Incorporating ST UPDATE

Volume 4
Number 2
April 1989
£1.95

ATARI ST USER

The top-selling Atari ST magazine

REVIEWS

Hyperpaint, Mini Office Professional Comms, Crosswords, modems and Superbase Professional

FEATURES

Bullfrog: The two man programming team from Electronic Arts, plus the very latest in PD educational software

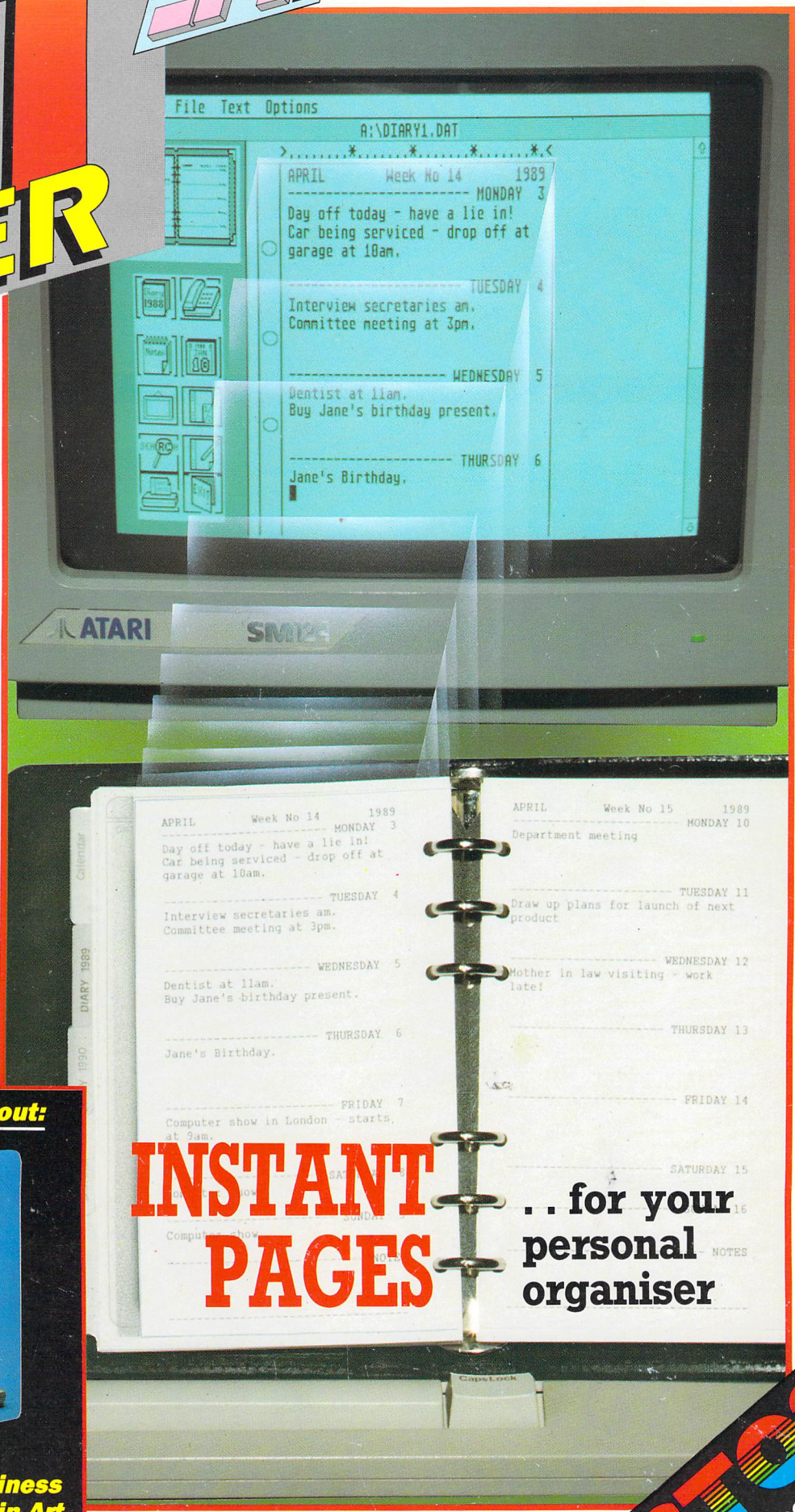
GAMES

Superman, The Munsters, Batman, Motor Massacre, Shards of Time, Fusion, Rugby Simulator, Andes Attack and many more

In this month's pullout:



Spreadsheets in business
Emotional response in Art
Inputting variables in C
Basic looping structures



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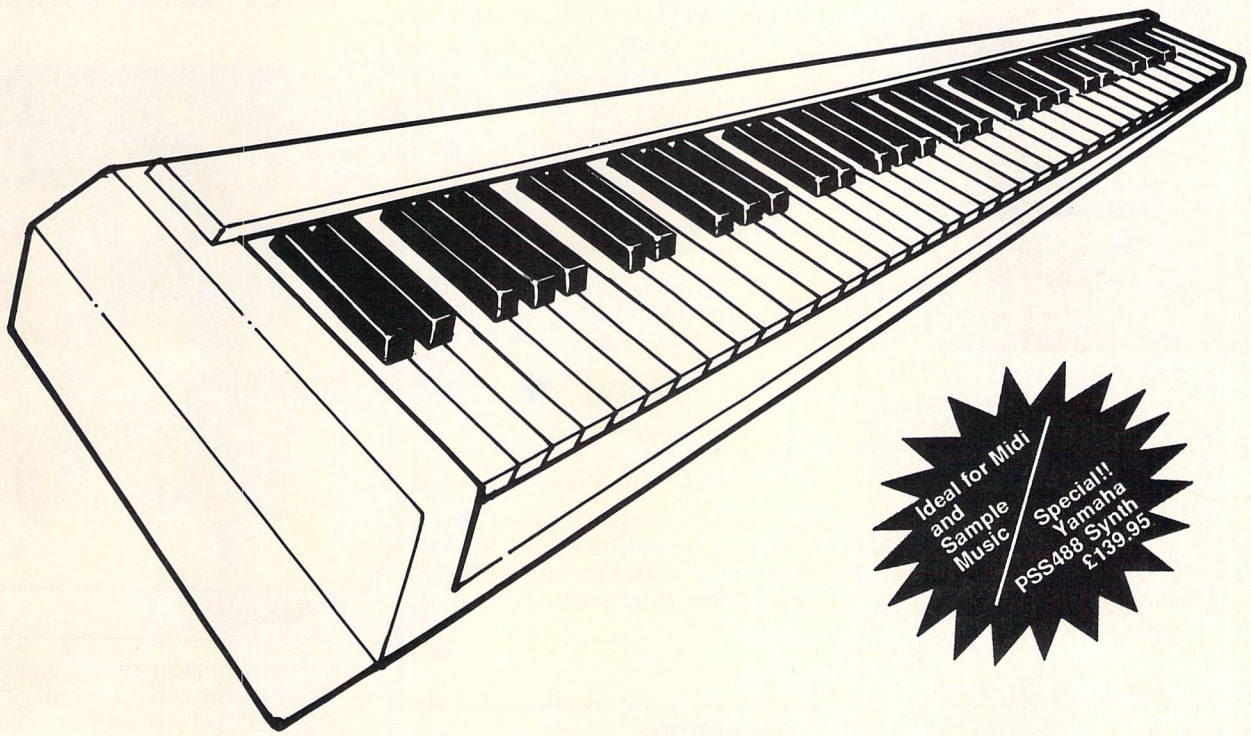

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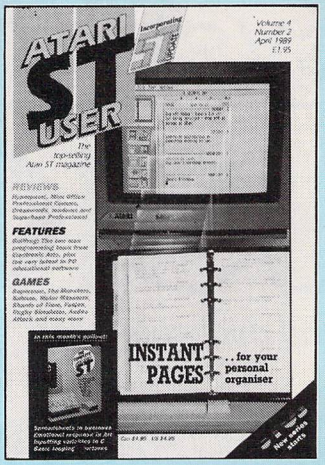

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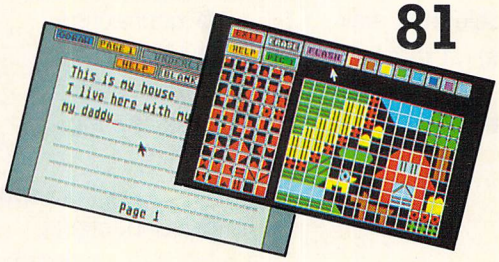

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MORE FOR YOUR BINDER ...

Part 9 of The Complete Atari ST.
Over the months this illustrated pull-out, which comes free with *Atari ST User*, is building up into the definitive guide to the working and uses of this powerful micro.

Continuing this month with:

- **Creating mood and emotional response using colour in art.**
- **Some more input functions for programming in C.**
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- **We continue looking at Basic's flexible loop structures.**



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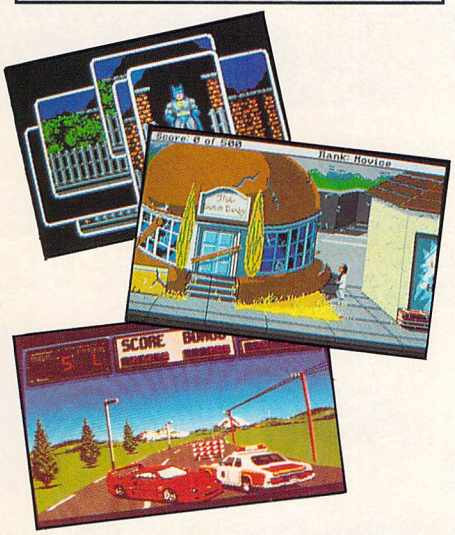

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ATARI ST USER GAME

Advanced Rugby Simulator

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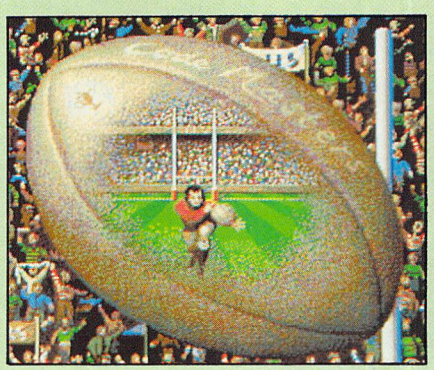

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Produce and print customised pages for your personal organiser with this very powerful utility from Kempston.

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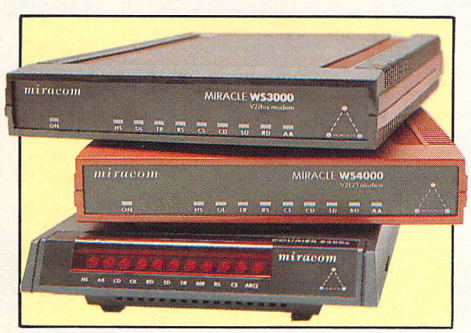

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Talespin

BY MARK HEATON

ATARI ST
AMIGA
& IBM



THE INTER-ACTIVE PROGRAM CREATOR

AMIGA CONVERSION BY TIMOTHY PURVES

WHAT IS IT? Talespin is a package which allows the collecting together of drawings, texts and sounds onto a series of pages together to form an interactive story, guide or textbook, which is read purely by clicking the mouse on the drawings or texts. Variables may be used to control the flow of narrative or record progress made. Talespin itself is entirely mouse-driven and very user-friendly, requiring no programming skills for its use. It includes an art package as well as importing Neochrome, Degas or IFF picture files and also imports ST-Replay or Amiga A.M.A.S. created Digitised Sound. The use of sound is optional. Its facilities include giving full details of disk space usage, location of all pages referring to any particular page, drawing, sound or variable, completely interactive development allowing changes to any part of a title at any time, the copying of drawings and sounds from other titles, the 'chaining' to other titles allowing the spreading of a story or textbook across several disks, and the provision of Demo mode, which allows a title to run on its own for demonstration purposes.

WHAT IS IT FOR? It can be used to create interactive adventure games, for profit, pleasure or instruction. Or in business to create a sales demonstration, or product servicing manual. Or in education: either using Talespin itself to teach the design and logic of computer systems in a non-technical way, or using Talespin as a vehicle for the teaching of any other subject. Or create an expert system with it. Or a school magazine. Or . . .

Talespin is ideal in most applications requiring inter-linked graphics and text and usable by persons with no programming expertise. And it's fun!



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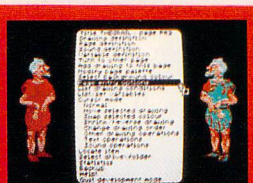

OVER 100 COMMANDS ARE AVAILABLE FROM THE DEVELOPMENT MENUS

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replay 4

microdeal

·A·M·A·S·

« SOUNDS CAN BE IMPORTED FROM A.M.A.S. AND THEN REPLAYED AT DIFFERENT SPEEDS AND LINKED

CREATE YOUR OWN COMMERCIAL PROGRAMS

Once you've finished developing your program whether it's an adventure, an educational program or other you can lock your program so on one can enter the development mode.

TALESPIN comes with a public domain display program called "Telltale": with this you can distribute your own programs or offer them to pubishers.

COMPLETE AND COMPREHENSIVE MANUAL

The manual comes as a complete Tutorial with a scaled down version of "The Grail" adventure and also a comprehensive reference guide.

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TALESPIN COMMAND FACILITIES AVAILABLE

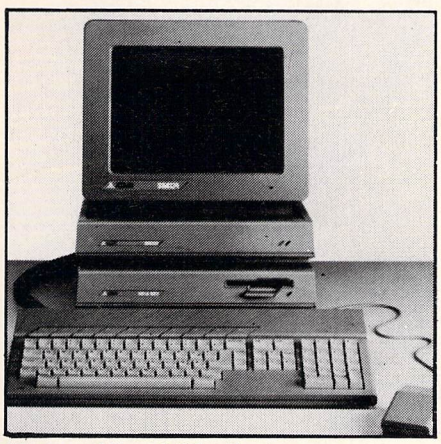
✻ choose/create title ✻ save position ✻ load position ✻ select drive /folder ✻ auto start ✻ demo program ✻ help ✻ drawing define ✻ page define ✻ sound define ✻ variable define ✻ turn to another page ✻ add drawing to page ✻ modify palette ✻ select backround colour ✻ page entry options ✻ list conditions ✻ list/set variables ✻ move drawing ✻ swap colour ✻ shrink/reverse drawing ✻ change drawing order ✻ add/edit/delete text ✻ replace/remove drawing ✻ locate item ✻ show disk space ✻ show drawing/sound-/page size ✻ chain to other title ✻ and more

New Mega to plug that business gap

ESCALATING its assault on the business market, Atari has announced a low end Mega ST to fill the gap between the 1040 ST and the more expensive Mega 2. And there are plans to bundle the new Mega 1 with software and a printer to give a complete word processing system for the first time user.

The Mega 1 is aimed to retail at £688.85 including monochrome monitor. Without a monitor, the 1040 ST costs £499 and the Mega 2 £934.99.

Based on the specification of the 1040, the Mega 1 comes in a revised housing mirrored on the existing Mega 2 and Mega 4. While the 1040 is seen as more appropriate for education and home users, the new Mega 1 is is firmly aimed at the business user.



The new Mega 1 ST will mirror the design of this Mega 2

"What we are going to do increasingly this year is to split the marketing and administration efforts by having an Atari Consumer Division and Atari Business Systems Division", said Atari spokesman Peter Walker. "The 1Mb ST is definitely included in the business systems".

He said Atari would increasingly push the ST range through the dealer network, which at present includes 70 dealers. "We anticipate selling about 120,000 STs throughout the country this year and this will increase our user base to 300,000", he added. "At the same time we are going to develop the Business Systems Division aimed at a completely different type of user".

It was rumoured that the Mega 1 would be on show at the Which Computer? Show, but shortly before the show marketing manager for Atari, Darryl Still told *Atari ST User* the company only had one machine in the country. They would hold off marketing the Mega 1 until they could be assured of larger stocks, but he hoped the situation would improve soon.

Music kit hits the right note

EXPRESSING ideas in written word or speech is hard for many students. Putting musical ideas on paper is virtually impossible. But now a Devon music teacher has devised a system he says will unlock the latent musical talents in youngsters.

Alan Spring of Exeter has based his music composing kit on the Atari ST and C-Lab's notator. It revolves around a rhythm system that enables a non-musician to write down in standard music notation a rhythm he has heard and then use it to create a melody, harmony, chord accompaniment or whatever he wants.

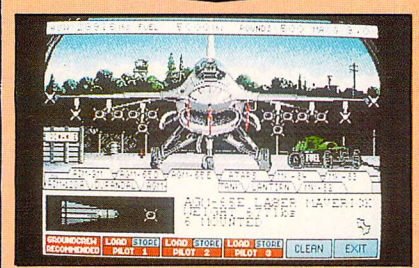
"I believe this is a real breakthrough as even grade eight instrumentalists are not taught to transcribe and have great difficulty with anything other than reading the dots", said Alan.

His system has been proved on musically able pupils who were upset and demoralised because they could not write down their compositions. In a short time they produced faultless manuscripts.

"I have created a file containing the rhythm system which amounts to a music construction program", said Alan, who teaches at St Peter's High, Exeter. "It loads on to C-Lab where it forms the basis of a complete composing course. I have introduced it to my classes and it is a real picture to see their faces as their compositions come to life on the screen with the help of an MT-32.

"There have been many alternative ways of representing music but the only truly universal one is standard notation which remains a mystery to the majority.

THERE'S WAR IN THE AIR

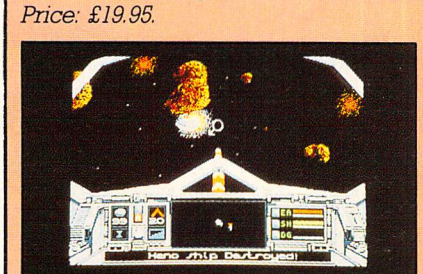


FROM the crewroom to the hangar, through pre-flight briefing and then into the cockpit of the latest F-16 Fighting Falcon. That's how ST users are introduced to F-16 Combat Pilot, the latest release from Digital Integration (0276 684044).

Then it's either straight into battle with the squadron or the chance of a training course first. Connect two computers together and both pilots can indulge in a one to one dogfight. Price: £24.95.



THE urban air attack is underway and your aim is to knock out enemy bases without destroying civilian locations. That is the scenario for Thunderwing from Artronic Group (0423 525325). This classic combat shoot-'em-up has vertical scrolling and multi levels. Price: £19.95.



ELECTRONIC Arts (0753 49442) has released Skyfox II on the ST. Skyfox II continues the battle against the Xenomorphs in the deep, dark, space of the Cygnus constellation.

With a new plot, enhanced graphics, better sound and faster action it is claimed to be a more realistic sensation of flying than its predecessor. Price: £24.95.



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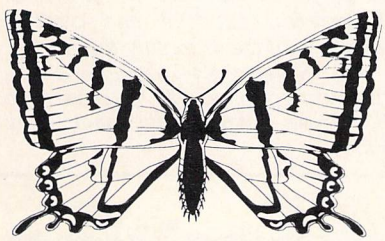
Art for Gem files

TWO new graphics packs from Electric Distribution (0480 496789) have been designed by Migraph to give impact and professionalism to documents. They are DrawArt and ScanArt.

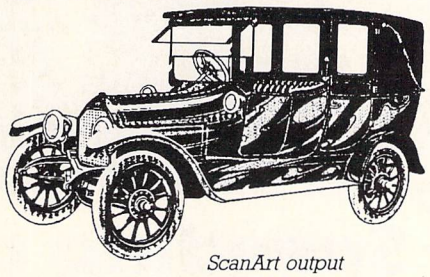
The DrawArt collection includes 150 line art pictures divided into categories like office, transport, sport and music. They can be stretched or sized without losing detail and can be loaded into any software package which handles ordinary Gem files.

ScanArt is a collection of more than 100 professionally drawn pictures including sport, humour, animals and holidays. It can be loaded into all packages handling IMG files.

DrawArt costs £49.95 and ScanArt £39.95. As a special launch offer, they can be bought together for £69.95.



DrawArt in action



ScanArt output

HISTORY, SCI-FI JOIN MICROLINK SERVICES

TWO new categories on MicroLink underline the wide range of interests that can benefit from this service. Science fiction buffs and local historians now have sections devoted to them.

Bristol historian Mike Gardener, who publishes the journal Exploring Local History, has helped to set up MicroLink's new local history category.

"There is a vast nationwide interest in local history, but so far it has been fragmented", he said. "Everyone wants to get into a wider field, but there has been no way for individuals or societies to get together for discussion.

"MicroLink can solve that problem by providing a platform or forum for this massive subject where subscribers can exchange ideas, seek help, expound their own theories or challenge other people's. The possibilities are endless".

Timescale is equally wide, with subjects ranging from ancient history to present day.

Genealogy, family history, the origin of place names, re-enactment of battles, archeological connections and oral history from elderly residents are just some of the subjects covered.

Photographer from Stirling, Colin Campbell is helping to organise MicroLink's new science fiction category. Basing content on the fanzine publications that are the most popular journals for sci-fi fans, he reviews books, movies and also hopes to deal with television programmes. Watch out Dr Who and Star Trek.

Subscribers can test their sci-fi knowledge with regular trivia quizes for which Colin donates review copies of books as prizes.

If you are interested in subscribing to MicroLink see Page 8.

Atari picks a pocket PC

ATARI has notched up a world first with its exclusive worldwide rights to sell the new pocket personal computer developed by DIP.

Weighing less than a pound it has a 63 character qwerty keyboard and a 40 character, eight line graphics LCD. They are built into a book like folding design so the machine is easily fitted into a pocket-sized package.

Credit card sized memory cards replace floppy discs for data storage or software and a multi-purpose expansion connector can be used to add memory, communicate with a desk-top PC or for peripherals.

A suite of five applications software programs are run from a built-in rom. They include a Lotus 123 compatible spreadsheet, address book with telephone auto-dialer, calculator, text processor and diary.

Long life batteries power the pocket PC for up to eight weeks. Price £288.85.

SOFTWARE HOTLINE

PROGRAMMED by a Swedish father and son team now living in Ireland, Tankattack is the latest game from CDS Software (0302 321134). Like its predecessor, Brian Clough's Football Fortunes, Tankattack is based around a board game. It is for two, three or four players who take the roles of generals commanding tank corps. The aim is to capture enemy headquarters or annihilate all enemy forces.

The ST version, due out this month, costs £24.99.

★ ★ ★

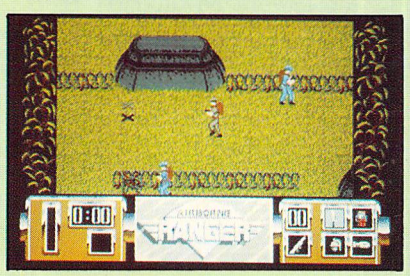


DUE for release on the ST this Spring, Ultima V (above) and Airborne Ranger are the latest games from MicroProse (0666 54326).

A fantasy role-playing adventure from Origin, Ultima V is twice the size of its predecessor, Ultima IV, and features 16 different sound tracks. MicroProse says the ST version is better than others in terms of graphics, speed, sound and overall playability.

Airborne Ranger (below) is an action strategy simulation featuring 12 different missions set in three areas of the world. As the lone Airborne Ranger, the player must complete each mission.

Price: £24.95 each.



★ ★ ★

MAGNETS whip the balls, bumpers bounce you off target, vacuums suck you in and blowers spit you out again. Those are just a few of the pitfalls facing players of the latest ball game on the Psyclapse label from Psygnosis (051-236 8818).

Ballistix is a goal scoring game with a difference. Price: £19.95.

They came out of the Shades . . .

THEY knew each other by name only. Some were friends – relationships built up over many months of pleasantries. Others were sworn enemies nurturing grudges from brutal encounters long past – and each swearing vengeance, demanding blood.

From the busy city south of Watford some came huddled together against the wind in their rickety old carriage. Led by Arch-wizard Ambushbug and his lady Witch Octavia were Stingray the Wizard, the evil Spitzen, the gorgeous Bouncy and Marina, Grumph and the rest of the motley band.

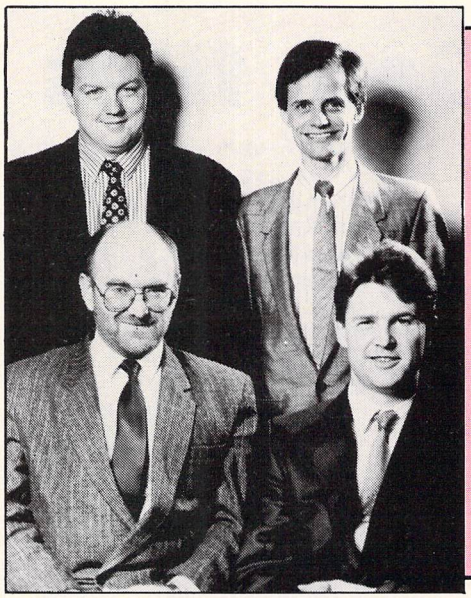
In smaller groups from the west far beyond the big mountain drifted Arfabrain the wise old Soothsayer, his son Skeeve the Enchanter, Zimmerman and Gopherit. Arifax the Wizard had but a few furlongs to journey, as this was his domain.

But they all had one thing in common. They had never met face to face. Their destination: The Whitelocks Tavern, Leeds, for a confrontation that could be the first of many and never forgotten – this was a real life Shades get-together.

For anyone who has been off planet for the last six months, Shades is the multi-user interactive online adventure available to subscribers to MicroLink/Telecom Gold and other services.

It is fast becoming a cult among its fans – hence the meet or eyeball as Shaders prefer to call it.

Some will have killed each other many times on their travels through this fantasy land at the end of the telephone. But that night there were no grudges, no hard feelings – a great time was had by all.



MICROPROSE (0666 54326) has expanded its development team with three new appointments. Paul Hibbard, Peter Moreland and Steve Perry have joined the Tetbury based company on software development. They will be responsible for sourcing and developing more products from within the UK. All were formerly with Telecomsoft.

Stewart Bell, managing director of MicroProse UK said: "The combined experience of the development team will be a key factor in the growth of UK-sourced product and overall expansion of the company this year".

● *Peter Morland, Steve Perry and Paul Hibbard are pictured with the head of the MicroProse development team, Tony Bickley.*

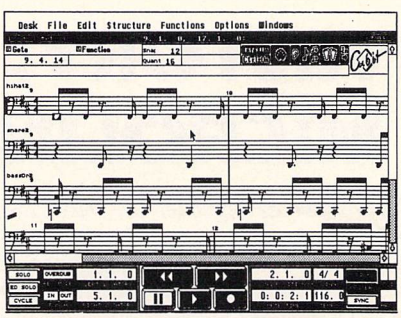
Speeding composition

CREATIVE inspiration in computer music needs equipment that is fast yet easy to use, and Steinberg thinks it has the answer. It's the Cubit desktop Midi recording system, which Steinberg claimed to be the most advanced such package yet.

Cubit uses VISP, Visual Song Processing, whereby everything can be seen on screen, instantly accessed and edited. Up to 1024 tracks can be recorded with an accurate clock resolution of 384 pulses per quarter note. It runs under Steinberg's Midi realtime operating system M.ROS and can be used on all Atari ST computers with at least 1Mb of ram.

Also new for the ST from Steinberg is Avalon, its universal stereo sample processing and resynthesis system. It can be used for sound design, digital editing, sound research, conversion and transfer of sample libraries between different samplers.

Aiming to provide "the perfect scoring pogram", Steinberg has released Masterscore II, an updated version of the original Masterscore. New features include defining master pages, pasting graphics or text anywhere on a page, various fonts and font sizes, indent or outdent grandstaves, preview pages and complete cut and paste facilities.



Cubit score edit

The company's products are marketed in the UK by Evenlode (099-389 8484). Cubit sells for £500 and Avalon, excluding hardware for £200. Masterscore costs £325 and can be upgraded to Master Score II completely free of charge.

Signing up for the big battles

SIMULATION wizard MicroProse (0666 54326) says it has signed the worldwide rights to Universal Military Simulator II. To be known as UMS II: Nations at War, the simulation is being developed by a team from Intergalactic Development Inc headed by author of the original UMS Ezra Sidron. Former MicroProse team leader Ed Bever is working with Intergalactic.

Stewart Bell, managing director of MicroProse, said: "We are pleased that such a high quality, high profile simulation will be part of our new range of products".

RAINBIRD GETS THE VOTE

FLYING the flag on the continent is Telecomsoft (01-379 6755) which has scooped a number of awards. France's leading computer magazine, Generation 4, awarded the company five first places in its annual awards.

Rainbird was voted best foreign company of 1988 with Firebird Software in third place. Rainbird's Star Glider II took second place in the game of the year 1988 section.

Telecomsoft also walked away with the first three places in the best strategy game awards. Carrier Command was first, Universal Military Simulator second and Sentinel third. Tracker was a runner-up.

Fish took the top award as the best foreign adventure game with Corruption in second place. The best simulation award went to Elite with Carrier Command in second place. First prize for the best 3D game went to Star Glider II with Virus third. Carrier Command was runner-up.

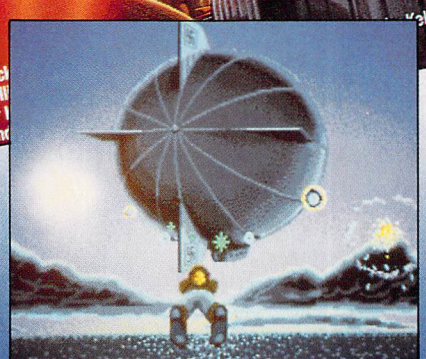
In Denmark, the readers of Soft Today magazine voted Bubble Bobble the best overall game in 1988.

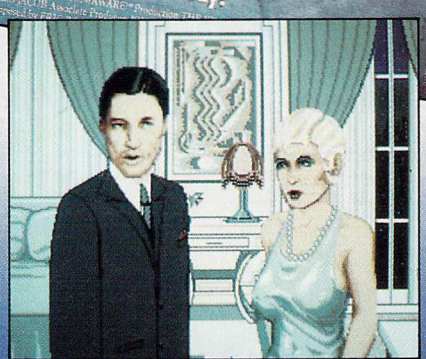
CINEMAWARE

PRESENTS









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Gallup Software Chart



This month	Last month	Title (Software House)	Price	Month reviewed in Atari ST User	Comments	Marks from 10
1	◁1	**FALCON** *Mirrorsoft*	24.95	March 1989	Holding its own at number one. Prepare yourself for a Mach 2 flight in an F-16 and join the growing class of military simulator enthusiasts.	9
2	◁2	**OPERATION WOLF** *Ocean*	19.95	March 1989	Another success for a Taito coin-op which has made a surprisingly good transition to the ST screen. Fun and not too demanding.	7
3	△6	**LOMBARD RAC RALLY** *Mandarin*	24.95	Jan 1989	Now change to a car in yet another simulator. Can you win the legs in this competition and customise your Cosworth to win the coveted prize?	9
4	△10	**THUNDERBLADE** *US Gold*	19.99	March 1989	Keyboard pilots have a wide choice, with war-torn skyscrapers, sea battles, rocky canyons and forests as the colourful backdrops.	8
5	▽4	**R-TYPE** *Activision*	19.99	March 1989	High in the difficulty stakes, but falling in popularity. Enjoy the beautiful graphics as you zoom across another horizontal shoot-'em-up.	8
6	•	**BATMAN** *Ocean*	19.95	April 1989	Highest new entry is this long awaited classic complete with Joker and Penguin. In comic form, it's a beautifully executed arcade adventure.	9
7	△8	**ELITE** *Firebird*	24.95	Nov 1988	This game scores most on playability and addictiveness. Now in solid 3D it is stunning – a classic.	9
8	▽3	**AFTERBURNER** *Activision*	19.99	March 1989	Without the moving seat and joystick to be found in the arcade version, this has little to offer which has not been seen many times before.	7
9	▽5	**DOUBLE DRAGON** *Melbourne House*	19.99	—	Blast from the arcades again. Your mission is to rescue your girlfriend from a selection of nasties from New York street life.	–
10	▽9	**SPEED BALL** *Mirrorsoft*	24.95	Dec 1988	Another Bitmap Brothers success. The graphic representation and animation are startling while the musical backdrop is pleasant and unobtrusive.	9
11	◁11	**HEROES OF THE LANCE** *US Gold*	24.99	March 1989	For the AD&Ders among you this is a must. SSI and TSR have linked to bring this increasingly popular game to your screens.	9
12	•	**JOAN OF ARC** *US Gold*	19.99	March 1989	With the depth of gameplay and extensive options, this is one of the better strategy games on the market. It gives excellent value for money.	8
13	▽7	**HOSTAGES** *Infogrames*	24.95	Jan 1989	Must be one of the most unique, highly developed and totally addictive games ever seen for the ST. Stunning graphics and sound.	10
14	△16	**CRAZY CARS 2** *Titus*	19.99	April 1989	A sequel, but not a simulator. A good and fun race against time and your opponents. Nice graphics and good value for money.	7
15	•	**LEISURE SUIT LARRY 2** *Sierra On-Line*	29.99	April 1989	If you haven't got Leisure Suit Larry in the Land of the Lounge Lizards, you are missing a lot of fun. When he goes Looking for Love it is brilliant.	9
16	•	**DUNGEON MASTER** *Mirrorsoft*	24.99	May 1988	Back in the charts again is this superb adventure from FTL. Sequels are due to follow shortly and are bound to be just as successful.	9
17	•	**PURPLE SATURN DAY** *Infogrames*	24.95	Feb 1989	Another beautiful, original and atmospheric game from France. Four individual games making an intergalactic quadrathlon.	9
18	◁18	**BAAL** *Psyclapse*	19.95	Feb 1989	Superb, the best graphics seen so far from this Liverpool-based company. Complete with lovely sound effects it makes an extremely playable game.	9
19	•	**TRACK SUIT MANAGER** *Again Again*	19.99	April 1989	After much acclaim in its 8 bit versions, Goliath and Again Again bring it to the big screen. Successfully manage your team or else.	8
20	▽12	**STOS GAME CREATOR** *Mandarin*	29.95	March 1989	Now you can create your own games with superb graphics using this powerful package. Easy to use, while giving professional results.	–

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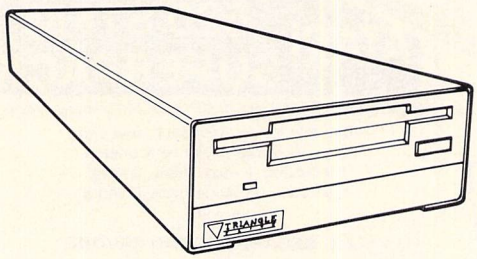

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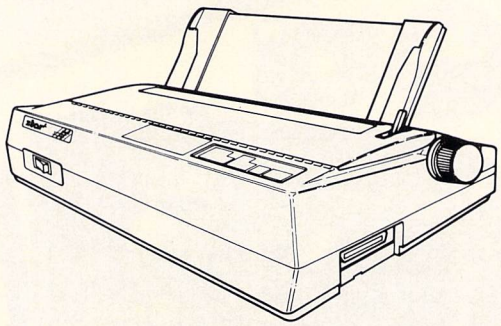

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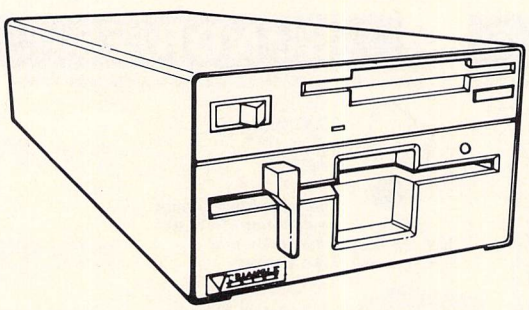

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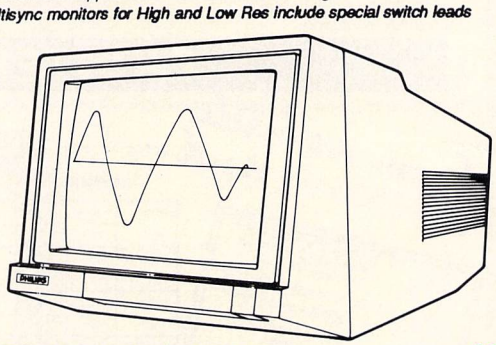

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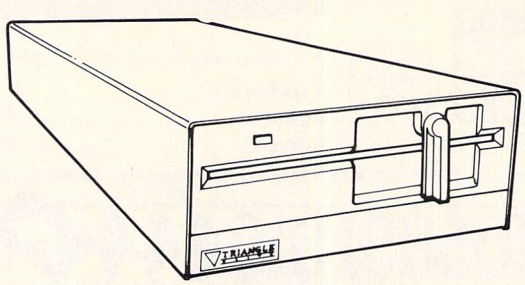

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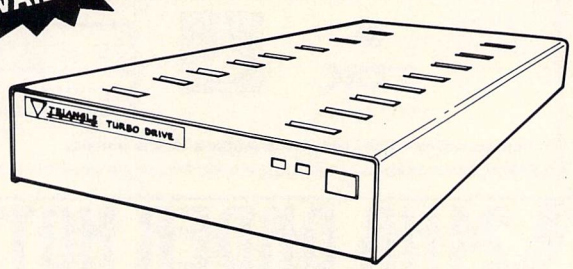

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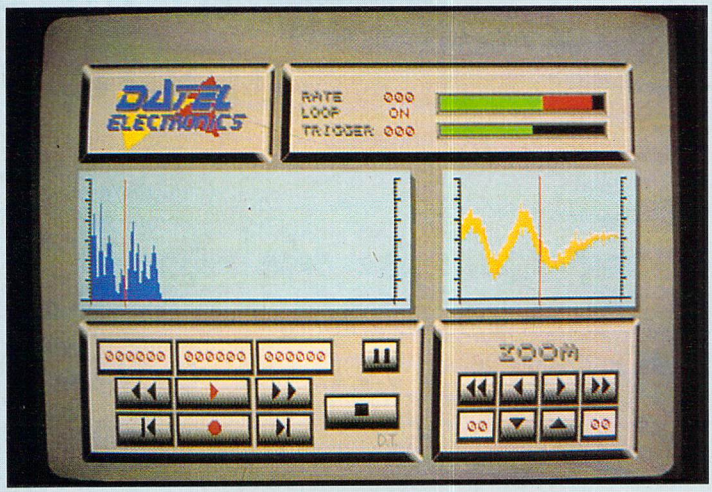

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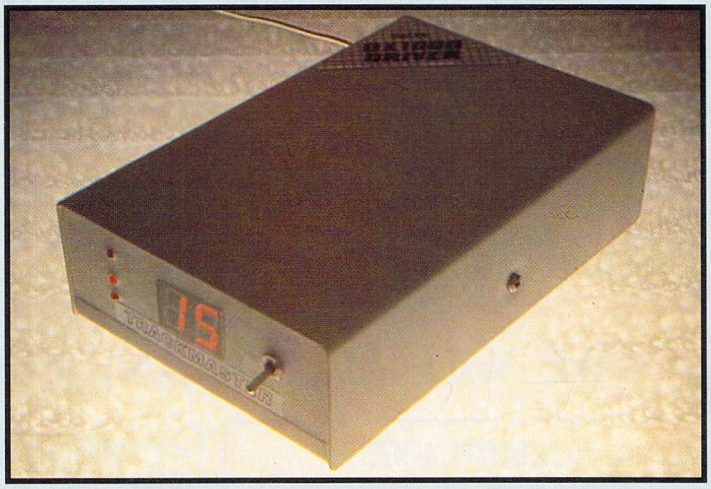

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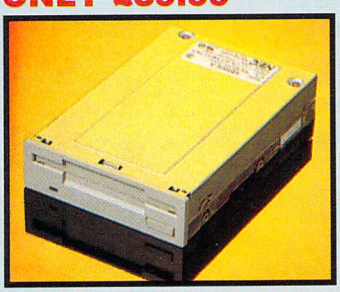

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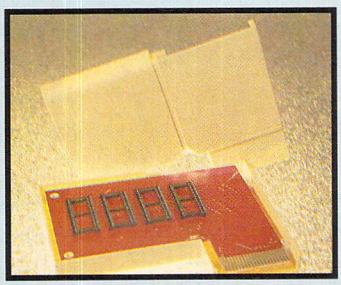

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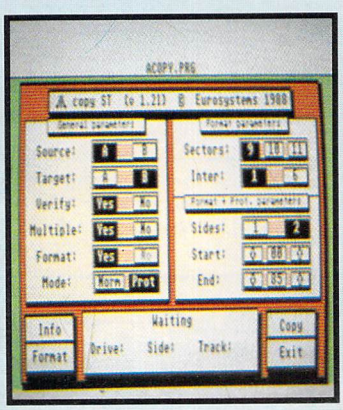



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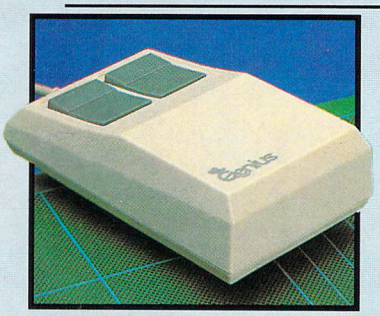

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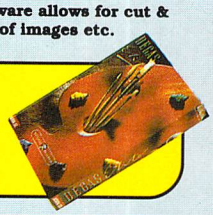



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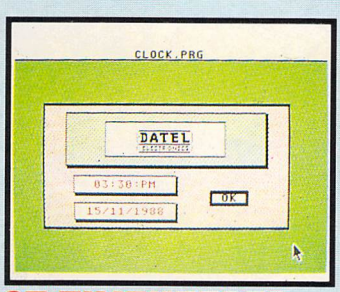

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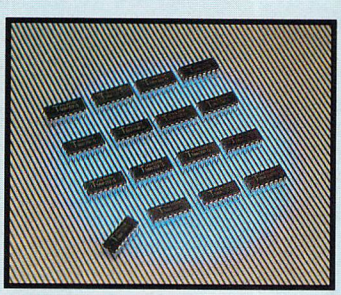

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ATARI STAR USER GAME

The triple crown

Program: Advanced Rugby Simulator
Price: £19.99
Supplier: Code Masters Software, Lower Farm House, Stoneythorpe, Southam, Warwickshire CV33 ODL.
Tel: 0926 814132

DURING the past two years soccer simulations for the ST have proliferated like rabbits. With one or two exceptions the bulk of them were instantly forgettable. In that time we have long waited for a software company to release a realistic representation of the noble game of rugby.

Perhaps it was the strange off-side rules that deterred companies or maybe simply a lack of will, but at last it is here. Advanced Rugby Simulator is a definitive and instantly playable burlesque of that great game. It unashamedly follows the Union code and features everything you would expect in a real game of rugby – including a streaking Erica Roe.

The game boots up with a colourful loading screen matched by some stirring music. You are then presented with the main menu, around which the simulation revolves, as it allows many variations in style of play and tactics.

Reading the accompanying manual is a prerequisite to play, but it is also worth messing around with the menu options and making a few mistakes.

I found this strategy allowed me to understand some of the complexities and to go from a 54-0 defeat to a 12-12 draw in only five games. That is not to say that Advanced Rugby Simulator is easy, as the infinite variation in play still poses problems in each game – just like the real thing.

You control your team of eight players – five backs and three forwards – on a laterally scrolling screen using smooth joystick action. You view play from an oblique angle as if you were sitting in the grandstand, and this helps you gain a good picture of the match.

The sprites are fairly small and I feel that the graphical representation of them could have been larger. However, the animation is superb as you run and fight for every ball.

Passing, jinking, bobbing, weaving, diving and tackling are all catered for in some of the most realistic sport animation I have seen on any micro. When in possession you can toggle the V angle of your backs by pressing the Alternate key. This lets you pass the ball down the line to gain clearance for a kick to touch.

Scrummages involve rapid joystick action if you are to win the ball and feed your waiting backs. Lineouts are lovely affairs which require tactical positioning of your forwards in order to win the ball.

Touchbacks are often life savers if the pressure gets tough, but make sure you get upfield as quickly as possible after your drop-kick back, otherwise you run the risk of your opponents getting a free shot at a field goal.

On scoring a try the view shifts and you face the posts head-on from pitch height. You then attempt a conversion, but this will require some practice to get the power and trajectory right.

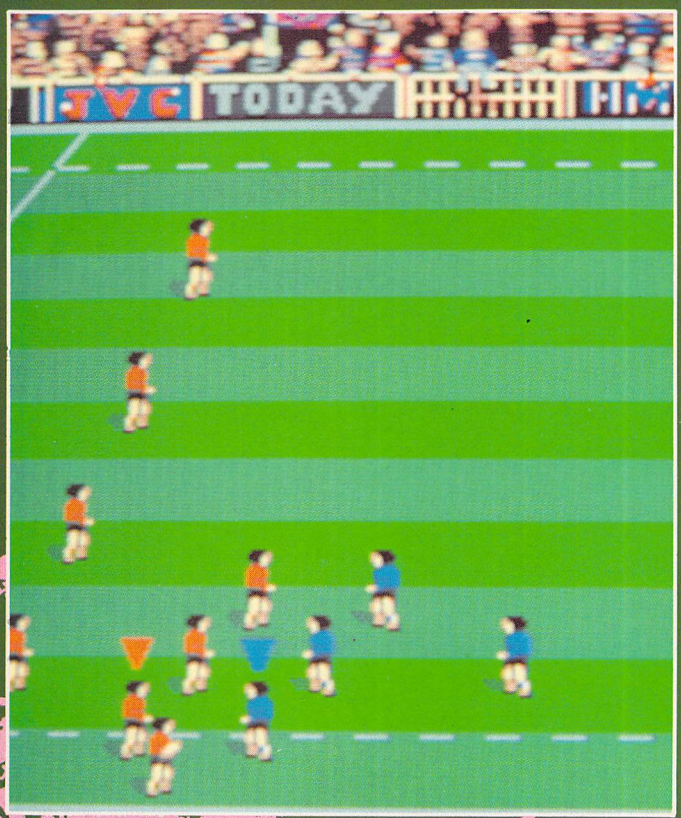
The main menu lets you choose between a one player game – you against the computer – a two player game, which allows you to play against a friend, and a league set-up.

