

# ATARI ST USER

Incorporating  
**ST**  
UPDATE

Volume 4  
Number 1  
March 1989  
£1.95

The  
top-selling  
Atari ST magazine

## REVIEWS

*Day by Day, Multiface,  
Flair Paint, Sprinter,  
Talespin graphic  
adventure creator*

## FEATURES

*Guide to ST Modems  
Midi scene surveyed  
VDI routines explored*

## GAMES

*Thunder Blade, Falcon,  
Hotball, Joan of Arc,  
President is missing,  
Last duel, Hell Bent,  
R-Type, Afterburner,  
... plus many more*

**In this month's pullout:**



**Word processors in business  
Emotion and colour in art  
Drawing in Gem windows  
Handling strings in C**

# BUDGET BEATER!

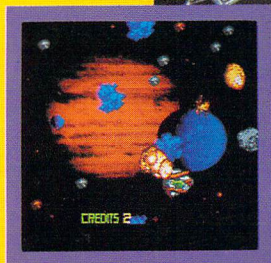
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# BLASTEROIDS



AMIGA SCREEN SHOTS

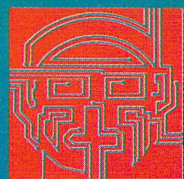


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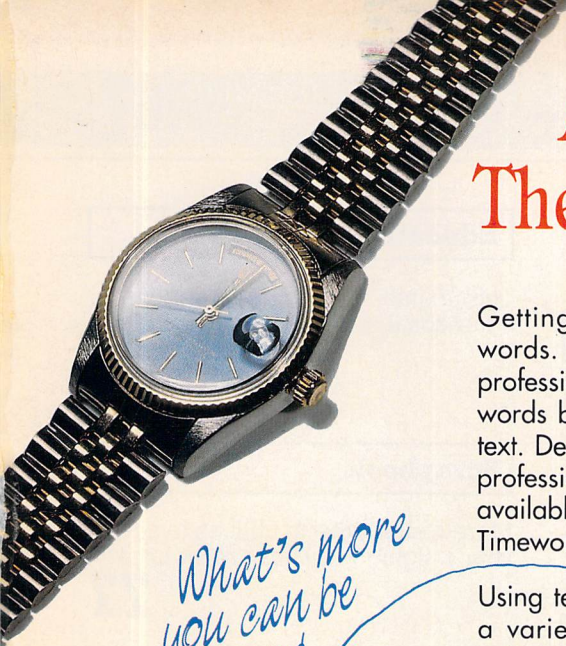


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Vol. 4 No. 1 March 1989

**Managing Editor**  
**Derek Meakin**

**Group Editor**  
**Alan McLachlan**

**Features Editor**  
**Roland Waddilove**

**Production Editor**  
**Peter Glover**

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**Advertisement Sales**  
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**Reviews coordinator**  
**Pam Turnbull**

**Promotions Editor**  
**Christopher Payne**

**Promotions Coordinator**  
**Robin Nixon**

**News Editor**  
**Mike Cowley**

**Tel:** 0625 878888 (All depts)  
0625 879940 (Subs)  
**Telex:** 9312188888 DB  
**Telecom Gold:** 72.MAG001  
**Prestel Mailbox:** 614568383.

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## FEATURES

### News

All the latest stories and events from the ever-expanding world of the Atari ST, including the latest Gallup Chart of top-selling games software.

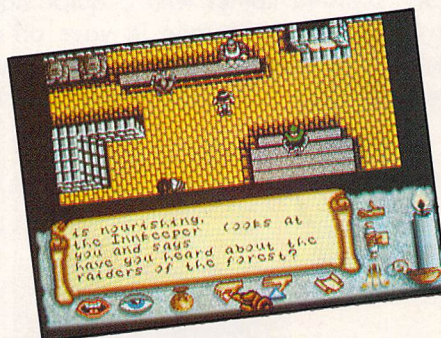
**7**

### VDI

Bruce Smith reveals how to access the virtual device interface functions.

**38**

### Brillig



All mimsy were the borogroves, except for our resident adventure wizard who stays bright to give help to intrepid wayfarers everywhere. Including a review of Times of Lore.

**46**

### Education

This month we feature a complete educational software guide for the ST.

**51**

### Scrapbook

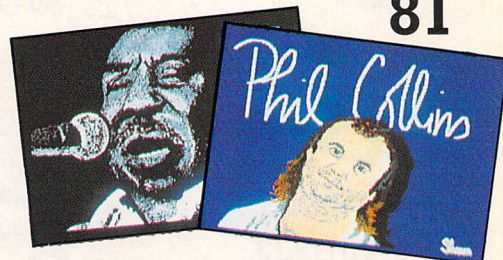
More handy type-in utilities to add to your bulging software toolkit library.

**77**

### Gallery

Four stunningly realistic faces grace our international picture gallery.

**81**



### Which modem?

Our guide to modems will help you decide which best suits your needs.

**85**

### Talespin

We examine this stylish new graphic adventure generator from Microdeal.

**98**

## MORE FOR YOUR BINDER ...

**Part 8 of The Complete Atari ST.**  
Over the months this illustrated pull-out, which comes free with Atari ST User has built up into the definitive guide to the working and uses of this powerful micro.

### Continuing this month with:

- Creating the right emotional response using colour.
- A look at commercial word processors for business use.
- Clipping images to fit windows in ST Gem.
- Input routines and strings in C programming.





## Mailbag

Here's a further selection of the brightest and most informative letters from our ever-bulging ST mailbag.

**116**

## REVIEWS

### Software



R-Type, Wanted, Afterburner, Thunderblade, Falcon, Joan of Arc, Hotball, Last Duel, Spitting Image, Hellbent, Pacmania and many more.

**18**

### Midi

A brief overview of music samplers and utilities in the public domain.

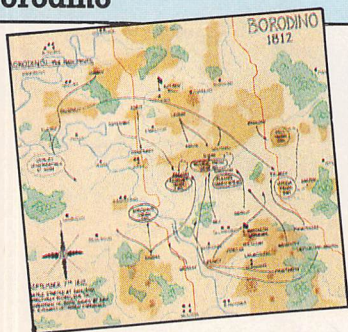
**105**

### Day by Day

Digita International's new personal organiser is put through its paces.

**45**

### Borodino



We re-enact Napoleon's invasion of Russia in 1812, and take a look at a new Battlescapes program from Atari.

