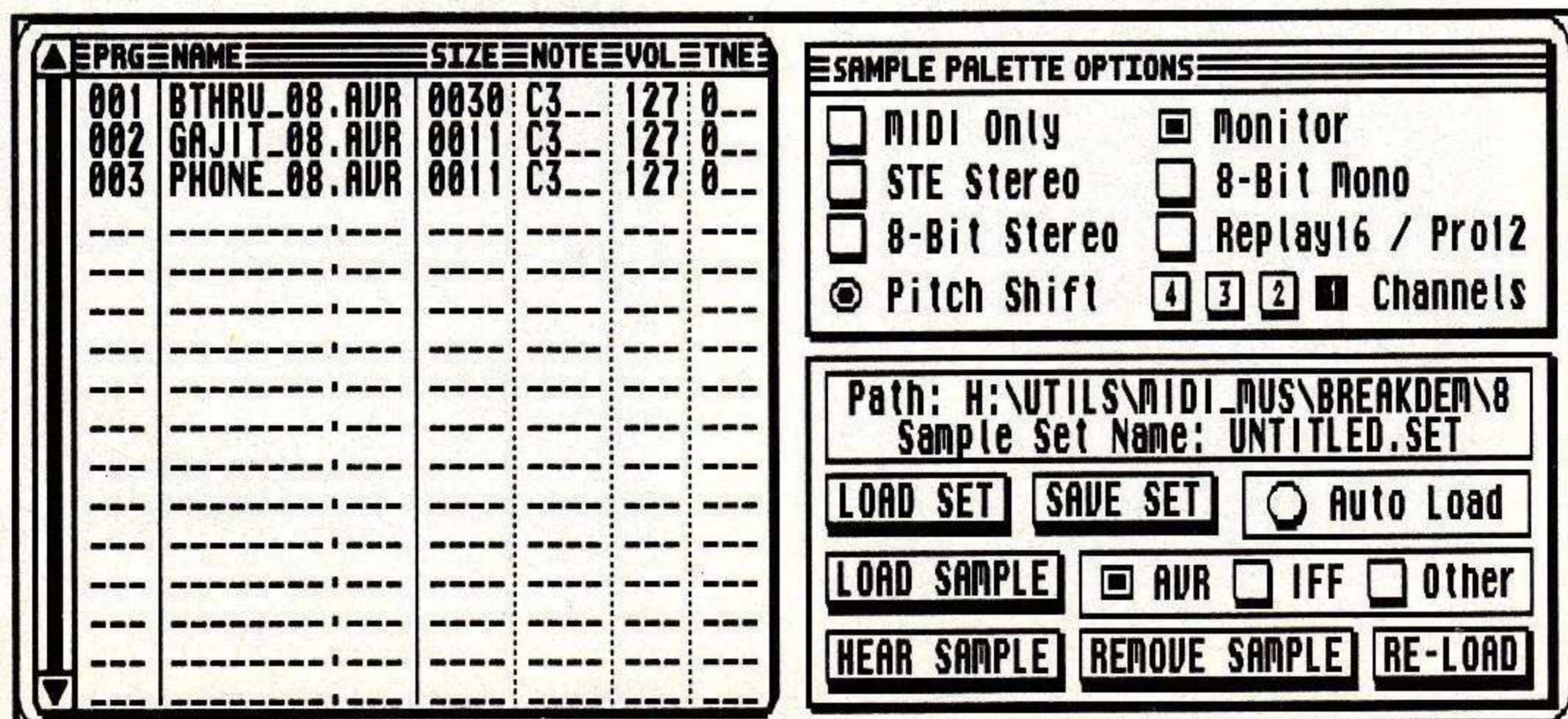
However, I know very little about writing and programming music for disk-based games. Would it be possible for you to recommend some commercial or PD programs to help me learn how to do this? I have tried various tracker programs, but as I am used to Notator, I haven't found one that impresses me. What do you suggest?
Chris Schmidt, Suffolk

A You are experiencing a very familiar problem, Chris. The truth is that writing music for computer games is very different from settling down with your favourite sequencer for a composing session. Some MIDI musicians find that they simply cannot adapt to the vastly different approach. Likewise, computer music makers often struggle to make sense of a standard MIDI setup.

There isn't a big market, in the commercial sphere, for computer music, so there are very few commercial programs and certainly none that could truly be labelled 'professional'. That said, one program which might help you considerably is Digital Tracker (£49 from 16/32 Systems, ☎ 01634 710788).

This program deals intelligently with MOD files and facilitates detailed editing of the samples and your sequences. You can use a MIDI keyboard to enter data and the program has made a good name for itself among computer musicians. An added bonus is that it runs in enhanced mode on a Falcon as well as running on your STE. stf

Send your MIDI and music questions to Andy Curtis at: The Score, ST FORMAT, 30 Monmouth St, Bath, Avon BA1 2BW or e-mail them to: Andy@adlib.co.uk.



Breakthru can use samples to play MIDI parts, but you must load and assign them carefully.



Digital Tracker is the nearest thing to a professional MOD file editor for the STE or Falcon. It facilitates detailed editing of samples and sequences.



Reader offers

If you wish to order by credit card or have any queries, please ring the Hotline on ☎ 01225 822511

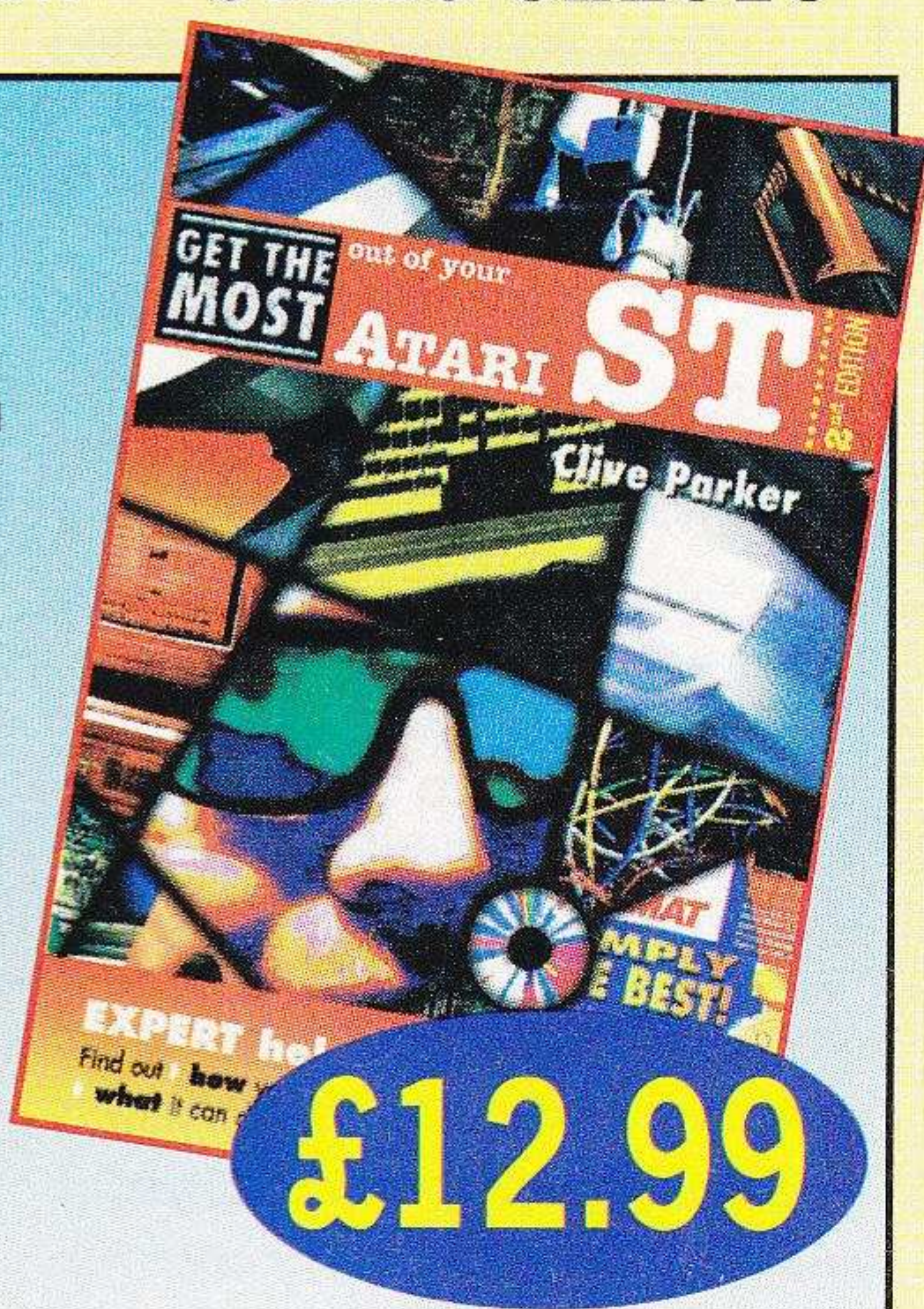
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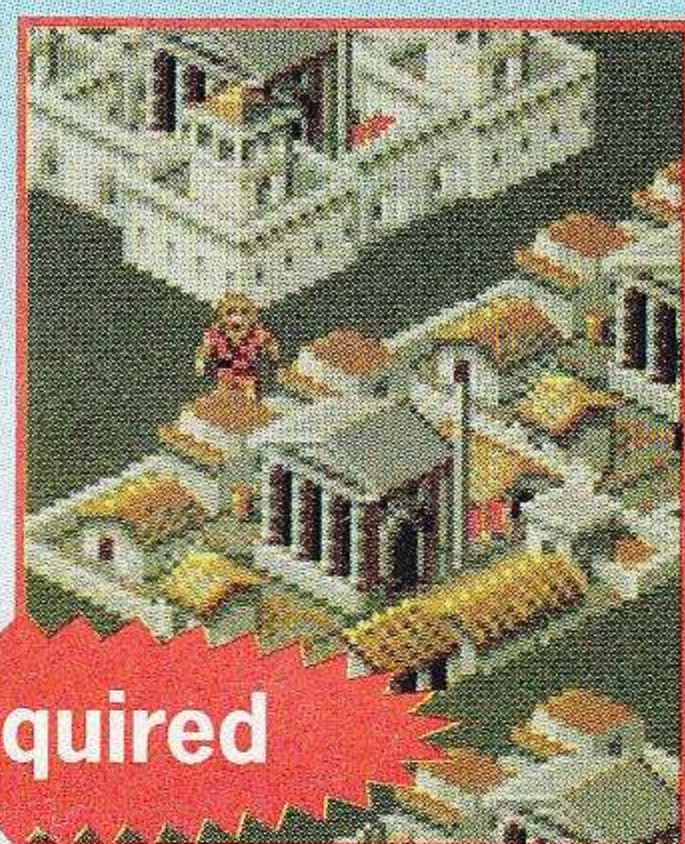
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Set yourself up as a deity in the best god game ever programmed, then battle for religious supremacy by wiping out your opponent's worshippers with malicious acts of god. *Populous 2* has great graphics, crisp sound and 500 levels. It scored a massive 95% in issue 30.