The league has room for up to eight teams, which can if you wish include your ST as one opponent. The names of the teams can be changed as desired using one of the menu selections.

However, it is the Options selection



Battle it out in a packed stadium



Line-outs feature clever tactical play

which opens a gateway into the sub menus. The first allows you to key-in and save your customised variations. And Help files can be called to screen at any point.

You can change team colours to represent any of the major international kits. Though unfortunately none of the colour sets involve hoops or quarters – it would have been grand to see Pontypool or Harlequins represented in their unique strips.

More importantly, you may change the attacking and defending presets of your backs. You can choose two presets from a selection of 17 and these can be toggled between during play using the Shift key. I found a combination of a wide floating V and a packed left feed-back preset the most effective.

Alter Simulation lets you into the intricacies of altering tackling thresholds, recovery rates, passing heights and speeds, kick power, stamina, defence distance and so on.

I discovered that increasing stamina and decreasing recovery time were essential to successful play. I would only recommend that you alter the passing thresholds once you have become familiar with the game.

This menu also lets you set the time for each half, so as you become more adventurous you can play for longer and longer without the annoying interruption of the final whistle.

It will take you some time to become proficient at passing and running with the ball, and even longer to kick to touch with accuracy and distance. However, the game is instantly addictive and the more you play the better you will become.

My only criticisms of gameplay are that rucks and mauls do not appear very realistic and no allowance is made for penalty kicks – a shame but only a minor quibble. This is a superb simulation and one I wholeheartedly recommend.

Nic Outterside

Sound	*8*
Graphics	*9*
Playability	*10*
Value for money	*10*
Overall	*10*

SECOND Sight

Swoon ... those legs and those macho bodies. This game is definitely for me, though I could have done without top-heavy Erica streaking on to the pitch after every other try.

Seriously though, as a lifelong rugby fan, this game has everything and is totally addictive. Even non-sports fans may find excitement in the tricky joystick dexterity needed to succeed.

Helen Grigsby

It takes two . . .

Program: Captain Fizz Meets the Blaster-Trons
Price: £14.95
Supplier: Psyclapse, Port of Liverpool Building, Pier Head, Liverpool L3 1BY.
Tel: 051-207 0825

COMPUTING has a reputation for being a rather solitary occupation, so it makes a pleasant change when someone releases a game which demands true cooperation between two players.

It's unfortunate, however, that Captain Fizz is based on such an old-hat design. Psyclapse will hate me for saying it, but the programmers are obviously ardent fans of that old favourite, Gauntlet.

The plot is distinctly different, though. Having woken up after what you thought was an operation to have your tonsils removed, you find yourself on a different planet in a different body.

Believe it or not, you are now a member of the Queen's Cloned Highlanders about to embark on a mission to the planet Icarus to destroy a computer.

Things sober up a bit from now on. Having found a suitable friend to accompany you, your task is to battle through 20 or so levels against overwhelming odds, destroying all the alien generators on each level in order to activate the exit to the next one.

As well as the usual homicidal alien population you'll have to deal with force fields, mines and security doors. And that's only the start of it. On request from Psyclapse, I won't give too much away, as half the fun is in finding out what everything does and how it fits into your winning strategy.

The playing area is viewed through two rather small windows – one for each player. It is possible to play on your own, of course, but don't expect to last long. Sadly, and in complete contrast to previous offerings from this company, the graphics are small, unimaginitive and slightly flickery.

The sound, too, pales in comparison with the likes of Baal, leaving me to wonder how this one slipped through the quality control. Another irritation is the flip-screen system used – no attempt has been made at scrolling.

It's fortunate that the gameplay redeems most of these faults to some extent. Each level is cunningly designed, and while the first couple should give you no trouble, things begin to get much more difficult from then on.

Decisions have to be made as to which player will tackle what, and any arguments usually end up being resolved by a shoot-out, although this tends to end the game prematurely.

While it is undoubtedly good value, and reasonably addictive in the short term, Captain Fizz doesn't really live up to the high standards set in the past by its publishers.

Jonathan Davies

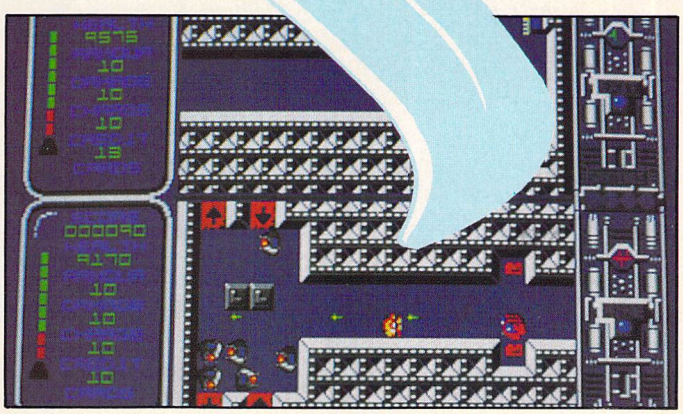
Sound	*5*
Graphics	*5*
Playability	*7*
Value for money	*8*
Overall	*6*

SECOND Sight

Superb gameplay but disappointing graphics and sound just about sums up this game.

Some lovely ideas are evident and the game is certainly addictive, but it lacks the polish to make it a winner. Captain Fizz meets the Blaster-Trons would certainly not make it into my Top 10 of ST arcade games.

Nic Outterside



Kenny Dalglish

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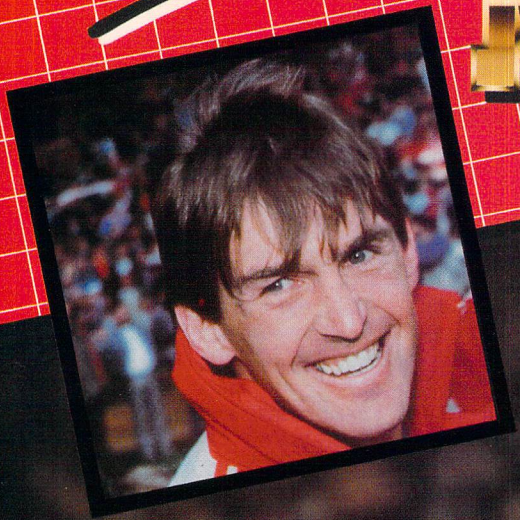


Cognito

Program: Batman
Price: £19.95
Supplier: Ocean Software, 6 Central Street, Manchester M2 5NS.
Tel: 061-832 6633

Zap! Pow! Biff!



THE latest release from Ocean places you in the comic book role of Batman, fighting for justice against two old adversaries, the Penguin and the Joker. Two discs supplied, provide totally independently playable games.

The first starts in the batcave and has you, controlling Batman, attempting to shut down the Penguin's master control computer. This, among other things, is responsible for mechanical penguins in the street that pop up and shoot you.

The second game places Batman in Gotham City Park from where he has to try and find Robin who has been captured by the Joker.

Both are graphic adventures featuring Batman, who moves within a comic strip. When he walks off the edge of one picture, a new one appears, roughly overlaying the last.

Batman has to travel between each picture, collecting various objects for energy or later use. When enemies are found they must be fought or eliminated with one of your collected objects.

Control is by joystick only and the manoeuvres available are high kick, low kick, punch, throw and duck either left or right. Movement is accomplished by walking left, right, into and out of the screen, as well as climbing up or down. Some of these actions can prove awkward at first.

The quality of the graphics is excellent and the characters are well animated and move with almost cartoon smoothness.

The music that plays throughout the game is a repetitive rendition of the Batman theme. Thankfully it can be turned off, allowing you to hear the simple but effective sound effects. These are very quiet in comparison with the main theme.

You move the joystick down and press the fire button to collect objects or enter the control screen which then scrolls quickly into view showing the five game control icons in the centre and spaces for collected objects on either side.

The percentage of the game completed and the remaining energy level is displayed as Batman's face, which slowly erodes to reveal his skull.

A Bat cursor, controlled with the joystick, is moved over the icons and selection made by pressing the Fire button. The instructions say nothing about the icons, however I found these were Drop, Use, Return to game, Quit and Music on/off. Another undocumented feature is the pause button – F10.

This was fun to play and entertaining to watch. There are many interesting locations to explore and puzzles to solve, aided by clues displayed as cartoon captions. Overall, a good game with well presented graphics. Well worth a look.

Steve Phillips

Graphics	*9*
Sound	*5*
Playability	*8*
Value for money	*8*
Overall	*9*

SECOND Sight

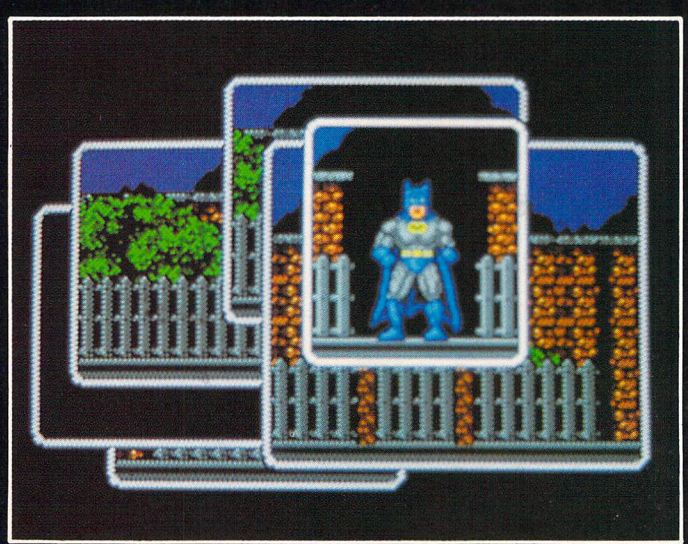
Holy broken bones, this game is amazing. It features all the best aspects of an arcade adventure while capturing the magic of a comic strip.

Batman is alive and well and fighting it out on your ST screen – a must for my son's birthday and for daddy to play in secret.

Nic Outterside



The control screen showing your status



The caped crusader to the rescue



Product: Andes Attack
Price: £9.95
Supplier: LLamasoft, 49 Mount Pleasant, Tadley, Hants, RG26 6BN.
Tel: 07356 4478

ANDES Attack from the talented Jeff Minter is a real blast from the past – an update of a golden oldie. The game was originally released years ago on the Vic 20. I never saw that version, but played several clones on various other micros – Planetoid, Guardian and so on.

Basically the game involves flying over a rapidly scrolling mountainous planet surface rescuing its inhabitants from the clutches of alien invaders while blasting everything in sight.

The game boots up to reveal a mostly blank screen apart from the title at the top. Fireworks shoot up and explode into coloured regular patterns, making way for the title screen featuring your ship flying through (animated) space, an amusing anecdote like "Sheep can't play Andes Attack because their little hooves can't grip the joystick", and the copyright message.

If you leave the program for a minute the game will enter demonstration mode to give you an idea of what your mission is and what sort of opposition you're likely to meet. After this comes information screens which show each of the alien ships in turn and briefly describe their function, vulnerability, speed and so on.

The controls are split between the mouse and keyboard – your right hand controls the mouse and your left hand is on the keyboard. Clicking on the right mouse button enters practice mode where you can build up your skills before trying the game for real.

Clicking on the left mouse button launches your ship down towards the planet's surface where llamas roam and graze. The major part of the screen is where the action takes place. At the top is a long range scanner showing all living creatures, aliens included, on the surface.

Down the left hand side of the screen are icons representing the llamas. Down the right are your spare ships, should you write one off, and smart bombs.

As you thrust forwards the surface scrolls smoothly below. It's not long before swarms of aliens suddenly appear and it's Zap!, Pow!, Crunch! as you wade into the evil critters. Some are merely out to smash you into tiny pieces, while others scout round for llamas to grab.

Llamas will be kidnapped at random and taken towards mothership hovering high above the planet surface. You must rescue them before they get there by blasting the alien ship and catching the falling llama. If you fail, the beast's organs are used for spare part surgery and a new breed of vicious alien is launched from the mothership, hell bent on your destruction.

The graphics are stunning, with multiple palettes and bright bands of glorious colour on screen. The sprites are well defined and animated, and the action is fast and furious. There isn't much sound to speak of, no music, just a few special effects like explosions and zaps – I don't think it's Jeff Minter's strong point.

There isn't much much variety, the game just gets harder as you progress from one level to the next. You won't find much of a background story either.

However, the two most outstanding features of Andes Attack are the brilliant graphics and very addictive, but difficult, gameplay. If these two items are top of your list of priorities rush out and buy it. You won't be disappointed.

Roland Waddilove

Sound	*5*
Graphics	*10*
Playability	*9*
Value for money	*10*
Overall	*9*

SECOND Sight

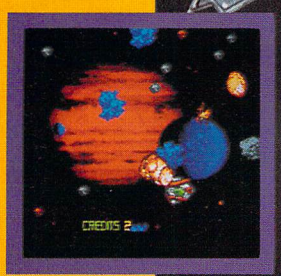
This is a toughie, and one for hardened arcade addicts only. Featuring the fastest action and the brightest, most colourful multi-palette graphics yet seen, Andes Attack is a masterpiece.

The only cloud on the horizon is that it's a re-release of an old favourite. I'd like to see Mr Minter use these amazing routines to produce something new, exciting and original.

Janice Murray

FULL WARNING STATUS: CONDITION RED

BLASTEROIDS







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HEADWAY HOUSE, 66-73 SHOE LANE, LONDON EC4P 4AB, TEL: 01-377 4645.

LEAF-BLA

Road racer

Program: Crazy Cars II
Price: £19.95
Supplier: Titus, Unit 4 Stannets, Laindon North Trade Centre, Basildon, Essex SS15 6DJ.
Tel: 0268 541126

Program: Motor Massacre
Price: £19.95
Supplier: Gremlin, 10 Carver Street, Sheffield S1 4FS.
Tel: 0742 753423

AGGRESSIVE drivers tend to fall into two groups – speed merchants who simply want to get where they're going as fast as possible, and dodgem drivers who delight in running other users off the road.

Driving games seem to fall into similar categories and the two tested here are as different as two games could be while retaining a common theme.

Crazy Cars II is for those of the former persuasion, putting you behind the wheel of a powerful Ferrari F40 in a race against time. Set on the American freeways, your mission is to smash a stolen car racket run by corrupt policemen.

This involves tearing around the country from state to state trying to reach the villains. For some reason your car explodes if you don't reach the target in time, but if successful you can continue to the next nest of corruption.

Motor Massacre is completely different, more tactical and violent. After the holocaust when cities are laid waste, the evil Dr. A. Noid realised that food is the only currency of worth. Cashing in on this, he began supplying Slu instead of food, knowing full well that anyone tasting the vile stuff would instantly forget anything else and spend all their time trying to get hold of more.

Your mission is to fight your way through several devastated cities, avoiding or killing slimy green zombies, ravaging the vehicles of various kamikaze drivers as you go. Your equipment for this mission is an armoured tactical vehicle (ATV) and a pistol.

Crazy Cars II gives you a view from behind and slightly above your car. As you accelerate away smoke streams from the tyres and the landscape begins to flash past.

Control of the car is deceptively simple – faster, slower, left and right – but takes a while to master, as delicate steering is needed when every instinct demands instant avoiding action as a police car looms ahead smack bang in front of you.

And smack bang is precisely what happens if you miscalculate your speed or overtaking manoeuvre.

Not content with this, the game requires you to navigate a system of sliproads leading from one freeway to another as you try to find the fastest route between two points while avoiding road blocks and angry cops.



Keep an eye on your fuel and speed in Motor Massacre



Stopped by the strong arm of the law in Crazy Cars II

Motor Massacre uses the overhead view, always harder on the controls but offering two joystick options allowing a choice of spinning on the spot to choose a direction or pointing the joystick where you want to go.

On the playing area you find buildings which are littered with both rubbish and useful items like food, ATV parts and ammunition.

Parking outside such a building takes you out of the vehicle and puts you inside on foot, armed only with a pistol to fight off marauding green hordes as you search the junk for useful items.

Out on the streets your battle is with other vehicles which ram you at the first opportunity, but these can be blasted with your cannon.

Also to be avoided are gun turrets, oil slicks and land mines. Every hit on your ATV crumples its pristine appearance, so finding a local garage for fuel and repairs is a must. However, the gas station needs payment, so you'd better have some food with you.

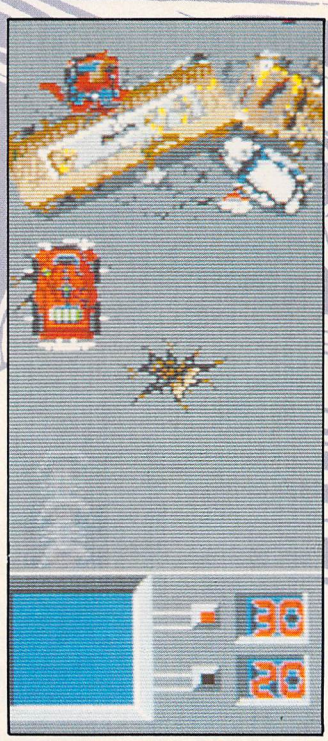
The graphics are clear and colourful in both games. Motor Massacre's screen contains detail and variety – particularly in the streets, where there is little time to admire it.

Crazy Cars has more simplistic graphics with a fairly static backdrop, but the scrolling of the road, verges, milestones and telegraph poles is stunningly realistic. You actually feel the crunch before you crash into obstacles either to glance off with a puff of smoke or see yourself obliterated.

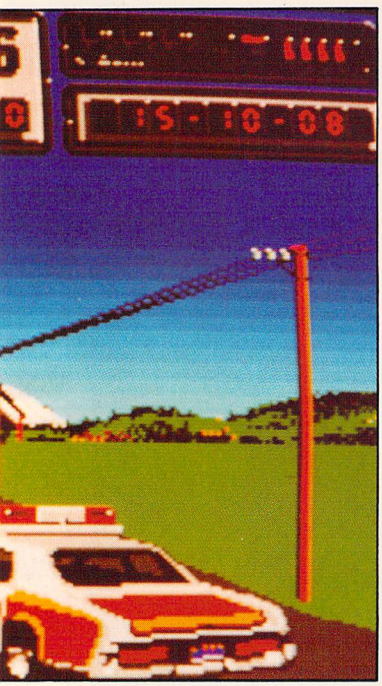
Both games use sound well – not much music but plenty of atmospheric background noise and realistic spot effects. Unusually, I found myself turning the volume up as it added so much to the enjoyment.

In Crazy Cars sound plays a vital part, as keeping your eyes on the road is a must and the audible radar gives warning both of the presence and proximity of road blocks or police cars.

I found both games very addictive, with little to criticise. Instructions for Motor Massacre are clear and comprehensive but I dislike having to



Your route by frequently blocked in Motor Massacre



save to the original disc. Crazy Cars has rather sparse instructions, with at least one vital control missed out altogether – scrolling the road map – but as it is an uncluttered game this could be forgiven.

In the end the choice boils down to winning by skilful avoidance in Crazy Cars II or triumphing by constant violence in Motor Massacre. Both games are worthy of a place in any collection.

Pat Winstanley

Crazy Cars II	
Sound	8
Graphics	7
Playability	7
Value for money	8
Overall	7

Motor Massacre	
Sound	7
Graphics	8
Playability	8
Value for money	8
Overall	8

SECOND Sight

There seem to be an awful lot of racing car games for the ST, of which these are the newest. They are both fast, exciting and aggressive with all the thrills and spills you would expect.

Not an awful lot to choose between them, though for my money I'd plump for Crazy Cars II.

Nic Outterside

Galactic gravel

Program: Blasteroids
Price: £19.99
Supplier: Image Works, 66-73 Shoe Lane, London EC4P 4AB.
Tel: 01-377 4645

HANDS up those of you who remember Asteroids – the black and white arcade game of yesteryear which involved piloting your spaceship through the asteroid belt armed with a rapid fire cannon.

If you do remember this classic then you will probably be pleased to know that it is back in a new bigger, brighter and better form.

Selecting from one of the four warps on offer, you can determine the level of difficulty you wish to play. Within each warp are an unspecified number of galaxies, each containing nine or 16 sectors.

The asteroids drift into view set against a planetary backdrop. There are five different varieties, each with its own special characteristics.

Normal rocks behave as you would expect, shattering into increasingly smaller fragments with every blast. Red asteroids release power crystals essential to your survival. Popcorn asteroids are rather unusual – they expand when first shot and then become immovable when hit again.

The dastardly egg asteroids contain energy-sucking leeches that are real stinkers to shake off. Finally, there are seeker asteroids, large fast rocks that zoom on to the screen heading straight for you.

Once you have cleared all the debris an exit portal will materialise and transport you to the galactic map. From here you decide upon your next port of call.

Laid out on a grid are the sectors that make up the current galaxy; small sprites within each sector indicate what hazards you can expect to encounter.

Sometimes it can be advantageous to enter a sector that you know will contain alien ships. Although hazardous to your health, they provide a useful source of upgrades for your ship.

Whenever you blast an alien craft it will leave some kind of token in its place – flying through them will endow your ship with extra fire power, better shields, or a crystal magnet to attract power crystals.

The final token is a real beauty, the Ripstar, which can be used only once, but that's all you'll need. When activated, your ship rotates, furiously pumping out volleys of laser fire.

Blasteroid's graphics are colourful and well animated, especially the evil Mukor – a bulbous tentacled creep which challenges you at the end of each galaxy. Sound is less impressive, but at least you can switch it off.

All in all I would class the game as a pretty competent shoot-'em-up that provides difficulty levels suitable for all abilities.

Steve Brook

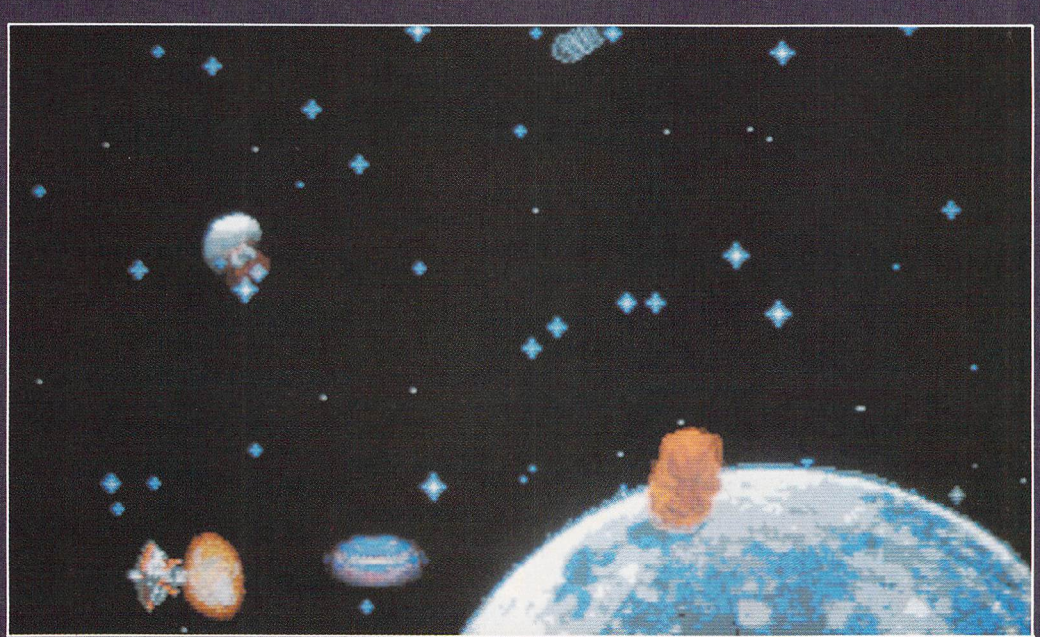
Sound	6
Graphics	8
Playability	7
Value for money	7
Overall	7

SECOND Sight

A novel and colourful adaptation of the old Asteroids theme. Good fun and loads of speedy joystick control needed if you are to succeed, but there is nothing here that you haven't seen before.

There are better games on the market this month, and better ways to spend £20.

Nic Outterside



Action-packed shoot-out

Product: Fusion
Price: £19.95
Supplier: Electronic Arts, 11-49 Station Road, Langley, Berkshire SL3 8YN.
Tel: 0753 49442

AS its name suggests, Fusion from Electronic Arts combines the best ideas from many sources into one action-packed game. There's no real story behind why you're the pilot of a fighter plane on foreign soil blasting the local inhabitants to pieces. But who needs that?

Your aim is to find the pieces of a huge bomb which have been scattered about the landscape, then return to a specific location and detonate it. The game features vertical parallax scrolling – that's a nifty bit of programming where parts of the background travel at different rates to the foreground – and the view is from overhead.

On the ground are buildings, pathways, roads and barriers. Guns popup from emplacements and take pot shots at you, alien craft appear from hangars and head straight for you firing a constant stream of bullets and homing missiles do their thing.

You start the game in a ground-based assault crawler, and your first task is to locate your plane – which fortunately, is quite close by. Tapping the spacebar puts you on board and you take to the air.

The controls feel a little strange at first as the plane has a fair bit of inertia – you can't suddenly stop and turn – which makes lining up your gun with a target more difficult than it otherwise would be. Barriers block your way, but there are means of removing them.

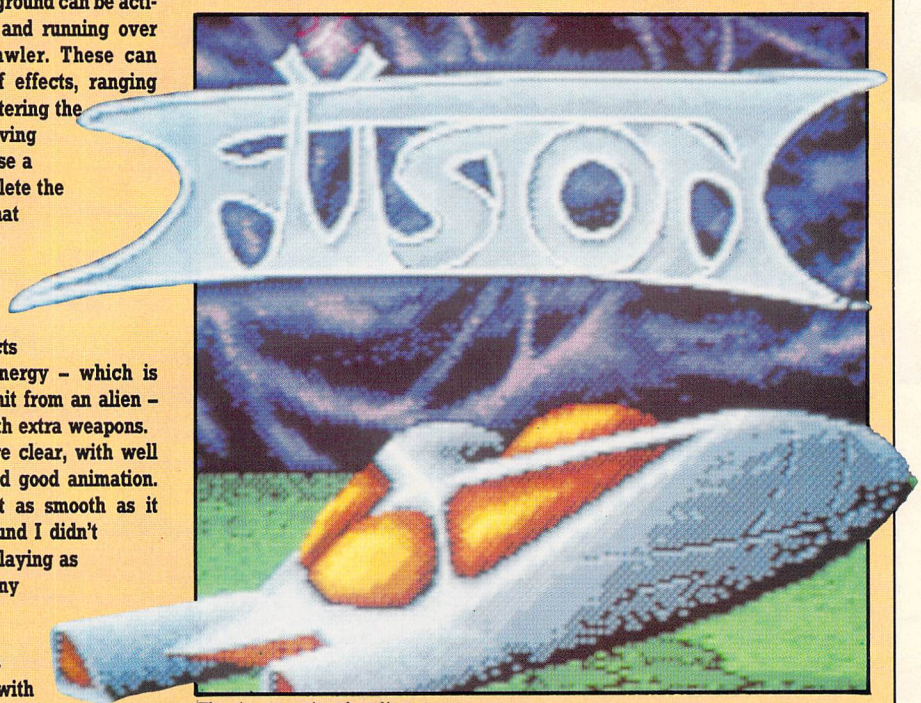
Switches on the ground can be activated by landing and running over them in your crawler. These can have a variety of effects, ranging from physically altering the landscape to removing barriers. These pose a puzzle, as to complete the game it appears that they must be activated in the right order.

When passed over, certain objects can boost your energy – which is sapped by every hit from an alien – or provide you with extra weapons.

The graphics are clear, with well defined sprites and good animation. The scrolling isn't as smooth as it could be, but I found I didn't notice this when playing as there were too many other things going on at the same time. The sound is reasonably good, with some music on the title page and the usual explosions and zaps.

Initially Fusion is difficult and you'll wonder what on earth is going on, but stick with it, it gets easier as you discover the use of the switches and other objects. It's an interesting game that will capture and hold your interest for quite some time.

Roland Waddilove



The impressive loading screen



Some switches alter the landscape



Mothership explores the level

Sound	*8*
Graphics	*9*
Playability	*9*
Value for money	*8*
Overall	*9*

SECOND Sight

I was a bit disappointed to find Fusion was yet another vertically scrolling shoot-'em-up. However, there is sufficient variation for this to be an interesting challenge to your arcade skills. There's plenty of action, aliens to shoot and puzzles to solve as you progress through the levels.

Janice Murray



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Presentation 96% Hookability 93%
Lastability 88% Overall 89%
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Commodore User says!!!

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Sinclair User says!!!

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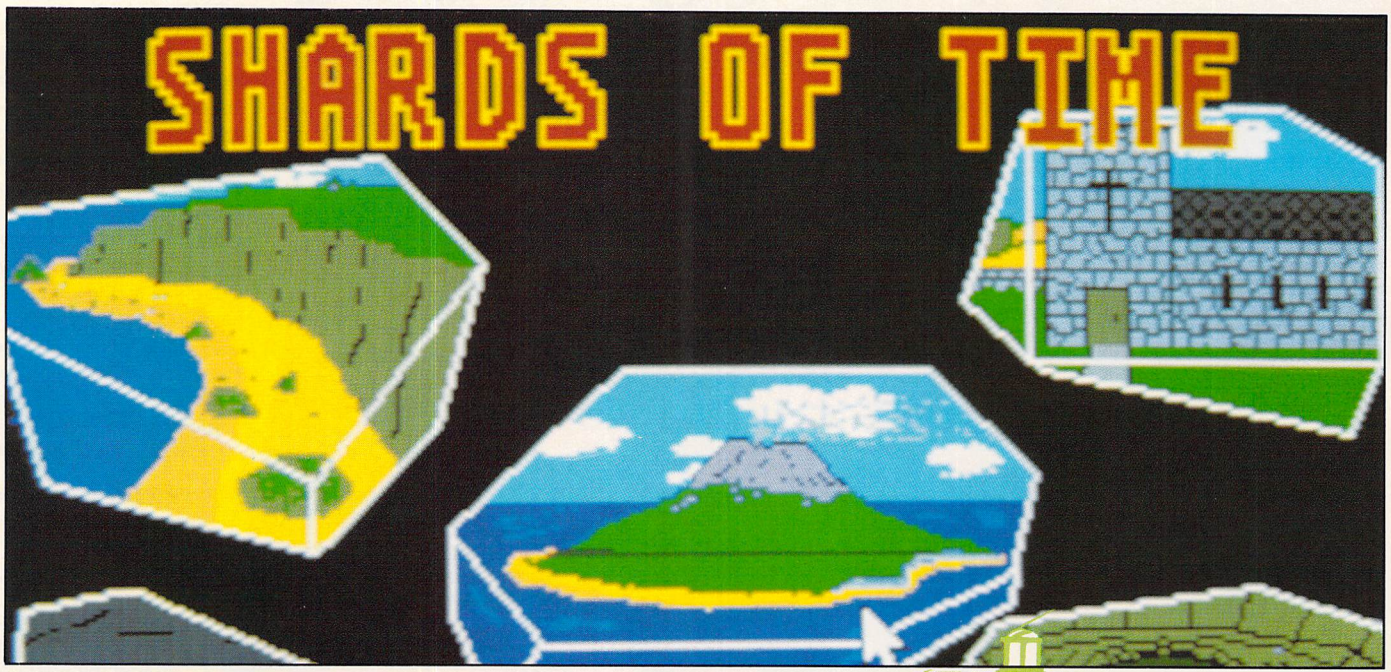


Program: Shards of Time
Price: £14.99
Supplier: Titan Games, 34 Windmill Lane, Worksop, Nottinghamshire S80 2SQ.
Tel: 0909 483017

Exciting years

SHARDS of Time is the first adventure from Titan Games, a small company that's hoping to make it big in the adventure field. Written using Incentive's ST Adventure Creator, Shards is a good example of the high quality software that can be created in this way.

You are a member of the Time Patrol, guardians of time and space. Time travel is achieved by means of the time matrix stabiliser, a complex and delicate piece of machinery that draws its power from the time crystal.

During a recent experiment the matrix stabiliser was pushed beyond its limits and a terrible explosion shattered the crystal and warped the three fragments into separate time zones.

By an incredible fluke you entered a protective time bubble only seconds before the explosion. The fate of the future, the present and even the past rests in your hands. Three field agents who will help you search for the crystal are already working, one in each time zone.

I'm amazed at the amount of pre-planning that surrounded the explosion – not only were there field agents already in the respective time zones, but time capsules of useful goodies had also been teleported there too. Sounds like an inside job to me.

The time capsules were all equipped with concealing units, allowing them to blend perfectly with their current surroundings, so ensure you examine every object carefully, no matter how ordinary it may appear.

Inside the time bubble are three doors, one leading to each time zone – the Ice Age, the 14th century and the 19th century – which can be accessed in any order and as many times as you like.

The Ice Age, as you might expect, is a barren wilderness consisting mainly of snow. An unusual feature is a huge cave fiercely guarded by a grey serpent.

I soon located the concealed time capsule but was disappointed to find that it contained the wrong objects – who needs a suit of armour in the Ice Age? Never mind, I thought, I'll just pick everything up and head for the 14th century.

Returning to the exact location at which I appeared I typed TELEPORT and hey presto I was back in the time bubble.

Stepping through the east door I materialised on a dusty track on the outskirts of the tiny village of Suvenwald. Heading southwest I decided to explore a dilapidated stone building before pressing on to the village. In the garden is a well and in the house a dozen skeletons. I grabbed what I could find and headed for the village.

Taking stock of my situation I decided to do an inventory of the goodies I had accumulated so far, but it would appear that the only thing allowed into the time bubble is yourself, for every last one of my Ice Age trophies had disappeared.

Yes, I tried the obvious solution of going back to the Ice Age again and wearing everything, but it still didn't work.

It was in the Middle Ages that I located the first of the field agents. Unfortunately, he wasn't particularly chatty – the local residents appear to have blamed him for the Black Death that had ravaged their community. When I found him he was swinging gently in the breeze over the village green.

The village church is a fun place with lots of secret places to explore and people to talk to. I was ejected by the priest on several occasions – and just because I was trying to cut the rope in his bell tower. I don't know if it is something about my personality, but I was ejected from the tavern too – the landlord caught me concealing one of his meat cleavers.

Time capsule number two took a little more finding. It contained the objects that had been destined for the Ice Age. This meant that the 19th century time capsule would actually contain something of use – I hoped.

If the Black Death wasn't bad enough, the 19th century time door deposited me on Krakatoa in 1883 – which, according to the Encyclopedia Britannica, is when the whole island went bang. It was in this particular zone that I located my first live field agent – in a rowing boat and heading out to sea.

Apart from the land-based locations, there is also a ship anchored off shore. But how do you get to it? My first attempt resulted in a pretty grisly failure at the hands, or should it be fins, of a school of sharks. Thank heavens for ram save.

Several of the locations were accompanied by pictures. They weren't particularly stunning, so I turned them off using the TEXT command.

As a textual adventure I really enjoyed Shards, the descriptions are atmospheric and you have to do something really dumb to die. Well done Titan, I'll look forward to number two.

Jon Revis

Presentation	8
Atmosphere	8
Puzzlement	8
Value for money	9
Overall	8

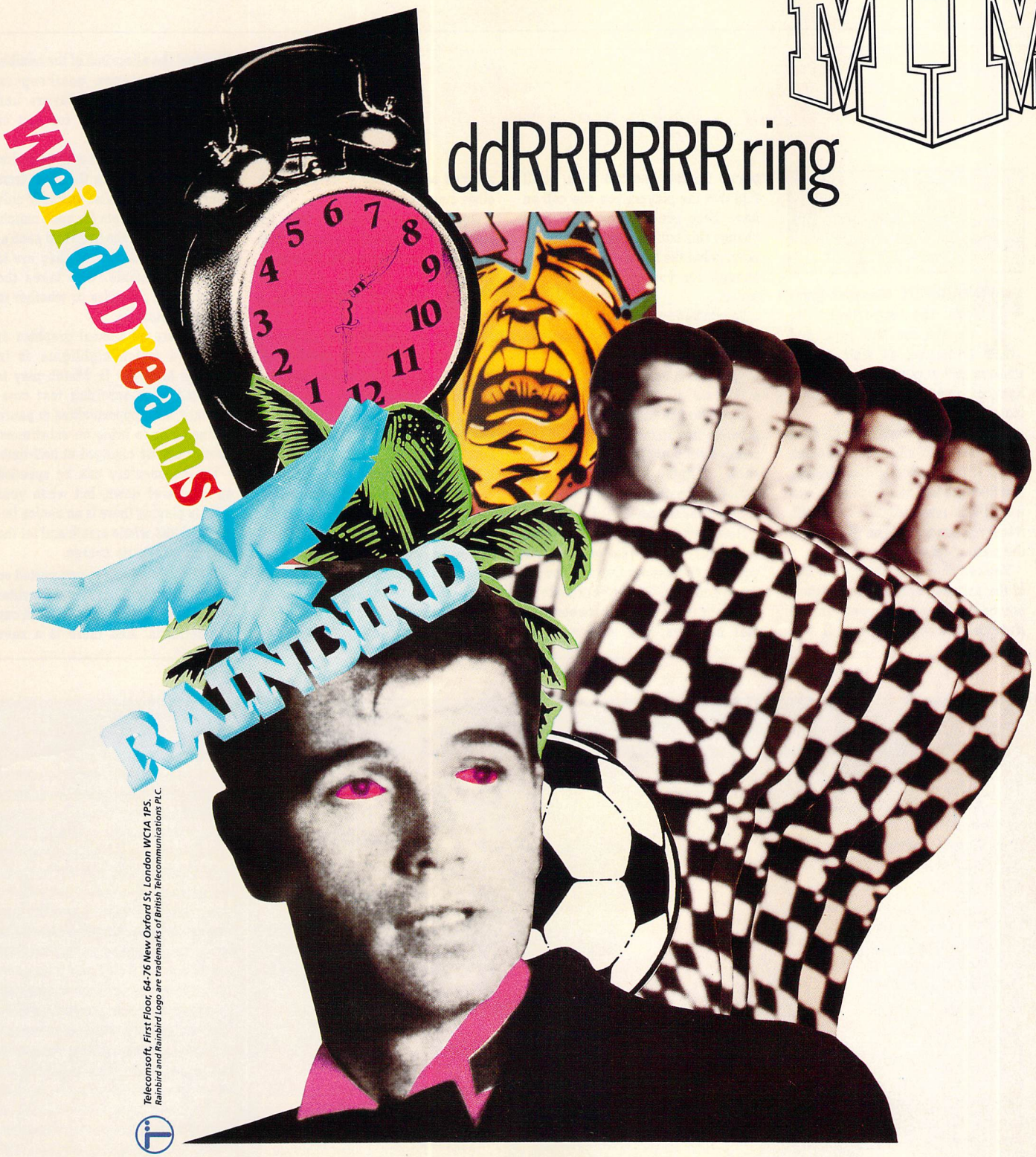
SECOND Sight

An excellent text adventure which reminds me in many ways of Level 9's Lords of Time – available for your ST in the Time and Magik trilogy.

This is a friendly adventure with lots of original ideas – such as the field operatives – and puzzles to solve. It lacks a little something, and more time zones to explore would have brought Shards up to the lofty standard of the Level 9 classic.

Nic Outterside

FEATURED ON TVS's SATURDAY MORNING MOTOR MOUTH



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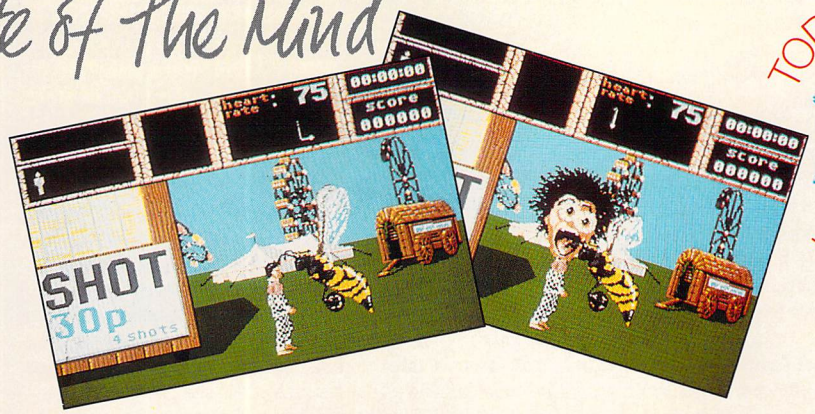

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Atari ST screen shots

FEATURED ON TVS's SATURDAY MORNING MOTOR MOUTH

Day in the dugout

Program: Tracksuit Manager
Price: £19.99
Supplier: Again Again, Units 3-7 Baileygate Industrial Estate, Pontefract, Yorkshire WF8 2LN.

TRACKSUIT Manager gives you the opportunity to experience the joys and triumphs, as well as the stresses and strains, of life as manager of your country's national football team.

At least some burdens have been lifted from your shoulders. You can forget about finance and administration because this game has freed you from those responsibilities. Instead, it lets you concentrate on the heart of the matter – playing the game.

You can choose to manage any one of the national teams from 54 different countries and compete in the Nations and World Cups. If you plump for the England team you'll find that the players you can call on have been pre-selected. You can't change this built-in stock of England players but the list is comprehensive enough for you to pick a decent squad.

Should you opt for another country, you'll have to enter in the details of the players – name, position and club – yourself. A minimum of 30 and a maximum of 100 players can be entered for the chosen country. The program has already determined the relative strengths and weaknesses of each country, so those pre-established values will be distributed among your squad.

Now you're ready to go. The game runs over a four year period, two years for the Nations Cup and two for the World Cup. To get your team in shape, or to fill in time between official matches, you may wish to arrange some friendly fixtures with other countries.

Only two such games can be played in any month, although you could have more by opting for a tour. On tour you have to play five matches in 10 days. Only one tour a year is permitted.

The game automatically advances to a day when a fixture is arranged. If your team is not playing on that day you can elect to watch one of the matches. Scouts can be sent out to keep you informed of the abilities of other teams.

A basic squad of 25 players must be chosen from all the players available to you. Reports on every player tell you such things as attacking and defending skill, stamina, morale and so on. These attributes can alter as time goes by, so you need to keep an eye on them.

The squad can be changed at any time and the allocation of the number of places between goalkeepers, defenders, midfield players and attackers is a matter for you as manager.

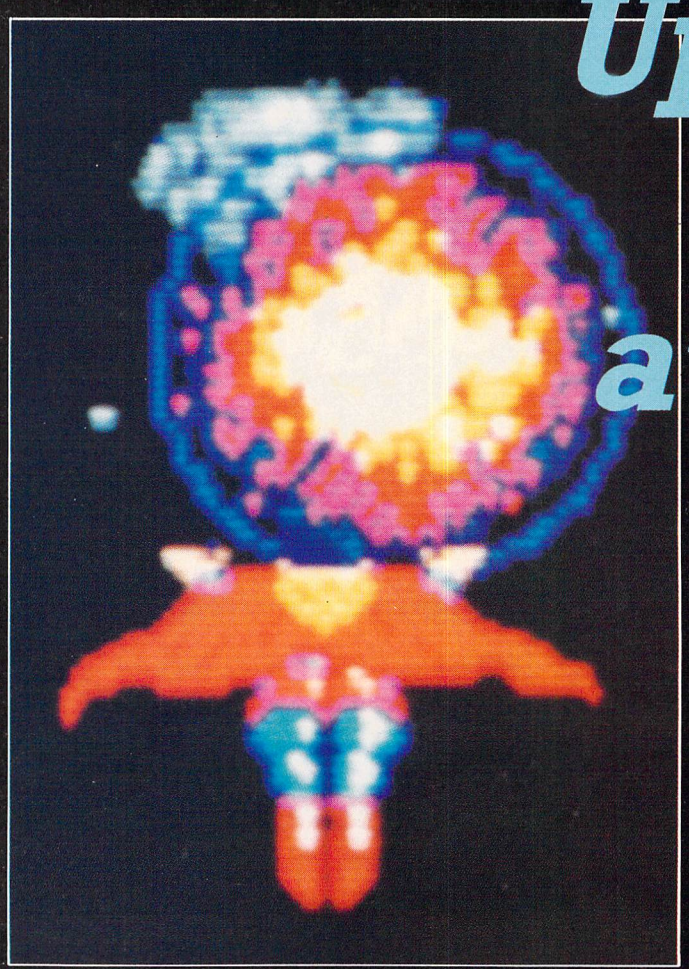
When you are faced with your first match you must pick the team from your squad. Thereafter you need only to make adjustments for each match. You can instruct the team and each of your players in the way they are to play, for example, who takes the throw-ins or penalties or whether to tackle agressively.

There are no special graphics or animated match highlights as in Football Manager II. Match play is reported as a scrolling text commentary, with opportunities to pause the game or to bring on substitutes. Tactics can be changed at half-time.

The commentary can be speeded up or slowed down, but when your team is playing there is no choice but to watch the whole match and let the narrative take its course.

A diary option keeps you posted on all forthcoming fixtures and provides all the tables and results for both cup competitions. And there is a save

Up, up and away!