**48**

## ATARI ST AR USER GAME

### The President is Missing

This amazing interactive simulation is given an in-depth assessment.

**18**



### Personal Finance Manager



Have you got money problems? Now keep on top of your bank manager with this utility from Microdeal.

**63**

### Flair Paint

The latest art package from AMS. Will it make the grade in an already overcrowded market?



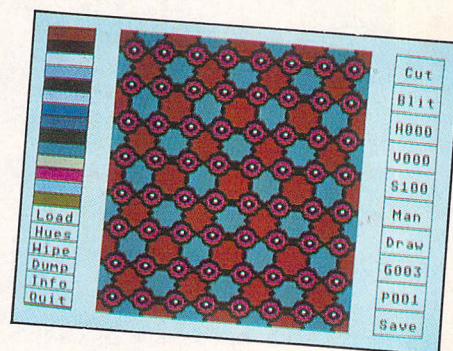
**82**

### OS/9

This powerful multi-tasking operating system is given the full treatment.

**89**

### Sprinter



Nic Outterside assesses a new colour separation utility for silk screen printers and is extremely impressed.

**97**

### Multiface

A pirate's treasure or an invaluable utility? We investigate this add-on and come up with surprising results.

**100**

## LISTING

### When

Our type-in will add a handy time and date printing utility to 1st Word.

**57**



# SupraDrive

Atari ST Hard Disk Systems



- High performance hard disk drives for Atari ST and Mega ST computers
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**NEW!**

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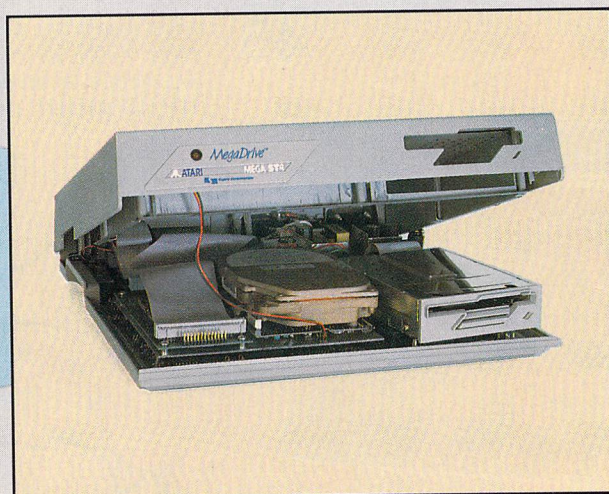
- Uses 10MB removable floppy disks for unlimited storage
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**NEW!**

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## Distributor raps printers 'score'

A WARNING from a major manufacturer that "grey imports" of two of its most popular printers may be unsafe has been dismissed as scaremongering both by a leading distributor involved and a technical expert. The models in question are the Star LC-10 and LC-10C, both market bestsellers.

Star Micronics UK recently warned its dealers to be on the look out for printers designed for the European market, but brought into the UK instead.

Although almost identical, these machines differ in being fitted with 220 volt power supply with a 10 per cent plus or minus variant instead of the UK 240 volt.

"Safety is the main concern that worries me", said Roger Bayley of Star. "These grey imported printers will run hot, and there is the faintest chance of one of them catching fire in the event of a power surge. This would do untold damage to our reputation".

While stressing that the practice of unofficial import and sale of Star printers is not illegal, Bayley has suggested that anyone with a grey import should return it.

However Bayley's comments were dismissed as "sour grapes" by a leading unofficial distributor. "What is really behind this is that we are able to sell these machines at much lower prices

than Star's official dealers", said Malcolm Jamieson, managing director of Crown Computer Products of Burscough, Lancashire.

"Our company imports the NX1000, the European badged version of the LC10. And we have sold these extensively to markets ranging from the man in the street through schools and colleges to corporates. And we've supplied them to the trade. We are quite confident that the machines run perfectly well on UK voltage and in no way could be considered dangerous.

"All our units carry full English manual and instructions together with a full 12 month return to base warranty. Naturally the consumer should beware of anything less than this being offered, as it may suggest they are converted machines".

The Crown boss hit out at the term grey imports. "This is a phrase that has been coined to cast doubts on what are really legitimate direct importers", he said.

Consulted on the safety aspect of the direct imports, Mike Cook, senior lecturer in physics at Manchester Polytechnic, came down heavily on the side of Crown. "I'd eat my hat if there was any cause for concern because a printer had a 220 volt power supply as opposed to 240 volt", he said. "It simply doesn't make a scrap of difference - to safety or anything else".

## Desktop paperback on ST

JOURNALIST John Wade has taken desktop publishing to a new level by bringing out a 90 page paperback using his Atari 1040 ST.

With the inexpensive Fleet Street Publisher software from Mirrorsoft and a laser printer, John produced camera ready copy then put it out to a jobbing printer to paste up and litho print.

"Were you not to detect the tell-tale imprint on the copyright page, this book looks as if it has been conventionally typeset", he said.

"Writing books on word processors and supplying the manuscript either on disc or via a modem phone link to be typeset is becoming commonplace today, but pasting up from a laser print is a vastly cheaper way of going about it".

The main snag was that Fleet Street Publisher does not allow copy to spill

over from one page to another, so John had to produce 104 separate page files.

He found that a much crisper typeface could be output from an HP Laserjet softfont rather than the Atari equivalent, so he reset the whole book in softfonts before having it laser output by the printer.

The sharper outlined Helvetica was his choice for bodymatter typeface because he originally thought that there might have been a loss of clarity when the laser pages were litho printed.

"Having seen the result, I would not hesitate to use a Roman face from the HP softfonts in future", he said.

John is chief assistant news editor with the Daily Telegraph in London.

His book described as an Edwardian manservant's odyssey, sells at £3.95. He has already started his second one - on how to publish a book from your desktop.

## SOFTWARE HOTLINE

FANS of *Dungeon Master* from Mirrorsoft (01-377 4645) will now have an opportunity to delve even deeper into the dungeons.

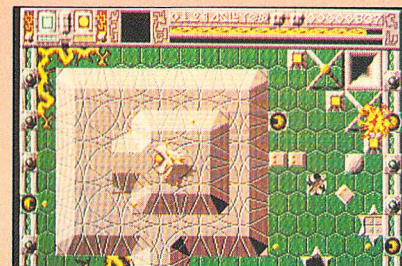
Following the success of the original game launched on the Atari ST a year ago, *Chaos Strikes Back* is an add-on with an extra five levels.