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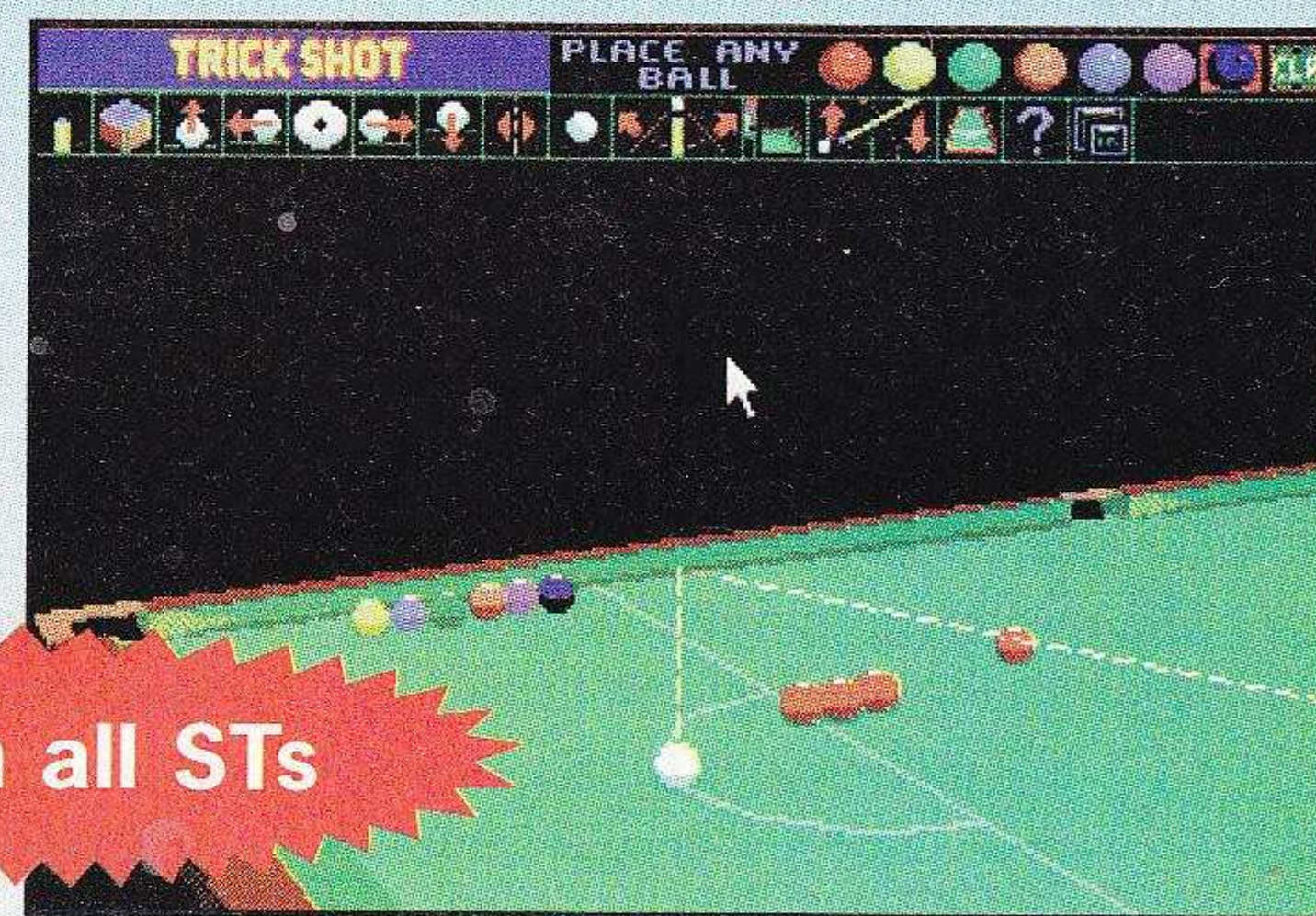
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JIMMY WHITE'S WHIRLWIND SNOOKER

VIRGIN

More enthralling than a Steve Davis 147 break, weirder than Dennis Taylor's glasses and funnier than Ray Reardon's haircut - if you're looking for a snooker simulation with a difference, this is for you. Realistic sound, cute animation and the stunning real-world physics engine will keep you returning again and again. And with a trick shot editor and two-player option, this is a game that has all the angles covered.

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Disk: CAB, Zaptastic, The Espers
Inside: The Internet; Desktops; Text adventures
Reviewed: Vision, EZ Drive, PageStream 2.2 SE, Power Drive Rally



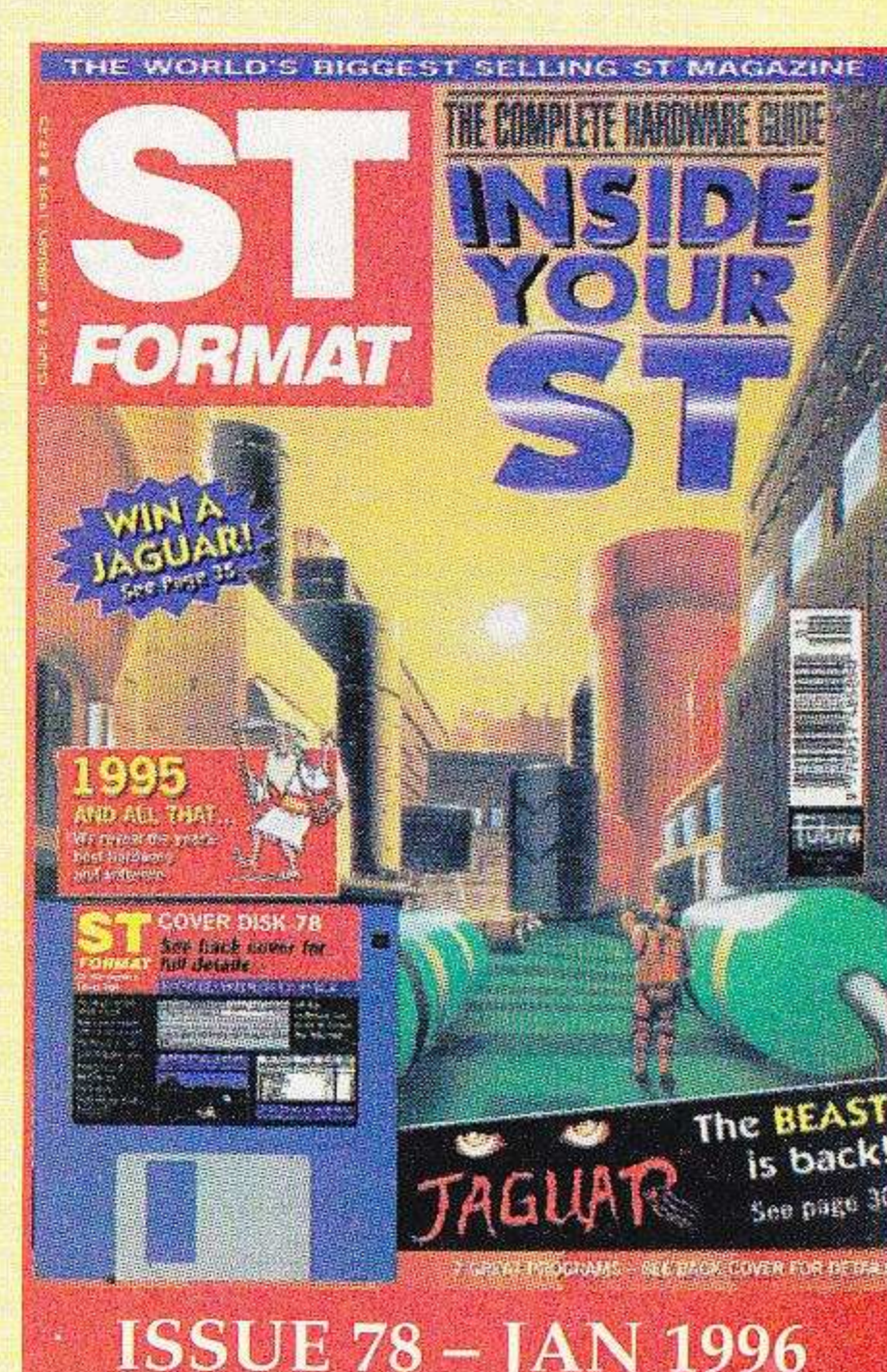
ISSUE 80 - MAR 1995

Disk: Positive Image demo, Deadland
Inside: Image processing; 3D
Reviewed: Strip Cartoon, Time Talk, Textstyle 1.1
Tutorials: HTML, Breakthru



ISSUE 79 - FEB 1996

Disk: Breakthru demo, Trapped 2
Inside: MIDI masterclass; Atari interview; ProTOS
Reviewed: Ease 4, Linux, GAS
Tutorials: HTML, DSP



ISSUE 78 - JAN 1996

Disk: World Wide Web pack, Killing Time
Inside: Inside your ST; Annual review
Reviewed: Twist 3, Apex Intro, DeskJet 600
Tutorials: HTML, DSP

THE BLACK BOX COLLECTION

UNIQUE DEVELOPMENTS



Obsession is a technically brilliant re-creation of pinball that scored a massive 94% in issue 67. Our reviewer described it as "one of the greatest ST games ever."

UDS followed up *Obsession* with *SubStation*, the first attempt at *Doom* on the STE and Falcon. You must roam a dangerous underwater energy plant that has lost contact with the surface.

Now you can get *Obsession* and *SubStation* together, for less than the price of the individual games!

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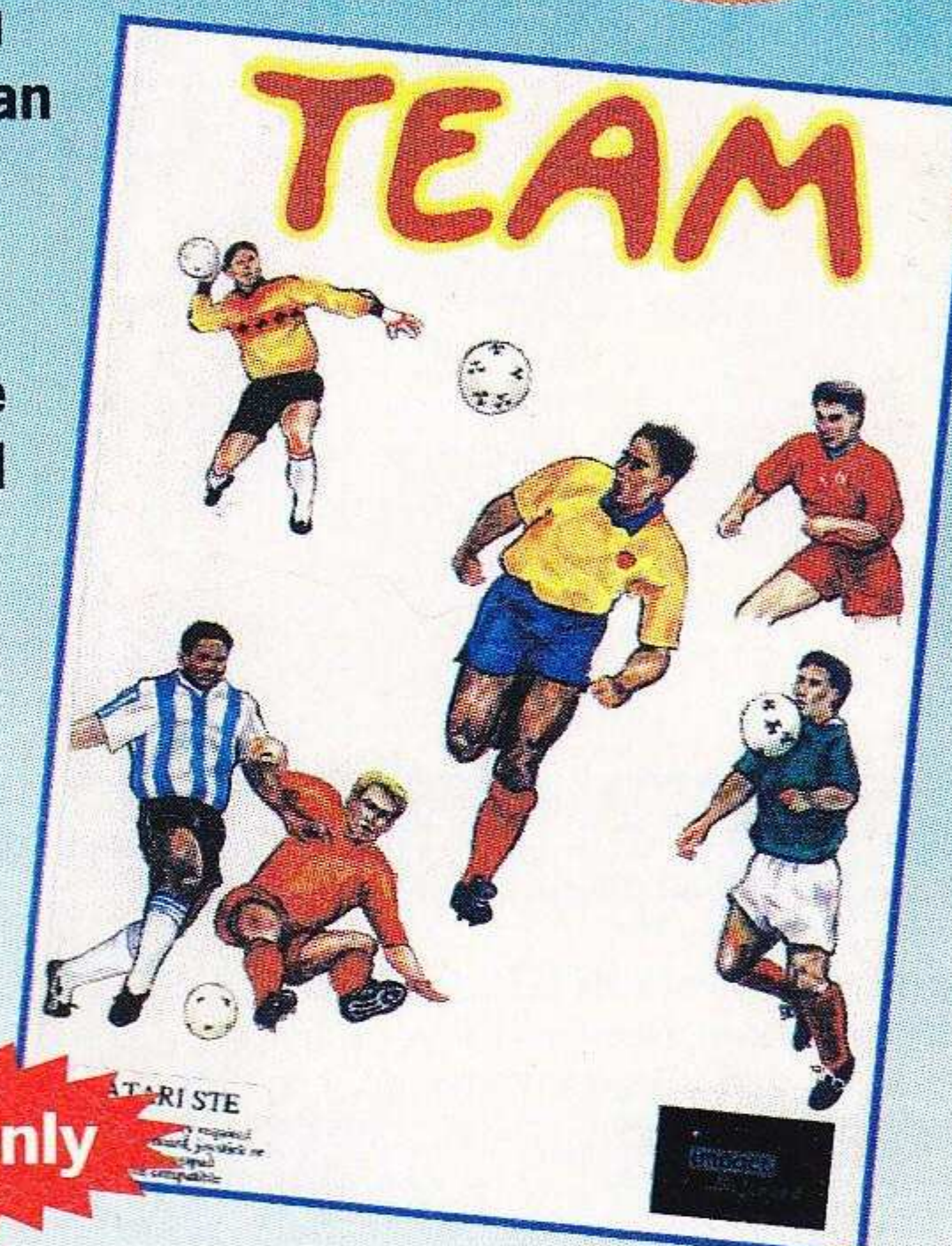


TEAM: NEW SEASON EDITION

IMPACT SOFTWARE

Team is a game that no serious footie fan should be without. Beneath the attractive graphics and atmospheric sound effects lies a true football simulation that's as realistic as it is exciting. *Team* gives you loads of options, too – you can select the pitch conditions, your team's tactics and even how blind the ref is. This is simply the finest footie game ever – just ask Nick, he's still playing it.

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VIRGIN

Brain-frying puzzles, clever character interaction, sumptuous graphics and a healthy dollop of humour mark *Lure of the Temptress* as one of the finest graphical adventures of all time. Quiz local inhabitants, eavesdrop on the locals in ye olde tavern and save the village of Turndale from the nasty Skorl, all



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SALES

Boxed original games for sale: Jimmy White, Godfather, Pirates, Gauntlet III, Bart vs Space Mutants, £5 each, Thunder Burner, Back to Future III, Robocop 2, £3 each. Tel: 01473 210592 (ask for Chris).

