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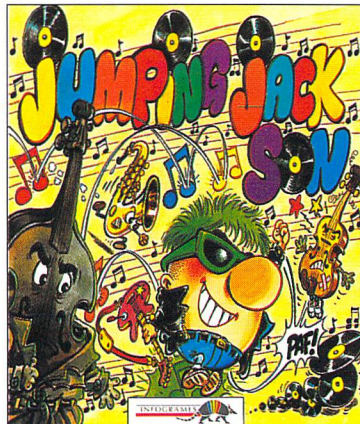


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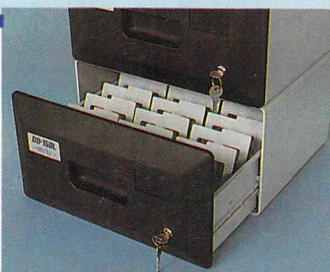
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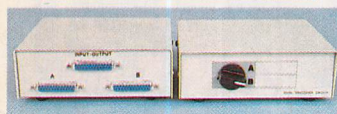
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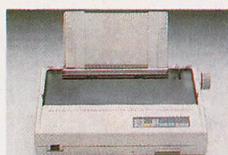
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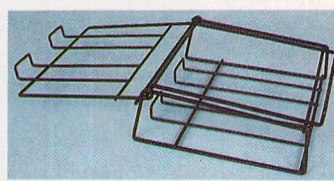
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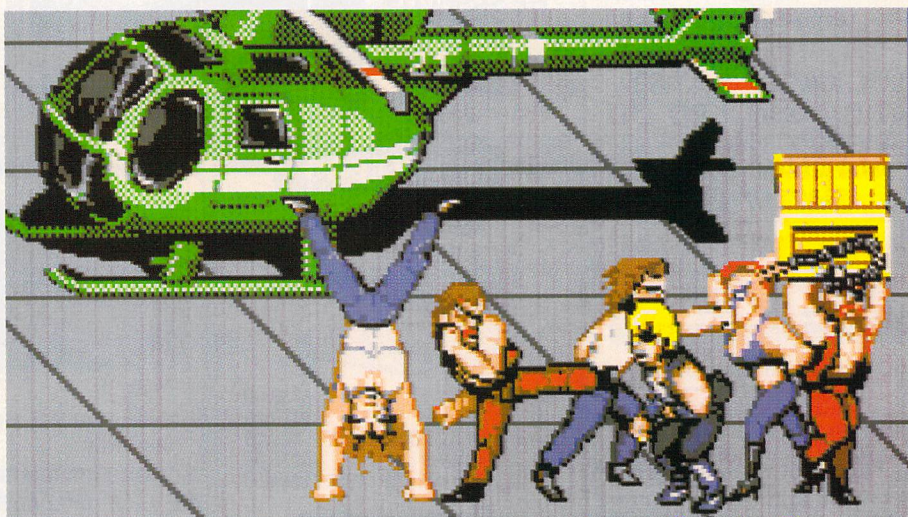
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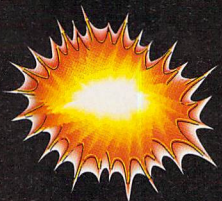


**There's an
explosion of
popularity in
combat games.
We survey the
market and
pick the best
of the bunch.
Turn to Page 18**



On this month's disc you'll find demonstrations of two superb new games – Debut and Damocles – plus a powerful text editor, a disc editor, a flexible file selector and directory printer.

● Turn to Page 42.



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THE NAME BEHIND THE GREAT GAMES

ST package picks winner

WHEN your main product is a computer-based betting program, it takes a lot of bottle to put your money on a runner which is generally branded as a carthorse.

Staff at TAM (0392 215485) did just that when their ST package The Tipster threw up rank outsider Norton's Coin for the Cheltenham Gold Cup. The horse romped home at 100-1 and they took the bookies for £1,000.

The program was also right with Toby Tobias which came in second. It tipped the third-placed Desert Orchid to come in fifth.

Its winning streak was repeated with the 33-1 outsider Evic Star in The Lincoln.

Run by the Marriott family, Exeter-based TAM offers betting advice to registered owners of The Tipsters.

Steve admits that neither he nor his family have any expertise in the horse world.

He is an electronics technician and wrote The Tipster in November last year applying pure statistics to data on the winners from 800 races. He built in eight special points which include the often discounted "beaten favourites" and the number of days since a horse ran.

"On the Gold Cup, a lot of people had been hyping Desert Orchid but The Tipster gave him only 131 points", he told *Atari ST User*. "It gave Norton's Coin and Toby Tobias 162 points each.

"When people started ringing in for tips my sister was giving out Norton's Coin, not realising that it was virtually a carthorse.

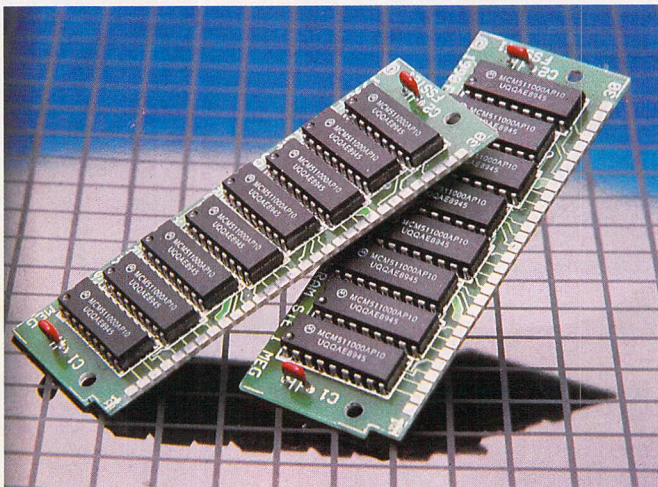
Our publicity says that the program tips winners not zebras, and it gave me a shock when I realised we were tipping this zebra for the Gold Cup, considered by many to be the top race of the year.

I thought we should call it just a fun bet, but it turned out to be more serious".

Thrilled by their success, the staff at TAM now have a regular betting pool but admit that the proof of their program will be if it is still turning up winners a year from now. The Tipster costs £29.95.

In the pipeline from TAM are a pools predictor program and a program called The Breeder which is due out later this year and will allow fanciers to trace the lineage of their pets or show animals and birds.

Massive STE ram extensions rapped



Frontier Software's Xtra-Ram

FRONTIER Software (0423 567140) has fired a broadside at companies which it claims are misleading Atari STE owners. Marketing manager Martin Walsh says some ram expansions being offered for the STE are just impossible.

"The market for ram upgrades for the STE seems to be very confused at the moment, with several companies offering 2.5Mb and 3Mb ram options for the STE. Both of these are impossible", he told *Atari ST User*.

"I find it disturbing that companies which purport to supply STE upgrades can make such fundamental mistakes and I have even heard reports that Atari UK's own helpline is suggesting that such ram options are possible."

His comments are backed by Frontier boss Andrew Bennett and follow the launch of Frontier's Xtra-Ram STE solder-free upgrade which is offered in 0.5Mb and 2Mb forms.

"We have discovered from discussion with STE designer centres at Atari US and Atari Japan that the STE is designed to be upgraded in the way we recommend", he added.

"I hope that the STE ram expansion market will settle down during the next few months with either these mistaken ram supply companies dropping out of the market altogether or at least not confusing users by supplying

incorrect information".

The STE has four slots for memory boards and since each space is eight bits wide, the slots must be used in pairs to give the STE its required 16 bits of memory therefore an odd number of slots cannot be used.

Only two types of memory boards can be used in the STE slots - 256k and 1Mb. For example, two 256k boards give a 512 STE and two 1Mb boards give a 2Mb STE", explained Martin Walsh. "The STE designers have decided that you cannot mix the memory board types. This means that an STE cannot have two 256k boards and two 1Mb boards which would give the impossible sizes of 2.5Mb".

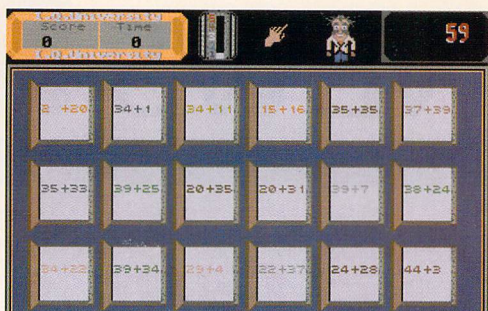
It is claimed that the only available upgrade options are 512k, 1, 2 and 4Mb.

Frontier's Xtra-RAM STE 0.5Mb package contains two 256k memory boards and the 2Mb version contains two 1Mb boards. Users wanting to upgrade to 4Mb have to buy two 2Mb packages. Xtra-RAM STE also comes with an adaptor allowing the boards to be used with both Simm and Sip connectors.

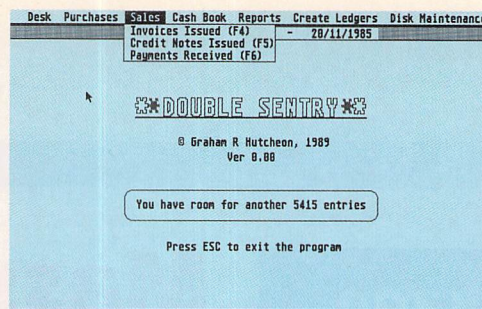
With full fitting manual testing software, 10 day money-back offer and 12 months guarantee the 0.5Mb version costs £89.99 and the 2Mb version costs £199.99.

Cheaper data

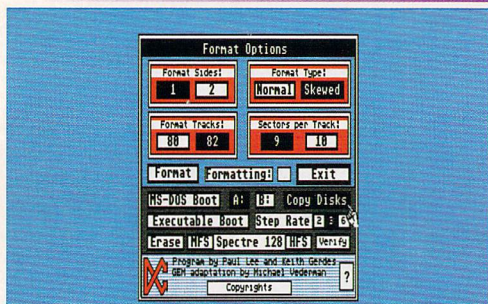
ELECTRIC Distribution (0480 496666) has cut the price of Data Manager Professional by more than 40 per cent from £69.95 to £39.95. The relational database works under Gem with pull-down menus, icons and dialogue boxes.



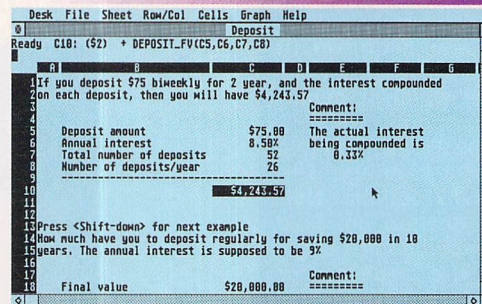
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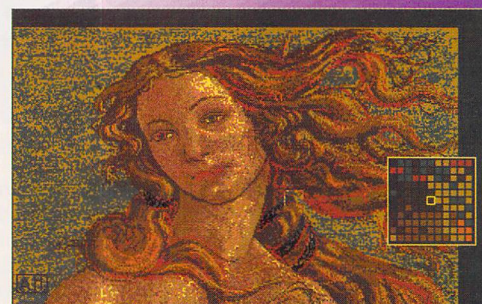
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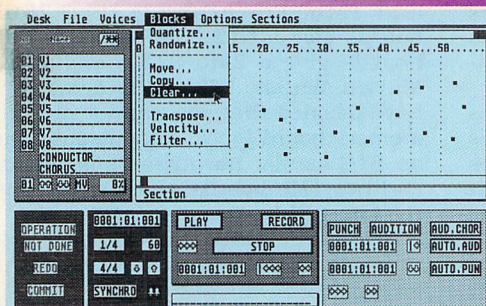
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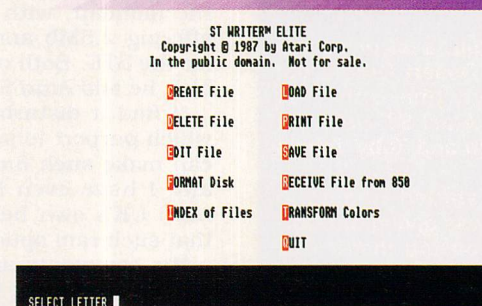
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CD-rom shows its paces

ATARI'S aspirations in the CD-rom market were dusted off for more than 100 software developers who attended the company's two day developers' conference at the Williams racing headquarters, Didcot.

Guests saw the ST controlling an audio CD player and also used as an information retrieval system."

We have had this technology in the warehouse for a couple of years", said a spokesman. "We decided to show it at the conference and everyone was

very impressed with it. When the software starts coming through, we will certainly be going ahead with it".

Guests were also shown the way ahead with the STE and Lynx and on the first day received a marketing and business presentation from Atari UK boss Bob Gleadow.

The PC-compatible Portfolio was also on the agenda and Atari is now rumoured to be bringing out an ST-based version of the hand-held machine.

New Mug game goes on line

A NEW multi-user game from David Mager of Willesden Green, London has hit the ST scene.

He wrote Future Life using GFA Basic 3 and a compiler. It is now online on his Lap of the Gods system (01-994 9119) run with an upgraded 520STFM.

Future Life joins David's existing games Gods and Zone and places the player at the controls of "seven stone weakling" Marcia who pursues her love for Eric the Fabulous while fighting off a cat which thinks it's a dog and a manic warbling telephone - among other things.

"The £11.50 subscription to the system covers unlimited usage of all three MUGs and the attached BBS for one month", said David who can be contacted at 9 Jeymer Avenue, Willesden Green, London NW2 4PJ. Tel: 01-452 3061.

Accent on the arcades

CONVINCED that the home arcade is the ultimate aim of the dedicated games player, arcade machine specialist Electrocoin has launched its own software label, Electrocoin Software (01-961 8705).

Initially, it will concentrate on 16 bit arcade conversions and hopes to add theme licences and original products to its range later this year.

First release is Time Soldier, which has been converted from the SNK arcade success and incorporates all the features of the arcade original.

It tracks the adventures of Yohan and Ben who are two of seven Earth Commandos briefed to destroy the evil Gylend. The game allows the player to control one of the Earth Commandos through six eras before confronting Gylend.



DOMARK partners Dominic Wheatley and Mark Strachan have been indulging in their own off-beat brand of promotions again. They teamed up with Incentive's Ian Andrew to bring a touch of the 16th century to Fulham Palace Church to plug latest release Castle Master.

Sir Dominic and Knight of the Realm Ian battled over the fair hand of Princess Mark in costumes which were used in Monty Python and the Holy Grail. Action adventure Castle Master costs £19.99.

Walkabout joysticks

REMOTE control gameplay is now on offer from Spectravideo (01-900 0024) with its new infra red joystick.

Doing away with leads and plugs, players can walk around the room and still play their favourite game on the ST. The joystick can send infra red rays from as far away as 30 feet, the signals being picked up by a control box which plugs into the back of the computer.

SOFTWARE HOTLINE



RIDDING future worlds of rogue killer insects is the aim of Venus, the latest offering from Gremlin (0742 753423).

Main ally is a new breed of fly capable of seeking out and destroying the enemies. The multi-world, five level, horizontally scrolling shoot-'em-up has five icons, three of which control how the insect can jump, one loses time and the fifth reverses gravity.

There are six weapon strengths picked up by shooting various pods. Price, £19.99.

★ ★ ★

FANS of the questionable comic strip Bloody Kids will soon have a computer version which goes by the same name.

On the £4.99 budget label



Smash 16 from Interceptor Group (0734 817421), the game features a skateboard assault course then various jobs for the kids to undertake. These include a paper round, poster-ing for a record shop, a milk round and glass collection for the local pub.

★ ★ ★

A NEW compilation for the ST is now on sale from Impressions (01-384 2701). It features StarRay from Logotron, Hell Bent from Novagen, Ringside from German firm EAS, Brickbusta from Impressions and costs £24.99.



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New fonts for PageStream

A NEW line of professional, high quality fonts for PageStream on the Atari ST has been developed in New York by Dennis Palumbo (0101 516 352 5605).

Using 36 point screen fonts, the new line is designed to improve screen resolution. It features Gallya Ornamented, Kooper Black and Plaebill typefaces including upper and lower case letters, numbers, punctuation plus foreign and special characters.

"The 36 point screen fonts are unique in that no other producer includes them as a regular part of their complete line", claims Dennis Palumbo. "A bonus included with this disc is the public domain 36 point Helvetica screen font".

Each font contains a minimum of 184 characters and comes with a 90 day warranty. Until June 1, there is a special introductory price of \$29.95, with \$2 for shipping. Contact Dennis Palumbo at 104 Barrymore Boulevard, Dept B, Franklin Square, New York 11010.

Speed the easy way

GASTEINER Technologies (01-365 1151) has produced Mega ST and STE versions of PC emulator PC Speed, and the good news is that both can be installed without soldering.

Called SpeedBridge, the Mega version plugs into the system bus directly behind the 68000 CPU. On the STE it plugs into the same socket as the CPU. Price £49; upgrade free.

Since PC Speed was reviewed in the May issue of *Atari ST User* a new upgrade has been produced. Version 1.4 gives access to 24 partitions on the hard disc by using the Add Part Sys driver. It also allows more than one hard disc to be used and in CGA mode, Tandy 1000 resolution can be displayed with 320 x 200 pixels in 16 colours. Using the Pcs Opt Cm program, compatibility is increased.

Deadline extended

ACTIVE Distribution (01-384 2701) has extended the entry deadline for its Paris-Dakar 90 competition which gives game players the chance to win a Peugeot 205 Junior car.

The Tomahawk game recreates one of the world's toughest car rallies and to enter the competition, players must send in their highest score with the verification code by the new date of June 15.

Five highest scorers from the UK and Ireland will play off in London on October 28 and at the same time play-offs will be held in France, Germany, Spain and Italy. Top scorer of the 25 Euro-finalists will win the car.

Little laser with a lot

BILLED as the most competitive dual bin laser printer to hit the ST market, the Dataproducts LZR 650 is now on offer from Mekom Computer Products (021-766 6886) for £1,625.

Measuring 1.3 feet square, it is claimed to have the smallest footprint of any laser printer. The LZR prints six pages a minute, has a 4.5Mb memory and five emulations as standard - HP Laserjet Series II, Diablo 630, Epson FX-80, IBM Proprinter and IBM Graphics.

"I believe this to be the most fully featured, user friendly and cost effective laser printer in the up to 8 page per minute market sector", said Mecom sales director John Spencer. "It should lead that market by the middle to end of this year".



Midi sounds of your own

MIDI musicians can now create their own unique library of sounds with the help of CMpanion, the latest in the Gajits range of professional sound development programs from Roland (01-568 4578).

Designed to help users get the most from their Roland CM module or MT-32, it allows them to modify the inter-

nal sounds and instrumental arrangements.

The instrument, connected to the computer via Midi and CMpanion, shows the contents of the module as full screen graphics displays. Parameters can be altered at the click of a mouse to develop individual sounds. Price, £99.

More packs converted

KOSMOS Software (05255 3942) has now released ST conversions of its six most popular educational packages.

Four titles aim to suite the needs of beginners, GCSE and advanced language students. They are The French Mistress, The German Master, The Spanish Tutor and The Italian Tutor. Including large vocabularies, they allow students to choose from a range of learning and test modes and also to create their own special lessons such as homework or revision lists. These can be easily stored on disc for recall at exam time.

For ease of use, the vocabulary is

arranged under 32 separate headings such as the family, dwelling, vehicles, substances, parts of the body and food and drink. There are more than 2,500 items of vocabulary. Price, £19.95.

Rounding off the new ST conversions are two educational quiz programs - Answer Back Junior and Answer Back Senior. They combine databases of general knowledge questions with simple games. Each program contains 750 questions spread over 15 topics.

Junior subjects include nature, music, nursery rhymes, books, poetry, sums and spelling. Senior questions include science, history, geography, literature, astronomy, music, art and sport.

Answer Back also costs £19.95 and extra quiz questions called Factfile 500 can be bought for £9.95.

Atari on show

ATARI products will have a strong showing at the second 16 Bit Computer Fair to be held at the Royal Horticultural Halls, London from June 28 to July 1. A follow-up to the inaugural show held in January, it is again organised by Westminster Exhibitions (01-549 3444).

Go back for chess

SERIOUS games players have three new offerings for the ST from CP Software (0993 823463).

The Oxford Softworks Chess Champion 2175 is an updated and improved version of best-selling Chess Player 2150. It combines the power of the original program with expanded features including opening book control and greatly improved playing strength. Price, £29.95.

Backgammon Player Professional is a fully featured computer version of the ancient oriental game. It includes dice and doubling cube, variable playing speed and full scoring. Price, £19.95.

Go Play Professional for the ST features Go, the oriental equivalent of chess which is so complex it was considered unprogrammable. Price, £29.95. Each of these games is available in French, German and Spanish as well as English.

Hi-res link for monitors

ALLOWING up to eight monitors to be connected to a single computer, the new multitat RGB distribution amplifier from Interactive Media Resources (0902 25444) is the latest product to put the ST at the centre of professional video applications.

Making a whole new range of facilities possible, Multitat uses RGB instead of video so graphics can be distributed down long lengths of cable without the degrading effects associated with video. This means that high resolution screens retain their clarity and colour detail.

The distribution amplifier is aimed at such applications as public information, advertising systems in shops and shopping arcades, bus stations, exhibitions and for teaching in both classrooms and lecture theatres.

There are two models, the basic Multitat with four outputs costing £175 plus £5 carriage and Multitat Plus with eight outputs and costing £300 plus £6 carriage. Scart output leads cost £5 each.

SOFTWARE HOTLINE

EGGS are at the centre of *Infestation*, the latest ST release from Psygnosis (051-709 5755). They are incubating alien eggs, the contents of which threaten the future of mankind.

The player takes the role of Kal Solar, agent for the Interplanetary Federation, whose mission is to eliminate threats from hostile lifeforms. Along the way there are running battles with alien eggs which can release deadly nerve gas. The player is equipped with a sophisticated pressurised body suit, oxygen pack, battery pack and cartridge pulse rifle.

Infestation costs £24.95.

★ ★ ★

FUTURISTIC graphics plunge players into a strange and frightening world in *Final Command*, the new offering from French software house Ubisoft (010 33 148 98 99 00).

The space adventure maps world wars through to 2025 when the superpowers create a confederation - The United State of Earth - to combat the Horgants. The player takes the role of agent YG 30 who is sent to unknown planet Ipsos III to



find the information banks of a teletransporter, equipped with a B138 laser pistol, a miniature computer and a telepathic headset.

★ ★ ★

ACCOLADE (01-738 1376) has launched the first compilation of some of its most popular titles.

Driving simulation *Test Drive*, golf games *Mean 18* and *Famous Courses I and II* are teamed with baseball simulation *Hardball* for a price of £29.99.

Getting down to molecules

ATARI ST owners who need to illustrate molecular structures or want to animate them for lectures have been provided with the right tool by The ST Club (0602 410241).

Molgraph is a molecular graphics program which includes display, rotate and scale models supporting vector, sphere and two types of ballstick displays.

The build features provides a versatile method of combining 3D fragments of molecules into new structures. Displays can be printed directly from Molgraph or saved to disc for use in word

processor or DTP packages. Frames can also be saved for use in Molgraph's movie feature, which present short movie sequences showing molecular rotation.

Fully Gem driven, the package makes use of drop-down menus and instruction boxes, runs in high resolution mono or low resolution colour and costs £12.95.

The ST Club has also produced a manual to help guide ST owners through the pitfalls of desktop publishing. For use with Timeworks, it costs £9.95.

Stealthy investigations

AS a successor to *Future Wars*, Palace Software (01-278 0751) has announced *Operation Stealth* from Delphine/Cinematique.

Put together by the same team as *Future Wars*, it features an enhanced Cynematique system and a complex plot. The player becomes CIA agent John Glames briefed to investigate the disappearance of a top secret Stealth bomber from a US airforce base. Price, £24.99.

Also new from Palace is *Colorado* which follows the fortunes of David O'Brien, a penniless trapper who comes across a dying Cheyenne

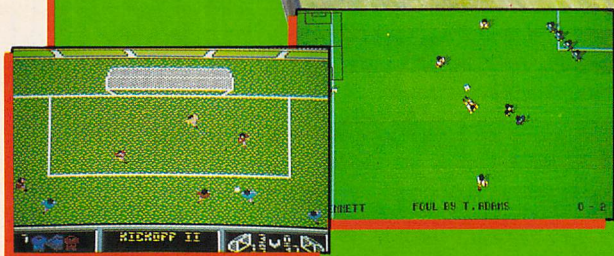


Colorado... action in the wilds

indian in the American wilderness.

Vowing to bury him in the style of a warrior, O'Brien is rewarded with an ancient map showing the way to the legendary lost gold mine of Pocahontas but to get there he must travel through alien Pawnee territory, across wolf-infested lands and down the deadly rapids of the Colorado River. With 100 screens of 3D arcade action, *Colorado* costs £24.99.

KICK OFF 2



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520 STE Explorer Pack £279.00

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STE**

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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	8	RAINBOW ISLANDS <i>Ocean</i>	24.99	June 1990	Bubble Bobble heroes return to a New Zealand Story-type setting. Chase rainbows and stun your enemies with them.	8
2	NEW	MIDWINTER <i>Microprose</i>	24.99	June 1990	Atmospheric with very nice graphics. The setting is beautiful and gameplay and animation superb. Definitely not to be missed.	9
3	NEW	ITALIA 1990 <i>CodeMasters</i>	4.99	May 1990	Quite good with nice animation and scrolling. Small sprites, but very clear. An inexpensive way to enjoy the World Cup.	7
4	11	CAPTAIN BLOOD <i>Smash 16</i>	4.99	April 1988	French styling, effects and graphics at their best. Jean-Michel Jarre's music and a plot line which is different. An absolute must.	10
5	2	OPERATION THUNDERBOLT <i>Ocean</i>	19.99	May 1990	Arcade conversion time again with the sequel to Operation Wolf. Rescue hostages while dodging jets, tanks and helicopters.	8
6	4	ADVANCED SKI SIMULATOR <i>CodeMasters</i>	4.99	*	Budget releases make their mark this month. Not a re-vamp and if you feel in need of snow, this is your chance to catch up on the piste.	7
7	7	PLAYER MANAGER <i>Anco</i>	19.99	May 1990	Strategy version of Kick Off. The interactive match highlights make up for strategic deficiencies. Basically an excellent game.	7
8	NEW	MANCHESTER UNITED <i>Krisalis</i>	19.99	May 1990	Management and match with superb digitised pictures of the team. Not just for those with the red and white scarves. A fine game.	9
9	5	CHASE HQ <i>Ocean</i>	19.99	March 1990	Out Run in a new suit, but far better. Similar in graphics and style, your Porsche chases the villains across America.	9
10	6	BATMAN – THE MOVIE <i>Ocean</i>	19.99	Feb 1990	Beautiful graphics and superb use of linking screens. Certainly one of the best film conversions ever. Atmospheric, brilliant.	8
11	1	CHAOS STRIKES BACK <i>Mirrorsoft</i>	24.99	April 1990	So you thought you had mastered the dungeon? Well FTL has a few surprises in store for you. Well worth the sleepless nights.	9
12	NEW	SAS COMBAT <i>Code Masters</i>	4.99	June 1990	Who Dares Wins – and who doesn't when all you have to lose is £5. So don the beret and hand grenade and get stuck in.	8
13	9	GHOULS AND GHOSTS <i>US Gold</i>	19.99	Feb 1990	Manages to capture the balance of addictive, unusual and extremely tough gameplay found in the original coin-op. One to look out for.	9
14	3	BOMBER <i>Activision</i>	29.99	Oct 1989	Vektor Grafix's much vaunted multiple polygon simulator. The zoom and alternative views of your aircraft make it special.	9
15	12	EXTRA TIME <i>Anco</i>	9.95	May 1990	If you've already bought Kick Off you might now need a new challenge. So go into extra time with some new playing surfaces.	8
16	NEW	NINJA WARRIORS <i>Virgin</i>	19.99	Feb 1990	You can now stop waiting for a good martial arts game on the ST. A superb arcade game conversion to return to again and again.	8
17	10	HARD DRIVIN' <i>Domark</i>	19.99	Jan 1990	Will meld itself to your abilities. The harder you drive, the greater the thrill, and the simulator makes for exciting driving.	9
18	20	TREASURE ISLAND DIZZY <i>CodeMasters</i>	4.99	*	Remember Dizzy? If so and you would like to renew your acquaintance, here's your chance. He's had a recent facelift, too.	6
19	NEW	SUPERCARS <i>Gremlin</i>	19.99	*	Another working of an old theme. Nicely done and if you are smitten by the driving bug you won't be disappointed.	7
20	NEW	PROHIBITION <i>Smash 16</i>	4.99	June 1987	Set in '20s America, you must shoot the hoods before they get you. Quick responses and a good eye needed.	9

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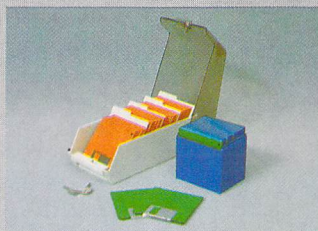
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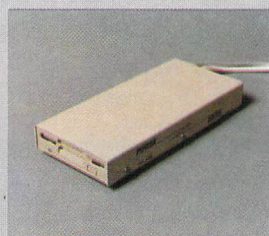
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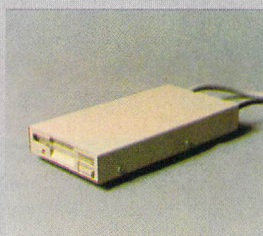


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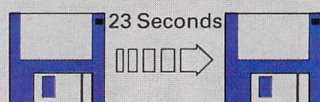
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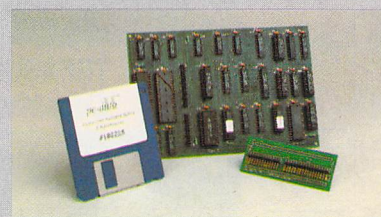


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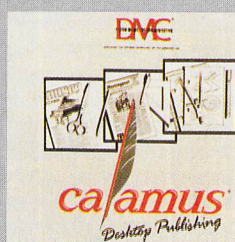


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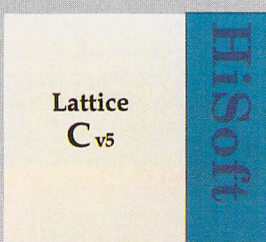
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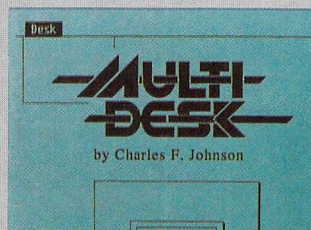
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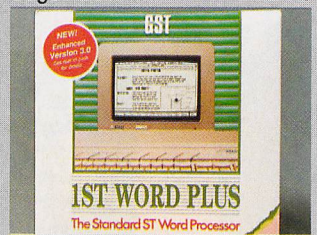
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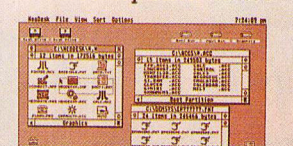
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BEATING 'EM

Combat games enjoy an almost cult following on the ST. Here Anthony Houghton presents a round-up of the best games on offer

BEAT-'em-ups are often the focal genre for people's negative views about computer games. They claim that they encourage mindless violence, mental corruption and desensitisation. Anyone who has played a beat-'em-up will tell you that it's more a case of good fun, a test of skill and reactions, a situation where you're dealing with the unpredictable.

The ST initially posed a problem in home computer beat-'em-up history since it offered the processing power to create ever more graphic depictions of violence – most people ignore the fact that coin-op

graphics are often far more explicit.

But even the ST doesn't go very far: The most offensive moments a beat-'em-up has attained are found in the decapitation scene of Palace's *Barbarian* – in context, hardly a video nasty.

Most kick and punch games are limited to 16 moves, for the simple reason that the joystick only has eight directions and a fire button – which doubles up the movement capability.

They are, in fact, quite limited in what they can do. Far from stimulating the imagination to acts of aggression, they reduce it to concentrating on specific skills.

The elements that make a good beat-'em-up are diverse. The most important for the solo player is the computer intelligence level: Having an opponent that is too easy to defeat – as did *Street Fighter* – quickly becomes a boring waste of money.

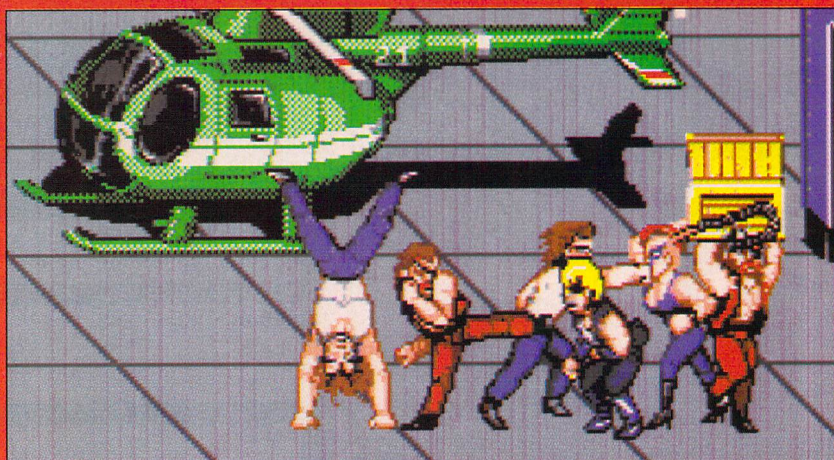
The choice of screen display is also important. If a game just presents two opponents fighting each other, then a single screen display is best, as in *Barbarian*. If there is some greater aim than just defeating a single enemy, as in *Double Dragon*, *Shinobi* or *Dragon Ninja*, a stage-by-stage scrolling scenario is chosen. If the beat-'em-up elements are contained within the wider framework of an arcade adventure, as with *Batman*, a flick-screen map is often the result.

To some extent the choice of one or two-player modes relies on this screen display, and there's no point in having a two-player combat option when the aim is to defeat a common enemy. By the same rules, a game such as *IK+* needs a choice of two players because its format is quite limited. Once the human player has defeated all the computer opponents, the game becomes boring without the spice of an unpredictable second human opponent.

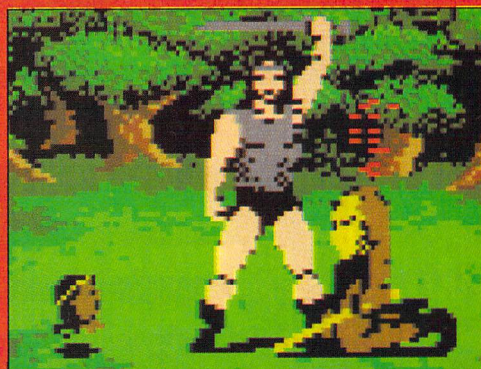
Visual and aural presentation are also vital in generating the correct atmosphere. Spitting Image would be useless without the cartoon-style graphics, *Barbarian* wouldn't be the same without the blood and sampled effects.

Sprite movement has to look, feel and sound natural – as a result sound effects tend to be minimal, sometimes reinforced by a suitable tune.

Again it's often dictated by the



Move like a butterfly sting like a bee in *Double Dragon II*



Stitch that! *Barbarian II*'s gory beheading scene



UP INTO THE '90s

size and purpose of the game. If there is only one screen, programmers have the memory space to make sprites large, well animated and natural sounding. If the game is larger and more progressive, the character size shrinks, the moves become more limited and the sound effects suffer for the cause of wider variety.

The number of blows/hits punches a character can take is similarly crucial. Programmers have developed various systems of keeping players in the game without making the action dull. IK+ uses the system of players spending time recovering before they can continue, and eliminates the

fighter with the lowest score. Vigilante has an energy bar, Psygnosis' Barbarian gives you lives which are lost when you're injured.

The better games rely on a gradual loss of energy, and don't force you to die at the first blow.

Finally, a lot of kicking games rely on a goal to provide extra incentive. The beat-'em-up is a male-dominated genre, so often this goal is related to rescuing a princess (Barbarian) or a helpless female (Vigilante). But there's also the achievement of acquiring higher grades of belt (IK+), or even attaining enough skill level to enter a competition in the first place (Chambers of Shaolin).

As more beat-'em-ups appear, it seems as if there isn't much room for development. Really nothing has improved on Palace's Barbarian in the single-screen format or on Dragon Ninja for the multi-screen version.

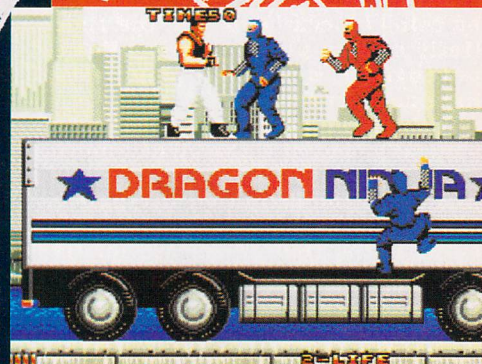
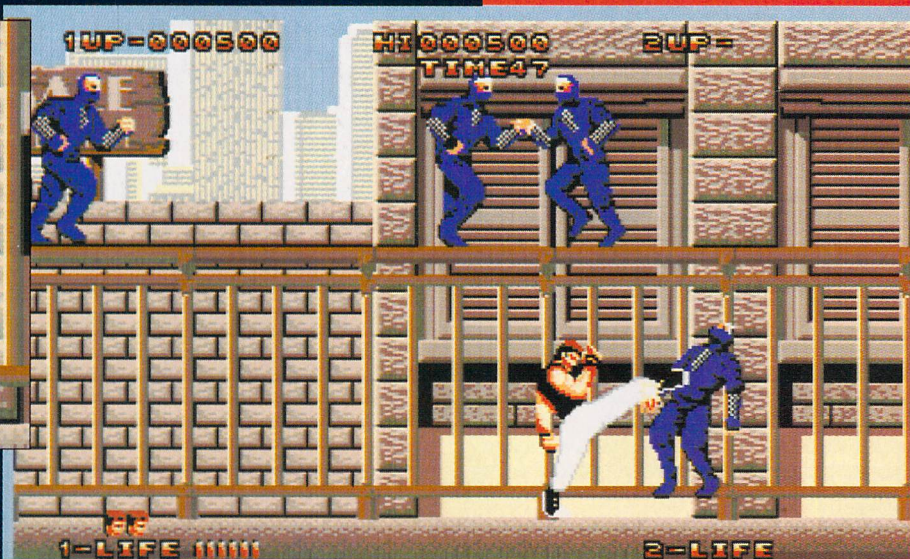
However, games are becoming more cosmopolitan, and you can find elements of beat-'em-ups springing up as part of other genres - for example, in Batman and Dynamite Dux.

There is plenty of room for experimentation, as little has been made of a character using a variety of weapons, no one has tried a beat-'em-up viewed from the first person perspective, no game has really tried to expand the number of moves beyond 16, by having different moves in different situations.

Barbarian was one of the first ever 16 bit beat-'em-ups, and it contained an experiment which has never been repeated - using a mouse to control



Taste the leather on these new Doc Martens: Fast and furious action in Dragon Ninja



Keep your balance on top of the moving wagon while beating up the enemy

movement. The push-scroll environment and long movement buffer didn't do much for the gameplay side, but the direction control via icons was an interesting idea which hasn't been repeated.

Maybe someone will come along with a fresh idea and do for beat-'em-ups what Nemesis did for blasters and Kick Off for football games?

Putting the boot in

Which beat-'em-up gives you more kicks than the rest? You could argue that Palace's Barbarian is the best action game because of its excellent design.

At any moment a player can win by using a neck chop, and the time limit of two-player mode allows potentially weakened players to fight another round.

It's not the prettiest nor the best sonically, but it's fun. What more could you want from a game? It is just about the definitive alternative beat-'em-up, but was widely criticised at the time of release for its goriness and its advertising campaign, which featured a scantily-clad Maria Whittaker.

This is a shame, since both views disregarded the quality of its gameplay: Fast action, superb one-on-one combat, neat animation, but some tacky backdrops and excellent sound effects. It's also remarkable because it broke the mould of standard oriental beat-'em-ups.

In recompense for the assumed sexism of the prequel, Palace produced a male/female fighter option second time around in Barbarian II. It improved on the original in several ways.