"The extra levels mean that those in the grip of *Dungeon Master* fever have yet more dungeons to explore with all their puzzles, secrets and surprises", says the firm. Mirrorsoft is aiming for a March release but has not finalised pricing.

★ ★ ★

*CAPTAIN Fizz meets The Blaster-Trons on the Atari ST, courtesy of Psygnosis (051-207 0825). It is tagged "a gripping mixture of frantic action and deep strategy" and is a two player collaborative game. Price: £14.95.*

★ ★ ★



ARCADE strategy game *Fusion* has now been released on the ST by Electronic Arts (0753 49442). The object is to collect nine pieces of a bomb spread over 13 alien levels. This ST version is reported to be faster and more difficult than the Amiga one with detailed animated graphics, digitised music and sound effects. Price: £24.95.

★ ★ ★



NEW from Gremlin is *Butcher Hill* set in the Vietnamese jungle. It centres round the search for vital supplies and ammunition through river and jungle sections to a village and the target of Butcher Hill. Price: £22.99.





# Personal Finance Manager

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—The World's Most Sophisticated Personal Finance Program—

If you run a personal bank account and have an Atari ST then you need "PERSONAL FINANCE MANAGER".

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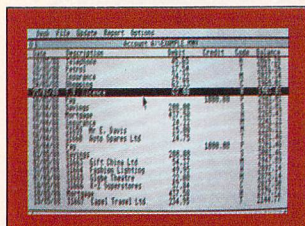
PFM handles Credit and Debit — Monthly, Quarterly, Yearly and even complicated regular payments like 12 payments of £52.99 followed by one of £12.50, PFM will check the date and automatically insert standing orders as they become due.

## BUDGET WITH EASE, AT THE CLICK OF A MOUSE

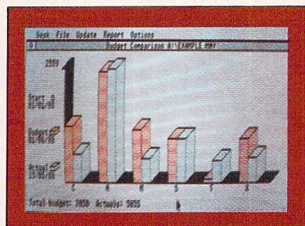
If you're the type that likes to look ahead then PFM allows you to set budgets for both expenditure and income. Up to 10 budgets can be set over a year, a quarter or a month and then displayed either in figures or as a bar graph for a given period. Income/expenditure for these budgets can also be shown as a pie chart so you can tell at a glance where your money's gone. PFM also allows you to display or print your budget groups selectively so you can see your expenditure quickly and easily.

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MAIN ACCOUNT SCREEN



BUDGET COMPARISON BAR-GRAPH SHOWING BUDGETS & ACTUAL EXPENDITURE OR INCOME



Home Finance Program By Peter Veale.

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"PFM is one of those rare programs with which it is easy to feel comfortable from the first time you run it."

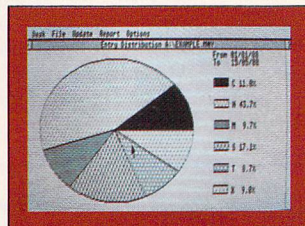
Ron Massey, ST USER

"Personal Finance Manager is a sophisticated home financial package, it will probably help you save money."

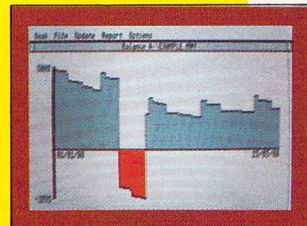
ST UPDATE.

"PFM is just the ticket if your expenditure is as disorganised as mine."

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BALANCE DISPLAY SHOWING HIGHS & LOWS OVER SELECTED DATES

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## Midi bundle rocks ST music world

SOUND waves have been made in the computer music world by Atari's 1040 music pack which bundles a copy of a new Midi sequencer with the 1040 ST.

Part of the package is German firm Steinberg's new sequencer called The Twelve, a less ambitious offshoot of the popular Pro-24.

Suppliers and dealers have voiced fears that giving away the sequencer could have an adverse effect on other music products. Possible piracy was the main fear of Brian Davies from Ladbroke Computing International who said The Twelve was going to "knock hell out of the market."

"It is released without a dongle. I can guarantee that within three weeks of it being on the market someone will crack it and everyone will have it", he said. "The protection will stand out a mile. I think it is a bad move on Steinberg's part."

"Who is going to buy anything else when they can get this free in the bundle or get a copy? It is being produced with just disc protection and for the music industry it is a very bad move."

Vince Hill of Hybrid Arts UK said that while it would not directly affect them as a distribution company, he did not feel Atari was right to include the sequencer in its bundle.

David Crombie of Steinberg's UK distributors Evenlode Soundworks discounted suggestions that The Twelve is open to piracy. "It is true that there is no dongle, but it does include anti-copying", he said. "People can manage to crack pretty well any program, but we do not think that this will happen in a big way".

Marketing services manager for Atari Daryl Still has said he thinks the package will get more people interested in music on the ST

## Blasting baddies can't be all that bad

— SAYS VICAR

ALTHOUGH shoot-'em-up arcade games include violence that is contrary to the gospel, growing numbers of the clergy are using them for relaxation.

Even pop star Cliff Richard resorts to combat games that are the opposite of his on-stage peace message.

A keen exponent of this preachers' paradox is the Reverend Bob Redrup, vicar of the parish of St. Kea, Truro, and owner of an Atari ST.

Bob's favourite game is Elite which has its fair share of fights and plundering. "I think a lot of clergy need a hobby to get rid of their accumulated frustrations", he said. "Blasting baddies is very cathartic."

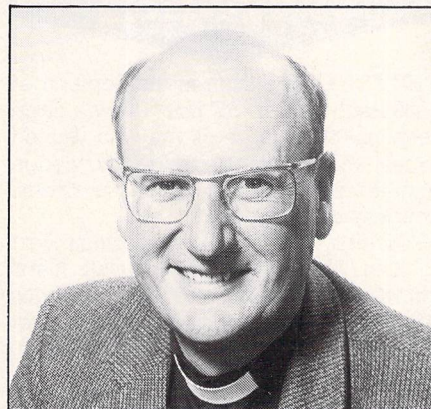
"After a day of dealing with real people and their foibles, which you would not wish to denigrate, there is no harm in bashing a piece of machinery. Clobbering a pixel is very satisfying and doesn't hurt anyone".

But even on-screen, Bob feels the odd twinge of guilt. "Part of Elite involves fighting pirates and scooping up their booty but when I inadvertently steal their narcotics, I have dreadful feelings of guilt", he said.