A blast from the comic books

Product: Superman
Price: £19.95
Supplier: Tynesoft, Addison Industrial Estate, Blayton, Tyne & Wear.
Tel: 091-414 4611

IS it a bird? Is it a plane? No, it's Superman, the man of steel. Tynesoft now brings that hero of the comic book to your ST. The software comes on two discs and the gameplay is set out like a comic in that at the start of each level a page from a comic depicts events leading up to the point where you control Superman in the thick of the action.

The story so far: Earthquakes and volcanoes threaten to devastate the Earth. Lois Lane and the governor have been taken aboard a hijacked yacht by terrorists and what's more two of Superman's most dangerous enemies are after him.

As Superman, you first have to meet Professor Corwan at Star Laboratories, but on the way you encounter the Para-demons. In this first stage, using either a joystick or the mouse, you must kill the demons with your laser eyes or by thumping the living daylights out of them with your superhuman strength.

Select Superman's mode of assault by clicking the right hand button of the mouse. Icons at the top left of the screen will display what mode you are in. As soon as you kill a Para-demon another is born through the Boom Tube which drifts down from the sky just when you think you have wiped them out.

Some of the demons ride cannons firing concussion clouds as they approach. Come into contact with one and your energy level quickly falls.

When you finally beat off the demons another scene will load while its comic strip introduction explains that you must immediately go to the Atlantis, the yacht where Lois and the governor are being held.

Now using your super strength you fight your way along the deck of the Atlantis dispatching any terrorists on the way. Free the governor and fly



game option. Response to joystick movement could be more precise, but this is not a problem as the alternative keyboard method is fine. The game sadly fails to take advantage of the ST's power – there is no sound and graphically it is pretty dull.

The biggest criticism I have is that games can only be saved to the program disc. As a newly-saved game overwrites any earlier one, and since the program disc is copy protected, this means you can only ever have one game in progress at a time.

A worrying point is the danger of leaving the program disc without the write protection tab set. I fail to see why it was not written to allow the player to save a game to a spare disc.

If you're looking for realistic sound effects and impressive graphics, you'll be disappointed with Tracksuit Manager. But if you want a football game that has great depth, a long and concentrated playing time, durability, masses of variables and a powerful whiff of authenticity, then look no further.

Despite its lacklustre initial appearance and some of its flaws, Tracksuit Manager is a first-rate football simulation.

Bob Chappell

Sound	*0*
Graphics	*3*
Playability	*9*
Value for money	*8*
Overall	*7*

SECOND Sight

Yawn, not another soccer managerial simulation. There are some novel re-arrangements in this one, but honestly haven't we seen most of it a dozen times before?

As a sport, soccer is dying the death in this country, so why the need to flood the software market with yet more of these simulations? I am disappointed.

Nic Outterside

off with Lois to Star Laboratories. This isn't as easy as it sounds – the terrorists are equipped with laser cannon and seem to have the strength of 10 men, so venture cautiously.

On arriving at Star the professor informs you, again in the form of a comic strip, that he must go to the laboratory in a space shuttle to gather important data concerning the planet's seismic activity.

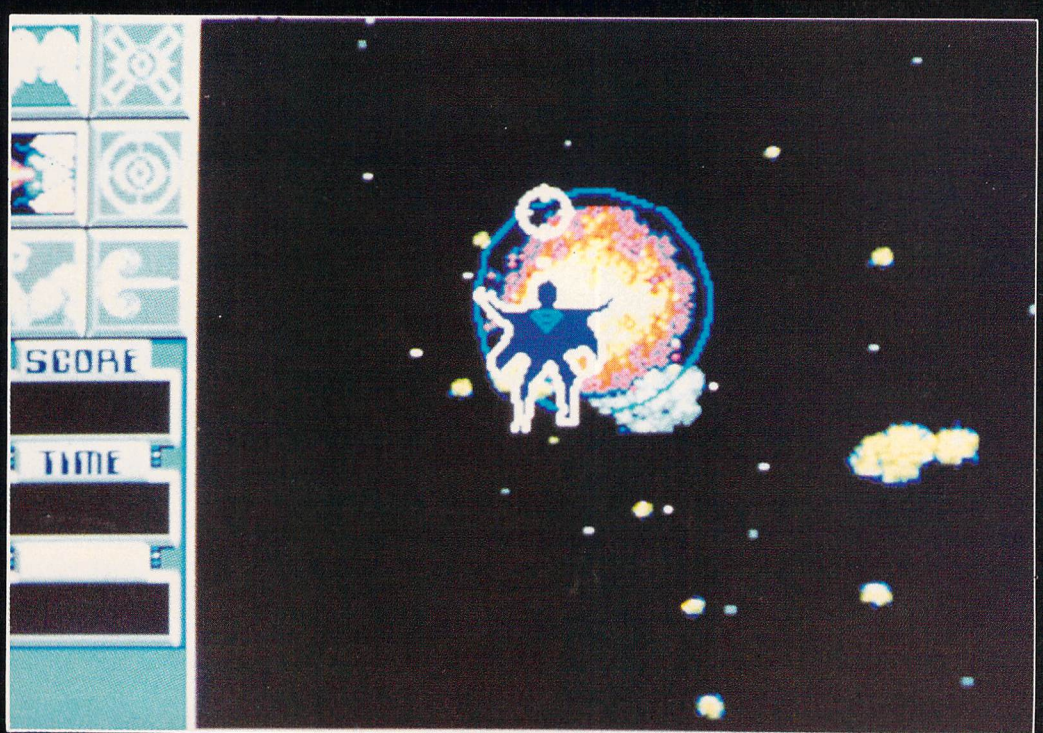
You must now guide the shuttle through an asteroid storm riddled with kryptonite. Again using your super powers, punch the asteroids and zap the kryptonite with your laser vision.

After hours of practice this third stage is the furthest I have reached. Your ultimate goal is to battle though the next five stages and reach the end where you must destroy the geodistruptor situated in the core of the Lexcorp Satellite station.

The game, although very playable, is by no means easy and the first stage may leave you somewhat frustrated after a while.

The graphics are very good and fairly well animated. The game will have you coming back for more and will not gather dust in the disc box until completed. I would say this is one for the collection.

David McLachlan



From the planet Krypton came the man of steel

Sound	*8*
Graphics	*9*
Playability	*9*
Value for money	*9*
Overall	*9*

SECOND Sight

Superman could have made Star Game this month, but for one thing – it's just too darn difficult. After two day's play I was still no nearer getting through the first level. The graphics – what I've seen on level one – are superb and the gameplay exciting and addictive. If Tynesoft could make it a bit easier then I'd recommend it, but not as it stands.

Roland Waddilove

Light blue Larry

Program: Leisure Suit Larry Goes Looking For Love
Price: £24.95
Supplier: Sierra On-Line/Activision, Blale House, Manor Farm Road, Reading, Berkshire RG2 0JN.
Tel: 0734 311666

THE first Larry adventure from Sierra, Leisure Suit Larry In The Land of the Lounge Lizards, was a huge success. The sequel has just been released and is even better than the original. So if this type of slightly risqué humour is to your taste, you're in for a real treat.

In case you've never heard of him, Larry is an unmarried, middle-aged nerd. It's even rumoured that one leading magazine voted him as the most negligible bachelor of the year.

With his over-coiffured but receding hair-do, crisp white polyester suit, shirt open to the waist, elevator shoes and gold-painted chains, Larry is once more dressed to kill and in search of a soul mate.

But because he's a jerk, Larry – as the full title of the game makes plain – is again looking for love in all the wrong places. Yet, you just can't help feeling more than a twinge of sympathy and affection for the guy.

In his latest adventure, Larry gets to play in a lottery and to appear in American TV's equivalent of Blind Date and Wheel of Fortune. As a result, he finds himself going on an exotic cruise with lots of spending money for fun and games. Of course, Larry will need some suntan lotion, a decent swimsuit and his passport before he can even get started.

Larry's subsequent escapades involve, not necessarily in this order, a visit to a tropical paradise, a nudist beach, dressing up in a bikini, contact with spies, an interrupted flight, a volcano, encounters with bees, snakes and quicksand, and something very unusual involving a sick bag. Hopefully it will all turn out right and Larry will get to meet and marry the girl of his dreams.

The adventure is copy protected by a routine that, at the beginning of each game requires you to identify a photograph and type in one of a number of telephone numbers that appear in the documentation.

One new feature is a jokey "filth" level. Rather like the lewdness level in Infocom's Leather Goddesses of Phobos, this option allows you to set the sauciness of the game to your own taste. It's not as titivating as it sounds, any blueness of the material is faint, being no more dubious than anything you might hear on, say, Alas Smith and Jones.

Pictorially, this new text and graphics adventure is far superior to other Sierra adventures – the graphics are sharper and Larry looks and moves more like a real human.



Larry looks for love in all the wrong places

Unfortunately, because of the size of at least one of the files needed to contain these new-style graphics, there is a drawback – and a very depressing one at that. The game will only run on a double-sided drive. Tough luck if you've got one of the earlier STs that have single-sided ones.

Shame that. Let's hope the other Sierra adventures in the pipeline are not going the same way.

Although some of the sequences don't require much from you – just sit back and watch the story develop by itself – overall there is plenty of challenge and involvement.

Leisure Suit Larry II is an entertaining and very funny game and well up to Sierra's excellent standards. If you have a double-sided drive, don't hesitate to buy this latest piece of fun and nonsense.

Bob Chappell



Larry goes searching

Presentation	9
Atmosphere	8
Puzzlement	8
Value for money	9
Overall	9

SECOND Sight

I am a great text adventure fan, but am afraid that this tirade of sleezy American humour masquerading as an adventure does nothing for me.

It seems that text adventure software houses are running short of ideas if they think this is fun. I'll give it a miss.

Nic Outterside



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Technicolour bloodbath

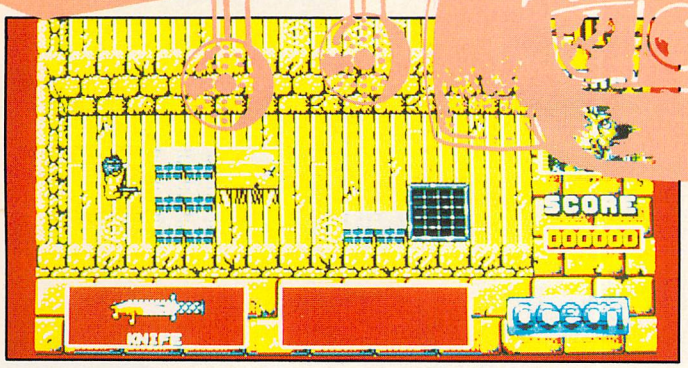
Program: Rambo III
Price: £19.95
Supplier: Ocean Software, 6 Central Street, Manchester M2 5NS.
Tel: 061-832 6633

WITH the vocabulary and the acting ability of a tree frog, John Rambo blasts his way back to our screens, this time in Ocean's Rambo III.

The game consists of three levels revolving round a plot that goes a little like this: Johnny's military chum, Colonel Trautman, has been captured by the Russians while on a mission in Afghanistan. So, guess which psychopath has to go in and rescue him.

You, taking the part of Rambo, have to go into the fort, find Trautman and escape. Nothing could be easier, right?

Wrong. The first section of the game has an overhead view of Rambo as he trots around the Russians' fort, looking for the cell where Trautman is being held. Guards patrol the area, and getting in the way of their patrol alerts them to your presence.



But you can fight back with the aid of your trusty hunting knife, which can be upgraded to bows and arrows, explosive arrows, guns, bombs, and all sorts of other goodies.

When Trautman has been found, you've got to flee the fort and get to a helicopter on the other side of the compound. Unfortunately, all the troops have now been alerted and you are in a lot of trouble.

The third level features you at the controls of a captured Russian tank, and an entire task force is now after your hide as you race towards the border and freedom.

This section is mouse-controlled, and you have to destroy soldiers with heavy machine guns and rocket launchers, soldiers in bunkers, tanks, and finally the Russian commander's MiG-24 combat helicopter.

If you finally reach the border you will have struck another blow for freedom, mom's apple pie and a good excuse for Rambo IV.

The graphics are pretty good, but not excellent, the sound isn't too hot and the tune could be better. Fortunately it can be turned off with the press of a button.

The three sections have already been done to death in other games. All are difficult to the point of hurling your ST out of the window.

Robert Swan

Sound	*5*
Graphics	*7*
Playability	*6*
Value for money	*5*
Overall	*6*

SECOND Sight

I found Rambo III to be quite challenging and addictive. OK, so certain parts of it are cribbed from other games, but that doesn't detract from the fun.

Roland Waddilove

Ghoulies stir in the crypt

Program: Munsters
Price: £19.99
Supplier: Again Again, Units 3-7, Baileygate Industrial Estate, Pontefract, West Yorkshire WF8 2LN.
Tel: 0977 797777

LILLY stirred uneasily, Marilyn had been kidnapped and Herman and Gramps were dozing in the crypt – a fat lot of use they were proving to be. You have to help her wake the two of them so they can help her out. The only problem is how?

Lilly who is under your control, is soon under attack from a steady stream of ghostly ghouls, grappling gremlins and fiery phantoms. The longer she lingers in one place the thicker and faster they come. Each one that touches her drains away some of her energy, though each time she blasts one into limbo her spell power is enhanced.

There is one particularly nasty spectre to look out for, which will drain all of Lilly's spell power if he gets half a chance, so he needs an instant ghost-busting blast.

One indestructible zombie roaming the mansion has to be avoided, but the most menacing threat to Lilly's progress is posed by the massed ranks of the graveyard ghouls.

These rise out of the ground eerily as you return from a spot of grave robbing. However, with the right combination of goodies even these can be blasted, though not without a spirited fight.

Sound quality is indifferent, but at at least it was not annoying. The Munsters' theme tune could be turned on or off.

This ghoulish game had me foxed for some time – I just had to go back to get it right. When at last I did manage to wake Gramps and Herman, they trudged off together into the next level, only to be killed almost instantly by lunging hands that groped out of a bank of coffins in the wall.

Here is my main criticism of the game. Getting through level one is neither easy nor quick, so having battled through to level two I think it reasonable to be given the choice of restarting the game at that level when killed. Otherwise frustration at plodding through the same repetitive screens will almost inevitably set in.

Except for that annoying point I would have rated the game higher, but the Munsters was nonetheless challenging, great fun and well put together.

Niels Reynolds



Graphics	*7*
Sound	*7*
Playability	*8*
Value for money	*7*
Overall	*7*

SECOND Sight

Lovely adaptation of one of my favourite TV programmes of the 1960s. Herman, Grandpa, Lilly ... they're all here in their pale and peculiar off-beat manner.

Great fun to play and certainly addictive. Despite Niels' grave criticisms I believe that The Munsters is a dead cert for the top.

Nic Outterside

STRETCH YO

THE Mini Office Professional suite heralds the beginning of a new era in productivity software for the Atari ST. It consists of five powerful modules which are available separately: Document Processor, Spreadsheet, Database, Presentation Graphics and Communications.

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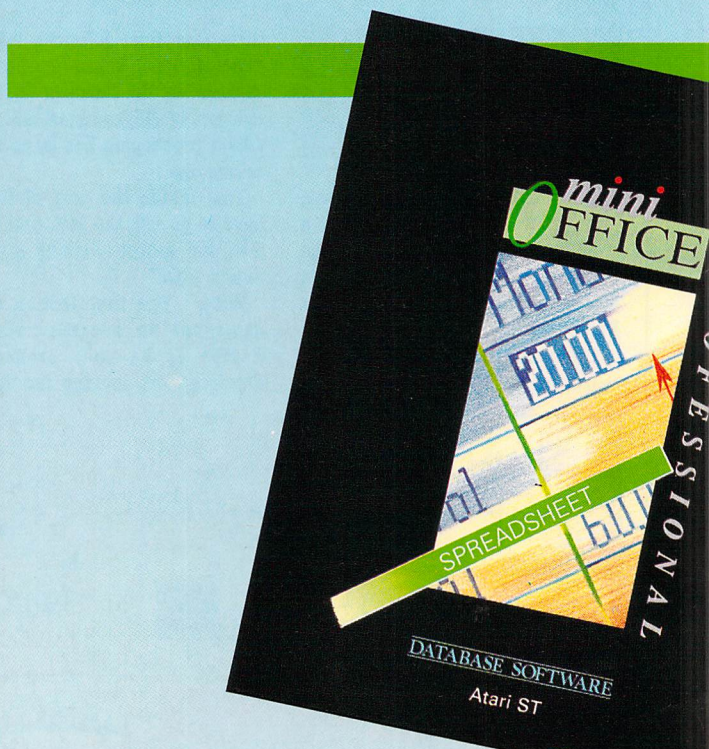

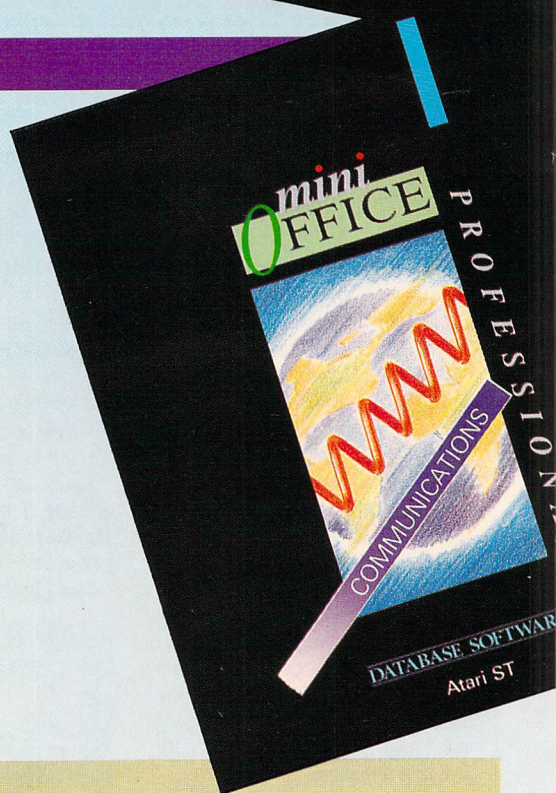

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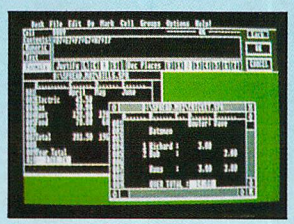

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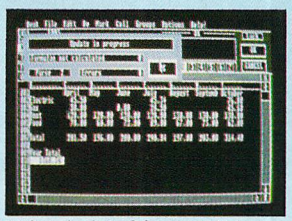

With its built-in debugger, Mini Office will highlight your errors

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Using your Atari ST to send fax, telex, telemessages and electronic mail is easy with the Mini Office Professional Communications module. With a minimum of keystrokes you can connect to MicroLink, Telecom Gold, Prestel and specialist bulletin boards all round the world.

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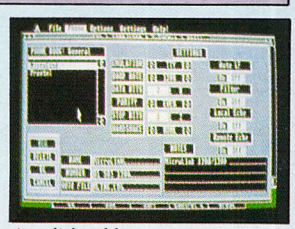

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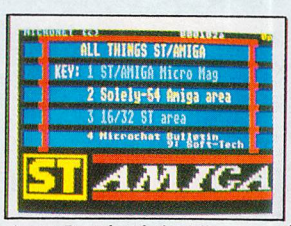

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Atari picks up the paint-brush



Niels Reynolds tests Hyperpaint, a new art package from Atari. Will it make its mark in an overcrowded market?

HYPERPAINT is Atari's own paint program for the ST. Assuming Atari would want to show its micro's graphic capabilities in the best possible light, I expected the software to be something a bit special.

Atari claims that Hyperpaint heralds the next generation of graphics packages on the ST, adding new and powerful commands to speed up and simplify the process of creating, editing and printing pictures and diagrams.

Well there is no doubt that by offering compatibility with Neochrome, Degas – both compressed and uncompressed – and IMG file types, as well as supplying Gdos (Graphics Device Operating System), there is great versatility here.

Also useful is the ability to work in all three screen resolution modes, a feature some well known art packages lack. Scanned or pre-drawn images can be imported and edited, many printers are supported and other typefaces are available. But is that so unique these days? And what of the real guts of the program, the ease and ability to create new graphic images?

The screen consists of a large work area taking up most of the available space. A palette runs along the bottom, an icon strip hangs down the side and the familiar Gem menu bar sits at the top. The menu bar consists of desk, file and options. The first menu item prints the copyright message and enables you to call up desk accessories.

The file menu allows you to load and save pictures, and dump them to the printer. Also a default file of brushes and fills can be loaded or saved, more of which later.

From the options menu you can choose the file type from Neo, Degas and IMG. You can also choose the type of pen, brush, spray, fill, block, text, shape and zoom. Also miscellaneous items can be set such as the palette, smear and mirror facilities.

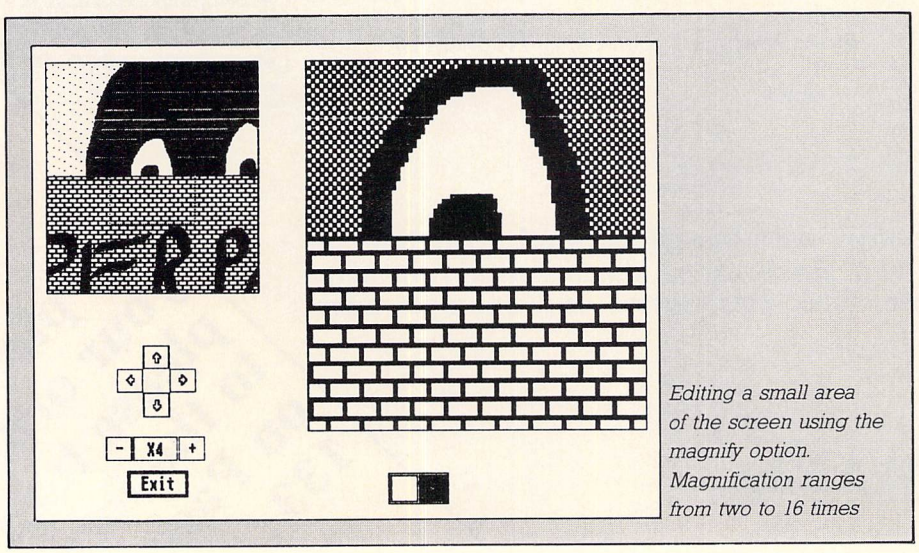
The options menu items are used to alter or manipulate the painting tools shown in the icon strip. Most can also be altered even when they are not currently in use.

The icon strip shows nine representing a drawing tool or function. Any icon can be selected by positioning the mouse pointer over it and clicking once with the left button. Double clicking brings up a menu or dialogue box allowing modification of that tool – for instance, altering a brush style.

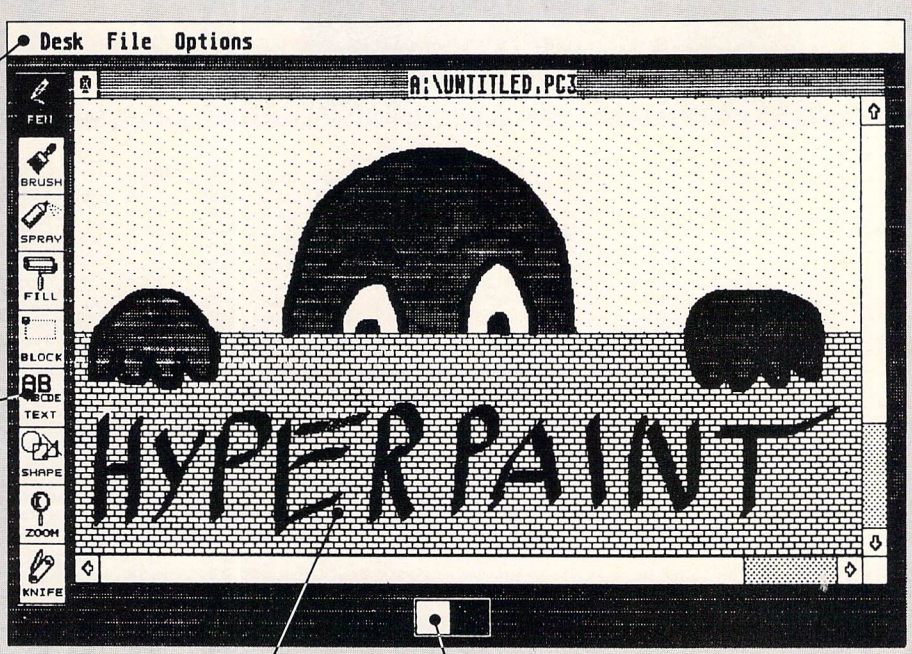
Clicking on the pen icon allows you instant access to the work area with your pen. Position the pointer on the screen, press the left mouse button and you're drawing. Or are you? I found there was an irritating delay between pressing the mouse button and the drawn line being shown on screen. This meant that when I was drawing freehand, with pen or brush, the start of each line was missed off and had to be put in again. You must wait a second before moving the mouse to draw.

Freehand curves can't be replicated easily, so fiddly retouching was often necessary – annoying and time wasting. Indeed, it would almost be a reason in itself for not considering Hyperpaint as a viable art package. Sure, you can adapt your style to minimise the effect, but why on earth should you?

The tools are sufficient for most needs, without being over generous with the facilities offered. The pen for instance, has eight thicknesses, but they can't be edited so that's your lot. The selected pen thickness also defines the line used by



Editing a small area of the screen using the magnify option. Magnification ranges from two to 16 times



Further options are available from the menu bar

The icon-based toolkit. Double-clicking on an icon brings up a menu or dialogue box

A window on to the work area. Clicking the right mouse button enables you to see the whole area at once

The palette. Only two colours are available in monochrome, but 16 are selectable from the ST's 512-colour range in low resolution

the shape tool for drawing borders.

The brush option is more fun, as you can create your own. Eight standard brushes are on offer, all of which can be changed. One option allows you to block cut an area from the screen to be used as the current brush style.

Modified brushes can be saved to disc or as part of the default file which is automatically loaded each time you use Hyperpaint. You could, in fact, have more than one default file, each containing a set of brushes.

I found the spray option a little underpowered. There are three sizes of cover – small, medium and large, although they would be better labelled small, smaller and smallest. There isn't much variety, and as with the pen option, you can't tamper with the preset sizes.

There is a spray modifier allowing one of six speeds to be used, though once again, a greater range would have been nice. Some of Hyperpaint's competitors have a range of 99 speeds.

The last aspect of spray worthy of note is the smear option, which can be toggled on and off. If you were spraying red over yellow you would expect at some point the red to obliterate the yellow. Using smear this doesn't happen, as the the two colours are mixed randomly within the area of spray to create a smoother merging of colour.

Fill allows specified areas to be filled with any one of 36 patterns. Each can be edited and saved in much the same way as the brushes to provide a new set of default fill patterns. Patterns can be set to fill in one of four modes – replace, transparent, invert or reverse transparent.

Blocks are defined by the usual method of sizing a rectangular outline over the area required. However, irregular shapes can be defined by using the separate knife icon. The block manipulator handles the usual cut and paste facilities, as well as a few more. Images can be enlarged, reduced, stretched, squashed, rotated, mirrored or skewed. You can set the rotation and skew at precise angles.

Outline and smooth options complete the block facilities. The former gives an outlined version of the image while the latter smooths out jagged edges. It is suggested that smooth is particularly useful for cleaning up digitised images, which can appear to be very speckly.

The text option allows you to write left to right, upwards, downwards or right to left in normal, italic, bold, outlined, underlined and light styles. Text may also be set centred or left or right justified. Several fonts are supplied in a range of point sizes.

Shapes allows easy drawing of filled or unfilled shapes. For instance, when drawing a triangle you need only to define its three corners by clicking the mouse button when the pointer is correctly positioned.

The lines are drawn automatically with the current pen thickness and filled with the current fill pattern – if the filled option has been selected. There are 18 shapes to choose from, including arcs, curves, rays, ellipses, continuous lines and rectangles.

Last but not least, the zoom facility allows magnification between two and 16 times at one point increments. This makes for easy editing and retouching with the minimum of eye strain.

Palette selection depends on the mode – clearly there's not much choice in monochrome. Low resolution colour is restricted to the standard 16 colours, but these are selectable from the ST's 512-colour range. You can pull RGB sliders about, or choose from a special palette screen displaying all 512 colours. Palettes can be loaded, saved and cycled for animation.

Conclusion

Together these facilities combine to create a generally competent and easy to use package. The manual explains all aspects of the program clearly and contains further sections covering picture formats, keyboard shortcuts, print utilities and Gdos installation. Each menu and the options available are explained with the aid of screen dumps.

I don't believe that Hyperpaint heralds a new age in computer art packages as it lacks any special features that make it stand out from the crowd. That slight delay in response when drawing worries me too. With the Atari name behind it, I'm sure it will sell. If you are in the market for an art package, by all means try it, but check the opposition too.

FACT FILE

Product: Hyperpaint
Price: £25
Supplier: Atari, Slough, Berkshire SL2 5BZ.
Tel: 0753 33344

POINTS FOR:
Easy to use Gem-based program. Degas, Neo and IMG file formats catered for.

AGAINST:
Not as many options as some of its competitors. Slight delay in drawing.

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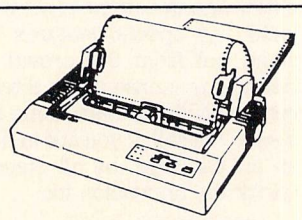

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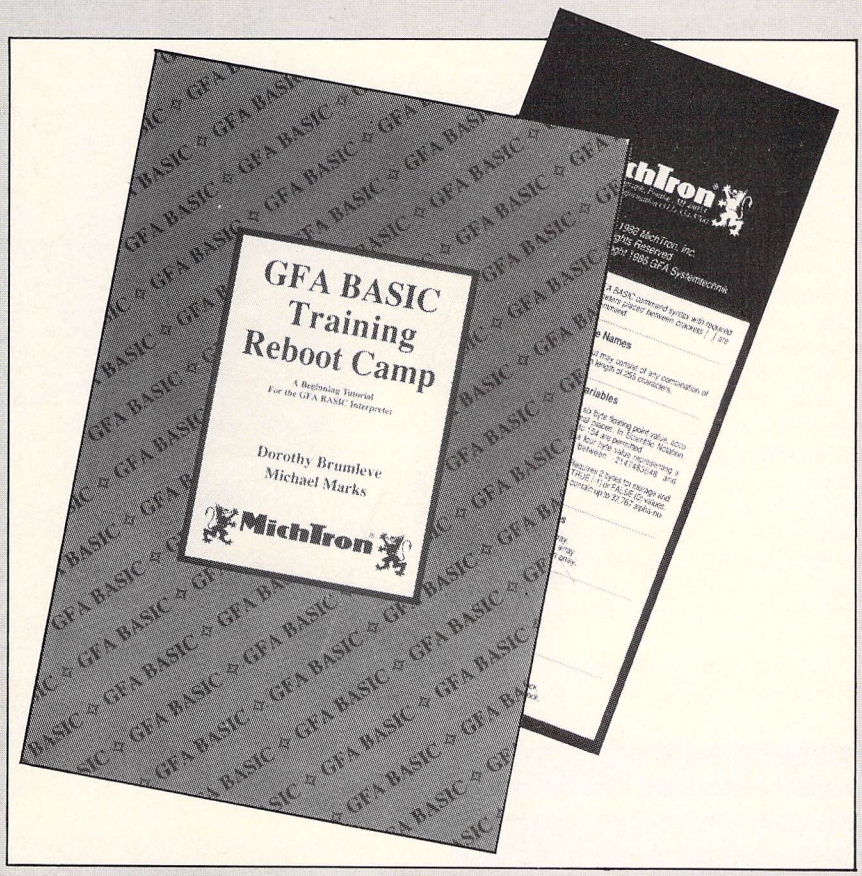

Nic Outterside reviews an excellent training manual to GFA Basic and a guide to using the new ST Basic

GFA Basic is one of the true pretenders to the crown of the best and most user-friendly Basic languages now available for the Atari ST. During the past two years its popularity has outshone most of its rivals, this despite the fact that GFA Basic employs some odd quirks in programming structure.

Warwick Thompson recommended GFA Basic most warmly in his review of the language in the June 1987 issue of *Atari ST User*. Although as an interpreted Basic it is slightly slower than some of its compiled contempories now available, the release of the GFA compiler addition meant an increase in speed of almost 1000 per cent.

The original package included the GFA Basic interpreter and a 300 page manual. The latter was superb as a reference guide to the terms, functions and procedures used, but did not attempt to teach programming with the language to anyone but experienced Basic programmers, and that was catered for in only 30 pages of introduction. It also fell short with numerous translation difficulties from its original German and a lack of any form of index.

GFA Basic Training Reboot Camp by Michtron Publishing is unashamedly a beginners' tutorial for the interpreter. It is available with or without a reference card and supplementary disc which includes several programming aids to help the novice. These include a utility to design your own colour palette and load Degas and Neochrome pictures into your own programs.

The book is a gentle, hold-your-hand guide to GFA Basic to be used as a complement rather than as an alternative to the original manual. It includes a series of 10 program chapters – which account for most of the book – a reference list of commands and an index of commands and terms.

Each chapter is divided into step by step programming techniques, experiments to carry out, and methods to test your growing working knowledge of GFA Basic.

The guide begins with the simplicities, explaining what .BAS, .BAK and .LST files are. At this point it caters as much for beginners to Basic in general as for beginners to the GFA form of the language. There is a whole chapter on getting started by exploring the uses of the GFA editor bar, debugging and saving and loading Basic files.

One of the strengths of GFA Basic is the editor/bug finder utilised by an array of single key commands or simple mouse operation. Another is the firmly structured nature of this language. From the outset the guide encourages you into good programming habits and into making full use of the editor bar. It teaches how to debug your own programs and how to avoid those silly mistyped numbers in data statements at the end of programs.

It also copes remarkably well in dealing with the fact that GFA Basic does not employ line numbers and allows only single statement commands per line. This was particularly useful for someone like myself who had learned Basic programming via the spaghetti of numbered BBC Basic.

The following chapters take you along the paths of simple graphics, logical statements, randomisation, using the mouse, sound and simple tunes, combining graphics and music and utilising data. Finally, Chapter 10 moves into the realms of more advanced programming which will surely be dealt with in a later Michtron publication. Each chapter concludes with a self-test which ensures that you have learned and consolidated everything which has been taught within that chapter.

Dorothy Brumleve and Michael Marks, who are the authors of this superb little book, suggest a strategy which takes a chapter at a time as part of the learning curve and prompt that work is only saved

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◀ From Page 41

permanently to disc at the end of each chapter. I can appreciate the logic of attempting to discipline the trainee into structured lessons which do not involve saving half-finished work, but have they never heard of mains spikes or power surges?

I felt that the reference card was rather over-priced at £3.95. It lacked a list of edit commands – as found on pages 24 and 25 of the original manual – and failed to list abbreviations of commands which are surely an essential point of reference for any beginner. The supplementary disc is full of utilities to help you program in GFA Basic but is not intended as a substitute to typing in the examples from the manual. It is only by such typing and debugging that you will really begin to learn.

However, the book is one of the best and most comprehensive beginners' guides I have seen to any computer language. With the GFA Basic manual and the GFA Basic Training Reboot Camp at your side, a bit of self-discipline and perseverence, you should soon master the rudimentaries of this most powerful form of Basic.

On its own it should encourage many ST users into Basic programming for the first time and will provide an excellent passage of transfer for any intermediate programmer who wishes to learn GFA Basic.

I am most impressed and await further publications from Michtron, with interest.

New guide to the new Basic

Product: Using ST Basic on the Atari ST
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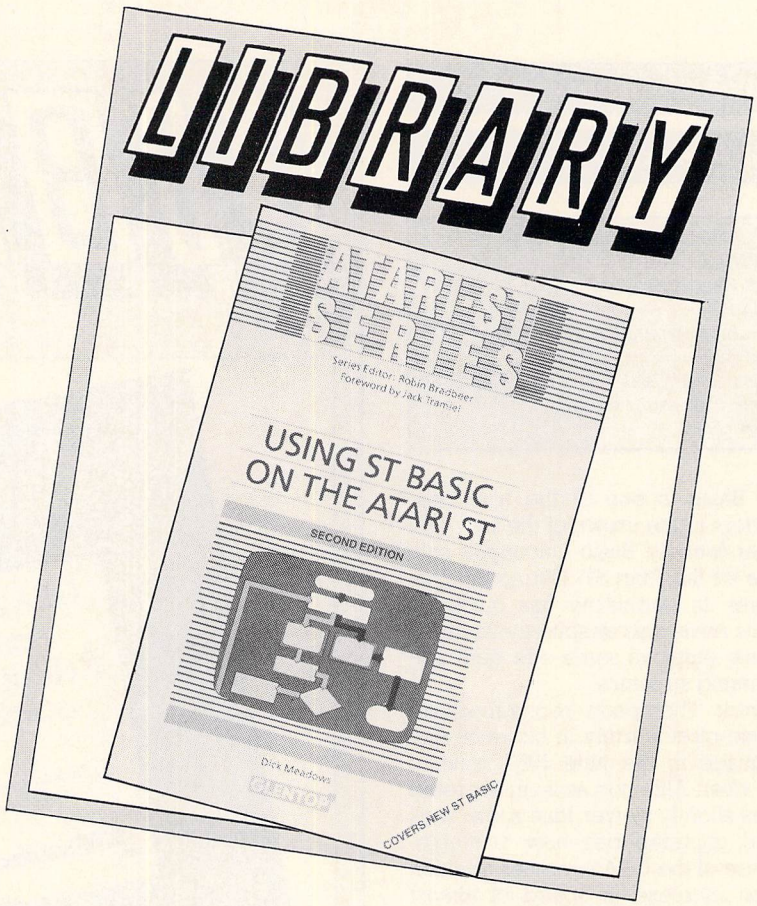

USING ST Basic on the Atari ST is an integrated guide to the new version of ST Basic and as such is suitable for anyone who has bought their Atari ST since the Autumn of 1987.

The original ST Basic which came bundled with the machines since 1985 was bug-filled and lacked a few important characteristics found in its enhanced younger brother. However, it was harnessed with a very good 240 page ST Basic Sourcebook and tutorial complete with a function key template, in addition to the owner's manual.

For reasons of time and marketing, when the new ST Basic was released, owners only received a 28 page résumé of Enhanced ST Basic. This flimsy excuse for a reference manual was as much help to ST users as a fridge would be to an Eskimo.

Using ST Basic on the Atari ST is aimed – in the words of Jack Tramiel – "to help ST users get to know their machine better and use it more productively". First impressions are that the book is well priced, user friendly and closely structured for easy reading and learning. It certainly escapes from the trap of turgidity into which many such manuals fall.

Chapter one copes with getting started with the real basics of the language. It explains how to load Basic and the purposes of the List, Command, Output and Edit windows as well as dealing at some length with using the Gem environment to best effect. The chapter also covers Print commands, calculations and simple graphics.

Chapter two looks at beginning to write and run programs in enhanced ST Basic, how programs should be saved on disc, then stored, merged and debugged through line by line checking. It further looks at fundamental commands and statements and explores the meaning of golden words like variables and integers. The paragraphs on using printers will be particularly useful to most ST users.

The next chapter launches into the application of data input statements and approaches some of the more subtle aspects of Basic programming.

Ensuing chapters are concerned with further programming, repetition jumps and sub-routines, standard functions and applications, random number generation, arrays and using files within programs. Each chapter is furnished with pleasant and easy to follow flow diagrams which in turn aid transmission of information.

The final chapter is essential reading and displays good insight by the author, Dick Meadows. It deals with facing and exploring practical programs which help test your progress in understanding ST Basic. Simple listings include a currency conversion program, a utility to produce multiple copies of memos and standard letters and a facility to calculate income tax.

Your understanding is further tested by a series of exercises set at poignant stages of the book. The answers are at the back, but as with any aspect of learning there is nothing to be gained from cheating.

A summary of keywords and reserved words are appendixed and help make the book into a super little tome of reference, which is well indexed to boot.

Using ST Basic on the Atari ST is not quite the gentle guide that the GFA Reboot manual pretends to be and assumes some working knowledge on your behalf.

There appears to me, to be a quantum leap in perception of understanding between chapter two – Beginning to Write and Run Programs – and the advanced nature of chapter three – Data Input. This could lose some beginners and I can only suggest that such readers supplement the book by tuning into our pullout guide to ST Basic.

I also feel that the addition of a function key strip and easy to follow reference card would be invaluable to the apprentice. However, this book is undoubtedly the best single guide to using ST Basic now available, and fills a much needed gap in the market.

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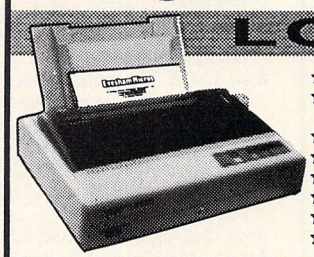

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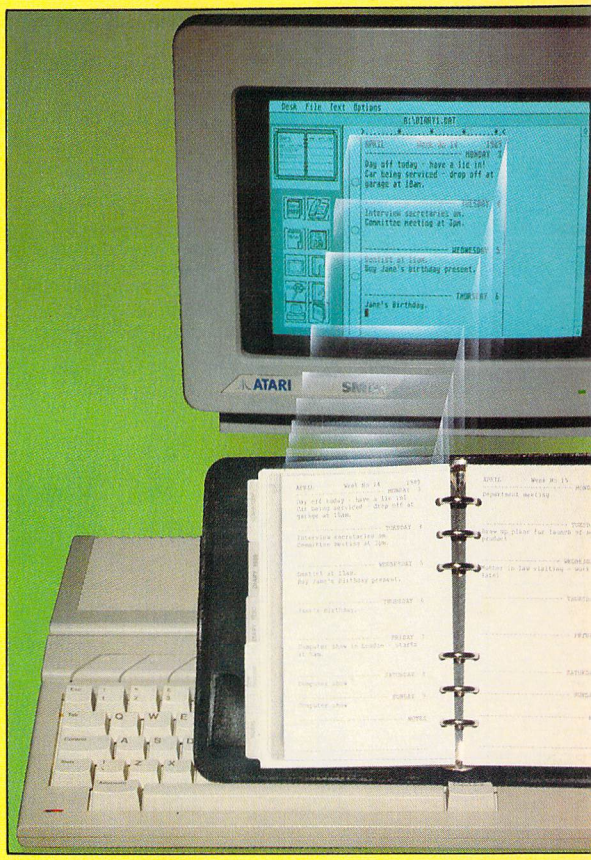

Roland Waddilove tries a new package designed to create neat pages for your indispensable Filofax

IN the past couple of years the Filofax, and its many imitations, has really taken off. Once used as a status symbol by Yuppies, it is now considered to be an executive's essential aid to organising his busy day. Anyone who regularly has appointments to keep, people to meet, phone numbers and memos to jot down will find that this simple tool can vastly improve efficiency.

Now that computers are firmly established it is inevitable that electronic versions will appear. There have already been several packages offering diaries, memos and phonebooks, but until now none has produced hardcopy output on the printer that can be placed directly into a Filofax.

Daatafax from Kempston Data combines the advantages of a computerised Filofax with the original manual version. Not only can you use it on your ST, but you can also print out the pages and place them in your Filofax ready for when you leave home or the office and are away from the micro.

The program consists of five modules – diary, phonebook, notepad, calendar and graphics.

Diary

The software boots up in medium or high resolution to reveal a large blank Gem window with a panel of icons down the left hand side of the screen. A Gem menu bar is at the top. The largest icon shows a closed Filofax. Clicking on the small diary icon below opens the Filofax and a file selector pops up and you enter the name of an existing diary file to load or a new one to create.

Once this is done the current week is displayed on the screen like a page from a Filofax, as shown in Figure I. You aren't restricted to one week a page, and two pages a week or one page a day are selectable alternatives when creating the file – but not once created.

In the diary you have text editor type functions at your disposal. You can enter and delete text, cut and paste it, move from day to day and jump to any particular date. Important dates can be highlighted with an asterisk. You can also search for any word by clicking on the Search icon.

Pages of the diary can be turned by clicking on the left or right hand pages of the open Filofax. Once the diary has been updated it can be saved to disc, or printed out in either draft or NLQ mode, cut up with scissors and placed in your Filofax.