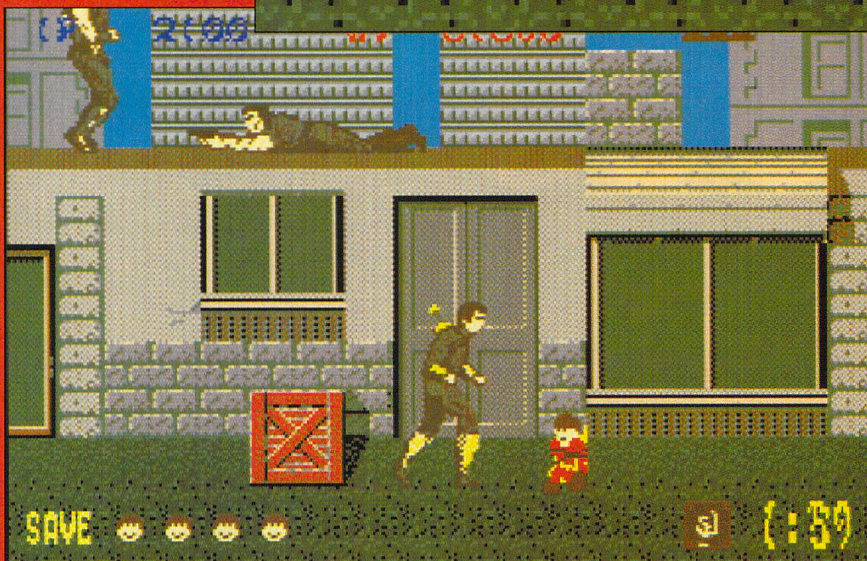
There's a whole host of different and original monsters to combat (very few games have ever featured monsters as opponents), culminating in a couple of spectacularly huge end-of-game opponents.

It also contained some brilliantly imagined sequences like leaping over a pit only to be snapped up by a set of jaws, or teetering on the edge of a hole and having to wobble the joystick to retain balance.

Some of the enemies were a little predictable, and the game as a whole was limited in scope, but it remains one of the most addictive beat-'em-ups going.

System 3's beautifully drawn single-screen karate game IK+ maintains a permanent computer opponent on the playfield. There are always three fighters, two of which can be human controlled. Every third bout a bonus screen appears that either has the player deflecting balls of variable bounce

Rescue the children held as hostages in Shinobi



with a shield or kicking bombs which are about to explode off screen.

It has a wide variety of moves and much better staying power than most. Extra options include a silly fast mode, the ability to remove the players' trousers and excellent presentation.

One of the best coin-op conversions around, Ocean's Dragon Ninja, is set in a scrolling environment over many levels. The opponents include four types of dastardly star-throwing ninja assassins, some pretty tough guard dogs and acrobatic women.

As if this isn't enough, at the end of each level there's a massive, superhuman opponent, including a larger-than-average Ninja in armour

and a fire-breathing fatty. You've also got to watch out where you're going on some levels - so there's plenty to keep any fan busy.

Programmed by the German software house, Thalion, Chambers of Shaolin is distinctly divided into two sections - training and combat. This split creates a genuine sense of achievement, in that the character you enter for the fight is someone you've sweated with during the learning process.

In addition to the usual punches you've got specialist moves such as the Tigerclaw and splits, and the colour of your belt is determined by the success of your training. The main sprite animation isn't fantastic, but the game has a style and sense of humour all its own.

It came as no surprise to see the ST dominate this year's Frankfurt Music Fair – it probably outnumbered all the other computers put together. All the major music software developers were showing new products along with many French and German companies looking for a UK distributor.

The news from C-Lab (distributed by Sound Technology) is the imminent release of three new educational programs. Aura, costing approximately £70, plays a series of rhythms and pitches which you have to copy. Midia, around £40, is a Midi tester/monitor program with which you can test your Midi system. It also allows you to create and record Midi data into a sequencer.

Notator Alpha, around £170, has most of the features of Notator but fewer real-time recording facilities. Although aimed at education, it could be a very attractive package for anyone wanting scorewriting facilities, although it is limited to four staves.

Version three of Notator is nearing completion and includes graphic editing of controller data and an adaptive groove design feature which intelligently corrects a musical passage according to its context.

Also new are the Polyframe editor/librarian modules, including one for Yamaha's new mega SY77 synth. The librarians can store voice data from different machines and manufacturers within one library. Screen updates are incredibly fast.

Digidesign is porting its Soundtools digital recording and editing system to the ST. This allows the storage of audio information such as a vocal track onto disc. There were rumours of a tie-in between Digidesign and C-Lab which may result in Soundtools being available within Notator. That would allow you to record and playback all acoustic tracks from the one program.

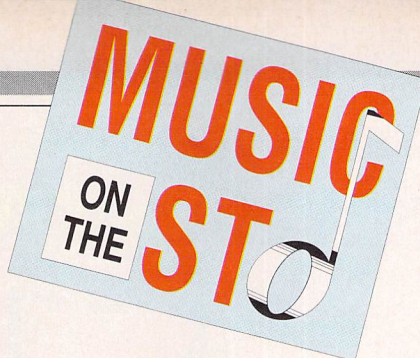
Steinberg's mega sequencer Cubase – distributed by Evenlode Soundworks – has been updated. Version two's new facilities include scorewriting with support for all popular printers including the Atari laser printer. It also has a feature called Interactive Phrase Synthesiser (IPS) which lets you process music phrases using functions such as scale correction, pitch and rhythm modulation.

A new release from Steinberg is Cubeat an entry level budget version of Cubase for users who don't need such a wide range of facilities. It is fully compatible with M.ROS and is expected to sell for £285.

Like C-Lab, Steinberg, too, is preparing an editor for Yamaha's new SY77. It is expected to cost £165.

Roland is one of the few major musical instrument companies actively supporting computer-based music and last year saw the release of three Computer Modules based on the successful MT-32 and U-110 instruments.

Now, to support these, Roland is about to release a music program for

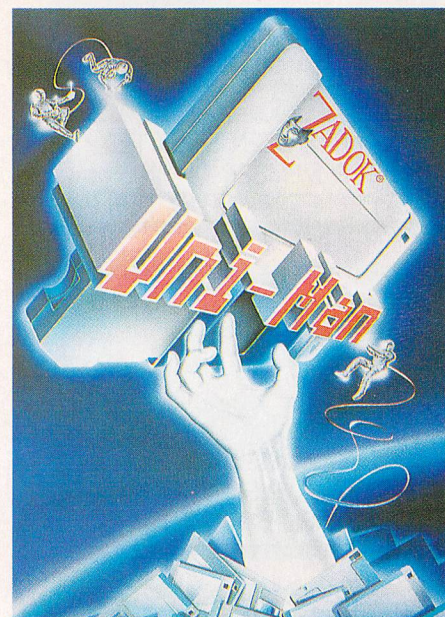


ST hits the top note

Ian Waugh reports from the Frankfurt Music Fair

the ST called Tentrax. The main screen looks like a 10-channel mixing desk complete with pan pots and VU metres with moving needles. It includes a drum edit page and on-screen notation. It is hoped it will sell for less than £100.

Hybrid Arts' EZ-Track Plus now supports the FM Melody Maker cartridge – with no increase in price. You can now make recordings from EZ-



Track's sequencer using the cartridge's sounds and there is also an edit page for tweaking output.

At the opposite end of the market, Hybrid Arts' direct-to-disc digital recording system, ADAP II, has had several software updates including an extended play list, crossfade editing and a Midi performance page.

French company Digigram, distributed in the UK by Soundbits, has updated several programs. Studio 24, for example, now has the ability to accept music lines input with Digigram's MidiMic, a pitch to Midi converter.

More interesting was version two of Big Band, Big Band Plus. This will add an auto accompaniment section to your melody line, a melody line to your chord sequence or, left to its own devices, it will compose both melody and accompaniment.

Big Band Plus now includes real-time and step-time recording, the editing of notes in notation form, interactive mixing and Midi synchronisation. It also lets you load in new musical styles which will be made available on separate discs.

Finally, a foreign program which you will be able to buy in the UK either direct or through a UK distributor, if one emerges, is Uni-Man from Dutch company Zadok.

Now into version two Uni-Man is a universal editor/librarian which looks extremely powerful. It can handle nine banks of sounds and has extensive editing facilities.

You can even define the type of controls you want to use to edit parameters. For example, graphs for envelopes, bars for volume settings or dials for pan position.

A UK price has yet to be fixed, but the equivalent German price converts to about £200.

If any of the continental software producers land a UK distributor, no doubt we will see them at this year's British Music Fair.

Contacts

Sound Technology, 6 Letchworth Business Centre, Avenue One, Letchworth, Hertfordshire SG6 2HR. Tel: 0462 48000.

Evenlode Soundworks, The Studio, Church Street, Stonesfield, Oxford OX7 2PS. Tel: 099 389 8484.

Roland, Amalgamated Drive, West Cross Centre, Brentford, Middlesex TW8 9EZ. Tel: 081 568 1247.

Hybrid Arts, 24/26 Avenue Mews, Muswell Hill, London N10 3NP. Tel: 01-444 9126/7.

Soundbits Software, 48 Galton Towers, Civic Close, Birmingham B1 2NW. Tel: 021-0233 3440/733 2063.

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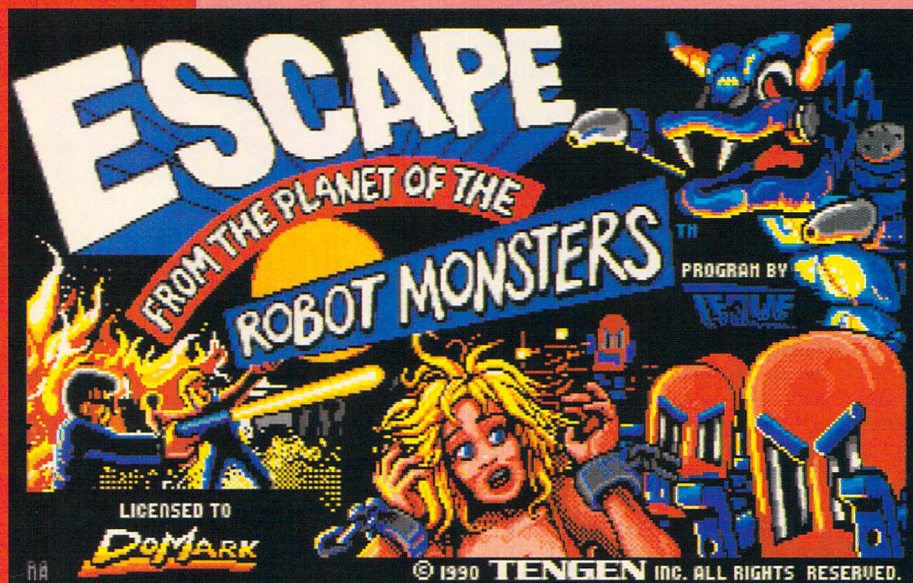


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THRILLS, spills, arcade action and hilariously funny cartoon-like graphics are the trademark of Domark's latest release, *Escape From the Planet of the Robot Monsters*.

Planet X, a synthetic industrial planetoid, has been taken over by the evil mechanical Reptilons. They have enslaved the humans stationed there and are forcing them to create a robot army which the Reptilons will use to attack Earth.

You have been selected as part of an interplanetary SWAT team which sets off for Planet X. You beam down to the

planet's surface either with a friend (in two player mode) or alone.

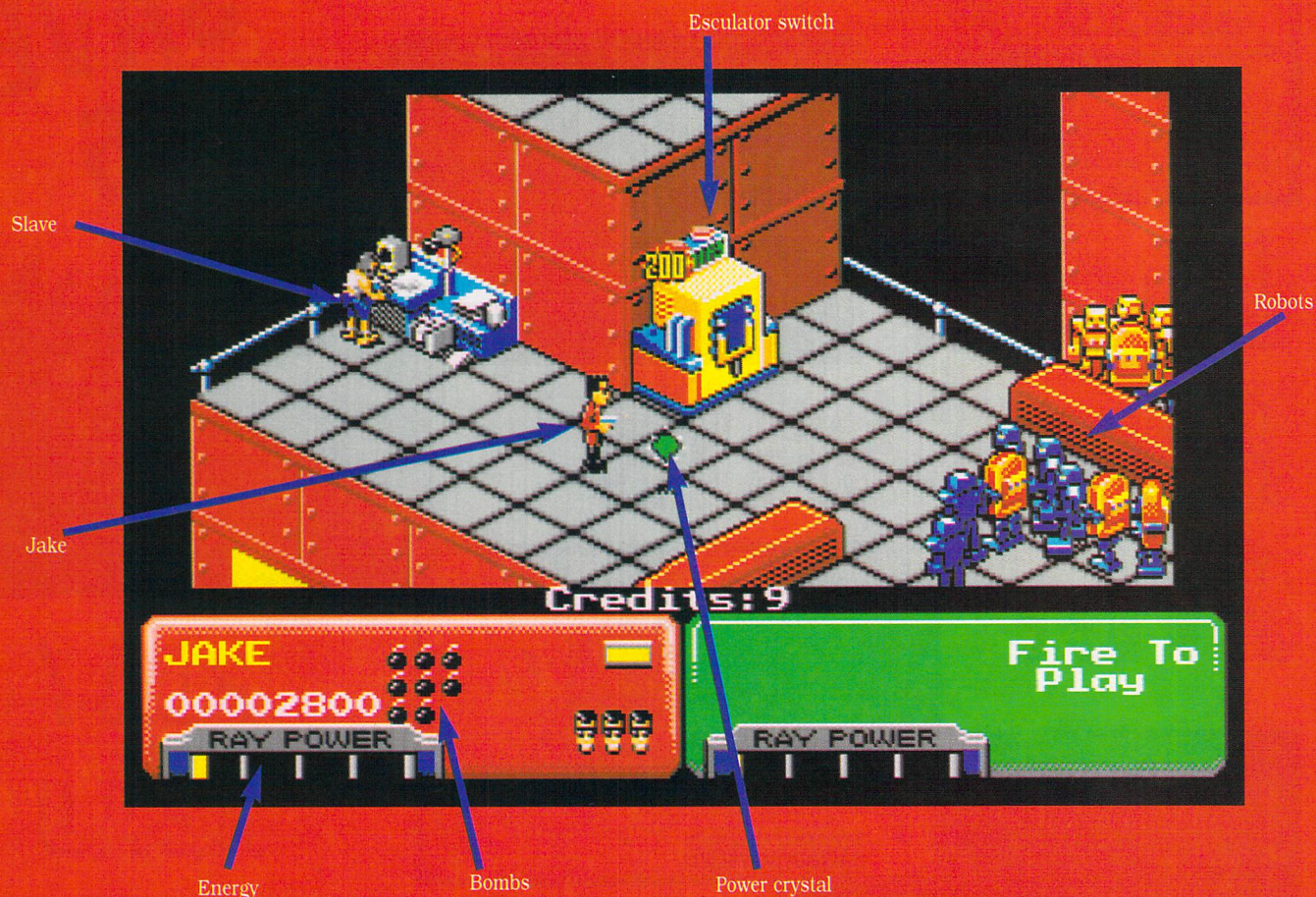
Your aim is to work your way through each of the Reptilon factories rescuing hostages (bumping into them beams them back aboard your ship), destroying the equipment, killing the robot guards and rescuing Professor Sarah Bellum.

The superbly drawn introductory screens tell the story up to the point of entering the first factory.

Armed with a ray gun and a pocketfull of grenades you enter the fray. Shooting or blowing up the robots often produces a green crystal to boost the firepower of your ray gun.

Each factory is spread over several levels and access to each is via ladders or escalators. The latter must first be switched on by locating the power switch.

Around the factories you will



every trip

find lockers and crates. Blast them open as they usually contain something useful, like extra bombs, food, energy or simple slaves waiting to be rescued.

Most slaves can be found tending the robot-making machinery and are easily rescued. Some however, are imprisoned within glass cases. To unlock them you must locate the machine that controls them and blast it with your ray gun.

At the end of each screen you are awarded bonuses for all hostages rescued. Every fourth screen you enter the canal zone in your cyber sled space shuttle and you have 30 seconds to find your way through the maze to the next factory. It's a bonus screen and nothing untoward will happen if you don't make it.

The 3D isometric viewpoint graphics are excellent and the animation superb. Control of

your character takes a bit of getting used to, though after a while it becomes easier to judge angles and directions of fire.

The comical capers of Jake your character and Duke, your partner in a two player game, are fun to watch.

He shakes his head when he bumps into a wall, dangles on the edge of floor levels by his fingertips and clasps his hands over his face in horror when a robot Reptilon zaps him.

Domark has come up with a sure-fire winner in *Escape From the Planet of the Robot Monsters*.

Buy it - you won't be disappointed.

Roland Waddilove

Sound	7
Graphics	10
Playability	10
Value for money	10
Overall	9

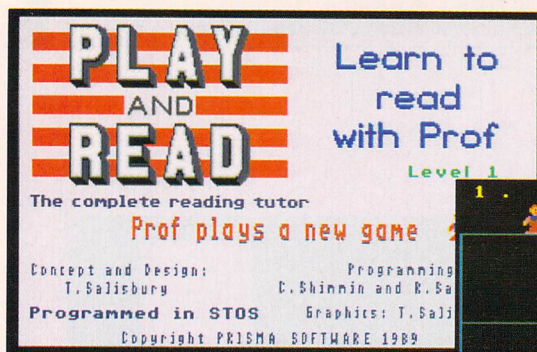


What a way to go - skewered on a pair of spikes!

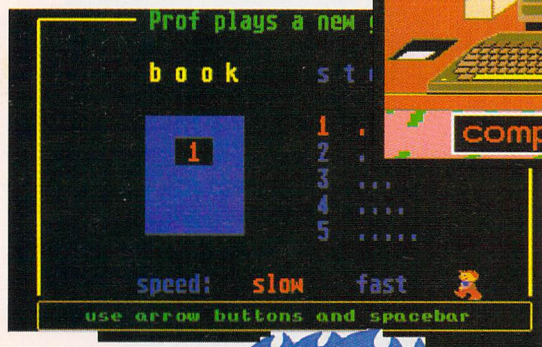
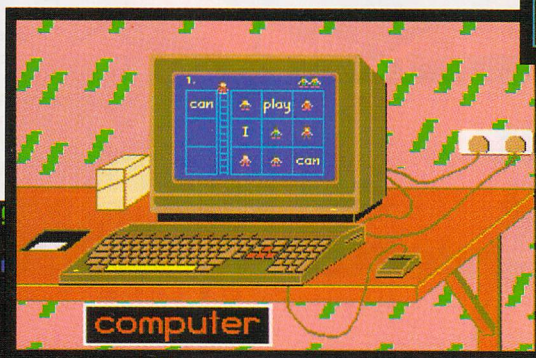
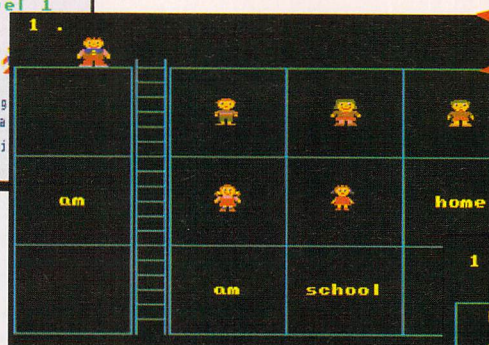
SECOND SIGHT

Escape is a brilliantly conceived and programmed arcade game that is likely to top the software sales charts the day it is released. The gameplay is addictive, the graphics are clear and well drawn and the cartoon-like capers are quite amusing.

Julie Boswell.



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Arrival of the aliens

Product: Xenomorph
 Price: £29.95
 Supplier: Pandora, Mercury
 House, Calleva Park,
 Aldermaston RG7 4QW.
 Tel: 07356 71145

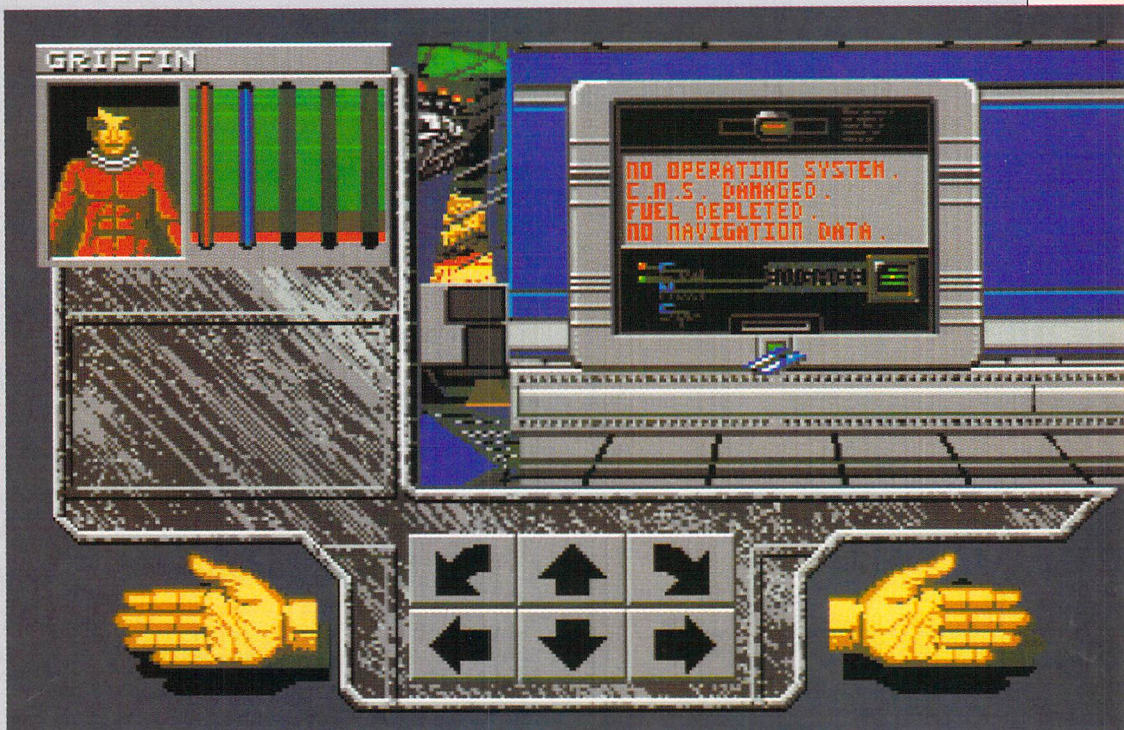
HORROR stories have often been told about the perils of travelling in hyperspace. Aside from the dangers of encountering ghost ships, there is also the fear that something might go wrong with your deep freeze.

In the realm of interstellar travel, such a failure could cost you your life, for we are talking cryogenic freezing here. Your problem in Pandora's Xenomorph, however, is a little stranger than either of these.

On a standard, two year supply trip to an outpost around Sirius B, your cargo pod fails to emerge from hyperspace, the resulting power surge nearly destroying your ship's computing services, and damaging a fair amount of electronics.

Nursing the near-crippled cargo ship, you make it to your destination, an Essen mining station. It seems oddly quiet as you approach, and there are no people around when you disembark. Something has happened – something to do with a shape-changing alien.

Xenomorph is an impressive game, with icons used to good effect throughout, but it is very slow to start – I played for three hours without seeing any



Accessing the computer terminal will provide you with useful information

sign of the alien. The graphics – seen from the first person perspective – are extremely effective in conjuring up an Alien (the film) type atmosphere as you explore both your own ship and the Essen base, which is patrolled by guardian robots which do not seem overly keen on your presence there.

Strewn around the base are various computer discs, the contents of which can be read at any convenient terminal,

and which consistently hint at an attack of some sort. Picture the colony on Acheron in Aliens and you will have some idea of the style of game.

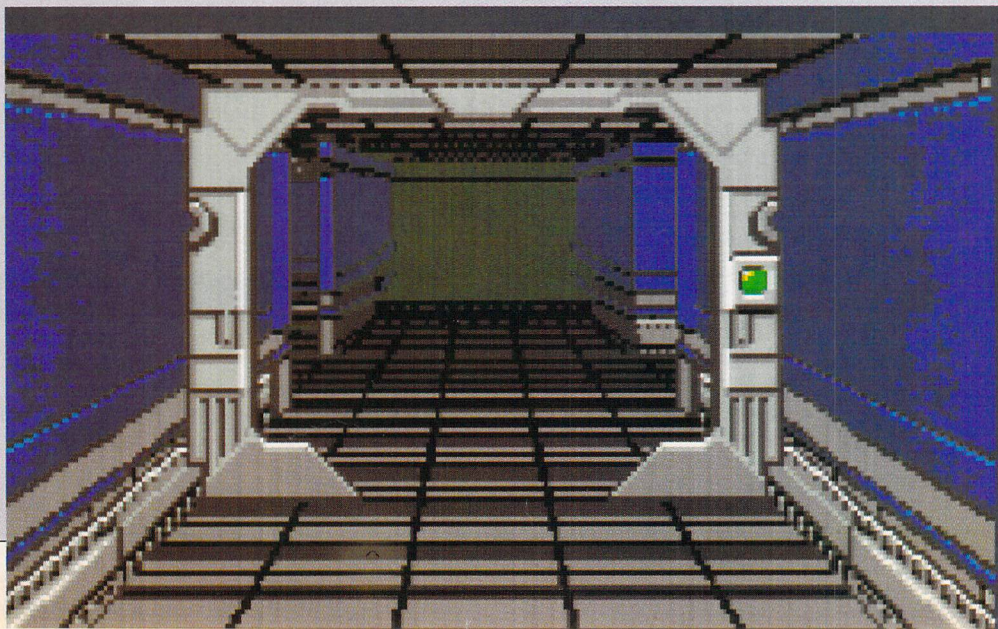
Xenomorph is excellent and the aliens – when they finally appear – are hostile in the extreme, and in line with the rest of the game's graphics, are supremely well drawn.

An excellent game, with little to hold against it, except the annoying and intrusive

need for changing discs twice every time you climb a ladder. This detracts from an otherwise wonderful presentation. The best implementation of the Aliens scenario I have seen on any computer.

Roy Stead

Sound	7
Graphics	8
Playability	9
Value for Money	8
Overall	9



SECOND Sight

Xenomorph is an excellent Aliens type combined adventure and strategy game. Unfortunately, it is slow to start, but if you can persevere with the dull beginning you will discover it's a real gem.

Mike Rowe

It's easy to get lost in the maze of tunnels – there could be an alien around the next corner.

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SECOND Sight

Klax is a simple game, which didn't really stimulate my old brain cells enough with its dull, repetitive gameplay. Stacking up tiles is best left to four-year-olds. I need a bit more action.

Julie Boswel

ones on level three, gain 10,000 points on level four, survive 40 tiles on the next level and so on, with each level bringing a new challenge.

Like Tetris, the gameplay is very simple, but it can easily become quite addictive. My only minor complaint was that the viewpoint made the stack of tiles at the bottom screen quite difficult to see clearly.

If you liked Tetris, Klax will instantly appeal to you. However, if you like an arcade game with more to do than simply stacking up coloured tiles I suggest you look elsewhere.

Roland Waddilove

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

Flipping tiles

Product: Klax
Price: £19.95
Supplier: Domark, Ferry House, 51-57 Lacy Road, Putney, London SW15 1PR.
Tel: 01-780 2224

FREQUENTLY computer games are merely conversions of successful arcade games, but Domark's Klax breaks the mould in that it has been developed at the same pace as

the arcade version, and both are to be released at the same time.

Vaguely reminiscent of Tetris, Klax involves stacking up piles of coloured tiles that flip head over heels out of the screen towards you in a pseudo 3D view display. You have a paddle with which to catch them and they can be stacked up at the bottom of the screen.

You can also flip them back into the screen, or temporarily stack them on the paddle to

give you breathing space until you decide where it is best to place them. A line of three identically coloured tiles is called a Klax and you have to create three Klaxes to complete the first level. Horizontal, vertical and diagonal Klaxes may be made, but diagonal ones are more difficult. Having made a Klax, the three tiles disappear to allow room for more tiles to be stacked up.

You make five Klaxes on level two and three diagonal

QUICK PEEK

Paris - Dakar 90

Tomahawk/Active Sales (01-384 2701)

WELL sports fans, here we are at the start of the 1990 Paris - Dakar rally, probably the most arduous and dangerous motor race that you're ever likely to enter.

Lining up against eight decidedly foreign-sounding opponents you must first decide in which of the three classes of vehicle you wish to compete.

Cars range from slow and sturdy to fast and fragile, with handling characteristics to match - the choice is yours.

Race stages are of two varieties. The first is a sprint along a set route bordered by small rocks. Stage two is rather more unusual.

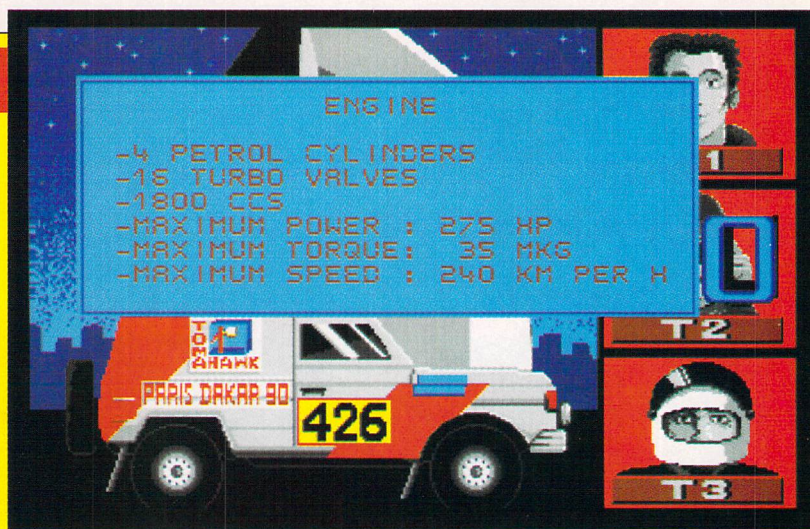
A small on-screen map shows you where you must drive to, but with no fixed course. It therefore consists of a high speed dash between rocks, trees and oil drums, as you attempt to navigate the shortest route between the two points.

Sand dunes have been included to add an interesting vertical dimension to the landscape. Your car landing with a worrying crunch as you leap them with excessive verve.

Apart from the ability to recover from skids, car control is very limited. Of the current crop of racing games this must be the only one which lacks a gearbox.

In many ways Paris - Dakar 90 is similar to Mandarin's Lombard RAC Rally, but lacks Lombard's varied scenery.

Jon Revis



Equip your car for the rally then set off across the Sahara for Dakar. The map shows your route, it's easy to become lost



Product: *The Krystal*
 Price: £24.95
 Supplier: Prism, Unit 1,
 Baird Road, Enfield,
 Middlesex EN1 1SJ.
 Tel: 01-234 5678

INCREDIBLE though it may seem, Atari ST User first previewed *The Krystal* from Prism a year and a half ago. While Amiga owners have had the chance to play the game for over a year, it has taken until now to complete the ST version.

The main reason for the delay was that the original programmer had a breakdown and the game had to be recoded from scratch. This has had two noticeable effects – one is that you now get true sideways scrolling instead of the ghastly flip screen effect first used, and that the backgrounds have been reduced to six colours only.

Surprisingly the loss of colour from the attractive but occasionally gaudy scenery is virtually unnoticeable, thanks to some imaginative and clever shading, giving the illusion of there being far more colours than there actually are.

Time dims the memory so you've probably forgotten that you play the part of Dancis Frake, who wakes up in a park bereft of his memory. Unknown to you at the time, the great *Krystal* of Konos has been stolen, and it's going to be your job to find it.

First, however, wander from the park into the city, and to an audience with the Kring. If you're already wincing at the spellings be warned, that it gets worse.

The full flavour of Rodney Wyatt and Mike Sutin's original '70s stage show has been repro-



You play the part of Dancis Frake – and you have lost memory

Long time, no see

duced in the game. Thus you can look forward to confronting the Akes, your mortal enemies. Ask anyone about the Akes and they will describe them as a pain. The boss of the Akes is naturally the Head Ake.

Anyway, as the stomping Dancis you set off into the city to find out what on Meltoca is happening. Another little innovation in the gameplay is that although you can't see certain objects on the screen, they will flash in an inventory panel when you pass them by.

You should pick up everything you find, and then you can have a lot of fun sorting out the red herrings. Your first chance to talk to a human is the buxom flower seller in the plaza, so press F1 to load the parser and get talking.

You should beware of using the odd naughty word because they cost you psychic points, and you'll need more than 30 for a final confrontation at the end. You'll also need plenty of skringles – what passes for currency, though it sounds like a painful ailment – and strength.

You can build up your strength by eating and winning sword fights, which less talented gamers will be happy to learn, have been made easier. Before long you should find yourself in the palace, being greeted by Nedrod of the Two Bones, who is Gru to Kring Narta.

Some important information can be had from the Gru, but he will only answer a limited number of questions before thrusting you before the Kring. The upshot is that the Kring's daughter is going to marry an absolute boulder by the name of Ffin Shadok, but you, if you find and recover the *Krystal* of Konos, can claim her hand and the rumpy pumpky rights.

After seeing the Kring you meet your would be bed partner, and she is indeed fair of face.

The Princess will give you a very valuable object if you say the right thing, so don't offend her.

Then it's off into space, to face space battles and the start of the quest.

There are many planets to

visit, and you can do so in almost any order, which lets you see some of the glorious scenery without actually solving anything. Going to places without being in possession of certain artifacts or knowledge can be both fruitless and fatal. For instance, the planet with volcanoes and lava flows is one to avoid until you have protection.

It has taken a long time for the ST version of *The Krystal* to arrive, but now it has you'll find the combination of tasty graphics, humorous character interaction, and the occasional spot of joystick waggling a real treat.

Expect to still be playing in a couple of months time, because with four discs worth, you're getting both value for money and an epic quest to savour.

Duncan Evans

Sound	7
Graphics	8
Playability	9
Value for money	9
Overall.....	9

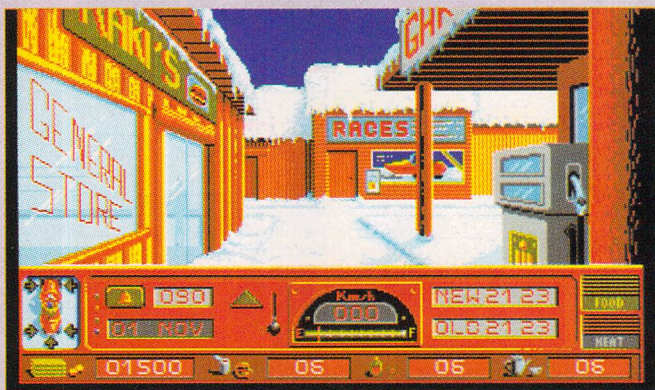


Talking to the other characters can provide help and clues

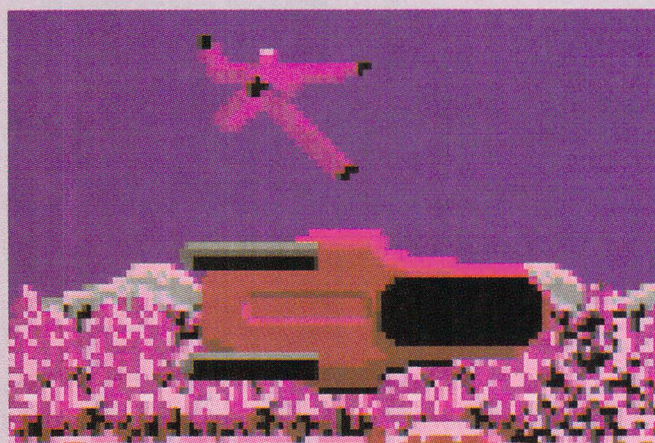
SECOND SIGHT

The Krystal has been a long time in development and there was a danger that it would become outdated long before it was released. Fortunately, however, it still looks fresh and is quite an entertaining game. Good graphics combined with varied gameplay make a professional product.

Roland Waddilove



In town you can buy provisions, fuel and look at the race timetable



You and your Skidoo part company after hitting a snow drift

SECOND Sight

snow on your scooter, hunt caribou and wolves, and enter races. Thoroughly good fun.

There is a lot to do in Skidoo, a simulation of life in north Canada, so you won't easily become bored. Speed over the

Julie Boswell

Skating on thin ice

Product: Skidoo

Price: £19.95

Supplier: Active Sales, Studio Centre, 1 Ranelagh Gardens, London SW6 3PA.

Tel: 01-384 2701

SKIDOO by Tomahawk is an unusual simulation. You live in the frozen wastes of Canada, deep in the Arctic Circle, and your only means of transport is a snow scooter.

The package comes with a map of the north-east territories, showing the towns, plains, mountains, forests and Eskimo igloos. Using this map and your snow scooter's compass you can tour a large part of Canada and visit many towns.

Once in a town you can refuel the snow scooter and get it repaired should you damage it by hitting a snowdrift or log. Food is an essential item, but as a last resort you could stop your snow scooter and go hunting caribou. Catch a wolf and you can sell its fur for money which can be spent

in the towns. Also in the towns are posters giving details of snow scooter races.

You must then travel to the towns holding the races and time your arrival to coincide with the day before race day. You can then enter the race and pit your skills against computer driven competitors.

The graphics are excellent, with plenty of 3D action as you speed through the frozen wastes. The lower quarter of the screen shows the dashboard of your scooter, which provides information on compass bearing, date, damage, food reserves, petrol, spirits, speed and position.

The sound effects are minimal and the music accompanying the introduction isn't too good. However, the game is interesting, challenging and good fun to play. It is nice to see an original game.

Roland Waddilove

Sound.....	5
Graphics	8
Playability	8
Value for money	7
Overall	7

QUICK PEEK

Pipe Mania

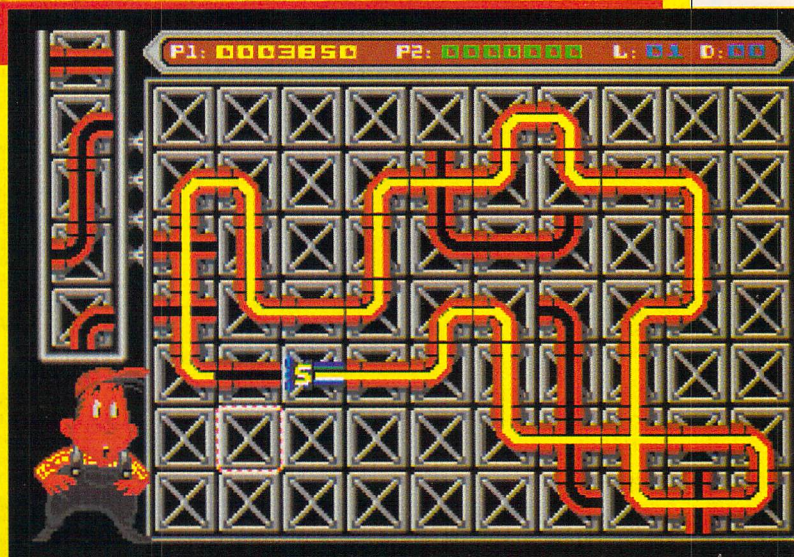
Empire (0268 541126)

PIPE Mania is one of those simple, yet infuriatingly, frustrating and addictive games that you just can't put down. It's not new game - Empire first previewed it at around a year ago, but has only now decided to release it.

The screen forms a grid on which you place sections of pipe using a cursor controlled by the joystick. There are horizontal and vertical pieces, right angle bends and cross pieces which can be connected to form one long pipe. Water flows from the start (tap) and you have to see that it flows for as long as possible before reaching the end of the pipe.

The problem is that the computer hands you each section of pipe at random - you can see what's next by looking at the pile of pipe sections on the left-hand side of the screen. You might want a left-hand bend, but you are given a right handed one. The pipe section must be placed somewhere on the screen, so by planning ahead you can decide where to put the right-hand bend.

The water starts flowing after just a few seconds pipe laying and then the pressure mounts. Wrong pieces come thick and fast and you sweat and panic as you try to find a use for them. Pipe Mania proves



the old advice of "Keep it simple". A good basic idea will sell more games than fancy graphics and intricate gameplay.

Recommended

Roland Waddilove

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Guardian - "It seemed to work
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- Thursday, 6th Oct 1989

ST Format - "A hard act to
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- Nov 1989

ST World - "It took Germany by
storm"

- Nov 1989

Popular Computing Weekly -
"PC speed is capable of out
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SEE REVIEW IN THIS MONTH'S ISSUES

SECOND Sight

If Pursuit to Earth was a budget shoot-'em-up then I would wholeheartedly recommend it. However, as a full price game it doesn't measure up to its competitors - Xenon II, R-Type, Blood Money and the rest. Wait for it to come out on a budget label.

Roland Waddilove

The PURSUIT TO EARTH

Slow coach encounter

Product: Pursuit to Earth
Price: £19.95
Supplier: Exocet,
14 Langton Way, London,
SE3 7TL.
Tel: 01-985 7232

IN Exocet's latest game, Pursuit to Earth, you are once again the only person capable of saving mankind from an approaching alien invasion fleet.