"I know it's silly because it is only an arcade game, but the natural revulsion is still there".

The Reverend Brian Snelling of St. Luke's, Hackney, sees computer games as a useful release for anger.

"God made us to have anger, and real-



Rev Bob Redrup

life violence erupts when people do not know how to use or control that anger", he said. "Even the clergy have to express this. Thumping the keys on a computer is better than thumping the nearest parishioner".

Although he admits enjoying shoot-'em-up programs, the Reverend Kendall Down of the Free Church in Rhyl is worried about increasing evidence of the occult in computer games.

"I find some of the ethics quite wrong in adventures that stress the occult", he said. "I can disassociate reality from the screen with a lot of adventure games but I certainly think that those leaning towards the occult are dangerous".

## SOFTWARE HOTLINE

*HOLocaust plunges cities, continents and civilisation into the depths of the murkiest hell imaginable on earth. That is the cheerful scenario for Motor Massacre from Gremlin (021-356 3377).*

*Players are invited to fight their way to demon dome and compete in the most horrifying carnival of motor destruction ever conceived. Price: £22.99.*

★ ★ ★



*SCROLLING shoot-'em-up Dragon-scape has just been released for the ST by Software Horizons (01-446 9146). With the help of Garvan, the pet dragon, the player has to stop the evil curse that has descended on the once beautiful lands of Tuvania. Price: £19.95.*

★ ★ ★

LOOK out for three new games on the ST from top selling house Alternative Software (0977 797777). Mad Flunkey, is set in the royal household where the hero must collect autographs.

Wrangler is set in space and features a macho robot called Glint Westwood. He must repair panels avoiding alien droids as he goes. Completing the new line-up is Mystery of the Indus Valley. Price: £14.95 each.

★ ★ ★

*HUMAN Killing Machine from US Gold (021-356 3388) is imminent for the Atari ST. It takes traveller Kwon through Moscow, Amsterdam, Barcelona, Germany and Beirut where he settles scores with his enemies. Price: £19.99.*

★ ★ ★

CODE Masters (0926 814132) has touched down for a good try with its latest game, International Rugby Simulator.

With side views for action and aerial views for strategy, the game also includes head-on shots of the posts when the player kicks to convert tries. Price: £19.99.



## Show draws big business

A STRONG contingent of companies actively involved in the ST market is heading for the first European Computer Trade Show. Flying the flag for Atari products at London's Business Design Centre from April 16 to 18 will be Activision, Domark, Electric Distribution, Gem and Microprose.

With three months to go, the unique event is already an assured success. An update reveals:

- More than 50 exhibitors confirmed – including big names from the USA, Germany, Spain, Sweden and Switzerland.
- All the Mezzanine floor stands at London's Business Design Centre now sold.
- 50,000 ticket registration forms on their way to leading industry names throughout Europe and the USA.
- Star studded speaker line-up for show seminars involving key industry figures from the USA, UK, France, Sweden, Greece, Switzerland, Italy and Holland.
- Major American trade presence expected. US personalities to include Larry Foster, the man who controls the purse strings of the world's largest retailer, Egghead Software, and Glen Ochsenreiter, director of Waldenbrooks, the 500-strong store group.
- US Software Publishers Association to attend to seek out European opportunities for its 2,000 members.
- International network of 12 agents in place and promoting the show extensively throughout Europe and North America.

"The computer industry has reacted in the most positive way possible to this event – by voting with its feet", said Michael Meakin, head of organiser Database Exhibitions (0625 879970).

## Top awards for Telecomsoft

CALLED up to receive three major awards at this year's Industry Dinner was Telecomsoft (01-379 6755) whose haul included prizes for two Atari ST games.

The 16 bit Game of the Year award went to Firebird's Virus by David Braben of Elite fame. The company also took both awards for the best graphics on 8 bit and 16 bit machines.

**TRADE sources claim that Atari is planning a second laptop ST series. Hot on the heels of the Stacey, it is being dubbed in America as Stacey-2. The new portable is rumoured to have 512K of memory, a single 1Mb drive and a blue, backlit LCD screen. Atari's UK operation had no comment.**

## Liverpool FC stars in two ST games

TWO deals have been signed that will put the name of Liverpool Football Club into the computer games market this year.

Impact, the new budget label of Scunthorpe based Video Images (0724 280772) has secured a licence from the club's board and Grandslam Entertainment (01-247 6434) has dealt direct with players through First Artists' Management.

Marketing and sales manager for Liverpool Jim Kennefick told *Atari ST User* that only the Impact game has permission to carry the club badge. "Grandslam will not be allowed to use the club badge because it has not been issued a licence by us or been given a licence number", he said.

Dave Colley of Impact says his game will be called Liverpool FC's League Challenge and will be out on the ST to

coincide with the start of the next football season. It will be available at Easter for 8 bit formats. It will take the player through a full season in which every team is played twice and will probably cost £14.95.

Liverpool: The Computer Game, is the title chosen by Grandslam. It will be released on the Atari ST as well as other 16 and 8 bit formats.

"Now we are ready to take on the challenge of producing a game that will match the enormous stature that Liverpool Football Club enjoys", said Grandslam managing director Stephen Hall.

"We've had a great deal of success this year with Peter Beardsley's International Football. The popularity of this type of product, plus what we consider the greatest sports licence yet seen in this market, means we have got a real winner on our hands".

## COMPETITION WINNERS

THE FTL Competition in the September 1988 issue of *Atari ST User* drew a large response from those of you who wanted to test your general science knowledge and there were some fantastic prizes, courtesy of Mirrorsoft.

The first prize of a Sony Discman went to John Weaver from Credenhill. Chris Nowse from Banbury and Thierry Kumps from Belgium won a Casio colour pocket TV. A copy of Oids goes to each of the 10 runners up.

- As the ST is being featured more and more in schools with some excellent software available for all ages Powerplay, famous for its joysticks, donated a 520ST to any school of your choice.

All you had to do was answer four questions and complete the tie breaker in the competition featured in the October 1988 issue of *Atari ST User*. The first prize, won by Ian Dickinson, goes to St Anthony's School, Middlesbrough.

There were also 20 runners up prizes of 10 clear Cruiser joysticks and 10 black or blue Cruisers.

## Bigger voice for the ST

PRACTICAL Solutions Inc of Tucson, Arizona has announced its Tweety Board for all ST computers. The firm claims this will add a new dimension to games software. It plugs inside the ST and provides three separate phono sockets for connection to amplifiers or monitors.