Phonebook

Clicking on the telephone icon opens the telephone book – again a file selector

Turn to Page 48 ▶

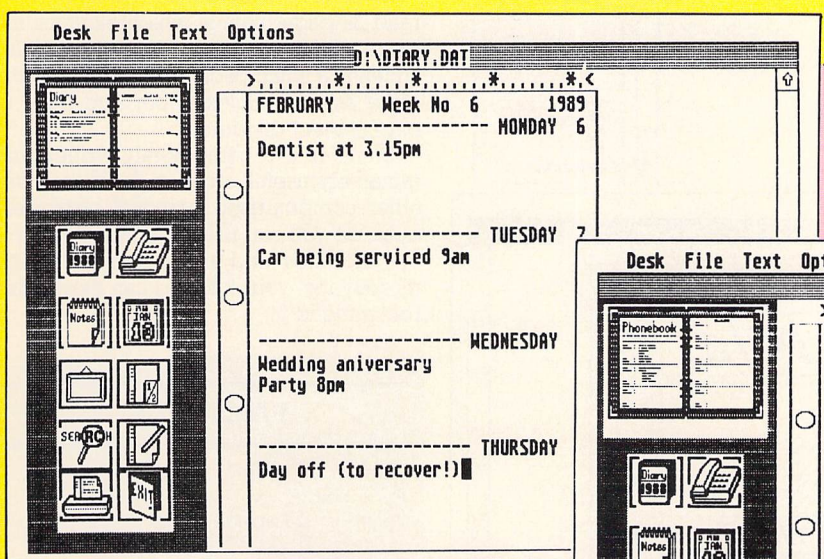

Figure I: Entering information into the diary

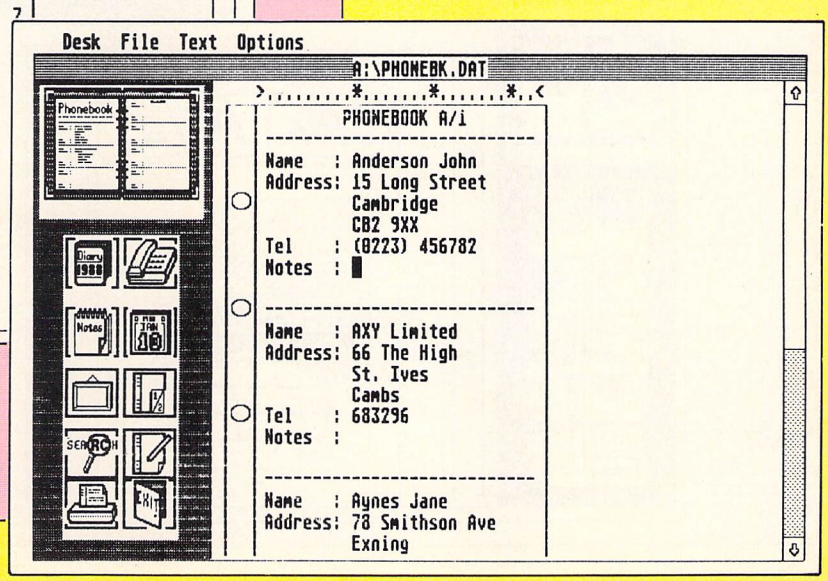

Figure II: The phonebook module

◀ From Page 47

pops up and you enter its name. The phonebook allows you to enter names, addresses, phone numbers and brief notes.

Like the diary, text editor type functions are available to insert, add, cut and paste. You can go to a particular letter of the alphabet by clicking on the Goto Page icon. The entries can be searched by clicking on the Search icon and sorted into alphabetic order by pulling down the Options menu.

The whole lot, or any part can be printed out so it can be stored in your Filofax, or the file can be saved to disc. It's a good idea to do both.

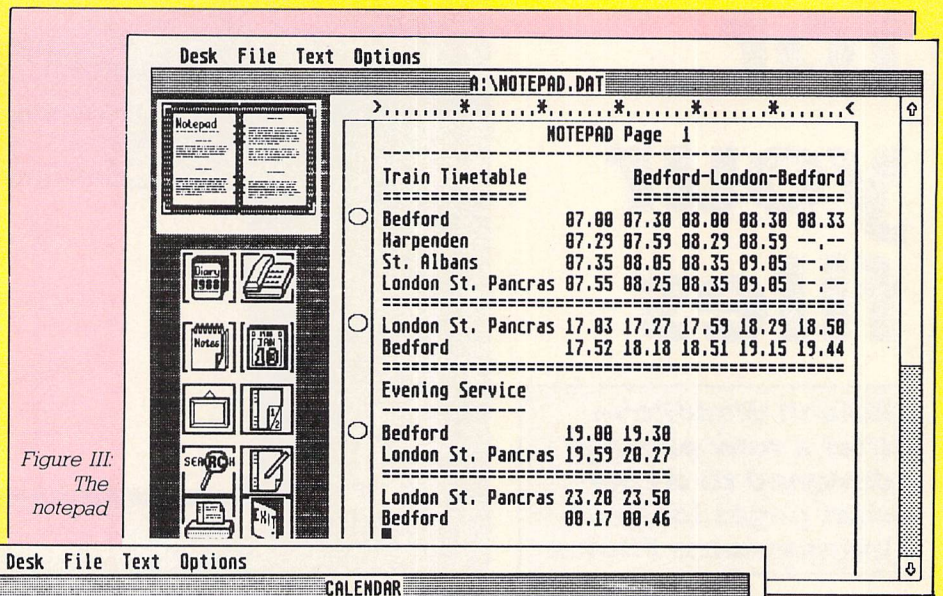

Figure III: The notepad

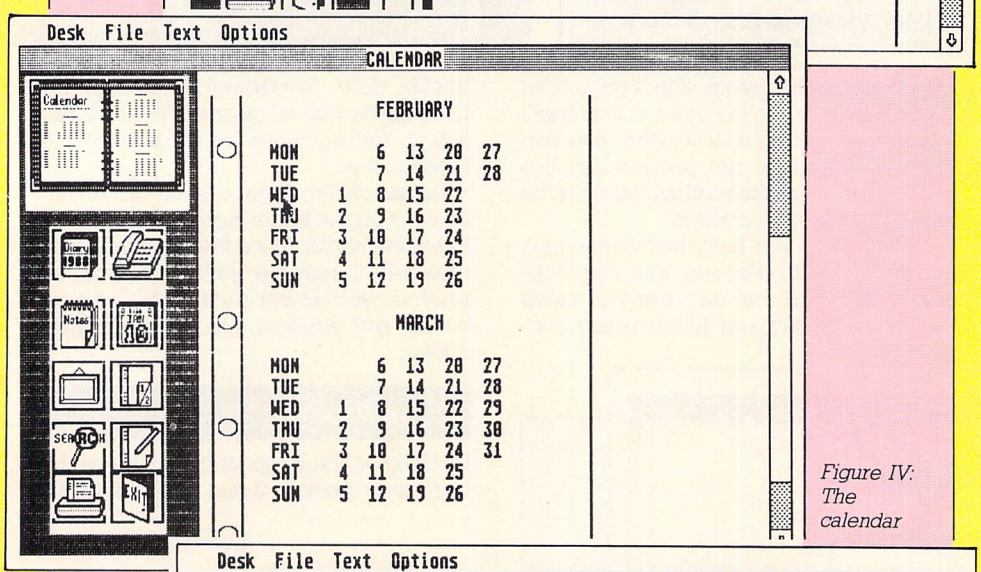

Figure IV: The calendar

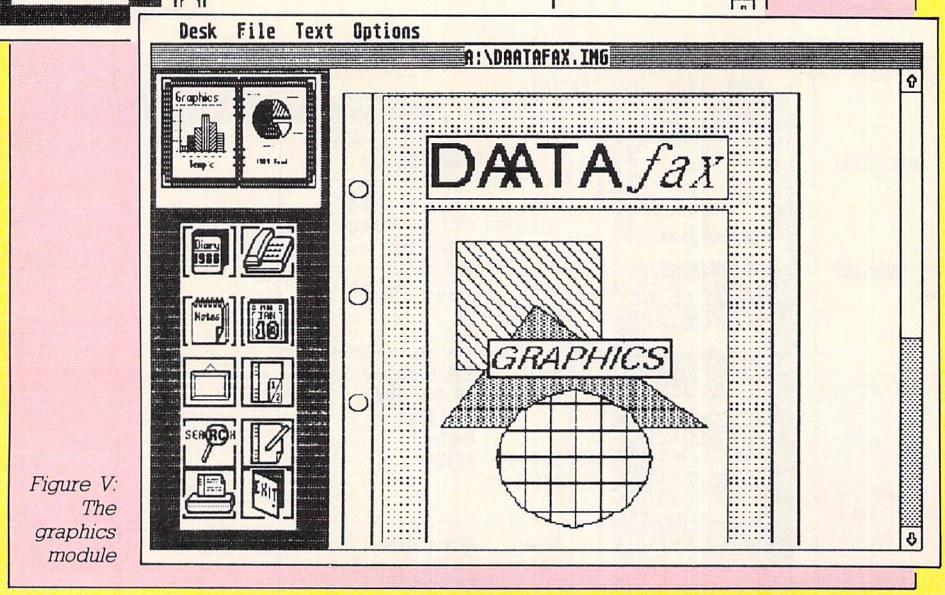

Figure V: The graphics module

Notepad

After entering the filename this module opens up to reveal the first page of the pad. Again all the text editor commands available in the other modules apply here and you can jot down notes and save or print them out. You can type away, cut, paste, insert pages, print them in draft or NLQ and so on.

Calendar

This is a pretty standard calendar printing utility which places the months neatly on the page so they can be incorporated into your Filofax. None of the text editor commands work here – they aren't required. Figure IV shows the screen display and output.

Graphics

This module enables you to paste graphic images on to blank pages. The facility simply enables you to load pre-drawn images in Degas, Neochrome and IMG file formats, no drawing commands are built in.

There are restrictions placed on the images because of the difference in size between the Filofax page and the screen display. There are two options. The first loads the left hand third of the picture on to the whole page, and the second reduces the whole screen and places it at the top of the page.

The first option is the most useful, as you can draw a picture or logo on the left hand side of the screen using Degas say, and then load and paste it on to your Filofax page.

In addition to the software is an easy-to-read 32 page manual which explains the function of all modules. The package also contains a small pack of listing paper the same size as Filofax paper and a set of blue subject dividers.

Daatafax is a competently written and genuinely useful product. It scores over other computerised personal organisers because you can print out the contents of the modules and insert the hardcopy directly into your folder. I can thoroughly recommend it.

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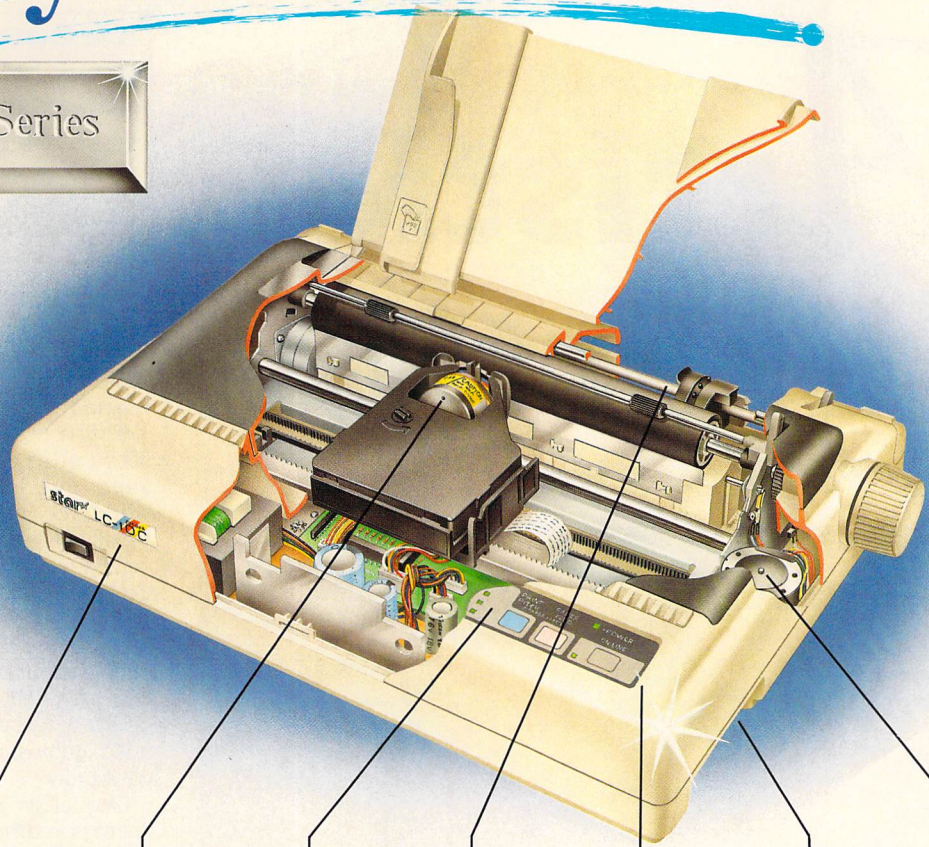

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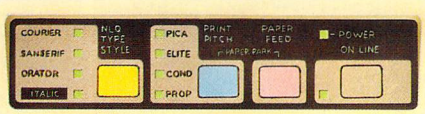
The LC-10 is compatible with almost every computer's needs whatever the system. It can emulate most industry standards with ease, (there's even a Commodore version) a standard feature that we think should always be included. For connection over longer distances, there is even the option of a low-cost serial converter. And the range includes two models that also give you the option of first class seven colour printing.

Putting the LC-10 to work couldn't be simpler. At the mere touch of a button on the front control panel you can set your margins, choose from one of eight Near Letter Quality fonts and pitch sizes or simply put the paper feed into action. (No more inconvenient DIP switches to hamper you). And with the clip-in replacement ribbons, we've made ink stained fingers a thing of the past.



144 From 0-144 characters in one second and that's just the elite draft. The LC-10 also performs word perfectly at a rapid 36 cps with its exceptional Near Letter Quality printing for pristine correspondence and important documents. And while you print, the 4K text buffer frees you and your PC to get on with other things.

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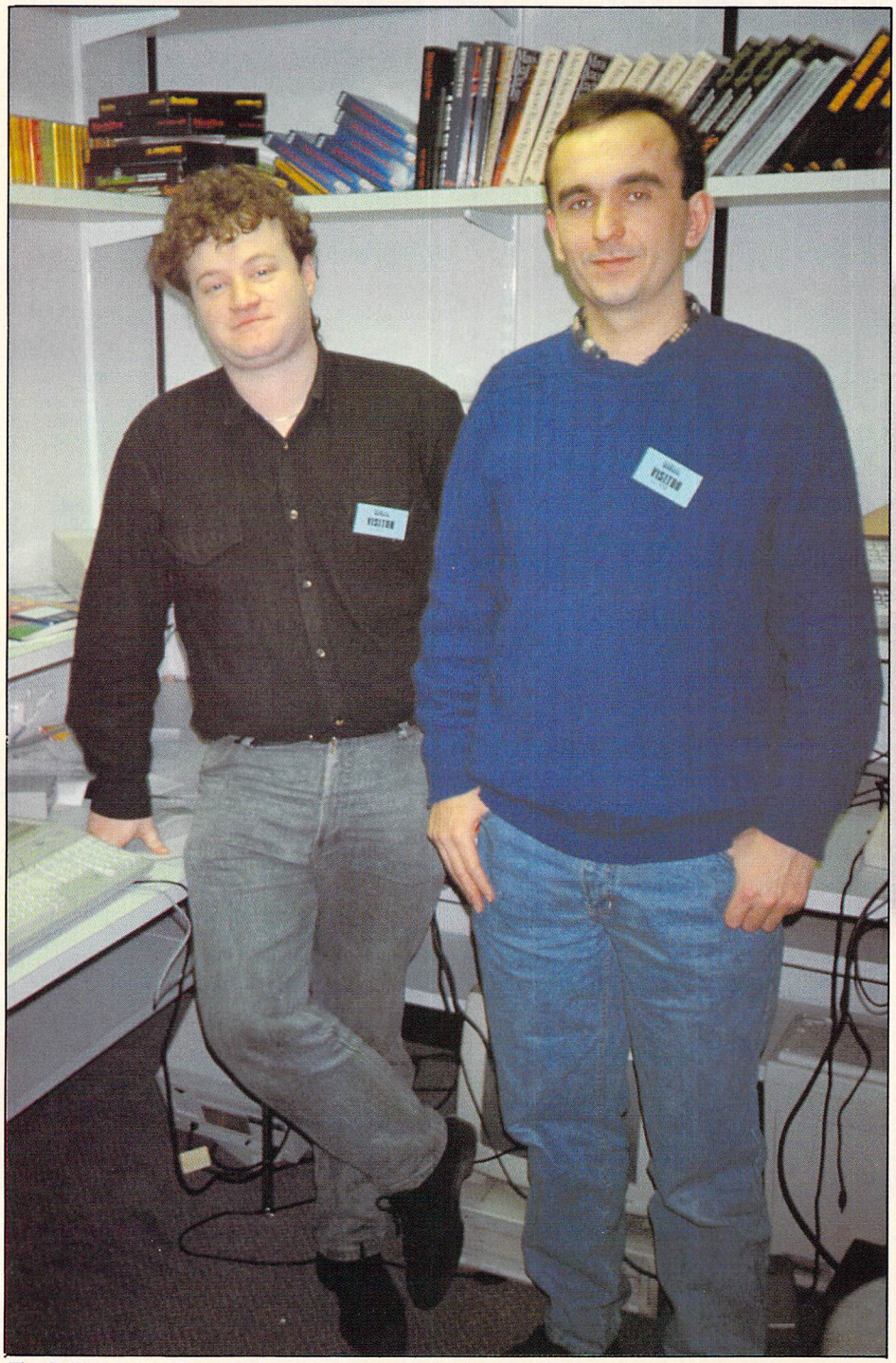
Artistic direction

Nic Outterside visits Electronic Arts and meets the programming team responsible for a whole new genre in ST games entertainment



The Bullfrog team: Peter Molyneux (right) and Glenn Corpus

TUCKED into a corner of Slough's Langley Business Centre, in what was the Home Counties' growth centre of the 1950s, lies a sparkling glass pavilion bearing the name Electronic Arts.

The company has only been established at its Slough base for just over a year. But with its 60 strong British workforce it is already developing a reputation for quality products. This is the company renowned for its ST best-sellers Test Drive, Powerdrome and Bard's Tale.

Much of the product is developed in the USA and shipped to Britain for adaptation, repackaging and distribution. However, EA is now making serious efforts to provide us with home developed games which exude quality and playability.

One of its new British programming teams is known amiably as Bullfrog. Peter Molyneux and Glenn Corpus who make up the Bullfrog duo are based in Guildford and are contracted to program games for quality assurance and distribution by Electronic Arts.

They began their 18-month-old partnership by converting Druid Enlightenment for the Amiga. Then they launched into their first piece of original serious games programming.

While Glenn works on graphics and animation on his ST, Peter develops game implementation on his Amiga, though both insist that their games rely on a partnership of development. This side by side programming and cross fertilisation of ideas and material is supplemented by a graphic artist and a sound specialist.

Now Bullfrog is ready to launch two new titles for the ST. The first is an arcade game with a difference and the second is an experience the like of which you will not have had before. Fusion should be available by the time you read this feature. It can best be described as a vertically scrolling shoot-'em-up with touches of adventure and maze solving.

It is colourful and fast with smooth animation and decidedly addictive. Your task as pilot of a futuristic spacecraft is to collect a series of globes while fighting off alien ships bent on your destruction. You are aided by a planetary hopper which allows you to expore mazes and uncover clues as you teleport through the game's 13 levels.

Fusion was written in assembly language with file access compiled in Laser C and linked in using Devpac II. The double-sided disc version also contains more than 400k of optional digitised music written by David Hanlon.

However, the real gem awaited me.

This is Bullfrog's second game, Populous – due for release in late April/early May 1989. It is a massive venture which allows you to play God in a titanic struggle between good and evil. With three totally different types of play – tutorial, custom and conquest – it should suit any ability level.

Populous stemmed from a Lego board game which Peter and Glenn devised for play in their office. It became so popular and addictive that last June Glenn began graphic development of Populous for the ST. Peter followed with months of vigorous C programming.

The ST version has a beautiful screen display of two aerial views of landscape. The nearer belongs to you and the farther to your enemy. Whether you represent good or evil is entirely up to you as this is a truly multi-option game.

You act only indirectly as persuasion is the key to your peoples' increased faith in your deity and your manna score. However, you can create land, sea and rock at will and in turn coax your inhabitants to populate this landscape and build villages, towns and castles. In fact at its peak the game can cater for 300 settlements on either side.

Meanwhile your enemy is doing the same on the opposing landscape as he seeks to dominate your people and destroy you. This is all portrayed in stunning three dimensional colour on a beautifully animated backdrop.

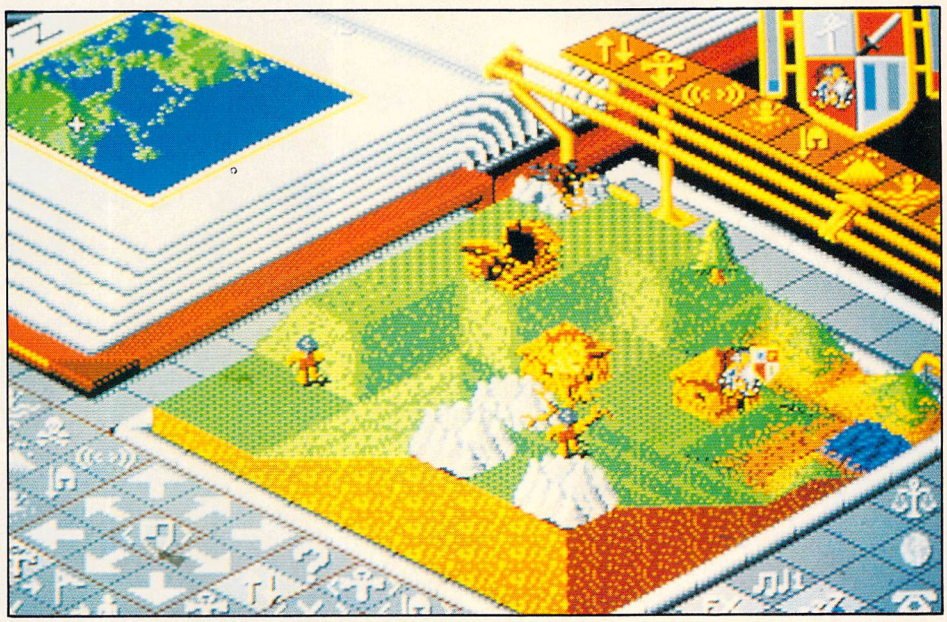
This can be of a desert, grassland, tundra or mountainous type. With earthquake, volcanic, swamp, flood and Armageddon scenarios which can be called upon during your battle, the game is ever changing. In fact Glenn pointed out that more than 65,000 different hinterlands are possible with literally billions of possible minor variations.

Plenty of options

The flexibility of the multiple menu options immediately endeared me to this escapade. A paint map option allows you to design your own landscapes and to cheat at will as you learn about the game's make up. Meanwhile the conquest game lets you save and play through 500 progressive levels as you battle towards Armageddon. It can be played at default against a computer adversary or across an RS232 serial link against a friend on another ST.

Populous is a truly interactive game which defies categorisation. Peter delineates it as "a fun game with strategy elements in it". It incorporates the speed of an arcade game, the thought processes of an adventure and the feel of a simulation.

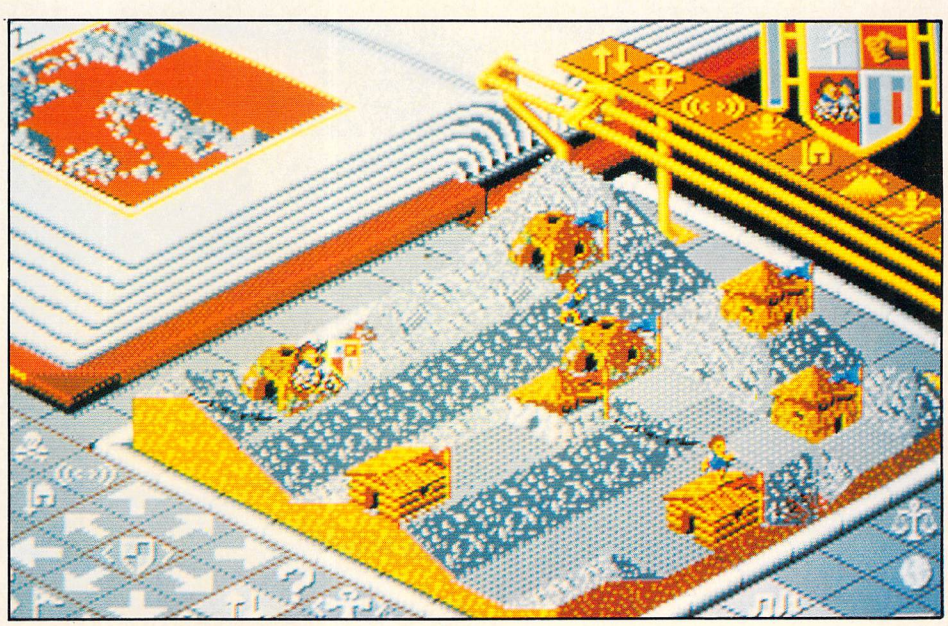
Moreover, Populous opens up a new genre. It is fun and without doubt the most addictive game I have yet seen for the ST. Glenn and Peter have established their pedigree with this one piece of programming, and I await the release of Populous with keen interest.



EA's next release – Populous: Building small settlements on grassland is easy . . .



. . . but landslips hinder development on the desert landscape . . .



. . . while the rock landscape has its own problems.

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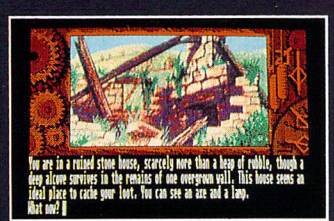

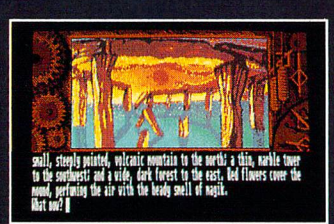

Screen shots from Atari ST version

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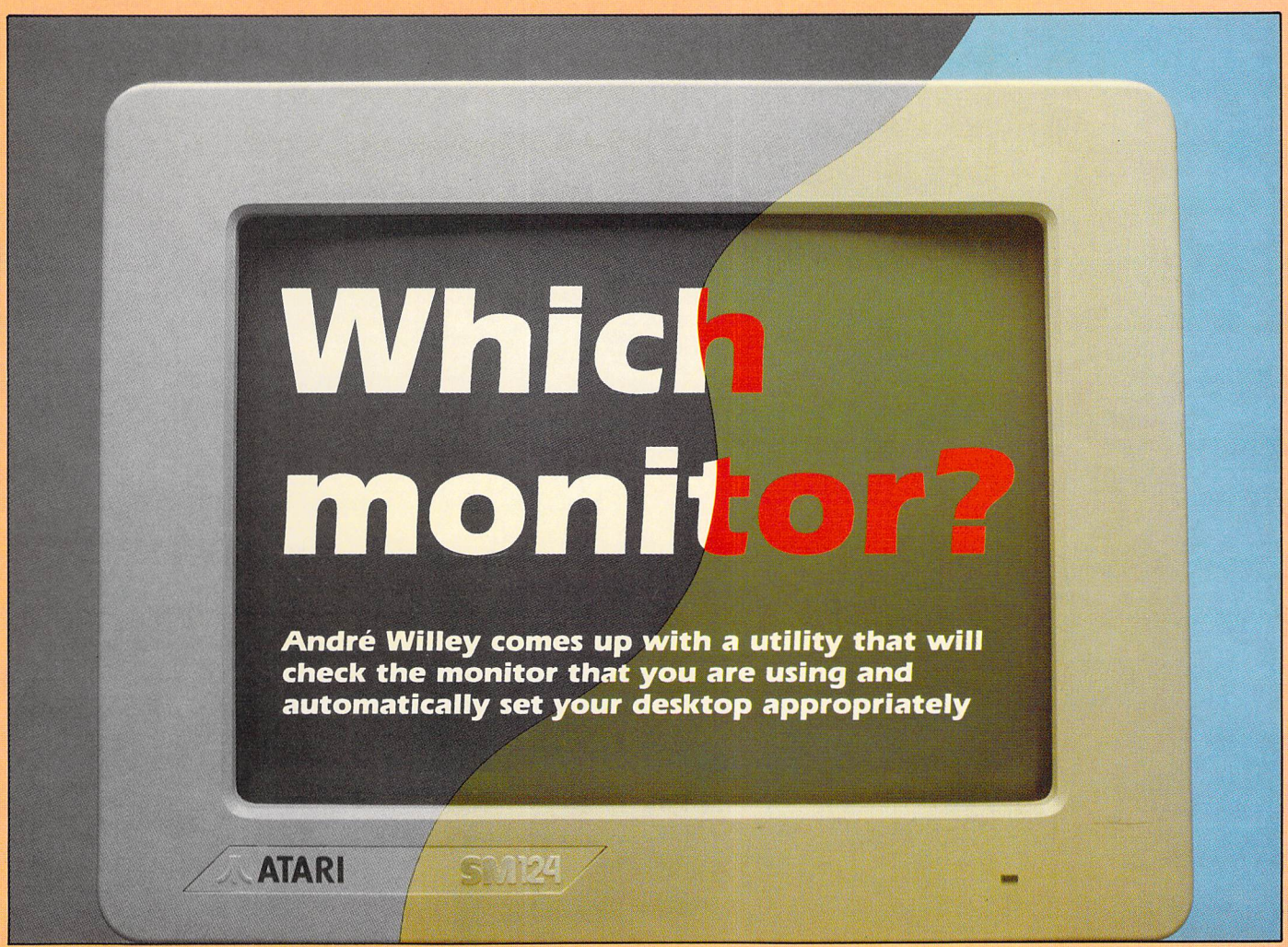
ST4

Which monitor?

André Willey comes up with a utility that will check the monitor that you are using and automatically set your desktop appropriately



WHEN Atari first released the ɔ20ST – it had no modulator or roms, and only an external drive – the only monitor available was its own monochrome SM124. Since then RGB colour monitors and televisions have become much more common. Indeed today the tables have turned and there are probably far more colour systems than monochrome ones.

Now that so many 520STs and 1040STs have internal modulators a growing number of people regularly use both standards – colour televisions for games and graphics and monochrome monitors for more serious business and programming work.

This has led to a hitherto unforseen problem with the DESKTOP.INF file used by Gem to set up the default desktop layout. This file can be configured for either of the two colour resolutions or for the monochrome system, but not both at the same time.

If you inadvertently try to use a monochrome DESKTOP.INF file with a colour monitor, icons will be misplaced or covered up and default window positions will often be incorrect.

One obvious solution is to have two separate boot up discs, one for each monitor, but this fails to take account of hard disc users or those who tend to boot up with a specific application disc already in place. What is needed is some way for the ST automatically to load up a correct DESKTOP.INF file for the monitor or television currently in use.

On boot disc

Monitor Matcher, a rather elegant solution to this problem, works with any combination of hardware or software. It sits in the AUTO folder on your boot disc, and when invoked during the boot process checks which type of monitor is being used and then copies one of two possible DESKTOP.INF files to the top level of the disc. Thus when Gem initialises the desktop it will automatically load the correct file.

The program is written in C, mainly to keep the size of the final PRG file to manageable proportions – 4k using Laser C, although it might vary with other compilers. As there is no need for the usual C I/O functions, such as *printf()* and so forth, I have compressed the code even further by not including the usual STDIO.H library.

All input and output is handled by the appropriate Gemdos routines. These are all the functions starting with capital letters – *Fcreate(), Cconws(), Malloc() and so on. Please note that calls such as Fopen* and *Fread* are also Gemdos calls, and are not the same as the normal C functions *fopen* and *fread*. They are accessed at a lower level within the operating system, so use different parameters.

One interesting point to note is that *Cconws()*, the function to write a null-terminated string to the screen, requires the inclusion of both `\n` and `\r` to create a carriage return and linefeed combination at the end of a line. Normally the higher level C functions such as *printf()* convert a simple `\n` in to a full `\r\n`, but with Gemdos we must be more explicit.

Some compilers might require an underscore in some of these Gemdos function calls, as in *F_open()* or *C_conws()*, and others may just use *open()* and *conws()*. Check your C manual to find out which form your particular compiler requires, and also if the Gemdos/XBios bindings library is given the same name as mine – OSBIND.H.

Once you've entered, compiled and

Turn to Page 54 ▶

◀ From Page 53

linked the listing, you should copy the newly created program into the AUTO folder on your boot disc, or hard disc if appropriate. If you haven't already got an AUTO folder, create one on the top level directory of your boot disc by using the New Folder menu item.

The two data files which the program will later use should also be placed inside the AUTO folder named as DESKTOP .COL and DESKTOP.MON. All these consist of are renamed copies of two ordinary DESKTOP.INF files.

To create them, first boot up your system with a colour monitor or television attached. Now you should set up your desktop to exactly the way you would like to see it each time you start the system or press reset – including the resolution, positions of any icons and windows and the default menu settings.

Then place your boot disc into drive A and click on the Save Desktop menu item to create a new DESKTOP.INF file. If you use a hard disc the file will be stored automatically on drive C, the first partition. This file should now be renamed as DESKTOP.COL using the Show Info menu item, and then copied into the AUTO folder.

Finally go through exactly the same procedure with a monochrome monitor attached, but this time rename the file as DESKTOP.MON before copying it into the AUTO folder.

And that's all there is to it. Now whenever you boot up your ST it will adjust the desktop to your exact requirements regardless of whether you are working in colour or monochrome. If at any stage you find you want to alter your default layouts don't forget to copy the new DESKTOP.INF file into the AUTO folder in the manner described, using the appropriate filename.

How it works

main(): *Checks the current resolution and uses* create() *to set up a file for monochrome or colour.*

create(txt,fname): *Copies* fname *from the AUTO folder to the top level directory as DESKTOP.INF using* fcopy().

fcopy(fname): *Allocates a 4k buffer then calls* xfer() *to do the actual file transfer. Then it de-allocates the buffer ram and returns the status of the file copy.*

xfer(fname,buffer): *Opens* fname *for reading and copies it to a new file DESKTOP.INF.*

Getrez(): *Returns current screen resolution (0,1 or 2).*

Cconws(string): *Writes null terminated string to screen.*

Malloc(size): *Allocates a memory block* size *bytes long and returns its address.*

Mfree(addr): *Frees memory block at address* addr.

Fopen(fname,mode): *Opens file* fname. *Returns file descriptor number.*

Fcreate(fname,0): *Creates new file* fname *and opens it for writing. Returns a file descriptor number.*

Fclose(fd): *Closes file given by file descriptor number* fd.

Fwrite(fd,numb,addr): *Writes* numb *bytes from location* addr *to file* fd.

Fread(fd,numb,buffer): *Reads* numb *bytes into buffer from file* fd.

```
/*   Monitor  Matcher  */
/*  (c) Atari ST User  */
/*  By  Andre Willey   */
/*  ----- Laser C ---- */

#include <osbind.h> /* Megamax Gemdos & XBIOS bindings */

/*  Test screen resolution */
main()
{
switch(Getrez()) {
  case 0: /* same file for low and medium res */
  case 1:
    create("Colour","\\AUTO\\DESKTOP.COL");
    break;
  case 2:
    create("Monochrome","\\AUTO\\DESKTOP.MON");
    break;
  default:
     Cconws("Resolution not recognised\r\n");
  }
}

/*  Request copy of fname */
create(rez_text,fname)
char rez_text[],fname[];
{
if (fcopy(fname)) {
  Cconws(rez_text);
  Cconws(" DESKTOP.INF installed\r\n");
  }
else {
  Cconws("Can't transfer ");
  Cconws(fname);
  Cconws("\r\n");
  }
}

/* Allocate 4k memory buffer */
fcopy(fname)
char fname[];
{
long buffer;
int ret_stat=0;
if ((buffer=Malloc(0x1000L))>0) {
  ret_stat=xfer_file(fname,buffer);
  Mfree(buffer);
  }
else
  Cconws("Can't allocate memory for DESKTOP.INF,\r\n");
return(ret_stat);
}

/*  Open 'fname' for reading, create new file & copy
    fname. Return transfer status (1=good, 0=bad)     */
xfer_file(fname,buffer)
char fname[];
long buffer;
{
int fd_read,fd_write,status=0;
long bytes;
if ((fd_read=Fopen(fname,0))<0)
  return(0);
if ((fd_write=Fcreate("\\DESKTOP.INF",0))<0) {
  Fclose(fd_read);
  return(0);
  }
bytes=Fread(fd_read,0x1000L,buffer);
if (bytes>0 && bytes<0x1000L)
  if (Fwrite(fd_write,bytes,buffer))
    status=1;
if ((Fclose(fd_read)<0) || (Fclose(fd_write)<0))
  return(0);
else
  return(status);
}
```

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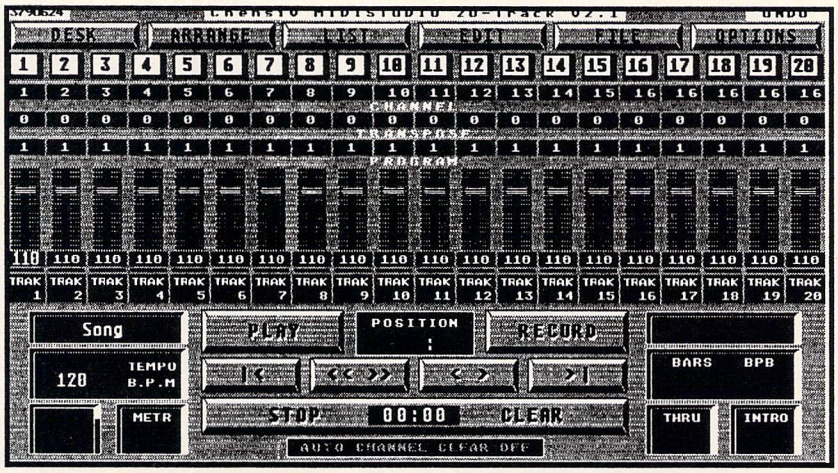

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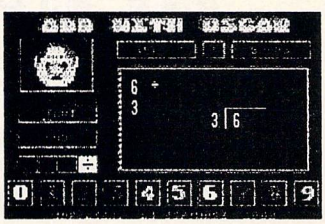

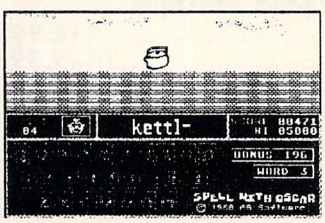

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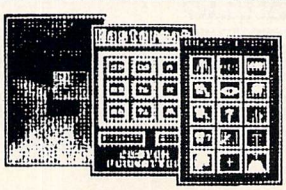

Picstrip is a utility that captures all or part of a picture file for use in Basic programs, supports GFA, FAST, HISOFT and ST Basics and is Degas, Neochrome and AB Animator compatible.

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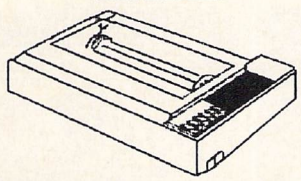

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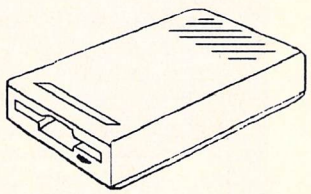

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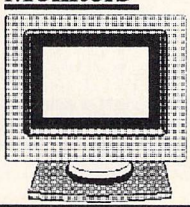

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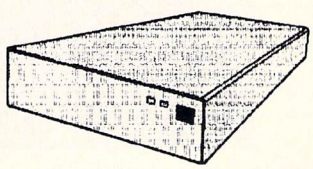

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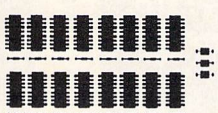

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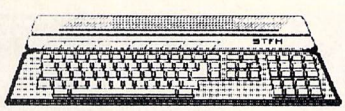

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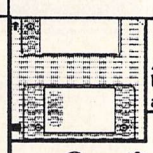

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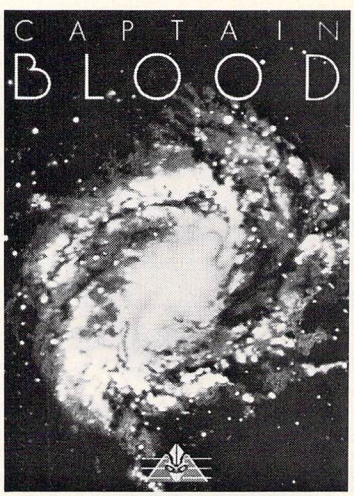

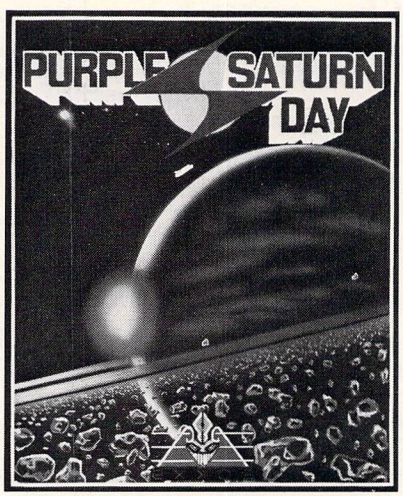

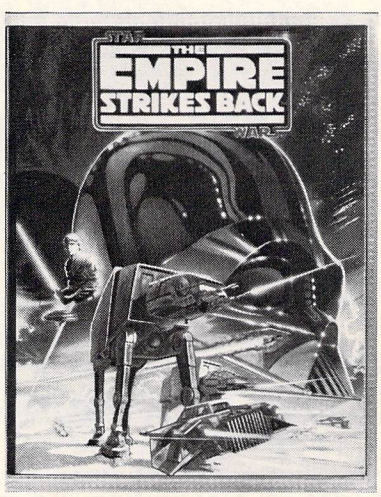

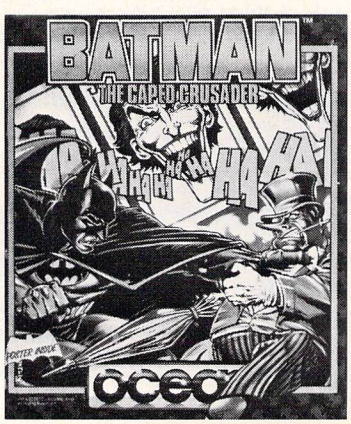

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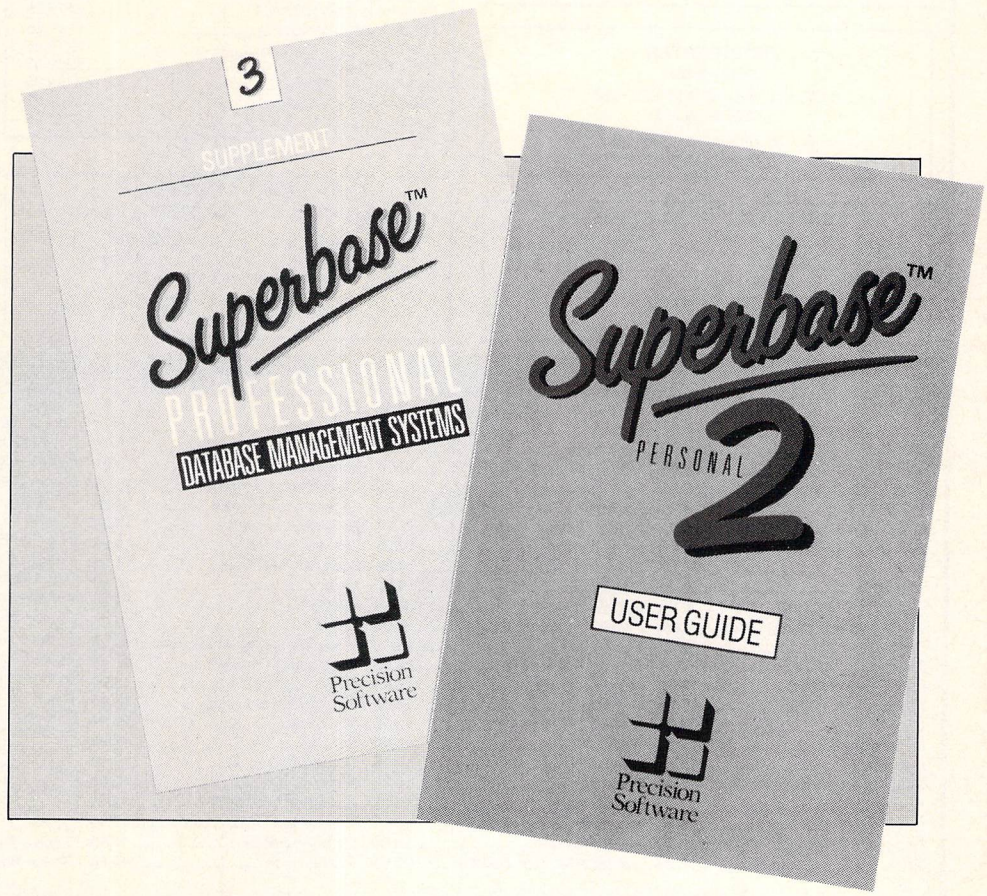
Improving on perfection?

Tony Kendle examines updates of two popular database packages

SOME of the most powerful and advanced business programs to be seen on the ST are produced by Precision. Building on past glories it has now released sequels to both the basic and advanced versions of its popular Superbase database packages.

Superbase Professional 3 sports relatively few changes, which is understandable given that the program is already bewilderingly complex, but Precision has banished many small irritations and added some useful features.

On the other hand, Superbase Personal 2 is a significant rewrite of the beginner's database and is arguably a new product rather than a simple upgrade. It occupies a niche roughly halfway between the original Personal and Professional.



Superbase Personal 2

This is a base level program only in the sense that it avoids the more complex and demanding data manipulation and display facilities found in Professional. The features incorporated are no less sophisticated.

Superbase's vital statistics, consistent across each version, bear comparison with almost any database on the market. There can be an unlimited number of fields in a record and unlimited records in a file.

Any file can have up to 999 indexed fields, although only one index will be current at a time to determine the order in which records are displayed. Individual text fields have a limit of 255 characters, but external files of unlimited length can be linked to a record and automatically read in when required.

To a limited extent Personal 2 can search the data in these external files. One of the most outstanding and original features is the ability to read in external graphic images in a similar way.

The potential uses are almost limitless – workshops can see an image of a part that has been requested, shops can illustrate goods for sale, astronomers can have star maps as well as data. However, to exploit this feature fully demands a digitiser or a determination to sit for hours with a copy of Degas churning out appropriate images.

Numeric fields can hold up to 13 digits, but as these can use scientific notation the size of numbers stored can be very much greater. Time field types are new additions to Personal 2 and are stored with an accuracy of thousandths of a second, though I'm not sure that degree of accuracy is useful.