A new powerful weapon has been developed at the Pluto Research Base which will increase Earth's chance of killing off all the invaders, letting us live peacefully until the next shoot-'em-up is released.

With your spaceship fitted out with the latest in space armoury you have the job of delivering the new super weapon to Earth.

On the way you'll encounter wave upon wave of enemy fighters. You can only travel in a circular motion around the screen and it took a while to get used to the controls, but after some practice I found it easy to handle.

You blast the opposition and

You've been hit! Never mind, next time you'll wipe that silly grin off their alien faces.

dodge their fire.

Energy pods in the form of blue and red bubbles occasionally float across the screen and should be collected if possible to give you extra features.

By collecting the required number of pods you can have increased weaponry, missiles, beamers, bursts, shields or buddies.

All of these options are quite straightforward. Beamers fire a

group of shots, a burst is a shot that on contact with an alien will split into two more bursts, and a buddy lets an extra player into the game who will be on screen at the same time as you.

You start off with three ships and lose one whenever you are hit by enemy fire.

The graphics are quite ordinary, with the viewpoint just behind your ship as it flies into

the screen, and the action slowed down considerably when there were many sprites onscreen. There isn't any music, just shooting and explosions sound effects.

The price isn't going to add to the Chancellor's inflation rate worries, but it's questionable whether you'll want to spend £20 on such an unoriginal game.

The circular motion of the craft is unusual, but if you are looking for a good shoot-'em-up then shop around, as there are much better variations on this theme.

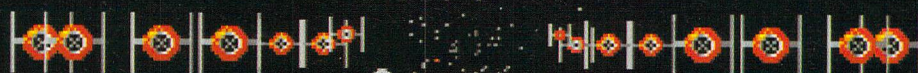
John Butters

Sound.....	4
Graphics.....	6
Playability.....	6
Value for money.....	7
Overall.....	6

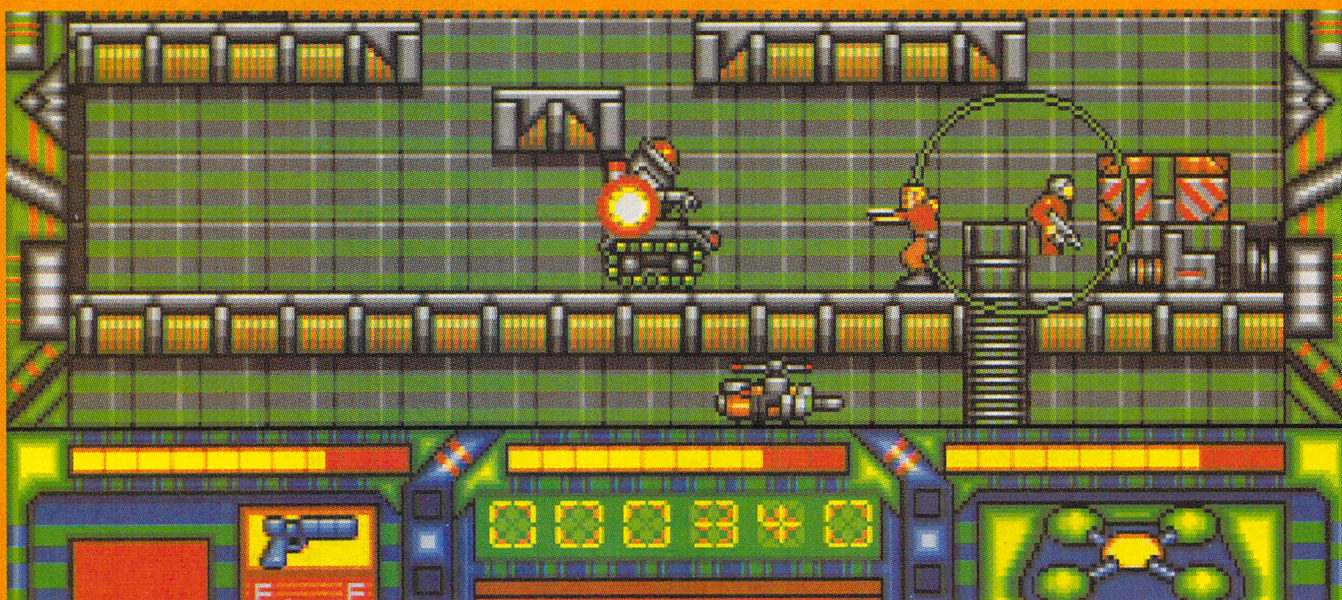
SCORE: 00003400

WAVE: 01

[A] : 02



SPE NTRA MISSILE BEAMER BURST SHIELD BUDDY



Stryx is tough – here you're being attacked from all sides

\$6,000,000 man

Product: Stryx
Price: £19.99
Supplier: Psygnosis, 122
 Century Buildings, Tower
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 ness Park, Liverpool L3
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Tel: 051-709 5755

PSYGNOSIS can always be relied upon to produce a cracking good game, and Stryx is no exception. The opening animated graphic screens are very impressive and serve to brief you on your mission. In a nutshell, Earth has been devastated by war and the only hospitable places are four huge domes encasing four cities. The domes, which are linked to each other by travel tubes, consist of a series of platforms which can be accessed by lifts, tunnels and ladders.

Deep beneath the domes is the hive, where energy crystals are mined to fuel the city. Cyborg robots do this manual labour and the rulers, terrified of a revolt, have imposed a lifespan of just a few years upon them.

The Lifeforce – the termination system – is controlled by four keys, but these have been stolen by the cyborgs and they're now on the rampage, determined to wipe out humanity.

You are Stryx, half man, half robot, and your mission is to locate and destroy the cyborgs then recover the keys and decode the machine to kill the rebels.

The game is basically ladders and levels, but the action is fast and furious right from the start. Before you even take a step you must pick up the laser pistol at your feet. There are more weapons to be found, such as grenades and bombs, but I constantly found myself short of fire-power.

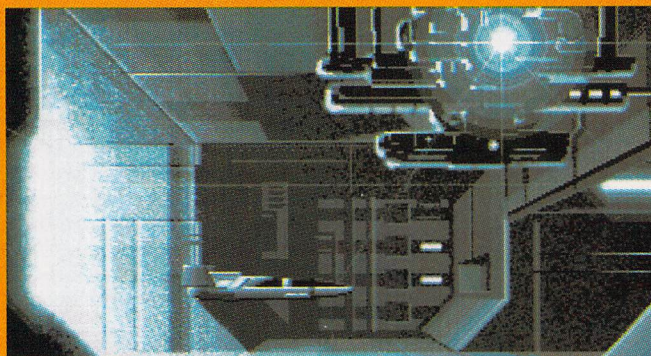
At first you won't live long as you are blasted from all sides by cyborgs and robots. However, with practice you can develop techniques for dodging their bullets, crouching down when they fire and springing up, shooting from the hip when their bullets have zipped by. Also try luring robots to the foot or top of a ladder, then stand above or below to shoot them. Good sportsmanlike stuff.

The graphics are clear and well drawn and Stryx has a wide variety of movements and his animation is quite good. The music is fast paced and keeps up the tension, but thankfully is turned off during the game leaving just the sound effects. Stryx is a difficult challenge for experienced arcade game players.

Keep a stiff upper lip and blast everything in sight. Recommended.

Roland Waddilove

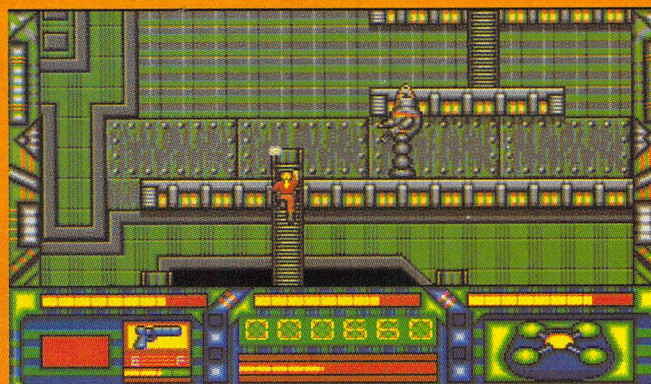
Sound	9
Graphics.....	9
Playability.....	9
Value for money	9
Overall	9



SECOND Sight

The opening graphics are brilliant, so I was a bit disappointed when the game started, revealing completely different graphics. However, the gameplay is exciting and addictive, but also very tough. Recommended for advanced gamers.

Julie Boswell



Lure that robot over the ladder then blast him from below

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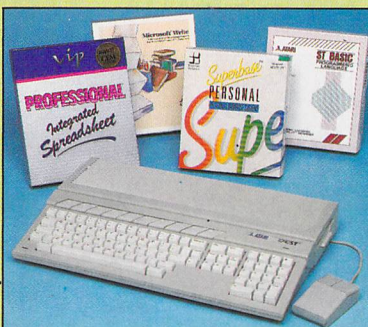
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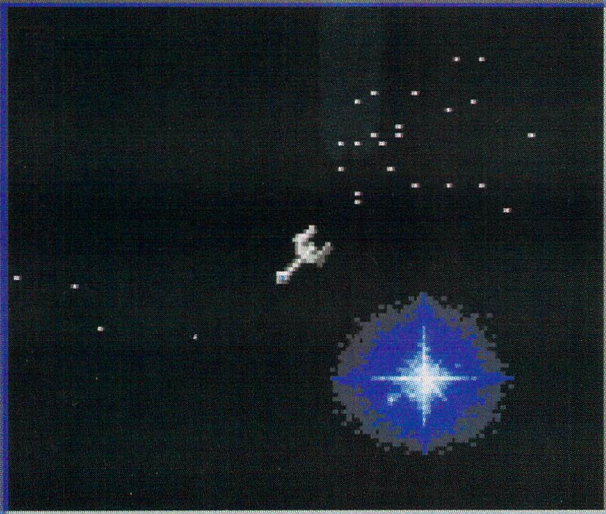
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If you have both played and become Elite, then you're probably looking for new interstellar regions to explore and fresh galaxies to conquer. If this is the case then I heartily recommend that you take a look at

Star Flight by Electronic Arts, as this game will allow you to boldly go where few men have gone before throughout its 270 star and 800 planet universe.

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The early stages of the game are spent exploring nearby systems and following up some of the rumours at Starport. Once you have discovered an interesting planet, you are able to choose what actions you wish to perform by selecting a crew member's name from a menu and utilising his skills.

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ISS WAYNE

CARGO PODS: 16

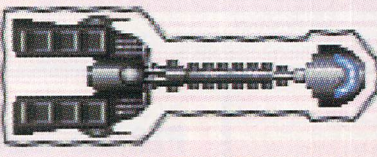
ENGINES: CLASS 5

SHIELDS: CLASS 5

ARMOR: CLASS 5

MISSILES: CLASS 5

LASERS: CLASS 5



MASS: 495 TONS

ACCELERATION: 5 G

ENDURIUM: 88.7 M³

YOUR ACCOUNT BALANCE IS: 322929 MU

Your ship can be enhanced with extra weapons and go faster stripes



Explore brave new worlds

ancient ruins, capture exotic lifeforms and recover valuable minerals.

However, travelling planet-side can be a hazardous business as it is possible to get lost in bad weather, run out of fuel or have some of your crew members killed by lightning.

If you manage to return to your spaceship safely laden with goodies you can return to Starport's trading depot and sell them for a healthy profit.

Then with your new found wealth you can upgrade your ship's offensive and defensive capabilities as well as buy more fuel and cargo pods.

It is here the game enters a new phase as you travel further afield and encounter other alien races.

Although some aliens will immediately open fire upon sighting you, many are friendly and willing to enter into diplomatic negotiations. These conversations can reveal all manner of interesting information which could prove very useful in the long run.

Eventually it becomes clear that you have to save your planet from destruction as some mysterious outside force is rapidly making it unstable and it will soon be torn apart. Once more you set out to explore the vast universe that lies before you and confront the dangers it contains.

There are many similarities between Star flight and Elite.

In my opinion Elite wins hands down in both the areas of graphics and combat, as these are vastly superior to what Starflight has to offer.

On the other hand Starflight has an intricate and enjoyable gaming system that delivers more complex and demanding challenges.

In fact, Starflight has a whole host of features such as planet colonisation, ship repairs, crew recovery, and space continuum fluxes. The best way to find out about all of these features is to buy the game. You won't be disappointed.

Wayne

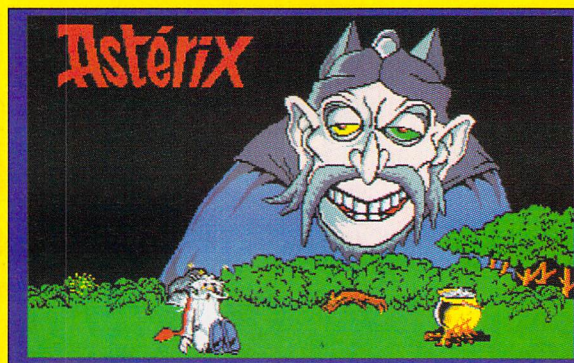
Sound	6
Graphics	7
Playability.....	9
Value For Money	9
Overall	8

SECOND Sight

Starflight is a massive game involving forward planning, strategy, exploration, space battles and conquest. The graphics are good and the sound effects are OK, combining to make an attractive package. Worth considering.

Roland Waddilove

QUICK PEEK



Asterix - Operation Getafix

Active (01-384 2701)

ASTERIX returns to the ST screen for another adventure in Roman occupied France. Obelix threw a menhir - an enchanted stone - at the Romans, but missed and hit Getafix on the head.

Getafix could easily make a potion to cure himself, that is if he hadn't been knocked senseless by Obelix. As it is he can't even remember how to make the magic potion that make the Gauls strong enough to resist the Roman army.

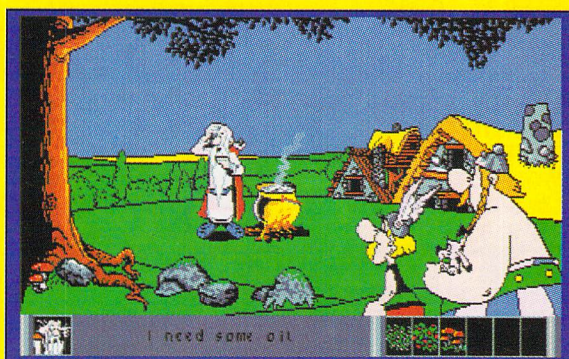
Your task, as Asterix, is to help Getafix make the magic potion to restore his memory. You search for the ingredients in the Gaul village, the surrounding woods and Roman fort, then return to Getafix to make the potion.

Only three ingredients are necessary for the potion so you must experiment with the large number of available items such as oil, mushrooms, strawberries and bay leaves.

You can also catch wild boar, fight with the Romans and play dice, though I couldn't work out how to manage the last activity.

The cartoon graphics are so good that at a glance you could easily mistake the display for the real TV cartoon. The music and sound effects are reasonably good, and the gameplay seems quite challenging for younger or novice players. Worth a look.

Roland Waddilove



Find the ingredients Getafix needs for his potion



Bash that Roman soldier

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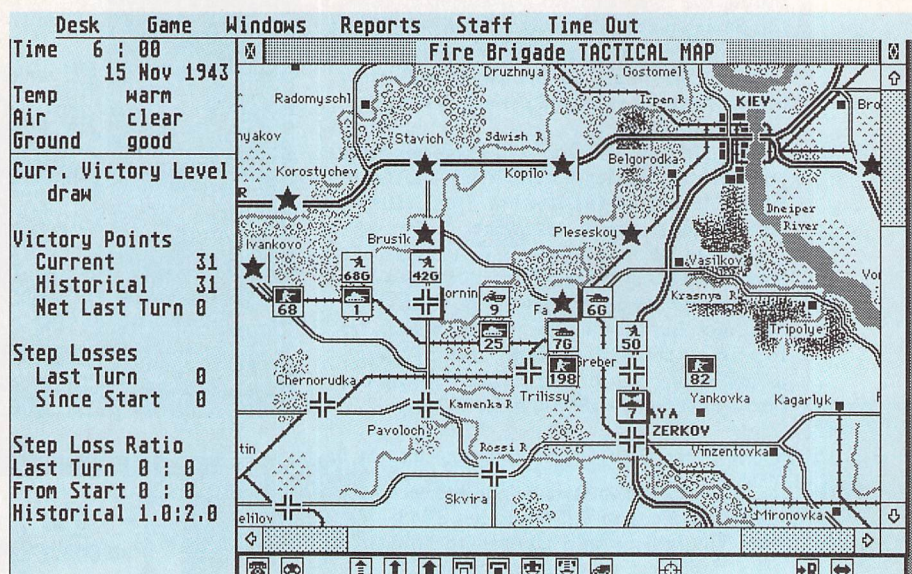
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GREAT VALUE, THAT'S THE MAGIC OF MERLIN

AS dawn broke on November 3, 1943, Russia's General Vatutin unleashed the biggest artillery barrage so far seen on the Eastern Front. The objective was to crush the German defenders screening the bridgehead, storm Kiev and then explore westward to seize the key towns of Korosten, Zhitomir, Berdichev and Fastov. These would cut the vital rail link to Army Group Centre and lay the ground work for a massive envelopment of Army Group South.

It was a bold and ambitious plan, which started very successfully – so successfully that even the cool-headed Manstein began to worry. As Rybalko's tanks headed past a liberated Kiev on November 5 Manstein was pleading with Hitler for the release and commitment of the 48th Panzer Korps, the Fire Brigade.

The battle for Kiev was a torrid affair. Terrible casualties, desperate



Unusually, the game runs on monochrome as well as colour

Manstein's Elite

Paul Rigby reports from the battle for Kiev on the Eastern Front – a new award winning wargame from Mindscape

defence and exhaustion on both sides. The re-enactment of this battle, from Australian software house Panther Games, is named Fire Brigade in appreciation of the 48 Pz Korps' work in countering the Soviet offensives and restoring a semblance of order to Army Group South's bedraggled and extended front.

You may play either the commander of the German Fourth Panzer Army, directing infantry and panzer corps in the battle for the city of Kiev, or you can assume command of the Soviet front with the task of freeing the capital of the Ukraine and breaking through the German lines.

The computer executes all orders by carrying out all movement and combat with allowances made for unit commander and staff capabilities, troop quality, armour and anti-tank strengths, supply, morale, supporting arms, casualties, fatigue, leadership and combat power. You will be able to observe the battle on both tactical and strategic level maps.

Victory progress is continuously

tracked and compared with the historical result at any given point. The computer also has a limited military intelligence without any input needed to be given by the player.

Probably the best advice that can be given to anyone playing this game for the first time is to take things slowly. It is a valid criticism that Fire Brigade presents you with too much information. It would have helped if information for all the units in a corps or army could have presented in some other form, such as tabular, for example.

This could have helped the player to make the best decisions possible. In addition, be wary of HQ symbols. Sometimes it is easy to mistake them for division/corps symbols on the tactical map.

It will probably take weeks or months to learn the finer points of Fire Brigade. Such as which commanders you can trust, or how far you can push a weary group of panzer grenadiers before they crack up, or what is the proper mix of tank corps and rifle corps needed to make a tough

Soviet Army, or what to do when bad weather hits, and so on.

When playing the game you should always be aware that historically, even with the large amount of forces deployed on the Eastern Front, there was usually no continuous front line, but rather a series of forward outposts and strongholds backed by reserves. So don't panic if your nice, neat front develops holes by the dozen and the enemy take a stroll behind your front line forces.

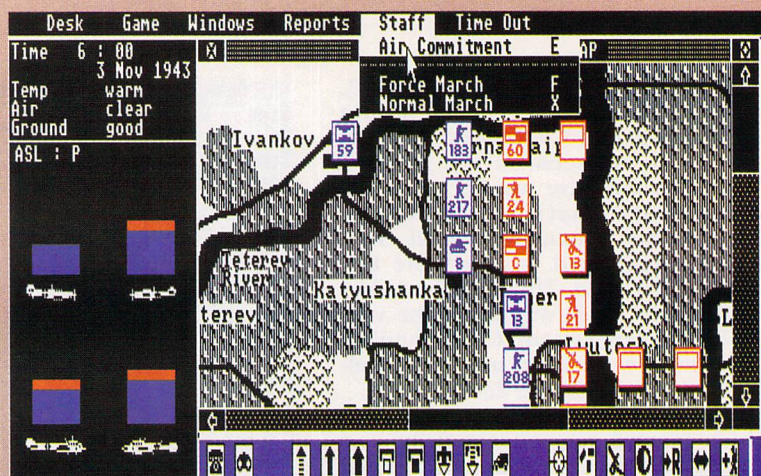
Concentrate your offensives in pockets with adequate reserves. Don't push too hard though. Advance slowly, otherwise your troops will suffer to the detriment of their fighting capability. In fact, fatigue has to be stressed as a major factor in the fortunes of your forces. If possible, give them a well-deserved rest in a local town and rotate another unit to take their place.

Overall, Fire Brigade is a well thought out and researched wargame that will hold your interest for quite some time.

During the first scenario (November 3, 1943) the Soviet player has a numerically superior force, so use it, but be quick because German re-inforcements are on the way. Avoid being bogged down for extended periods. Manoeuvre, chaps, manoeuvre.

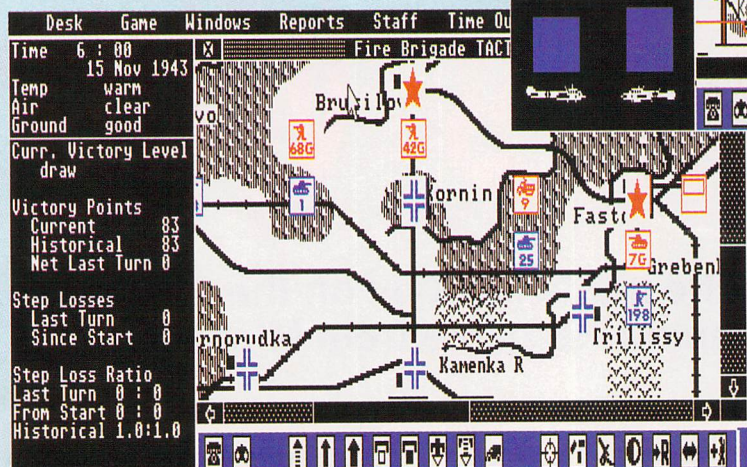
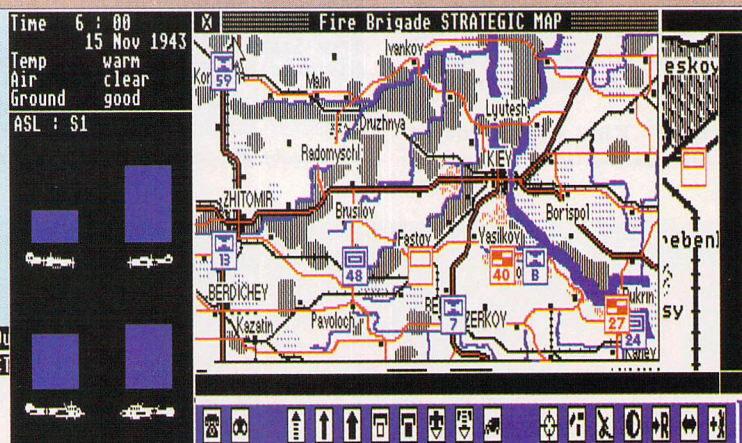
Probably your best source of advancement is your all-star 3rd Guard Tank Army – a sort of Wimbledon FC of the Eastern Front. They'll leave bodies strewn in their wake.

For the German side? Well, exactly the opposite strategy is called for. For two weeks you have to check the Soviets in their stride while keeping the German casualties low. Try to preserve the 48th Pz Korps until re-inforcements arrive. Try not to tangle with the 3rd Guard Tank Army – they're mean fighters.

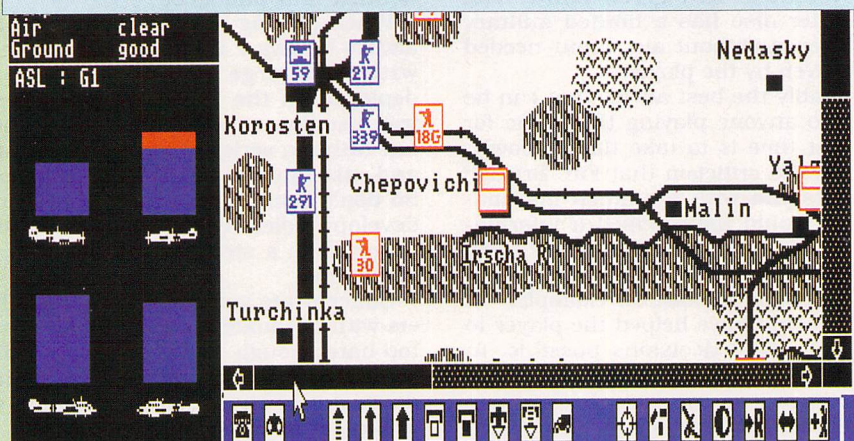


Taking the Russian side in the second scenario (15 November 1943) you will be well advised to hold tight, rest your troops and build a reserve. Two options for defence arise. Firstly, you can meet the advance head-on or, secondly, invest in random attacks in other areas to attract German attention.

The latter will also disrupt any



head-on attack the German side is making or planning. Don't be afraid to give way, slowly retreating if losses mount up will extend your survival rather than stubbornly digging your heels in and being slaughtered into the bargain. Your reserves and rested troops can be introduced later to hit the, by then, slowed German advance.



In the third scenario (December 5, 1943) the German side should go hell for leather by pushing the Soviets as far as possible. Maintain a steady pace, but keep a few reserves back because when the Soviets counter attack you will need them.

If you decide to head northwards push the 48th to the limits until they reach Malin. If you don't make haste you'll find your path blocked by Soviet reserves. Watch the 48th's flank. Use the 13th Korps to hit the 1st Guard Army. Go the whole way with this attack by throwing the lot at them – heavy artillery, Amiga power packs, you know the sort of thing.

FACT FILE

Product: Fire Brigade
Price: £29.99
Supplier: Mindscape, PO Box 1019,
Lewis, East Sussex BN9 4DW.
Tel: 0444 86545

POINTS FOR:

Full-featured wargame that is historically accurate. Runs in colour and monochrome..

AGAINST:

The game's complexity means that it is difficult for the novice to get to grips with.

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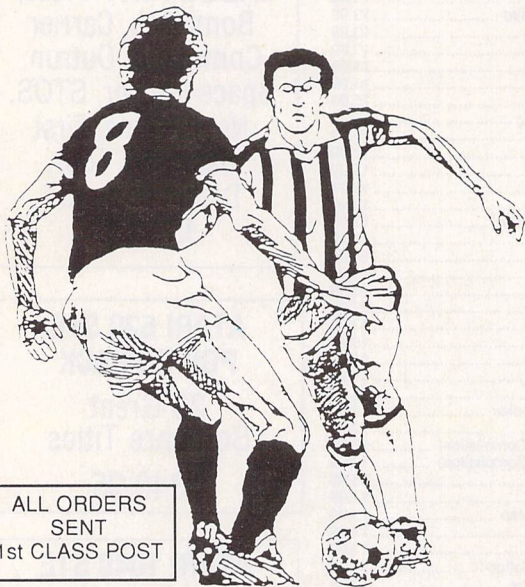
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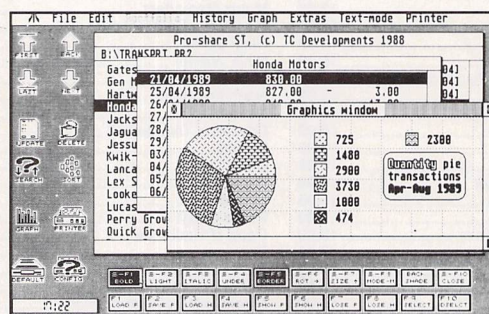
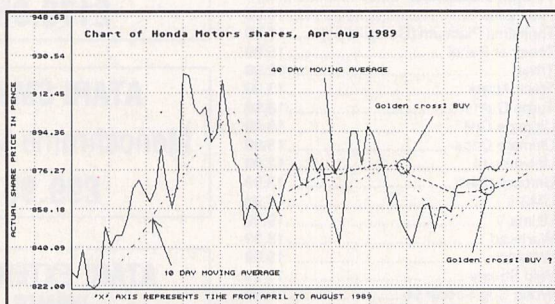
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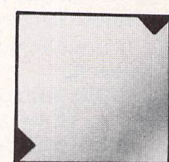
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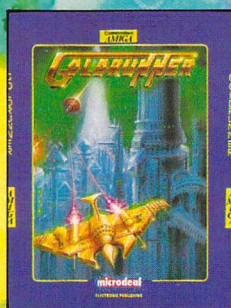
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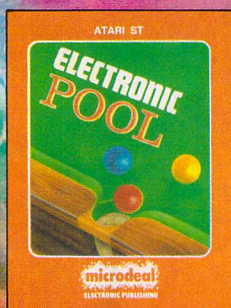
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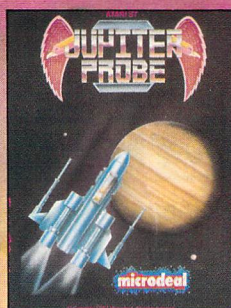
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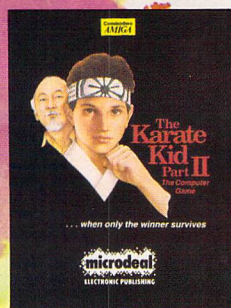
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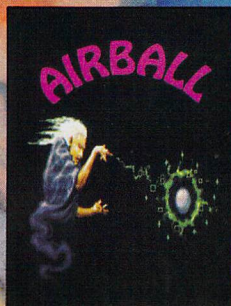
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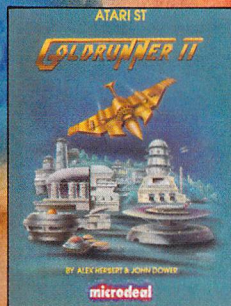
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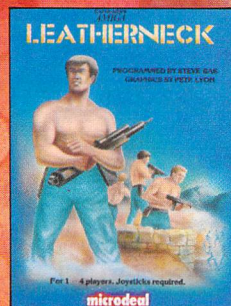
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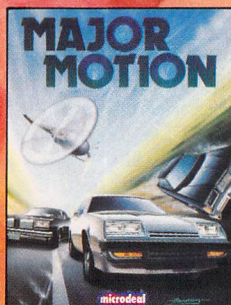
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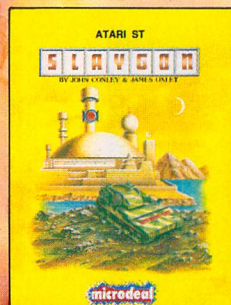
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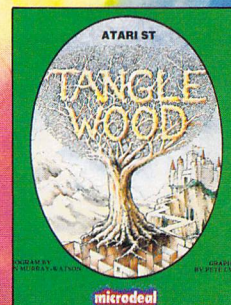
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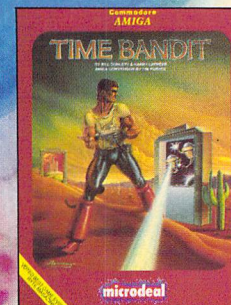
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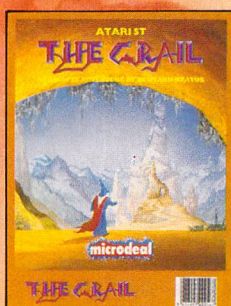
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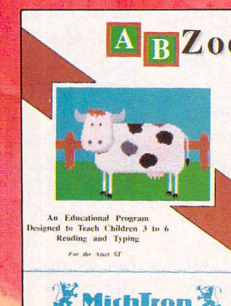
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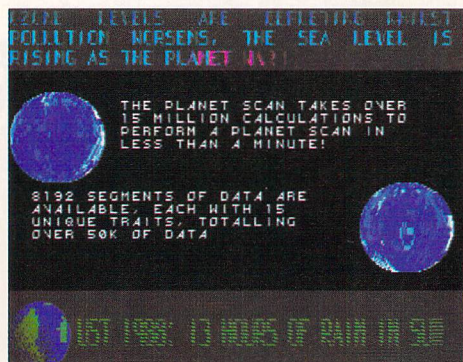
ATARI ST USER

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SIDE TWO

Debut
Damocles



DEBUT is an impressive planet simulation from Pandora in which the aim is to stabilise a planet's ecosystem and environment.

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You start with a mildly polluted planet and as the game progresses the cities will

Début



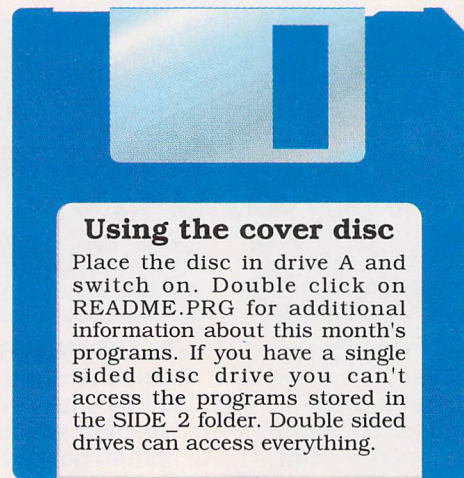
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- ✓ Low res colour
- ✗ Medium res colour
- ✗ Monochrome

slowly pollute it to a greater extent – a bit like Earth, really. You are not offered with a vast array of hardware in order to achieve your goal, but simple equipment that is around today.

Debut is built on the science of chaos, and the programming language provided will enable you to locate the crisis points on the planet. It is these locations that control its future.

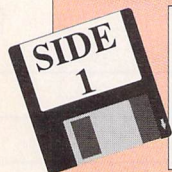
THE



Using the cover disc

Place the disc in drive A and switch on. Double click on README.PRG for additional information about this month's programs. If you have a single sided disc drive you can't access the programs stored in the SIDE_2 folder. Double sided drives can access everything.

DLII



To load: Double click on KEYBOARD.PRG.

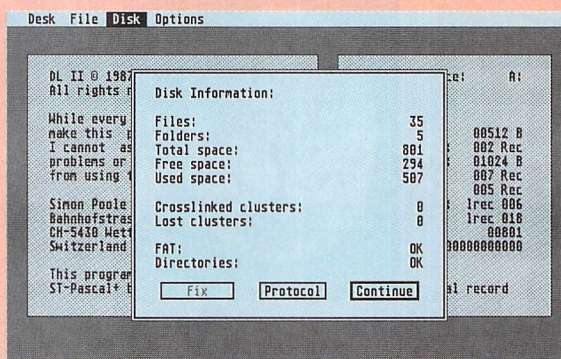
- ✗ Low res colour
- ✓ Medium res colour
- ✓ Monochrome

DL II, written by Simon Poole, is a powerful multi-function disc utility program which has the following functions: Disc usage display, check FAT integrity, check for lost and crosslinked clusters, some disc fix functions, automatic and manual unerase, file attribute modification, disc editing (file or sector oriented) and edit hard disc bootsector.

To run DL II double click or open DLII.PRG. If you don't want an automatic disc check performed after most operations, deselect Autocheck in the Options menu (the default value is not to perform a check).

The functions of DL II can be divided into three groups: Commands which access the disc via the information in the bootsector, those which do not need a correct bootsector, and others that are not disc related.

In the View/Edit dialogue box, accessed from the Disk menu, some or all of the buttons will be disabled. The number in



Displaying disc usage statistics

the top right-hand corner indicates which logical sector/cluster you are working on and this is always relative to sector zero of the current disc or the first cluster of the file. To leave the View/Edit dialogue press or select Exit.

In the Ascii display section both NUL and @ are mapped to space, so if you want to enter them as characters use the hexadecimal part of the display. Point at a byte or character with the mouse and click the button to alter a value. Type in the new value and press Return.

The left and right arrows decrease or increase the current sector or cluster number by one. A single click in the grey part of the slider bar will decrease or increase the number by 10.

The slider can also be dragged to any position. To position it at an absolute position, double click the bar and enter the sector or cluster number in the dialogue box.

Click on the Search button to call up a dialogue box, where you can enter the

string you want to search for as an Ascii string or hexadecimal number. If a match is found the first character of the string is inverted for 10 seconds and a keypress or a mouse click returns you immediately to the editor. To continue from the

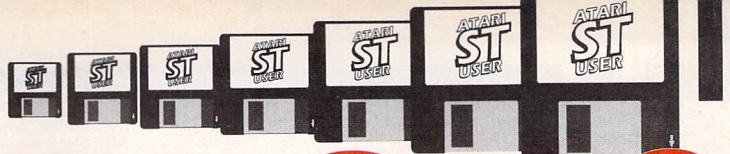
current position double click the Search button.

To copy a sector/cluster to a different position on the disc/file select Copy and enter the new position in the dialogue box.

The Files dialogue box works much the same way as the standard Gem file selector. Select the '..' entry to return from a subdirectory (folder) to its parent directory.

Selecting the Check command will start a check of all the files and directories on the current drive. Items that are checked are: Lost clusters – ones that are marked as used, but do not belong to a file or directory – crosslinked clusters (used by two different files), bad directory entries (zero length files, first cluster out of range) and other catastrophic errors in file allocation.

Once the check is finished a dialogue box will show the results of the operation. If DL II finds something wrong with the disc structure it will report the faults. If



DISC PAGES

Earn up to £1,000 for cover disc submissions

We are looking for new and innovative software to include on our cover disc. It can be anything from business packages and utilities to shoot-'em-up arcade games.

The more useful, enjoyable and original your program is the more chance you'll have of getting it published. Can't program? No problem we're also on the lookout for top quality public domain programs.

If you find a good one that isn't generally available in a PD library send it in and we'll pay you for your efforts.

Send your submissions to:

The Disc Editor,
Atari ST User, Europa House,
Adlington Park, Adlington,
Macclesfield, SK10 4NP

Please include an SAE if you want your submission returned.

DL II can fix the problem, the Fix button will be enabled.

The Fix command will truncate files to avoid crosslinked clusters and will generate files of the form 99999999.FIX (where 99999999 is an unique number) in the root directory out of lost clusters. Since only unused (and undeleted) entries are used, there is a limit to the number of files that can be generated.

If you have problems here, you can change deleted entries into unused ones by changing the first letter of the filename from \$E5 to \$00, but be careful as this also marks the end of used entries in the directory.

ReOrg

ReOrg improves performance on hard and floppy discs through better placement of subdirectories and their files on disc, and through defragmentation of the files themselves. It will also remove deleted and zero length entries.

Before running the utility first backup your disc and only run ReOrg after all crosslinked and lost clusters have been disposed of using DLII. ReOrg has no protection against incorrect discs and will probably run into a infinite loop if you do not take these precautions.

The ST will reboot after you have run ReOrg and reorganised your disc, the ST will reboot. This is normal, and serves the purpose of re-initialising the operating system's internal directory tree.

DIRPRINT is a very simple, yet useful, desk accessory which has just one function - to print out a listing of all files contained on a disc. Place the accessory on your boot disc so that it is automatically installed next time you boot up.

To print out a list of files stored on the disc select it from the accessory menu and click on the Perform button. Now select either Drive A or Drive B after making sure your printer is online. All folders present on the selected disc will be searched, along with any folders they themselves contain.

DirPrint

To load: Boot up with the disc in the drive

- ✓ Low res colour
- ✓ Medium res colour
- ✓ Monochrome



Damocles

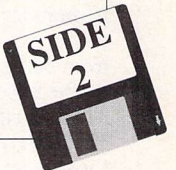
DAMOCLES, the latest release from Novagen, is a brilliantly absorbing game with high speed, solid 3D graphics. Erin is the fifth planet in the Gamma solar system, and in a few hours it is going to be smashed to pieces by the giant comet, Damocles.

Your task is to fly to the planets in the solar system, search any cities you discover for objects and clues and ultimately, save Erin from impending destruction. With nine planets and 19 moons there is much to explore and many places to visit.