The three channel output can be combined into a stereo-style two channel signal for use with stereo hi-fi systems.

Measuring two and a half inches by two inches, the board can be installed without soldering. In America it is selling for \$59.95. It is not yet available in the UK.

## AUTISTIC AID

THE National Autistic Society will benefit to the tune of £50,000 if firms in the computer games industry hit their 1989 charity target.

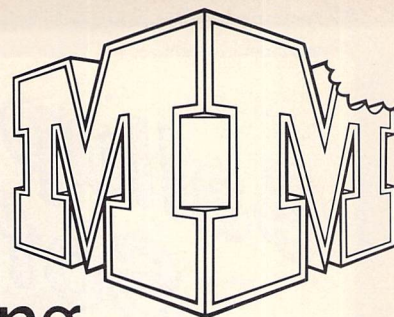
Their annual appeal was launched at the industry dinner in London, with £15,000 being pledged on the night.

Organisers applauded the support they have had so far and are calling for titles to be included in a charity compilation.

There are also plans for a Day of Action on May 4 when as many firms as possible will be asked to undertake fund raising efforts. Over the past few years the games industry has raised half a million pounds for various charities.



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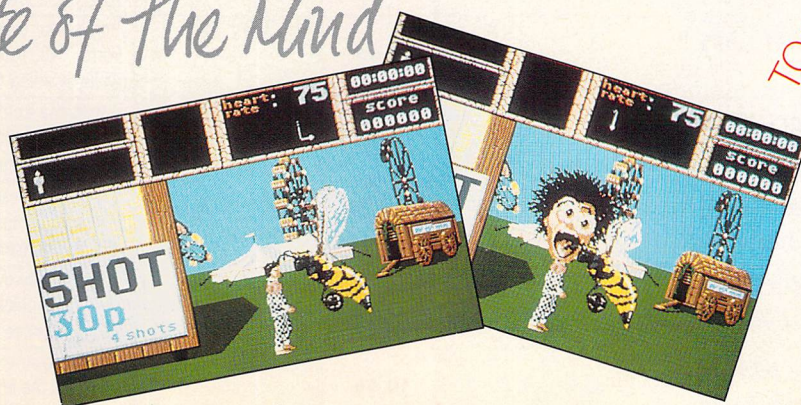
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Atari ST screen shots



# Gallup Software Chart



This month	Last month	Title (Software House)	Price	Month reviewed in Atari ST User	Comments	Marks from 10
1	●	<b>FALCON</b> <i>Mirrorsoft</i>	24.95	March 1989	Straight to the number one slot for this new one. Get ready for a Mach 2 flight in an F-16 and join the class of military simulators.	9
2	△ 6	<b>OPERATION WOLF</b> <i>Ocean</i>	19.95	March 1989	Another success for a Taito coin-op which has made a good transition to the ST screen. One more shoot-'em-up set in a Rambo style.	7
3	▽ 1	<b>AFTERBURNER</b> <i>Activision</i>	19.99	March 1989	The F-14 has been outclassed by the F-16 as this one heads down the charts. Originally an arcade game which some have found disappointing.	7
4	◁ 4	<b>R-TYPE</b> <i>Activision</i>	19.99	March 1989	Holding firm, this is high in the difficulty stakes but gives you beautiful graphics and gameplay while you try.	8
5	△ 7	<b>DOUBLE DRAGON</b> <i>Melbourne House</i>	19.95	—	Arcade conversion time again. Very popular in the arcades, it asks you to rescue your girlfriend from a host of nasty characters.	—
6	▽ 2	<b>LOMBARD RAC RALLY</b> <i>Mandarin</i>	24.95	Jan 1989	Simulations are certainly popular this month. Can you win the legs in this competition and customise your car to get the greatest prize of all?	9
7	▽ 5	<b>HOSTAGES</b> <i>Infogrames</i>	24.95	Jan 1989	Must be one of the most unique, highly developed and totally addictive games ever seen for the ST. Stunning graphics and sound.	10
8	▽ 3	<b>ELITE</b> <i>Firebird</i>	24.95	Nov 1988	This games scores most on playability and addictiveness. This solid 3D version is stunning – a classic.	9
9	◁ 9	<b>SPEEDBALL</b> <i>Mirrorsoft</i>	24.95	Dec 1988	Another Bitmap Brothers success. The graphic representation and animation are startling while the musical backdrop is pleasant and unobtrusive.	9
10	●	<b>THUNDERBLADE</b> <i>US Gold</i>	19.95	March 1989	Keyboard pilots have a wide choice at the moment. Wartorn skyscrapers, sea battles, rocky canyons and forests are the backdrops	8
11	●	<b>HEROES OF THE LANCE</b> <i>US Gold</i>	24.99	March 1989	For the AD&Ders among you this is a must. SSI and TSR have linked to bring this increasingly popular genre to your screens.	9
12	▽ 11	<b>STOS GAME CREATOR</b> <i>Mandarin</i>	29.95	March 1989	Now you can create your own games with superb graphics using this powerful package. Still the only non-games title in the charts.	—
13	▽ 6	<b>PACMANIA</b> <i>GSE</i>	19.95	Dec 1988	Pac-man doesn't die – he just grows clones. Here is the original for you if you have never seen him before or are pining for his return.	9
14	▽ 12	<b>INTERNATIONAL KARATE +</b> <i>System 3</i>	19.99	—	If you like travel and love martial arts games this one is for you. Karate and unarmed combat simulations never seem to lose their appeal.	—
15	▽ 10	<b>RETURN OF THE JEDI</b> <i>Domark</i>	19.95	Dec 1988	A nice ending to this series of games, with a good conversion from the arcades which will keep you hooked to your ST for hours.	9
16	●	<b>CRAZY CARS 2</b> <i>Titus</i>	19.99	—	Here's your chance if you ever wanted to own a Ferrari F40. You must smash a stolen car racket while avoiding the cops.	—
17	●	<b>SPACE PILOT</b> <i>Anco</i>	19.95	—	A new one from Anco – it is good to see them in the charts again. Simple and self-explanatory game, and a change for them too.	—
18	●	<b>BAAL</b> <i>Psyclapse</i>	19.95	Feb 1989	Superb, the best graphics seen so far from this Liverpool company, as well as lovely sound effects. The game is extremely playable.	9
19	●	<b>FLYING SHARK</b> <i>Firebird</i>	24.99	—	This is a little overpriced for the content. Nice chunky graphics. You man a fighter and must fight to survive this aerial dog fight.	—
20	●	<b>THE MUNSTERS</b> <i>Again Again</i>	19.99	—	Whether you are an Adams Family fan or preferred the Munsters you will enjoy this one, especially if you have missed the re-runs on TV.	—