ST FORMAT magazines from Issue 28 to 80. Atari Games including Civilisation, Sensible Soccer, Premier Manager, Speedball 2. Tel: 01247 822289 after 6pm (ask for Martin).

Neodesk 3, £10. Neodesk 2, £5. Thats Write 1.51, £5. Tel: 05852 99203 (mobile).

1040 STE, Discovery, Productivity Packs (boxed), Philips CM 3888-II Colour Monitor, stand, two mice, joystick, Star LL200 Colour Printer, Timeworks 2, lots of cover disks, £230. Tel: 01366 388150.

DA Vector £70, Atari WP/spreadsheet/database Package £15. Calamus SV2 £100. Epson 7760 ink Cartridge £16, Epson LQ860 ribbon £5. MX70 £3. Tel: 01522 752458, ask for Robin.

Atari 1040ST, colour monitor, black and white monitor, NEC CP6 printer, second disk drive, 300 disks including Signum, spreadsheets, games, art and design programs, joystick, mouse. Excellent condition £500. Tel: 01732 810640.

Atari Falcon Digital Interface SPDIF. Optical 2 Cocex. Works with Cubase Audo and Logic Audio. Very good condition, £165 ono. Tel: 0181 8887183, ask for James.

Atari software for sale or swap. Tel: 0121 5254024, ask Andrew for list.

ST software: Lotus 2, Caesar, Team Yankee, War in Gulf, Taipan, Predator, Knights of the Sky, Rampart, music software, or swap for: Campaign, Populous II, Civilisation, Conflict in Europe, any war games. Tel: 0181 399 6582, ask for Jonathon.

Lynx 2, carry case, eight games eg Desert Strike, Blue Lightning, Steel Talons, Rampart, Dracula. Worth £150+ new, sell for £70. Also ST Games. Tel for list: 01934 712280.

HiSoft Basic manual and two disks, any reasonable offer accepted. Tel: 01204 651192.

Magazines: ST FORMAT 28, 30-37, 39-51, 71; ST Review 5, 13, 23, 24; ST User 70-74, 76-80, 85, 21 cover disks, £20 the lot. Tel: 01253 726905.

4Mb STE, SLM804 laser, 52Mb drive, scanner, SM124 mono monitor. Also 1Mb STFM, colour monitor, LC200 colour printer, offer on both, will not split. Tel: 01766 530616, evenings.

1Mb Memory upgrades, spare after 4Mb upgrade, two available, £5 each, including postage and packing. Write to: Bryn Jones, Bryn Golau, Cynwyd, Corwen, Clwyd, LL21 ONX. Tel: 01490 412512.

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Atari 1040STE, Family Curriculum Pack, ST FORMAT magazines and cover disks, two joysticks, mouse. Games: Hook, Street Fighter 2, Canon Fodder, loads more! £150. Tel: 01371 874582.

Spectrum and C64/128K games for sale, 50p-£2. Speedball 2, Golden Axe, Lotus Esprit and more. Tel: 0181 6760500, leave message for Dave, I'll phone you back, may swap for ST Games.

Atari SM124 monitor £50. Atari SH205 20Mb hard disk, £30. Progate 40DC hard disk, £100 ono (cost £400 new). Tel: 01922 479285.

External drive for Atari £30, very good condition. Original boxed games: MI Tank Platoon, Cruise for a Corpse, Civilisation. TCB Tracker and STOS Maestro plus - offers. Tel: 01522 536478.

STE 4Mb, mouse, joystick, second disk drive, £140. Protar 80 hard drive, £80. Citizen 24-pin printer, £80. Tel: 01842 878389.

4Mb STE, 105Mb hard drive, System Solutions 14-inch monitor, Notator L, Calamus 1.09n, Calligrapher, lots more. £450. Tel: 01634 880232, evenings.

Atari Falcon030 Computer with 4Mb RAM, £450 ono. Tel: 01203 592061.

Atari 520SFTM with SM124 monitor, joystick and mouse, £120 ono. Tel: 01962 854271.

520STE upgraded to 1Mb colour monitor, hi-res monitor, external disk drive, 9-pin dot-matrix printer, disks, mags etc, A drive faulty, hence £300 not including postage. Tel: 01928 712338.

Atari Compendium, Devpac 2 and 3, Stereo Master, two 1Mb SIMMs, ST FORMAT issues 18, 20-40, 42-46, 48, 59-81 (59-81 with Cover Disk, 66-81 with Wonder Disk). Will split. Offers please. Tel: 01603 619492.

AppleMac Power Book 5300 CS/100, 8Mb RAM, 500Mb hard drive, in box with manual. As new, £1,500 ono. Tel: 01748 834666.

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Atari 520STE, 4Mb, lots of software, magazines, mouse, joystick, disk boxes, hand scanner and software inc, £200 ono. Tel: 01952 246248, after 5pm. Ask for Jason.

Games and utilities for ST/STE, all original, many boxed, prices from £5. ST FORMAT Cover Disks 1-78 (100+ disks). Sensible offer please. Tel Steve: 01244 335498, anytime.

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ST/STE owners - VIDI-ST plus VIDI-RGB colour digitiser system, hardware and software, STOS compatible, £40. Call Steve: 01244 335498.

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35 original boxed games in good condition, £5-7. For list, send SAE to: Mrs B Pancha, 38 Gurdon Road, Charlton, London SE7 7RW.

Jaguar and Jaguar CD drive, scart lead inc, all boxed. Plus ten games including Tempest 2000, Doom and AvP. All-inclusive price £200. Tel Richard: 01805 378790.

Games for sale: Shuttle, Lemmings 2, Monkey Island, AV-8B Harrier Assault - £10 each or £30 for the lot! Tel James Bird: 01332 882217.

WANTED

Desperately seeking: Drakhen, Personal Nightmare, ST contacts. Other software also wanted. Write to: BOD, 171 Jardine Crescent, Tile Hill, Coventry, Warks, CV4 9NX. Hi to everyone who knows me!

Protext 6 or any upgrade from version 4.3. Contact: Mrs B Pancha, 38 Gurdon Road, Charlton, London SE7 7RW.

Wanted: manual for Deluxe Paint for Atari STE. Tel: 01209 842504.

TrueColour pictures required, any subject. Formats required GIF, TGA, BMP, JPG. Write to: Jason Cheswick, 23 Astral Close, Lower Stondon, Henlow, Beds SG16 6EL.

Wanted: Manual for Atari 520STE. Tel: 01923 827246.

Urgently wanted! All manuals for Alice in Wonderland game. Will pay good money! Tel Mark: 01442 257882, 9-10pm, Mon-Fri.

Black Lamp and Spellbound Dizzy. Will pay £9 for each. Tel Phil: 0161 7037503 after 7pm.

Wanted desperately: original game called Hunter, please tel: 01782 396666.

Wanted: mono monitor or cheap colour/multi-sync monitor for ST. Tel: 01223 369347.

Lords of Chaos data disk and Bloodwych. Tel Jim: 01236 613725.

Wanted: 3.5-inch floppy disk drive internal 720K, or external. Tel: 01222 884507.

Anyone selling any Scottish football games or has anyone got a hint for Wonderland, Dream the Dream, not Alice in Wonderland. Tel: 01333 450867.

Atari monitor wanted, SM124, 125, 144 or any compatible high-resolution monitor. Cash waiting, can collect. Tel: 01884 257487.

Original boxed ST games wanted, especially Lemming Double Pack, Noddy's Playtime, Shoe People 2, Microprose Golf, will pay £3-10 for each. Tel Ian: 01733 606932.

Wanted urgently: Cannon Fodder Hint Book. I also want Premier Manager 2. Tel William: 0161 4764895.

Wanted/help: Atari 16-bit PC Portfolio, parallel interface to link to printer/PC or any books on this model. Tel: 0151 4804115.

SWAPS

Two 1Mb SIMMs £30/pair, four 256K SIMMs £5/pair, good for STE, etc, or swap/part exchange for SCSI hard disk, any size considered. Tel Chris: 01235 534152, evenings (Oxford).

Sensible Soccer, Larry 3, Team, Xenon 2 and many more for sale or will consider swap for any game. Tel Dave: 0181 6760500 and leave message.

MESSAGES

Cerco amici-amiche inglesi e non, appassionati, cultori di atarist per scambio opinioni e esperienze, in inglese scolastico (come il mio!) o in Italiano. Scrivetemi a questo indirizzo: Stefano Pisano, Via Portogallo 27, 09045 Quartu S. Elena (CA) Italia... e scusate, mie errori! Grazie!

Atari pen-pals to correspond frequently. Write to: Walter J White, 209 Lou Alma Dr, Goldsboro, NC 27534, USA.

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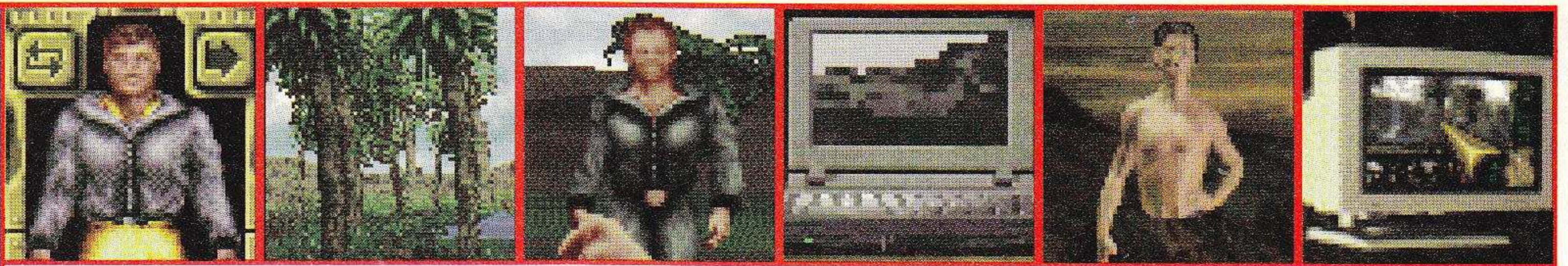
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2. Make sure you read the small print on ads.
3. Beware of companies that don't include their address on their adverts, or don't answer or return your calls.
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8. When you receive your goods, check them carefully. If anything is missing or faulty, contact the supplier immediately.
9. Order from the most recent issue of **ST FORMAT**.
10. If a problem does arise, contact the supplier first. Calmly and politely tell them your problem. Most problems turn out to be minor hitches or misunderstandings, which can easily be resolved. If you think you have a genuine grievance, contact your local Trading Standards Officer. The number is in the phone book.

BUYER BEWARE

Inclusion in this list does not mean that **ST FORMAT** endorses or recommends libraries, user groups or companies in any way.

If you run a PD library, or a user group/club, and you'd like it to be included in the list, please send your details for inclusion (and your latest catalogue if it's a PD library) to: **The Directory, ST FORMAT, Future Publishing, 30 Monmouth Street, Bath, Avon, BA1 2BW.**



Cheats never prosper. Feel any better now? No? That's because it's a lie. Cheats get better cars. Except Simon Forrester, that is.

Gamesbusters



One of the most impressive things about *Requiem* was the fabulously well-presented options screen, setting a graphic precedent for the rest of the game.

Robinson's Requiem

Last month's instalment of our *Robinson's Requiem* solution left you asleep in a cave after bedding down to the ferocious roar of a tyrannosaur. You're heavy with clothes, ready to head off into the swamp.

You'll find four different routes in the western part of the swamp. From north to south (clockwise), the first leads to a tree with edible grapes; the second to an area with five melons which provide a lot of water when eaten; the third to a Robinson who hands you a necklace and gives you a little information; and the fourth to a village of women. Don't get too eager,

though – they don't like strangers and stab anyone who comes near them unless the visitor is wearing the aforementioned necklace. You can take the first three routes in any order, though.

You will encounter big green reptilian monsters on your travels. Kill them with the knife and cut off their skins and meat. You should also come across some trees with creeping vines, called liana, which you can cut down.
 12 REPTILE SKINS + NEEDLE AND THREAD = REPTILE SKIN COAT
 TEN REPTILE SKINS + NEEDLE AND THREAD = REPTILE SKIN TROUSERS

BRANCH + LIANA = BOW
 BRANCH + LIANA + SAFETY PIN = FISHING ROD
 FISHING ROD + WORM = FISHING ROD WITH BAIT

Head back to the jungle via the same cave. Make some arrows and a bow and return to the tiger. Get within range (keeping a safe distance) and fire at it. If you hit it, it will run towards you. Quickly shoot it again and it should die. Cut off its skin and some meat, if necessary.