Benson is your constant computer

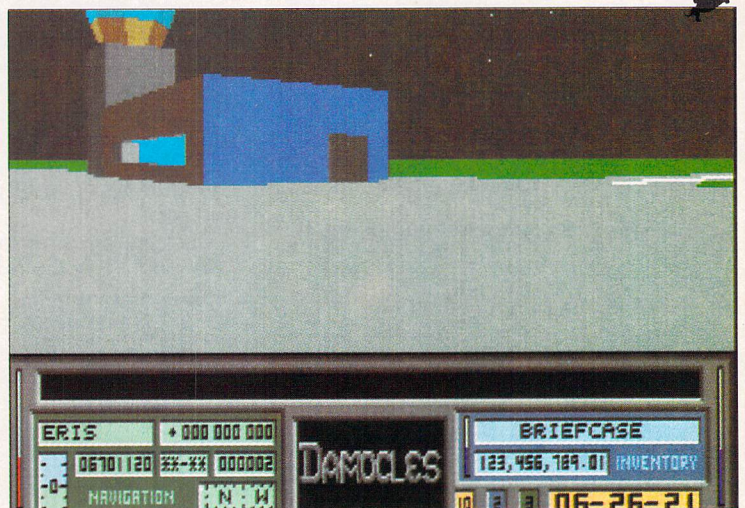
To load: Copy DAMOCLES.ARC and ARCX.TTP to a blank disc. Double click on ARCX.TTP and enter DAMOCLES. Double click on DAMOCLES.PRG.

- ✓ Low res colour
- ✗ Medium res colour
- ✗ Monochrome



companion who guides your actions and provides whatever help he can. Even if you fail in your mission, the game isn't over as you can still wander the galaxy in your spacecraft and discover new life forms, boldly going where only Captain Kirk and co have gone before.

High speed, 3D graphics are the trademark of Damocles. Fly around the solar system and visit the many planets



DISC PROBLEMS?

If you have any difficulties loading programs from your disc it will be replaced free of charge. Send it with your name and address to: Stanley Precision Data Systems, Unit F, Cavendish Courtyard, Sallow Road, Weldon North Industrial Estate, Corby, Northants.

If you damage the disc yourself please include a cheque/postal order for £1.50 made payable to Stanley Precision Data Systems. If the disc has been damaged in transit please return it to Database Direct at the address shown at the foot of the order form on Page 121.

Defsel

DEFSEL is the definitive file selector from a group of programmers known as Worlds Immarcescible. As many computer boffins will know, file selectors are really Gem object trees, and to interact with them you call the Gem routine *form-do*.

This piece of Digital Research's code is bugged and quite slow, so they set about writing their own version. As a consequence, Defsel hardly uses Gem at all. All the mouse routines, code to print the characters, button handlers and so on, are custom written, and Gem is called only to draw the objects (that code isn't bugged).

Defsel is very easy to install by putting DEFSEL.PRG inside the AUTO folder on your boot disc. When you switch on you should see a message to the effect that Defsel has been installed. Once in memory the Defsel file selector should appear wherever the old file selector did.

Defsel isn't particularly fussy as to whether it is run first or last in the AUTO folder, except that it must be run before any of those programs which speed up the mouse, because they use the same vector. If memory is tight, hold both Shift keys down as you boot up to prevent Defsel from being installed.

The pathname entry line can be scrolled left and right, allowing you to have up to 150 letters. All 16 drives are shown and those that are inactive are in faint print and cannot be selected.

At the bottom of the file window are left and right arrows, plus scroll bar. Scrolling along shows all the information on a file - its size in bytes, date and time of creation and all system flags. Since these are only any use to those who know about them anyway, it is only necessary to say that if the archive bit is set you will see an A on the far right, if the hidden bit is set, an H, and if the system bit is set, an S.

There will be normally two spaces on the left of the filename, a diamond there means that the file is a folder, and an R means the file is read only.

To load: Copy DEFSEL.PRG to the AUTO folder of your boot disc and boot up with it.

- ✓ Low res colour
- ✓ Medium res colour
- ✓ Monochrome



Another bonus of this file selector is the nine ways it allows you to sort your files. To select them, you click on one of the UNSDT buttons below the selection line:

- U Unsorted
- N Sort by name
- S Sort by size
- D Sort by date
- T Sort by file extension

The 10 buttons in the bottom right corner are the file extension buttons. Clicking on them tacks that extension to the pathname. Clicking on Delete has no immediate effect, except to toggle the mouse pointer between an arrow and a D. The D pointer means you are in Delete Mode and now when you click on a file or folder it is deleted.

Diskinfo shows the free space, used space and so on, for the current drive. Clicking on Options brings up a whole new screen with several options. Maxfiles allows you to change the amount of memory Defsel needs.

Storage space is used for filenames and so on, and the more files it can hold, the more memory it needs. Memory is allocated when you boot up, so changing Maxfiles from within Defsel has no immediate effect. What you must do is change it and save it, using the Save button.

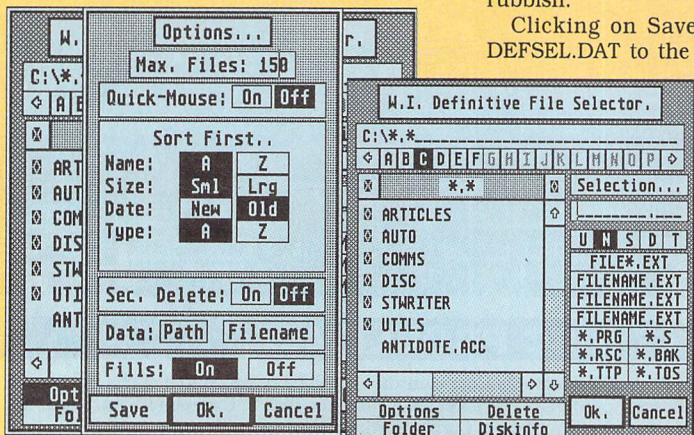
When Quick-Mouse is on, the mouse's speed is doubled. When deleting a file under Gemdos, you don't really delete it at all, you simply erase the bit on the disc which says that it exists, and where to find it. The actual data remains intact. Recovery programs use this fact to their advantage, and it can be quite a bonus.

However, if you have a file that you want to physically erase, there aren't many simple ways unless you format the disc. By turning Security Delete on, whenever you delete a file it is first filled with rubbish.

Clicking on Save, saves a file called DEFSEL.DAT to the AUTO folder on drive

A, so make sure you have your boot disc in the drive. This file is loaded (if it exists) when the program is booted, so you can have customised options.

Clicking on the title at the top of the main screen reveals a dialog box with which you can de-install Defsel.



Customising Defsel

Replace Gem's file selector with this more powerful version

Pro-

PRO-ED was written by Jerry Cole of Beavercreek, Oregon, and is a text editor designed specifically for the programmer to create and edit source code. This editor can be used to produce any type of document, but it does not attempt to replace a word processor.

A programmer requires a tool that will assist him or her to be more productive, and make development much easier. Pro-Ed will strictly enforce an 80 column limit on line length, as it is the opinion of many that source code should not exceed column 80, because longer lines may affect readability.

It is a good idea to copy Pro-Ed to another disc before using the editor. Use the backup copy as your working disc and place the master disc in a safe place. PRO-ED will run from a ram and hard disc without any problems.

Pro-Ed is a .TTP (Tos Takes Parameters) program. This will allow you to specify the name of a file to edit when executing Pro-Ed. If a pathname was entered when executing Pro-Ed, the program will attempt to load that file into memory for editing. If not, Pro-Ed will boot up and prompt you for the pathname of a file to edit. (A list of files on disc can be shown on the screen at any pathname prompt by entering a pathname containing wild card characters).

All tabs within the file being loaded will be automatically removed and expanded. Also, any lines terminating with LFs only will be changed to end with CR/LFs. To create a new file simply press the Return key at the pathname prompt without entering a pathname. Pro-Ed will request a pathname when you save the file. A new file is indicated by the words *New File* displayed on the left hand side of the status line.

After loading a file or creating a new file the editor will display the first screen of text and position the cursor on column 1 of the first line. The top line of the screen is reserved for the status line.

Editing

The cursor can be moved anywhere on the screen except past the end of file. Insert mode can be engaged by pressing the Insert key and the editor will display *Ins* on the status line. Insert mode will remain active until the insert key is pressed again.

In Compose mode Pro-Ed will automatically insert a new line each time the Return key is pressed. Compose mode is activated by pressing function key F9 and *Com* is displayed on the status line. In addition, Control+O and Control+U can be used to open new lines of text - either above or below the cursor line. Note that the Return key will not split a line -

Ed



To load: Double click on PROED.TTP in the PRO-ED folder and then enter the file to edit or press Return to create a new file.

- ✗ Low res colour
- ✓ Medium res colour
- ✓ Monochrome

instead use the command Control+Y.

Pro-Ed has two different command groups: Key commands, such as function, Control and Alternate keys, can be executed at any time during editing by pressing the appropriate key, and extended commands are executed by pressing function key F10 or Control+X followed by the command to be executed. The editor will prompt for information needed to carry out the command. The last line or block

deleted can be recovered by pressing the Undo key. A character or word delete can also be recovered, but the undo must be carried out before leaving the line. Any other changes made to that line will also be undone.

A block of text must first be marked before a block command can be executed. A block can be marked with F4 at the beginning and end and removed with Shift+F4. The cursor does not have to be in

column one when defining a block, but only entire lines of text can be marked. The block markers are removed after a block command has been executed.

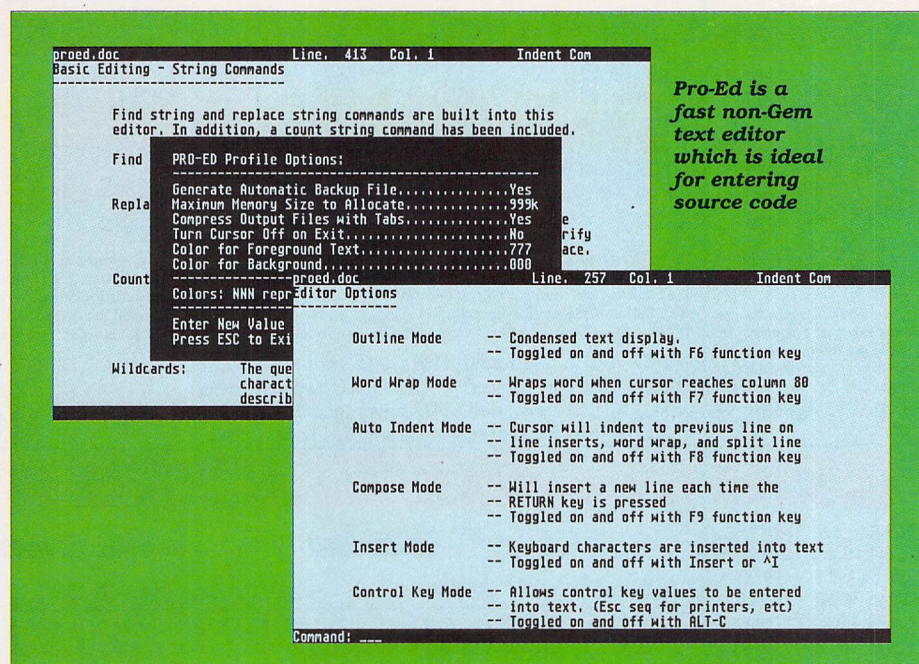
To insert an external text file into the current edit, position the cursor at the correct place, press the F10 key and enter IF at the command prompt. Pro-Ed will then prompt for the pathname of the file to insert.

To edit a second file press the F10 key and enter XE at the command prompt. You will then be prompted for a pathname to edit. The file will load and the first screen of text will be displayed. The status line will show the name of the second file you are editing. When the second edit session has ended, the first file will return to the screen. There are two commands for saving your work: SE will save the file and allow you to continue editing afterwards, while QE will save the file and quit editing. Both commands will prompt you for a pathname for the file and the default one will be shown on the command line. Press Return to accept it.

Press the Escape key to cancel the save command. If the Auto-Backup option is on, the original file will be renamed with a .BAK extension before the new file is written. Quit editing without saving the file by using the command QA (Quit and Abort).

The editor's Outline display mode allows text to be viewed in a condensed form. This is activated and turned off by toggling the F6 key. When in the Outline mode, the editor will only show those lines of text that begin at or before the cursor's column position when the F6 key was pressed.

Pro-Ed will not allow you to quit during editing. To exit and return to the desktop press the Escape key when the editor prompts for a pathname to edit. If the Escape key is pressed at the second edit pathname prompt, the editor will return to the first edit.



Key commands

Function keys

- | | |
|------------------------|----------------------------------|
| F1 Scroll forward | Shift/F1 Scroll to end of file |
| F2 Scroll backward | Shift/F2 Scroll to start of file |
| F3 Scroll to locator | |
| F4 Mark block | Shift/F4 Clear block markers |
| F5 Mark locator | |
| F6 Outline mode toggle | |
| F7 Word wrap toggle | |
| F8 Auto indent toggle | |
| F9 Compose mode toggle | |
| F10 Extended commands | Shift/F10 Line per screen toggle |

Alternate keys

- | | |
|---------------------------------|--|
| Alt-P Scroll backward | Alt-E Show end of file |
| Alt-N Scroll forward | Alt-S Show start of file |
| Alt-L Scroll to locator | Alt-O Outline mode toggle |
| Alt-M Clear block markers | Alt-F Cursor forward to next word |
| Alt-D Delete word or spaces | Alt-B Cursor backward to previous word |
| Alt-C Toggle control code entry | |

Control Keys

- | | |
|-----------------|-------------------------------|
| ^B Cursor left | ^A Align block/line to cursor |
| ^F Cursor right | ^O Open line above cursor |

- | | |
|-------------------------|---------------------------------------|
| ^S Start of line | ^U Open line under cursor |
| ^E End of line | ^Y Split line at cursor |
| ^P Cursor up | ^J Join current line to previous |
| ^N Cursor down | ^L Locate next occurrence of string |
| ^D Delete character | ^C Copy previous line - cursor to eol |
| ^R Delete line | ^I Insert mode toggle |
| ^K Erase to end of line | ^M Mark block |
| ^T Set/Release tab mark | ^X Extended commands |
| ^Z Cursor line to top | |

Extended Command Functions

- | | |
|-----------------------------|--------------------------------|
| SE Save edit and continue | XE Execute second edit |
| QS Quit and save | DB Delete block |
| QA Quit and abort changes | CB Copy block |
| IF Insert file | MB Move block |
| PF Print file | SB Save block to file |
| HP Halt printing | PB Print block |
| KP Kill printing | FS Find string |
| RP Resume printing | RS Replace string |
| SL Show line | CS Count occurrences of string |
| MR Modify roll size | SP Save profile |
| DK Define keyword | LP Load profile |
| SK Show keyword definitions | PO Modify profile options |

Ladbroke Computing International

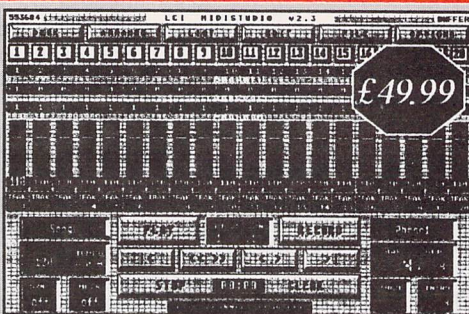
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Unbeivable value

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Low resolution demonstration disk £3.99

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Look at these prices

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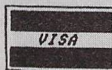
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ADVENTURES

Pendragon relaxes in the dungeon and ponders on Satanic ambitions as well as a forthcoming blockbuster from Magnetic Scrolls

Hot from the

Overture and beginners

There can, perhaps, be nothing more infuriating in text adventuring than to reach a seeming impasse. Many a time I have struggled for hours with various strategies and re-runs, and still found myself well and truly stuck. Eventually, weary-eyed I would make my way to bed and perhaps lie awake for hours trying to fathom out what I have missed, or what other ploy I could try.

Paradoxically, such frustration is one of the greatest joys of this genre of puzzle solving. We all have blind spots, though thankfully these do seem to decrease with experience.

Perhaps the ancestor of all such stymies involves the dragon in Colossal Adventure. When you attempt to fight the beast, the program responds with "What, with your bare hands?". You then try unsuccessfully to kill it with a sword, an axe, a wand and so on. Only perhaps in desperation will you try with your bare hands and achieve success.

In one of the earliest adventure games I played – long before the ST was even a twinkle in a designer's eye – I had solved more than 100 locations of a quest before being

confronted by a locked and seemingly impassable door.

Close inspection revealed a key stuck in the lock on the other side. I banged my head in frustration, and retraced my steps to look for some overlooked item. Then by chance, I remembered a similar incident in a Famous Five novel I had read as a child.

I checked my inventory and discovered I was carrying a map, a candle and a knife. The candle appeared to be of no immediate use, but the map and knife surely were implements which could be used to open the door.

First I carefully slid the map under the door, then picked the lock with the knife. The game responded with "You can hear a clink as a key falls". Now I carefully pulled back the map, upon which rested the key. I unlocked the door and my journey continued. Needless to say, this puzzle has been repeated many times, with slight variations, in a host of other adventures.

More recently, in Guild of Thieves I became stuck while trying to open an opaque case by manipulating a set of dice – a similar puzzle exists in Kult. The main problem was

knowing how many spots should show on the top face of each die when it is placed into a slot. I tried all sorts of combinations in vain before I turned to my map for help. It was here that the clue lay. The arrangement of rooms surrounding the opaque case resembled the five-spot face of a die. It was now a simple matter to work out the correct combination.

Elsewhere in the same game your way is blocked by a barred gate which cannot be climbed or unlocked. The way through is to simply break the bars, as they turn out to be made of flimsy polystyrene.

However, perhaps the most annoying puzzle I have ever faced was in Incentive's Ket Trilogy. Here I met a door with a minty smell. I tried every way I could think to get through, and the only clue open to me was "A mixed up LOOP".

Eventually, taking the excesses of cheap humour to its lowest bounds, I uttered the word POLO, and hey presto, the door opened. Perhaps the moral from all these experiences is: If at first you don't succeed, try the unexpected.

Next month I will look at more sophisticated problem solving.

THERE is nothing quite so relaxing after a hard day in the saddle than to lie out on my favourite rack before sojourning to play a splendid text adventure. Since we spoke last, much of my time has been spent unravelling the delights and tortures of Horrorsoft's Elvira, Mistress of the Dark.

This flight of gothic horror has been long awaited by myself and many of my less tainted knights, but at last Elvira is upon us in six discs of satanic glory.

Unlike its predecessor, Personal Nightmare, Elvira is a totally icon-driven adventure, with little regard to text, and probably the best graphics I have seen since Chronoquest.

The plot surrounds the evil created by the long-dead Queen Emelda, and her somewhat naive and less evil descendant Elvira. As the game's hero

press



you have an uphill battle to right some of the mess Elvira has landed herself in, and some nasty surprises await around each corner.

The never-ending story concerning the new Magnetic Scrolls adventure has been taking a few equally strange twists and turns of late. Originally scheduled for March release, we are all awaiting with baited breath for the launch of this new blockbuster from the masters of ST text adventuring.

A Magnetic Scrolls spokesman told me: "The game is almost finished ... it is very big and tremendously exciting". While on the very same day, Ian Mathias at Virgin/Mastertronic – the game's publisher – announced: "It is nowhere near finished and a late summer release is probable."

This just goes to show the often vast dichotomy which exists between programmers and publishing companies when it comes to marketing and releasing a product. So despite my inside source, we can only wait and see.

In the mailbag this month I was pleased to receive Issue 4 of Syntax – the best yet – from Sue Medley. This is an excellent disc-based adventure help service of which I made detailed mention of a few months ago.

I was delighted to receive a full solution to Space Quest II from Michael Ward of Nuneaton. Many thanks Michael, use will be made of your scroll in a future edition of this column. Thanks must also go to Allen and Mark Errington of County

Durham for some superb maps to Zak McKracken.

Before I close I must report that I have just received an epistle from Zenobi Software which informs me that the company is now the sole publisher for Whiplash and Wagonwheel – reviewed in the April issue of *Atari ST User* – The Jade Stone, and Three of the Best. These clever text/graphic adventures retail at £7.49 each; Zenobi can be contacted at 26 Spotland Tops, Cutgate, Rochdale, Lancashire OL12 7NX.

Finally, I am delighted to present the first in a new series of maps to Mindscape's classic brain teaser, *Déjà Vu II*. See over the page.

● *Until the night comes rushing in, happy adventuring.*

Problems solved

This is part five of my serialisation of solutions to three of the most popular and difficult adventures for the ST. If you wish to keep your dignity and not indulge in a bit of cheating, look away, otherwise read on.

Fish The Boss

You see the Dark Warp, from where you will get the cylinder. But on enter-

ing the warp Sir Playfair tells you that the Fins have twisted the dimensions into a labyrinth.

The backroom boys know it is in a place where the only exit is Up. So you enter a maze which is as baffling as the one in *Zork II*. The only way to map this maze is to draw each set of available exits on a compass face.

You can then ascertain that NW, SW, SE and NE are covered by the

exits on either side of them – for example, North West is covered by North and West. Therefore, whichever exit you take, you will discover that direction and its two companions – for example, North West, West and North – do not appear at the next location.

If you couple this with the knowledge that going Up will enable you to get the cylinder, you will strike suc-



cess. Anyway, get the cylinder and go Up, South, Down, South, East and Down to the platform. Catch the train to Opah University, then go South, Up and East.

If Simon is waiting, give him the kipper tie and go North into the disco, but ensure you wear the shades and the ear plugs.

From the university quad, go East, East, East, and put the tatty card into the slot. Continue East, South-East, drop the various components and take the bag.

Keep the crystal, go North-West, put the tatty card in the slot, go West, West, and put the new card in the slot. Now travel North and place the crystal in the box. Close the box and turn it on.

(To be continued)

Manhunter - New York R.G.B. Marshall

The day starts with a report of a dead Orb at the Greenwood Cemetery. Play Tracker and note that the suspect goes to a theatre in Times Square and then on to Abdul's pawnshop.

Here the signal ends, so go to the cemetery and note that Tim Jones died for his father. Type in Harry Jones to get Harry's address. Now go to Trinity and light three candles - as shown on Harry's arm. This opens a secret compartment and Module B. Note the symbols on the back of the compartment door.

Continue on to Abdul's place and pick three badges from the selection offered to you. Pick the two which you saw on the compartment, and the third one which looks similar to British Rail's logo.

If you choose the correct three badges, you will fall through a trap-door. You are then presented with four pictures in turn, which apparently show the combination codes for the door which is to the left of each. To save some perplexed head-scratching, the combinations are: 41, 1031, 264, 425.

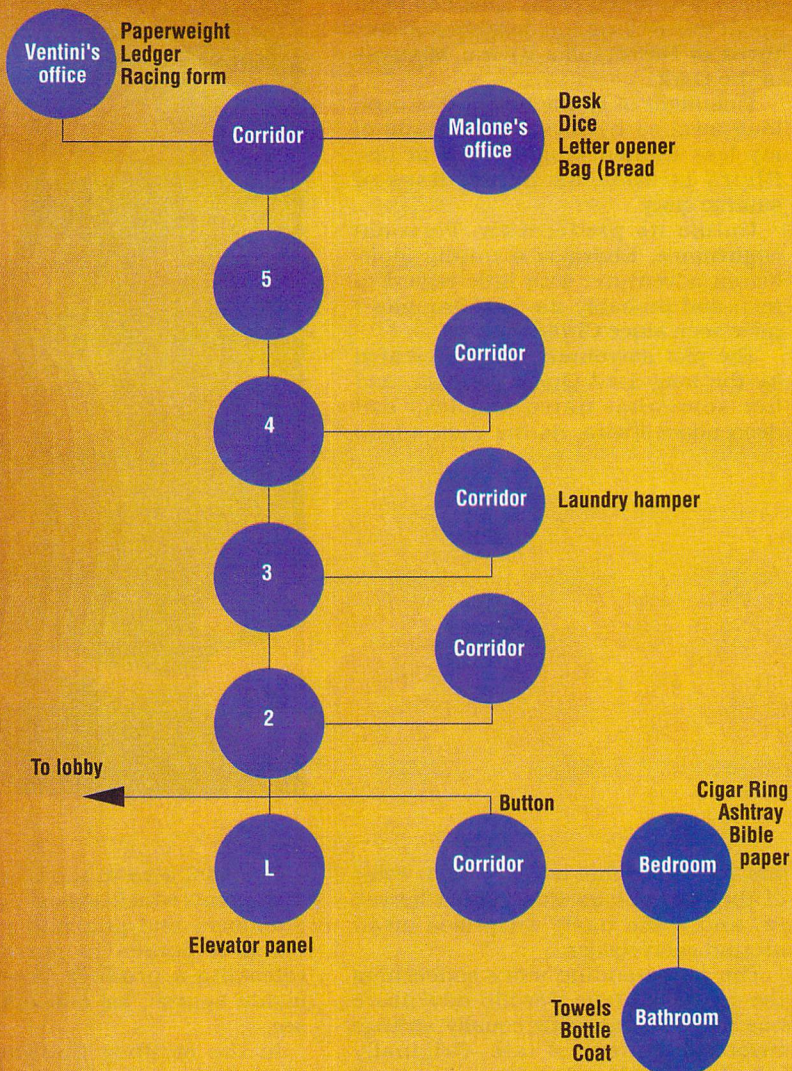
When you go through the door, you will see Phil, who you must overpower. He will then drop a note which reads 843769. He now escapes, but you should not follow him.

Instead, make your way to the theatre, remove the picture and enter the code from the note. You will now be given a new code, which reads UCUC.

(To be continued).

War in Middle Earth Steve Perris

In order to equip yourself for the enormous task ahead it is important that you know a little about the strange objects you may come across (see panel)



Déjà Vu II Map I

Object	Location	Effect or Use
Flask of black beer	Tuckborough	Increase strength
Blue healing potion	Michel Delving	
	Grey Havens	
	White Towers	
	Mouth of Isen	
	Belegost	Restore Health
Mithril mail	West of Buckland	Increase armour
Gnarled staff	North of Erebor	Valued by the wise
Elven hammer	East of Annuminas	Increase prowess
Sceptre of Annuminas	West of Mount Gundobad	Enlists Denethor
Silver orb	South of Mount Gram	Enlists Thranduil
Red arrow	North of Necromancer's	Enlists Theoden
Dwarven ring	Tower	Enlists Dain
Palantir	South of Forlond	Give to Aragorn
Ancient sword	South of Ost-in-Edhil	Give to Aragorn
Cloak, rope, vial	Lorien	Various magical uses

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A moving experience

WE have all seen amazing arcade games containing hordes of sprites, all moving independantly of each other or following a leader. No matter what the final appearance, you can rest assured that the programmer has forced them to follow pre-defined paths, which explains why certain aliens always appear at exactly the same point in a game.

For the next couple of months I'll be showing how to implement this feature in our own games, starting with simple examples and working up to some very complex techniques.

There are two ways of making a sprite travel around the screen. The first and probably most often used is by using the MOVE command, but with many large sprites onscreen this can become too slow.

The second way is to store each coordinate a sprite is to appear at in an array and use the SPRITE command to display it at each one in turn. Don't worry if this sounds complicated, as we'll be examining this

Phil Lawson cast his eye on the humble sprite and comes up with some simple but interesting effects

method in detail next month.

The simplest way to control a sprite is to make it travel from one side of the screen to the other and back again in a continuous loop. Boot up STOS, then load Program I from the Cover Disc and run it.

You should recognise lines 26000 to 26030 from previous articles – they set the colours to those stored in the sprite bank. Each program this month will use this routine. Line 25050 tells the sprite that it will be moving 200 pixels to the left and then 200 to the right.

The letter L means that when the movement is finished the sprite should loop back to the beginning of the

MOVE command. Just because the screen is 320 by 200 pixels in size, there's no reason why our sprites cannot move outside this area. Program II shows a sprite appearing from the top of the screen, moving down to the middle of the screen, going left and finally disappearing off the top of the screen. Load it and run it.

Everything in this program is controlled through the two MOVE commands in lines 25040 and 25045. To recap, the syntax of this instruction is:

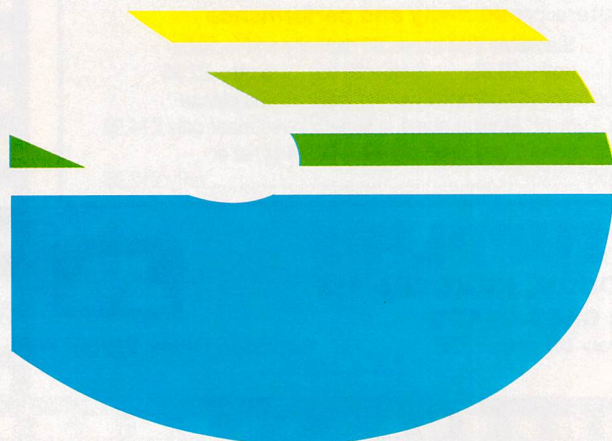
`MOVE speed,direction,steps`

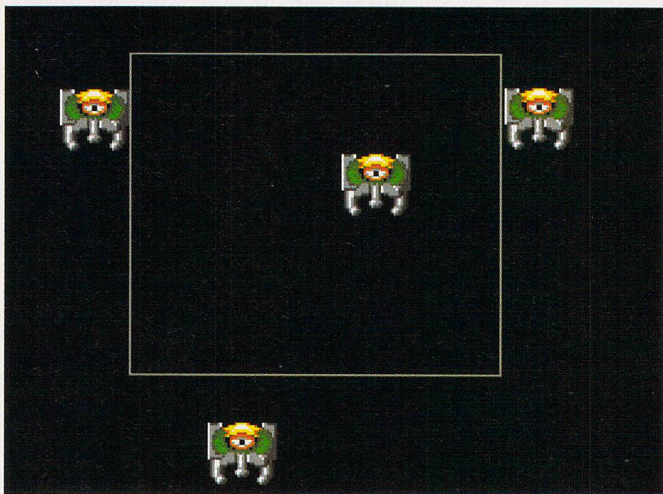
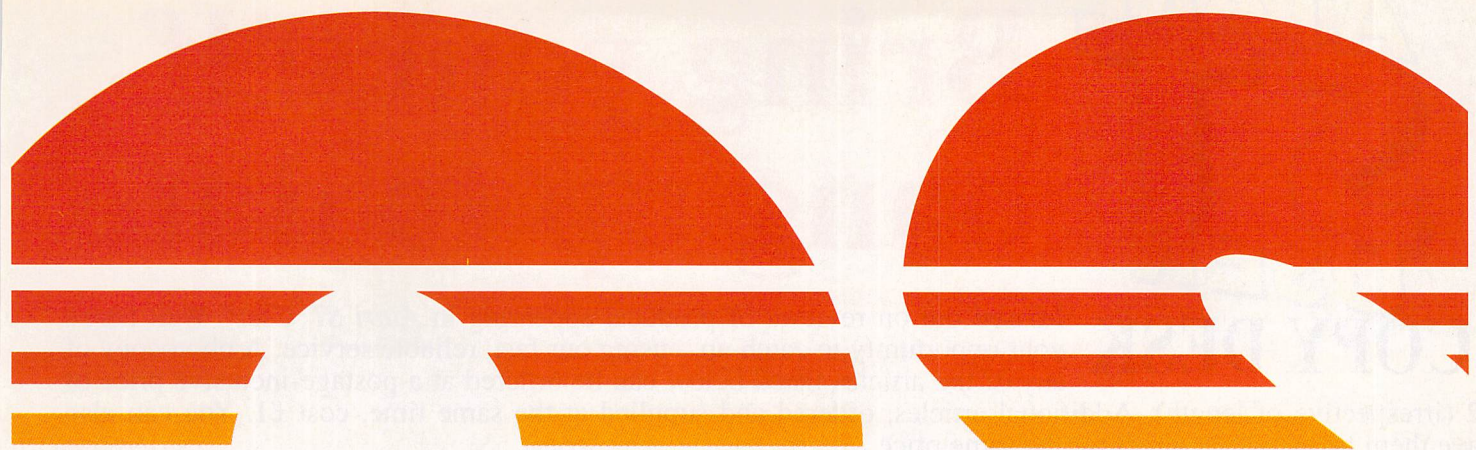
The important parameter is *direction*, which specifies the number of pixels the sprite will move each step. If this number is negative the sprite will move either left or up, where positive values move the sprite right or down, depending whether the command is controlling the X or Y plane.

If the value of *direction* is zero, the sprite will not move in that plane at all. Taking a look at lines 25040 and 25045 shows that the sprite will move down the screen for 100 steps, without moving horizontally at all because the value for X movement is zero. After 100 steps the sprite moves to the left (note the negative value of *direction*). Our sprite will now move up the screen and vanish off the top.

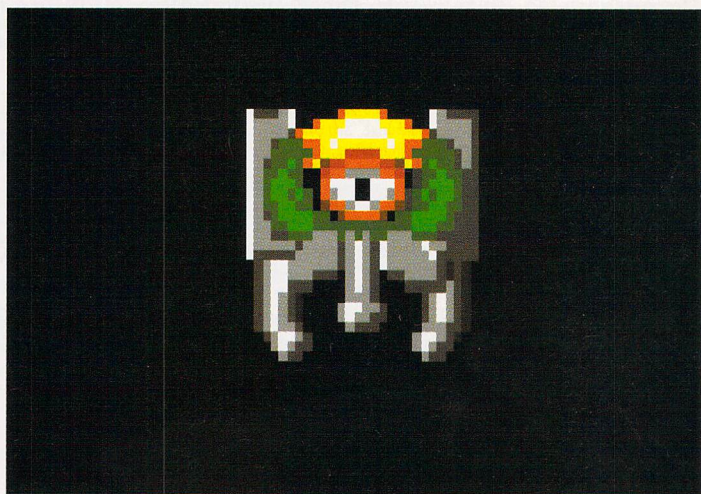
• Using combinations of MOVE X and MOVE Y commands like this can produce very impressive results, including diagonal movement as in Program III.

Sometimes it may be necessary to keep a sprite within a certain predefined area on the screen. As we have seen, we can easily define the path for





One sprite is confined by the box, the others patrol the perimeter



Close up of a sprite. Replace it with your own design if you like

our sprite to follow with the MOVE commands, but unfortunately this doesn't allow for random movement. The best way around this is to set maximum and minimum values for the X and Y sprite coordinates and keep checking that it doesn't go past them.

Two other variables are used to show the sprite's direction in both the X and Y axis, and whenever the sprite reaches the edge of its area the appropriate variable is altered. Load and run Program IV to see this working.

The variables *xp* and *yp* are the initial position of the sprite chosen at random, and *xd* and *yd* are the directions the sprite will travel. When *xd* is one the sprite moves to the right, and a value of minus one moves it to the left. If the value is zero our sprite won't

move at all in the X direction. The same goes for *yd*, except the movement is vertical.

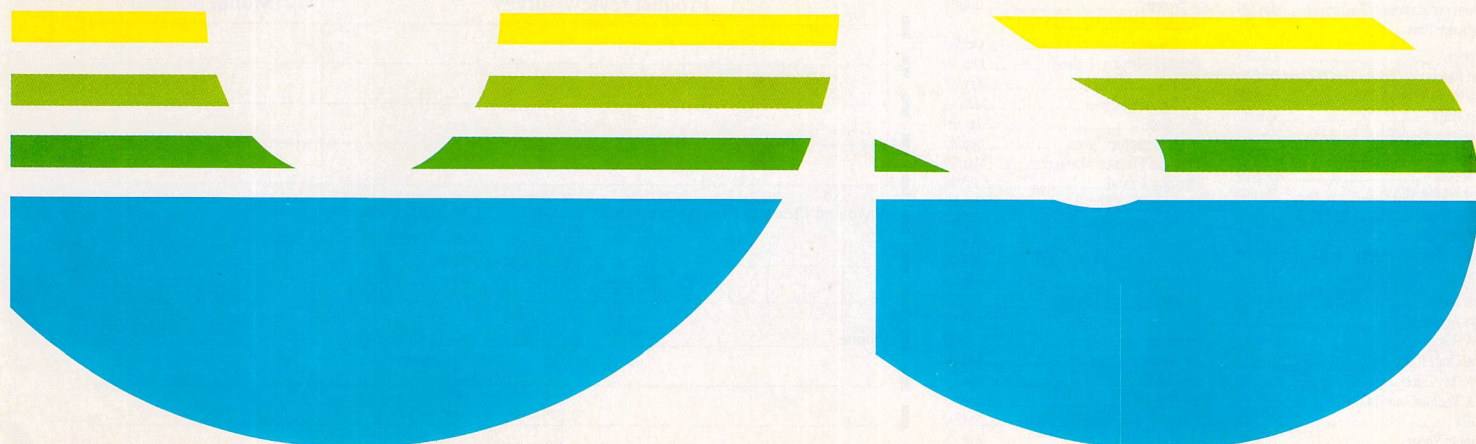
In Program IV, after every 300 counts – or six seconds – the sprite changes direction and to make sure the new directions are different from the last ones, two variables are used to remember the last values. These are *oxd* and *oyd*. Line 25040 just draws a box on the screen so you can be sure the sprite is staying within the area.

The two important lines are 25120 and 25130. This is where the checks are made to ensure the sprite hasn't reached the edge of its allocated area. If it has, the value of *xd* or *yd* is negated. This simply changes any value of one to minus one and vice versa, therefore altering the direction. If the value is zero, it will remain zero.

We'll be covering how several sprites can all follow the same path next month, along with some slightly more complex sprite techniques, but to get you in the mood Program V is a very simple program with two sprites moving around the edge of the screen.

We have covered enough MOVE commands to enable you to discover exactly how this program works. Our final program this month shows four sprites and covers all the techniques we have discovered. I mentioned at the beginning that some sprites can be forced to follow others, and Chase is a very simple program which demonstrates this technique.

● Can you discover how it works? I'll leave you with that little brain teaser until next month, when I'll be looking at this and other STOS sprite movement routines.



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Prospero Developer's Toolkit	Apr/90
Protext	Apr/88
Protext Office/Filer	Sep/88

Quantum Paint	Jul/88
Quantum Paint Gold	Jul/89
Quartet	Jan/90
Quicklist + Mastermat	May/88
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Regent Word II	Nov/89
Revolver	Nov/89
Robokit	Dec/88
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Share Master	Aug/88
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Spectrum 512	Aug/88
Speed Read	Jul/89
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Sprinter	Mar/89
Sprite Master	Jan/89
Stacy portable - Part I	Feb/90
Stacy portable - Part II	Mar/90
Stage 2	Jul/89
Star LC-10 colour/mono printer	Aug/88
Star NB24-10	Oct/88
ST Organiser	Dec/88
STOS Games Creator	Dec/88
STOS Compiler/Sprites 600	Aug/89
STOS Maestro Plus	Sep/89
Studio 24	Oct/89
Superbase Personal 2	Apr/89
Superbase Professional	Jul/88
Superbase Professional 3	Apr/89
Super Card Index	Apr/90
SuperScore	Dec/88
Swiftcalc	Nov/88
Swiftie Lisp	Jan/89
Tables Test	Apr/89
Talespin	Mar/89
Technist	Dec/88
Tempus	Mar/88
Tempus 2	Oct/89
That's Write	Oct/89

The Juggler	Jul/88
Things to do with Numbers	May/89
Things to do with Words	Jan/89
Timeworks DTP	May/88
Trackman	Dec/89
Trip-a-Tron	Oct/88
True Basic (Precision)	Apr/88
Tune-Up!	Apr/88
Turbo Kit	Nov/89
Turbo ST	Feb/89
Tweety Board	Jun/89
UltraScript	Dec/89
Universal Item Selector	Dec/89
Utilities Plus (Microdeal)	Feb/89
Vidi-ST	Feb/89
Virus Destruction Utility	Jun/89
Waterloo	Aug/89
Werces/Werces+	Jan/89
WordFinder	Oct/89
WordPerfect	Mar/88
Word Search	Sep/89
Xtent Easitalk ST	Apr/89
Xtra-RAM	Mar/90
Z80 x 68000 Translator	Jul/89

LANGUAGES:

Modula 2 - FTL (HiSoft)	June/88
Pasal (Prospero)	

MODEMS:

Miracom Courier	
Miracom WS300, WS400	Apr/89
Modem Marketing Designer	

MIDI/MUSIC PACKAGES:

Dr T's Fingers	Feb/89
MidiGrid	
Master Tracks Junior	Nov/88
SST	

WORD PROCESSORS:

Protext	
Word Writer ST	Aug/88
WordUp	

COMPARATIVE REVIEWS

ASSEMBLERS:

Devpac2	Aug/88
Workbench	

BULLETIN BOARD SOFTWARE:

BBS Express	Apr/90
BBS 3.0	

C COMPILERS:

Manx Aztec	Feb/89
Micro-Time	

CLOCK CARD UTILITIES:

Forget-me-Clock	Jan/89
Micro-Time	

SURVEYS

SOFTWARE:

Educational Software Guide	Mar/89
Hardware/Software Guide	Apr/88

MODEMS:

Amstrad stand alone	
Anglo Turbo I/II	
Datachat	
Dataflex Stradcom	
Dataphone Demon	Mar/89
Dataphone Designer	
MicroLink dual/Multi-speed	
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Deep space probe

John Kennedy
explores brave
new worlds with
the aid of his ST

FAR out on the western spiral arm of the Galaxy lies the yellow star Sol. Orbiting it at a distance of about 93 million miles is a blue/green world, unique in the system because the hydrogen-oxygen molecule called water exists in three distinct states. On this planet live many species of carbon-based life forms, among which one of the most intelligent is Man.