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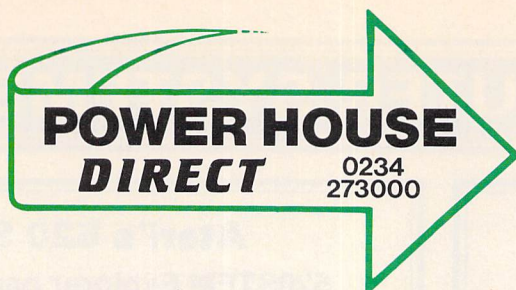
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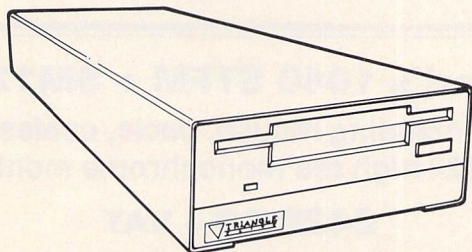
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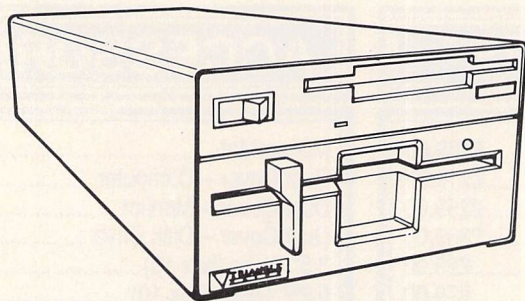
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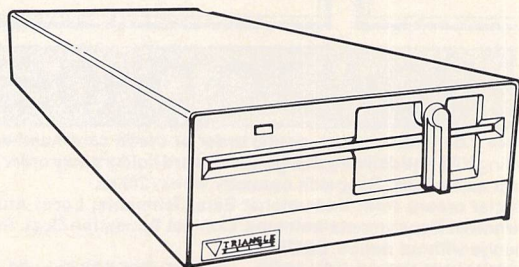
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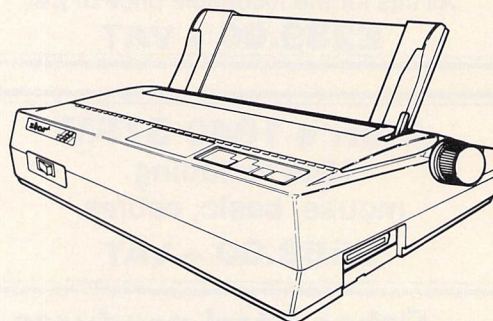


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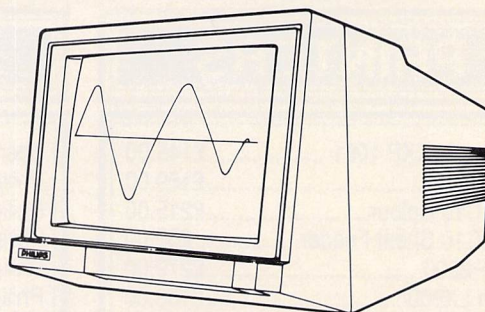


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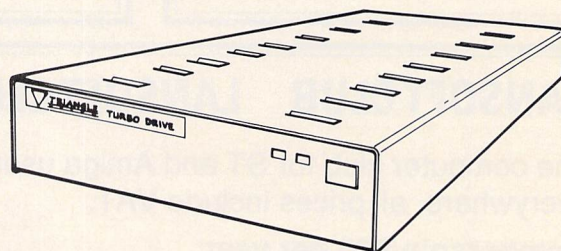
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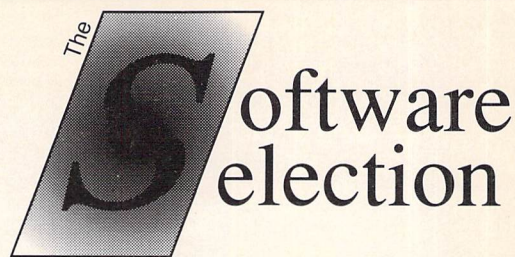
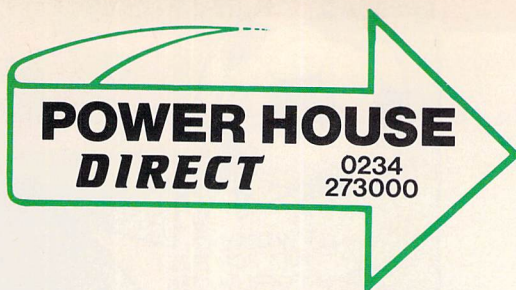


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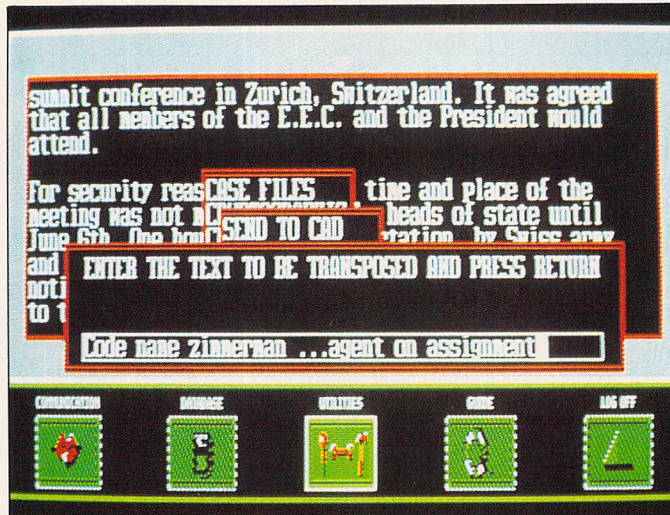


Program: *The President is Missing*  
 Price: £24.95  
 Supplier: Cosmi/Microprose, 2 Market  
 Place, Tetbury, Gloucestershire GL8  
 8DA.  
 Tel: 0666 54326

**T**HE President is missing and presumed kidnapped by persons with hostile intent towards the United States of America... These words launch you into an exercise in mental agility which will have beads of sweat trickling down your forehead.