EIGHT FURS + NEEDLE AND THREAD = FUR TROUSERS
 FOUR FURS + NEEDLE AND THREAD = FUR BOOTS
 TWO FURS + NEEDLE AND THREAD = FUR HAT
 ONE FUR + NEEDLE AND THREAD = FUR GLOVES

The fur clothes are nice and warm, so put them on in cold environments. Head across the jungle to the far southeast, where you should find another cave entrance in a passage. Follow the passage until you reach a narrow section which you have to crawl through. You'll be attacked by a very dangerous monster on the other side.

To kill the monster, turn to the north and slash at it with your knife, then take a few steps back. As it crawls towards you, slash at it

again – it'll stop attacking. Once it's dead, check your blood levels – the wounds it inflicts usually result in great blood loss and require stitching. Use the blood plasma pouches if your blood level is critical. Eating and drinking will restore your blood level over time.

Take the passage at the southwest and follow it until you emerge in a cavern with five or six similar monsters. Don't worry, they are far less dangerous and a few stabs should see them off. At the far end there's a computer to pick up. Return to the main cavern and take the passage to the southeast. Crawl through and follow it to an exit which leads to the forest massif. Enter the forest. Carefully.

Pavlov 95 is running around shooting at anything that moves with his laser. He must die. You can locate him on the map as a flashing dot, and the safest method is to crawl as close as possible without being noticed and shoot him with an arrow – remember to shoot in front of him because the arrow moves slowly. When he's dead, you can loot his body for kevlar gloves, his laser and its

(POOR) OLD WINNER

Once again, our heartiest thanks go out to Mike Kirwan for this solution. However, as we're going to have to run this solution in installments over the next few months, we're not giving him another £25. Bad luck, Mike.



'Ere, mate – got the price of a cup of tea, then?

chargers, his computer and a spare battery.

Head to the alcove in the northwest and retrieve the computer from the dead body of Schopenhauer 26. To the north of here there's an eastward passage lined on either

side by stationary tigers. Kill them individually and carefully with one laser shot each. If you rush too far forward, you'll find yourself in the middle of a tiger party. Once the tigers are dead, you can make light clothes from their fur.

At the end of the tunnel there's a vast lake – fill your flask if necessary and do a spot of fishing. Note that every time you catch a fish, the weight in your rucksack decreases by about 500g. Eating or disposing of the fish loses an extra

200g. This is handy for getting around the 50kg weight limit in your rucksack.

And this is where we shall leave you once more, sitting by a lake, eating fish, eyeing up that rucksack. Until next time... *stf*

Towers

This month sees the third and final part of our *Towers* solution, covering levels 13 to 15 of JV Enterprises' 3D explore-'em-up. The game is now available as shareware, so contact your PD library of choice to obtain a copy. Alternatively, ring LAPD on ☎ 01773 761944.

Towers 2 for the Falcon is available from Goodmans. Call ☎ 01782 335650 for details.

And where would you be without the faithful map key? Nowhere. You'd be nothing, boy.



Level 13

BUGS THAT BITE!

The button at B12 opens the door in front of the stairs to the next level. The buttons at Y2 and Y6 just create monsters. You can keep killing them for experience until they run out. There's a scroll you need at E16 that reads "In case of fallen rocks..."

Head over to M23 and face west, and you'll notice fireballs whizzing past. Either throw the scroll from here or drop it directly on to M21. The boulder at L21 will

There's plenty of food scattered around this level, too. disappear, unblocking your way to the stairs at B24.

Levels 14 and 15

WANT TO PLAY A GAME?

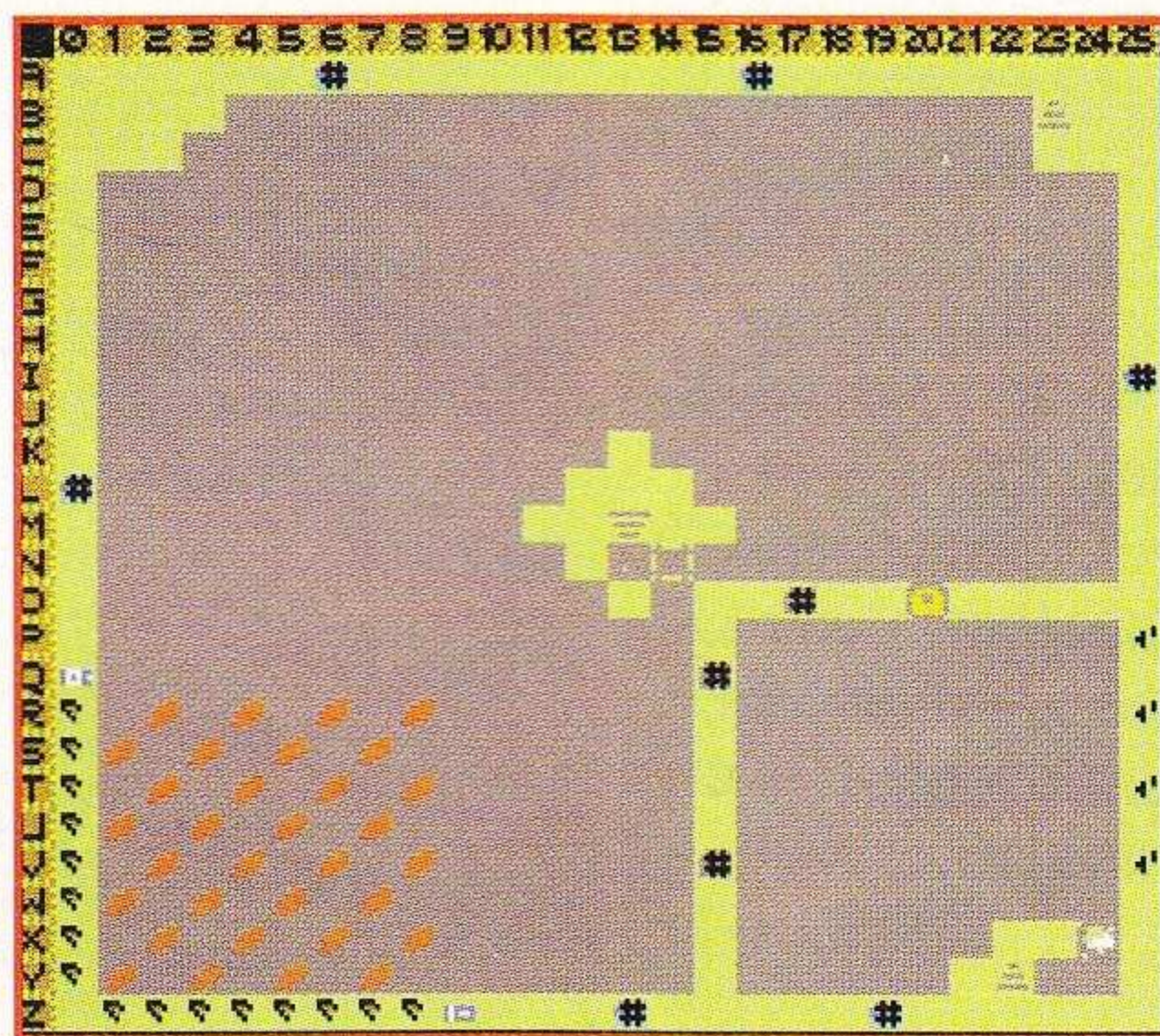
This level is full of wandering monsters, so head to N13 where there is food. You'll also find stairs leading up to level 15, where you can hide. Once you've cleared out enough monsters, you can start the level proper.

There's a scroll by the door at N20 that reads: "Make your move!" Remember all those numbers you've been collecting from levels one to 11? You're going to need them now. They are moves to a chess game, you see, where the black king is in check, and white is about to win. The game is being played out on a life-size chess board in the southwest corner of the level.

Around the board you'll find levers which enable you to enter your move. Once all the moves have been played, there's one more move to make – the knight's checkmating move, c3-d5. Pull the levers C, 3, D and 5, and the door at N20 will open.

Once through the door, you must defeat the end-of-game boss. When you get too weak, you can run to level 15 to hide. When he's finally dead, take the three checkered keys he was guarding and use them in the keyholes on the right side of the room.

The fourth key can be found by heading back to level fifteen and finding the lever at

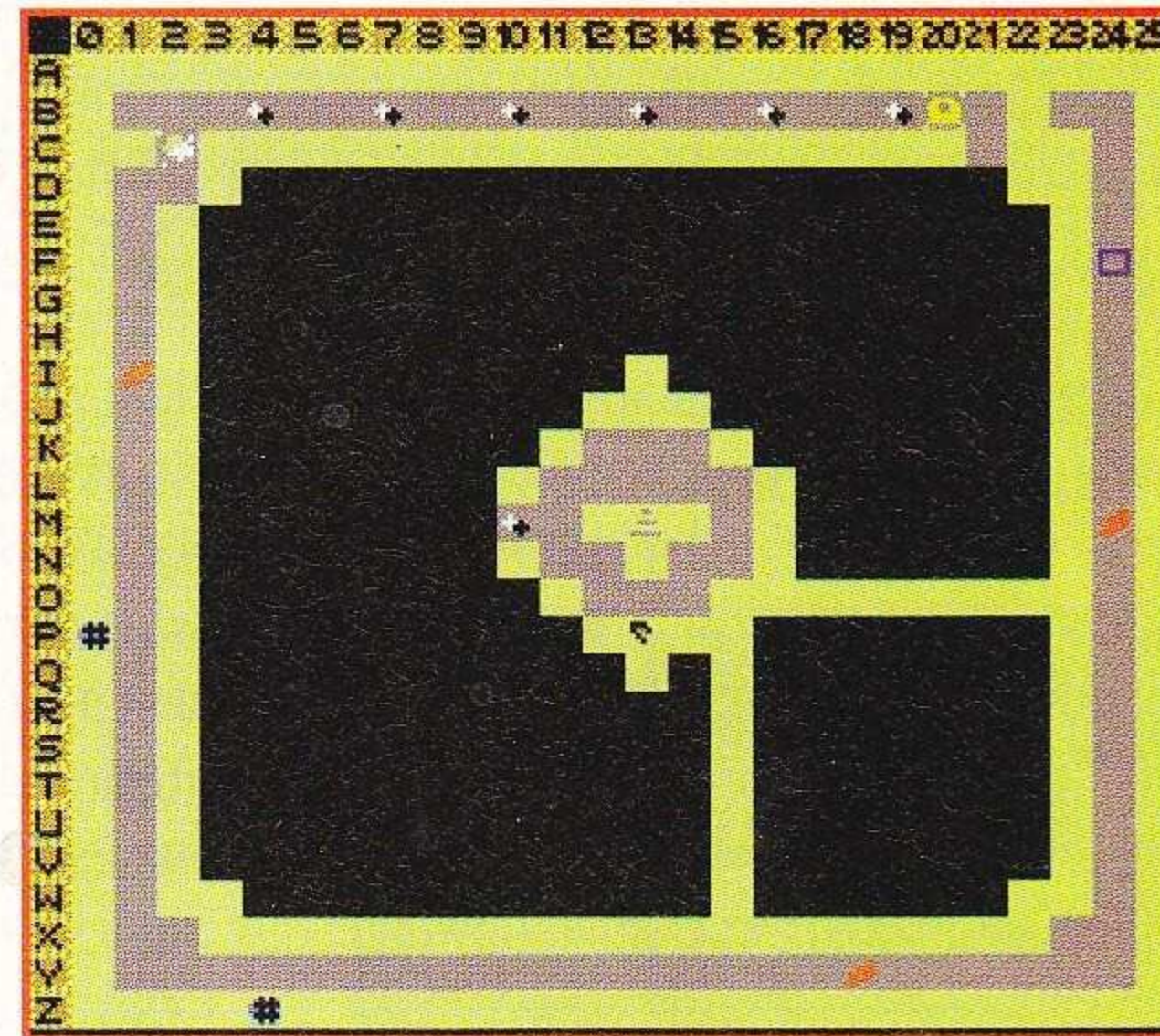


Note the overly large chess board in the southeast corner of the level.

O13. This will unlock the door at B21.

Go back to level 14 and make your way to D21. Use the levitate up spell to go to level 15, where you'll find a ledge to walk on. As you travel you'll come across magic mines – either use small spells such as magic missile, or throw rocks.

Eventually, you'll come to a scroll. Keep going until you get to I24 – there's a trap in front of you that you can levitate over. You'll



Level 15 is best used as a hiding place. You can hide from the end of level boss, fate, your mother...

now come to the fourth key. Wait until the levitate spell wears off, then fall through the trap and use the fourth keyhole. The boulder at X24 will vanish, allowing you to pass.

The stairs will take you to a room with some mudmen to be killed. Take the scroll you find here and drop it in front of the door. Congratulations – you've just completed *Towers*. Phew. Now that's over, you can go back to *Robinson's Requiem*.