Man has fashioned many cunning devices to help him explore his universe, and has collected many pieces of data and as many theories again to explain them. His fascination with the science of astronomy has remained to the current day, with each new discovery heightening his desire for knowledge.

Now the ST can help present the data collected in a form to stimulate interest with the help of the Computer Guide to the Solar System (CGSS), running in medium resolution colour in half or 1Mb versions.

By clicking on various drop-down menus, Earth creatures of all ages can pay visits to various parts of

the solar system, exploring planets, asteroids and Sol itself. Animated sequences demonstrate physical phenomena, and even perform scientific experiments to explain them.

Don't mistake CGSS with a number-crunching program that will produce dates, events, right ascension and declinations of the planets: There are many of other packages on the market and in the public domain that will achieve this more specialised requirement.

The CGSS is more in way of an interactive on-screen text book. It will explain what a lunar eclipse is, but it won't tell you when to expect the next one.

Each planet and phenomena has several pages of information associated with it, and can be read in any order. The ability to step back to a previous page is missed.

It's difficult to criticise a package like this without simply picking at any tiny defects. The CGSS is definitely a well polished package, but it could have been so much better.

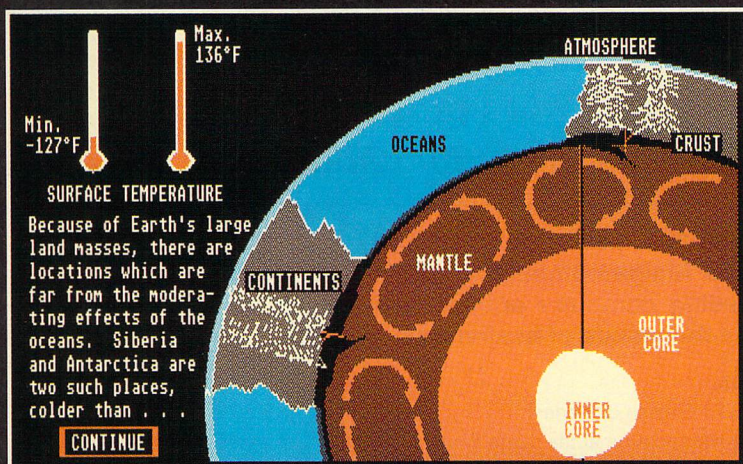
For example, a major disappoint-

ment is the lack of any information on the planets' moons. Obviously the programmers had to draw the line somewhere regarding what to put in and what to leave out, but I think by ignoring natural satellites they have done themselves a grave disservice.

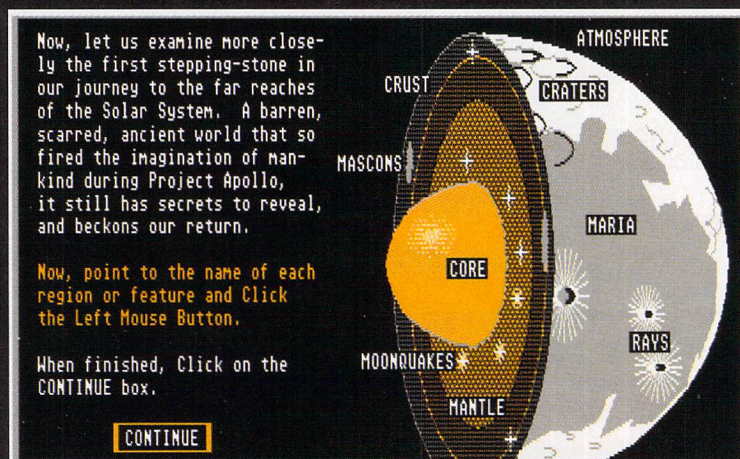
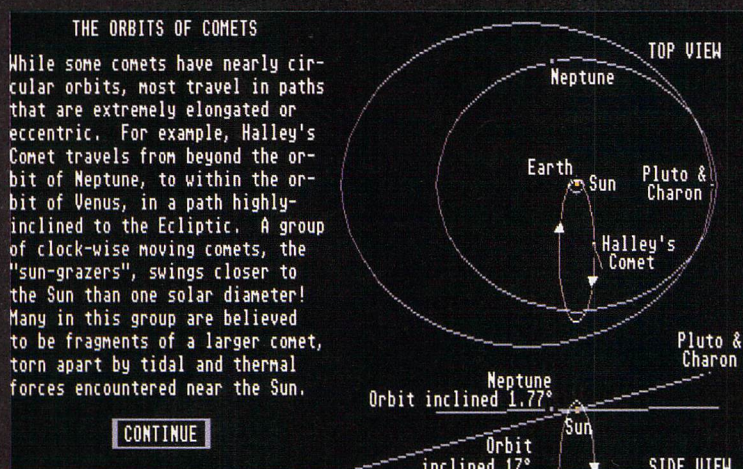
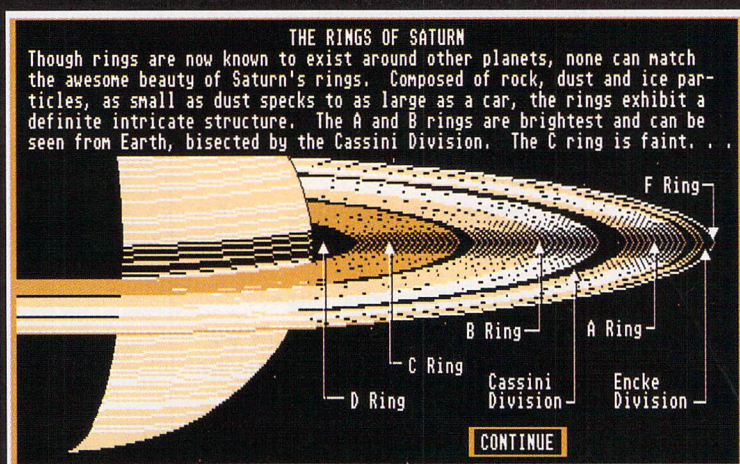
Not only that, but subjects such as thermodynamics are touched upon, which are a great deal less important. A brief mention about the number of moons of each planet is made (as known in 1989), but this is not enough: The moons of the outer gas planets are among the most amazing and dynamic worlds in our entire solar system.

Io, a moon of Jupiter, is where the first extra-terrestrial active volcano was discovered by means of a now-famous photograph showing a plume of gas. Saturn's satellites include a deep-frozen version of the Earth. Even the moons of Mars merit more than a mere mention of how much you would weigh if you were standing on one.

Also maps of the Moon and Mars were conspicuous by their absence.



From a main menu you can access dozens of screens packed with facts, figures and information about the heavenly bodies in our solar system



Pointing out some well known craters and features would have been a good idea. Another missed opportunity is the lack of digitised pictures, say a Lunar close-up or a Viking Lander image.

Now I don't want to paint a wholly negative picture; the program contains a lot of useful information, two discs worth in fact. Every planet has comprehensive cross sectional diagrams, comparisons with the Earth and generally enough information to comfortably answer any astronomy questions which may crop up on Mastermind.

The presentation standard is very high indeed, with clear diagrams and clever animated sequences of eclipses and tides and so forth. Make sure for "clever" you read "easy to understand" and not "state of the art".

The astronomical data included is valid up to some time before 1989. So for example, the Halley's Comet rendezvous is recorded, but the Voyager 2 encounter with Neptune is not. Upgrades are promised, so make sure the registration card is returned.

Although the amount of information contained in the CGSS is about the same as that in a text book costing about £10, the interaction and animation means that the grab factor is immediately higher.

Thus the CGSS would be wonderfully at home in a primary school, where children could sit in front of an ST and explore the solar system at their own pace.

Parents should also take note that it might be a chance to use that computer bought under auspices of education for something other than games.

By nudging into the education market, WinterTech has felt justified at pricing the CGSS at a rather high £50 (minus a penny). Yes, it is a good program, but for the price I would have expected more information, if necessary on an extra disc or two.

FACT FILE

Product: The Computer Guide to the Solar System

Price: £49.99

Supplier: WinterTech/Third Coast Technologies, Unit A, Bradely Hall Trading Estate, Standish, Lancashire WNO OL9.

Tel: (0257) 472444

POINTS FOR:

Well presented, well executed and full of interesting facts.

AGAINST:

Lacking in detail in some areas, such as the planet's moons, but too much detail in others.

The word is PROTEXT...

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AUI 3/89

"Protex really is the best text processor on the Amiga"
ST/AMIGA FORMAT 2/89

"Wins hands down as the all round package"
ST USER 8/88

"I couldn't be more impressed" ...

"So a big thanks to Arnor for writing a brilliant piece of software"
COMPUTER SHOPPER

PROTEXT is now Britain's fastest selling Word Processor on Atari ST and Amiga computers, and is used by many of the leading computer publications and journalists, as well as thousands of businesses.

Protex's powerful features include:-

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- use of foreign languages
- headers, footers and footnotes
- flexible configuration program
- comprehensive set of printer drivers
- wysiwyg ('what you see is what you get') display shows bold, underlining and italics on the screen.
- two file editing. You can edit two documents at the same time.
- find and replace. Powerful search facility.
- mail merging. The most comprehensive mail merging facilities available in any program.
- 300 page manual with full index.
- Swedish version also available. French and German coming soon.

Protex was awarded the "Best Buy" accolade in PC Buyers Guide, and was given a bottom line verdict of 5 stars in What Personal Computer?

"Protex is probably the most powerful word processor on the Atari ST"
ST USER 4/88

"the best value for money in word processing on the Amiga"
AUI 9/89

"Protex deserves to be the system by which all other word processors are judged ... Arnor has given the market a superb product"
YOUR COMPUTER

"Arnor's Protex 4 is just about unbeatable ... this really is an excellent program"
PC AMSTRAD

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And of course, Prodata is fully compatible with Protex.

Amiga owners please note that you need 1MB to run Prodata - see below for special price for Prodata plus A501 (512K memory + clock expansion)

PRODATA

"Designing layouts is incredibly easy" YOUR AMIGA

PRODATA v1.00 (c) Arnor 1989 Printer (P1) EPSON Directory E:\PROD
Open: INVOICE (49F) Recs: 12 Sel: ALL Layout: 1 Index: 0 15:23:22

INVOICE		Select field name
Invoice Address	Del	Field 4 : Address 3
-----	---	Field 5 : Address 4
-----	---	Field 6 : Address 5
-----	---	Field 7 : Del Addr 1
-----	---	Field 8 : Del Addr 2
-----	---	Field 9 : Del Addr 3
-----	---	Field 10 : Del Addr 4
-----	---	Field 11 : Del Addr 5
-----	---	Field 12 : Telephone
-----	---	Field 13 : Fax
-----	---	Field 14 : Contact
-----	---	Field 15 : Invoice Number
DATE	Your Ref	Field 16 : Order Ref
????????????????		Field 17 : Quantity 1
		Field 18 : description 1
		Field 19 : Unit Cost 1

Top left = (0,0), Pos = (3,17), Length=20.
Variable name: DATE Use <<<< to move, < and > to resize
(Field) (Text) (Variable) (Line draw) (Attr) (Del) (Edit) (Tab) next:

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____ Protex demo disc

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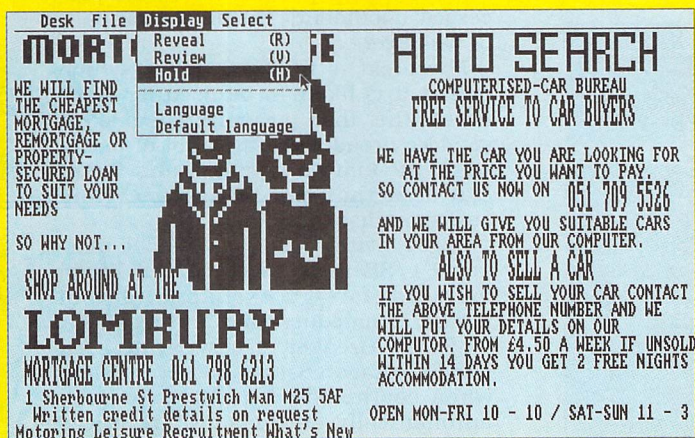
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The monochrome display shows two pages onscreen

Tune in to the Atari

A new hardware add-on to receive teletext services is tested by Roland Waddilove

Teletext

A television signal is made up of several hundred individual lines, each containing colour and brightness information for that line. These lines are demodulated and displayed by the television to make the picture you see on the screen.

The first 25 lines of broadcast information are ignored by a standard television, and 16 of them may be used to transmit extra information not related to the picture.

About six or seven are currently used to transmit teletext signals – a digital stream of 1s and 0s at a rate of around seven million bits per second. Teletext pictures are constructed from this binary data.

YOUR ST has one big advantage over a normal TV set when it comes to dealing with the teletext services broadcast by the BBC and Independent TV, Ceefax and Oracle. It can store the displayed information on disc and subsequently manipulate it in a variety of ways.

The Microtext teletext adaptor is a small light grey coloured box about 8in x 6in x 2in. A ribbon cable plugs into the ST's printer port and a power supply and aerial plug into the Microtext. A through port on the rear of the unit allows you to continue using your printer.

Boot up the software and it automatically scans the TV broadcast frequencies looking for teletext signals – up to 16 channels can be stored. It notes the frequencies found and saves them to disc ready for next time you boot up. It automatically recognises BBC 1 and defaults to displaying the general index on page 100.

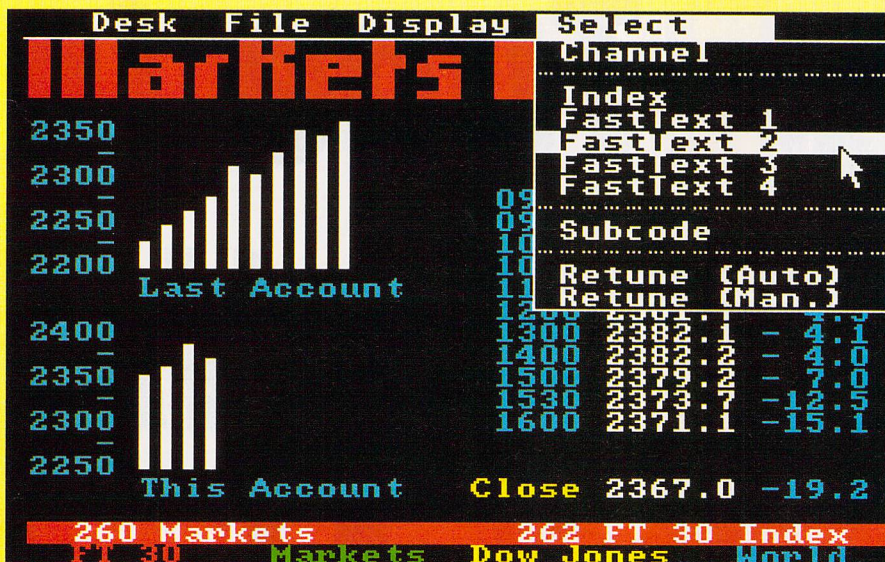
The display on a colour monitor is excellent and you would think you were watching a TV. You can, in fact, treat Microtext just like a TV – type in the page to display using the numeric keypad and the page will be displayed. The lazy way to use Microtext is to use the mouse to point and click at page numbers displayed onscreen, such as in the index.

So far its operation is just like a TV, but now for the several extras that might tempt you to invest in the Microtext. The software runs in either low resolution colour or high resolution monochrome, and in the latter mode, two pages are displayed side by side.

Fastext is provided – each page is accompanied by a four-item menu at the bottom of the screen. The menu items each take you to a related page, so if you were looking at what's on BBC 1 TV then the menu options might be to display BBC 2, ITV and Channel 4. You can point and click on



Here, the Gem menu bar is overlaying a typical teletext page. Note the fastext options at the bottom of the screen



Financial pages can be automatically downloaded and saved to disc

P221 CEEFAX 221 Thu 14 Dec 20:04/13

Prices

SHARECHECK CLOSE		3/4
Calor	428	- 4
Cap Cos	365	
Caradon	533	
Carlton	850	+11
Charter	459	- 7
Christi	284	
Clyde	170	- 4 1/2
Coates	494	
Coats V	143	- 1
Colorol	66	
CU	495	+ 4
Compass	350	
Control	50 1/2	+ 1/2
Cookson	259	-13
Costain	276	
Courtau	380	- 5
CRH	253	+ 1
Croda	190	- 3
Dalgety	401	
Davy	252	
Dawson	207	+ 1
DeLaRue	303	
Delta	320	+ 5
Dixons	134	- 1
Dowty	233	+ 2
DRG	587	
Dunhill	388	+ 7
Electro	199	
EMAP	234	- 1
ECC	429	- 9

Updates: 0915 1045 1215 1345 1515 1730

220 Prices 221-3 SHARECHECK
SharesH-R Prices SharesR-2 Features

Market Breaker - a separate software package - will download and manipulate stocks and shares information

the menu options. The last 16 pages displayed are retained in memory and can be recalled instantly.

This facility can be used for temporarily storing related pages or for automatically capturing multiscreen pages.

Pages can be saved to disc in a variety of ways - in a special compact form, as an Ascii text file or as a Degas picture. Pages can be output to the printer as Ascii text or as a screen dump. You can also specify page subcodes, for instance, if page 199 has five screens and you wanted to see just the third you could select 199 then 003.

The most exciting feature of Microtext is the ability to program it using a

text editor (not supplied, but there are plenty around).

The keywords consist of CHANNEL, PAGE, SAVE, PRINT, ALL, DELAY, WAIT, REPEAT and QUIT, and their functions are immediately obvious, except perhaps for ALL. This command means all the frames of a rolling multipage.

This code will save the share price listings on Channel 4 to disc:

```
CHANNEL 4
PAGE 501 SAVE ALL
PAGE 502 SAVE ALL
```

Quite simple, isn't it. This example would be very useful for a businessman. The pages could be recovered from disc, printed out, turned into a

text file to incorporate into a word processed document, put on a DTP page or whatever.

Microtext is far from cheap which means it is likely to be used for business rather than pleasure. The teletext services broadcast quite a lot of useful up-to-the-minute business and financial data that can be captured and stored on disc.

Pages include shares, the stock market, FT/SE index, Wall Street, World markets, foreign exchange, pound report, commodities and unit trusts.

Market Breaker is a separate software package costing £69.95, which, when combined with Microtext, will automatically download share prices from Ceefax and Oracle. Prices can also be manually input.

Graphs can be produced in five formats, showing selling and buying points. Portfolios can be set up and subsequent share acquisitions recorded.

This package is ideal for anyone interested in the intricacies of the stock market and enormously increases the power and usefulness of Microtext. It's a pity some simple software along these lines couldn't have been bundled with Microtext.

Conclusion

Microtext worked perfectly throughout the review period. It is easy to use and gives a superb display. Even with only a cheap indoor aerial the reception was faultless.

If you have a need to access the data stored on Ceefax and Oracle pages then Microtext will fulfill your hardware requirements. If you want to manipulate the data captured you will either have to process it manually, write some software yourself - this could easily be done in Basic - or buy a package such as Market Breaker to do it for you.

FACT FILE

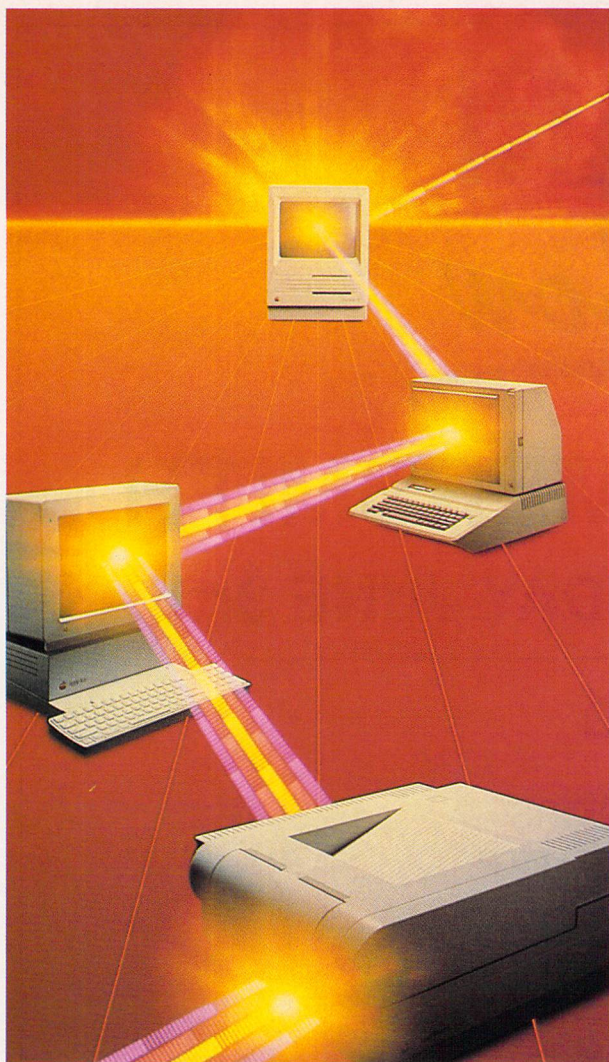
Price: £148.90
Supplier: Microtext, 7 Birdlip Close,
Horndean, Hampshire PO8 9PW.
Tel: 0705 595694

POINTS FOR:

Easy to use. Produces a good display.
Many useful features.

AGAINST:

You'll need to buy extra software or write your own to make the most of the downloaded pages.



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How to get the Most From the Atari Portfolio
ST Programming Forum – HiSoft Ltd.
Atari Lynx – The New Age
User Groups and Bulletin Boards
Atari New Product Update
MIDI Workshop

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Saturday 10.30,
Saturday 11.30, Sunday 15.30
Saturday 12.30, Sunday 11.30
Saturday 13.30, Sunday 14.30
Saturday 14.30, Sunday 12.30
Saturday 15.30, Sunday 13.30
Saturday 16.30, Sunday 10.30

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Drakkhen dissected

Arcade CORNER

BEFORE starting to play Drakkhen you'll have to generate a set of characters, and the instructions to do this are clearly explained in the manual. However, where most players may fall down is in accepting the first characters the computer offers them.

Table I shows the desired values for each party member. You don't have to be spot on with these, but don't go less than one point below any of them or you probably won't survive very long.

When starting to play, first of all clothe your characters and give them weapons. The magician and priest should be ready with healing spells – they'll probably be needed before long.

To cast a spell, except in battle where it's automatic, choose it from the weapon/spell selector and right-click on the object or person to operate on.

Your first task is to gain entrance in to Prince Hordthken's palace, which you can see directly to the west. Before crossing the drawbridge, wait until the shark goes under it and out the other side.

Once inside you'll find a buckler on the wall; take it and give it to one of your companions. Now go outside, then enter again and again take the buckler which has reappeared. This should be done three times until each character has one. Go outside again and save your position.

When you re-enter, press the second symbol counting from the left. This will turn off the force field and allow access to the rest of the palace. Now enter the doorway to the immediate left of this symbol and begin exploring. In one room you'll find a carpet hung on the wall. It covers a passageway into a chapel.

While wandering around be ready for a fight, so keep the combat icon active. If you make it into the bedroom, do not enter the room to the south until your characters are at least level five. When you do go in there, don't fight the Prince, but acti-

Phil Lawson guides you through the dark land of Drakkhen and offers hints and tips to aid survival

vate the question (?) icon and you'll receive your orders.

Gaining experience points is only achieved by attempting to perform actions or winning a fight. At times your party will come close to death, so be sure to save your position at regular intervals.

You can do one of two things to increase your hit points, either visit one of the two temples and get a priest to heal you for cash, or stand immediately outside a building and wait for a couple of minutes.

I prefer the second method, as it

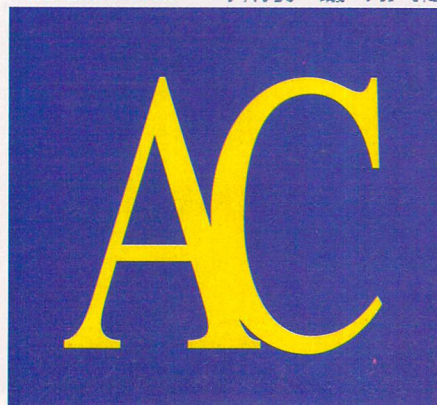
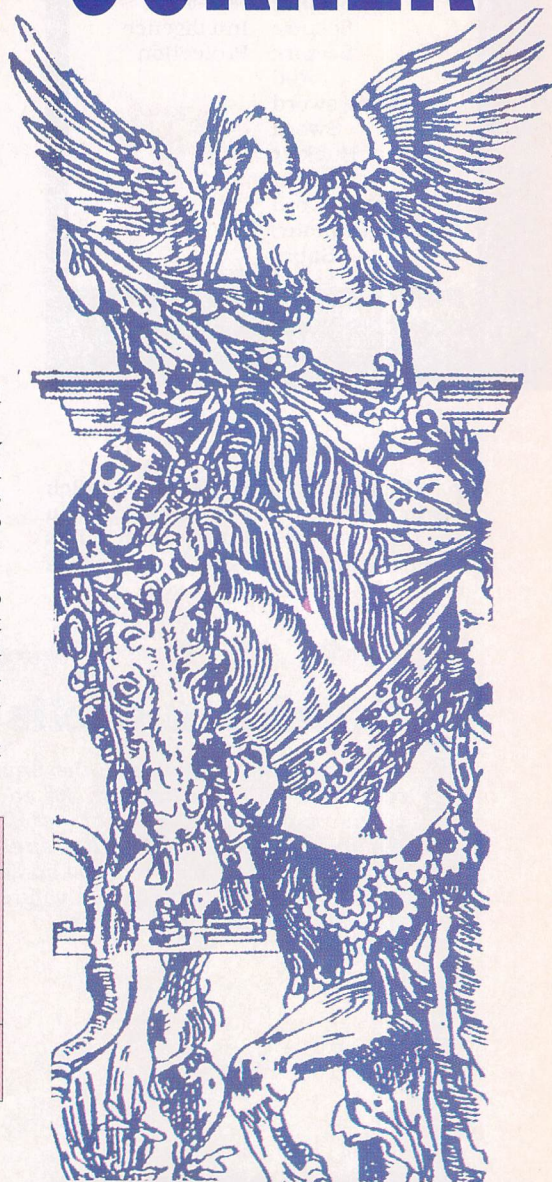
	F	S	M	P
Strength	18	17	15	16
Dexterity	17	14	12	14
Intelligence	15	11	16	16
Constitution	17	11	13	10
Education	15	10	18	12
F Fighter		S Scout,		
M Magician		P Priest		

Table I: Minimum requirements for each party member

gives you an opportunity to take a break without the threat of being attacked.

Most of the creatures you'll encounter carry some form of bounty, either in extra weapons, useful objects or cash. Once they're defeated, the character who dealt the final blow will collect all the treasures.

Make sure that no one carries more than seven weapons or items, as this leaves no room for others to be picked



Ring	Power
Ring	Luck
Ring	Dexterity
Ring	Invisibility
Ring	Intelligence
Ring	Understanding
Potion	Speed
Potion	Cure
Sceptre	Power
Sceptre	Intelligence
Sceptre	Protection
Rod	
Long sword	
Sword	
Buckler	
Helmet	
Long sword	
Cuirass (armour)	
Sabre	

Table II: Extra weapons and objects

► up. Whenever an object is found which acts in a similar way to one already in use, throw away the one which offers the least protection. Always wear rings

when possible, preferably the ones of power and dexterity.

The sceptre of protection should be carried by the magician, as he's unable to wear some of the more protective clothing such as chain mail and helmets.

Be sure to collect torches whenever possible, as night comes fairly quickly. Swords, rods and other weapons, to be found in Prince Hordthken's palace, should be picked up and distributed among the party.

Don't think that you can get by if a character is killed. Each one has different characteristics and therefore is essential to a successful adventure.

The manual mentions the weapon-smith, which is in the ice land to the north. To reach it, follow the east path northwards into the ice land and take the first turning on the right.

Once you've bought everything you want, leave the shop and head south back to familiar lands again. On no account attempt to explore either the ice-land or the desert until each member has reached level seven, otherwise you'll be quickly wiped out.

Occasionally a small man will appear. Don't fight him, as he's well versed in the magic arts and will quickly kill you. Talk to him instead,

as he often has valuable information to pass on.

All the crossroads you'll come across contain a small grave, which if bumped into will often release a demon. These can be defeated, but it takes great skill and it's best to skirt around the headstones whenever possible. Losing your direction is a common way of getting into trouble, but luckily the crossroads have a small arrow pointing north.

The transporters marked on the map take you quickly from one side of the island to the other without having to worry about being attacked on the way.

The group of triangles in the middle should be avoided at all costs, as stepping on them produces some very evil creatures, which will take great delight in killing you on the spot.

Hostels are scattered all over the land and should be visited on a regular basis, as vital information can be obtained by questioning the inhabitants.

Remember your main task is to rescue a priest, kept under close guard by Princess Haagkha. Gaining entrance to her palace isn't easy, but you won't need to do this for quite some time.

Drakkhen spells

Some are only available to the priest and some to the magician. As each gains experience, so more spells become available. As the spells marked * and + have the same names, it is assumed that the priest controls one and the magician the other

⌈V<J⌋⌈⌋	Heal small wounds	Low
⌋⌈⌋⌋⌋	Light	Low
⌋⌈⌋⌋⌋⌋⌋	Lightning bolt	Med
⌈⌋⌋⌋⌋⌋⌋	Invisible	High
⌋⌋⌋⌋	Cure	Med
⌋⌋⌋⌋⌋	Extra protection	Low
⌋⌋⌋⌋⌋	Unlock door	Med
⌋⌋⌋⌋⌋	Increase speed	Med
⌋⌋⌋⌋⌋	Lock door	Med
⌋⌋⌋⌋⌋	Blind the enemy	Low
⌋⌋⌋⌋⌋	Teleport	High
⌋⌋⌋⌋⌋	Increase strength	High
⌋⌋⌋⌋⌋	Confuse enemy	Med
⌋⌋⌋⌋⌋	Dispell enemy	High
⌋⌋⌋⌋⌋	Paralyse creatures	?
⌋⌋⌋⌋⌋	Language translator	?
⌋⌋⌋⌋⌋	Increase force	Med
⌋⌋⌋⌋⌋	Heal large wounds	Med
⌋⌋⌋⌋⌋	Kill undead creatures	Med
* ⌋⌋⌋⌋⌋	Recover all that was lost	High
* ⌋⌋⌋⌋⌋	Back to life	High
+ ⌋⌋⌋⌋⌋	Isolation: Ignored by enemy	Med
+ ⌋⌋⌋⌋⌋	Deny the dragon	High

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ERGONOMICS used to be quite a big buzzword. Everybody was really into stuff that looked like a sumo version of everyday objects – all big and curvy and easy to hold. The design of the XB24 harks back to these times, it looks like it was left out in the sun to long – more sort of congealed than designed. But looks aren't everything, or so they tell me. Let's see what it can do.

After unpacking and removing the

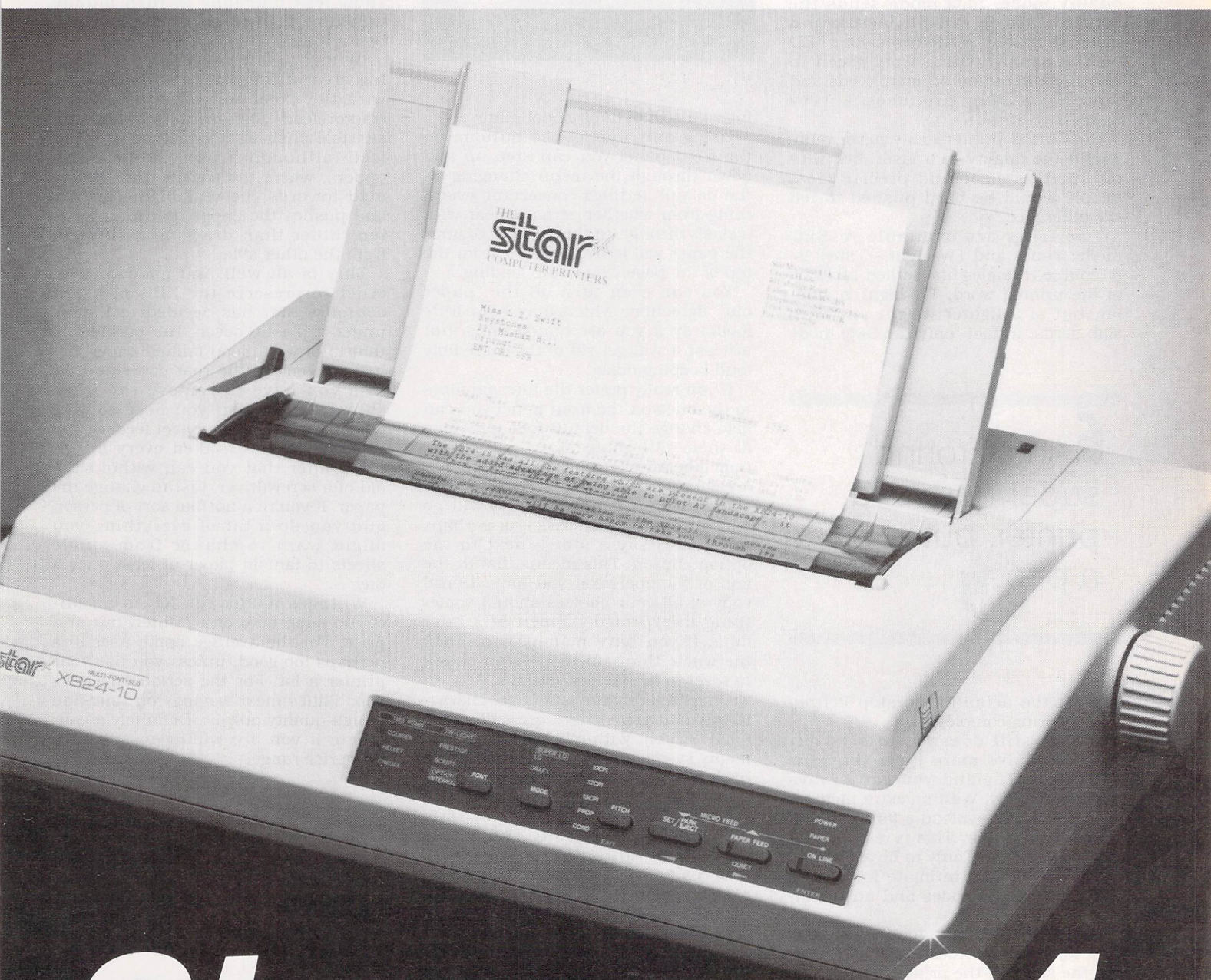
obligatory three pieces of expanded polystyrene the first thing you must do is to put a piece of paper in and press the feed button. Motors whir, lights flash and your page is parked auto-

Nic Veitch checks out whether the XB24 is worth its pin money

matically. That's what you pay money for.

The park and eject routines are very precise, helping to eliminate the usual first page wastage.

The front panel overflows with gadgets. There are five buttons and 19 LEDs, which are mostly connected to the surprising number of fonts. There are 15 letter quality fonts, though one of these doesn't really count as it is a



Stars on 24

representation of the Code 39 bar-coding system.

Seven fonts can be obtained using the select button on the printer itself, the rest will have to be prised out with a bit of cunning programming and use of escape codes. This is a shame since fonts like Blippo and Orator are a lot more useful than some of the ones on the panel – Script for example.

The XB also supports a super letter quality mode. SLQ mode sends the printer into its 48-pin emulation mode, indicated by the two-colour LED on the panel turning from green to red. A combination of micro feeds and double passing produces a very impressive output.

Dot matrix printers may never quite match the quality of a laser, but with output this clear and precise most people would be hard pushed to tell the difference.

Two fonts are available in SLQ mode: Times and TW-Light – Times is, of course, the elegant, serified stalwart of the printed word. TW-Light is similar, but of a lighter weight and with slab serifs. In fact, only the SLQ mode



ings – a sort of duck-shoot affair.

Using only four of the buttons on the front panel you can step up and down through the menu changing all the default settings concerning everything from whether zeros appear with a slash through to the number of lines the paper will be fed forward from the top of the page when auto loading.

You can even turn off the “paper out” detection, which may be a little foolhardy if you are handfeeding, but at least it will get rid of the incredibly loud beeping noise.

If you really prefer the internal fonts to the ones on the front panel you can also change the default font to be one of them. All choices are, of course, remembered after powering down.

Because of the XB's reverse feed capability, at each option it will go back and put an asterisk – or perhaps we should say a star – next to the option chosen. This means that at the end of the operation you have a hard copy of all your choices should something unexpected happen at a later date. If you have managed to muck the whole thing up there is an option to reset to the factory settings.

Unfortunately the language, character set and page length are still set by a DIP switch. With all these wonderful menu systems why do we have to go back to the primeval chore of rooting around in the guts of the printer with a Bic?

On the speed front the XB is impressive with a draft (pica) rate of 200 cps and for LQ (pica) 67cps, just a shade slower than the Epson LQ-850, although considerably quieter. In fact, the XB has a quiet mode – actually just a switch to turn off bi-directional printing – which enables the user to work at the same desk as the printer and remain sane (assuming he was in the first place).

Being a Star, there is no compatibility problem. Just set the printer to Epson mode and it will run happily. If you go for the colour option be sure to check for software compatibility.

The colour kit is very easy to install – just pop out the ribbon and lever up

the plastic base of the carrier unit. Remove the polystyrene – it gets everywhere – and drop the colour unit into place. There is no worry about getting it wrong, it will only fit one way. Put everything back the way you found it and you're now ready to explore the spectrum.

The ribbon can take quite a bashing, but after about six or seven sheets of A4 the colours start to fade. Colours are still fairly distinctive though and show less tendency to turn muddy with time than most other colour-ribbon printers.

Getting to any conceivably interesting area of the printer is fairly easy with the exception of access to the tractor feed. Star printers favour the sensible push-tractor method of paper feed (although a pull-tractor is an option), where the tractor unit is situated towards the rear of the printer and pushes the paper round the platen rather than dragging it through from the other side.

This is all well and good, but in order to preserve the XB's pleasant contours Star has decided to hide it under a plastic cover. The problem is that in order to load fanfold paper you have to remove the rear cover and for this you have to remove the front cover, and for that you need to take out the plastic single-sheet feeder.

Soon you have taken every bit off the printer that you can without the aid of a screwdriver, just to change the paper. If you're a normal sort of person and you do a bit of everything you might want to change from single sheets to fanfold paper at least once a day.

Whinges aside, the XB is an all-round superhero of a printer, but at a price. For the average home user it is perhaps too good, unless you use your printer a lot. For the serious user it's capabilities mean savings on time and a high quality output. Definitely a candidate if you are willing to spend in this price range.

“An all round
super hero of a
printer, but at
a price”

gives it the definition to stop it from disappearing completely.

If that still doesn't satisfy your desire to have more fonts than the Church of England you can always download a few. With no extra memory card you can download a font and still have a 12k buffer. This is a very difficult business and only to be attempted by those with an intimate knowledge of Epson escape codes and an unlimited supply of paper.

In addition to the pitch, print mode and font, many other options regarding the setup of the printer can be carried out from the front panel. To access them turn off the printer and then turn it on again while holding down the Set, Paper Feed and On-line buttons simultaneously.

From this moment on your printer thinks it's a terminal. Menu options will be printed out and at the touch of relevant buttons the print-head will position itself under one of the head-

FACT FILE

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AGAINST:

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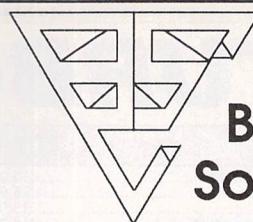
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Nic Veitch introduces an alternative programming language and assesses an APL development system

Weird – or wonderful?

SHOW someone a function listing from APL and they will say "What sort of programming language is that?" and the answer is that it isn't any sort of programming language. It is a mathematical one.

Back in the sixties a guy called Iverson decided what the world really needed was a new form of mathematical notation, a way of writing complex and often repetitive formulae in a way that was easy to understand.

He felt so strongly about this that he gave lectures, wrote papers and finally, in 1962, produced a book outlining the symbols for the language and the format it would take.