Arithmetic can be performed on times and dates, for instance, for working out subscription renewal reminders and so on. Fields can be assigned certain attributes, many of which are new to Superbase Personal. These are Read Only, which can't be altered, Required, so that data must always be present in that field, Multiple Response, which is a single field that stores an array or collection of information such as several lines of an address, and lastly Formula.

Formula fields can themselves be of three types – constants, calculation and validation formulae. Calculation formulae include some quite sophisticated maths functions intended primarily for financial information. These inlude options which help with the preparation of tax or for rounding up fractions. Alternatively, calculation formulae can be used for text string slicing or for calculating the period between two dates.

Validation formulae place limits on the possible entries that a field can be given, such as amount>20 and amount<40. A simple error message can be defined that will advise you why the data is being rejected.

Each type of data also has a display format which controls the way it appears on screen. Text fields can be forced into lower case or capitalised and there are many ways in which numbers can be displayed, such as different decimal precision or with various currency symbols. Several date and time formats such as 24 or 12 hour clocks are available.

There are several levels of sophisti-

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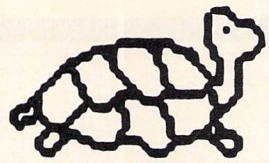

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cation by which the records can be viewed and used, beginning with three raw data display modes. The first is a simple sequence of one record after another. The second, Table View, displays several records at once, fitting each into one horizontal line. Every field within the record therefore appears like the column of a table. Their order can be easily altered using the mouse.

Form View is a freeform option which lets you use the mouse to drag fields around on a blank screen and put them in the order you want. Choosing which fields you want to appear on screen at any one time is extremely simple – just call up a menu of all those which have been defined and click to open the ones you want to see.

Viewing the records

Once the screen layout has been selected you can flick through the records using a series of buttons on screen designed to look like those found on a video recorder. Fast Forward and Rewind allow you to move quickly through the file, Pause allows a record to be inspected, and Play makes it current and editable if you have the right password.

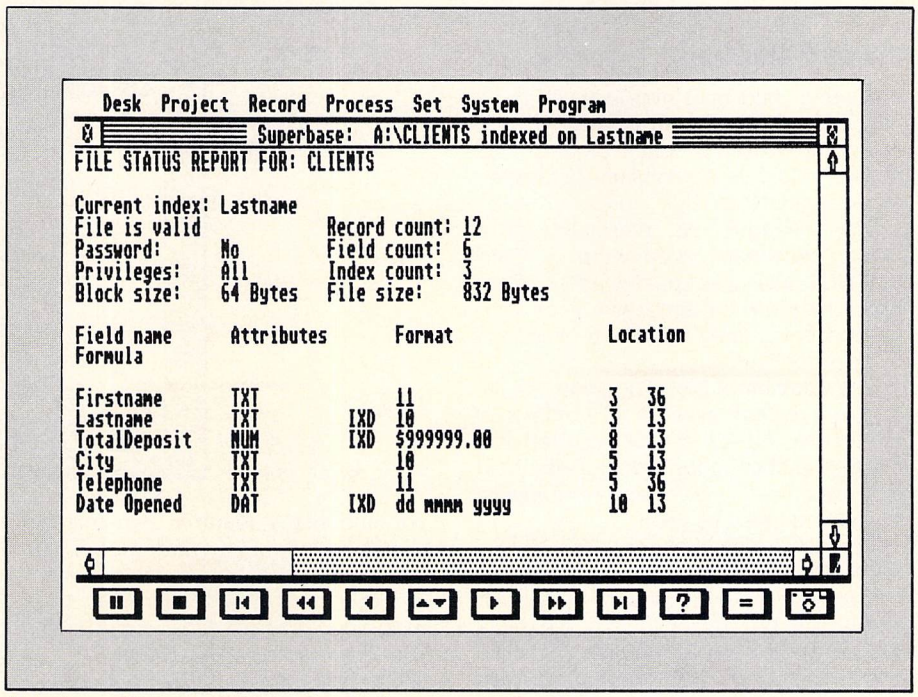
The Find, First Record, Last Record and Filter buttons have no direct video equivalent, but it hasn't stopped the programmers continuing with the theme. Of course, it is important to be able to select which records will be displayed and this is done using Filters such as Town=London or Account<0 which will only show those records which match those criteria.

These filters can be as complex as you wish, involving any number of fields as long as the total filter fits within 255 characters. Standard logical concepts such as equals, greater than, less than or equal to and so on can be included. By using the word NOT the meaning of the filter can be instantly reversed.

When filtering text data the LIKE operator is extremely useful. It allows records to be searched in a case-insensitive way, or by using wildcards, and also allows you to search for a text string anywhere within a record.

External text files can be included in the filter using the word CONTAINS which looks for a given text string on every line of the file. Filters can also be used for controlling which records are to be printed, deleted, exported or imported.

These simple data searches, filters and form designs are all very well, but if something permanent and more ambitious is required the Query option is available which can perform several tasks. Firstly, complex filters can be saved to disc if needed regularly and can incorporate links to retrieve data from any number of files at the same time.



Superbase will report on the structure of a database file

Query can also sort the order in which records are displayed, using a hierarchy of several fields and arranging any of them in ascending or descending order. Finally, Query can be used to produce data reports. A report shows the information for the currently selected fields – which may be taken from several files at once – in a more complex way than is possible with Forms View.

It can incorporate explanatory text or additions to improve the display. It can also show information derived from, but not held in, the fields. For example, numeric data from several fields, or even from fields in different files, can be summed and a total shown. Another advantage of Query is that the output can be redirected easily to one of four destinations – the screen, printer, an Ascii file or a new database file.

Superbase Personal 2 has many other small modifications and improvements over the original version, such as batch entry of data, but most of these are too obscure to detail here. A major change however, is the incorporation of a built-in

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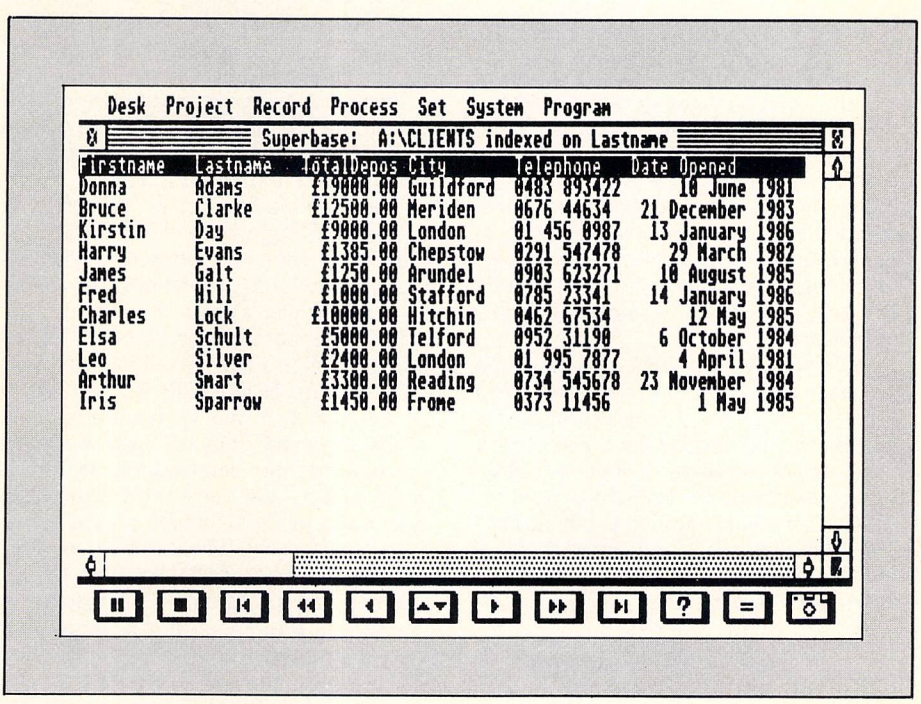


Records can be displayed in three different ways – this is Table View

◀ From Page 61

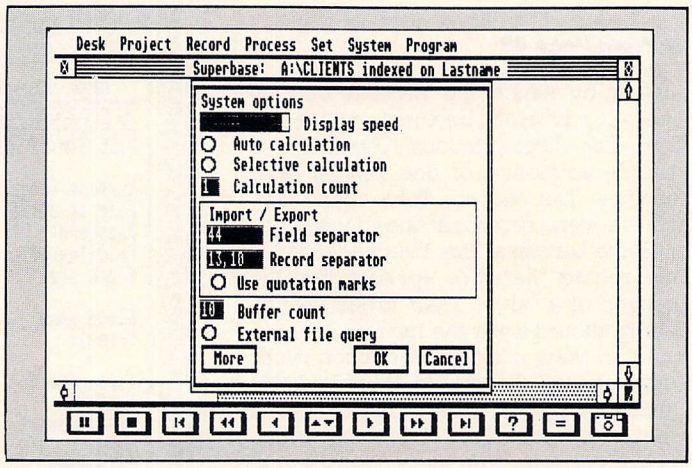
text editor and mail merge facilities by which filters are used to select a working set of records. For each of these the chosen field data is automatically inserted into a standard letter.

The text editor has reasonably good cursor movement, word wrap facilities, overwrite and insert modes and a selection of delete options which can be undone if you make a mistake or wish to move some text.

The addition of block deletion or pasting is a feature new to all versions of Superbase. Rulers can be inserted into the text to change the layout. Italic, bold and underlined text, or any combination of them can also be used.

The label printing option in the original takes on a new usefulness when combined with mail merge. Up to four labels can be printed across the page and there is a range of sizes. A useful preview option confirms that you are getting what you want.

A new feature, not previously seen in any Superbase release, is the ability to import or export files with a variety of data formats – dBase, Lotus, Logistix, DIF, comma delimited and fixed length Ascii. These will be particularly welcome when moving data between an ST and a PC. Previously file transfers could only be achieved via an Ascii intermediary.



Superbase system options

Superbase Professional 3

An innovation to be found in Superbase Professional 3 is the incorporation of a communications facility that allows data to be sent from one computer to another via a serial connector and modem. This option and the file import and export are just two new developments.

Both the Professional and the Personal releases are very similar and overlap in many areas. It is possible to buy Superbase Professional and to use it in exactly the same way as you would with Superbase Personal.

The extra features that make up the Professional part of the package are a bells and whistles Form Editor – yet another way of viewing the data held – a Database Management Language (DML) and a Transaction Handling facility. These may sound daunting, but require little more than a moderate programming ability and a stomach for arbitrary jargon and opaque explanations.

Once the hard work is done Professional can actually be easier for everyday users than the Personal version. The Forms Editor is an excellent facility incorporating many features that are more reminiscent of a pagemaker than database.

Like Query, the Forms Editor takes data from different files and displays it with surrounding text. However, it also allows lines, boxes, different colours and a range of different fonts. In addition, images such as a company logo can be incorporated in the display.

The form can be designed to cover several pages in both length and width. Because the editor produces a graphics image the options for re-directing the output is more limited than with a Query report. A screen dump of the whole image can be produced on an Epson printer if Gdos is first loaded from the boot disc supplied. This also allows the use of many fonts not usually found in Gem.

The DML facility turns Superbase into a programmable database like dBase (on the PC) or similar systems, lacking only a compilation option. Routines can be written to ask specific questions, perform complex calculations automatically, update information regularly across several files and so on.

Unskilled users can be presented with simple, well explained choices leaving all the difficult bits such as file opening and closing and data manipulation to be carried out automatically. Almost any sequence of Superbase tasks can be programmed using the purpose designed language which is certainly no more challenging than Basic.

For instance, the command TEXT MERGE will produce a mail merge letter. The keyword NUMBASE can be used to set the display format for numbers. Many of the keywords can be used as direct commands, and some, such as PCOL which returns the current position of the print head, or EJECT which causes a form feed, may prove useful even to non-programmers.

When the programming language is combined with the options for setting data access passwords, plus the complex forms which can be designed and the data validation facility, the program can be made extremely attractive, easy and almost foolproof to use.

The range of DML keywords has been extended and modified in Professional, partly in response to requests and partly to allow access to new features such as the communications options. Other modifications include automatic program indentation, more display formats and keyboard shortcuts for the mouse and icon controls.

The last major modification is Transaction Handling, which is a way of using relational files so that many records from one file can be accessed simultaneously. The example given is of one file which holds authors names and details and a second which can be used to access all the titles that any one of them has produced.

The two original and comprehensive Superbase Professional manuals are still there, but the improvements and additions are explained in a slim third volume, a system that adds little to the clarity of what are already rather foggy tomes.

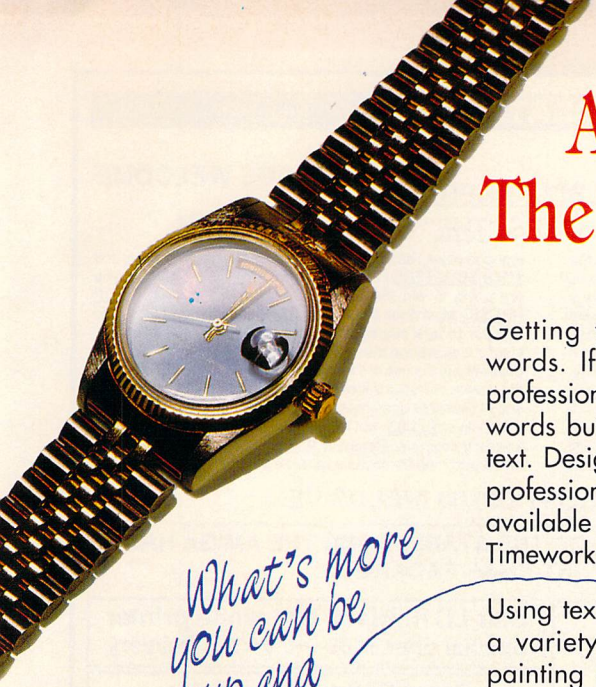
On the whole these welcome improvements to an already powerful data management system should ensure that Superbase stays well in the forefront of the market.

FACT FILE

Product: Superbase Personal 2
Price: £99.95
Product: Superbase Professional 3
Price: £249.95
Supplier: Precision Software, 6 Park Terrace, Worcester Park, Surrey KT4 7JZ.
Tel: 01-330 7166

POINTS FOR:
Extremely powerful and flexible database packages. Professional has comms and its own programming language.

AGAINST:
Quite complex and daunting to tackle. Manuals should be made simpler for the novice.



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Simulating REPEAT?

THE FOR ... NEXT loop construct is the simplest form of controlled loop, but there are several other types too. Some Basics, like STOS, include the REPEAT ... UNTIL construct, which repeats several program lines until a certain condition is found to be true.

Others – and this includes ST Basic – use the similar but not quite identical WHILE ... WEND construct to repeat part of a program while a certain condition is true. However, REPEAT ... UNTIL can be simulated in ST Basic quite easily should you require it by using IF *x* THEN GOTO *repeat*.

Like FOR ... NEXT, a WHILE ... WEND loop has three distinct and separate parts – a head, body and tail. The WHILE statement forms the head of the loop, the optional body forms a series of commands or lines to be repeated, and the WEND forms the tail.

This is where the similarity ends. Although this is a controlled loop structure, the loop does not terminate until a certain condition – defined in the WHILE part – fails to be met. The syntax of WHILE ... WEND is as follows:

```
WHILE <condition is true>
  execute program lines
WEND
```

As you can see, this new loop structure appears to be very simple, although it does introduce a feature borrowed from IF ... THEN – the conditional test. Unlike FOR ... NEXT – a loop which executes a definite number of times according to instructions given in the head – WHILE executes either indefinitely until a certain condition ceases to be true, or never at all.

If the condition fails to be met when the head is executed for the first time, program control jumps directly to just after the WEND marking the end of the loop structure. It is therefore, important to realise that WHILE ... WEND can completely ignore the statements in the loop body if certain conditions occur.

WHILE or REPEAT?

LOOK at this example to see how WHILE loops differ from REPEAT loops. (Remember, ST Basic does not include REPEAT and it is being featured here to illustrate the very similar WHILE loop).

Here is WHILE:

```
10 count=0
20 WHILE count<>10
30   count=count+1
40 WEND
50 PRINT count
```

And the REPEAT construct – if ST Basic had one – would look like:

```
10 count=0
20 REPEAT
30   count=count+1
40 UNTIL count=10
50 PRINT count
```

These two examples perform exactly the same task. Even so, in this case it would be easier to use a FOR ... NEXT construct as all the program does is perform a simple count incrementing from 0 to 10.

However, you should notice an important variation: In the case of the WHILE construct, the condition is tested at the head of the loop, but the REPEAT tests it at the end, after it has executed the loop. If the test fails on the first run of the WHILE loop, the counter would never be incremented, yet the REPEAT loop would.

The following example illustrates this more clearly:

```
10 count=10
20 WHILE count<>10
30    count=count+1
40    PRINT "Counting..."
50 WEND
60 PRINT count
```

Loop structures

ST BASIC has only two loop structures, the fixed FOR . . . NEXT and the more flexible WHILE . . . WEND statements. HiSoft and Power Basics – both by HiSoft – are completely compatible with ST Basic, so you can type in and run all the listings here. However there are several advantages in using these alternative Basics over ST Basic.

The first advantage is that the programs are compiled directly to machine code and therefore run hundreds of times faster. Secondly, a number of ST Basic bugs are fixed, and finally there are many additions and extensions to the range of commands available. For instance, as well as the two ST Basic loop structures two others are available in HiSoft Basic. The first is the REPEAT . . . END REPEAT loop:

```
i = 0
REPEAT one
  i = i + 1
  IF i = 10 THEN EXIT one
  PRINT i
END REPEAT one
```

The REPEAT statement is followed by a variable, in this case one. *The end of the loop is marked by END REPEAT. Unless you break out of the loop with an EXIT command – here shown with an IF . . . THEN statement – then the loop will repeat forever.*

The second loop structure is the very flexible DO . . . LOOP which can be used in a variety of ways. You can DO . . . LOOP UNTIL, DO UNTIL . . . LOOP or simply DO . . . LOOP. The following three snippets of HiSoft Basic code show how they are implemented:

```
i=0
DO
  i=i+1
  PRINT i
LOOP UNTIL i=10

DO UNTIL i=10
  i=i+1
  PRINT i
LOOP

i=0
DO
  i=i+1
  IF i=10 THEN EXIT LOOP
  PRINT i
LOOP
```

The UNTIL statement tests to see if a certain condition is true – in this case if the variable i *is equal to 10 – and exits the loop when it is. The last DO . . . LOOP hasn't got an UNTIL so it will loop forever unless an EXIT LOOP is met.*

It's worth noting that if you do decide to use this enhanced version of Basic you can't subsequently run the programs in ST Basic, as the extra commands won't be recognised. However HiSoft and Power Basics do recognise all ST Basic (old version) commands.

While on the other hand . . .

Here the WHILE skips the body of the loop and jumps straight to the end where it prints the value of *count*. Notice that the message in the body of the loop is never printed.

Data handling

THERE are times while writing a program that you need to store a series of constant data items. Take, for example, a program which prints the name of any month given just the month number (1 to 12) to go on. How do you get the names to print?

One way would be to implement a series of IF ... THEN tests on the month number and then print the correct month's name. Or you could store the names in string variables. You are then faced with picking which string to print like this:

```
10 Month1$="January"
20 Month2$="February"
30 Month3$="March"
.
.
.
200 IF n=1 THEN PRINT Month1$
210 IF n=2 THEN PRINT Month2$
220 IF n=3 THEN PRINT Month3$
```

This may seem like the obvious way of solving the problem, but of course, there are alternative methods. Basic has a far neater way around this problem, which crops up an awful lot in the real world.

Basically...

THE only major difference between the WHILE loop and the REPEAT loop is that the latter always executes at least once. Otherwise the choice between the two functions is arbitrary. ST Basic does not support REPEAT, but more advanced Basics like STOS do.

Either function can be simulated with IF *x* THEN GOTO *label*, but this should be avoided, as GOTOs tend to lead to programs that are complex and difficult to debug.

Here is another example: The parts department in a garage stores spare parts for a particular type of car. The number of parts is constant, and so is each part number. The store manager wants to computerise the system so that he can enter a part number and the micro will print out the part name (or vice versa).

The problem is essentially the same as before – inputting a number and then printing a string as a result. This time however, there are a much greater number of items so an enormous number of IF ... THEN statements would be required.

Basic has two features to solve this problem, and breaking the task down further you may realise there are two things featured here. First there is a long list of constant values, and second there is a need to store all of these values inside the program.

Solving this problem using variable assignment and IF ... THENs as in the calendar example would take up massive amounts of memory for a stock list and would, therefore, be completely unsatisfactory. There is a much better way, and that is by tying all of the similar variables together in the form of a list, or in Basic terminology, an array.

A new dimension

ARRAYS are just special forms of the variables we have already discussed. In fact, any variable can be defined as an array using the Basic statement DIM – short for dimension.

What this means is that one variable name can have many different values. Each value is called an element and is accessed by an index number which is given in brackets when the variable is accessed, that is, assigned or read.

When the program is run, Basic reserves memory for the elements belonging to the array defined in the DIM statement. This is only performed once in the program and attempting to do it again gives rise to an error.

To see DIM in action try:

```
10 DIM numbers(10),string$(10)
20 FOR i=1 to 10
30   PRINT numbers(i),
     string$(i)
40 NEXT
```

This short program simply allocates space for two arrays. The first is a single precision real and the second a string type. The thing to note here is that DIM initialises all of the elements in a numeric array to zero and all elements in a string array to null or empty strings.

If you want the array elements to hold particular values you must set them in your program like this:

```
10 DIM numbers(10)
20 FOR i=1 to 10
30   numbers(i)=i*i
40 NEXT
50 PRINT "All set!"
60 FOR j=1 to 10
70   PRINT numbers(j)
80 NEXT
```

Once again, what we have done is set up a 10 element array, only this time it has been initialised to hold a set of calculated values – the square of the loop counter. This set of numbers is then displayed on screen using a simple loop.

Our store manager could define a string array for the parts names and a numeric array for the parts numbers. After entering a number, say *n*, the program could print out the part name with a simple PRINT part$(n).

Basically...

ALL types of loop structure can be simulated with IF . . . THEN . . . GOTO, and in fact early implementations of Basic didn't have any looping structures apart from FOR . . . NEXT. This led to so-called spaghetti programming with GOTOs sending program flow careering all over the listing.

The loop structures are designed to prevent this and to make programs more readable and easier to follow. So make sure you use them where possible.

Arrays like this are called single dimensional arrays, but it is possible to have two or even more dimensions. Their number and size is decided by the program, but it is rare to have more than two or three. A nine by nine (two dimensional) array contains 81 (9 x 9) elements, and a two by three by four (three dimensional) array has 24 (2 x 3 x 4) elements.

The most powerful feature of arrays is their ability to hold lists of related data in an easy to get at form. Not only this, they are faster to use than repeating the same calculation, perhaps many times.

This is a technique called tabling and is used widely by computer programmers in all sorts of languages, not just Basic.

Consider the SIN function, which calculates the sine of an angle given its size in radians.

Suppose for example you need to use the sine values, given the number of degrees for a particular calculation. If you require more than just a few calculations, which is quite likely, the fastest method is to set up a table of the sine values from 1 to 90 degrees. Here's how you would do this:

```
10 DIM nums(90)
20 pi=3.141593
30 rad=pi/180
40 FOR i=1 TO 90
50   nums(i)=SIN((i*rad))
60   PRINT "SIN ";i;" = "
     ;nums(i)
70 NEXT
```

A simple solution to a complex problem.

The power of colour

NOW we'll move on to take a brief look at the practical applications of the emotional aspect of colour and composition. To illustrate how you can use colour to say exactly what you want here are two pictures created using Degas Elite on the ST, one a traditional landscape, the other an expressionistic graphical design concept. These should be sufficient to demonstrate the power of colour and how to use it to maximum effect.

Figure I is a green landscape. This is a quiet, sombre type of picture showing a pond at sunset. The main emphasis is on subtle warmth and restfulness. There is nothing here to really grab your attention, except the pond itself. It asks nothing of the viewer and is quite comfortable to look at. This is what is called a rather nondescript picture.

Figure II is identical to the first except for the colours. Here the dominant green has been changed to white and a few of the highlight colours have also been altered to blend in with the overall picture. There is a strong sense of coldness. The sombreness has gone and so has the warmth.

This is a more dramatic scene than the original picture yet the only difference is the dominant colour. The overall colour is stronger, colder and therefore you react differently to the picture. Study both examples until you can work out why you react the way you do.

Try creating your own versions of the two pictures. When you complete the first, save it, then change the dominant colour to give an entirely different picture. You may have to spend some time planning your landscape and how you are going to use your colours before actually painting it, but the planning stages are important and if carried out correctly, usually reward you with a better result.

Feelings within pictures

LOOK at Figures III and IV for a while and work out what they say to you. Investigate your feelings towards them and then try to analyse why you react in that particular way.

The two pictures are drawn in four-colour medium resolution. This restriction can be put to good use as it forces you to think about what you want to say with the picture. Having planned this, decide on the colour combinations.

The difference between the two is quite extraordinary. Not only is the surface changed, but also the whole emotive and symbolic meaning has been altered by changing the palette. That is the power of colour.

The two figures are centrally placed, which gives a strong, forceful composition. The squareness and solidity of the figures has been balanced with the roundness of circles in both corners (the symbolism here is also very interesting).

The strong vertical has been tempered by subtle diagonals to keep the picture within its frame and soften the impact. The placement and shape of the arms, hands and head-dress have also been very carefully thought out. Each part taken separately would look invalid but taken as a whole the picture is not only complete, but makes a very strong statement.

Figure IV is nearly identical to Figure III, apart from changing the colours and the mouth of one of the figures. This small detail helps to change the feeling of the whole picture, and it is more in keeping with the colour changes made.

Purple signifies mystery or a mystical statement. This colour has been used to convey a religious feel to the picture, although the subject matter itself is not one that could be readily identified with our normal preconception of a religious motif.

The red picture conveys a primitive and somewhat threatening feeling, while the same picture in a purple tone – mainly conveyed by the background border – removes the threatening primitive feeling and replaces it with one of strangeness or uneasiness, especially when viewed together with the contradictions within the subject matter itself.

The contradictions within the picture play a major role in the overall effect. Round and square, hard and soft, not

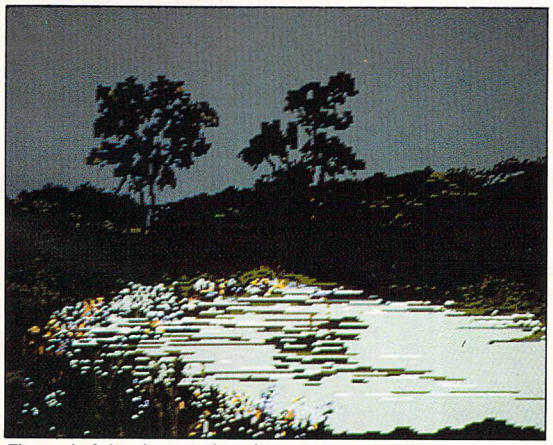


Figure I: A landscape showing subtle warmth



Figure II: Dramatic scene created by changing the palette



Figure III: A four-colour medium resolution picture

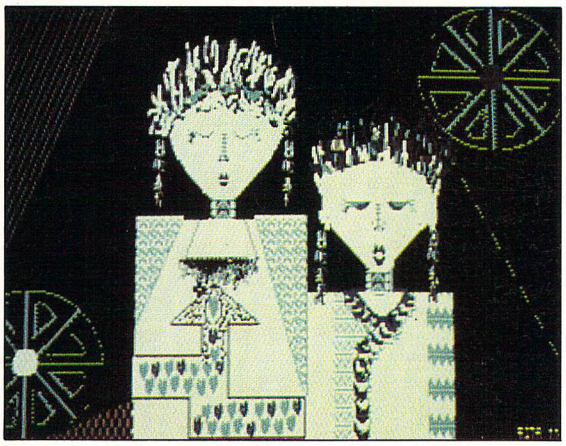


Figure IV: The same picture as before using different colours

Practical applications

only in lines but also colour usage and the subject matter itself. The two pictures show that the number of colours available are nowhere near as important as understanding how to use them to say what you want.

Mastering colour

COLOUR is a servant to but a few. If mastered it becomes an excellent tool. It will do for you what nothing else can. It will communicate directly with the viewer's subconscious and he or she will react to and with your work.

The reaction may not always be pleasant, because you are asking the viewer to do something which he may not want to do, be it think about your work, or even think about himself, which most people generally find uncomfortable or even threatening.

Colour should not be treated lightly. Near enough is not good enough. There is always the one and only right colour for everything. The object should not dictate what colour it should be, but the emotive feeling of the object is of primary importance.

The examples used here should make clear the feelings produced by colour. The topic itself is not an easy one to talk about effectively, the eye and heart (spirit) can understand better than the ear. In other words one picture is usually worth a thousand words.

Tonal composition

HAVING drawn the main picture, think of the best possible composition. Some areas have to be subdued, others highlighted. Use the Degas Smear and Stipple with a small brush to break up any hard background ridges where two colours meet. This softens the colour contours as it merges them.

At this stage some areas of your picture will require highlighting and others will require darkening. Strengthen some of your line work so everything does not merge into the background or sit on the same visual plane. Some strokes can be in the background, others in the midground or foreground.

Where the strokes seem to be placed within your picture will depend on the strength of the line itself. This strength is made up of the colour, thickness and density. By varying these factors you will vary the strength of the line and change the composition of your whole picture.

Now decide on the shape of your final picture. Just because the ST monitor screen is rectangular doesn't mean that your picture has to be the same shape. Try a variety of different things including reversing (flipping) the entire screen. Play around with different types of borders – you'll be amazed what a difference it makes.

Spray it again...

WE will now try some practical exercises in using stippling. Our preference in art packages for the ST is Degas Elite, but it doesn't matter which one you use as long as it has a definable stipple – or spray – option.

Before you start your painting on screen you have to make three decisions:

- Decide on your subject matter.
- Decide on the overall effect or feeling you want to convey.
- Set up your palette accordingly.

Now select the Stipple option. Using your background colour and a medium brush size, spray around the screen. Allow a heavier concentration in some areas, becoming lighter in others. The stipple density can be regulated by the speed of the mouse. The faster you move it the lighter it is. Move very slowly if you want a heavy flow.

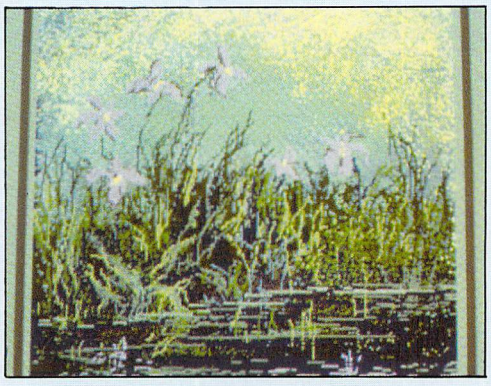
Now change to a slightly lighter colour and smaller brush. Place some accents here and there to give areas of interest and relieve the monotony of overall colour. For variety, try using a long thin vertical brush with the stipple. The horizontal thin line brush gives a wonderful feel when portraying water.

Try a brush at an angle and then go over the same area lightly with the angle reversed. This technique is good for rocks and cliff faces. Try a combination of different brushes – you can get some interesting effects this way.

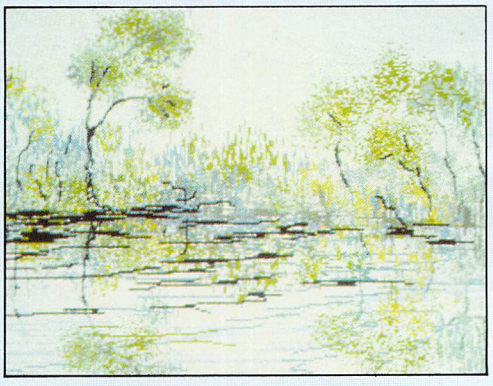
After covering half to three quarters of the screen with a variety of colours and brush lines, change to the Draw option to accentuate areas and bring life to your picture. The size brush you use will depend on what you are doing.

In the pictures below a large brush indicates broad leaves and a medium brush size with a strong colour is used for the flowers. With the trees a small brush with stronger colour contrast delineates the tree trunks thereby bringing them out of the background. How you use colour is a very personal thing, so just try a few different combinations until you have something that feels right.





These three pictures show how to combine the spray and brush to produce effective results



Keeping account

What is a spreadsheet?

IF you run your own business, no matter how large or small, you will at one point or another have to deal with your accounts. Whether you simply keep a day book, produce a cash flow for the bank manager or provide end-of-year ledgers, a micro will smooth and speed the process.

As you probably know, accounts and accountants are expensive and time consuming. Using an ST and a powerful spreadsheet and accounting package will help you with these often tiresome procedures and also enable you to run your business more smoothly and efficiently.

There is a bewildering variety of packages on the market, and some are very expensive, so we'll take a brief tour of what's available and the features you can expect them to contain.

YOU are probably familiar with ledger sheets used by accountants for making balance sheets and profit and loss statements. Well, a spreadsheet is an electronic tabulated worksheet which can be tailored to produce and monitor cash flows, depreciation charts, end of year ledgers and much more besides.

Not only is it capable of cross calculation of cash data, but it can also be used to classify and manipulate non-monetary arithmetic data, such as test results of students, IQ scores, cubic metres of earth dug each day by a gang of workmen and so on. Figure I shows an example.

A spreadsheet is made up of a large number of cells – boxes – organised in rows and columns. These can contain numbers, text or calculations – in fact anything you care to put in them.

An average commercial spreadsheet program – which may allow up to 65,500 rows by 65,500 columns – can cater for 4,000,000,000 cells. That's if your ST had the memory to store them. The fact that you would never need to use anywhere near that amount of cell space is irrelevant, but it proves the sheer power of a typical package of this sort.

The joy of electronic spreadsheets to the businessman is their speed and ability to answer "What if?" questions. They can be constantly updated and altered – usually using an Edit command – without resort to writing out each sheet from scratch.

When one of the cells is changed it is reflected in the state of the others, so it is easy to predict the outcome of circumstances like increasing sales, overdrawn bank balances, cash flow problems and so on. Basically the sheet can be manipulated to provide the set-up of information which is required for your business.

Further to this, their global calculatory functions enable you to quickly do tasks which with a pocket calculator would eat away at valuable business time. They are also cost saving, as they let you carry out many of the weekly and monthly accountancy tasks which you would otherwise have to pay an accountant to do.

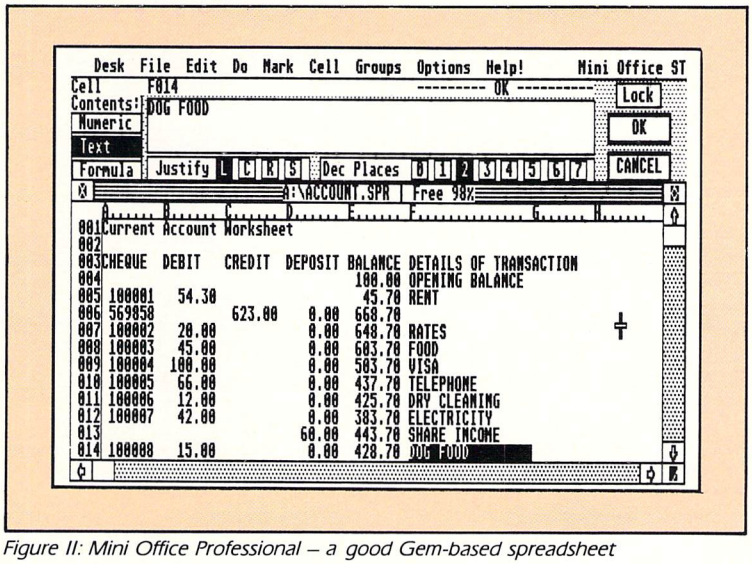


Figure II: Mini Office Professional – a good Gem-based spreadsheet

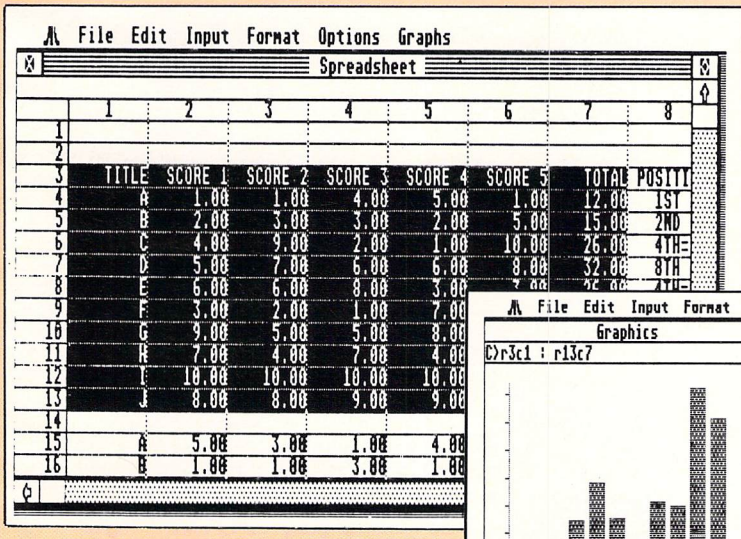


Figure I: Tabulation of test results is easy with a spreadsheet such as Glentop's Graphic sheet

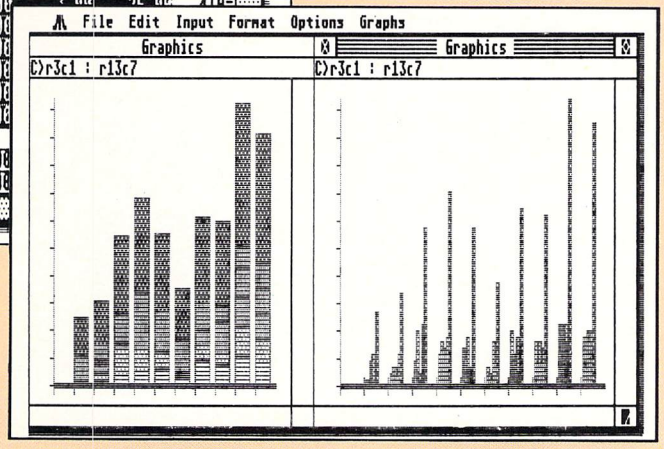


Figure III: And you can output the results in chart form

Keeping account

What's available

IN addition to varying speed and size, these packages can differ in many ways. One is whether they are Gem-based or command-driven. Mini Office Professional Spreadsheet, shown in Figure II, is a good example of the Gem-based variety. The pros and cons of operation reflect the same arguments in the word processor section, but command-driven sheets are rare for the ST.

If you are unfamiliar with computerised spreadsheets a Gem-based one will be easier to get to grips with than a command-driven one. However, once you get to know a command-driven one it can be much faster and flexible.

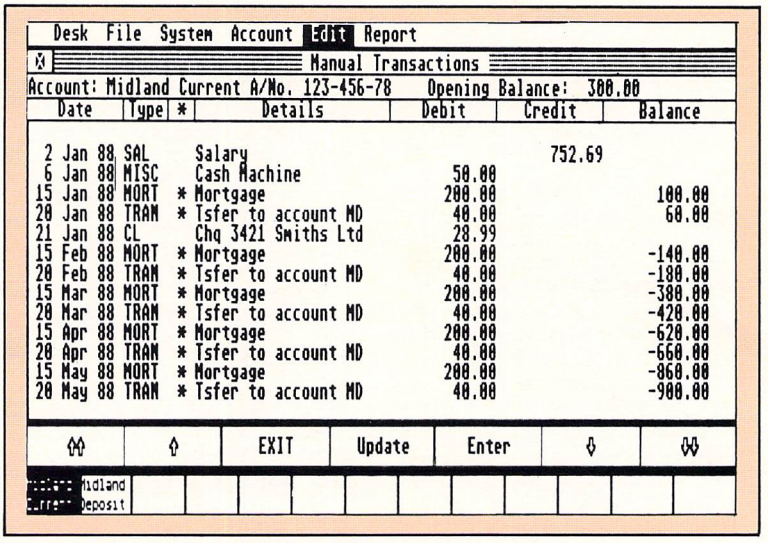
The second difference is whether or not they support graphics to allow you to print out graphs and charts from your accounts or statistics. These are handy as they can give at-a-glance updates on your commercial progress or forecasts. Glentop's Graphic Sheet provides some excellent graphic functions, as can be seen in Figure III.

Some spreadsheets also provide facilities for on-screen calculators and notepads to enable you to perform related tasks while updating your sheet.

In the public domain, spreadsheets and accountancy programs are as bearish as their word processing relations, but by necessity of their size are limited in their power compared to their more expensive big brothers. VC Spreadsheet – available on Softville's ACC.23 disc – is a marvellous non-Gem but highly usuable spreadsheet.

Meanwhile ST-Sheet, available on Softville's ACC.31 disc, is a Fast Basic spreadsheet utility that can be used as a stand alone program or as a desk accessory. Also available in the PD market is a superb accounts/spread utility to be used within the ST Writer environment.

If you require slightly more flexibility and power for ledgering and day to day accountancy, Kuma's K-Spread and Digita International's Digicalc are inexpensive and user-friendly entry level spreadsheets which hold a half-way position between the PD sheets and the lucrative master packages.



Desk File System Account Edit Report

Manual Transactions

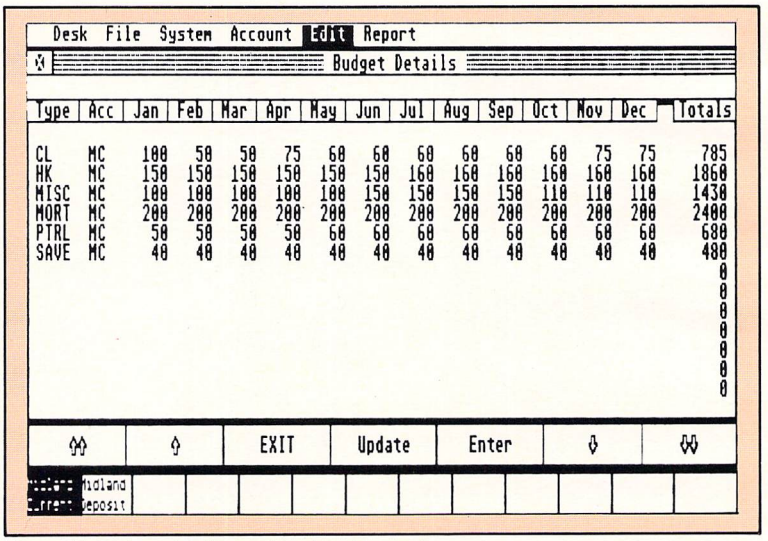
Account: Midland Current A/No. 123-456-78 Opening Balance: 300.00

Date	Type	*	Details	Debit	Credit	Balance
2 Jan 88	SAL		Salary		752.69	
6 Jan 88	MISC		Cash Machine	50.00		
15 Jan 88	MORT	*	Mortgage	200.00		100.00
20 Jan 88	TRAN	*	Tsfer to account MD	40.00		60.00
21 Jan 88	CL		Chq 3421 Smiths Ltd	28.99		
15 Feb 88	MORT	*	Mortgage	200.00		-140.00
20 Feb 88	TRAN	*	Tsfer to account MD	40.00		-180.00
15 Mar 88	MORT	*	Mortgage	200.00		-380.00
20 Mar 88	TRAN	*	Tsfer to account MD	40.00		-420.00
15 Apr 88	MORT	*	Mortgage	200.00		-620.00
20 Apr 88	TRAN	*	Tsfer to account MD	40.00		-660.00
15 May 88	MORT	*	Mortgage	200.00		-860.00
20 May 88	TRAN	*	Tsfer to account MD	40.00		-900.00

EXIT Update Enter

Midland Deposit

Figure IV: Bank statement produced by Digita's Home Accounts



Desk File System Account Edit Report

Budget Details

Type	Acc	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Totals
CL	MC	100	50	50	75	60	60	60	60	60	60	75	75	785
HK	MC	150	150	150	150	150	150	160	160	160	160	160	160	1860
MISC	MC	100	100	100	100	100	150	150	150	150	110	110	110	1430
MORT	MC	200	200	200	200	200	200	200	200	200	200	200	200	2400
PTRL	MC	50	50	50	50	60	60	60	60	60	60	60	60	680
SAVE	MC	40	40	40	40	40	40	40	40	40	40	40	40	480
														0
														0
														0
														0
														0
														0
														0

EXIT Update Enter

Midland Deposit

Figure V: Budget details produced by Home Accounts

Also available are some excellent general accountancy packages such as Microdeal's Personal Finance Manager and Digita's Home Accounts. These allow you to construct, tabulate and print many everyday accountancy tasks, such as bank statements – shown in Figure IV – and budget details – shown in Figure V.

At the top end of the market the packages are many and varied. VIP Professional is a very powerful but expensive Lotus 1-2-3 clone – the standard spreadsheet by which all others are compared in the IBM PC business world.

It is therefore best perhaps to begin with either a public domain or cheap spreadsheet then to decide for yourself what you require of a master package. The table summarises a cross-section of the best packages available.