EVEN MORE TOWERS SPELLS

Spell	Incantation	Mana	Effect	Spell	Incantation	Mana	Effect
Heal	Tab Men	10	Cures 16–32 hit points	Circle of Light	Pab Sir Xas	12	Four at ten times EL, 360 degrees
Firestorm	Pab Hal Ra	10	Three bolts at eight times your EL*, 6m each	Fatal Touch	Sir Hal Tab	16	Damage 16 times EL, direct
Magic Mine	Kub Me Xas	10	Damage nine times EL on contact	Magical Hemlock	Ha Ha (Ha)	1-All	Instant death for you
Frost Byte	Ha Kele Ki	12	Damage 16 times EL, direct				

*EL = experience level

Cyber Talk



Hip, groovy, on the telly, in the papers and coming to an ST near you... it's the Internet, of course. **ST FORMAT** has staked a claim.

You've seen the ads over the last few months, but you're still not sure what FutureNet is all about. Allow me to explain. FutureNet is Future Publishing's rapidly expanding World Wide Web site, packed to the hilt with features, news, reviews, bargains and even software for you to download.

We've recently given you all the software you need to access the World Wide Web (see Cover Disks 78 and 81), plus all the information you need to navigate the Net (see *STF 81*), so why not start your Internet travels with a trip to FutureNet?

What's on offer?

FutureNet provides features, news, essential contacts and links for all of Future's 30-plus



magazines, including *.net*, *The .net Directory* and, of course, *ST FORMAT*.

You can order back issues, enter our competitions and even take advantage of special reader offers, all from the comfort of your ST keyboard. You needn't worry about evil hackers getting hold of your credit card details either, because FutureNet's server utilises encryption software to prevent Internet fraud.

Then, having stocked up on bargains, you can sit back and fill your noodle with the day's Computing News. Or, if you prefer, you can check out FutureNet's World News, which is also updated daily.

You can also download ST software from our FTP site. What more could you want? Just point your browser at <http://www.futurenet.co.uk> and bookmark the index page once you've registered your details using *CAB 1.0*. It really couldn't be easier!

Nicholas Peens

ST FORMAT FTP SITE

As well as the software mentioned in last month's Internet feature, our FTP site also includes all the PD and shareware programs from Cover Disks 71 and 72, plus an assortment of useful utilities.

Programs include *Speed of Light*, *Eagle 2.7*, *Disk Opus* and top demos of *SubStation*, *Alien*

Thing and *Kev's World*.

To take a gander at the files, point your Web browser at <ftp://ftp.futurenet.co.uk/incoming/futurenet>. If you're using ftp software, type in: [ftp.futurenet.co.uk](ftp://ftp.futurenet.co.uk) and go to the directory [/incoming/futurenet/](ftp://ftp.futurenet.co.uk/incoming/futurenet/). Use your e-mail address as a password.

ST FORMAT DIRECT



Okay, so you know what FutureNet offers generally, but what's available for hard-core Atari buffs?

● Features

It's all here in our bite-sized features guide – everything from making music on your ST to the hardware and software behind the CD-ROM revolution.

● ST Answers

Frank Charlton and the gang crowd into the cyber ward for insane STs... and their owners. Whether you're troubled by viruses, assembly code, comms or badly-behaved STs, this is the place for you.

● Machines of the future

We take a closer look at the latest Atari clones, GeSoft's Eagle and C-Lab's Falcon Mk2, and ask whether they have what it takes to topple the TT and Falcon.

● Hands on

Discover exactly how to take your ST or STE apart – and put it back together again – with our practical guide to fitting a composite video port. Or how about designing your own 3D game? We show you how.

● E-mail the team

Now you can get in touch with the team that produces *ST FORMAT*. Whether you want to pose technical queries, suggest features or send us compliments, you're only a mouse-click away from our desktops.

● Bargains

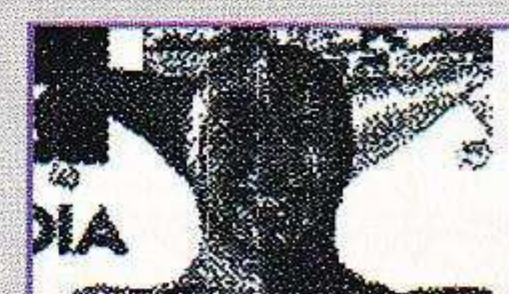
Connect to FutureNet and order a back issue or take advantage of our reader offers, all without ever leaving the comfort of your ST.

SCAN IT!

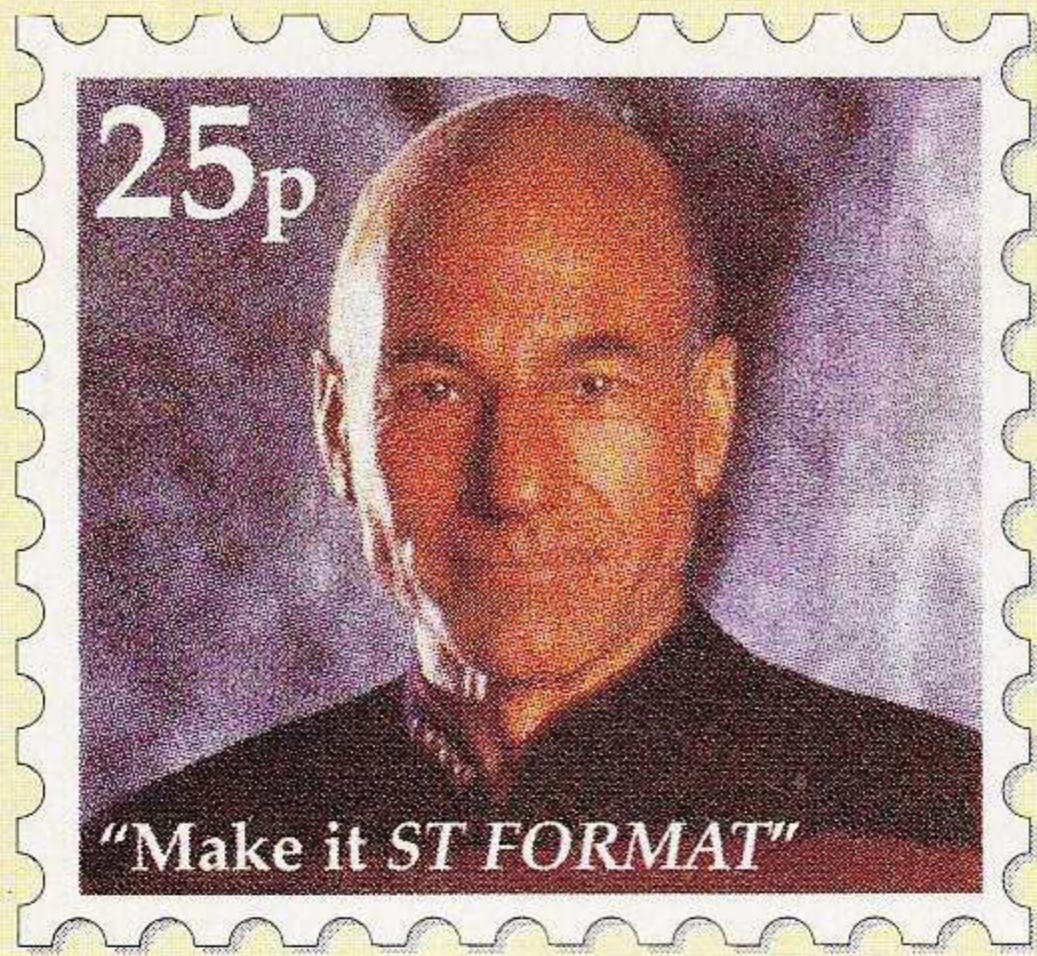
Scanners enable you to enhance your artwork and jazz up your documents. Peter Crush explains who's who and what's what on the ST scanner scene.

[Q & A](#) - [Scanning Hardware](#) - [Scanning Software](#) - [Scanning](#) - [Copyright & Wrong](#)

to install and dead simple to use, scanners enable even the most artistically-challenged ST user to add graphics to letters, posters and reports. They make it easy to produce professional-looking illustrations... and they're great fun.



With over 100,000 hits every day, FutureNet is one of the most popular Web sites in the UK. Point your Web browser at <http://www.futurenet.co.uk> to find out why...



Feedback

Gingerly easing himself into the captain's chair, Nick Peers is crushed by the latest batch of mail.

Jag coverage



I write to urge you to increase your coverage of the Jaguar. I've just bought mine from Silica Systems; if you buy from one of its Debenhams outlets, you get three games bundled with the Jag, providing you use the Debenhams store card. The price? A mere £69 all in! With value for money like that, why consider paying £400+ for a CD-based games platform?

The Jag doesn't have to become a dead platform, but I think it is important that there is more coverage for the Jag in your magazine, especially giving information about software suppliers, user groups and so on.

The problem is the continued production, and supply to the UK, of new games. When I was over in the US I saw very cheap software, but the question I'd like to ask is, will CDs and cartridges run on UK equipment?

H Brittain, Morden

stf: You've almost answered your own question. It's difficult to increase our coverage of the Jaguar when there are so few new

games being produced for it. On a more positive note, we have just received news of The Console Centre, a new company providing a mail order service for Jaguar owners. Call ☎ 01484 544926 for more information.

The main problem with the Jaguar is the quality of software being produced for it (see comments below). As for your query, our friends from GamesMaster magazine say you can run US games on UK equipment.

Amiga rules



I just picked up an edition of what I thought was *Amiga Format* from my father's desk. I didn't realise it was *ST FORMAT* until I hit Feedback and noticed something about Future Publishing. But this is ridiculous! Just 68 pages for £4.25.

About 13 years ago I got my first computer, an Atari 600. Several years later I had a 1040ST. About a year after that I migrated to the Amiga scene. And before you say anything, the Amiga is brilliant.

I can still clearly picture the first *ST FORMAT* I ever bought. It must have been

STUCK OF SWEDEN

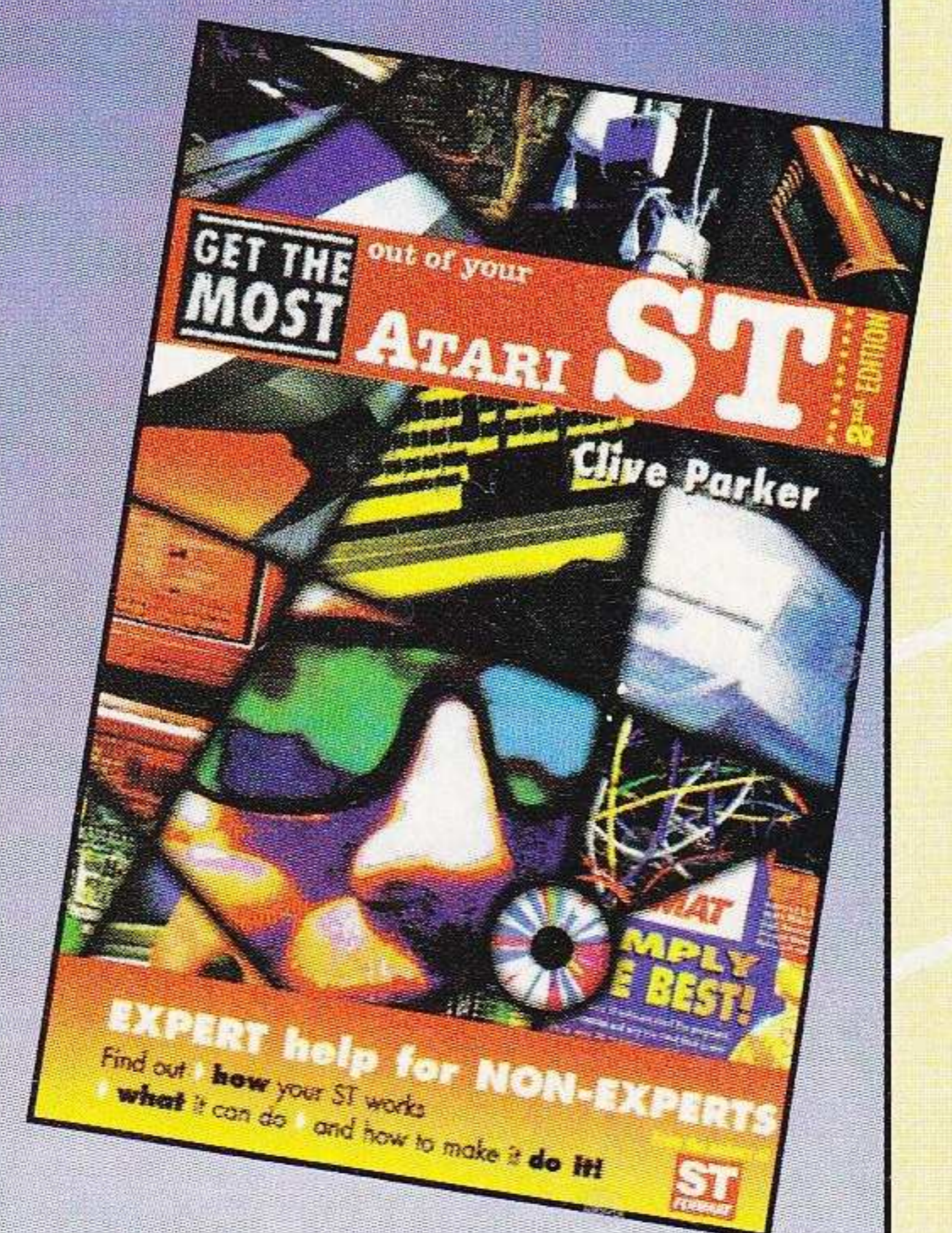
I am a beginner when it comes to computers, having bought an Atari this summer. Is there somebody who can help me install Cover Disk software and alternative Desktops?