The book was entitled *A Programming Language*, and Iversons' strange squiggles became a symbol based programming language which, with a blinding stroke of imagination was christened APL.

Now it has arrived for the ST in the shape of APL.68000 from Micro APL, and very well presented it is too. Open the excellent hard box to reveal two manuals, a set of stickers and a single disc. Yes, one disc, and it's not completely full – size isn't everything.

The first manual is around 280 pages of just what it is that APL can do. A lot of this is taken up by definitions of all the strange symbols and a discussion on what exactly is meant by the terms monadic, dyadic and nomadic.

It is fairly well written and gives enough information for the APL illiterate to get an idea of what's going on. There are examples, but in some cases I think they are too simple.

The fervour induced by APL is near religious in some circles, with many camps divided on the proper way to do things. If you really want to know what's going on you have to buy a book, but it is unlikely you will find one in the local library.

The second manual is much smaller and is an ST specific guide to how APL

```

Desk File Edit Break Options
APL.68000
a ← THIS SYMBOL DEFINES A COMMENT
a THERE FOLLOWS A SIMPLE MATRIX MANIPULATING FUNCTION

▽ TRANSF
[14] [0]
▽A TRANSF B
[1] A←(A÷180)×0.1 a CHANGE ANGLE FROM DEGREES TO RADIAN
[2] N←ρB a DETERMINE SIZE OF MATRIX
[3] N←N[2] a ONLY 2ND DIMENSION RELEVANT
[4] MAT←3ρN 1 a DEFINE MATRIX M DIMENSIONS 3×N FILLED WITH 1
[5] X←40A a DEFINE X AS COS OF THE ANGLE
[6] Z←3ρN X a DEFINE Z MATRIX FILLED WITH X
[7] Z←B×Z a MULTIPLY MATRIX
[8] MAX←Γ/Z a FIND MAXIMUM VALUE IN MATRIX Z
[9] X←(Γ/Z)⌈MAX a FIND X POSITION OF MAXIMUM VALUE
[10] Q←100÷MAX a CALCULATE SCALING FACTOR
[11] MAT2←B×Q a CALCULATE NEW VALUES OF ORIGINAL MATRIX
[12] MAT2←MAT2+MAT a ADD OFFSET
[13] ANSWER←MAT2 a STORE ANSWER
[14] █

```

Variable types as APL sees them

uses Gem, with a breakdown of the sample files included. It also tells you where to put all the little stickers provided. This is a task which can be tackled in one of two ways – the cunning method or the *Atari ST User* reviewer system.

I managed a fairly straight set by lowering them on to the front of the keys and pressing them flat with a small screwdriver. The more sensible would possibly prefer removing all the keys and sticking them that way. This method has the added bonus that you can easily reconfigure your keyboard as a zerty if you want to run German software.

The stickers are very important as they don't just tell you where the symbols are, but where everything is. When you run APL all the familiar brackets, quotes and colons will magically swap about. There is a word to

explain this sort of behaviour – no, not that one. The word I was thinking of is compatibility.

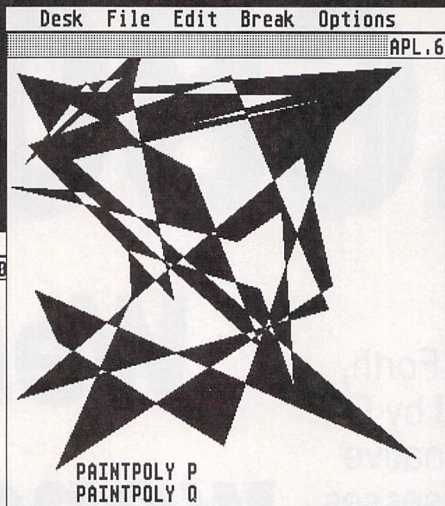
Years ago, when I had a C64, I used to take the keys off and swap them around to confuse people who didn't know how to type. Their experience would be similar to an APL programmer's if he was suddenly introduced to an environment where all of his symbols were in different places. It would be like learning to type again.

In the interests of system portability the keyboard layout for APL remains the same, whether you are using an IBM4040, a Vax, an ST or an A500.

So much for the system, what can you actually do with it? Well, writing a program is a very different experience in APL. For a start there are no FOR ... NEXT loops. APL tends to operate on a more interactive level. There are no

Graphics are catered for with the STGRAPH workspace

Desk File Edit Break Options										
APL.680										
X ← 1 10										
X										
1	2	3	4	5	6	7	8	9	10	
Y ← 1 16										
Z ← X°.XY										
Z										
1	2	3	4	5	6	7	8	9	10	
2	4	6	8	10	12	14	16	18	20	22
3	6	9	12	15	18	21	24	27	30	33
4	8	12	16	20	24	28	32	36	40	44
5	10	15	20	25	30	35	40	45	50	55
6	12	18	24	30	36	42	48	54	60	66
7	14	21	28	35	42	49	56	63	70	77
8	16	24	32	40	48	56	64	72	80	88
9	18	27	36	45	54	63	72	81	90	99
10	20	30	40	50	60	70	80	90	100	110



PAINTPOLY P
PAINTPOLY Q

APL has been described as a write only language – once written you have little chance of reading it back

actual listings. It's more like consulting the oracle than writing a program. The nearest analogy I can think of is Prolog, which is used just as often in an interactive mode than in any set form.

That APL doesn't have loops is not a disadvantage. The whole ethos is away from that sort of structure. And why not? Think of a problem. Say you have a table of numbers and you want to find the maximum. How would you do it in basic? A nested FOR ... NEXT with a dummy variable holding the best so far? In APL this can be done with four symbols:

```
X ← 3 3 3 8 9 10
Y ← 1 1 1 1 1 1
```

where x is a variable containing the table of data. The first line sets up x as a three by three matrix full of random numbers, the second reduces to the maximum by row and column.

APL resists the whole idea of top down programming. Instead of breaking a problem up into successively smaller problems and then coding it, the way of APL is to tackle the problem head on, as a complete task. A sort of hollistic approach, you might say. If you can express the problem then you have the answer.

A variable in APL covers a whole range of data types. A scalar is just a single number, a vector is a string of numbers (like a one dimensional array in Basic) and a matrix is a table of numbers, a two or more dimensional vector. In fact APL will handle up to eight dimensions for a variable,

though they get difficult to display on the screen.

A common criticism of APL is that it is slow. When you consider the speed as the time it takes to execute a statement, this is true, but when you take into account the fact that one statement in APL can replace several lines of code in most other languages, the comparison seems unjust.

Consider, for example, the Deal function or ?. The following APL statement assigns to the variable x the numbers one to 10 inclusive, distributed randomly:

```
X ← 10 ⍵ 10
```

Just one statement. How long would that take you in Basic? Or C?

This isn't just an isolated case. There are many more examples of very useful symbols, like iota, the index symbol. In one form, the dyadic or two-argument form, it will return the index or the position the variable to the right occupies in the variable to the left:

```
5 4 3 2 1
```

Here the number four appears in position two of the vector to the left. In its other form, monadic or taking only one argument, it will produce a vector of numbers from one to the value of the argument. This can be combined with more conventional mathematical operators to provide a vector containing any arithmetic sequence:

If you desperately require graphics, which to the eyes of many APL hardened programmers are namby pamby, the STGRAPH workspace provided includes a few functions you might find useful. Among these are line drawing and filled polygons, pattern fills and inverting routines.

Heavily biased towards graph and chart style graphics, you can even choose lines to be drawn dashed, dotted, dash double dotted and virtually any other permutations.

The Workspace environment is difficult to get used to if you have not worked with such a system before. Instead of saving a listing, the whole area of memory is saved. These means that not only are all the functions recalled when you load a workspace, but all the variables as well.

Speed is hard to judge since although statement execution is fairly slow an average APL statement does 10 times as much as a line in any other language. In interactive mode it is irrelevant anyway.

The language is more biased towards mathematical and statistical problems, but that isn't all it can do. Its design gives it away as a language for theorists, mathematicians and scientists, not programmers. Variables can just as easily be strings as numbers though, so it isn't a language only for those who speak in floating point.

Admittedly as an implementation on a micro it is probably aimed more at the hobbyist, but the advanced filing system means that as ST networking facilities become more widely used APL.68000 will be able to cope with multi-user access.

A must for serious users and those interested in learning a truly alternative language. Forget Swahili and Apache, see if you can get a language record for APL.

FACT FILE

Product: APL.68000

Price: £99.95

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POINTS FOR:

Excellent implementation of a classic language. A must for every serious programmer's library. Fun, too.

AGAINST:

The manual could have been more extensive, providing more useful examples. Sample functions should have been included on disc – the ones supplied are locked and therefore can't be edited.

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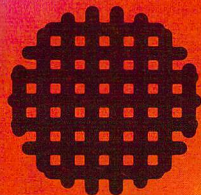
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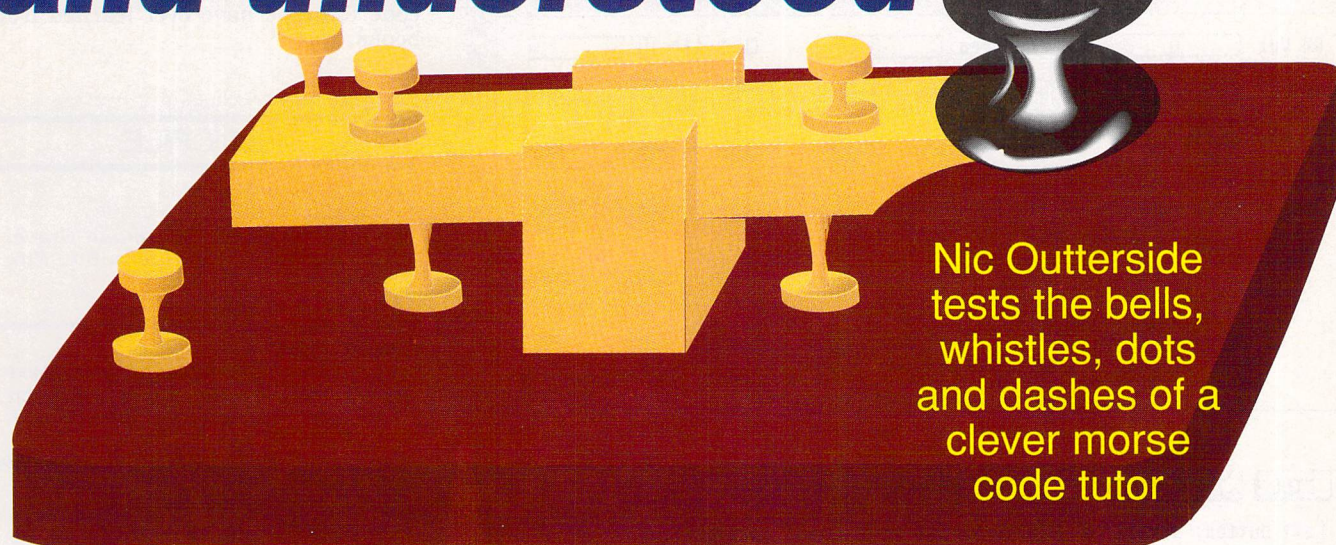


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Message received and understood



AS the ST matures, so its supporting products begin to grow and develop beyond the range of games, music, education, and business and programming applications.

Recently we have seen astronomical packages, yachting tutors, satellite tracking programs, and even a model aircraft simulator.

Morse Master fits snugly into this expanding category of miscellaneous applications for the micro. It is a hardware/software package offering a complete morse tuition system, catering for all needs for novice to the professional operator who wishes to improve his speed or technique.

Already it has been bought by many radio amateurs and by armed forces professional operators. The program comes on a single disc with well-documented manual and a cable/connector to connect a morse key or paddle – a two way key – to your ST.

This in turn lets you send morse to Morse Master – once you have mastered receiving. The supplier, Boscad, can arrange for you to buy a good quality key or paddle should you need one.

The program and manual at first seem confusing. They refer to sending morse as the program “receiving” morse from you, and receiving as the program “sending” morse to you. It is wise, therefore, to think of the program as a third party rather than as an extension of you, the operator.

Morse Master presents a tutor/menu screen offering a number of selections, dependant on proficiency and needs. You may select whether you wish to send or receive morse, and whether this is done by key or paddle.

You may also opt for either a text or lesson format for practice or tuition.

From here a Lesson menu lets you choose from eight sets of alphanumeric characters, and selection marks a set for inclusion in random letter generated or text file exercises.

The text file option is particularly clever. Such files, loaded from disc or created from scratch, allow you to practise sending or receiving standard sets of letters and numbers.

The default sets on disc are purposely nonsensical to over-ride logical processes which may lead you into bad habits, such as guessing the next word in a message.

A further menu lets you control the

seed of a lesson group so you can try the same lesson sequence at a later date, which aids consolidation. More importantly you can select the word rate and character rate at which the morse is sent. The character rate is based on the word rate at which individual characters are sent.

Further menu selections allow you to choose whether the letters, morse characters or blinks being sent, are shown on screen, and whether you wish the letters to be repeated – a useful facility. Transmission time can also be varied between 1 and 20 minutes.

However, it is on the Control screen that Morse Master really comes into its

The main menu screen

own. It is here that the morse is sent and received, with or without the screen displays of letters, blinks and symbols which you have selected.

To the delight of all operators, you

may adjust the volume level of the CW tone channel, the amount of background noise, the level of the adjacent RTTY signal, the frequency of the primary CW tone channel and the percentage drift (distortion) of the primary

CW tone. I find it hard to imagine a more realistic way of learning or practising morse without blocking up the airways.

Both myself, as an intermediate operator, and my father as a keen beginner feel that in three weeks Morse Master has taught us more about sending and receiving morse code than we have ever learned from books.

The control screen displays several sliders for CW Vol, Noise Vol, RTTY Vol, CW Freq, and CW Drift. Below these is a display area showing 'S ... ()'. At the bottom, there are buttons for FILE, TUTOR, START, PAUSE, RESUME, and REVIEW. A note at the bottom states: 'Left button: scroll up, Right: scroll down, Both: exit review'.

The control screen

FACT FILE

Product: Morse Master

Price: £29.99

Supplier: Boscad, 16 Aytoun Grove, Baldringburn, Dunfermline, Fife KY12 9TA.

Tel: 0383 729584

POINTS FOR:

An excellent graded tutor program. Good documentation and supported by an excellent backup service from Boscad. Well priced.

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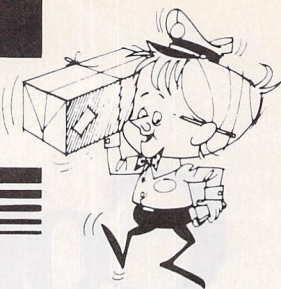
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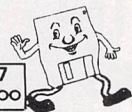
STUFFED is fully compatible with ALL colour STs (even the STE!). STUFFED features a unique disk format which allows it to be read on single or double sided drives. There are extras on the second side of the disk for those with double sided drives. Don't get left behind, Get STUFFED Regularly! Send for your copy now, enclosing a Cheque/PO for £3.50 (or £12 for a four issue subscription) to the above address.

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KIEETH GRAHAM of Edinburgh provides the stunning artwork for this month's Gallery featuring the very best of microcomputer generated artwork. He has provided four superb pictures of well known movie stars. Some are current stars, but other a film greats of yesteryear, all drawn using the popular Degas Elite art package.

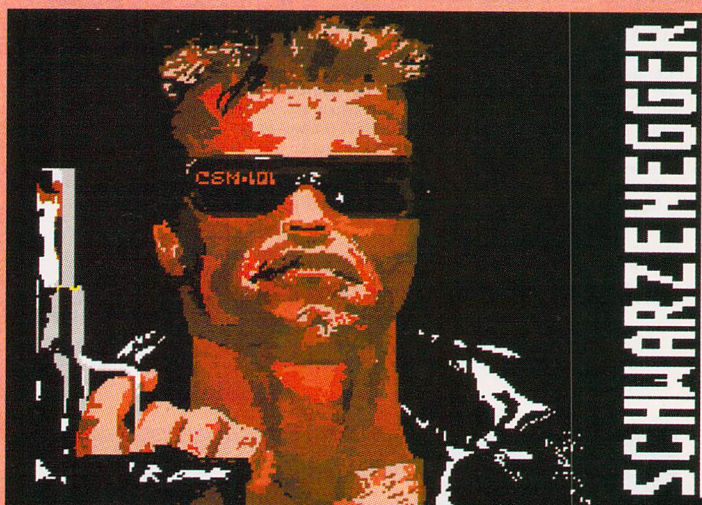
Arnold Schwarzenegger is instantly recognisable and the picture is reminiscent of his role in the popular sci-fi film *The Terminator* in which he plays a robot sent from the future to the present day on a deadly mission. We have recently been enjoying a re-run of Sergeant Bilko's comedy TV series on BBC 2. Groucho Marx is probably the better known of the Marx brothers - that look, the moustache and cigar were his trademarks. And who could fail to recognise that famous comedy duo, Stan Laurel and Oliver Hardy?

If you have a work of art that you would like to see exhibited on our worldwide stage, why not send it in on disc to Gallery? Remember though, that anything you submit must be original - for instance, don't copy posters or record covers - unusual and all your own work.

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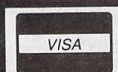


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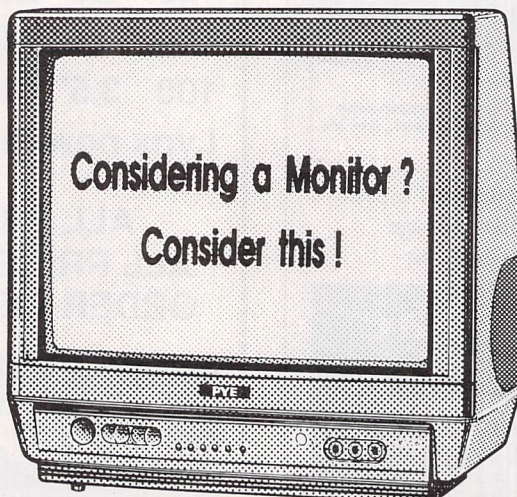
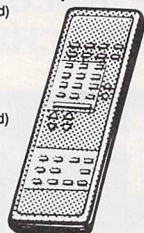
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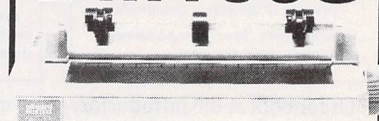
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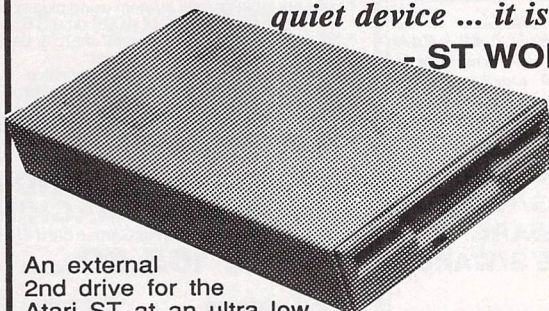
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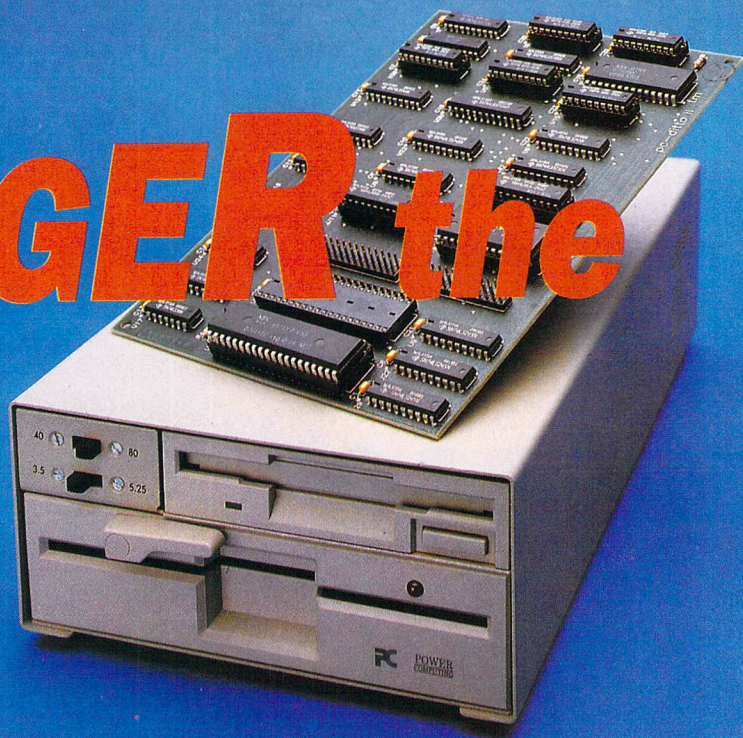
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The BIGGER the better?

Roland Waddilove squeezes a pint into a quart pot with a flexible new disc drive and turns his ST into a PC clone



REPLACEMENT disc drives are a thriving business for Atari dealers and distributors. There are internal and external ones, some with built in power supplies, or externally powered, taking 3.5in or 5.25in discs. The larger size 5.25in disc drive is quite rare on the ST, and to find a double drive with both 3.5in and 5.25in units combined in one case is rarer still.

Power Computing's Multidrive is such a unit. It will take both size discs, has its own power supply, a switch to flip between the two sizes and a 40/80 track switch. It plugs into the external floppy disc port on the ST and can be used at the same time as the internal drive.

The 3.5in/5.25in switch means that you can't, unfortunately, use the two different size drives at the same time. However, this isn't a handicap, as for quite a long time now all STs have had an internal drive.

You may be wondering what advantage there is in having a 5.25in disc drive. There are two main ones – price and PC compatibility.

There is a significant price difference between 3.5 and 5.25in discs. Disc prices vary enormously according to the retail outlet, brand and so on, but by shopping around you should be able to buy a pack of 10 5.25in discs for about £6.50 compared to a pack of 10 3.5in discs for £9.00.

I have accumulated around 100 3.5in ST discs which cost about £90, but Multidrive could have saved me £25 if I'd bought the 5.25in variety.

The IBM PC, its offspring and compatibles are quite old micros, and originally exclusively used 5.25in discs, and many still do, though some now



use 3.5in discs like the ST. The ST experiences few problems reading 3.5in discs, but 5.25in ones clearly require a peripheral such as the Multidrive tested here.

A 5.25in disc was formatted on an Amstrad PC1640 and a Protex text file saved on it. The disc was inserted into the Multidrive and loaded into Protex on the ST. Brilliant! Unfortunately, the data transfer is only one way, as the Multidrive won't write to 40 track floppy discs (PC formatted or not), only read them.

The ability to directly read and copy 5.25in PC discs means that PC emulators such as Power Computing's PC Ditto II have direct access to a wealth of PC software. The PC PD market is probably bigger than that for the ST. So too is the number of commercial programs.

The Original PC Ditto from Avante Garde Systems was a software-only PC emulator. It worked quite well, but suffered severe speed problems, causing PC software to run extremely slowly. PC Ditto II, however, is a combined hardware and software package that solves the speed problem. In fact, it

boasts a Norton speed index of 3.0 – a bog standard PC is 1.0 – making it quite a fast performer.

The hardware consists of a PCB measuring about seven inches by five which has an NEC V30 processor – often used in PC clones – and space for an 8087 maths co-processor. The board sits inside the ST's case and connects to a small clip which fits over the 68000 main processor. No soldering is required, just a little manual dexterity.

It provides 640k of usable memory (same as a PC), emulates colour and mono screen modes, can be installed on hard disc and supports an external 40 track 5.25in drive, such as the Multidrive.

There wasn't enough time to test PC Ditto II, but if it lives up to its specifications it should be very good indeed.

The Multidrive performed perfectly throughout the test and combined with PC Ditto II will turn your ST into a useful PC clone.

FACT FILE

Product: Multidrive
Price: £199
Supplier: Power Computing, Power House, 44A Stanley Street, Bedford, MK41 7RW.
Tel: 0234 273000

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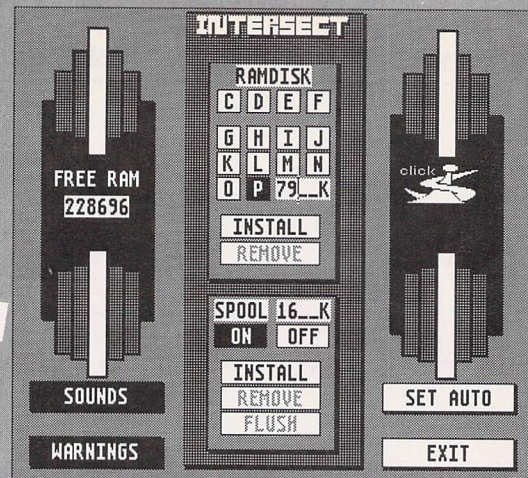
Reads 3.5 and 5.25in PC discs. Can use cheaper 5.25 instead of 3.5in ST discs.

AGAINST:

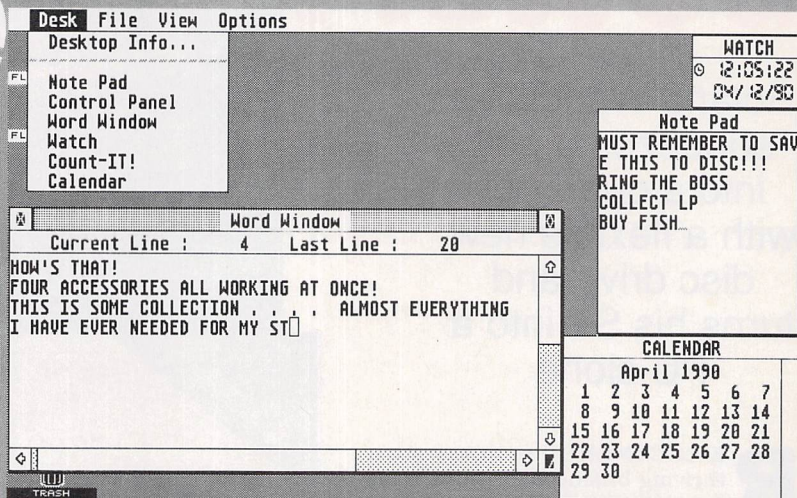
Can't write to 40 track PC discs.

Spoilt for choice

This month Jayne West examines a comprehensive collection of public domain and shareware desktop accessories



Intersect's Ram Baby offers a host of options



Four accessories working alongside in a complementary fashion show what can be achieved

If I was given 10p for every time I have searched through my PD collection – often in vain – for a certain desktop accessory I needed at a particular moment, I would be rich – and far less vexed. I am not alone, as this is a problem which I know plagues many other ST users.

The answer to this headache is now at hand in the shape of The Ultimate Accessory Collection. Newly released on to the PD market by an erstwhile colleague, this collection promises to become a very popular addition to many PD libraries.

Most of the desktop accessories featured in the Ultimate Collection you will possibly have seen before, but to have them all garnered together for the first time is a long awaited boon. All are carefully grouped in easily identifiable folders for quick access and transfer to your own work disc.

Working the System

Within the main System folder is Free Ram – a small desktop accessory which, when installed, tells you how much ram you have left free, whenever it is called upon. Very useful if you are using a number of desktop accessories.

Next up is Private Eye v2.0, a compact and useful program which allows

you to take a peephole look at the workings of your ST. It displays a window which contains a whole host of information, including your ST's system parameters, disc drive information, video information and keyboard and mouse peculiarities.

CLI (Command Line Interpreter) is a blessing to any programmer or serious user. It accepts near-English instructions and acts upon them – assuming your input makes sense.

There are more than 40 commands which are particularly useful for disc and file management, such as HELP, which summons a list of all the commands, and ECHO, which sends any text that appears on screen to the printer.

Alongside is Tiny Tool, a superb disc sector, file and memory editor. In each of a number of selectable editors you can read and write to disc. Protected memory can also be accessed in the memory editor.

An alternative to both is Disc Manager, which is similar in many ways to Tiny Tool, but offers quite a few more functions from an easy to understand menu screen.

However, the major addition to this folder, and one of the most powerful programs on the whole disc, is Quick ST by Darek Mihocka. This is a shareware software blitter/text accelerator program, similar in many ways to the

commercial Turbo ST.

With Quick ST installed screen operations such as printing text, scrolling the screen and popping up windows are performed much faster.

Fast Gem and fast text options can be disabled in situations where the speed increase is not desirable, or with a few programs that cause problems with Quick ST – such as some terminal software.

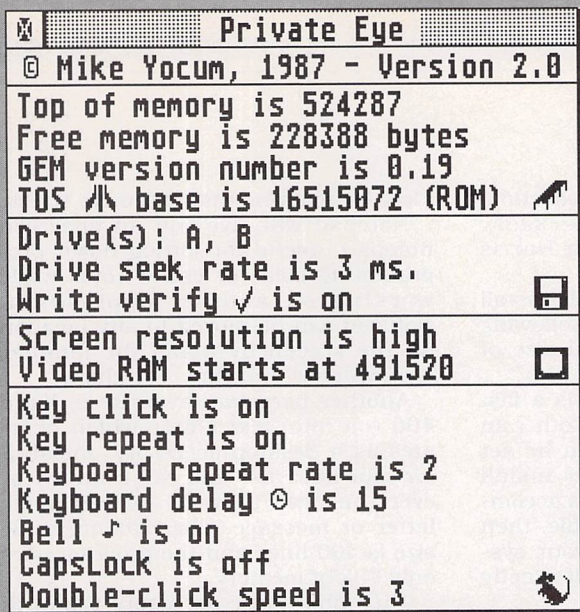
However, Quick ST supports most of the common VT52 commands, so it should work with most ST bulletin boards. It also supports the 48 row mode found in Flash and some editors.

Useful utilities

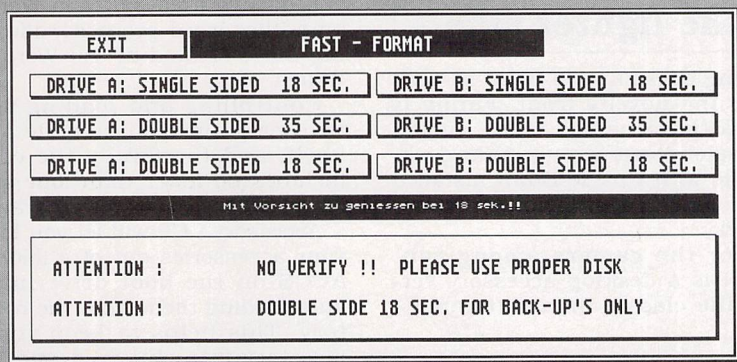
Among the more general utility accessories is Calendar, with which you can view monthly calendars of years from 1980 through to 2009 by clicking on a Gem scroll bar. If you have a real-time battery-backed clock the program highlights the current date.

Watch gives you a digital watch accessory that appears as a small window showing the current date and time. Once installed it will tick away in the top right hand corner of your screen no matter which program you are using.

Miniterm is a comms package which supports full VT100-emulation and



Private Eye gives a glimpse inside your ST



The high speed options of Fast Formatter give an indication of its power

full IBM character set with all graphics. In addition it has Xmodem, Ymodem and Zmodem file-transfer possibilities and fast screen dump to printer.

A MINITERM.INF file contains all the required settings to get started, and may be altered using a normal text editor. A useful partner to Miniterm is USVT52, an alternative VT52 emulator program to EMULATOR for your ST.

Quick Print is a useful print utility which allows you to toggle between the standard ST Alternate/Help graphics dump routine, and a quicker IMB-style Ascii text dump.

Meanwhile, Print Coder is a desktop accessory designed to allow alterations to printer status to be made without having to fiddle with your printer's DIP switches. Almost any escape sequence can be sent to the printer from this program.

For completeness, Printer-Control is a cut down (15k) PD version of the Atari Control Panel (20k) and works in a similar way to that beast.

However, perhaps one of the most useful residents in this collection is Happy Face by Robin Edwards. This cute virus detector/protector actually runs as a desktop accessory.

The program works by letting you write a greeting code such as HAPPY FACE on the boot sector of any disc. Each time you boot the disc, the greet-

ing will appear. If the greeting fails to appear, an uninvited guest has overwritten it. It is then a simple matter of running Happy Face again.

Most experts advise you to keep the disc write-protect on, but Robin Edwards invites you to do precisely the opposite. Leaving the write-protect off is the bait required: As soon as the greeting fails to appear, all discs are tested until the virus is isolated.

Favourite Goodies

Goodies is one of my favourite desktop accessories. It is a disc/desk manager that has lots of programs within one, including a printer spooler, configurable ram disc, file copier, clock/calendar and undelete facility.

A more powerful alternative to Goodies is Les Kneeling's Dos-Acc v2.8. This has all the features of Goodies - plus a couple more - but they are much faster and more advanced than the contemporary.

Codehead's famous Font Tricks is also here in all its glory. Once installed on your boot disc, it will allow you to load Degas fonts to replace the system font.

Rat Trap is an excellent, if quirkish, accessory which changes the drop-down menus on your ST to pull-down menus as on the Apple Mac - and it

Rat Trap changes the drop down menus to pull down ones as on the Apple Mac

can be toggled on and off. You need to try it to fully appreciate the difference.

Speed Mouse does as its name suggests and speeds up the mouse pointer representation on screen, thus reducing the footprint area within which the mouse needs to perform on your desk or table. This is obviously handy if you have limited space, or your desk is cluttered.

Art Gallery shows Degas, Degas Elite compressed, Neochrome, and TNY compressed pictures. It fully supports colour rotation in any of these formats, including Degas Elite's multi-channel rotation.

And if a copier is what you are after, look no further than French programmed Riocopy, which is a disc copier and formatter. Install it on your boot disc and it will carry out simple or formatted copies of any discs, or will format from 80 to 83 tracks and 9 or 10 sectors smoothly and quickly.

SNAPSHOT.ACC is a much used accessory in my personal collection, and I am glad it is included here. When called up from the Desktop menu, you may size up any part of any screen by Gem rubberbanding and then save that part of the screen to disc. It really is amazingly simple, and works in all cases where the resident program does not overwrite the Desktop slot.

TI58C is an onscreen scientific calculator which will carry out all the functions you are ever likely to need. It allows not only basic + x / and bracketed functions, but dual function keys cater for inverse, reciprocals and logarithms.

Clearing operations include Clear Entry which clears entries made with the digit, decimal point, and change-sign keys, and the program also permits clearance of all 30 of the memory registers, and a general clear of calculations in progress.

The user is spoilt for choice when selecting formatter programs. Fred

► Deutsche's Formatter v4.0 will format between 80 and 82 tracks and 9 or 10 sectors, and to standard ST or Mac format.

Fast Formatter is the fastest disc program I have yet seen for the ST. A straightforward dialogue box offers you a selection of format types and times. It will format a single-sided disc in only 18 seconds, a double-sided disc in 35 seconds, and will back-up a double-sided disc format in less than 18 seconds.

DC Formatter v1.0 is the accessory version of the famous disc formatter program of the same name. It has all the functions of the program version except for the copy disc function.

It will create a variety of disc formats including 9 or 10 sector, 80 or 82 tracks, regular or fast format, and will even operate a Magic discs or place an MSdos boot sector on a disc so that it can be used by PC Ditto or any MSdos machine.

Another classic is MYSTIC.ACC, which is a unique disc formatter accessory that allows you to format a disc while getting on with other onscreen tasks – simply amazing. Ram

discs also proliferate in this collection. Ram Disc 349 is the accessory member of the famous John Harris ram disc family.

It allows you to install and de-install a fast ram disc, with the 349 following the RM indicating the actual size of the resident ram disc.

Intersect's Ram Baby v.1.0 is a fast ram disc and print spooler. Both ram disc and/or print spooler can be set up so that they automatically install when you boot your ST. This is accomplished by creating an AUTO file, then the next time that you boot your system Ram Baby configures itself exactly as you had previously set it.

On the lighter side

Everything doesn't have to be so serious. On the novelty front, Funny is harmless turbocharged Mites. Install it, and watch it eat through your desktop. While with Upside Down installed you can learn to program the Australian way.

And for the gamers among you, Breakout is a desktop accessory version of the classic Breakout game –

ideal for relieving that executive stress.

Notepad will give you an onscreen notepad, useful for jotting down programming ideas or essay notes while working on another application. Notepad can be moved to any position on the screen by using the familiar Gem window dragging procedure.

Another personal favourite is Word 400 – a mini-text editor which operates as a desktop accessory. Install it on your boot disc and call it up whenever you need to write the odd quick letter or message. The maximum file size is 400 lines and the program uses only 73k of memory.

Then shareware accessory Count-It! will let you count the number of words you have written either in Word400 or any other word processor file, including those created by 1st Word and ST Writer.

Controlling and loading all these Gem programs can be quite a task in itself, and thankfully the collection includes no fewer than four quite different accessory loader programs.

Accessory v1.0 will let you load all of your accessories out of a folder called ACCS on the boot drive instead of auto-loading them from the root directory. This helps to keep your main directory less cluttered and is especially useful for hard drive owners.

ACC_SEL.PRGM is another superb selector. The program resides in an AUTO folder, and all accessories live in the root directory. To select which accessories to load, the program simply writes back to disc changing the extensions from .ACC to .ACX or vice-versa.

Gem of a utility

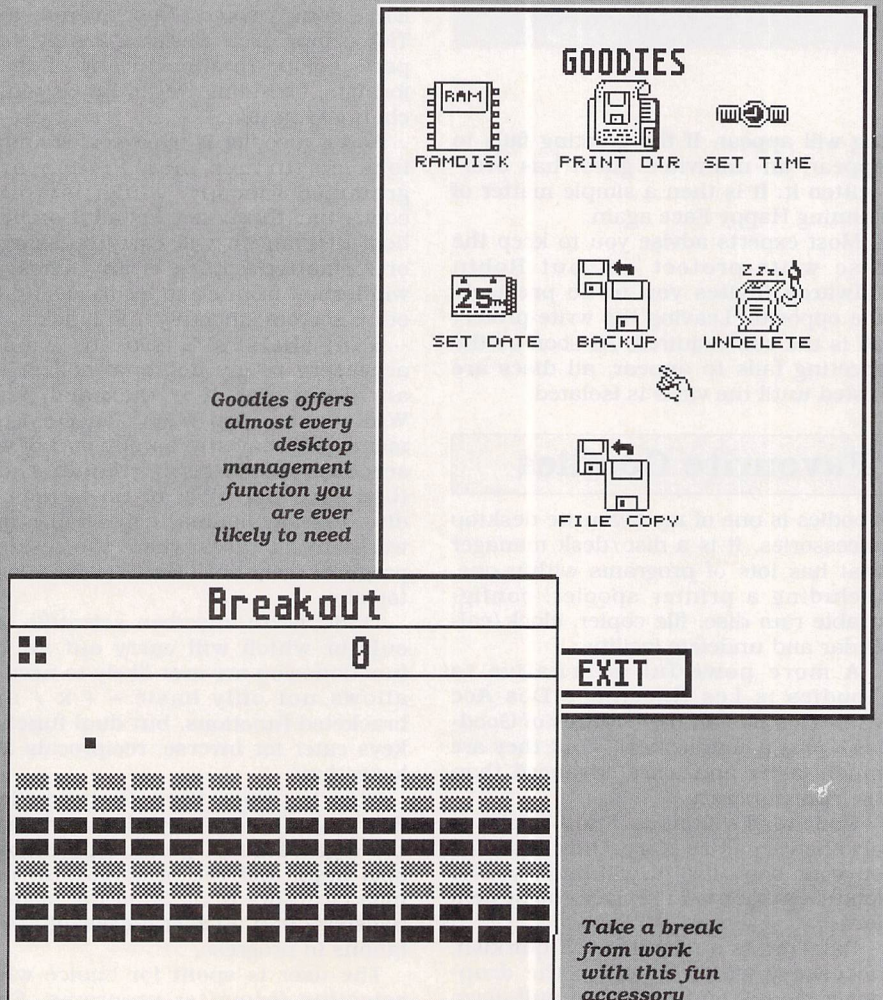
Meanwhile, STARTGEM will auto-run any Gem program of your choice, and included are old and new versions of the program. The new version works with the new Mega ST blitter roms, while old works with the older disc-based TOS.

Each version contains an .INF file which reads the name of each file to execute with its associated path. You need to edit this file to your own requirements to contain a list of all the Gem programs you want executed on startup.

Equally impressive is Accessory Loada. This superb program allows all the accessories you wish to reside in the root directory of your boot disc. You can then load only those that you want.

On boot-up Accessory Loada displays all the accessory files, then all you do is enter which you want loaded, pressing +- to end and go to the Desktop.

This is an amazing collection which boasts documentation for all programs in a 32k .TXT file. I hope it cures as many headaches for you as it already has done for me.