Guide to Spreadsheet and Accountancy packages for the ST

Spreadsheet	Supplier	Price	Graphics mode	Operation	Package type
VC Spreadsheet	Softville	PD	No	Non-Gem	Simple spreadsheet
ST-Sheet	Softville	PD	No	Gem	Simple spreadsheet
K-Spread 2	Kuma	£59.95	Yes	Gem	Spreadsheet
Digicalc	Digita	£39.95	No	Non-Gem	Spreadsheet
Graphic Sheet	Glentop	£49.95	Yes	Gem	Spreadsheet
Mini Office Spreadsheet	Database	£29.95	No	Gem	Spreadsheet
Home Accounts	Digita	£29.95	Yes	Gem	General accounts
Swiftcalc	Timeworks	£79.95	Yes	Gem	Spreadsheet
Personal Finance Manager	Microdeal	£29.95	Yes	Gem	General accounts
BAS Accounts	BAS	£195.00	Yes	Gem	General accounts
Master Plan	Silica	£89.95	Yes	Gem	Spreadsheet
VIP Professional	Silica	£228.85	Yes	Gem	Spreadsheet

Case conversion

WE will continue to explore character arrays – often used for storing strings – and write some useful functions to manipulate them in various ways. Although many of the routines we'll look at are available as ready made library functions, it is usually a trivial task, and good practice too, to write your own versions.

One of the things we often wish to do with a chunk of text stored in a character array is to check that it contains either all upper case letters or just lower case ones, and convert those that aren't to the correct case. A function to do this would have to examine each character and test it to see if it was in the range A to Z for upper case and a to z for lower case.

The following program demonstrates how to input a line of text from the keyboard and convert any upper case letters to lower case. It is written using GST C, but contains nothing unusual, so should be able to be compiled by most C packages:

```
/* Convert input to upper case */
/*      Written in GST C       */

#include <stdio.h>
#define MAXLEN 100

main()
{
  char string[MAXLEN];
  input(string,MAXLEN);
  lower(string);
  printf("\n%s",string);
  getchar();
}

input(s,m)
char s[];
int m;
{
int c,i;
for (i=0;(c=getchar())!='\n' && i<m-1;)
  s[i++] = c;
s[i] = '\0';
}

lower(s)
char s[];
{
  int i;

  for (i=0; s[i]!='\0'; ++i)
    if (s[i]>='A' && s[i]<='Z')
      s[i] += 32;
}
```

Enter it, compile it and run it to see it in action. Try typing a mixture of upper and lower case letters and see that it converts them all to lower. You've seen input routines before, so *input[string]* should hold no surprises. It reads the input and places the characters in the character array *string* which is passed as the parameter *s*.

The function we are interested in is the one at the end called *lower()* as it is this that does the actual conversion. A *for* loop structure is used to scan through the array character by character. An *if* statement tests the current character to see if it is upper case, and if it is, 32 is added to the Ascii code – the increment needed to make an upper case letter lower case.

The line:

```
for (i=0; s[i]!='\0'; ++i)
```

sets up the loop, and initialises the loop counter *i* to zero. The end of the string is tested for by the middle conditional statement, which checks that the character is not equal to the zero end-of-string marker. The final statement in the brackets increments the loop variable *i*.

The following *if* condition tests if the character is greater than or equal to A and less than or equal to Z (the double ampersand sign is C's equivalent to Basic's logical AND operator). In other words, it asks whether the character is a capital letter:

```
if (s[i]>='A' && s[i]<='Z')
```

The final line of this function, which is executed if the *if* condition evaluates to true, is an interesting feature of the C programming language, and at first sight it appears to be very strange indeed:

```
s[i] += 32;
```

What this does is to add 32 to the array element *s[i]* and the line is exactly equivalent to the alternative, and more traditional way of writing the expression:

```
s[i] = s[i] + 32;
```

The only difference is that the latter version takes slightly longer to type. The accompanying panel shows some similar C shortcuts and abbreviations along with their full expanded versions.

Abbreviation	Meaning
x = y	x = y
x += y	x = x + y
x -= y	x = x - y
x *= y	x = x * y
x /= y	x = x / y
x %= y	x = x % y
x >>= y	x = x >> y
x <<= y	x = x << y
x &= y	x = x & y
x ^= y	x = x ^ y
x |= y	x = x | y

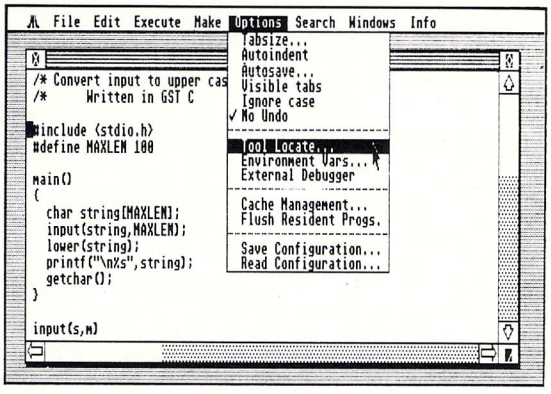
Common abreviations and their meaning

One final point to note with this listing is the *#define* at the start. This tells the compiler to replace every occurrence of *MAXLEN* with the number 100. If at any time we want to change the maximum length of input, we simply alter the 100 following *MAXLEN*.

The advantage of this is that we don't have to search through the program listing changing all the maximum lengths, which would be the case if we had used the actual number 100 in the program.

Numeric input

WE will move on to see how to input numbers into our C programs rather than character strings. In fact, the technique involved uses a large chunk of code from our last program.



Laser C, although very expensive, can reduce compile-link-run times from minutes to seconds

Case conversion

What we have to do is to input the number into a character array as a string of Ascii characters. We can then scan the array and calculate the number from the Ascii codes of the digits stored there.

The program here allows you to input a decimal number, which it then prints out in hexadecimal using the *%x* conversion specification in the function *printf()*:

```
/* Convert decimal to hexadecimal */
/*       Written in GST C         */

#include <stdio.h>
#define MAXLEN 10

main()
{
  char string[MAXLEN];
  int number;
  input(string,MAXLEN);
  number = val(string);
  printf("\nHex = %x ",number);
  getchar();
}

input(s,m)
char s[];
int m;
{
int c,i;
for (i=0;(c=getchar())!='\n' && i<m-1;)
  s[i++] = c;

s[i] = '\0';
}

val(s)
char s[];
{
  int i,n;
  n = 0;
  for (i=0; s[i]!='\0'; ++i)
    n = 10*n+(s[i]-'0');
  return(n);
}
```

The input routine we've seen before so I'll say no more about this. The part we are interested in is the function called *val()* at the end of the listing, as it is this which scans the string of digits and converts it into a number.

The way it works is to initially set the number *n* to zero. Then a *for* loop scans the string from start to finish – remember the end of the string is marked by a zero character. The number *n* is multiplied by 10 and the next digit – calculated by subtracting Ascii zero from the Ascii code of the character – is added to the result. This process is repeated until there are no more characters. Finally *n* is returned as a result of the function with *return(n)*.

Operator	Function
+	Addition
–	Subtraction
*	Multiplication
/	Division
%	Remainder after division
<	Less than
>	Greater than
<=	Less than or equal to
>=	Greater than or equal to
==	Equal to
!=	Not equal to
!	Logical NOT
&&	Logical AND
||	Logical OR
&	Bitwise AND
|	Bitwise OR
^	Bitwise XOR
>>	Shift bits right
<<	Shift bits left
~	Ones complement

C operators

Counting up

STILL staying with strings, but this time returning to pure text rather than numeric input, we'll look at a new function to count the number of words in a line of input – the basis of a simple word counter for word processors.

We can use the same input routine as in our previous examples, and once we've got the text stored in a character array we can scan it and count the number of words quite easily.

All words start with a letter, so what we do is start at the beginning of the array and examine each character. When we find either an upper or lower case letter then that is the start of the first word.

We now have to skip the rest of the characters in the word and look for its end, marked by either a space or the end of the input string – a zero marker. If a space is found, we look for the start of the next word, and so on until we come to the end of the input string.

Here is the whole listing:

```
/*   Word counter   */
/* Written in GST C */

#include <stdio.h>
#define MAXLEN 100

main()
{
  char string[MAXLEN];
  int words;
  printf("Enter some text: ");
  input(string,MAXLEN);
  words = count(string);
  printf("\nThere are %d words",words);
  getchar();

}

input(s,m)
char s[];
int m;
{
int c,i;
for (i=0;(c=getchar())!='\n' && i<m-1;)
  s[i++] = c;
s[i] = '\0';
}

count(s)
char s[];
{
  int i,words;
  words = i = 0;
  while ( s[i]!='\0' )
    if ((s[i]>='A' && s[i]<='Z') ||
 (s[i]>='a' && s[i]<='z'))
    {
      ++words;
      while (s[i]!=32 && s[i]!=0)
        ++i;
    }
    else
      ++i;
  return(words);
}
```

The important function is *count()* at the end of the listing. After declaring the variables, both *words* and *i* are set to zero. Then a *while* loop structure contains the main body of the code.

The *if* statement tests whether the character is greater than or equal to A and less than or equal to Z – in other words a capital letter – or greater than or equal to a and less than or equal to z – a lower case letter. If it is, *words* is incremented and a *while* loop skips the characters in the word, looking either for a space – Ascii 32 – or a zero – end of string marker.

If the *if* test fails and the character is not a letter, the pointer *i* is incremented so that *s[i]* points to the next character in the string.

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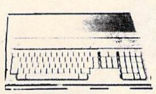

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Stuck for what to buy next, or just wondering where to start? The gaps in your wants list are filled by our resident Midi expert

Shopping around

WHETHER you are a musician or a computer user you'll never be short of items on your "must have" list. If you fall into both categories you'll probably be tripping over your list. But just in case you haven't given the matter much thought, here's a few suggestions aimed at novices who want to try the highly entertaining world of Midi music.

The first thing you need as an Atari computer musician is the right micro. The extra memory on the 1040ST is definitely worth having. If you have a 520ST you could upgrade the ram capacity for less than £100.

You must have 1Mb of memory in order to run some professional music programs, and it also comes in useful for storing long compositions.

Most music software will run in high or medium resolution but some – particularly scorewriter programs – insist on a high resolution monitor. If you have two monitors you may also feel you need a mono/colour monitor switch.

Choosing the software

The foundation of any computer music set-up is a sequencer, and professional sequencer programs cost from £150 to £485. There are however, many cheaper budget-price packages on the market. Passport's Master Tracks Junior at £99 is an excellent program but lacks event editing.

Sonus' SST at £99 is also fine. It's less graphic-oriented than Master Tracks Junior but has a separate event editor. Hybrid Arts' EZ-Track Plus at £59.95 is a 20-track, real-time, tape recorder-based sequencer and the files are upwardly compatible with Hybrid Arts' sequencers.

Hybrid Arts' EZ-Score Plus at £129.95 lets you enter six part music directly on to staves. Microdeal's Super Conductor at £49.95 can store 10 songs in memory at once. Songs are built-up from sequences of patterns. For a really lightweight introduction to music and Midi take a look at Electronic Arts' Music Construction Set, which at £24.95 is an ideal starting point for novices.

Bit By Bit's MidiDrummer at £39.95 is a sequencer program designed specifically for use with drum machines. It has a few limitations but is ideal for use with samplers and synths. Intelligent Music's M at £135 is an algorithmic composition program which improvises note patterns and sequencers – a very usable composition program and great for the experimenter.

Choosing a book

There are dozens of books for the hi-tech musician. If you're a bibliophile, ask for copies of Music Sales' and IMP's catalogues and drool over them at your leisure. If you're new to the Midi scene here are a few titles I can recommend to provide background and technical information.

Musical Applications for the Atari ST (£5.95) by R.A. Penfold, published by

MUSIC ON THE ST

By IAN WAUGH

Babani. Lots about Midi, some DIY hardware projects and how to program the sound chip and the Midi ports. Music Through Midi (£17.95) by Michael Boom, published by Microsoft Press. A hefty price and a hefty 300 page book containing chapters on music and equipment as well as Midi.

Chart Hits (£5.95) from Hal Leonard. A superb idea – nine chart hits transcribed in five tracks especially for sequencers. Titles include Every Breath You Take, Flashdance, Miami Vice Theme, One More Night and When the Going Gets Tough.

The idea must be catching on because Music Sales has just launched 10 books in similar vein. They're called Rock Scores (£6.95) and contain six to nine part arrangements, including guitar tablature. They are exact copies of the original songs. The series includes Phil Collins, The Beatles, The Rolling Stones, Bruce Springsteen and Bon Jovi.

Arranging Techniques for Synthesists (£9.95) from Music Sales will be invaluable reading for anyone wanting to get more out of sequencing. It includes chapters on melody writing, harmony, rhythm, arranging for different instruments and transcribing techniques. A demonstration record is included.

You don't have to be a keyboard player to make music via Midi or with a computer. Midi for Guitarists (£8.95) from Music Sales, looks at Midi from the guitarist's point of view. It includes a demonstration record of musical examples.

Electronic Music Dictionary (£4.50) from Hal Leonard. Another super idea – a glossary of over 300 terms used in today's hi-tech music world.

Choosing an instrument

Multi-timbral instruments can play several sounds at the same time and are ideal for use with sequencing software. Here's a selection of the best ones.

Roland's MT-32 – around £450 – is currently very popular. It uses linear arithmetic synthesis to produce lots of super, breathy sounds and has a built-in drum kit. Lots of music demos are configured for the MT-32. The new Roland D110, around £550, incorporates the features found on the MT-32 but expands them. It has more percussive presets and separate outputs.

Yamaha's TX81Z (around £399) uses the company's famous FM synthesis and has 128 presets and 32 user-programmable sounds. Two of Yamaha's new portable keyboards, the PSS-480 (£179.99) and PSS-680 (£249.99) both have mini keyboards but a good Midi spec. Just the thing for use with a sequencer.

Kawai's now famous K1 synth (around £595) is also available in module and

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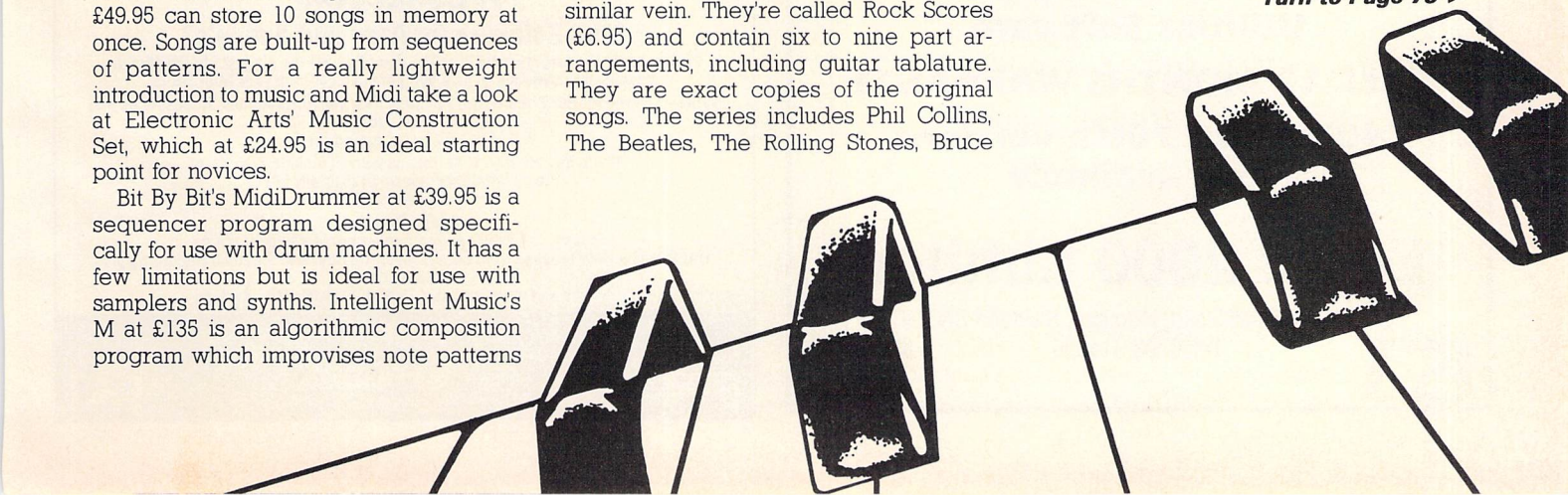

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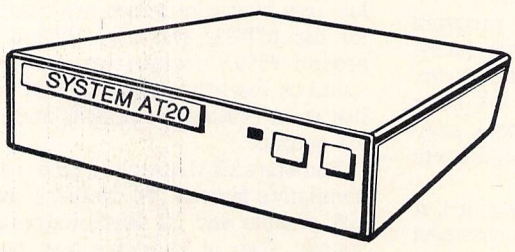

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◀ *From Page 77*

rack-mount versions (around £395). Kawai also has a new portable keyboard called the PH-50 (£295). It has 200 presets and uses the same variable memory sound generator as the K1.

Cheetah has a wide range of Master Midi keyboards from the five-octave MK5II (£199.95) to the seven-octave MK7VA (£399.95) which has weighted keys and is both velocity and after touch sensitive. Cheetah also has an expander of its own, the MS-6 (£299.95) which features 320 preset sounds and 96 user programmable ones.

Choosing a sampler

Eidersoft's Pro Sound Designer at £57.44 is an excellent budget-priced sampler and includes routines for playing samples from within your own programs. Microdeal's ST Replay at £79.95 has the edge on Pro Sound when it comes to quality, but it uses the ST's keyboard rather than the mouse.

Eidersoft's Pro Light and Pro Midi are £16.95 each and can be used with Pro Sound Designer and ST Replay. Pro Midi lets you play samples via a Midi keyboard. Pro Light converts an audio signal into a light display. Hybrid Arts' ADAP1 (£1,799.95) is a pro-quality sampler which uses the ST's memory. You can save to hard disc with ADAP2.

The Lynex Sampler (around £1,899) from Commander interfaces to the ST but leaves it free to run other software.

Black Boxes?

Once you get more than two pieces of Midi equipment I can guarantee you'll need to plug and unplug a few Midi cables. To avoid this you need a Black Box.

The 5X5 (£89.95) is a switcher unit which lets you route inputs and outputs between five pieces of equipment. The V10 Thru Unit (£35.95) is mains-powered and lets you send one input to 10 outputs. A budget-priced battery-powered V3 (£12.95) with three thrus is also available.

The W5 (£49.95) is mains powered and lets you select one of two input sources for five outputs. The 5S (£25.95) requires no power and simply lets you route an input to one of five outputs. It can work the other way, too, allowing you to route one of five inputs to a single output.

The Akai ME-30 (£199) is more sophisticated. It's a programmable Midi patch bay with four ins and eight thrus. You control the routing via software and Midi messages.

Choosing a recorder

So you've written, arranged and produced your music. Thanks to Midi you'll be able to record and store most, if not all of it, on your ST, but if you want other people to hear it you'll have to put it on tape. You can record directly to a cassette recorder, but you may prefer or need the flexibility of a multi-track recorder.

The Fostex X-15 (£298) is one of the cheapest yet practical cassette-based portastudios although it has only two input channels. The Vesta Fire MR-10 (£320) is virtually an up-market X-15 with extra inputs for drums machines.

The Tascam Porta-05 (£329), a new machine, features a sync socket for time code. The Yamaha MT2X (£499) has an extra sync input and if you want to sync Midi equipment – which you will – there's an optional dedicated sync box, the YMC2 (£85), which fits on to the rear of the machine.

They said it wasn't possible but Tascam has made an eight-track recorder which uses normal cassettes – the Tascam 232 (£1,299).

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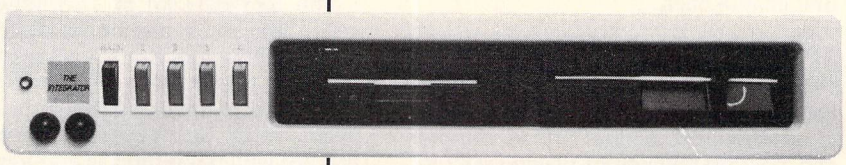

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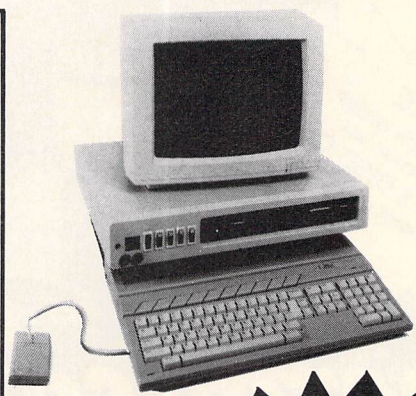

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Atlantic crossing

Nic Outterside brings exclusive news of a whole host of public domain educational programs from the USA

I HAVE exciting news this month of a whole suite of colourful and fun education programs about to be released on the PD market, but first a report on the ST overseas. It is six months since I wrote the first of this series of articles on the ST in education. Since then we have reflected on the strong effect the ST has made in British education.

The picture overseas is equally healthy, with the ST firmly establishing itself on the education front. Its forté in the primary sector has been exploited in schools such as the Our Saviour Lutheran Primary School in Adelaide, South Australia.

Just across the Tasman Sea a class set of STs is being used in the hands of Geoffrey Pearson to teach advanced robotics and mathematics to 7th form pupils at Marlborough Boys College in Blenheim, New Zealand.

Meanwhile in the USA, where the ST plays second fiddle to the Apple II in the popularity stakes, Dorothy Brumleve is at the heart of a serious challenge to PC supremacy in US schools and colleges.

She is the author of the GFA Basic Training: Reboot Camp for the ST – a beginner's programming tutorial intended for users aged eight and over – and has written many educational articles in the Stateside computer press. Testament to her programming skill is evident in Microdeal's much vaunted Pre-school Kids Progs (£14.95).

She has now released 16 excellent educational programs called Kidprgs on the American PD network. The Kidprgs are widely distributed in the United States and have recently been made available in The Netherlands and West Germany, where they have been enthusiastically received.

Dorothy has given me a full preview of these GFA Basic programs before they are launched on the British network later this month.

These freebies include the superb children's DTP program called Kidpublisher – see Figure I – a visual recognition/training program called Kidshapes – Figure II – and music and graphic design items.

Of the 16 programs, Kidpublisher particularly impressed me with its simplicity of use which should even allow infant

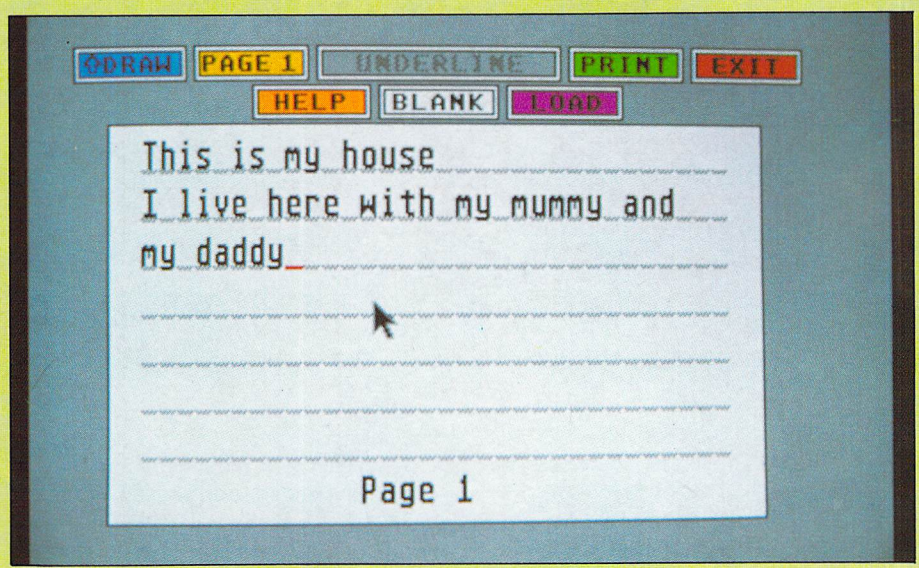

Figure I: The edit page of Kidpublisher

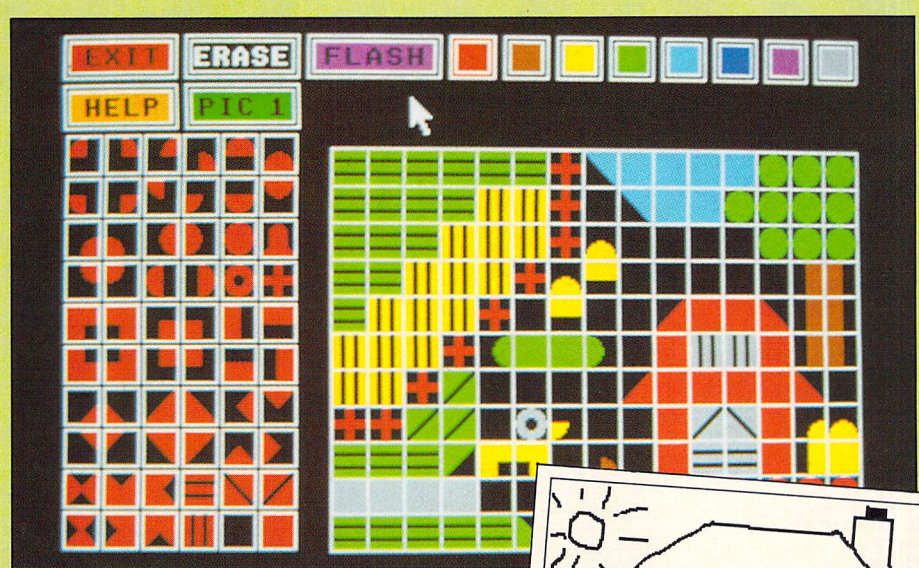

Figure II: Kidshapes makes learning fun

school children to handle it with ease. It allows seven lines of bold 32 point text per page and the import of on-screen drawn graphics. Typical output from this program can be seen in Figure III.

While learning the rudiments of word processing and desktop publishing you can, at the same time, produce beautiful pieces of news or illustrated stories.

Another of the collection in the same ilk is Rebus Writer. A rebus is a code in which pictures and symbols substitute for words – the style used to great effect in that mega game, Captain Blood. Rebus Writer allows you to write and decode stories in a thought-taxing and stimulating way. Up to three messages/stories can be

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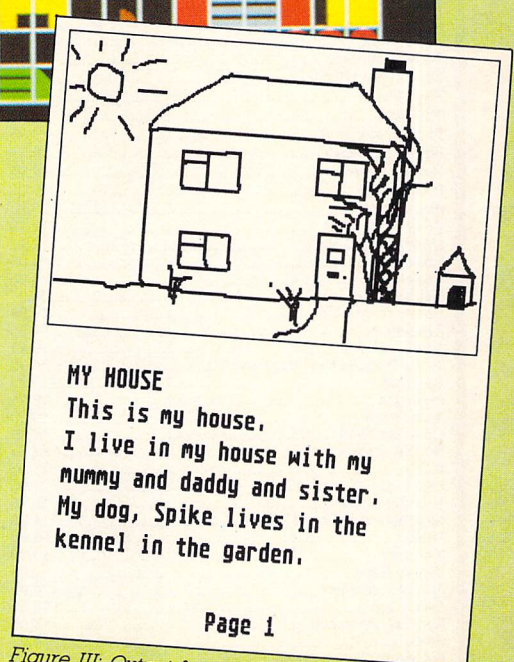

Figure III: Output from Kidpublisher

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saved to disc and these are automatically loaded when the program is run. Help screens provide valuable information about using the program and rebus design.

This will undoubtedly benefit brighter primary school children, and will be an important aid to sentence construction and vocabulary extension.

In fact story sequencing is further dealt with in Dorothy's Kidmixup. This program offers icons for 11 picture stories. When you select an icon, pictures showing part of that story are displayed in the wrong order. You use the mouse to arrange the pictures in the proper sequence to make the story make sense.

Kidstory is a totally mouse-controlled exercise for young readers and aims at a similar vein of learning. You choose picture icons which are integrated into an off-beat version of Little Red Riding Hood. You then read the story as more than 30 pages of large-type text and instructions are displayed. All versions are different and certain selections can result in some very strange endings.

These four programs are excellent learning aids for the primary school classroom. The fact that they are give-away PD utilities must make them essential additions to any educational software collection.

The graphics-orientated software includes the aforementioned Kidshapes and Kidshapes Plus. With Kidshapes you use the mouse to select from a palette of 28 shapes and eight colours. You can then use these various coloured shapes to construct pictures on an eight by 10 grid.

Kidshapes Plus is slightly more advanced, allowing you a palette of 60 shapes, eight colours and a flashing colour option. You can then construct your design on a more flexible 11 by 15 grid.

Both are simple to use and produce startling results on your colour monitor or TV. In addition Kidgraph is a colouring utility which lets you colour small squares on a 19 by 28 grid to create your own picture.

Kidgrid and Kidgrid 2 operate in a similar vein allowing you to fill prestyled grids of triangles with colours from 6 and 14 colour palettes respectively. Each of these art programs will find their true home in the primary school. Though simple, they succeed where more complicated software would confuse a young child.

Dorothy's collection also includes four music programs which, while delightful to use, are also subversively instructive. Makin' Aiken presents the children's song Aiken Drum. You select silly body parts for Aiken from a picture menu. A new body part is added with each verse, and a picture of Aiken is progressively displayed.

Kidpiano, meanwhile, is a simple keyboard tutor which gives a three octave on-screen keyboard which can be played using the mouse. Kidnotes performs the same task for the older primary school child. On a simpler level Kidmusic is a tune player for the under sixes. A menu of eight nursery rhyme tunes can be selected as desired.

This nosegay of educational programs is finally brought back home with two games. The first is Kidpotato, a graphic matching game which allows you to design and match funny potatoes. The other is Kidpuzzle, a discovery puzzle involving a large grid and hidden colours.

This collection is like a breath of fresh air. It's interesting, entertaining, educationally sound, and what's more it's free. Let's hope that encourages more programmers to release equally good educational software on to the British network to supplement the pitiful amount now available.

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David Atherton tries several modems from budget models up to the top of the range

Making the right connection

COMMUNICATIONS is one of the most exciting areas of computer use, and the Atari ST is an excellent choice of machine for work in this field. To communicate with other computers via a telephone you need both software and a modem.

In this review I'll examine four modems for the ST, ranging from rock bottom budget models right up to the Rolls Royce end of the market.

Three of them come from the large comms specialist Miracom and are standard RS232 modems which can be used on a number of computers. The ST has a standard serial connector and can be used perfectly with these. Even the cabling is standard – that is, it is the same as for an IBM PC. The fourth model is a budget offering from Dataphone.

I have also been looking at Easitalk, an ST communications software package which can be used with any of these modems. All are direct connect – meaning they are fitted with a phone plug for a standard BT wall socket. A socket on the modem accepts the phone plug, and the phone then works normally when the modem is not in use.

The principal difference between the four units is the speeds which they offer, and this is the governing factor on price. Normal modems can operate at four speeds – V21 300 baud, V22 1200 baud, V22bis 2400 baud, and V23, a special European-only speed of 1200 baud receive and 75 baud transmit.

Budget models tend to offer only V21 and V23, as these speeds can be achieved with cheap hardware. V22 costs more, and V22bis costs a lot more. The higher speed modems will perform at the lower speeds, except in some cases such as the Courier 2400E, where 1200/75 is not available.

Designer modem

The Designer is a low-cost modem offering V21 and V23 speeds only, with the half-duplex 1200 baud rate. It is a sort of half way between manual and fully intelligent modems. You can autodial numbers and autoanswer, and automatically change baud rate, but it doesn't offer a command interface language as Hayes ones do.

This means that it costs less than the Hayes type, but you need to have the right sort of software to use the autodialling, and where appropriate, autoanswering features. Also, as the Designer does not offer a standard 1200/1200 interface to the computer when operating at 1200/75 baud mode, the terminal software you use must be capable of switching baud rates. Virtually all British ST comms software can do this, so it isn't really a problem.

The unit comes in a two-tone grey plastic case with buttons on the front to select V21/V23, normal or reverse mode, and separate buttons for power-on – a rare but welcome feature – and audio monitoring. Indicator lights show whether V21 or V23 is selected, and whether you are in originate (normal) or answer mode. There are also the usual on-line, carrier detect and transmit/receive lights.

At £113, the Designer is very competitively priced, and if your main reason for buying a modem is to log on to Prestel, this is a good choice. If however, you want a Hayes-compatible model – essential with much bulletin board operation software for example – the Miracom WS4000 is probably a better bet.

Easitalk software

Supplied with the Dataphone modem was Easitalk ST from Xlent Software. This package is designed to perform autodialling with the Designer modem, and can be bought with it.

The program is a full-function terminal offering both scrolling and viewdata displays. The latter option has frame capture (including dynamic frames), and works in monochrome or colour. The scrolling option emulates a VT52 ANSI terminal, and has the usual file upload and download options – Ascii and Xmodem – so you can, for instance, download ST public domain software from bulletin boards.

A useful feature is the command file system, where you write programs in a Basic-like language. This enables you to log on to a system, download all your mail

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and log off. An example for use with MicroLink is given in the detailed 48-page manual.

Despite the software being supplied for review with the Designer modem, I was unable to get the program to perform autodialling with it, although it autodialled correctly with the Miracom Hayes units. However, everything worked perfectly when I used manual dial. The program comes on one disc, and costs a very reasonable £29.95.

Miracom WS3000

Until recently the Miracom WS3000 and WS4000 were both offered with the low-cost V21/V23 options, an intermediate V22, and an expensive V22bis. Miracom has now rationalised its range, and the WS3000 is a V22 or V22bis unit only – including the two lower speeds – and the WS4000 a V21/V23 unit.

The WS3000 comes in a standard black Miracom modem case which sits under the telephone, and contains all status lights and the Miracom logo on the front. Indicators are provided for high speed 2400 baud, online, terminal ready, RTS, CTS, carrier detect, send data, receive data, and auto-answer.

On the rear of the case are the line out to the phone wall socket, socket for the phone itself, standard male 25-way serial connector, power supply lead and control port. The power supply lead terminates in a female trailing socket which connects to the power transformer, a large moulded black box which has a mains lead connected to the other side.

The control port allows a printer to be connected directly to the modem, which means that incoming data could be downloaded directly to the printer without the necessity of a computer.

The WS3000 is Hayes-compatible, and changes speed in the usual Hayes way by detecting the computer's speed for the modem/computer connection, and the output speed by sensing the baud rate of the remote machine.

You can force the speed at which the remote system is connected by using the Hayes command ATS24=0. This is standard to all Hayes modems. The auto-answer system correctly speed-seeks across all four baud rates including V23, unlike some other multi-speed modems.

Miracom WS4000

The Miracom WS4000 shares the same case as the rest of the Miracom range, even to the extent of having the same indicator lights, although as this is V21/V23-only, the HS (high speed) light will never come on.

The WS4000 is downgraded from its more expensive cousin in other ways too – the printer control port and battery backup systems are absent, the latter making the number store inoperable. The American Bell tones and the Protect 3000 option are not available. In all other respects it is identical to the WS3000.

Like the WS3000, the unit is Hayes-compatible and operates at the V23 speed using a 1200/1200 interface with the ST. This means that any communications software will work with it at this speed, not just the special software which supports the 1200/75 baud rate by constantly altering the ST port.

A nice feature about the 1200/75 baud rate operation of both Miracom units is an instant disconnect when the carrier is lost. This is important because the 75 baud carrier frequency is very similar to the standard UK dialtone, which can cause particular problems when running bulletin boards.

As well as the standard speeds, the WS4000 also works at a special 600 baud speed, reverse V23 (75/1200 baud, useful if you want to run a V23 bulletin board) and half-duplex 1200/1200 baud where the system automatically switches between 75/1200 and 1200/75.

Miracom Courier 2400E

The Courier 2400E is one of a range built by Miracom under licence from American manufacturer US Robotics. It performs identically to its flagship, the Courier 9600E, which works at an amazing 9600 baud.

The 2400E, as its name suggests, works at 2400 baud, and as you would expect, 1200 baud and 300 baud. It does not however, work at 1200/75 baud – not surprising as this speed is unknown in the United States.

The principal feature which sets it apart from the other Miracom models is a MNP error correction – Microcom Networking Protocol, named after the company which devised it. It is a system whereby two modems which support the feature can remove any errors in transmission without the computers at each end ever knowing they existed.

A big problem with communications software is line noise, which can make characters garbled and unreadable at the other end. This is not a great problem when reading text messages, as your brain can make sense of things, but when transferring program files it is essential to get all the data right.

Even more important are unattended communications. If you want to run a system which automatically dials MicroLink, picks up your mail, and sends a batch you have saved, it is imperative that the MicroLink prompts are received without error, otherwise an automatic system could get totally confused.

With the use of MNP this confusion will never happen as you are guaranteed to receive the correct character – or nothing at all. The MNP system is totally transparent in use, although it can be turned off if desired.

The Courier 2400E also contains all the usual features you would expect at this price level, a speaker volume slider, American Bell tones 103A (300 baud) and 212A (1200 baud), and many extensions to the standard Hayes command set.

Conclusions

All these modems are good value and it's really a question of how much you want to spend. If your budget is only £100 to £150 you can only have the two slower speeds, and the decision then is whether you want to spend the extra £30 or so for Hayes-compatibility but no on/off switch.

The Miracom WS3000 is a near-perfect specimen of a V22bis modem, and if you want this speed, this is what you will have to pay. The 2400E is also excellent, but you are paying more than £250 extra for little more than the MNP function, so this would have to be essential to justify purchase.

All the models reviewed here are BABT approved. When comparing prices, bear in mind that unapproved ones may often be cheaper, but it is illegal to use them on the public telephone network.

FACT FILE

Product: Easitalk ST
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Tel: 021-327 6110

Product: Designer modem
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Product: Courier 2400E
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Football management games, both Soccer and American Football, have the potential to produce excellent strategy games of some considerable sophistication. QUALSOFT produced League Division One in 1983, and Mexico 86 in 1985, but otherwise the implementation has been infantile. When Coda sent me HEADCOACH for the BBC Micro, 2 years ago, I saw an American Football computer game for the first time that measured up to the same standards. QUALSOFT is pleased to offer Atari ST users "World of Soccer" and "Head Coach v3", two games I honestly believe will fill a yawning gap for those looking for realistic simulations of the real games.

Malcolm Howard, QUALSOFT

WORLD OF SOCCER

International management is the ultimate challenge in soccer. To build a squad of players to defeat the ball playing skills of Brazil, the fluid play of Holland, the organisation of West Germany, the counter-attacking of Italy, and the many varied styles of many others, demands an insight into the game rare amongst managers let alone fans. Do you exploit a team's weaknesses, or play to your own strengths? Do you attack down the flank with wingers, or pierce the centre with powerful midfield running? Do you play a flat back four, or use a sweeper or libero?

In "World of Soccer", players are not just attackers/defenders/midfield but goal poachers, play makers, ball winners, wingers, left, right and centre backs, sweepers (19 types of player in all). The results of matches are determined by simulated soccer matches controlled by the skills of the opposing players. Strategy is determined by the skills you build into your squad, and tactics by the particular skills you use to defeat particular teams. Substitutions and tactical moves can be made during the match to change or reinforce your plans.

For four years, through the Qualifying and Final stages of the European Championship and the World Cup, you will guide the European team of your choice. You can prepare for the competitions with friendly matches of your choosing, developing your strategy to match the in-form players at your disposal. Success is there for the taking, but it will need earning.

Choose from 33 European squads. The 4 UK home countries have 16 man squads which can be increased to 36 with players of your own. A customisation program will allow squads for any of the 33 countries to be created.

HEAD COACH v3.1*

On the field 220lb blocks of concrete-on-legs collide, while a small man in a suit paces the touchline stroking his chin. He's the Head Coach. He has more tactical skill in his little finger than the MCC can muster in the entire club. Third down and 9, he signals to his quarterback. The quarterback takes the snap back into the pocket, dummies to his star running back, wheels to the right skirting two defenders, motions to throw to his rightside wide receiver and then swings his pass back over the pack to his open Tight End. He catches and makes another five yards before being grounded. An eleven yard gain and another first down, thanks to 2 hours of rehearsal the previous Thursday afternoon. The crowd cheer the quarterback but the head coach knows that his Right Guard really deserves the credit. This is American Football, Chess with mobile human pieces.

It's your first season as a Head Coach in the NFL and you face two pre-season games. You must give as many of your 45 players a run out to see how they've come through the close season. Through these matches and the time spent at training camp you must devise your game plan to face your first NFL game. Over the next 16 games you will meet the likes of the Chicago Bears, the Washington Redskins, the Dallas Cowboys, the LA Raiders (hiss). Each game will need a new plan to exploit the weaknesses and nullify the strengths of such teams, and in the game you will probe their defense and try to stifle their offense. Success over these 16 matches will put you into the playoffs and in sight of the Superbowl. Failure will give you the best of the college draft, which will allow you to make up for the deficiencies you must by now have discovered in your side. Providing of course that the club keeps you on . . .

Let us be straight , Head coach v3 is NOT an arcade game. It's a sophisticated game based on American Football. For those who already understand something about the game, it's a chance to find out just how much they really know. For those to whom the game appeals but is something of a mystery, then Head Coach v3 is the ideal way to find out what the game is all about. In the match itself, you have a choice of 27 offensive plays and 21 defensive plays, and so you can bias your plays to suit the skills of your squad and negate those of the opposition. The training camp will give you an insight into the current performance of your players, even checking their speed in 40 yard sprints. There's only one thing that can prevent your team from eventually achieving a Superbowl place; YOU! But we warn you, this game is addictive!

"World of Soccer" and "Head Coach v3" are published by QUALSOFT at £17.50 and £19.95 respectively.

*Contains the player changes and team performances of the 28 NFL teams for the 1988/89 season. Current owners send SAE for update sheet.

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Five out of ten

Nic Outterside examines a tables test program for children and gives it a reluctant Pass

AS education software for the ST begins to proliferate, good, bad and indifferent programs are bound to surface. While Tables Test thankfully doesn't fit into the bad category, it is not in the same league as previous educational packages I have reviewed in *Atari ST User*.

Tables Test is an unashamedly simple program aimed to consolidate basic multiplication and division with the primary school aged child. It fills an important need in the ST education market and is priced at the budget end of that sphere.

The program should not be used as a means to teach the concepts of multiplication and division but to reinforce what has been already learned.

On boot up you are presented with an attractive loading screen which shows a wizard pointing at a blackboard, upon which are drawn the program and READ.ME icons. Click on the PRG icon and the blackboard display changes to a stunning pictoral representation of the wizard's castle. As the program loads this soon envelops the whole screen.

You are then asked to write your name by clicking with the left mouse button on the now familiar lower-case letter grid. When satisfied, you click on the Done box and the screen flicks to a selection panel. In fact the selection is a raw choice between multiplication and division.

I began by opting for multiplication and was asked to select from the 2 to 12 times tables or an Any option. The screen changes once again to a surreal classroom setting with the wizard at the blackboard in front of five attentive little mutants from the marsh. Sums from the selected table are then displayed in random order on the blackboard.

You have to select the correct answer by mouse from a number grid before clicking on the Done box. You are able to delete your answer or quit the test at any stage.

If your answer is correct a speech-sythesised "Right" comes from the video speaker. If incorrect, "Wrong" is mumbled and the correct answer displayed at the bottom of the blackboard. No second attempt is allowed, and the program continues to the next question.

On completion of a 10 question test on the selected table your total score is displayed on screen alongside a suitable "Bad Luck", "Good", "Well Done" or "Excellent", depending upon how well you did.

Once you are proficient at multiplication, clicking on the Any option gives you a test on a randomly selected table. However, I discovered that in this option the program went into a loop and the same three questions were repeated until the 10 limit had been reached.

Surely a mixed random test of different tables would have been a more stimulating finale than the repetitive set given?

The division option was even more suspect. You again make a choice of table as with the multiplication section. However, the sums are then offered in the number-divide symbol-number= format rather than the more familiar open box design used in most primary schools.

This restriction could cause confusion with many children. Miked must realise that it is possible to include both versions of the sum on screen as was achieved successfully in Ladbroke's excellent Add with Oscar.

At the end of both the multiplication and division sections you will probably breathe a sigh of relief, as the lack of any variation makes the tests repetitive and quite boring.

On termination you are given the flimsy reward of a black and white score card. A suitable musical or graphical addition would have given motivation for a child to continue.



The sums are printed on a blackboard by the wizard

Conclusion

Tables Test is a little disappointing. Lack of any sound accompaniment and stimulating visual rewards also detract from what is basically a sound educational product. The graphics are colourful but very blockish, and with a bit of work could have been as good as the loading screen.

This is nowhere near as good as Add with Oscar which attempts to teach the same concept – plus a lot more besides. It gives the impression of being underdeveloped and slightly corny despite its bargain £9.95 price tag.

However, it will fulfil a need in many a home and school and should encourage the author to write better educational software in the future.

FACT FILE

Product: Tables Test
Price: £9.95
Supplier: Miked, 6 Devonshire House, Union Street, Plymouth PL1 3HE.
Tel: 0752 671464

POINTS FOR:
Fills a need in the ST education market. Easy to use.

AGAINST:
Monotonous play. No real reward for success. Graphics are amateurish. Underdeveloped.

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CAD

Computer Aided Design has grown to become one of the most important uses for modern computers. With a CAD system you can design houses, cars and electronic circuits – in a fraction of the time it would take you with pen and paper.

With the high speed and powerful graphics of Atari micros it's hardly surprising that bigger and better CAD programs are pushing back the frontiers all the time.

And only at the Atari Computer Show can you see all the latest systems under one roof.

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Many companies will be demonstrating their latest software and hardware, specially designed to release the full business potential of Atari computers.

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And you'll also be able to get expert advice from professionals.