I would like to write arcade games with samples and pictures I've created with your excellent *Deluxe Paint*. I buy your magazine every month and I think it's great. Tommy Falkenstam, Helsingborg, Sweden

stf: Hopefully our Absolute Beginners section will solve some of your problems, Tommy. I think the best answer to all of your questions is to get hold of Clive Parker's excellent Getting The Most Out of Your ST 2 (see page 50). This book is both more practical and easier to understand than the manual Atari supplied with STs.

As for game writing, we'll be

looking at aspects of game design in next month's ST FORMAT.



Clive Parker's *Getting The Most Out of Your Atari ST 2* is an invaluable source of information for beginners and experts alike.

about 200 pages thick, and all for £2.99. What I'd like to know is, what the £\$%@ happened during all those years? From some of the comments in the issue I picked up I gather Atari has now left the home computing scene and only does Jaguar hardware

and games. If that is so, it is a totally stupid marketing move worthy only of the late Commodore.

Frank Levin, via e-mail

PS: The actual magazine content is still quite good. Congratulations to you all.

GRATUITOUS PRAISE

You'll be pleased to hear that I still enjoy, for the most part, *ST FORMAT* every month. It's good to see that you've adapted the magazine to emphasise coverage of the more 'serious' side of the market. Although there are a few people out there who still use their ST exclusively for games, I think the majority of ST owners are now at the high end of the market with RAM upgrades, hard drives and so on. These users are more interested in product reviews that reflect this and articles that show them how to get the best out of the software they are using.

Keep up the good work, and keep evolving with the market.

Chris Lund, Swindon

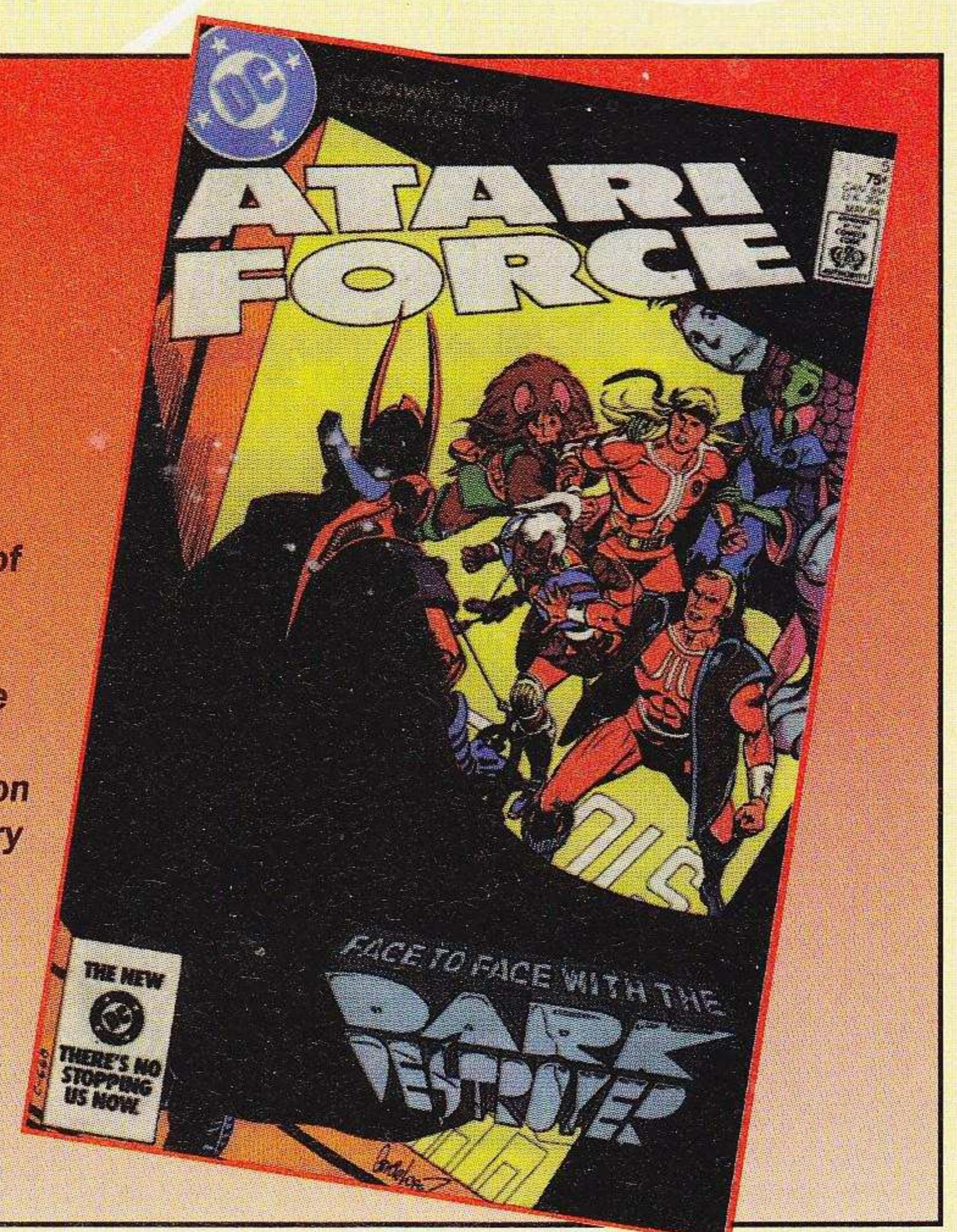
stf: Many thanks for your comments, Chris. It's true that ST FORMAT has changed to reflect the current trends in Atari computing. We'll continue to do this in a way that enables

readers to get involved. Take a look at this month's sampling feature, for example.

However, the mail we've received lately suggests a growing number of people are discovering the ST for the first time, having recently bought one through the burgeoning secondhand market. These people, although beginners, show a desire to exploit all facets of their 'new' machine, so we'll continue to bring them up to speed in our Absolute Beginners section while simultaneously catering for more experienced readers like yourself.

Also, many thanks for the extra information regarding DC Comic's Atari Force. It made very interesting reading - perhaps we'll cover the comic in more depth in a future issue. What do people think?

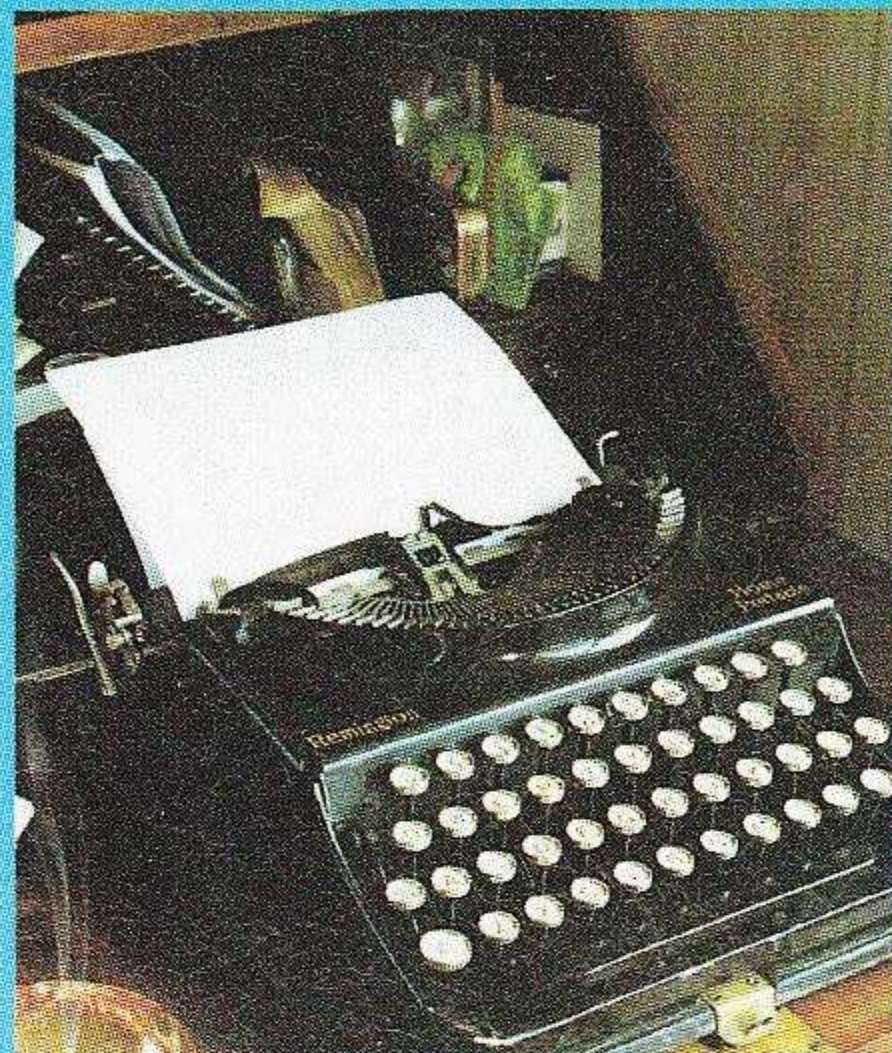
If you want to learn more about that wonderful Atari Force comic (see STF 79), write in and let us know!



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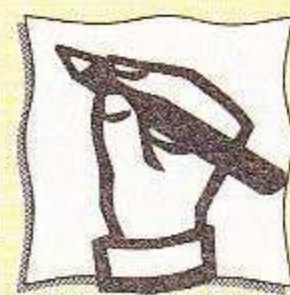
Not everyone agreed with our opinion of *Defender 2000*. Nevertheless, we don't consider £50 for a game based on an old concept good value for money.

stf: I won't waste time by resurrecting the ancient ST versus Amiga debate, although Commodore was never as good as Atari when it came to fouling up its marketing strategies!

As for *ST FORMAT*, its slimline appearance is an unfortunate consequence of Atari abandoning the ST and Falcon two years ago. Without direct support from a parent company via advertising campaigns, new machines and user support, it's difficult for any computer to thrive and flourish. That said, the ST and Falcon are blessed with a particularly loyal group of users, well aware of the capabilities of these versatile machines.

ST FORMAT has decreased in size without dropping in price. Denying that would be like claiming that Birmingham City has won the FA Cup. Ever. However, these changes don't alter Future's continued support and investment in a market other companies walked away from long ago, nor do they change the fact that all of us on *ST FORMAT* remain as faithfully committed to the ST and Falcon as we were when we started using the machine. It may not be trendy to promote the ST and Falcon over more recent platforms, but I think we all prefer our machine to speak for us. Oh, and thanks for the postscript, we do our best!

Campbell bashing



I think it is very unprofessional and damaging of Stuart Campbell to deviate from the job of critically assessing *Defender 2000* (STF 80, 31%) to slate Jeff Minter's other work.

His comments regarding *Defender 2* on the ST were a fairly interesting look at a game's history, but in no way

should he consider suppressing an innovation such as a new control method. The mouse control of the ship was quite difficult to get the hang of, but when you suddenly did, phew! Whammo! It was better than sex!

Stuart is just another reviewer who has to make himself look big by crucifying his subject. Who protects us against such people?

Name and address supplied

stf: As far as *Defender's* control system goes, the adage 'one man's meat is another man's poison' seems apt. The same is true of *Team*, which I adore, but others find too difficult.

Stuart referred to Jeff's previous attempts at *Defender* because he wanted to point out that he had already tried – and failed, in Stuart's opinion – to bring *Defender* on to the Atari. *Defender 2000* is yet another example of Atari's reluctance to develop original concepts.