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Midi on the minimum

Ian Waugh continues his survey of the budget Midi market



A SEQUENCER may be the most important part of your music setup, but many other kinds of program can help you. This is where the fun starts because the variety and choice is enormous, although the programs tend to fall into a few well-defined categories.

In this, the final part of our look at budget Midi software, we consider a selection of the most interesting ones on offer and what they can do for you.

Whereas the ceiling for budget sequencers seems to be £130, some ancillary programs cost £20 more, so I've raised the budget limit for this article to £150.

Voice editors

We'll begin with the second most popular kind of music program, the voice editor and librarian. Most modern synthesisers use a form of digital synthesis and are only slightly easier to program than a Cray.

One of the problems lies with the LCD display most synths use, as you can't see all the parameters at once and they have to be edited in isolation with up/down buttons.

A computer-based voice editor will display all associated parameters on one screen, it will show envelopes graphically and perhaps even let you alter them by clicking and dragging the nodes.

A librarian offers simple and accessible storage for your synth's voices. It will be far cheaper than ram packs and more reliable than saving to tape – program storage alone is an excellent reason for investing in a voice editor and/or librarian.

Voices can be loaded into a number of banks, you can choose which ones

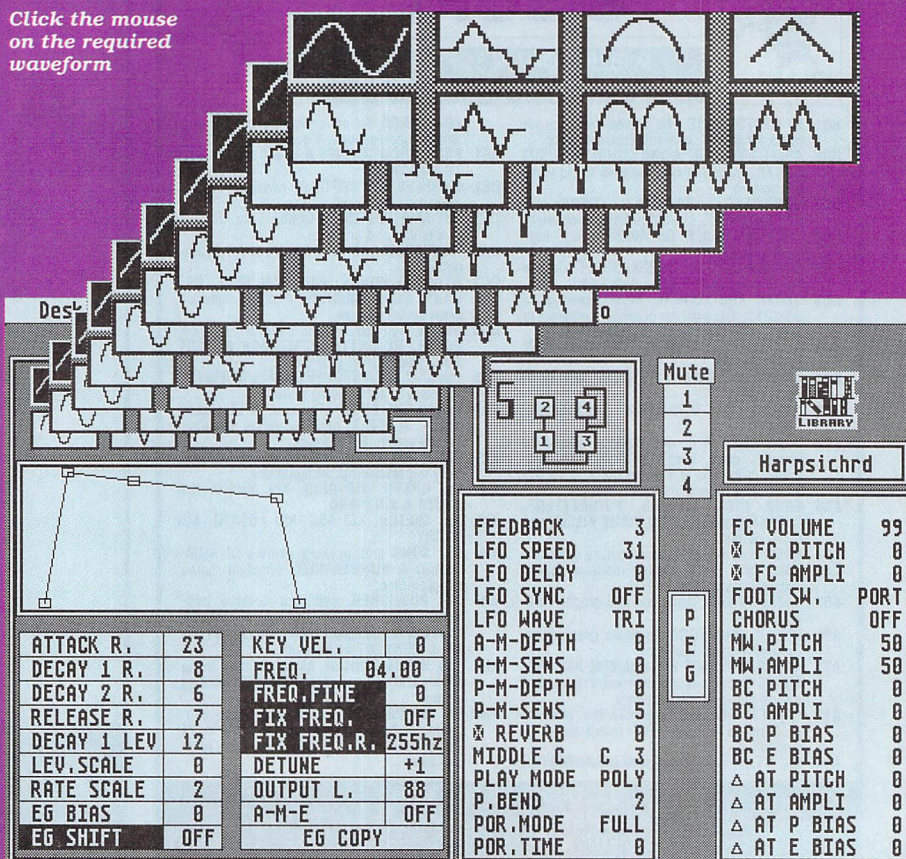
you need for a particular session, sort them into a bank in any order you wish and send them to your synth.

There are dozens of voice editors for the ST – there must be at least one for every popular synth – so you are

spoiled for choice. Most are well priced, ranging from £60 to £110.

Some of the most comprehensive editors come from Dr.T's software emporium (distributed by MCM). So far the range includes editors for

Click the mouse on the required waveform



Soundbits's Yamaha 4x4 librarians are best for the novice because they are fairly easy to use

Desk	Voices	Performance	Setup	Functions	Extra
Select a voice to move or play, or select a menu option					
Voice file A/1: BELLPLUS.A4V				1	2 3 4
Bell	1	Bell	2	Bell	3
Bell	5	Bell	6	Bell	7
Bell	A	Bell	B	Bell	C
Bell	E	Bell	F	Bell	G
BellBrass		BellBrass2		BellCello	
BellGong		BellOboe		BellOrgan1	
Bellchoir		Slidebell		VibeSynth1	
VibesBrass		VibesFlute		VibesPluck	
				Windchime	
Perform.file: DEFAULT.A4C					
Patch #1		Patch #13			
Patch #2		Patch #14			
Patch #3		Patch #15			
Patch #4		Patch #16			
Patch #5		Patch #17			
Patch #6		Patch #18			
Patch #7		Patch #19			
Patch #8		Patch #20			
Patch #9		Patch #21			
Patch #10		Patch #22			
Patch #11		Patch #23			
Patch #12		Patch #24			
Setup file: No File					
Voice file B/1: PERCUSSH.A4V				1	2 3 4
AfroDrum 1		AfroDrum 2		AfroDrum 3	
AfroDrum 5		AfroDrum 6		BassDrum 1	
Cowbell 1		Cowbell 2		Cymbal 1	
Cymbal 3		Cymbal 4		Claves 1	
Gong 2		Gong 3		Gong 4	
ElecDrum 2		ElecDrum 3		ElecDrum 4	
ElecDrum 7		BelDrumCym		TomDrumCym	
Timpani 2		Tontom 1		Tontom 2	
				Tontom 3	

Quinsoft's produce some of the cheapest librarians on the market, here is Advanced 4-Op Librarian

Casio's CZ-101/1000/1/3000/5000 and VZ-1/10; E-Mu's Proteus; Ensoniq's ESQ-1/M and SQ-80; Kawai's K1, K3 and K5; Korg's DS-8, DP-2000 and M1; Oberheim's Matrix 6/1000; Roland's D-50, D-110/10/20 and MT-32; and Yamaha's DX7 and four-operator synths (TX81Z, FB-01, and DX-100/27/21).

There are also editors for effects units including Lexicon's LXP-1 the Art MultiVerb, Digitech DSP-128 and Yamaha's SPX90/II. All cost £110.

The editors all follow a similar format although obviously there are variations to allow for the differences between synthesisers. Envelopes are shown graphically and can be edited by dragging. They let you store multiple banks of sounds and most permit random voice generation.

They all run in Dr.T's MPE (Multi Program Environment) which allows up to eight programs to coexist in the ST simultaneously and share the same Midi data. However, to use the MPE you need a core program such as Dr.T's KCS (Keyboard Controlled Sequencer).

The only budget-priced programs currently supporting MPE are Tiger and Tiger Cub. You can't, unfortunately, run the editors as desk accessories if you currently use a different sequencer.

The Dr.T programs are quite sophisticated. If you are a newcomer to voice editing and don't want to get too deeply involved, it's worth looking at some simpler programs such as the Soundbits range.

These are

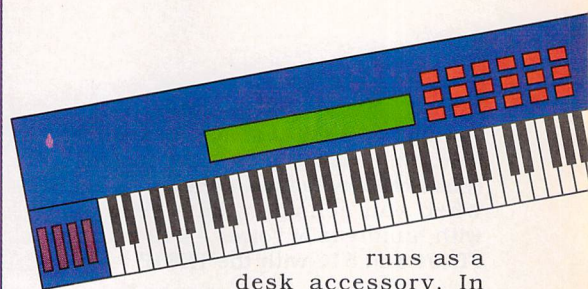
available for the Roland D-50 and Alpha Juno1/2, the Kawai K1 and Yamaha 4-operator synths. All cost £60 and have a similar, highly-graphic layout. Operation is easy and although they lack many of the bells and whistles of the Dr.T editors they

Librarians offer greater flexibility and voice storage capacity than an editor

include randomisation, cut and paste facilities and graphic display of the envelopes.

They are nice, easy-to-use programs although they are standalone and can't run as desk accessories. Pandora was one of the first companies to produce an editor which can run as a desk accessory – DXessory (£79.95) – and this is well worth looking at if you have a six-operator machine such as the DX7.

MidiMan (£89) from Hollis Research is a Universal Voice Editor which



runs as a desk accessory. In operation it's very much like a hardware remote editor such as the programming units Roland produces for some of its synths.

The main screen consists of a number of sliders and values are altered by clicking on them with the mouse. Like their hardware counterparts, communication is one way – from the ST to the synth – but MidiMan is ideal for tweaking voices and for altering configurations such as the pan and volume settings of the voices in a multi-timbral synth.

If you run it with Hollis's Trackman sequencer (from £179) you can save MidiMan data into the sequencer as it's recording. Neat!

Librarians

Most voice editors let you organise voices into banks, but some programs known as librarians specialise in this function. Most will offer greater flexibility and voice storage capacity than an editor and they are ideal if you don't want to program your instruments – and you don't have to, as packs of new voices are available from many sources, often in ST format, ready to load into your synth.

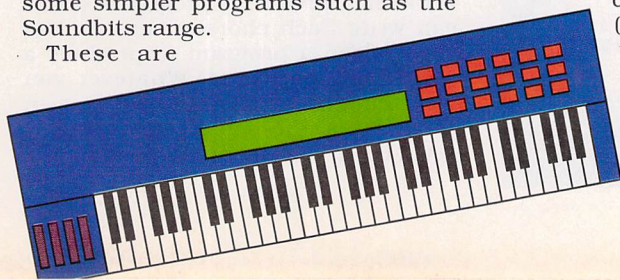
One of the best and cheapest librarians on the market is the Chameleon Universal Patch Librarian (£89.95) from Keynote. It can operate as a desk accessory or a standalone program, and as its name implies, it can handle voices for virtually any synthesiser.

It can hold up to nine libraries in memory at once, each containing as many voices as ram permits – you are not restricted to the number of voices which are held in a bank in the synthesiser. Patches can be transmitted or received individually or en bloc.

Extensive patch-handling facilities include the ability to allocate voices up to 32 named characteristics such as brassy, mellow or keyboard – you give them your own names. To select a particular type of voice you highlight the characteristics you want and the program shortlists them for you.

The adventurous can use the built-in programming language to create libraries of their own although as the current total of supported patches stands at well over 100 that should not be necessary. Highly recommended.

The cheapest librarians on the market come from Quinsoft. They are for



MUSIC ON THE ST

Yamaha's FB-01 and TX81Z expanders and cost £24.95 each. They offer remarkable value for money, especially when you consider that they come with hundreds of voices – 480 with the FB-01 and 512 with the TX81Z.

New sounds

The programs, however, are rather basic, but they do allow you to create banks of voices easily and simply. Worth investigating if you're on a really tight budget, if you don't need bells and whistles, or simply as a source of new sounds.

No budget-priced music program

has extensive scorewriting facilities. The current leader in the field is C-Lab's Notator at £485, but there are cheaper alternatives if your expectations aren't sky high.

Hybrid Arts' EZ-Score

Plus at £145 is the nearest you'll get to a budget Midi-based scorewriter. It supports three staves which



can each contain two music parts. You can click music on to the staff with mouse, enter it from the ST's keyboard or from a Midi keyboard.

It supports more than 100 music signs and symbols and it can convert files saved from other Hybrid Arts programs to notation (within its limits).

You can print the score, of course, and screens can be saved in Degas format. You can play-back via Midi or with the ST's

soundchip. Well worth

investigation if you like using the dots.

Dr.T's Copyist Apprentice (£79.95) is a graphic-based scorewriter. It does not support Midi at all, although it can read standard Midi files and convert them to notation. This, however, needs to be approached with care to get the note spacing correct.

Operation requires a combination of mouse and keyboard and there's an overlay to identify the keys. It is a feature-packed program and a little time spent getting to know it will result in impressive scores.

Languages

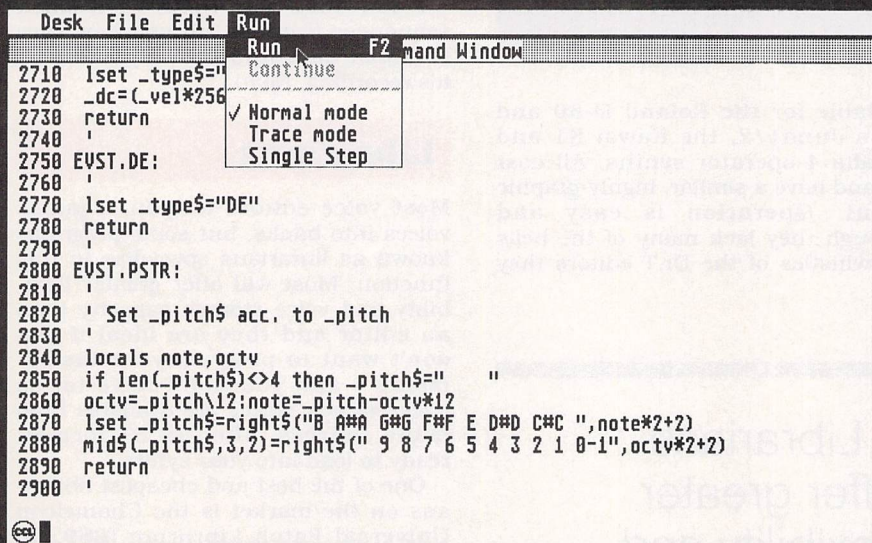
Music programming languages are few and far between. Anyone wishing to write their own music software normally has to do so using a general purpose language such as C, machine code or even Basic.

T-Basic (£129) – from Dr.T, of course – aims to change all that. It supports all the features of ST Basic and has additional keywords for accessing Gem. Although it can operate as a standalone program it is more powerful when used within Dr.T's MPE.

It has direct hooks into the MPE and can work on pre-recorded music data and generate music which can be placed directly into the host's sequencer tracks. Each line of code is compiled as it is entered, which helps avoid the speed problems associated with interpreted Basics.

The package includes several demonstration programs including some games. If you are familiar with Basic you should find T-Basic fairly easy to get to grips with.

Many people suppose the ultimate computer music program will compose its own music. Although the academic world has produced programs which can write Bach chorales, no one has yet devised a program to produce a convincing pop song. Whatever you may think of the efforts of our human songwriters, the pop song is a highly stylised music form. Exploring the



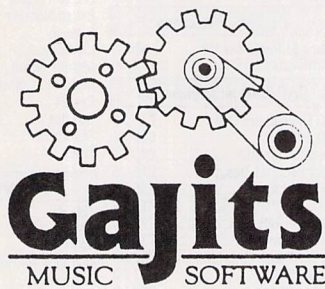
Dr. T's T-Basic is ST Basic compatible and capable of placing music data into Dr. T's MPE

THEME & VARIATION PARAMETERS										MENU									
Microbeat	< 6>	First Note	< 1>	Maxim						Play Screen									
Theme Length	< 32>	Pitch Loop	< 99>	Onbea						Load Tune									
Pulse	< 2>	High Note	< F5>	Offbe						Save Tune									
Rest Probability	< 25>	Low Note	< C4>	Rhyth						Load T&V Presets									
Rhythm Algorithm	< 1>	Maximum Step Size	< 1>	Pitch						Save T&V Presets									
Variant	< 3>	Maximum Leap Size	< 3>	Vari						Load Acc Presets									
Scale 1 Major	Mode F2 1st	Key N(C	Octave 0							Save Acc Presets									
Theme TA	Pulse 2	Microbeat 6	Left 1:00	Seq						Load Arrangement									
T & V PARAMETER PRESETS										ACCOMPANIMENT PRESETS									
A B C D E F G H I J K L M										A B C D E F G H I J K L M									
N O P Q R S T U V W X Y Z										N O P Q R S T U V W X Y Z									
Channel Program	Octv	Velocity	Accent	Stat	Art	Dlay				Drum Notes									
1 <14>	< >	< 0>	< 64>	< 12>	Mute	<1>	< 0>	< 1>	Rhythm	Set Options									
2 <14>	< >	< 0>	< 64>	< 12>	Mute	<1>	< 0>	< 1>	Notepad	Change Colors									
3 <14>	< >	< 0>	< 64>	< 12>	Mute	<1>	< 0>	< 1>	MIDI Messages										
4 <14>	< >	< 0>	< 64>	< 12>	Mute	<1>	< 0>	< 1>	Channel Reassign										
5 <14>	< >	< 0>	< 64>	< 12>	Mute	<1>	< 0>	< 1>											
6 <14>	< >	< 0>	< 64>	< 12>	Mute	<1>	< 0>	< 1>											
Tempo <123>										Quit									
Arranger										Start Pause Stop Menu									

Dr. T's Tunesmith can compose up to five themes and three variations

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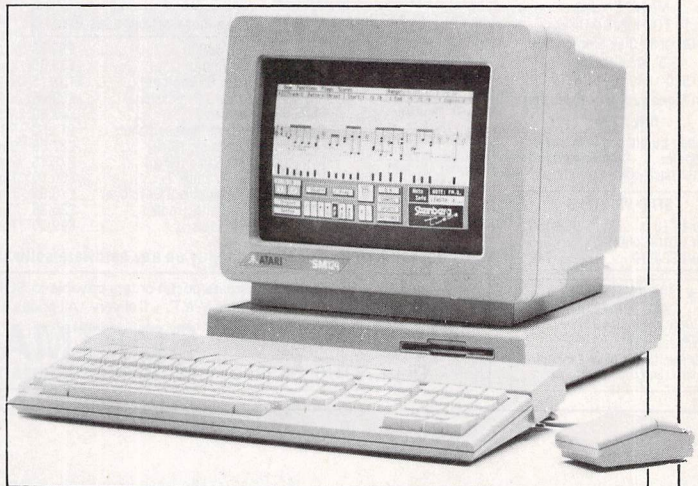
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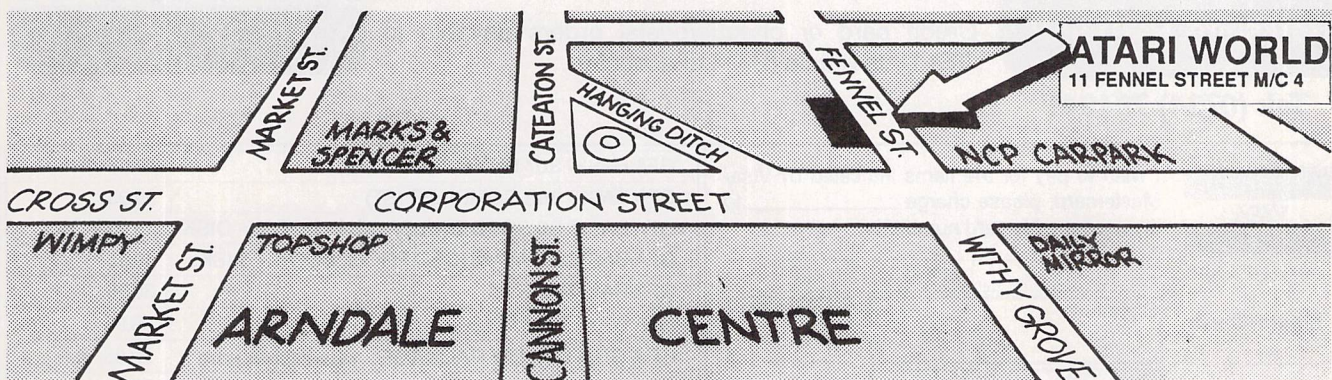
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MUSIC ON THE ST

▶ world of computer composition is a fascinating business and several commercial programs let you try your hand. The cheapest composition program is currently Dr.T's Fingers at £79.95, but it is highly numeric and hindered by a self-indulgent manual full of techno babble.

Composition tends to be based on numeric rather than musical criteria. However, if you're the sort of computer user who revels in numbers – and I know there are a lot check it out.

Also from Dr.T is Tunesmith (£135). This is more musically oriented, although still with its share of numeric parameters. It can compose up to five themes and three variations on each of the themes. Normally, these are created from a set of on-screen parameters but if you run it within the MPE it can create variations based on recorded material.

It has a myriad of adjustable controls for articulation, octave, dynamics, muting, parallel harmonies, counter melodies, echoes and arpeggios and you can select literally one of a hundred different tonalities.

Hybrid Art's Ludwig (£145) is similar to Tunesmith in several ways. It's quite numeric and produces variations out of user input. However, it can apply a large number of musical transformations to the data and it has more manipulatory functions than any other

Contacts

MCMXCIX, 9 Hatton Street, London NW8 9PR. Tel: 01-258 3454.

Soundbits Software, 48 Galton Towers, Civic Close, Birmingham B1 2NW. Tel: 021 233 3440/733 2063.

Pandora Technology, 9 St. Marks Place, London W11 1NS. Tel: 01-221 9653.

Hollis Research, First Rate (Guernsey) Ltd., La Ramee, St. Peter Port, Guernsey, Channel Islands. Tel: 0481 23169.

Keynote Music Software, 13 Duchy Road, Clandown, Bath BA3 3DQ. Tel: 0761 32610.

Quinsoft Ltd., PO Box 68, Tadworth, Surrey, Kent KT20 7EP. Tel: 0737 243066.

Hybrid Arts UK Ltd., 24/26 Avenue Mews, Muswell Hill, London N10 3NP. Tel: 01 444 9126/7.

Square Dance Audio, The Bakery, Boyer Street, Derby DE3 3TD. Tel: 0332 385021.

composer program – it'll take you a long, long time to exhaust all its possibilities.

The most well-known composition program is probably M (£150) by Intelligent Music (distributed by MCM). In contrast with the other programs, its approach is more graphic than numeric which makes it more immediately accessible.

Basically, you enter a number of pitches and then set up the program to perform a variety of operations on them – cycle using various durations, pick them with a degree of randomness, apply accents, transpose, and so on. It seems to be capable of more musical output than most algorithmic composers, but then with all of the programs you get out what you put in.

If you're interested in the experimental side of music I can well recommend you try one of these composition programs. Start with a demonstration version of M which is available from most PD sources – you can't get much cheaper than that.

We have by no means exhausted the range of budget music programs, but we've covered a good selection. Your Atari ST can be used in every aspect of music production from composition and orchestration to playing and printout – and on a budget, too. But don't forget the most important ingredient of all – you! If you have the ideas you don't need expensive hardware and software to make good music.

Drum editors

MidiDrummer 2

(£85.00 – a demonstration disc is also available for £5) from Square Dance Audio is a dedicated grid-based editor for creating drum patterns. It

is not totally unlike the drum edit grids in some up market sequencers.

It can handle 32 drums and you can create to 100 patterns and link them to produce a drum track. The drum assignments can be saved so it's fairly easy to alter the setup if you add to your system or change drum machines.

Automatic Note Assign will read in the Midi channel and note the number of any drum pad or key you press, so setting up is very easy.

Drum patterns can be saved in Midi file format, allowing you to load them into your sequencer – as long as it also supports the format. It's an ideal companion for an expander with built-in drum sounds and you'll probably find it easier to use than the programming facilities on most drum machines.

The Gem-based, mouse driven software is easy to use – you simply click on the icons

Intelligent Music's M is the most well known composition program

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Welcome

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DIY

Fingers on the buttons, here's your starter for 10... John Kennedy shows how to build your own ST quiz adaptor

quizmaster

ALTHOUGH the ST does not have a user port as such, we are lucky enough to be provided with a pair of useful joystick ports. A standard joystick consists of nothing more than five switches to control movement up and down, left and right and fire. By connecting our own switches to the ports, we immediately have a way of getting useful user input into the machine.

Probably the simplest use of this technique is a multiple choice box, which takes the form of a set of buttons, numbered one to five. With suitable software, the computer can be programmed to ask questions and display answers which the user can then choose from by pressing a button.

The project is cheap, simple and even potentially useful for various educational applications. The parts for the project can be obtained from most electronic stores, probably the hardest item to get hold of is the multicore cable.

I usually get my parts from the mail order supplier Maplins, so its order numbers are contained in the parts list. Asking another supplier for an XH76H will probably not get you very far.

Before you sign your cheque and post off the order, or travel 20 miles to pop into your local Tandy shop, please reconcile the list with the remainder of the article. Mistakes have been known to happen, and besides, you may wish to extend the project further than the simple design provided.

Once you have collected all the parts we can begin, so scatter everything over your table and switch on the soldering iron. First strip about 5 cms from one end of the multicore cable and then strip about half a centimetre from all the individual wires exposed.

Before they can be soldered to the nine way D connector – otherwise known as a joystick socket to you and me – they must be tinned with the

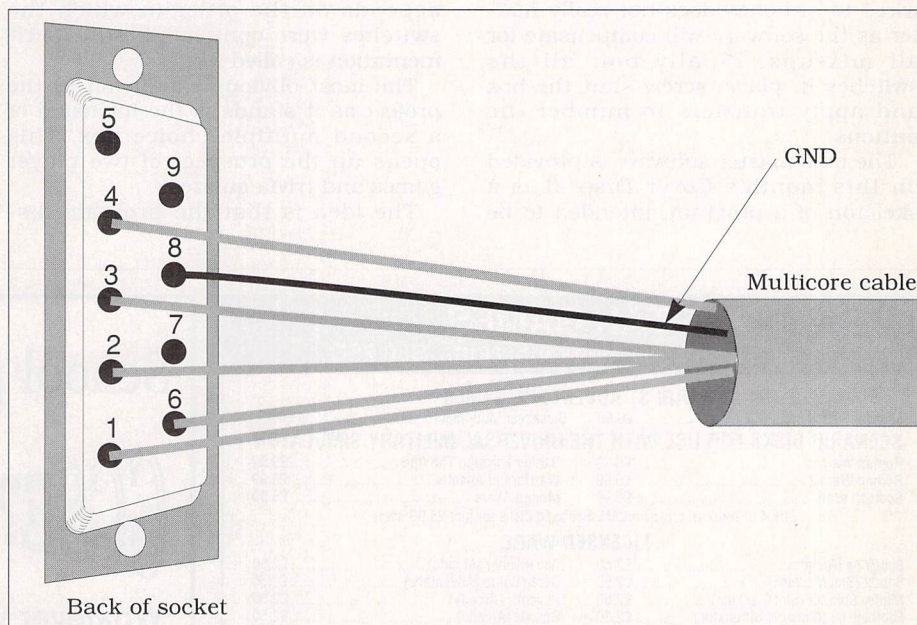


Figure 1: Connect the five signal lines and ground as shown

Parts list

Part No.	Description	Qty	Price each
RK61R	D-Range 9 way socket	1	60p
XR26D	Multi-core cable	1	52p
FH59P	Push-to-make switch	5	38p
LH14Q	Box	1	99p
XH76H	Number transfers	1	56p
Total			£4.57p

iron. Tinning, as you probably know if you have been following this series, involves letting a little solder melt over the wires to unite the tiny strands into one easy-to-handle wire.

Now the five signal lines and the single ground line can be connected to the socket. The pins to use are detailed in Figure 1. Don't worry about the order of the wires, as long as the

correct pins are used everything will work fine. The only wire you need to keep your eye on is the one connected to pin eight, the ground signal.

Once this plug has been connected, it is time to build the multiple choice box itself. Drill five holes in the top of box for the switches, and another in the side for the cable to pass through. If you don't have a drill to hand, a sharp knife can usually be used to bore through the box's soft plastic.

Before starting to solder the wire to the switches, pass it through the hole you drilled in the case. It will be difficult to do this after you have soldered the switches in place – so do it now before you forget.

Strip about 20 cms from the end of the cable and prepare the wires for soldering again. The ground wire must be connected to all switches, so solder little scraps of wire between them all.

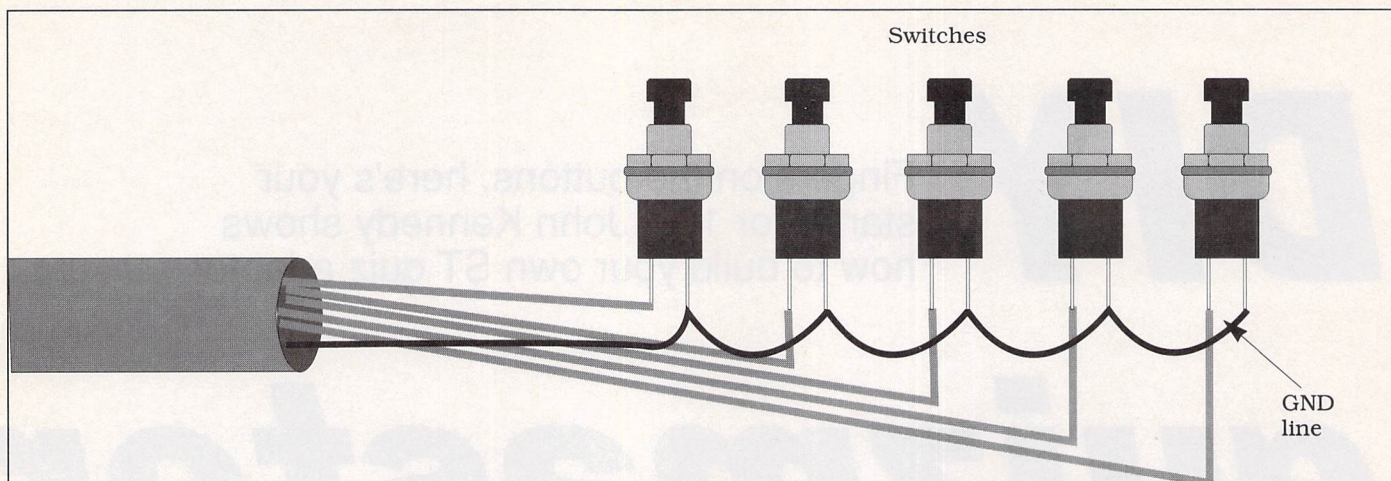


Figure II: The ground must be connected to all five buttons

as in Figure II. The other wires can each be connected to a switch to complete the circuit.

The combination of the remaining wires to switches does not really matter as the software will compensate for all mix-ups. Finally bolt all the switches in place, screw shut the box and apply transfers to number the buttons.

The quiz master software is provided on this month's Cover Disc. It is a skeleton of a program, intended to be

expanded and tailored to the purpose for which it is intended. Before using it, you must fiddle with the group of numbers in the first data statement. The order of the numbers zero to five depends on the order in which the switches were connected, so experimentation is called for.

The most obvious expansion to the project as it stands is the inclusion of a second multiple choice box. This opens up the prospect of two player games and trivia quizzes.

The idea is that the program dis-

plays a question followed by five alternative answers, only one of which is correct. The program then monitors the switches to see which contestant presses the correct switch first.

As an extension, you might like to bar a contestant from winning if he first presses the wrong switch. This would prevent someone pressing all five switches in rapid succession without even reading the question. The software, of course, simply monitors the joystick directions, so the programming is very simple.

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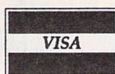
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ONE of the greatest recent advances in home computing is the advent of the wimp environment. The ST uses the standard Gem protocol, which means that, theoretically at least, all programs should share a common user interface.

In other words, the look and feel of any given program will be consistent to help the user quickly get to grips with any new package.

From the programmer's point of view there are both pros and cons to using a standard operating system such as Gem.

On the one hand, all the work of designing a custom interface has now been already done; on the other, actually writing a program to make use of Gem is far from simple.

Take the Basic language as an example. Basic is the most popular computer language ever, having recently overtaken that old stalwart Cobol for the number one spot.

It is a real workhorse, and with compilers readily available, professional quality software is entirely feasible. However, if there is one thing that Basic is not very good at, it is talking to operating systems such as Gem.

On the ST, GFA Basic is a popular alternative to the various other Basics available, and comes in two flavours; an interpreted and a compiled version. Both are very powerful languages, ideal for writing anything from games to spreadsheets. However, as you might expect, accessing Gem has always been difficult.

This means that programmers have been faced with the dilemma of spending a great deal of time trying to integrate their program with Gem – at the same time attempting to remain sane – or else chickening out and developing their own front end from scratch.

To help alleviate this problem, GFA has released a package aimed specifically at that strange, masochistic person who enjoys a challenge: The Basic programmer who wants to use Gem. GUP – or Gem Utility Package – works in conjunction with either flavour of GFA Basic (but requires version 3.03 upwards), and supplies a veritable plethora of features in the form of a programming framework.

The special Gem communication routines are all based around a main loop at the start of the Basic program. They are of three kinds – those which cannot be called directly, those which can, and those which are really extras, to be deleted if not required, so saving some space. Unless you are an

Guppy I ♥ ve

John Kennedy
explores a powerful
new Gem Utility
Package for
GFA Basic

advanced GUPpy – or just asking for trouble – you will rarely need to make any changes to these procedures, so they may be treated as simply extensions to Basic's repertoire.

The use of GFA's locked procedures means that all the extra code appears as several more lines at the end of your program, and you are protected from the coded horrors that dwell within.

Your own GFA Basic routines are easily tacked all around the main loop and called when necessary. Suddenly your program has developed a Gem environment. Well, not suddenly, because before you can get your Basic underway you will have to complete a large list of procedures to introduce

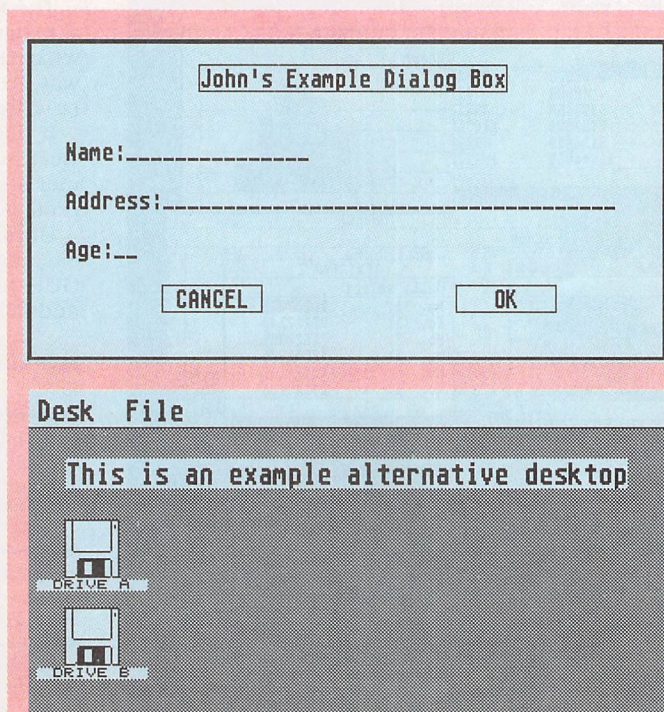
yourself to the Gem way of things.

However, there ain't no such thing as a free lunch, and so some limitations must be taken into consideration. Once Gem has been introduced to a program, several Basic commands suddenly become obsolete. Well-loved favourites such as PRINT, INPUT and the now-classic MOUSEX and MOUSEY are suddenly meaningless, being replaced by Gem counterparts.

For example, PRINT is now superseded by the TEXT function which also automatically positions the text in the current window. To allow users to INPUT information, a dialog box must be opened and provided with editable text. The loss of these commands is the price paid for Gem compatibility.

Up to six windows may be active at any time, but the way in which they are allotted at the start of the program means that the specific exit routine must be accessed to leave everything neat and tidy.

This obviously presents a problem if the program crashes midway through its execution, as the exit routine will be missed. If this happens, the only way a program can be restarted involves saving it to disc, quitting Basic to return to the Desktop, and re-starting. An



Accessing Gem from GFA Basic is now quite simple, thanks to GUP. Here is a simple dialogue box and an alternative desktop

utter nuisance if ever there was one.

To get a feel for the new commands now available, let's look at how to go about creating an example program and the output produced. A common element in Gem is the dialogue box, and because it do can do almost anything, it is also among the most complicated.

To use a box, the programmer must first create a resource file. Within these files – created with a special resource editor – the make up of the dialog box is defined in graphical form by means of cutting and pasting tools into place. A suitable editor is supplied with the GFA Basic interpreter, so you will have no worries on this account.

Once the box exists in the resource file, it may be accessed from within the Basic program by means of our new GUP commands. The example listing will set up a box to extract a name, address and age from the user.

The first half of the listing selects which box is being used, and the various fields required, before passing control directly to Gem. Once Gem has finished with the box – usually because the user has finished entering text – control is returned to the Basic program and the information remains in the internal global variables. From here Basic variables can easily be assigned to the new values typed into the box. Ideal for a Gem-based address book.

So what does the typical GUPpy look like? Who would want to use this package? Well, not the novice, that's for sure. The documentation supplied assumes the programmer is not totally new to either programming in Basic or with Gem. You will need a very good

```
GOSUB rscaddress(demobox&,0)      'Find the address of our dialog box
GOSUB set text(d name&,name$)      'Set up name field
GOSUB set text(d address&,address$) 'Set up address field
GOSUB set text(d age&,STR$(age&))  'Set up age field
GOSUB dialogbox (d name&,3)        'Start the box working

'To get past this point it is assumed the user pressed the 'EXIT'
'button in the dialog box and filled all fields

GOSUB editedtext(d name&,TRUE)      'Remove blanks from text
LET name$=edtext$                  'and assign text to string variable.
GOSUB editedtext(d name&,TRUE)      'Remove blanks as before
LET name$=edtext$                  'and assign text to string variable
GOSUB editedtext(d age&,FALSE)      'Blanks irrelevant in this field
LET age&=VAL(edtext$)              'change text to numeric value
```

The listing to produce the dialogue box on the previous page

grounding in advanced programming before large portions of the example listings appear nothing more than gobbledegook.

There is no point thinking that just because you can program in Basic you can easily add a Gem environment with this package – you will need a good book that explains what Gem is and how it works before you can achieve worthwhile results.

GFA itself just happen to publish suitable books on the subject, and for all would-be Gem programmers, this is an essential read.

The manual is comprehensive, but being translated from German means it lacks readability in places and is also very dull. Take this sentence as an example: "If you want to use Gem in the most efficient way, you should have some experience with Gem."

The first part of the documentation concentrates on the ethos of Gem, and how to go about making things as easy for the user as possible. This is a very

professional approach to programming style, and goes against the natural tendencies of many programmers to make things as easy as possible for themselves.

The second part of the guide details all the procedures in turn, giving parameters and examples. This part will become well-thumbed (with the help of the index, thank goodness) until you can remember the sometimes endless list of numbers which must follow each new procedure call.

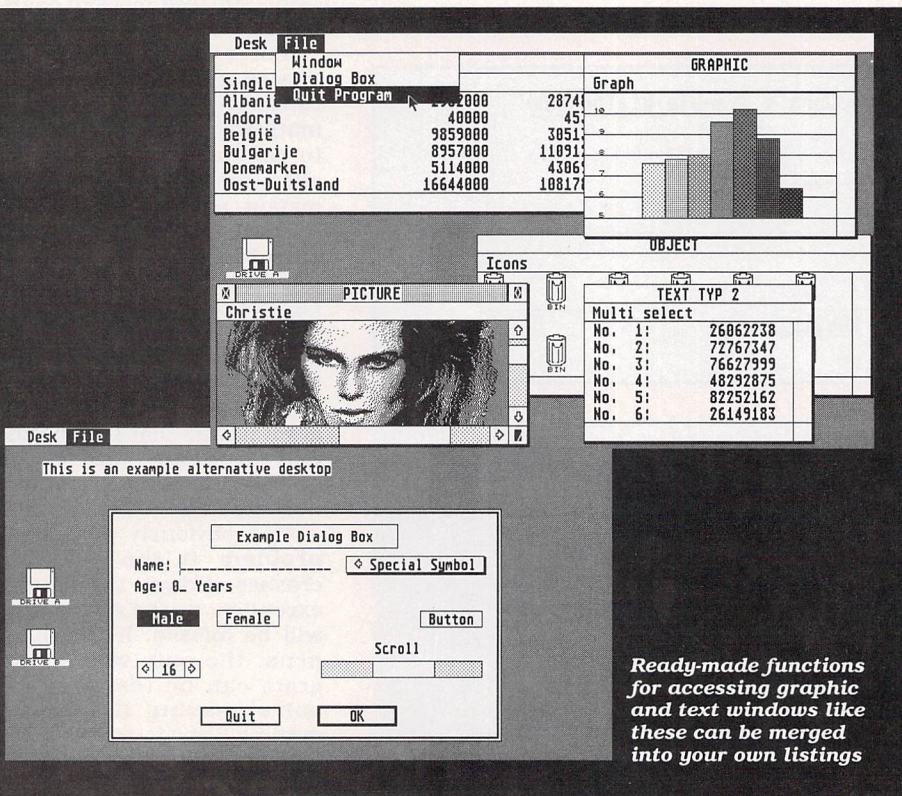
Undoubtedly the best way to learn how to use this package is to roll up your sleeves and get stuck into the demonstration file. This will open six windows to allow text to be highlighted and selected, graphics displayed and so on, but you will need a monochrome monitor.