DTP

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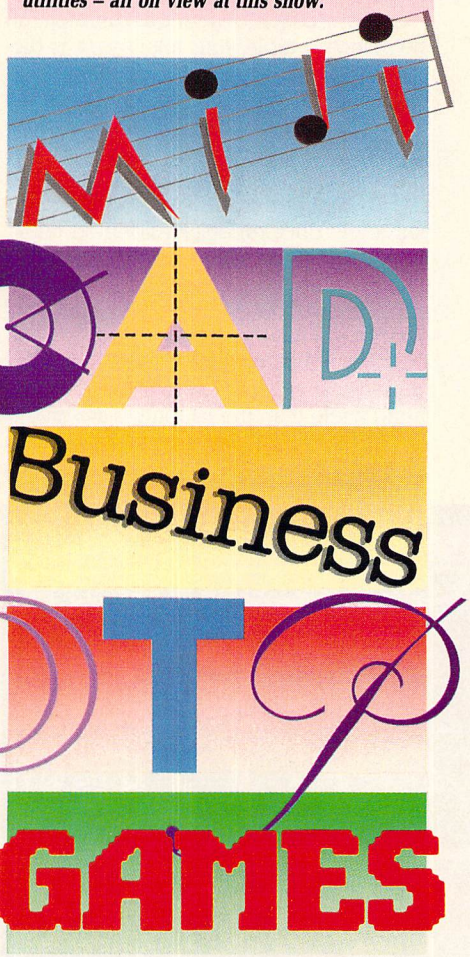

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So for a great day out – whether you want to see what the future holds for Atari computer users, take advantage of the bargains on offer or get advice on specific applications – the Atari Computer Show is the place to go.

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A642

NEW SERIES!

Creating multiple miniatures

David McLachlan, one of the STOS design team, starts a monthly feature to help you get the best from this top-selling games creator



WELCOME to the first part of a new regular series where together we'll look into and examine the many programming aspects of STOS Game Creator.

STOS provides you with all the commands you need to write your own games. Unlike other Basics, the amateur games writer doesn't need to program his own graphic routines for sprites or animation, as these are provided ready made – I'll cover these later in the series.

To kick off I have written a short utility to illustrate just a few of the wide range of powerful STOS commands. What the routine does is to display up to nine miniature versions of Neochrome or Degas pictures from a disc of artwork.

You could, for instance, use this technique as a novel menu selection device in your own games.

When you have typed in the listing, enter RUN and the program will look for Neochrome picture files from drive A. To use another drive simply alter the drive number on line 40: Drive zero is drive A, drive one is B and so on.

If you want to access picture files in another folder, again it's a simple matter to alter the variable *PATHNAME$* to the desired folder. For instance:

```
PATHNAME$="A:\PICTURES\*.NEO"
```

will access Neochrome files in the folder PICTURES on drive A. To display Degas pictures change the NEO extension in *PATHNAME$* to PI1.

When the pictures have been miniaturised and displayed, move the mouse pointer over them to restore their palettes – unless you've used the same one for all your pictures. Click a mouse button to save a copy of the screen. Experiment with the program. Try altering it as suggested. Examine how it's structured and how it works.

Looking at the program, the first unfamiliar command you will come across is KEY OFF. This removes the function key strip from the top of the screen. HIDE ON removes the mouse pointer and CURSE OFF removes the cursor.

Notice that KEY OFF is used before the MODE command. This is because KEY OFF does a clear screen and if MODE was first the function key banner would momentarily reappear then be cleared by KEY OFF, causing it to flicker as the program started. The SCROLL OFF command prevents the screen from scrolling when text is printed at the bottom.

On the next line you will see the RESERVE command. Among other things this is used to reserve a memory bank – a protected area of ram – for future use. You can reserve memory banks for storing complete screens, and two types of screen are available – permanent and temporary.

When you come to save your program permanent screen banks will be saved along with it. Temporary screens will be discarded. With the RESERVE command you can also set aside memory banks for data, work areas, character sets and so on. We'll look at some of its other uses in a future article.

When you reserve a bank of memory, no matter what it's going to be used for,

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the syntax requires a bank number. When reserving a bank as a screen you can specify any bank number from 1 to 15 provided it isn't already in use, for instance:

```
RESERVE AS SCREEN 5
```

In order to load the pictures the program needs to know the contents of the disc, so two commands are provided that allow you to examine each filename. These are DIR FIRST$ and DIR NEXT$. The syntax is:

```
FSP$=DIR FIRST$(pathname$,flag)
FSP$=DIR NEXT$
```

Both commands assign a string, in this case *FSP$*, to a 42 character block. DIR FIRST$ describes the first file in the directory set by *PATHNAME$* and *DIR NEXT$* describes the next. The variable *flag* is a way of filtering out unwanted types of files from your selection.

The possible file types are as follows:

Bit	Type
0	Normal read/write files
1	Read only files
2	Hidden files
3	Hidden system files
4	Volume labels (the disc title)
5	Folders
6	Files which have been written to and closed

Setting a bit to one will include that file type, for example, if you only want to include normal read/write files (bit zero) and hidden files (bit two) the flag should be set to %0000101 (binary) or 5 (decimal). The path name filters out all unnecessary files, so we don't need to work out which file types we need to exclude. So we set *FLAG* to -1 to include all files.

The 42 character block that both DIR commands return is constructed as follows:

Character	Usage
0-12	Filename
13-21	Length of the file
22-32	Date the file was saved
33-41	Time the file was saved
42	File type

When you have the character block in the string, you can then print the filename using the *LEFT$* function to extract the first 13 characters. Once the filename is known you can load a Neochrome picture directly into the reserved bank – or, in fact, any other screen.

The program loads the pictures into the reserved screen bank five using:

```
LOAD fsp$,5
```

When you specify the bank you are simply giving the command a load address. STOS works this out from the bank number and loads the data into it. You could just as easily load Neochrome files directly to the screen. The address of this is controlled by three system variables, PHYSIC, BACK and LOGIC. PHYSIC holds the address of the picture currently being displayed on the monitor screen. BACK holds the address of the background screen which is used to update the sprites, like the mouse pointer.

When a sprite is printed STOS has to

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Restore a picture's palette by moving the pointer over it

```
   1 rem Picture Library
   2 rem By David McLachlan
   3 rem (c) Atari ST User
  10 key off : hide on : curs off : m
ode 0 : scroll off
  20 reserve as screen 5
  30 dim PALT(9,15)
  40 drive=0 : PCNO=1 : PATHNAME$="a:
*.neo" : FLAG=-1
  50 FSP$=dir first$(PATHNAME$,FLAG)
  60 if FSP$="" then print "No Neochr
ome files available"
  70 repeat
  80 load FSP$,5
  90 gosub 220
 100 gosub 300
 110 FSP$=dir next$
 120 until FSP$="" or PCNO>9
 130 screen copy physic to back : sho
w on
 140 while mouse key<>2
 150 OZ=Z : Z=zone(0)
 160 if Z<>OZ and Z<>0 then for C=0 t
o 15 : colour C,PALT(Z,C) : next
 170 wend
 180 while mouse key<>0 : wend
 190 save "a:Pict_dir.neo"
 200 end
 210 rem *** Reduce and display ***
 220 read A,B,C,D,X,Y
 230 get palette (5)
 240 reduce 5 to physic,A,B,C,D
 250 set zone PCNO,A,B to C,D
 260 ADD=start(5)+32000 : for C=0 to
15 : PALT(PCNO,C)=deek(ADD) : inc ADD
: inc ADD : next
 270 inc PCNO
 280 return
 290 rem***** Extract file name from
the 42 character parameter block *****
 300 pen 15 : locate X,Y : print left
$(FSP$,13);
 310 return
 320 rem
 330 rem***** Data for reduce areas,
zones and filename positions *******
 340 data 0,0,96,64,0,7,112,0,208,64,
14,7,224,0,319,64,28,7
 350 data 0,68,96,132,0,16,112,68,208
,132,14,16,224,68,319,132,28,16
 360 data 0,136,96,199,0,24,112,136,2
08,199,14,24,224,136,319,199,28,24
```

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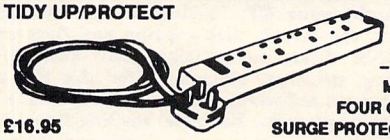

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remember what was underneath it so the background can be restored. When a sprite is moved STOS uses the background screen to put back the data that used to be underneath it.

The third screen variable, LOGIC, holds the address of the screen used to draw on when you use a graphics command.

If this isn't the one you are displaying on screen, when you want to display it you use SCREEN SWAP.

You can load a Neochrome file straight into the address PHYSIC or BACK. However, STOS is designed to recognise a NEO or PI1 file extension so you can load a picture on to the screen without specifying an address. Try loading a Neochrome or Degas picture from the program editor to the background screen using:

```
MODE 0:LOAD "filename",BACK
```

Now move the mouse around. You will see that because the picture is in the background screen STOS updates the mouse pointer with it and the picture is effectively painted on to the monitor screen. Now try loading the picture to the physical screen as well as the back using:

```
10 MODE 0
20 LOAD "a:filename.NEO",BACK
30 LOAD "a:filename.NEO",PHYSIC
```

When the program has finished loading try moving the mouse pointer around. You will see that the picture doesn't get erased. This is why the utility uses the SCREEN COPY command to copy the physical screen to the background. Its syntax is:

```
SCREEN COPY screen/bankno,x1,y1,x2,
y2 to screen/bankno,x,y
```

This is one of the most useful commands in STOS and is used frequently in writing games.

Screens are 32,000 bytes long. There are also an additional 16 words which are used to hold the 16 numbers of the colour palette. These are stored in an array for future use. When a picture is loaded into bank five the program calls a subroutine to reduce and display miniature pictures and set up zones.

The REDUCE command is a simple one, the syntax being:

```
REDUCE bankno TO bankno,x1,y1,x2,y2
```

Remember, the *bankno* variables are just addresses, so these can be screens too, such as PHYSIC and BACK.

SET ZONE is a simple command. It sets up an imaginary rectangle on the screen so you can detect whether or not a sprite is inside it. The syntax looks like this:

```
SET ZONE zoneno,x1,y1 to x2,y2
```

We use the ZONE command in this instance so we can detect which mini picture we are pointing to with the mouse. The ZONE command:

```
z=ZONE(n)
```

asks what zone sprite number *n* is in. If it returns a zero, the sprite isn't in a zone. For this program we ask what zone sprite zero – the mouse pointer – is in. The number that the ZONE command returns can be used to retrieve the corresponding colour palette stored in the array.

● *We have covered quite a few commands here, some of which I will go into more detail later in the series. Next month I'll look at moving, animating, detecting – and that zone command again.*

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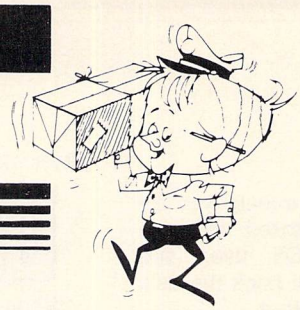

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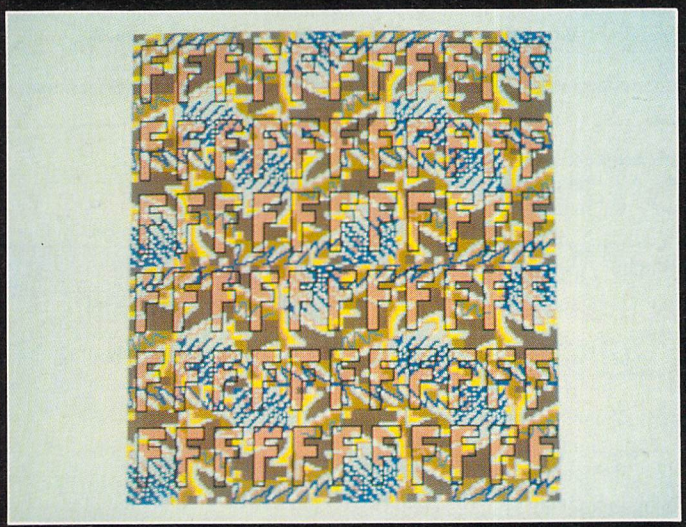

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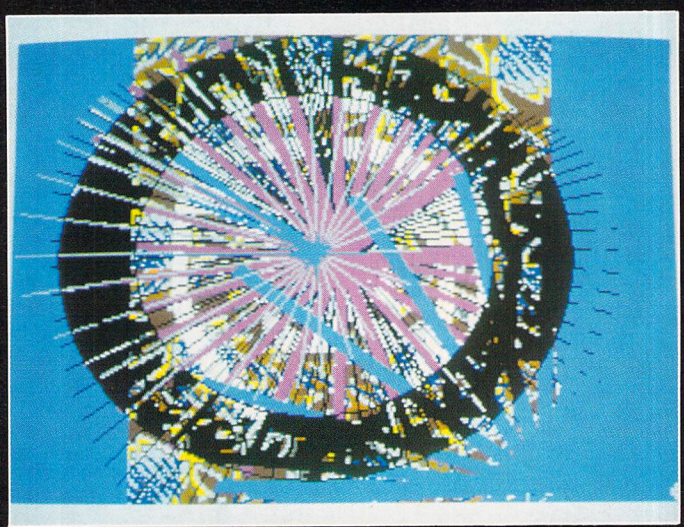


This Wheel's on Fire

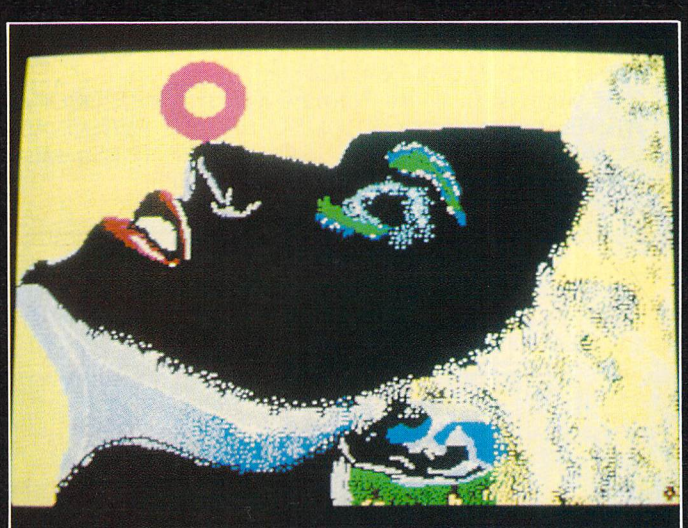
GALLERY

DURING the past 22 months we have featured work by artists from all over the world. However, this month we celebrate by featuring ST created masterpieces from two of the world's top rap pop artists.

Dave Lowid and Frenchman Sid Tortée have long been held in high esteem by the art fraternity for their unusual pop art duets. They work separately on chosen topics but insist the finished products are displayed side by side for the viewing public to fully understand their often controversial statements.

Now they have turned to the ST as their chief medium of artistic production and are soon to have full exhibitions of their work at the world famous V and A and Lyle galleries. On this page we feature a small sample of their incredible joint talents.

If you have a work of art you would like to see exhibited on our worldwide stage why not send it in on disc to Gallery? Remember though, anything you submit must be all your own work. You must own the sole copyright and provide us, in writing, with confirmation of this fact, as well as your express permission to let us publish your work. Please supply an sae if you want your work returned.



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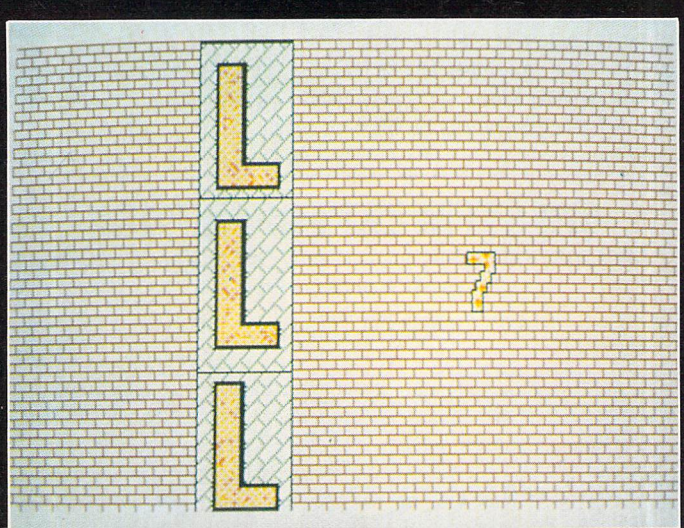

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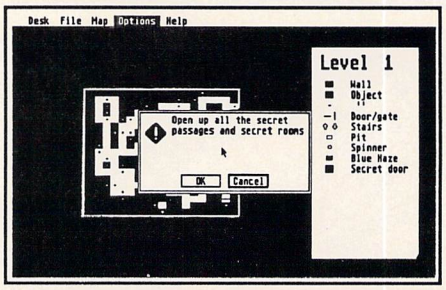

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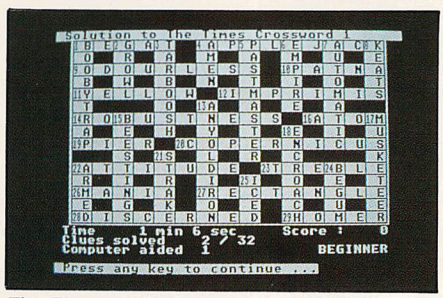
Cryptically yours

Nic Outterside examines a suite of crossword programs from Akom

DURING the past 58 years, The Times Crossword has become part of the great British tradition in cerebral eccentricity. Indeed, for many people it has become part of their way of life. I know at least one friend who feels that his day has not really begun until he has completed that morning's Times crossword.

I suppose it was only a matter of time before these magnificent word puzzles found their way on to a micro. They were originally released for the BBC Micro almost a year ago. Such was their success that they have now been transported to the ST. They are also supported by four volumes of crosswords from The Sun – sorry no Page 3 rewards.

Eight separate packages make up the full range. These include 60 crossword puzzles on each of The Times and The Sun volumes, and 56 puzzles on The Times Jubilee edition. In fact the Jubilee Puzzles should become a valuable collector's item as it features one superb



The Times crossword volume I

crossword taken each year from 1932 to 1987 inclusive.

The effort involved to bring all these crossword to your ST is quite a feat in itself. I remember stolidly typing in a crossword compiler from a magazine listing some years ago and being amazed by the clever programming used by its author. However, that was child's play compared to the labours of David Akenhead, the creator of this fine collection, who used advanced calculus to program all the variations needed for the puzzles.

This software is not just for the expert



The Sun crossword volume I

crossword solver, thanks to comprehensive instruction booklets, there are four graded levels of play with The Times crosswords and five levels with The Sun puzzles.

In fact you need not solve the crosswords at all, but simply investigate, clue by clue, the construction of each puzzle. This package could also have an educational application within the sphere of vocabulary extension at GCSE level English.

Reading the instructions is an essential prerequisite to play, as the programs include some clever options. In fact the booklets are doubly important, for they contain a glossary of convention indicators and abbreviations used within the puzzles, as well as an introduction to the devices used in cryptic crosswords.

Upon booting the disc you are presented with an introductory page and then asked to insert the puzzle number of your choice. With more than 540 crosswords to choose from in these packages you are rather spoilt for choice.

I suggest you attempt puzzle number one in each volume to begin with, as a blow by blow analysis is contained within the instruction booklet. This also gives an insight for novices, into the construction and convention indicators used within such a puzzle.

On choosing your crossword the grid is assembled on the screen, a score line is set to zero and an invisible clock begins timing your progress.

The instruction *Insert clue number* appears, with the obvious accompanying option of down or across. You are now operating at level one and the clue appears together with the words "Help? Y/N".

If you enter N you may then go ahead and attempt to solve the clue, for which you will be awarded 50 points for a correct solution or a time penalty if incorrect. If you answer Yes, you proceed to level two and a marker option is presented. If this is accepted you may enter any letters you know and fill any spaces in that answer with chevrons. You may return to that clue later in the game.

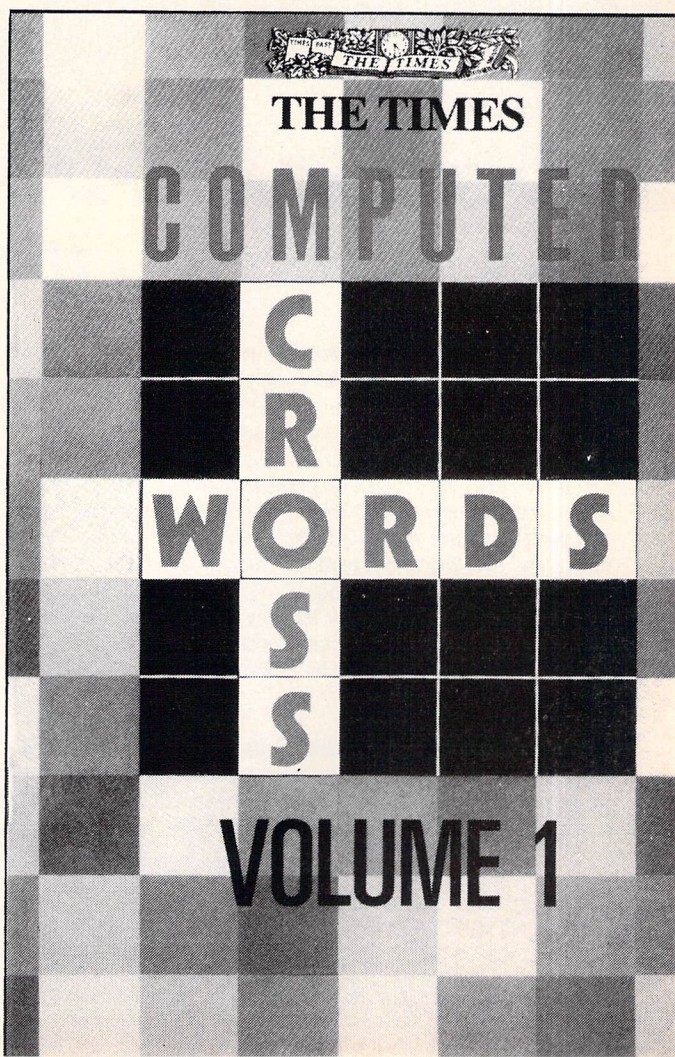
If, however, you solve the clue at this level, 40 points are awarded. If you decline the marker option the program assumes that you require more help. Now at level three you may ask for a convention indicator and may solve the clue for 30 points or mark as before.

If you are still stuck, you are offered the solution to that clue, which, if accepted, is printed in the grid and 30 points are deducted from your score. Conversely, you may continue to level four where the first letter of the answer is printed in the grid. This gives you the opportunity to solve the clue for 10 points.

Within The Sun crosswords an extra level exists between stages two and three where a "coffee time" clue is given. An appropriate deduction in points is made should you make a correct solution at this stage.

You may leave the game at any level, in which case the screen clears to reveal an analysis of your performance. This appears in terms of time taken, the number of clues solved by both yourself

Turn to Page 101 ▶



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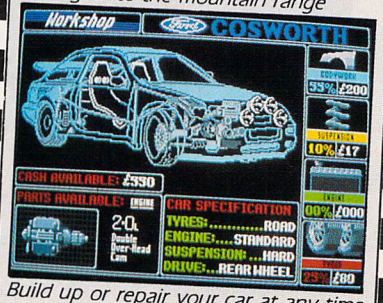

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Screenshots from Atari ST version

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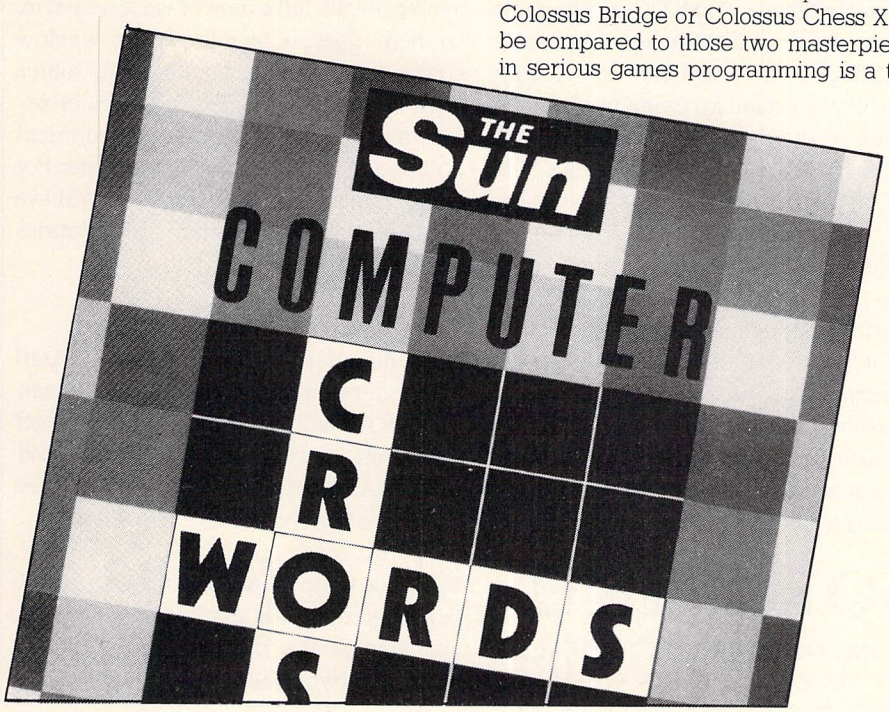
◀ *From Page 99*

and the computer, the score and an assessment of your expertise in the categories – beginner, average, good, very good and expert.

You are also offered the option of viewing the entire solution before progressing to another puzzle or leaving the program.

The graphic representation in these puzzles is attractive and precise and the ST's response time is extremely fast. This must be the crossword equivalent to Colossus Bridge or Colossus Chess X. To be compared to those two masterpieces in serious games programming is a true testament to the quality of The Times Computer Crosswords.

Whether you are of championship status in the art of solving cryptic crosswords or a novice to this genre, these packages represent excellent value. I doubt if you would find better implementation on any micro.



FACT FILE

Product: The Times Computer Crosswords Volumes 1, 2 and 3
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AGAINST:

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ADVENTURES

Brillig lends a hand in solving problems for fantasy fans

A breath of fresh air

JUST released is what I believe to be the very first commercial adventure developed using Incentive's STAC. The Jade Stone, produced by Marlin Games, is a text and graphics adventure written by Linda Wright, who clearly has a great deal of talent in this direction.

The plot concerns a second-rate sorcerer, Mallumo (the villain of the piece) and your attempts, as the daughter of the local ruler, to put him out of business. Although the scenario is familar, the writing is fresh, literate and vigorous and the adventure a real joy to play.

The graphics add to the pleasure, and well thought-out puzzles and such features as ram save and load, on-screen instructions, font size alternatives and an Undo command, make this one of the best adventures I've seen from a small company in a long while.

And the best news is that this delightful little jewel costs only £8, a third of what you'd normally expect to pay for a good ST adventure. At this price you'd be mad to miss it. I'm sure we'll be hearing more of Marlin Games and of the talented Linda Wright.

Now for some of your letters. That Quicksilver of the adventure world RGB Marshall of Congleton has done it again. Sierra On-Line's Manhunter, Police Quest II and Leisure Suit Larry II have all rolled over and yielded up their secrets to RGB's expert probing. There cannot be many adventures to which he's turned his attentions that have not instantly revealed their secrets.

I'm beginning to think his adventuring intellect makes Marvin's planet-sized brain look gnat-like by comparison. RGB's solutions are like manna in the wilderness to those of us less able adventurers. Long may he continue to help us out.

While RGB appears to be able to coast through every new adventure without so much as a hint of a migraine or a bead of sweat on his brow, we lesser mortals must continue to swear and strain, left far behind in his wake. For instance, Alan Paterson, a professional computer programmer in Meikirch, Switzerland, is having trouble with King's Quest I. He was unable to get anywhere with Hitch-Hiker's Guide to the Galaxy or Jinxter, and there are at least a dozen or so other such barely-penetrated adventures lurking around his desk.

He did manage to complete Leisure Suit Larry (minus 20 points or so) and half-completed Guild of Thieves, and thought he would try his luck with something a little easier. How wrong he turned out to be! Can anyone help him with the following problems from King's Quest I – it's the only one I haven't yet played:

What's the use of the goat? How do you get past the boulder? Does the gnome really have a name? What's to be done with the bird? Can you get anything out of the hole in the ground? Is there anything useful, other than the giant, up the mountain? What are the pebbles, cheese, four-leaf clover and note for?

I'm disappointed to say that I still haven't received a complete solution to Mirrorsoft's Shadowgate from any of our readers (how about it, RGB?). I know several of you have managed to crack this tough adventure, so how about taking pity on the rest of us and letting me in on its secrets so I can pass on some tips?

Two of my favourite regular contributors of solutions to this column, Allen and Mark Errington of Durham, have now polished off another of Mirrorsoft's adventures, Uninvited. Along with a map and solution, they have also sent in the diploma that is displayed at the successful completion of the game as further proof of victory – the personalised diploma can be printed out, you see. Well done, men.

Like many others, they are now struggling with Psygnosis' Chrono Quest and are having a hard time of it. Having played it through to the end – guess who's solution helped me – I have to say that it isn't anywhere near as good as I first thought.

There is rather too much sudden death involved, the puzzles seem to be tacked on and are neither terribly original or credible, and the plot is rather threadbare when you get down to it. Still, it marked a new departure for Psygnosis and perhaps the next one will offer an improvement. For those still wrestling with it, this month's hints and tips will help.

Until next month, keep your lamp high and your head low.

HINTS AND TIPS

CHRONO QUEST

Lighter not holding out?

● Get a candle from the chapel. You'll find it over at the left by the photo.

Problems with the room downstairs?

● Put the sphere from the bookcase on the banister. Examine the mirror downstairs and press the switch to open the secret door. Go back and remove the sphere from the banister. Return downstairs, open the drawer and take the fuses. Go north, turn the switch, use the fuses on the fusebox, turn the switch again and go up into the machine.

Can't find the four punch cards?

● Try the northeast corner of the rug, the pillow, the book (in the chapel) and the silver object near the stairs.

Don't know the correct order in which to visit the different periods of time?

● Prehistoric (fourth card from left in your inventory), India (first card), Egypt (third card) and Mexico (second card). Make sure you get to Mexico before 1300 hours.

CORRUPTION

Can't find a key?

● Get one from Theresa's office when she

Program: Manhunter New York
Price: £24.95
Supplier: Sierra-Online/Activision, Blake House, Manor Farm Road, Reading RG2 0JN.
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Future looks grim

MANHUNTER New York is a new graphics adventure from Sierra Online, publisher of the hugely enjoyable King's Quest, Space Quest and Leisure Suit Larry series. Although the presentation and style is similar to those stablemates, Manhunter is different in two key respects – no text input is required and the storyline, while it has its moments of humour, is deadly serious.

A mixture of science fiction and horror, Manhunter proffers a dark vision of the future when the world has been conquered by an alien race of flying, gobstopper-like beings, the Orbs.

In order to continue to maintain total control, the aliens monitor all human activities in order to detect, report and instantly deal with any possible rebellion. Their chief means of checking up on the populace is by a system of tracking computers and the use of human spies.

The adventure is set in New York where you play the part of a Manhunter, the title given to those who now work for the dictatorship and are contracted to spy on their fellow humans. The action is split into several phases, each one representing one day.

At first, you won't know quite just what is going on and who's who, but in the traditions of all good mysteries, the plot starts to become clearer as the adventure unfolds. Bit by bit, the clues and pieces of information form a jigsaw which you begin to fit together.

Every phase begins in your apartment where you are visited by an Orb and given your orders for the day. These involve your investigation of some form of suspicious incident. You will only be allowed back to your apartment – and thus able to move on to the next stage of the game – when you have completed that day's assignment.

A special terminal, the Manhunter Assignment Device (MAD) is linked to the Orbs' central computer and is available to you wherever you go. With it, you can bring up a map of New York across which the recent movements of any suspect can be replayed. When a suspect enters a particular location MAD shows the location interior and the suspect's movements within it.

Once a location has been visited by a

Turn to Page 107 ▶





leaves at 10am.

What to do in the car?
● Play the cassette you got from David's desk. Get the screwdriver from the glove compartment.

Want to hear an important conversation?
● Pick up the phone around 11.25. Try again at around 12:10.

Can't open the safe?
● You need the stethoscope from the hospital

Don't know how to enter the casino?
● Show the waiter the chips you got from David's safe.

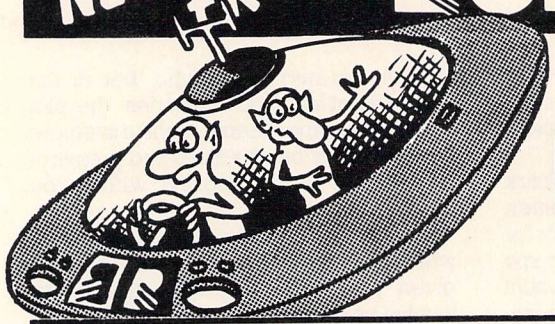
MANHUNTER

Don't know what to do at your convenience?
● Flush three times!

Can't see the connection between the video game and the sewers?
● The game is a map of the sewers showing the location of every keycard.

Coney island sideshows a puzzle?
● Find the shortest route through the video game. Note which three kewpie dolls fall. Those are the ones to knock off at the sideshow. When you do, show the stallholder something quickly.

NEW FROM **ROMANTIC ROBOT**



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◀ *From Page 105*

possible subversive, it remains highlighted on the map, and thereafter you may travel to it immediately by moving your own marker to that designation. Your MAD will also provide a limited amount of information. In addition, where the paths of suspects travelling together diverge, you may track either of them by tagging the desired marker.

The full-screen graphics depict the view seen through your eyes, but occasionally will change to a third person viewpoint, such as when you are embroiled in a fight.

No text input is necessary as your movements, investigations, collection and use of objects are all handled by pointing at objects in the current screen picture. It is up to you whether you use joystick, mouse or designated keys for these activities.

At certain points you'll be obliged to engage in some basic arcade action that relies on fast hand and eye coordination. For instance, you'll find it necessary to test your navigational skills on a video game, dodging knives thrown at you in an alley by some vicious punks, and less dangerously, lobbing balls at kewpie dolls in a Coney Island fairground sideshow.

I'm not too keen on arcade elements in an adventure game, but these are not too bad and are in keeping with the plot.

Some of the arcade action is pretty frustrating, but your progress through it will be dramatically eased provided that, before you load Manhunter, you first install a ram disc. There isn't a built in ramsave utility, so you'll need one of your own.

Saving to your ram disc is instantaneous – restoring is much easier and faster too – and will thus afford you the invaluable opportunity to keep saving your position as you make headway through a difficult arcade sequence.

Incidentally, the use of a ram disc seems to work with most of the Sierra adventures. You only need to set aside about 40k, and I guarantee this will really enhance your enjoyment.

Manhunter will take you to such locations as the Empire State Building, Central Park, Coney Island, Grand Central Station and, more prosaically, to a public convenience (where you may become a trifle flushed) and a café where a game with knives and digits will have you sweating.

Be prepared for gruesome sights, particularly at the hospital and when hanging around a certain suspect's apartment. The graphics are very effective while various simple sound effects add to the fun.

The arcade elements, particularly the punk sequence, can be annoying rather than challenging. Without a doubt though, Manhunter is highly absorbing. The strong atmosphere and the mystery are so compelling that I just couldn't wait to see what happened next or how it all turned out. The game is a well told and really cohesive adventure with many surprises, an explosive climax and a neat sting in the tail. I thoroughly enjoyed its twists and turns. And by the way, take a careful look at the supplied copy of the map when you play the video game. I didn't, but life may be just a little easier if you do.



Presentation	***9***
Atmosphere	***9***
Puzzlement	***8***
Value for money	***8***
Overall	***9***

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Access

SCRAPBOOK

We've got your number...

IN this month's Scrapbook we have a very compact assembly language subroutine which will print out a number in any number base. It comes from the talented Janice Murray of Warrington, Cheshire, who has contributed to Scrapbook before.

Whenever you need to print out a number from within a machine code program simply call *printn* with the number in the D0 register and the number base in D1. Why write three or more subroutines to print binary, decimal hexadecimal and so on when you can do it in one? This routine saves on both space and typing.

It works by successively dividing the number by the number base and storing the remainder each time in a string. When the quotient reaches zero the string is complete and is printed on the screen by calling Bdos function nine – *c_conws*. Here's how the system would print 123 in binary (base 2):

```
123 DIV 2 = 61 remainder 1
 61 DIV 2 = 30 remainder 1
 30 DIV 2 = 15 remainder 0
 15 DIV 2 =  7 remainder 1
  7 DIV 2 =  3 remainder 1
  3 DIV 2 =  1 remainder 1
  1 DIV 2 =  0 remainder 1
```

The number is read from bottom to top, and so becomes 1111011. This method works for any number base and is a method worth remembering.

The program shows how the number 12345 can be printed out in hexadecimal. The two EQUs at the start of the listing set the number and base – alter these and experiment with different numbers and bases. The digits of the number are calculated in reverse order so they can't immediately be printed out. Space is allocated for them in *buffer* and they are temporarily stored here before being sent to the screen with a call to *c_conws* – Gemdos function nine – to print out the string.

After printing the number the program waits for you to hit a key by calling *c_rawcin* – Gemdos function seven. The program then returns to the desktop.

Also included is an ST Basic (old and new) version which can be incorporated as a subroutine and called from within your programs. Set *n%* to the number and *b%* to the base and GOSUB *nprint*.

```
 10 REM Print any number in any base
 20 REM By Janice Murray
 30 REM (c) Atari ST User
 40 '
 50 CLEARW 2
 60 INPUT "Number";n%
 70 INPUT "Base";b%
 80 GOSUB nprint
 90 END
100 '
110 nprint:
120 n$=""
130 r%=n% MOD b%
140 IF r%>9 THEN r%=r%+7
150 n$=CHR$(r%+48)+n$
160 n%=INT(n%/b%)
170 IF n% THEN 130
180 PRINT n$
190 RETURN
```

```
************************************
* Print out any number in any base  *
*         By Janice Murray          *
*        (c) Atari ST User          *
*    Written using HiSoft Devpac    *
************************************

base  EQU 16          Number base
num   EQU 12345       Test number

  MOVE.L #num,D0      D0=number
  MOVE.L #base,D1     D1=base
  BSR printn          Print it
  MOVE #7,-(A7)       c_rawcin (pause)
  TRAP #1             GEMDOS 7
  CLR -(A7)           p_term_o
  TRAP #1             GEMDOS 0

************************************
* Print a number
* D0.L=number / D1.L=base
* Uses D0,D1,A0
************************************
printn
  LEA buffer(PC),A0   A0->buffer start
  CLR.L (A0)+         Zero buffer
  CLR.L (A0)+
  CLR.L (A0)+
  CLR.L (A0)+         A0->buffer end
loop1
  DIVU D1,D0          D0 DIV D1
  SWAP D0             D0.low=remainder
  ADDI #'0',D0        Make into digit
  CMPI #'9',D0        Digit or letter?
  BLE ok
  ADDQ #7,D0          Make into letter
ok
  MOVE.B D0,-(A0)     Store character
  CLR D0
  SWAP D0             D0.low=quotient
  BNE loop1           Another one?
loop2
  MOVE.L A0,-(A7)     c_conws
  MOVE #9,-(A7)       Print string
  TRAP #1             GEMDOS 9
  ADDQ.L #6,A7        Tidy stack
  RTS

buffer
  DS.L 5          Number$ - 20 digits
  DC.B 0          Buffer end marker
  EVEN

  END
```

SCRAPBOOK is a regular feature consisting of short, simple programs sent in by our readers. It's a place where we can publish all of the interesting little routines that don't end up in our regular features but are too good for us not to share with other readers.

If you have a short program which you think other readers would find useful, send it to:

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AU/04

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THERE are few home computers that have not been graced with a version of the Mini Office series of programs. These packages are famous throughout the computer world for providing you with a complete office system for the price of an arcade game.

The Mini Office Professional series is a departure from this all-in-one philosophy. Each module is being sold separately, although it does come with a set of desk accessories. The complete communications package also includes a text editor, calculator, memo pad, a collection of disc utilities and a comprehensive manual that describes their use.

Whenever I begin using a new package of this type there is always a sense of frustration at the very start – I know exactly what I want it to do, but feel daunted by the prospect of wading through the manual's reference section to discover how to do it. Thankfully, the publisher saw fit to include a quick guide to going online. In the space of six pages I had been shown how to log on to both MicroLink and Prestel using either an auto-dial or a manual modem.

The screen is well designed, the major portion being reserved for the comms display – this is the area where you view the text you are transmitting or receiving. Across the top of the screen is the menu bar, from which you can access all the facilities. As you would expect with an ST, the mouse is used extensively for program control.

Just so you don't forget the current terminal configuration, the screen title bar always displays the emulation selected, baud rate, word length, parity and stop bit settings. You can see at a glance whether the computer will actually communicate with the system you are about to log on to. Too many programs hide these settings beneath several layers of menus.

At the very bottom of the screen is a group of 10 boxes which control such features as auto linefeed, local echo and the Xon/Xoff options, all of which can be toggled on and off using the mouse.

If this is your first venture into computer communications you may be a little unsure of what you are doing. The manual's Basic Concepts section provides a layman's guide to comms, describing the hardware required, the types of service available and much of the jargon associated with this topic. Stage one of the manual's tutorial section explains how to change the terminal configuration to suit your own requirements, a task accomplished via an easy to use dialogue panel. Baud rate, parity and handshaking can all be set at the click of a mouse button. My only grumble about this system is the fact that these parameters do not become the new default settings – when you reset the machine your preferences are lost. Some means of saving these settings to disc would have been most welcome.

Menus available are Desk, File, Phone, Options, Settings and Help!

Desk is your link to the desk accessory programs, one or more of which will be loaded into memory when the disc is booted up. By default the system loads the calculator, text editor, memo pad and disc utility routines.

If you are using the database or spreadsheet modules you may want to load only one or two accessories, as each program occupies memory which is at a premium. The ACCONFIG.PRG can be run to determine which routines are loaded.

The communications module is less memory hungry and will run quite happily with all four accessories loaded.

A text editor is an indispensable tool when using computer comms, so having the routine permanently residing in ram is a big plus. The text editor comes well equipped with Cut and Paste, Move and Copy and all the usual disc file operations. Lengthy documents can be prepared offline, thus saving valuable time and money while connected to the electronic mail system.

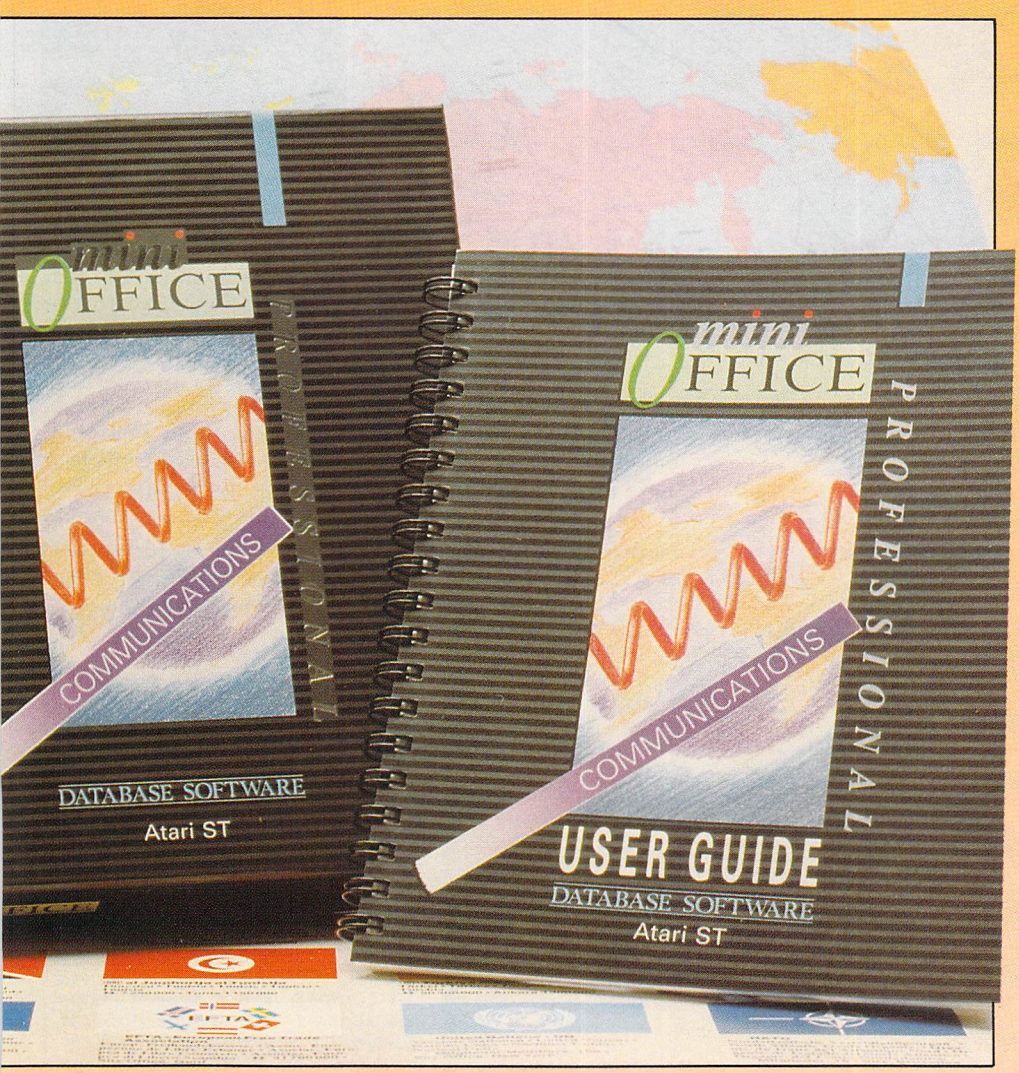
The File menu allows you to transmit and receive files using either Ascii, Xmodem or Kermit protocols. Alternatively, you may open up a logfile and store a complete record of your comms session. This facility is useful when you are accessing a new system or bulletin board for the first time. All you do is race around the host system calling up every menu in sight and then log off.