Judging by recent releases, Atari sees its 64-bit masterpiece as nothing more than a vehicle for marketing games that have been around for years, albeit updated with flashy graphics and sound effects. We think £50 is too much for such an experience – you won't find original ST games selling at that price. More games like *Skyhammer* (see page 29) would be the answer, but the dearth of original games is Atari's failing, not Stuart Campbell's.

Send your letters to the editor, Nick Peers, at: Feedback, *ST FORMAT*, Future Publishing, 30 Monmouth St, Bath, Avon, BA1 2BW or e-mail: npeers@futurenet.co.uk. You can also reach him via our Web site at: <http://www.futurenet.co.uk>. Note: letters may be edited for length and clarity.

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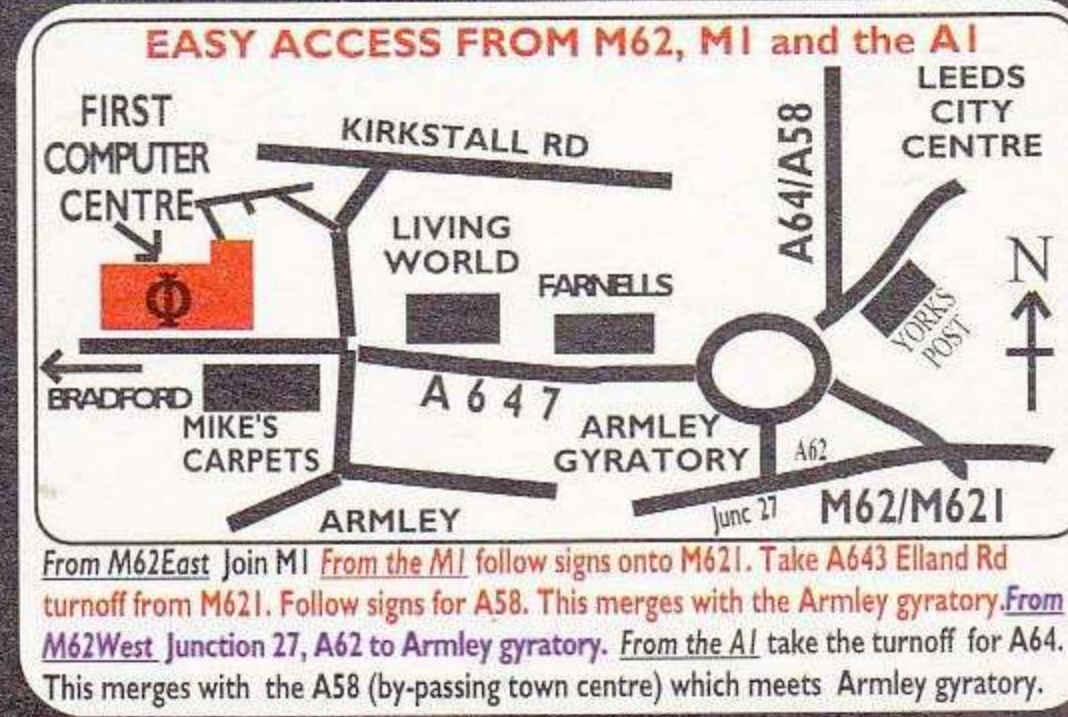
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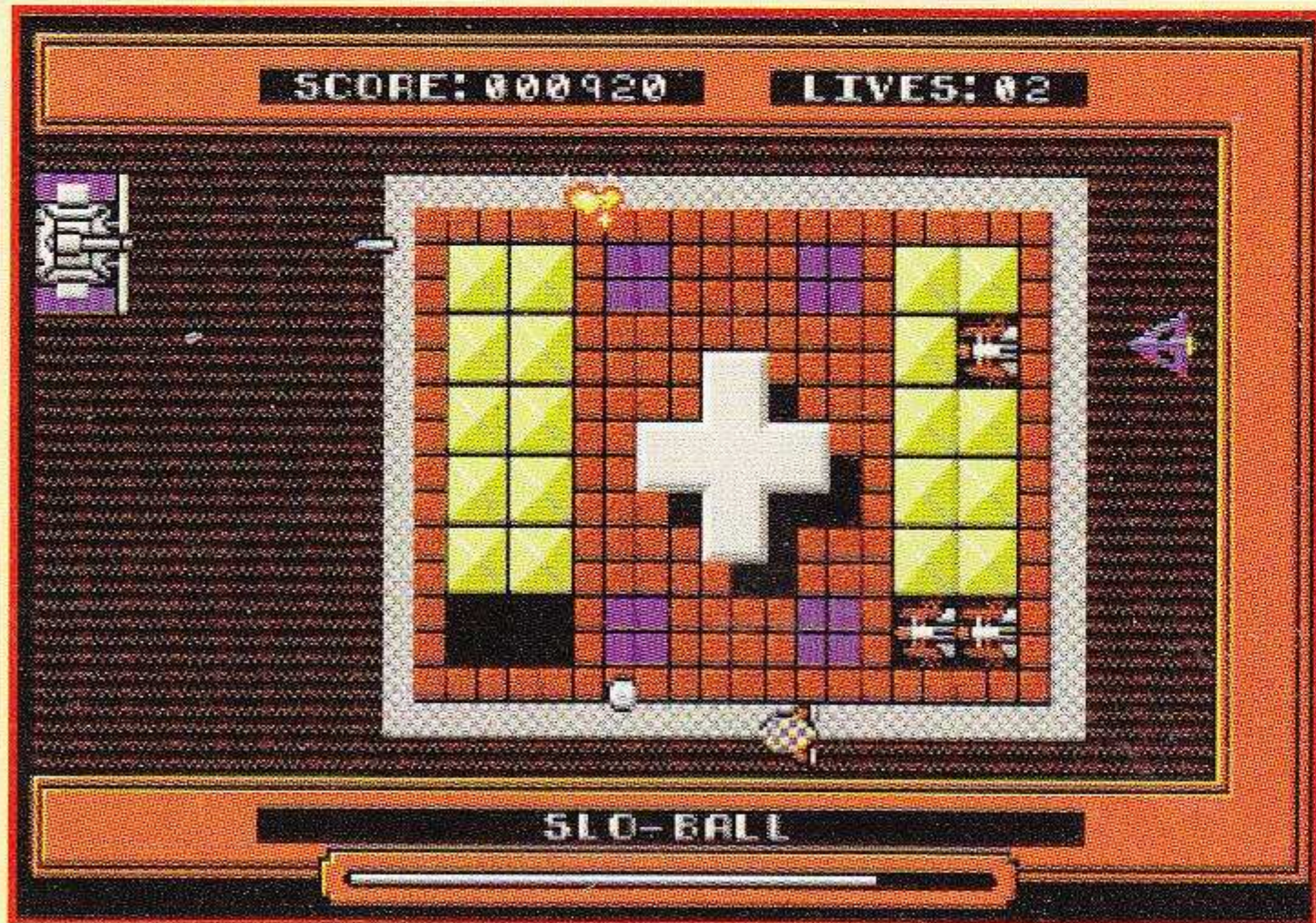
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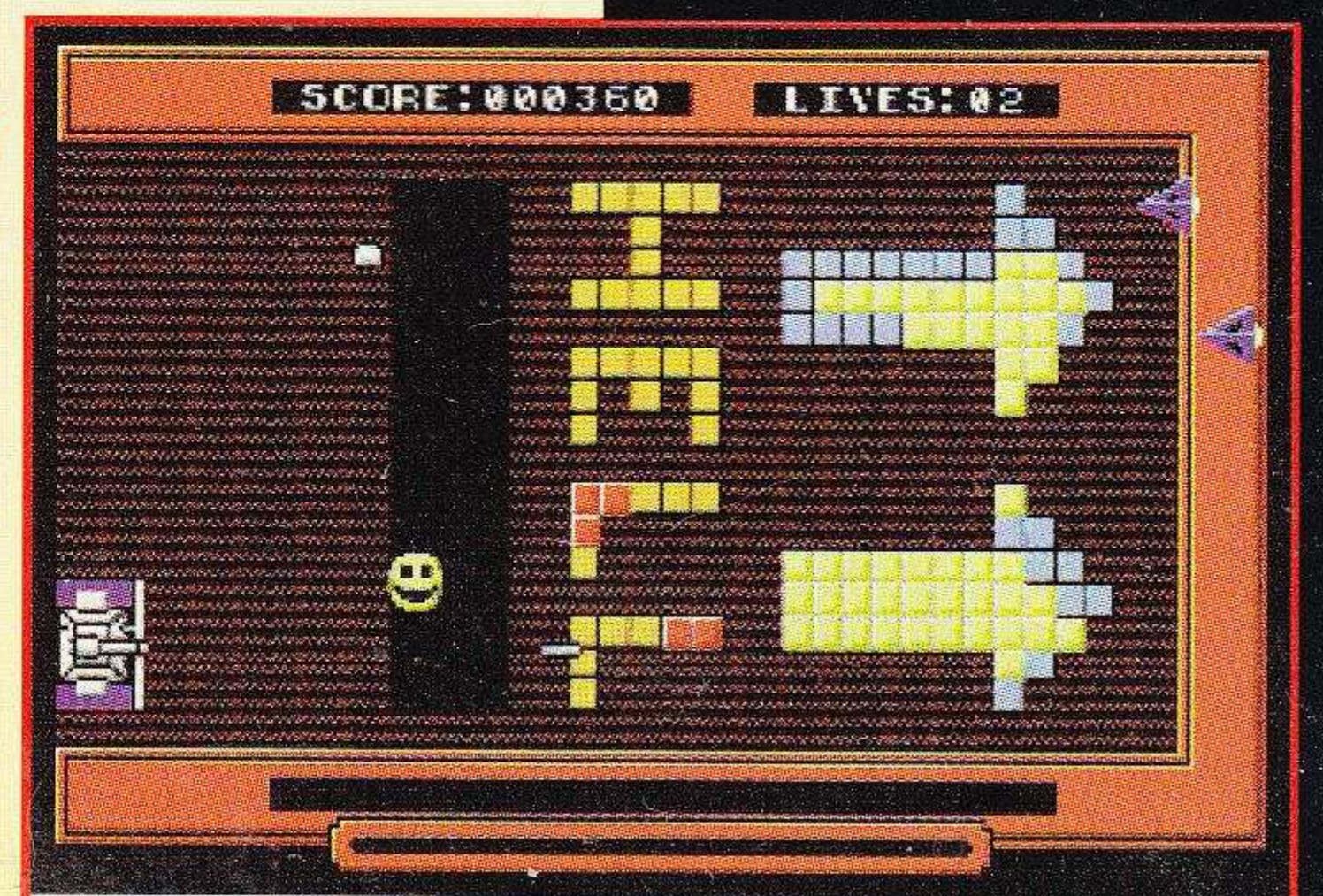
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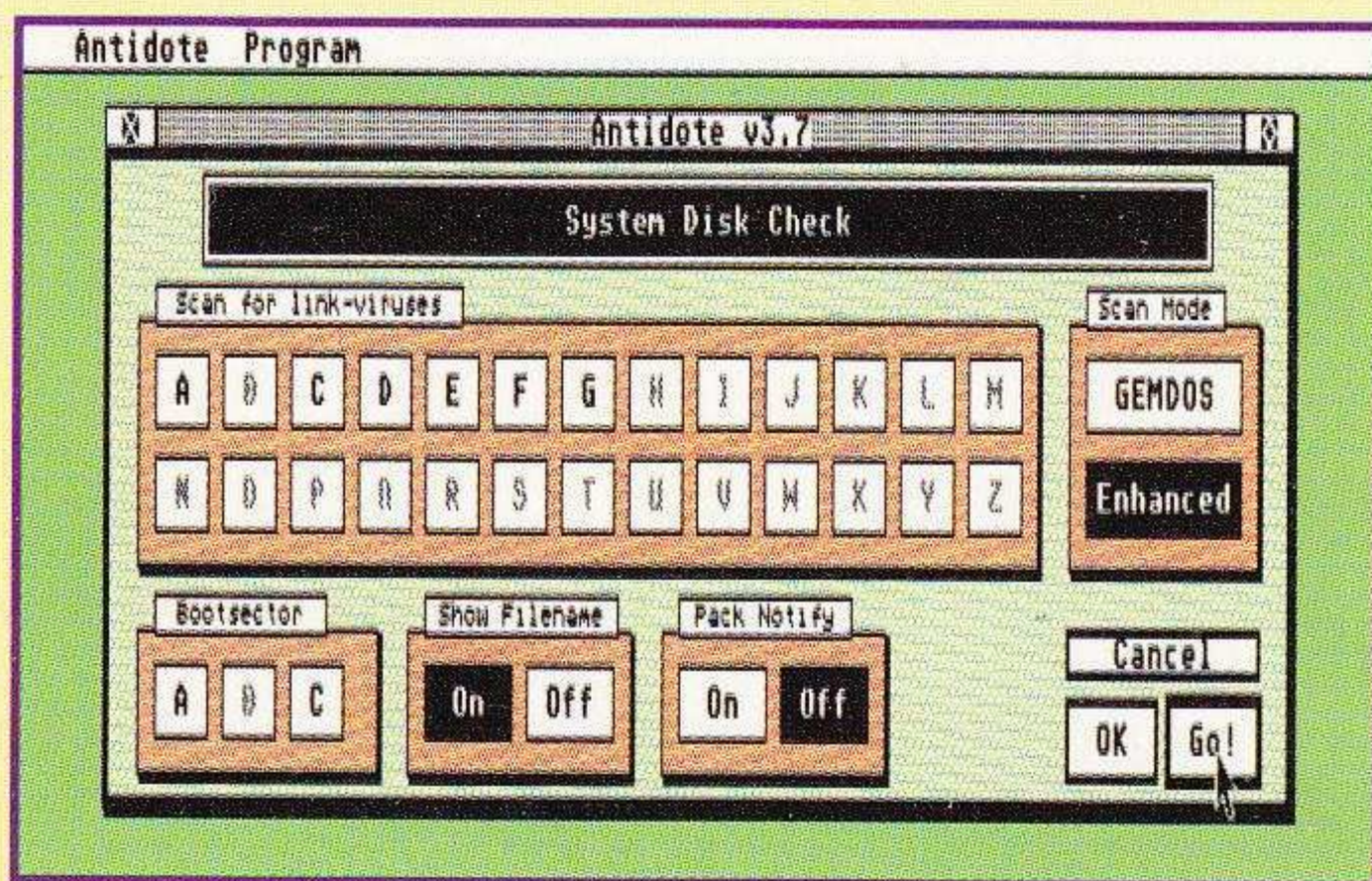