On June 6 1996, at an international summit in the tiny principality of Liechtenstein the largest terrorist action ever conceived was faultlessly executed. Within minutes the President of the USA and the leaders of 10 European nations were abducted.

Where they were taken, by whom, and whether they are safe, no one can say. An unidentified voice on tape claiming responsibility, and issuing a list of impossible demands is the start-



*Transposing a message to an operative*

as you will discover for yourself the most successful investigative methods. However, to begin with it is perhaps a good move to opt for the guide, as this will give all the necessary background

information to help you carry out your task.

The communication icon allows you to transmit and receive messages to and from a variety of sources. These include eight field operatives who you can call upon to investigate suspect characters or places - each will report back to you in due course.

Also included on your communication schedule is the State Department, CAD analysis, the news

department and staff memo updates. Pay close attention to your communication channels if you want to stay on top of the case.

The database menu is of equal importance and is the medium through which most of the investigation takes place. You can examine dossiers on a variety of suspect characters, ranging from a petite French femme fatale with a dodgy Left-wing background to a high powered US congressman with tight connections to the presidency.

The dossiers are each supplemented with an excellent digitised photograph of the suspect and certainly do not lack detail. In addition you are able to view eight confidential CIA photographs of scenes which may or may not be of relevance to your inquiries. These photographs may be examined under two, four or eight times magnification which may reveal hidden clues. Look them over carefully, on your own head be it if you miss something.

You also have the facility to read the official report of the abduction of the President, which will provide most of your initial important background information on which to base your inquiry.

Secret records which include among other things the code names of known terrorists, summit conference proposals and a list of terrorist groups are also

# THE ATARI STAR USER GAME

## PRESIDENT IS MISSING

ing point in an investigation of unprecedented proportions. And you have been appointed by the Secretary of State as a special independent investigator.

The President is Missing comes on a single sided disc, boxed with a manual and an audio cassette - which provides invaluable information for your quest.

Like its sometime contemporaries, *Hostages and Freedom*, *The President is Missing* is difficult to categorise as a game. Your task to conduct an on-screen investigation bears a passing resemblance to the text adventure genre in that most input and recall is in the text format, but there is a lot more besides.

Boot up the disc and you must carry out a tricky log-on procedure before being allowed into the investigation. If successful you are presented with an on-screen display which is taken up by a large staff memo box, under which are five menu icons. It is via this box and these icons that your investigative methodology will be tested.

How you use the menu is up to you,



*The President is taken hostage*



## SECOND Sight

If you have seen every variation of the vertically scrolling shoot-'em-up game and have been bored to tears with the never ending tedium of text adventures, you are in need of something completely different. This is it - buy it now, you won't be disappointed though you may lose a lot of sleep.

Jayne West

essential initial reading. All these documents, records and photographs can be called up quickly via the database menu.

Provided you can ascertain your secret access code you can also view top secret limited access files, which are of utmost importance to your studies.

Finally under this menu heading is a guide to the messages and recordings to be found on the cassette audio tape. You can listen to this tape straight through or selectively when required. Don't worry, it won't self-destruct after one hearing!

The utilities icon gives you access to a real-time clock so you can keep a check on the sands of time. Be aware that world events are proceeding outside and conditions everywhere are deteriorating quickly.

Also available are cryptographic services which include transpositions, an Enigma cipher machine and a morse code service for deciphering messages and documents and encoding your own text to keep it from prying eyes.

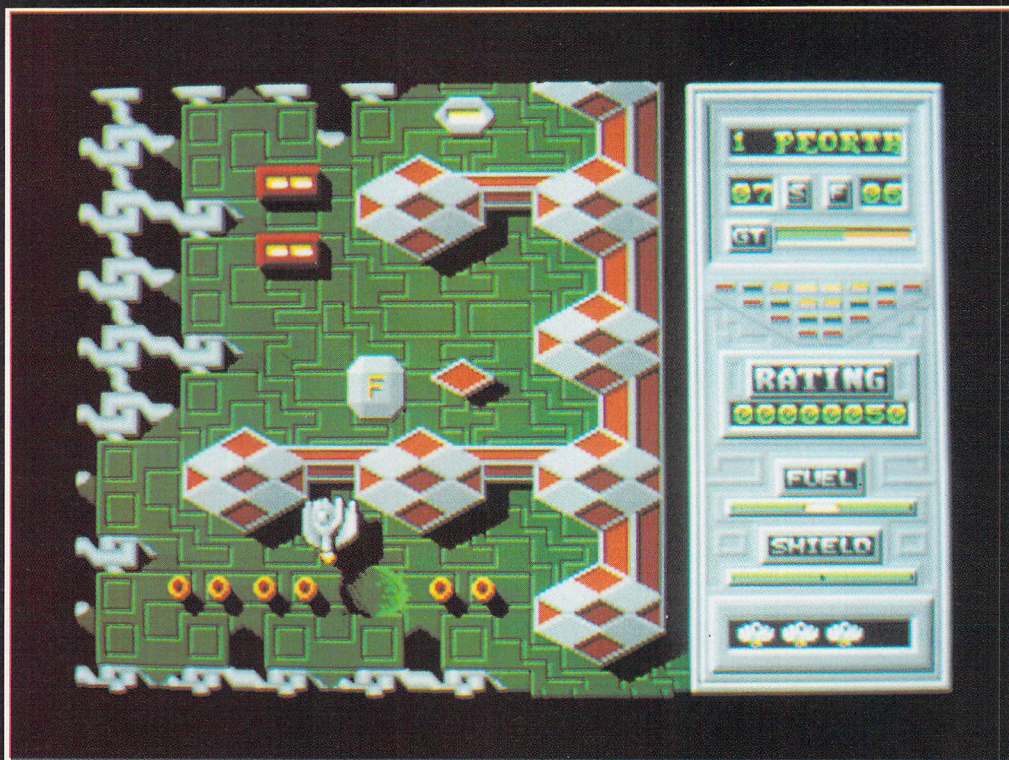
The final and most important utility is your own bag of case files. As the investigation proceeds a large amount of data is generated, such as items from other files, agents' reports and your personal observations, ideas and conclusions. The case file processor is used to create and organise, store, retrieve and update this data. Constant update is imperative to success.

The last menu icon is the log off procedure which allows you to save your files for use when you return to the fray. One final word of advice is to remember your independence, no one is above suspicion.