Once off line you can reload the logfile and browse through the system at your leisure. Armed with your new knowledge, your next venture on to the system



friend

John Revis examines a new comms package and finds it both powerful and versatile



can be well planned, allowing you to use it as efficiently as possible.

With your best interests – and bank balance – at heart, the program thoughtfully keeps a log of all of your online exploits. Stored in an Ascii file called COMMSLOG.PHN, it automatically records the name and phone number of the system you accessed, the date, your logon and logoff times and total elapsed time for the session.

By loading this file into the text editor you can keep track of how much time and money you are spending on each of the systems you use. Unfortunately, this useful facility requires you to set the ST's clock before every session and also use the Phone Book auto-dial feature.

Aimed mainly at auto-dial modem users is the Phone menu. Clicking on the Phone book option calls up a dialogue panel that allows you to create a series of phone book entries. Each entry holds a copy of the required terminal configuration, the phone number and the name of a batch file. This batch file holds the complete logon sequence required to access the system concerned.

The Dial option is an intelligent routine offering you a choice of phone book entries which will work with the currently selected comms mode. If you are set up for Viewdata transmission then you will not be allowed to execute a MicroLink phone book entry.

Menu number four, Options, is not fixed – the choices on offer are determined by which comms mode you are in. In Terminal mode you can switch to Viewdata mode, toggle the printer on and off, choose between normal and double height text or highlight any control codes received during a transmission.

In Viewdata mode you can switch to Terminal mode, print out the currently displayed page, reveal the answers on puzzle pages, return to the top level frame within the current Viewdata page, and even make on-screen selections using the mouse – there's no need to enter all of those little numbers.

The most noticeable difference between Viewdata and Terminal modes is the extensive use of colour made by systems such as Prestel.

The medium resolution ST mode is not exactly geared to handle such a barrage of colours, so what do you do? You could always exit the program and change screen modes using the Gem desk top, but this would mess up the 80 column display used in Terminal mode.

Fortunately, Database has come up with a solution – by pressing the Undo key while in Viewdata mode the screen can be toggled between medium and low resolution modes.

The Settings menu provides facilities that allow you to alter the overall setup of your comms system. We have already discussed the Configure Terminal option, and Terminal Width needs no explanation, so that brings me to Function keys, which enable manual modem users to emulate some of the facilities that auto-dial users take for granted.

Up to 20 sets of definitions can be assigned to the normal and shifted function keys. They are likely to be logon sequences for your most frequently used comms systems.

Help! is a series of on-screen displays containing useful information relating to the program's main facilities. Why reach for the manual when the information you require may be only a button click away?

In addition to using the menus to access the facilities provided, many options can be selected by holding down the Alternate key and a letter. For instance Configure Terminal is Alternate+C, Viewdata is Alternate+V – this shorthand option saves reaching for the mouse whenever you want to access a particular function.

The Mini Office Professional Communications module is a dream to use, I logged on to MicroLink and Prestel, using both manual and auto-dial modems and experienced no difficulties at all – I even used it to talk to my Cambridge Z88. The self-explanatory menu options render the excellent manual practically redundant – why can't all software be like this?

FACT FILE

Product: Mini Office Professional – Communications
Price: £24.95
Supplier: Database Software, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.
Tel: 0625 878888

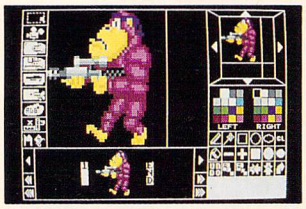
POINTS FOR:
Easy to use. Powerful. Good manual.

AGAINST:
Only a 78 character window in Terminal mode.

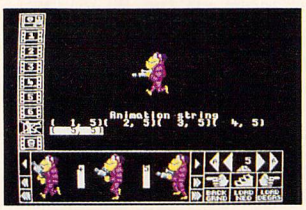
UNLEASH YOUR IMAGINATION WITH

STOS

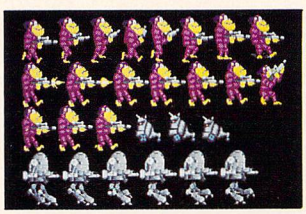
The Game Creator



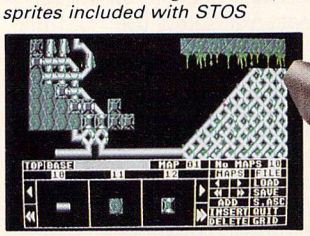
Design sprites using the powerful sprite editor



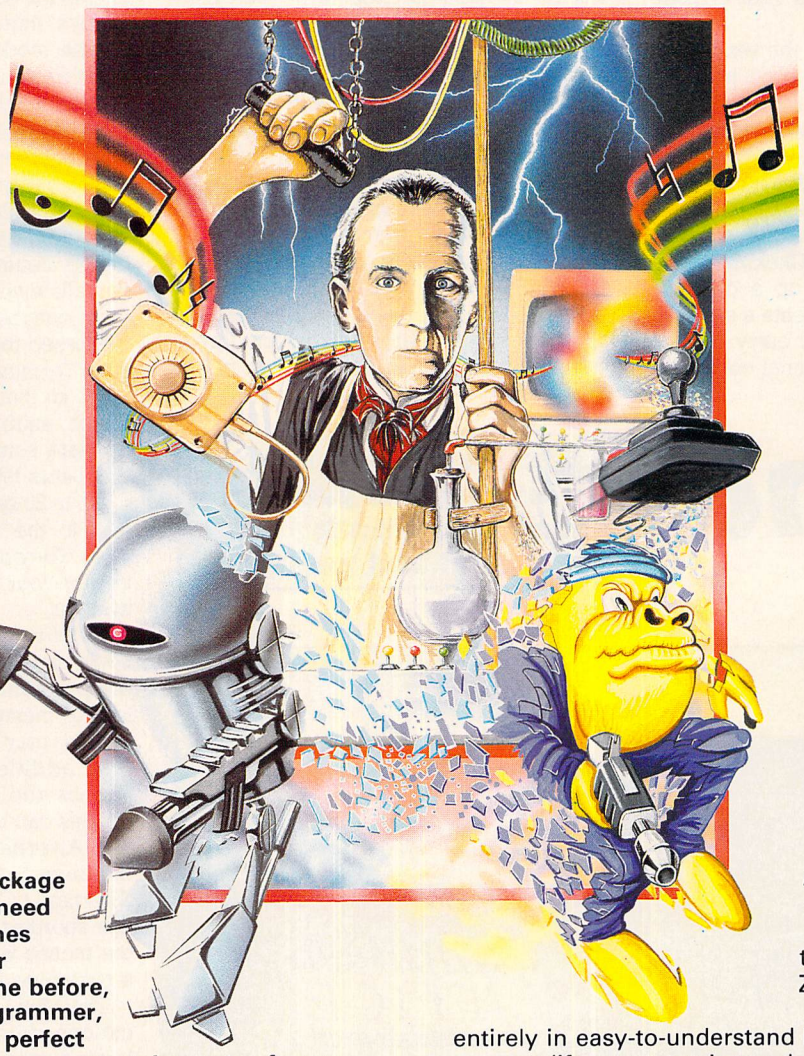
Set the sprites in motion with the animator section

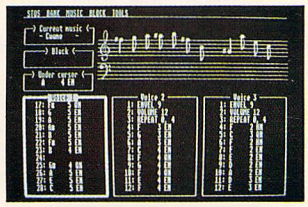


Choose from a range of example sprites included with STOS

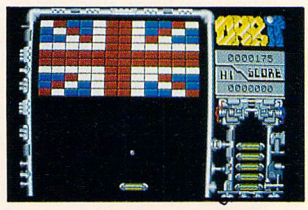


Produce a layout for each screen with the room designer





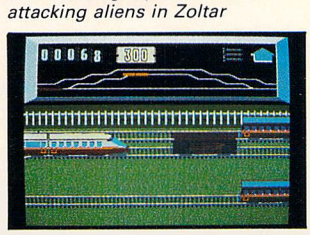
Create dynamic sound effects and compose a suitable score



Construct devious screens in the feature-packed Orbit game



Draw the flight paths of the attacking aliens in Zoltar



Blast the carriages in the horizontal-scrolling Bullet Train

STOS is a revolutionary package which has everything you need to create fast, exciting games quickly and easily. Whether you've never written a game before, or you're a competent programmer, you'll find that STOS is the perfect way for you to design your own entertainment software.

PLUS: Three *free* fast-action games which show you just what can be achieved with this unique package. There's Zoltar, Bullet Train and Orbit – and each game is written entirely in easy-to-understand Basic, which means you can modify or customise each one to your heart's content. Change the sprites, music, difficulty level, design new screens and so on. And by examining the programming you'll learn how to create your own games from scratch.

The STOS package comprises:

- A massive manual packed with easy-to-follow examples.
- At-a-glance reference card putting all the commands at your fingertips.
- Three discs containing: STOS Basic, sprite editor, room designer, character set editor, icon editor, music editor, screen compacter . . . plus many other utilities and short programs.
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Send to: **Database Direct, Freepost, Ellesmere Port, South Wirral L65 3EB.**

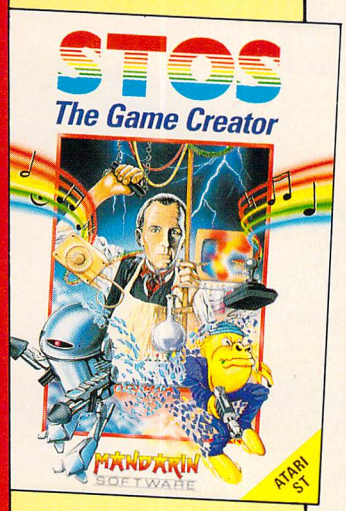
ST4

Here's just some of the facilities that will be at your command:

• 340 powerful and versatile commands • Move and animate up to 15 sprites at once • Sprites any size up to 64 x 64 pixels • Full collision detection between each sprite or zone • Grab sprites from commercial games • Define up to 16 different types of scrolling areas • Hold up to four main programs and 12 accessory programs in memory at once • Create pull-down menus with just one command • Change modes from within a program • Overlay up to 13 windows • Compact Neochrome or Degas screens – or even sections of screens • Zoom and reduce pictures to produce incredible effects.

EARN £5,000 CASH

... in the STOS Gameswriter of the Year Award



ST owners around the world are using STOS to create a galaxy of new games – and now there's a fabulous opportunity to profit from those exciting endeavours.

The writer of the most commercially viable game submitted by Tuesday, June 13, 1989 (10 days before the Atari Computer Show at which the winner will be awarded) 1989 will receive £5,000 in advance royalties and the title will be marketed worldwide by Mandarin Software.

We are looking for an exciting, original idea with an emphasis on gameplay. Graphics are secondary and, if necessary, a professional graphic artist will enhance the visual aspect of the winning title.

Rules of the contest

- The game must be written in STOS Basic but may include new machine-code extensions or routines occupying no more than 30k.
- The game must take up no more than three discs and run on an Atari 520ST, but may include extra parts which require one megabyte of memory.
- Copyright for the winning game will belong to Mandarin who will market the software. A royalty will be paid for every copy sold, and royalties will also be paid if the game is converted to other formats.
- An advance and royalty will be paid for any other top games received which are suitable for release.
- In the unlikely event that no commercially viable game is received the money will be added to the cash prize for the following year's award.
- The award is not open to the staff at Mandarin, Europress or Jawx, or their families.

Please include instructions for loading and playing, and put your name and address on EACH disc as well as on all correspondence.

Your discs will be returned *free of charge* together with suggestions for further improvement so that the game can be refined and resubmitted before the closing date.

Send your discs to:

STOS Gameswriter of the Year Award,
Mandarin Software,
Europa House,
Adlington Park,
Adlington,
Macclesfield SK10 4NP.

MANDARIN SOFTWARE

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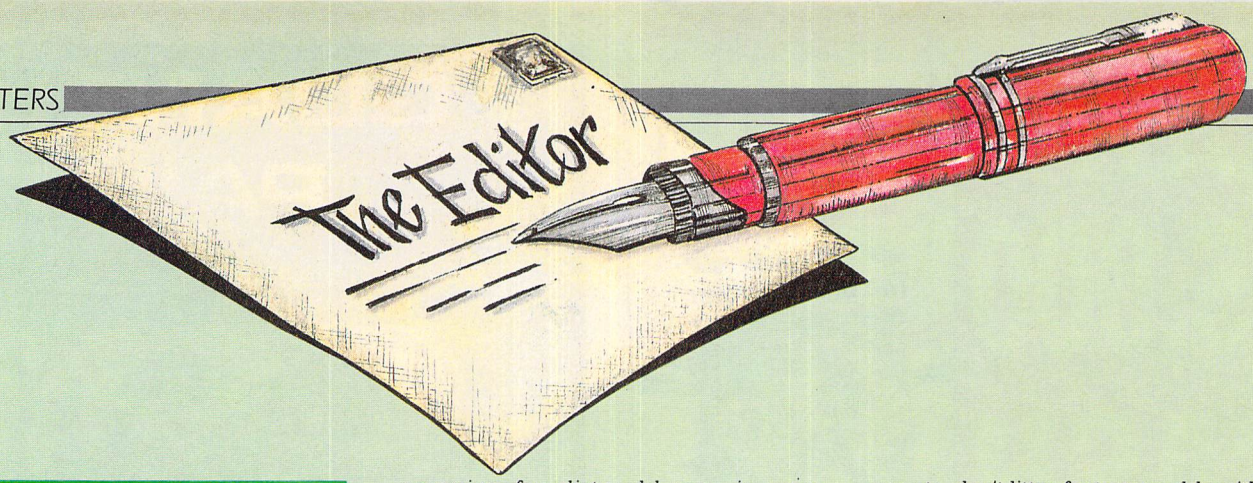


A question of morality

I READ M.Garny's letter in the March 1989 issue of Atari ST User *with interest. As a concerned parent I agree wholeheartedly with the comments expressed. However, I would like to expand on these concerns.*

In the early days of 8 bit micros the available games seemed almost totally to reflect a concentration in science fiction and zapping aliens. While this was perhaps violent, it did not step over any recognised lines of morality.

However, as time progressed it seemed that software companies began to run out of original ideas and had to try any avenue to boost sales. With the 16 bit domination of the market many games with highly dubious moral stances are proliferating.

Manhattan Dealers is only the horrifying tip of the iceberg.

I agree with Nic Outterside's Second Sight in the February 1989 issue of Atari ST User. *Why in this age of détente and positive progress in arms reductions do software companies feel the need to foist upon our children anti-Russian propaganda scenarios like Raid over Moscow and SDI?*

Why do companies also release such degrading products as Hollywood Strip Poker and Teenage Queen? Those should be in the realm of plain brown wrapping for dirty old men in grey raincoats, not pushed at young and innocent children.

Recent releases such as Speedball, Garfield, Baal and Rugby Simulator show the variation of good new ideas. So there are no excuses. Is it time to have software censored in the same way as videos with age certifications? – **Fiona Reynolds, Rhyl, North Wales.**

★ ★ ★

I WANT to know what has happened to good old fantasy? We are forever striving to taint the worlds we create with mindless bloodbaths and sexual horror stories.

Fantasy means wonder, the beauty of other lands and the thrill of adventure. Are people becoming so base that all this means to them is an excuse to perform the horrors of sex and violence where they cannot be brought to justice?

I think a lot of programmers underestimate the intellect of fantasy fans and feel a need to combine fantasy adventures with "mindless shoot-'em-ups" in order to sell the product.

Be practical, how would you expect a female adventurer to survive even the first level of a dungeon wearing only a bikini? Adventure programs would be more popular if programmers stopped making sex their main motive of marketing.

Do us a favour ... leave sleeze to the trashy magazines which are usually hidden on the top shelf in most newsagents, don't litter fantasy worlds with it. – **Joh Banl, Tasmania, Australia.**

● An attractive female in a bikini may well get further in a dungeon than a male Rambo type armed to the teeth with a nuclear missile, but that's another story. Seriously though, we have noted these comments and tend to agree with much that has been stated. We would also be interested in other readers' responses.

Typing tutor needed

DOES anybody know of a typing tutor program for the ST, so that I can learn to use the correct fingers and touch type? I have been unable to find one. Considering the number of word processing and desktop publishing programs, there must be a demand. Or is everyone else already an expert typist before they get an ST? – **Martin Jelfs, Mornington Grove, London.**

★ ★ ★

I HAVE recently bought an Atari STFM micro. I would be grateful if you would inform me where I could buy software to learn to touch type. I remember some years ago seeing a very good educational typing program for the BBC Micro. I assume that similar discs are available for the ST. – **R.M. Thomas, Tregaron, Dyfed.**

● SDL's Master Type and Typing Tutor – both priced at £34.95 – may fill your needs.

Electronic Arts also produces an excellent touch typing tutor for the American ST market, and it may be worth contacting the company to see if it can supply you with a British conversion.

Otherwise, can any readers help with information about typing tutors?

Colour dump routines

I WOULD like to say a great big thank you to Alex Ferguson for his letter in the January 1989 issue of Atari ST User, *solving the vertical line feed problem with 1st Word and the Star LC-10 printer.*

However, I am still having some problems with the printer, in that no art utilities I own contain built-in colour screen dump routines. Although I have heard that Degas Elite does have such a facility, I don't want to shell out £30 on another art package.

Therefore I would be grateful for any information of any snapshot utility available on the public domain network. – **S.J. Freeman, Cheltenham, Gloucestershire.**

● Snapshot programs are available in great numbers on the PD network. We suggest that you contact one of the libraries that advertise in this magazine who will tell you which one best suits your requirements.

We can also thoroughly recommend Care Electronics' Flexidump – reviewed in the January 1989 issue of *Atari ST User*. This excellent screen dumping program includes a snapshot utility.

Copying out music

I AM a music teacher, but also do quite a lot of composing and arranging of classical music, with some song writing.

When I first bought our Atari 520STFM eight months ago I also bought Music Studio. However, I have found it most frustrating in that it is totally unable to help ease the burden of copying out music.

As yet I don't own a Midi keyboard so I

Star Game for a Star Letter

Each month we'll select a letter of the month and the sender will receive the program which our reviewers have rated Atari ST User Star game. This month, reader Alastair Percival will receive Rugby Simulator, which is reviewed on Page 18. Letters on every subject of interest to Atari ST users are welcome. Send them to: The Editor, Atari ST User, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

The case for cheaper games

IN the December 1988 issue of Atari ST User *you published a letter by a self-proclaimed software pirate in which he attempted to justify his illegal behaviour. I am not going to try to defend his ignorant twaddle, but there is one point he raised that I feel needs further airing – that of inflated software prices.*

I don't think that anyone denies that expensive software leads to more software piracy, and quite frankly, I do not feel that most of the games currently available for the ST are worth the £20 to £30 asking price. Furthermore, I cannot see the justification for asking such prices.

If you care to examine the cost of entertainment software for the range of popular micros, a regular pricing pattern quickly becomes obvious.

Games for the Spectrum generally cost £7.99, Amstrad CPC discs cost on average £10 – the same as BBC Micro disc-based games – yet for the 16 bit ST the price rises to over £20. For Macs and IBM-compatibles the price rapidly becomes ridiculously high.

Nobody is going to convince me that these price differences are solely related to conversion costs, particularly when some of the 16 bit versions appear to be virtual replicas of their 8 bit predecessors.

While the software publishers may point to digitised pictures and sampled sound, in many cases the difference in the code is minimal. There is no doubt that in terms of value for money the 8 bit buyers get the better deal.

Of course the most important factor to the producer in balancing the production costs is the number of units likely to be sold. The greater the proportion of the development costs that each copy is going to be burdened with, the higher the cost to the producer.

Thus a game may have the same development cost as a business package, but as the former may sell by the thousand, the latter can expect much lower sales, consequently retailing at a much higher price.

For example, if the development cost of a package is £5,000 and it achieves sales of 20,000, the additional cost to each unit is 25p. However, if the sales reach only 2,000 the added cost per unit is £2.50. The gap between such figures increases dramatically once the two profit margins have been added on.

However, with the soaring sales of the ST during the past couple of years, this argument can be applied less and less forcefully. So I can no longer see any justification for the price tag that most ST games carry – especially when the novelty value of such a game usually lasts five hours or less.

If the software producers really are worried about the levels of piracy of ST software, I would strongly urge them to drop prices and to use passwords and codes for protection rather than supposedly uncopyable discs.

If a pirate needs to photocopy a 60 page manual to access a pirated program, he is far more likely to do so if the original package cost £25 than if it only cost £12.

I feel that I am not alone with this point of view. – **Alastair Percival, Edinburgh, Scotland.**

● A very interesting letter which hammers home some salient points about the pricing of ST software. We would be interested to hear other readers' comments on this topic.

can't even play preset tunes. I am thinking of buying a Clavinova but I am unsure as to whether they are totally suitable for the purposes I have in mind.

Would a Clavinova be a good choice? What software is available – preferably costing not more than £500 – which would allow me to write scores of varying formats and then print out individual parts? – **Sheila Joynes, Pershore, Worcestershire.**

● Yamaha's Clavinovas are superb keyboards, but you ought to view and try out for yourself before deciding on which one to buy. They range from the CLP100 which retails at about £900 to the magnificent CVP10 which will set you back £3,000. The new CVP20 costs nearly £1,500 and is well worth a closer look.

Score writing utilities for the ST are numerous and once again we would advise that you try before you buy. Top of the tree are undoubtedly Steinberg's Master Score and C-Lab's Notator. Also available are Hybrid Arts' EZ-Score Plus, Sonus' Super Score and Dr T's Copyist.

Best spot for another drive

I HAVE been considering buying another disc drive for my Atari 520STFM, as it only has a 0.5Mb drive fitted as standard. However, after reading a letter in the January 1989 issue of Atari ST User *about all new STs being fitted with internal 1Mb drives, I am in a dilemma.*

Should I buy an internal 1Mb drive to replace my existing one, or should I buy an external 1Mb drive and use it in conjunction with the current internal 0.5Mb drive?

Is it possible to use both the 1Mb and 0.5Mb drives together without causing problems? – **A.E. Elsley, Didcot, Oxfordshire.**

● Yes, a 1Mb and 0.5Mb drive will work perfectly well side by side. We would recommend that you buy an external drive for the simple reason that you will add flexibility and extra storage capacity by doing so. The price difference between an external and an internal disc drive for the ST is minimal. The former can be bought for as little as £95 while the latter will cost you from £90.

Upgrade difficulties

I HAVE recently bought a 520STFM, but now want to upgrade it to a 1040. I understand that my machine is of the new variety and does not use the old ram chips.

Inside it there are spaces for four rather than 16 upgrade chips. Could you tell me who is likely to be able to upgrade it for me, how much it would cost and if the chips are currently available? – **C.E.S. Rayer, Cathays, Cardiff.**

● With the old 16 x 32k ram set-up the

Turn to Page 118 ▶

◀ *From Page 117*

upgrade of a 520 to 1040ST was fairly simple and inexpensive – costing about £90.

However, the new ram board configuration, which boasts only four 128k chips, adds a certain complexity. These chips are still fairly hard to come by and also rather expensive – costing about £45 each, not allowing for installation.

So such an upgrade will cost you well in excess of £200 and you may even have to wait some time for the availability of the ram chips.

Ladbroke Computing International of Preston may be able to help with its new plug-in ram upgrade board which costs about £80. This allows you to plug and unplug ram chips to upgrade your ST to a 2Mb machine.

Atari has promised that the price of the 128k ram chips will fall as availability improves, so hopefully it will not be too long before upgrading your machine is once again a simple and inexpensive matter.

Scrum down

DURING the past six years sports simulations for the 8 bit and 16 bit range of micros have littered the market. These include Olympics, golf, cricket, squash, tennis and literally dozens of variations on the soccer theme. Isn't it time we rugby fans had a simulation of our marvellous game?

I have seen Rugby League Boss for the ST, but that is nothing more than a managerial simulation, besides which it is truly dreadful. The coding for a game of rugby for the ST surely can't be that complex, and the potential market for such a product is enormous. Come on programmers, get your fingers out and give us something to play after we get back from a hard evening's training! – **J. Neary, Cardiff, South Wales.**

● It's time to pack in the pleading as it seems like your prayers have been answered. Read Nic Outterside's review of Codemasters' Advanced Rugby Simulator, a touch back in this issue. Don't get lost in the maul for a copy. Just join the line outside your nearest software retailer and mark yourself down for what must be sports simulation of the year.

Colour printout from Degas

I AM replying to Robert Moorman's plea for help in the February 1989 issue of Atari ST User. *To get a colour printout from Degas Elite using a Star LC-10 printer, set Print Type to JX80C. The colours will need correcting, so choose your palette colours and print them out in boxes. Then do test runs, modifying your palette as you go, until you get a satisfactory printout.*

At the end of printing the printer does not get a message to stop, so switch it off, wait for the Printer not responding *message, then cancel to get back to the menu screen.* – **Noel Blackwell, Solihull, West Midlands.**

Beginner's headache

WE bought my son an Atari 520STFM for Christmas and our first task on Christmas Day was to read the owner's manual and then to back-up the ST language disc. However, there we met our first problem, nowhere did it tell us what was on the disc or how to use it.

The sample program seemed to run ok but we opened the BASIC.RSC file to find garbage on-screen which ended with END FILE. Should it have more writing on it or is this ok?

Our second problem is more serious. Some of our games refuse to play after using them only once. We have taken them back to the shop where we bought the ST and the assistant said that in each case all of the disc had been erased.

However, he didn't really seem to know much about Atari STs, depite the fact that he sold me the machine. He seemed to blame the drive and wrote on the Service Repair Sheet: "Disc drive – loads games first time but will not reload, appears to damage games, could need cleaning".

Do you think this is the real problem or are we doing something wrong? – **E.Peace, Pudsey, West Yorkshire.**

● Your first problem appears to lie in a common misconception about the way the ST works. Hopefully the following short explanation will help.

Most commercial software loads by placing the disc in the drive and then switching on your ST. However, other programs can be loaded by double-clicking on an icon which has a name with a PRG extender attached to it. Alternatively you can single-click on the icon then run the program by clicking on Open from the File menu.

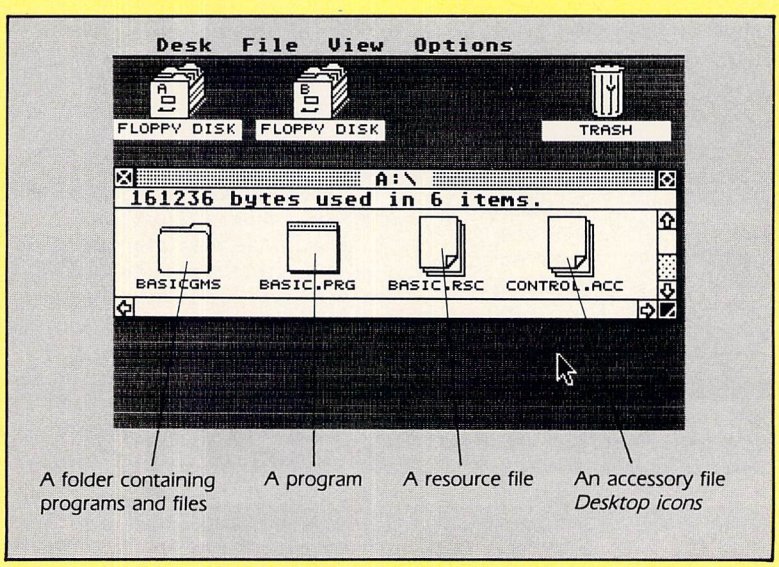
Icons which are shaped like a bunch of papers with a turned-up corner are files and should not be opened, as they contain code and data to allow programs to run. Those with .ACC extenders are accessories which are automatically installed when you boot up the disc. Those with .RSC extenders are resource files and are needed to run the main programs.

Icons which are shaped like filing folders contain other files and programs. These folders can be opened by double clicking on them but they will not run as programs in themselves. All these icons are highlighted in the illustration below.

As for your disc problem, that has probably one of three causes. It is possible that your disc drive needs realigning by a service engineer, though this is doubtful if the ST is new.

Do ensure that you are not trying to format your commercial discs. Also do not try to copy commercial games discs, as many are fitted with anti-piracy devices which trash the original disc.

We hope this helps, and we are sure that with perseverence you and your family will have many happy hours with your micro.



PUBLIC DOMAIN SOFTWARE

GAME3 - HACK D&Dragons
GAME11- KIDGAMES
GAME12- ORIONS RUN

GAMES

GAME27- MONOPOLY
GAME2 - CHESS,BACKGAMMON
GAME7 - SPACEGAMES
GAME18- LASERCHESS

PIC7 - 16 NAUGHTY PICTURES
PIC9 - 17 from GhostBusters etc.
PIC18- DIGIPICS FROM SPACE

PICTURES

PIC22- SPEC'512 PICTURES
PIC28- STRIP POKER PIC'S
PIC29- SAM FOX PICTURES
PIC31- SPEC'512 PICTURES

DEM13- CLASSIC DEMOS
DEM22- FLYING BIRDS
DEM25- MURRAY AND ME

DEMONSTRATIONS

DEM31- Tour your ST (beginners)
DEM59- BIG TEX - Brilliant
DEM87- PUMP UP THE VOLUME
DEM89- LOST BOYS DEMO

MISC1- SKYMAP, 1500 stars
MISC2- ORBIT, track sattelites
MISC4- VIRUS KILLERS

RADIO-COMMS

COMS3- UNITERM V2.0C
COMS6- WORLI V2.5
COMS7- INTERCOM V3.01
COMS8 - ANET & GEMTERM

ACC1 - 50 files of Accessories
ACC26- DATABASE
ACC31- SPREADSHEET

UTILITIES

ACC34- MAC EMULATOR
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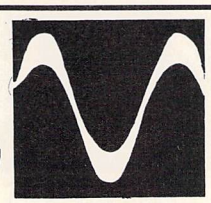

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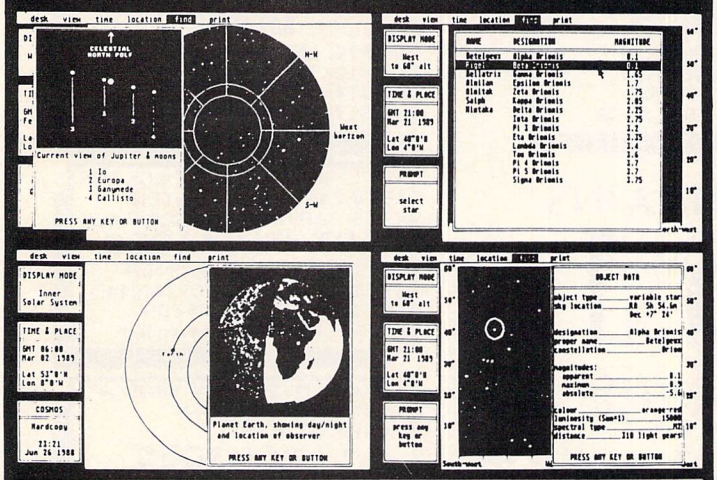

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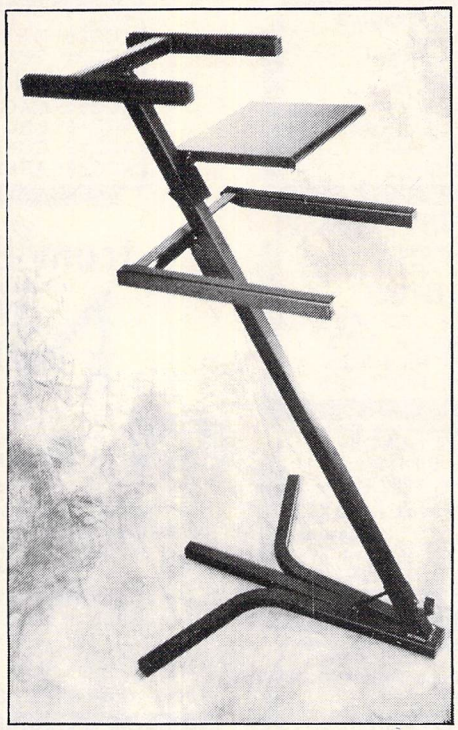

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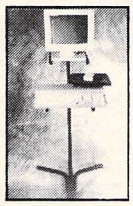



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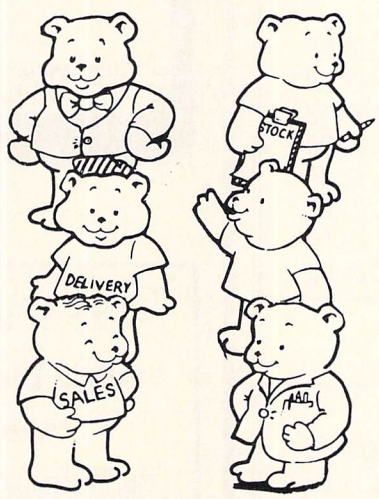

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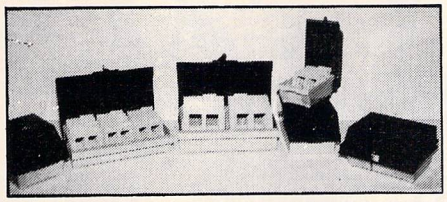

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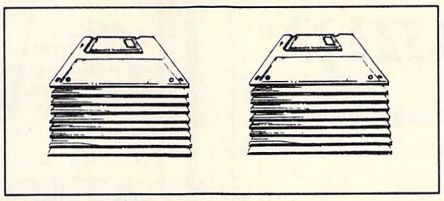

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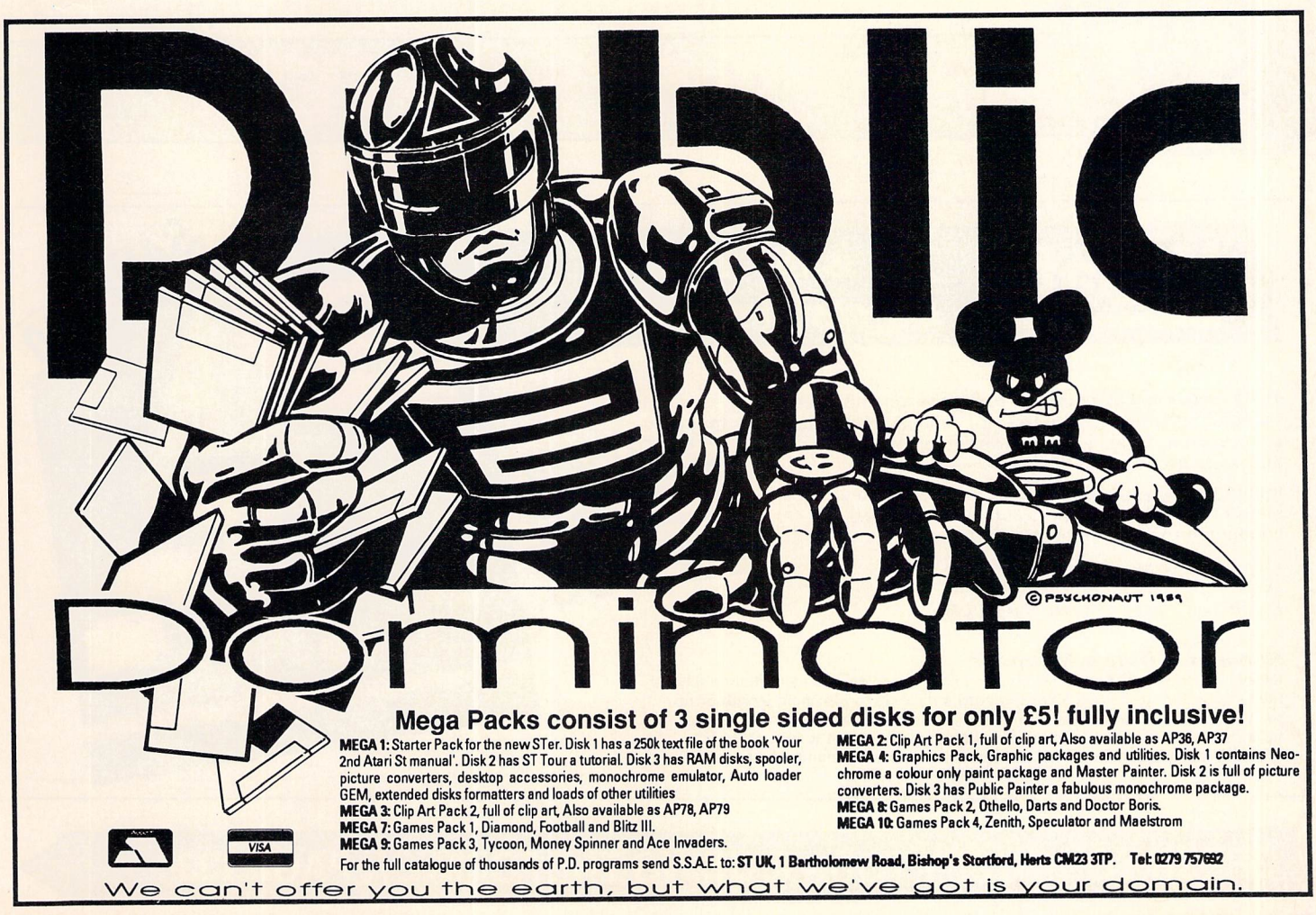

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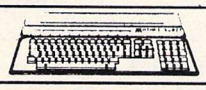
ATARI ST  AMIGA

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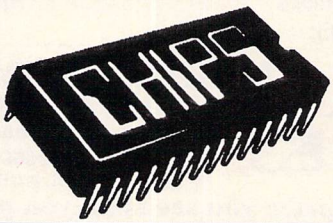

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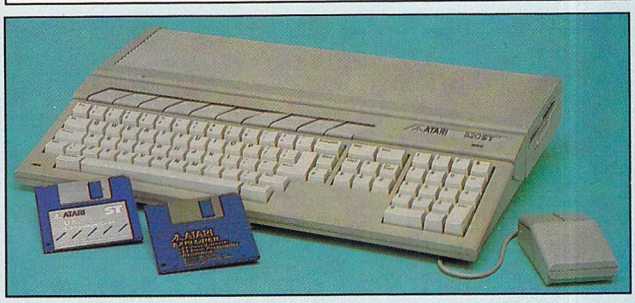

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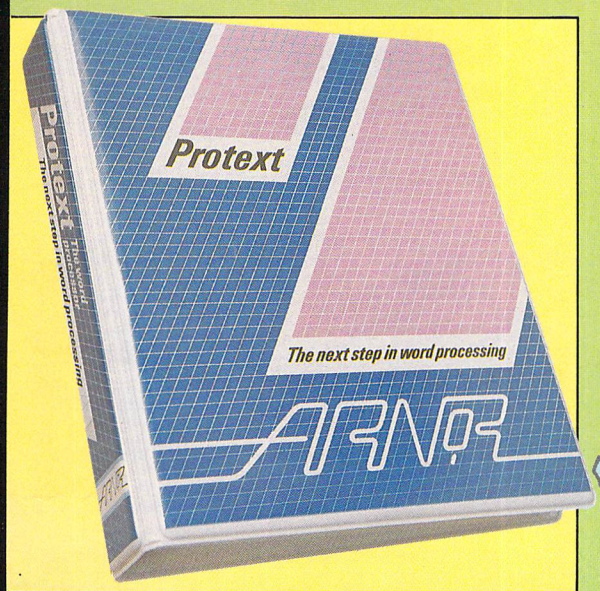

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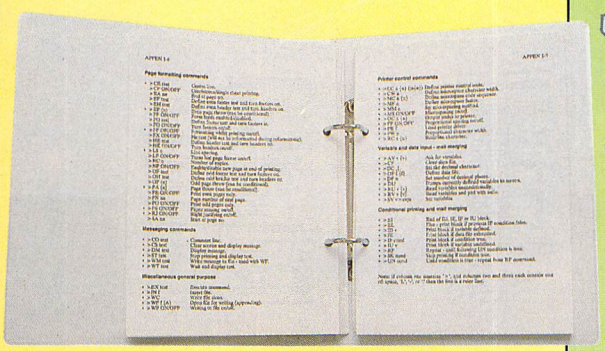

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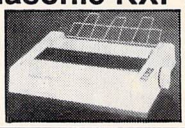

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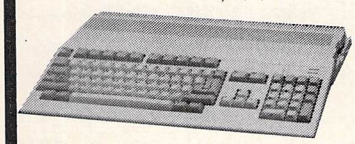

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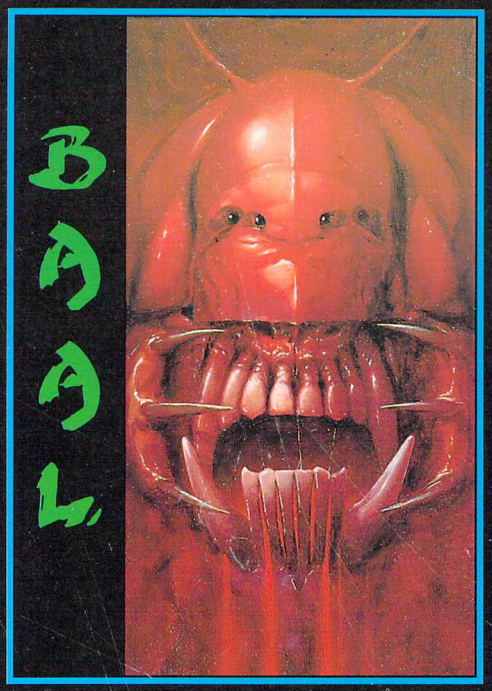

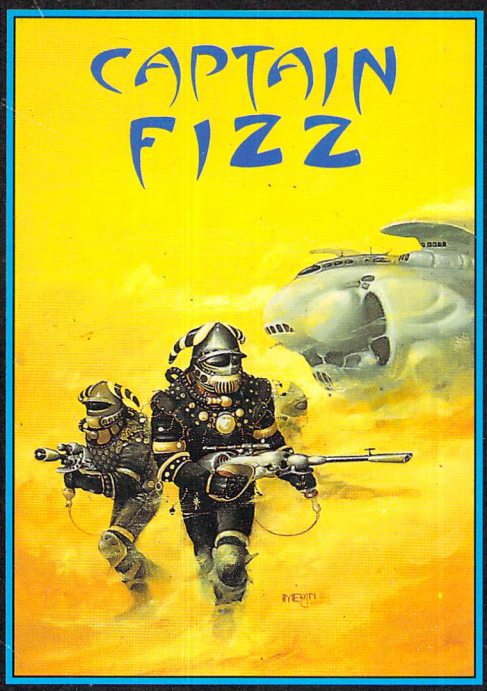

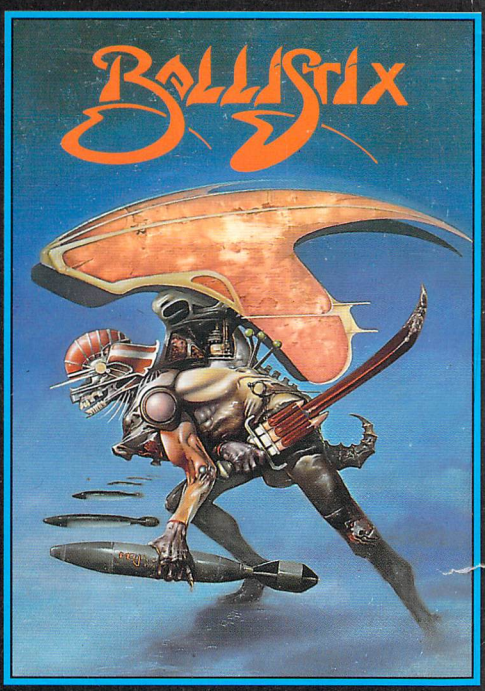

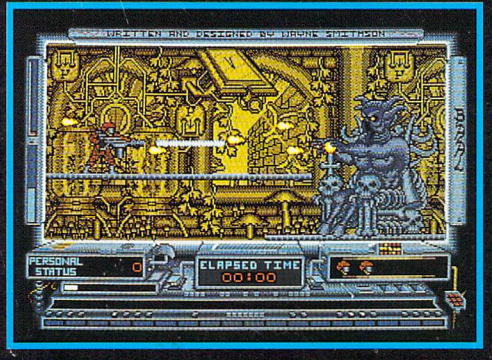

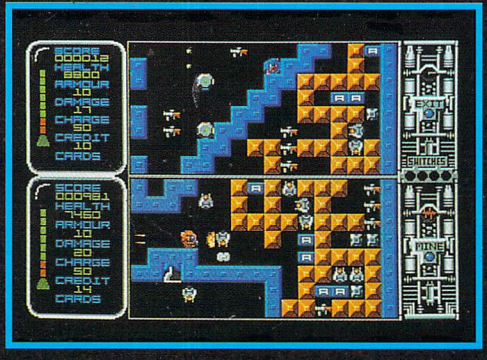

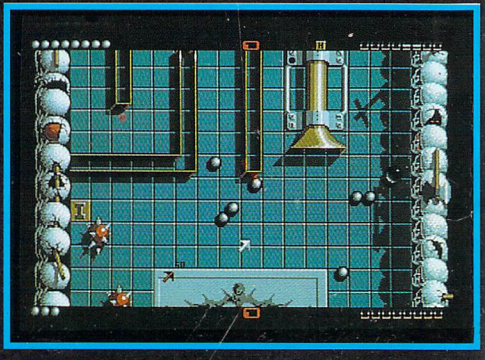

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