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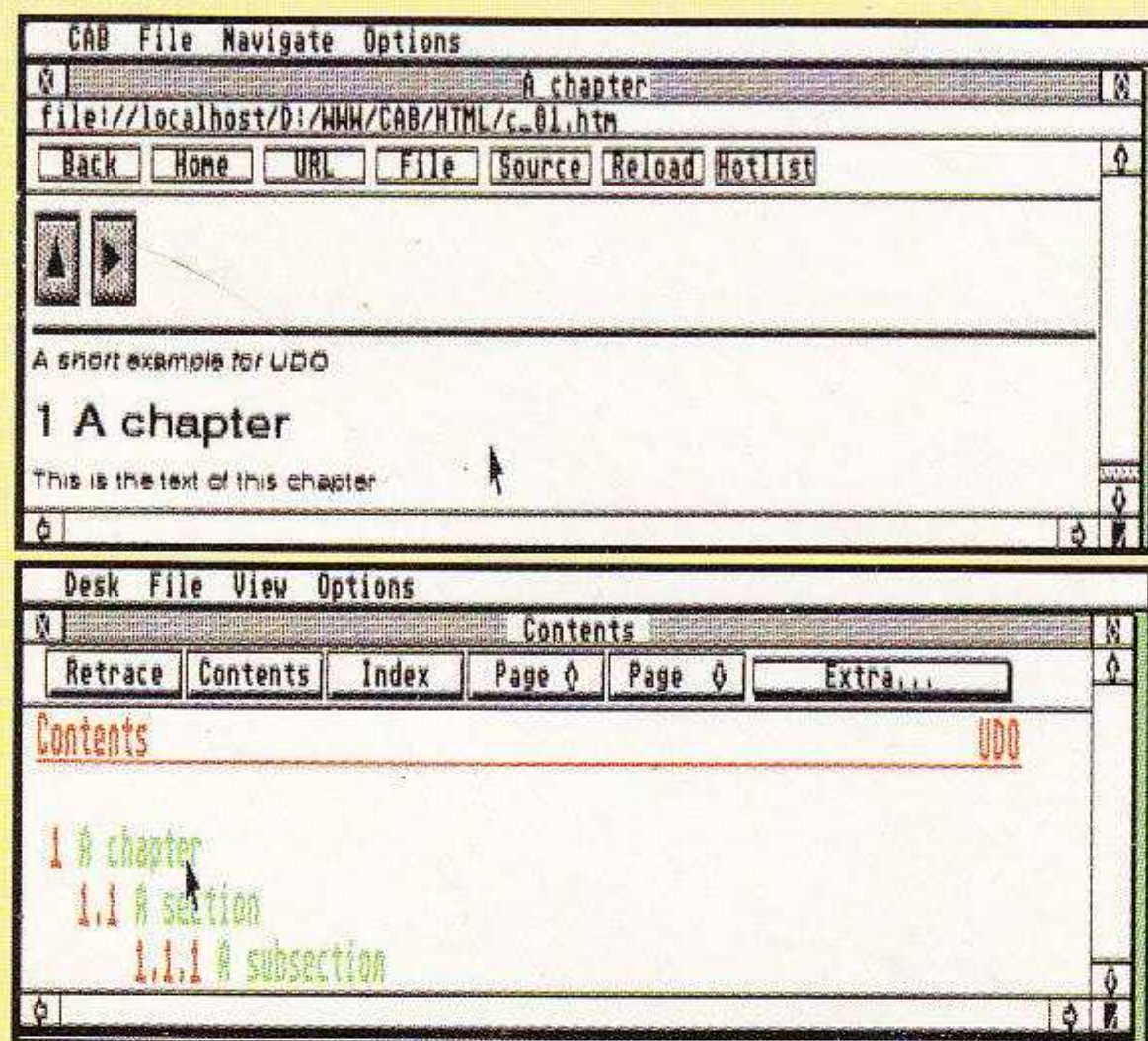
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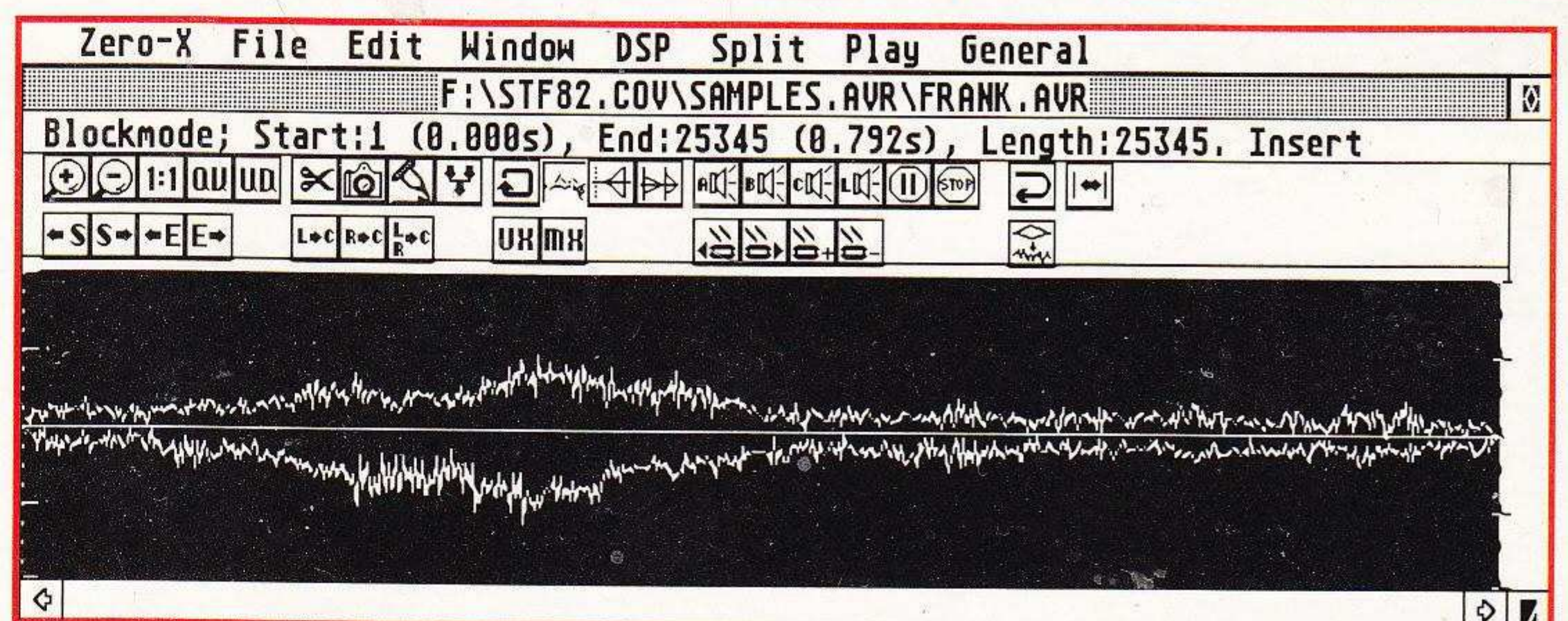
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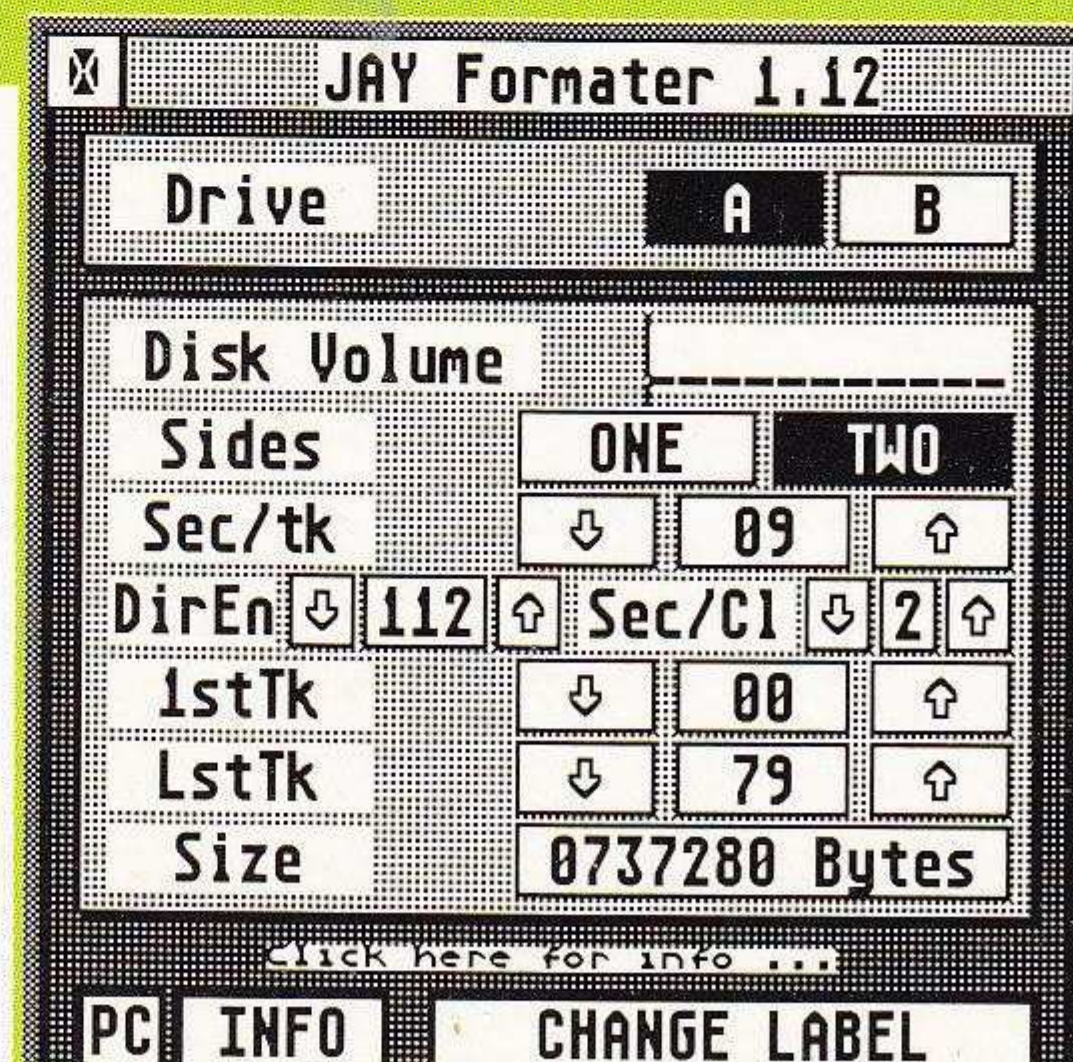
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