Two versions of the GUP framework program are supplied, one with copious amounts of comments, and one without. Obviously the commented version is a good place to start, the stripped down version being reserved for hardened hackers.

The ideal GUPpy would already have a program developed, be conversant with Gem, and be waiting for some way to integrate both without having to write an entire library of routines.

If this is the case, GUP will provide a worthwhile addition to any programmer's collection, providing maximum professional finish with minimal effort.

Unfortunately, a beginner will easily become swamped when trying to use GUP, and should stick to using PRINT and INPUT, at least for the time being.



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FACT FILE

Product: Gem Utility Package

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AGAINST:

Manual and examples could be better. Even experienced programmers will feel lost at first



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CATALOGUE

WHEN the home computer was first launched on to an almost unsuspecting public, the standard method of storing programs and data was cassette tape. Tape is still used today, although mostly by games players on 8 bit machines such as the Atari XE.

In those far gone days of computing, cassette tape was the state of the art. Since then most serious users have upgraded to floppy disc, the advantages of increased speed and random access being essential for most serious applications.

Floppies, however, are easily lost or damaged, and even on the ST can only hold up to 720k of data. They can also be noticeably sluggish when used with software that requires constant disc access, for example a database package.

And so today many of us are probably seriously considering or have already opted for a winchester hard disc. A hard disc controller, and the drive, can be bought from several sources for approximately £300. So the immediate future would seem to lie in hard disc storage, at least for those who require more and more performance from their machines for applications such as DTP and CAD.

Advances in storage technology have produced advantages which will be felt most keenly by those applications which rely heavily on the storage of large amounts of data, mainly databases and database related software, but also including CAD and other image manipulation software which tend to be storage intensive.

However, there are still many applications requiring mass data storage which up until now have not been suitable for computerisation. Applications such as component catalogues, such as car parts, require not only text to be stored in the database, but also large amounts of diagrammatical or pictorial data, for example an outline diagram of a complete exhaust system for each make and model of car.

Further examples would be medical records, which may include X-rays and other applications requiring photographic detail, such as lists of properties available in an estate agency or reference material on natural history subjects such as birds, animals, plants, fish, trees, and so on.

CD-rom

Philips, the Dutch electronics company, has for several years been at the forefront of optical storage technology. The first result of its research was the release, with Sony, of high quality compact discs and players for audio use.

Sound information is converted to digital data and stored as a series of zeros and ones on the disc surface, thus allowing exceptionally high quality reproduction of music and vocals.

In 1986 – 900 years after William the Conqueror and the Domesday book – the BBC together with Acorn and Philips completed a two-year project known as the Domesday system, which will be familiar to many educational readers.

Philips' contribution featured the LaserVision videodisc player, developed especially for the project and thus heralding the era of optical disc computer storage.

The system uses a 12in optical disc holding 300 megabytes of data on each side of the disc. Information stored includes text, the software to control the system, Ordnance Survey maps of the whole of the UK, more than 50,000 photographs, sound and video sequences. This technology is commonly referred to as CD-rom, although Philips refers to its system as LV-Rom.

The Domesday system is controlled from a standard PC – or alternatively, RM Nimbus or BBC Master – so that, in theory at any rate, it could be run from an Atari ST with a PC emulator. The complete system, consisting of computer, software and LaserVision CD-rom player, is available for around £4,000. A number have been installed

in libraries, schools and by some courier services. Extra discs are available for approximately £400 each.

The original system contains two laser discs. Since then several additional ones have been produced,

including topics such as ecology – a video tour of a nature reserve – with video sequences of actual volcano eruptions on land and sea, and industrial and management training packages. These discs open up a whole new world of interactive video to users.

Recently we have seen the introduction of compact disc video, which reproduces not only high quality sound but video output also, so now you can listen to Dire Straits in high quality sound and watch them on high quality video.

As with CD audio, the quality is greatly enhanced due to the fact that the data is stored in digital format. For instance, still frames are of the same standard as the moving video sequences. All of this is now available for about £600 or so from your local

STreak



Atari's CD-Rom player was too far ahead of its time and never caught on. Is it time to relaunch it?

hi-fi and video shop.

The same type of disc is used to store data for CD audio, CD video and for CD-rom, although the 4in to 12in disc sizes vary. The disc is manufactured of moulded polycarbonate plastic with a reflective aluminium coating on either side. Pits are created in the surface during manufacture which cause a reflective or non-reflective spot, or pit, in this aluminium layer.

Each bit of data – zero or one – is represented by one of these pits, more than five million of which can be stored on a single disc.

This data can be read from the disc by a low power laserbeam, enabling the data bits to be placed very close together – only 0.6 micrometres apart (the average integrated circuit has circuit lines more than one micrometre apart). This makes a storage capacity of more than 500 megabytes per disc possible.

The discs cannot be written to by users, hence the term Compact Disc – Read Only Memory and are therefore mainly suitable as a publishing/distribution medium. In other words only pre-recorded information such as a catalogue, or the type of information available on the Domesday system,

can be accessed using them.

It is not possible to use CD-rom for personal data storage unless you are willing to pay to have your data pressed on to CD-rom.

There is still quite an advantage, as the discs themselves only cost about £5 each and can store a large amount of information. A typical CD-rom will store 250,000 pages of text, which is the equivalent of 1,000 floppy discs. Future developments will increase this by four times to 1,000,000 pages – enough to fill several filing cabinets.

Applications such as component and automotive parts catalogues can be updated regularly and cheaply by sending a new disc in the post and the information can be accessed much more quickly and efficiently than with the older microfiche type of storage. Library and public records catalogues can be maintained in the same way.

For those interested in buying a CD-rom player, Atari made an interesting development early in 1988. It has taken a standard CD audio player and added the extra error correction circuitry which is required to enable computer data to be stored with accuracy.

The odd erratic bit on your CD audio

will not be detectable by the human ear, but the same error in your computer files could cause havoc. The player was originally launched at around £400.

This player, known as the Atari Optofile CDAR 504, retains the ability to play audio compact discs as well as computer information. Unfortunately for us, this machine has only been released on the Continent so far, and even there it has not really taken off, being a little bit ahead of the market demand. As interest grows in CD-rom there could be a case for the machine being launched in the UK.

Another machine that may be of interest to ST owners with a PC emulator is the CD-rom drive supplied by NeXT Technology. The company manufactures the NeXT Computer, the first micro to use erasable optical storage and the latest machine from Steve Jobs, creator of the Apple Macintosh.

Its CD-rom drive will operate with any PC or AT-compatible machine capable of CGA, EGA, VGA or Hercules graphics and conforms to the industry standard High Sierra specification. That is, it can read standard audio CDs.

The drive can be fitted externally or, in place of a second disc drive, internally. Software available on CD-rom includes the Oxford English Dictionary, British Books in Print and Images from Space.

Another product which may interest Atari ST owners is the range of genlock systems available from Third Coast Technologies. These allow ST text and graphics to be mixed with the external video pictures from video tape, videodisc or camera, using PAL on Scart socket and PAL and RGB on connector.

The mid-range model also allows full fader control and VHS Super compatibility and the top-range model will accept all formats – VHS, Beta and so on – providing broadcast quality output.

Imagine, however, being able to use your computer to control your music and eventually also video. Games could be marketed on CD-rom which would make use of high quality sound and music, still and moving video frames, and computer graphics – all controlled by software stored on the same, uncorruptible disc.

Worm

Better still would be a system which allows data to be written to the disc as well as retrieved. Worm discs – Write Once Read Many – can be written to only once but can be read over and over again. They behave, therefore, in a very similar way to Prom devices and cannot be erased.

The optical drive on a Worm system contains two lasers instead of one. The high powered laser is used to write to

The technology is here, but where's the software?

of light

Much has changed since the days of using cassette tape for storage of data.

Raymond McCullough looks at the changes and what the future holds



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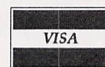
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Using Worm drives for data storage will result in many permanent copies of files, which can be an advantage in some applications, for example to maintain an audit trail in company accounts.

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In practice, although many files are created, it will take a long time to fill 500 megabytes of storage. When the limit is reached it is simply a matter of copying the most recent version of each file on to a new disc and carrying on from there, with the former disc remaining as an archive copy.

Bulletin boards

Worm drives are now available for PC compatibles – PC emulator users take note. Some enterprising sysops are employing them to store their main bulletin board database of news and information. Try John Lambon's Lamplight BBS on 0705 811531 for an example of this.

This system uses a Panasonic Worm drive with a double sided capacity of 400 megabytes. Although mainly an MSdos service the ST area is growing rapidly.

Magneto/optical

There is yet another type of optical system, the magnetic/optical drive, referred to as MO. These discs behave like an ordinary floppy or hard disc and can be written to over and over again. The process is very similar to

the operation of an eeprom but instead of an electrical signal a magnetic field is used to rewrite the data.

Again, two separate lasers are employed. The magnetic field is switched to represent zeros and a high powered laser is used to melt a very small area of disc surface, which then aligns itself magnetically with the existing field. The molten area solidifies immediately and is permanently set to zero.

All of the bits in a specific sector are set to zero and the field is then switched through 90 degrees so that the ones can be written in the same manner. As with previous methods, the disc is read using a low powered laser.

The disc is not susceptible to damage from magnetic fields after it has been written to and can be stored near a speaker or monitor without danger of corruption.

At present these MO drives are available almost exclusively for mainframe and mini computers and are extremely expensive – £9,500 for the Infinity system from Alphasatronics, running on Vax and Microvax equipment. The drives use a 5.25in removable cartridge with a 650 megabyte capacity.

Third Coast Technologies of Wigan, suppliers of ST hard drives, is currently investigating the possibility of a magneto optical drive for the ST and possess a 900 megabyte Sony read/write drive. If you happen to have £5,000 spare then you might like to talk to Jason Miller at the Wigan office.

The future then, would seem definitely to include optical storage, and we may well be using CD-rom, Worm drives or even MO storage in the very near future. This will have the effect of opening up many new areas to computing and should make a big impact on training and education, which is an increasingly important area of the Atari ST market. Interactive video is

already becoming popular for commercial and industrial training, where the learner, for example a trainee doctor, can make

his or her mistakes without endangering life and property. Further educational establishments should already be investigating this technology if they wish to compete in the training market of the future.

For those of us with personal computers the day may well come when we will use one erasable optical storage device to record music, videos, photographs, and all our computer software and data. We could then write simple programs to play back our own selection of sound, video, graphics and so on.

Family photographs could be scanned and a database set up using the scanned images, which could then be centred, enlarged and otherwise manipulated by software. Sequences of still frames could be put together to give an impression of movement. Video shots could be included, if available, and suitable stereo music and graphics added to complete the overall effect.

Interactive video games may become available, enabling much more reality to be incorporated into arcade and adventure games. Home videos using compact discs will be of much higher quality and could be edited and enhanced easily using the computer.

Reference books and catalogues may be supplied on CD-rom, enabling an incredible amount of information to be held on a home database.

The National Educational Resource Information Service (Neris) educational database is one example of the coming use of optical storage.

The database, of reference material for teachers, is available online for those with modems and a high disregard for telephone bills. It is also available on CD-rom disc for those with IBM-compatible machines.

Incidentally, Neris is a good source for information on interactive video releases and project material on a wide range of topics.

Predictably, more and more of this type of material will be made available in optical format in future, as the number of CD-rom users expands. This should have the effect of reducing prices so that ordinary users can consider investing their hard earned cash.

The one thing which we can hope for at this stage is that a standard format is agreed upon internationally, so that all of our optical media can be played on any of these machines, be they CD-rom player, Worm drive, or erasable magneto/optical drives. With CD-audio and video common sense has prevailed so far, so we can but hope.

Emigration database

In Northern Ireland there is considerable interest in a project currently under way at the Ulster American Folk Park in Omagh, County Tyrone. The staff there is using a high capacity Worm drive on a Digital Vax system to store details of emigrants from Ireland to North America and other parts of the world, particularly during the peak emigration period of the Irish famine during the last century.

Data is collected using a PC-compatible and stored on a second Worm drive for transfer to the main database. Sources used include newspaper advertisements from that period, old letters, journals, books and shipping lists.

Details of each source are stored on hard disc, along with a transcript of the document, and the Worm drive is used to store an A4 laser scanned image of the original document.

Librarian and system manager, John Winters says that the park hopes to set up an interactive search facility using micros to enable the public to access the main Worm drive as part of the main indoor display.

There are a number of sources, at prices ranging from about £2,500, such as the Panasonic LF-5200 which stores 200/400 megabytes each disc. As demand for this type of storage increases, so the price should become more reasonable. We have already seen this happen with both floppy and hard drives.

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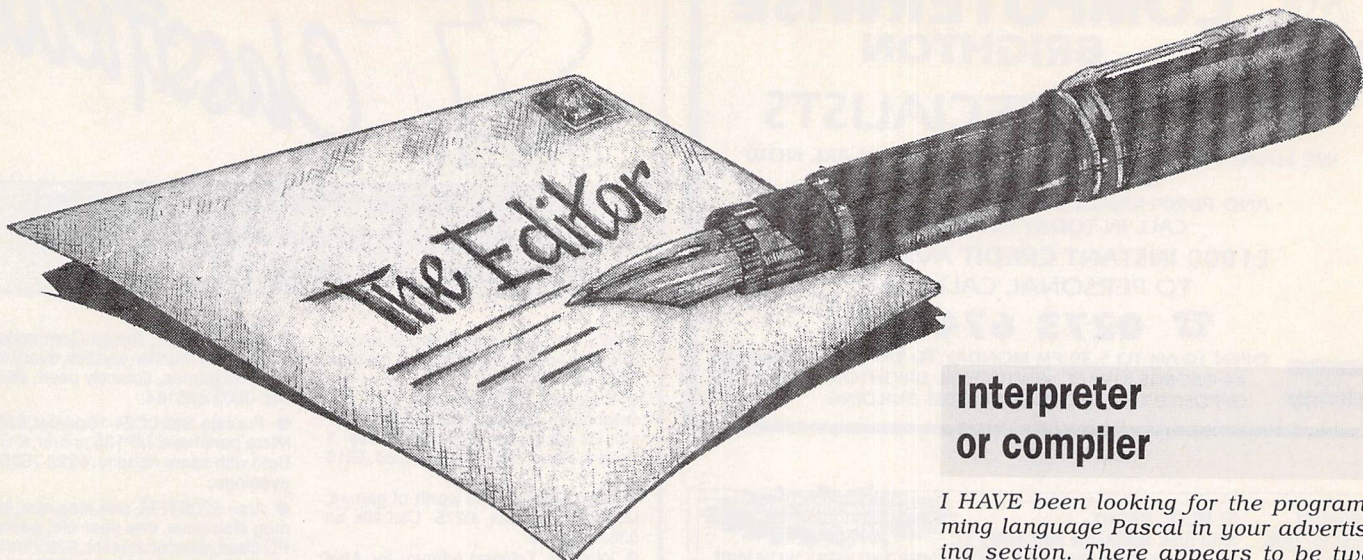
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ST5



Somewhere, over the rainbow

I OWN an Atari 520STFM, a Philips 8833 colour monitor and a Star LC-10 colour printer. I have been trying to get the printer to output a screen in colour using the Alternate and Help keys, but so far have only managed to get a black and white print.

I configured the printer using the ST Language disc selecting the Install Printer Menu as follows:

Printer type	Dot
Colour	Colour
Pixels/Line	960
Quality	Final
Printer	Printer
Paper type	Feed

Pressing the Alternate and Help keys, as instructed in the User Manual, produces no response.

If I select black and white instead of colour I get a printout of the screen.

How can I print screens in colour? Does the Atari need a special colour dump program?

My second problem is with my communications package. I am using the ST with a MicroLink dual speed modem and K-Comm II software. On Prestel and Micronet the screens are extremely good but I get distortion in some frames. Please advise.

My Atari is two years old and I converted it to a double sided 1Mb disc drive. — **Michael Allison, Ware, Herts.**

● The ST can't dump a colour screen to the printer using the Alternate+Help function. You must load the screen into an art package such as Degas Elite and dump the screen from there.

Several printer drivers are supplied with Degas, and more are available in the public domain so you should be able to find something suitable.

The distortion on Prestel screens is due to the fact that K-Comm II can't exactly reproduce the teletext character set.

Interpreter or compiler

I HAVE been looking for the programming language Pascal in your advertising section. There appears to be two versions available at the moment — HiSoft/OSS Personal Pascal and Prospero Pascal. There was a third, Metacomco Pascal but this does not appear to be available any more.

I am trying to obtain an interpreted version of Pascal as opposed to a compiled version as I believe that this is far easier to use for the beginner.

Both Atari and the local Atari stockist seem to know very little about the available Pascal packages and I would be grateful for your recommendations on the most appropriate version. — **A.J.W. Roberts, Bristol.**

● We haven't heard of any commercial or public domain interpreted versions of Pascal, only compiled ones. Both compilers you mention are excellent in their own ways, but Prospero is probably better for a novice programmer because of the superb documentation supplied with it.

However, OSS Personal Pascal has a quicker edit-compile-run-edit cycle and produces more compact code. If money is no object buy both!

Installing the ram disc

ON the Cover Disc of the November 1989 issue of Atari ST User, is a ram disc application entitled RAMDISC.TTP. I cannot find any documentation either in the magazine or on the disc to enable me to install this on my Mega 2.

When the dialogue box asking for TTP parameters comes up on the screen I have tried various combinations of commands, to no avail.

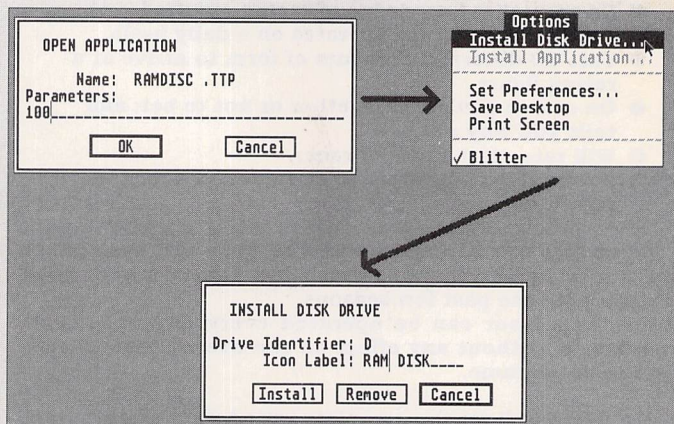
By keying in a capacity in kilobytes I can get the program to give me the message: "Ramdisc of ***k bytes installed". But when I try to use the ramdisc I get the error message: "This disc does not exist".

I have managed to install an icon for the ramdisc and save it to the desktop so that it reinstalls with the next bootup, but no ramdisc to utilise it. I

would appreciate it if you could give me the information I need to use this ramdisc. — **Michael Wassil, Ontario, Canada.**

● This tiny utility occurred several times on the Cover Disc and instructions can be found in the August and September 1989 issues of Atari ST User. You need to double click on RAMDISC.TTP and type in the size (in k) of the ram disc you want. It will then be installed.

You can't access it yet, however, as you need to install a disc drive icon as



shown in the illustration above. Click once on a drive icon, then pull down the Options menu on the desktop and select Install Disk Drive. Change the drive identifier to D and the icon label to RAM DISK then click on Install. The ram disc is now ready to use.

Blow your mind with an STE

JUST before Christmas I bought an Atari 520STE and after already being the owner of two STs previously, the first thing I did was to upgrade the memory to one megabyte. It only cost £60 and took the shopkeeper 10 minutes to fit.

Shortly after Christmas I found every magazine pulling my beautiful computer to pieces. Quotes: "The blitter chip is a waste of time"... "mono emulators don't work"... "medium res doesn't work"... "PC format is no good" and "1st Word Plus doesn't work".

Well 1st Word does work because this letter was written with it.

Also I have a very good monochrome emulator that works perfectly, and if you save the desktop while in monochrome to any disc you want to boot in medium resolution it will end the medium resolution boot problem.

If the blitter is such a waste of time how is it that every Gem-based program I have is speeded up tremendously? Also a friend of mine works with PC computers and has tried discs formatted on my ST and has had no problems.

Why oh why is everyone so eager to pull the STE to pieces when it is such a powerful, fully specified machine, with which I am more than happy?

I brought a nice amplifier and good quality speakers from a second-hand shop for £25, the price of a game, rigged it up via the phono sockets and wow! Mind blowing! Absolutely brilliant! Roll on stereo software. – **Richard Cundell, Leicester.**

Right one for the STE

AS my Atari ST User subscription includes a double sided cover disc I decided to change my ageing single sided STFM with a new STE.

I was, therefore, very concerned to read in the March issue of software compatibility problems, and was totally amazed to find these problems on your Cover Disc. I refer to Death Star, which will load without problems on the STFM but not on the STE. In fact I find I cannot load any software written in STOS. This includes Fun School 2 from Database Educational Software.

Is there a remedy to this problem and can you suggest any way of ensuring future software I buy is compatible? I would appreciate your help. – **K. Rice, Wigan.**

● Death Star was supplied by a freelance programmer and unfortunately

Each month we select a letter of the month and the sender receives the program which our reviewers have rated Atari ST Star game. This month E. Thai will receive Escape from the Planet of the Robot Monsters, which is reviewed on Page 22. Letters on every subject are welcome. Send them to the Editor, Atari ST User, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

I, LIKE many other not so rich ST owners, cannot afford the deluxe hand held scanners, and therefore turned to the cheaper IMG unit. I am sure some people are experiencing difficulty in attaching this scanner to the printer head securely so that it will not fall off in use.

I have discovered a way of installing it so that it won't wobble and can easily be installed and removed without having to adjust the position of the scanning head. I used the old ribbon cartridge for my Star LC10 printer, a small hacksaw, superglue and a screwdriver. Here's what to do:

Using the screwdriver, remove the top of the ribbon cartridge, making sure you don't damage it. Throw away the ribbon and any other loose parts, but keep the casing. Saw away the right-hand corner of the top and bottom parts as shown in the illustration.

Take the top clip and pass the scanner tubing half way through –

Scan it with superglue!

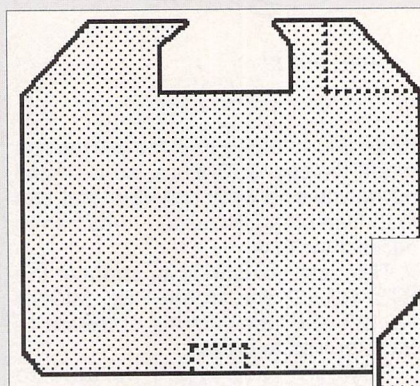
ATARI
STAR
USER GAME

you won't need the bottom clip. Place the bottom half of the ribbon cartridge into the printer as normal.

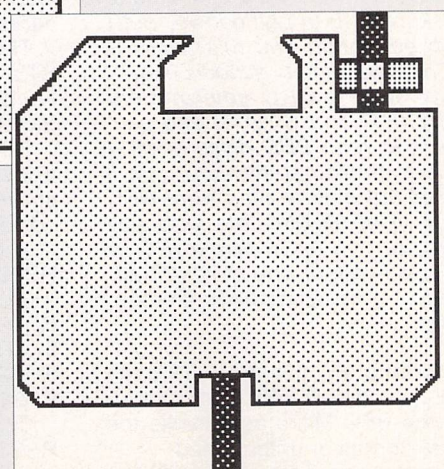
Place the clip and scanner head into the ribbon cartridge so that the scanning optical fibres poke out through the side corner you cut out. To achieve this one quarter of the clip may be hanging out, so make sure the fibres reach the print drum.

Take the cartridge out of the printer, make a mark on it and superglue the clip on. Place the cartridge and scanner in the printer and adjust it so that it is as close to the drum as possible. Place the cover on the cartridge so the lead comes out through the hole you cut. Make any final adjustments necessary then you are ready to scan.

You now have an easily installable and removable scanner cartridge. The cable can easily be pushed forwards or backwards through the clip and you can be sure that it won't fall off during scanning. – **E. Thai, Ramsgate, Kent.**



Cut along the dotted lines



Thread the scanner cable through the cartridge

wasn't tested on the STE. The reason this, and other STOS software, won't work is that the programs were written with an old version of STOS that was released before the STE became available. A STOS upgrade utility is available in the public domain.

Database Educational Software will exchange Fun School 2 for an STE version free of charge. Post your copy to them at Freepost, Europa House, Adlington Park, Adlington, Macclesfield, SK10 4BY. No doubt other software houses will offer a similar

service, but contact them first.

Software publishers will now have had the new machine for quite some time, so new software should be compatible with it.

Many happy returns

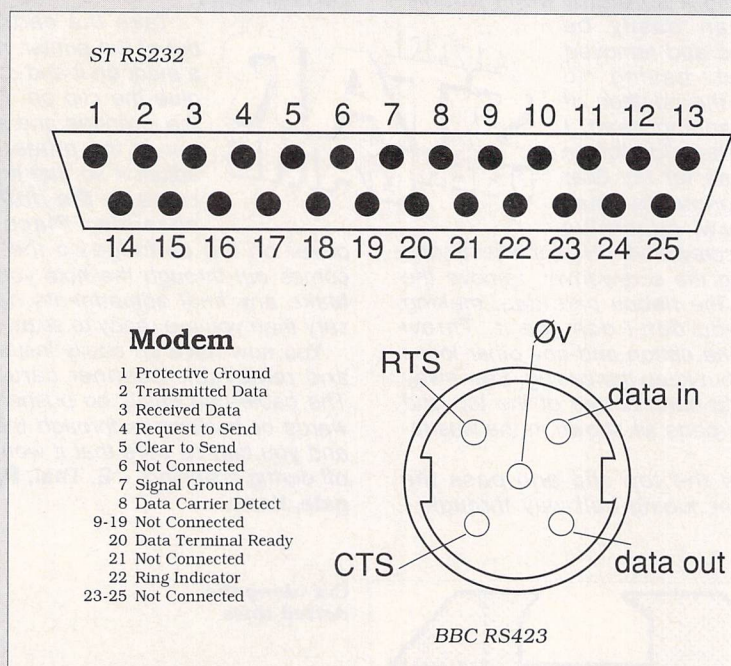
I RECEIVED an Atari STE Power Pack for Christmas and am very impressed with it. I'm also impressed with your

cool, mega Atari ST User.

But I have to say that your magazine would be much better if you had the disc on the front cover, rather than having to send off for it. Don't worry though, I'm still going to buy it. – Niel Anderson, Ross-on-Wye.

● Thanks for the letter Neil, and thanks to everyone else that wrote on that subject. The disc is obviously very popular, so we decided to bring it back. Let us know how what you think of it – do you prefer demonstrations, games, utilities or public domain programs?

Reading BBC Micro discs



CAN you help? I have a 1040STE with a 40/80 track switchable 5.25in drive attached. I would like to be able to run BBC software on it from time to time. I know it is a comedown, but I work in education and this micro is what Cheshire primary schools use.

I have tried a BBC environment emulator (BTMsoft STDFS) and cannot get it to read BBC discs at all. I remember reading somewhere that it can read the picture files from BBC discs. Is it at all possible with any emulator or is a fix available (PD or other)? Can you, or one of your readers help? – R. Burgess, Crewe, Cheshire.

● Unfortunately, the Atari ST can't easily load software from discs formatted on the BBC Micro as it thinks the discs are corrupt or unformatted.

A few experiments with HiSoft's

Knife ST revealed that the ST can be made to read BBC discs, so it should be possible to write software that can load files off a BBC disc – if someone cares to write it.

The best solution is to connect the ST's RS232 port to the BBC Micro's RS423 and use comms software to transfer files and data.

However, you won't be able to transfer the majority of commercial software due to the protection methods employed.

The figure shows the RS423 and RS232 sockets on the BBC Micro and Atari ST. Connect the Data In of the RS423 to the Transmitted Data pin of the RS232 and the Data Out of the RS423 to the Received Data of the RS232.

Connect the RS423's 0v to the RS232's ground. The RS423's CTS and RTS can be linked together.

Slipshod service

I WAS certainly not surprised to read of the problems C. Benham encountered in receiving a reply from companies (Letters, March 1990) since I have experienced similar problems.

I am currently hoping to buy a hard disc, and in January wrote to 10 companies asking them to send details of any appropriate 20 or 30Mb discs that they sell.

With only one exception (Frontier Software) I had to write a further letter two weeks later requesting a reply, in some cases pointing out that I needed the information urgently to enable me to buy the disc by the middle of February.

It is now well past that date and well over four weeks since I sent out the second batch of letters, and five companies have not given me the courtesy of a reply.

Of the five that did reply, Frontier Software wrote me a personal letter and actually supplied me with what I wanted – a product specification fact sheet and not just a catalogue of all its products.

After the second attempt, Power Computing sent me a fact sheet and Silica Shop a personal letter, but without specific details beyond price.

I think this exercise shows that a lot of companies would benefit from proper marketing as this was an opportunity for the sale of an unspecified number of hard discs.

It takes very little to persuade a potential customer who is in searching to buy, and what persuades me is reasonable service and full details of products that I ask about.

Since there may be genuine reasons why I did not get the required level of service from the other companies – resources, postal problems and so on – and I have no desire to give adverse publicity based on a one off, I have only mentioned the companies that gave me satisfactory response. – K. Bolton, Oxford.

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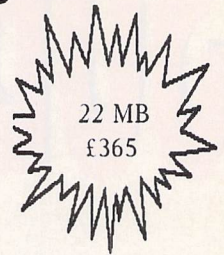
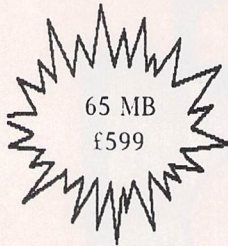
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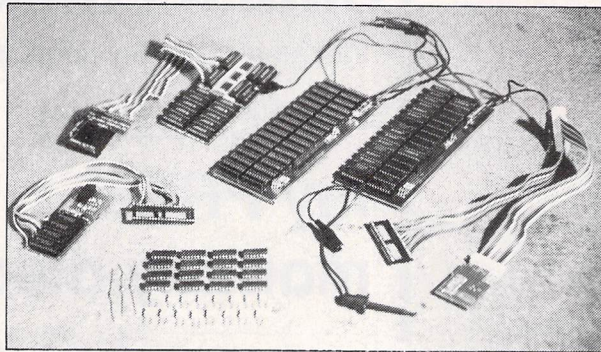
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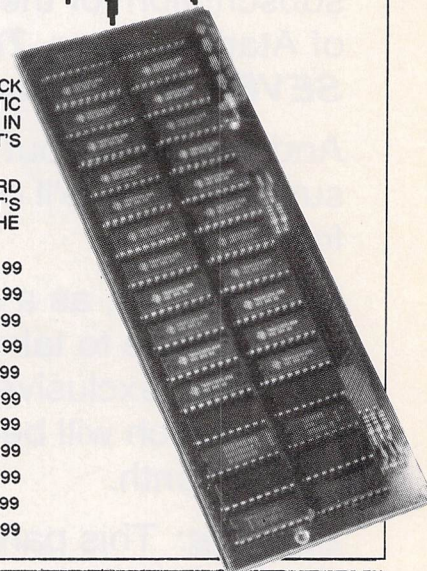


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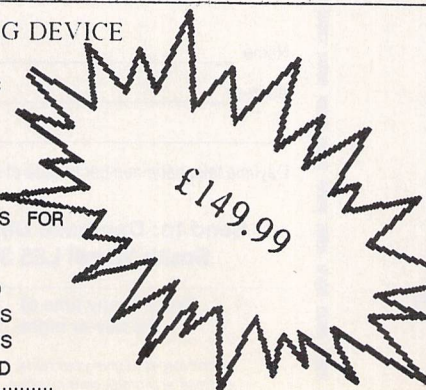
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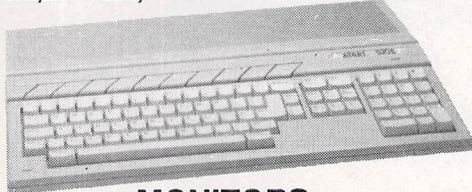
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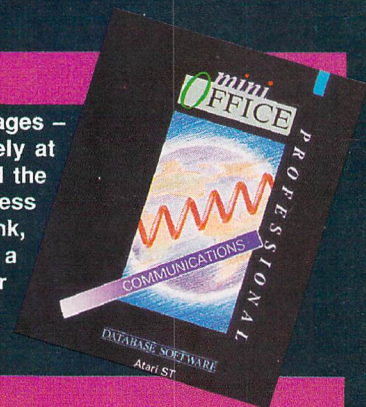
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ST6

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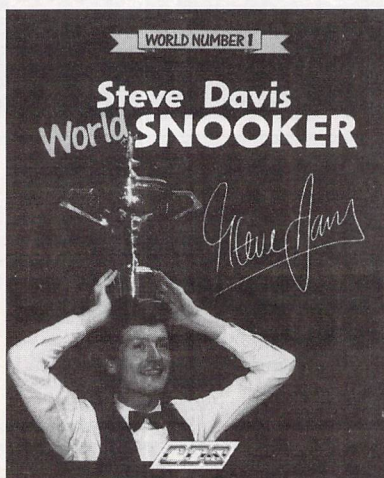
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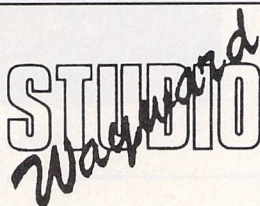
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The installation process takes around an hour (the XTRA-RAM simply plugs into two places inside your ST) and is carefully explained in a detailed 32 page manual which is written with the non-technical ST user in mind. If you have any problems during the installation process, Frontier's technical staff are always available on the phone to offer assistance.

• No Need To Stop At 1MB

Most RAM upgrades leave you with your 1/2MB ST upgraded to 1MB and that's it! If you need any extra memory at a later date you are expected to go out and buy a Mega ST - Not so with the XTRA-RAM. The XTRA-RAM has been designed to take two sizes of industry-standard RAM memory chips. With sixteen 256Kbit RAM chips the XTRA-RAM will upgrade your 1/2MB Atari ST to 1MB, making it totally memory compatible with the 1040ST and Mega 1ST. When you decide that you need more memory you can change those sixteen RAM chips for sixteen 1Megabit chips (again with no soldering whatsoever) in around ten minutes and your ST will be expanded to 2 1/2MB (520ST, 520STM, 520STFM, 1040STF, 1040STFM and Mega 1ST will be expanded to 2 1/2MB, Mega 2ST will be expanded to 4MB).

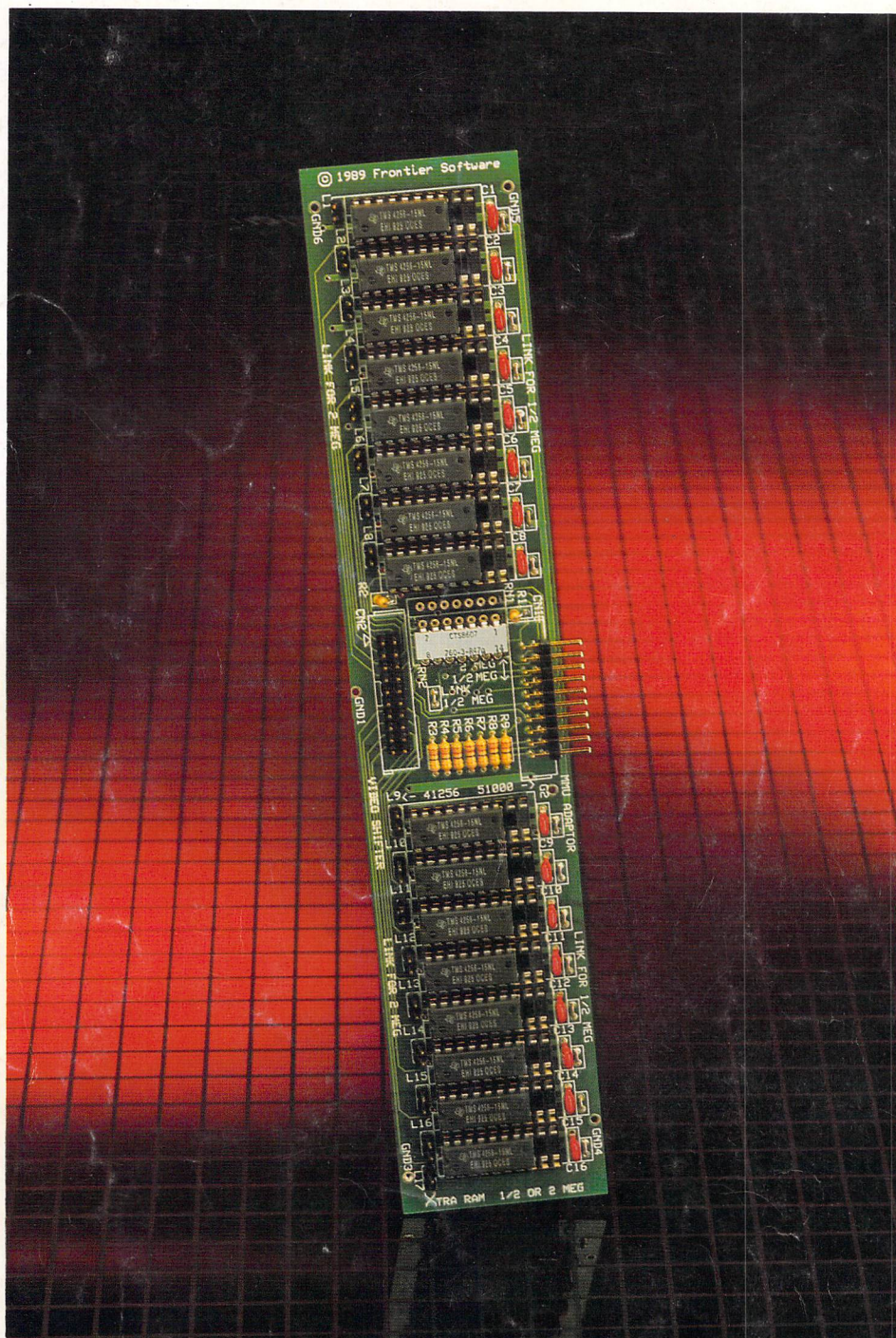
• Totally Compatible

The extra RAM memory that the XTRA-RAM gives you is totally compatible with all of your Atari ST programs. The ST's memory controller chip 'logs' in the extra memory and makes it available for your programs. You will automatically get more memory for DTP, word processing, MIDI, running the Atari Laser printer and everything else that you use your ST for.

• Software Included

Every XTRA-RAM upgrade is supplied with a free

^{oo}The XTRA-RAM must be fitted to STs with surface-mounted MMU chips by Frontier Software. You can fit the XTRA-RAM to STs with surface mounted RAM chips with no soldering as long as the MMU and Video Shifter chips are in sockets. Call Frontier for more details.



RAM testing program (so that you know with *certainty* that your installation has worked), RAM disk and printer spooler software.

• Satisfaction Guaranteed

The XTRA-RAM is supplied under Frontier's ten day money back guarantee, which means that if you don't like the XTRA-RAM, for any reason, you can return it for a full refund within ten days of purchase. The XTRA-RAM also carries a full twelve months' guarantee.

• Available With Or Without RAM Chips

Frontier supply the XTRA-RAM in three ways:

- (1) Unpopulated (with no RAM memory chips, so that you can purchase your own),
- (2) Populated with 16 256Kbit RAM chips (taking any 1/2MB ST to 1MB. This, of course, can take your ST to 2 1/2MB whenever you wish simply by changing to 1Megabit RAM chips)
- (3) Populated with 16 1Megabit RAM chips (to take any keyboard ST or Mega 1ST to 2 1/2MB or any Mega 2ST to 4MB).

• Prices

XTRA-RAM Unpopulated	£69.99
XTRA-RAM Populated to upgrade a 1/2MB-ST to 1MB (can later upgrade to 2 1/2MB simply by changing RAM chips)	£99.99
XTRA-RAM Populated with 16 1Megabit RAM chips to upgrade keyboard STs and Mega 1STs to 2 1/2MB and Mega 2STs to 4MB	£299.99

All prices include VAT. Please add £2.30 postage and packing to all orders under £120.00. Frontier accepts payment by Visa or Access.

Available from your local dealer, or direct from:



Frontier Software

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Telephone (0423) 567140/530577. Fax (0423) 522874.