That's all for now, I must return to my cover - wish me luck ... over and out.

Nic Outterside

Graphics.....	7
Puzzle factor.....	10
Playability.....	10
Value for money.....	10
Overall.....	9



## Zappers' delight

Program: Hell Bent  
Price: £19.95  
Supplier: Novagen, 142 Alcester Road,  
Birmingham B3 8HS.  
Tel: 021-449 9516

**T**HIS is a vertically scrolling shoot-'em-up in the Gold Runner vein, and is based on Stellarfleet Captain Dirk Hellbent's legendary attack upon the Kraellian usurpers of Alphonicka. It is fast, with a touch more colour than its predecessor, but falls short of Gold Runner in the sonics department.

Venturing north from the launch pad you slowly make your way along the convoluted route to the top gate. I use the word slowly as any attempt to play the game at speed is doomed to failure. As you are flying at ground level you must pick your way between the buildings. Unfairly, the aliens are exempt from such collisions.

There are two types of alien ships on level one - flying saucers that drift down the screen taking the occasional pot shot, and delta wing craft that display the annoying trait of self-sacrifice. They fly in a straight line until level with your ship and then make a 90 degree turn and bang on the boosters.

Contact with laser bolts and other ships is not necessarily fatal as your fighter's plasma shields will deflect

most minor collisions at a price. Shield energy must be replenished at regular intervals by flying over silos marked with an S.

Even more important is your fuel consumption - the early fighters were renowned for their lack of range. Failure to collect fuel silos on every possible occasion will result in a very short game.

Entry to level two is only allowed once you have destroyed your quota of ground based targets. Bonuses can be obtained by destroying further targets or collecting additional fuel silos - a new ship is awarded for extra shield silos.

On level two things are much more difficult. The degree of alien activity is much greater, and it is now possible to collide with the ground-based targets - in level one you could fly straight over them if you fluffed a shot.

The main difference between the first two levels is the appearance of the laser fence. Zone two is criss-crossed by a network of beam emitters that become active at regular intervals stopping you advancing up the screen. While trapped in this way you are still open to attack from the marauding aliens.

Hell Bent employs faultless scrolling and lightning fast response to the controls. In fact the game's pace is the main source of frustration to the novice pilot.

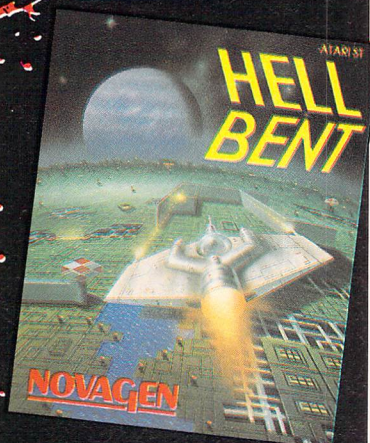
James Riddell

## SECOND Sight

Yet another vertically scrolling shoot-'em-up. However, Hell Bent does offer smooth scrolling, fast action and a few diversions from the normal fodder, and should keep arcade diehards amused for a few hours. My best advice is to try before you buy.

Nic Outterside

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





**TRIP-A-TRON**, LLAMASOFT'S unique graphics program for the ATARI ST, has great potential as a creative graphics tool.

It comes in an attractive A5 binder, on two disks, and includes a 145 page manual. It can be used on any ST, for home entertainment or for more professional use.

**TRIP-A-TRON** comes 'ready to use' with presets and demos allocated to the ST's keys or in easily loaded files. It includes many beautifully designed pop-up menus, lightened by Jeff Minter's sense of humour.

It has its own 120-command language, **KML**, and can accept and manipulate images from DEGAS and NEOCHROME. On STs of 1 Meg or more these images can be animated.

**TRIP-A-TRON** is not a 'Sound to Light' program - it gives its users an interactive link between the ST and their imaginations - a wonderful enhancement to the enjoyment of music of all kinds.

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# A star wars born

Program: Galactic Conqueror

Price: £19.95

Supplier: Entertainment International,  
Unit 4 Stannetts, Laindon North trading  
Centre, Basildon, Essex SS15 6DG.  
Tel: 0268 541126

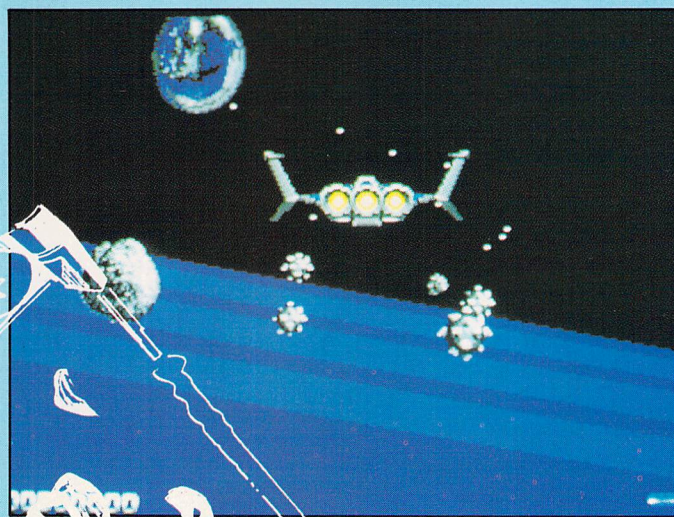
**Y**OU may be deceived into thinking that this was your opportunity to take to the spaceways and carve out a galactic empire of your very own. But you'd be wrong.

The galactic conquerors of the title are the enemy, and it's your job to make sure that this galaxy, centred around the artificial planet Gallion, is not the next on their shopping list.

Quite surprisingly this means a measure of strategic thought has been introduced into what is essentially a fly and die exercise requiring fast reactions rather than cerebral dexterity.

A map of the galaxy in question is presented, illustrating the central planet of Gallion. When this is taken it's all over for the forces of the free, so defence of the surrounding moons is paramount. Once the enemy has control of the moons invasion of Gallion is imminent.

The enemy's spread is represented by an ever increasing number of red spots, rather like galactic measles,



planets and moons fall under the enemy flag. This is where you come in, selecting a planet, and being treated to very nice visual representation of it and the type of defending enemy ships.

Then an impressive mothership eases down the screen before disgorging your shiny new fighter, the Thunder Cloud II. The fighter descends to the surface of the planet/moon, and everything that the enemy possesses starts hurtling your way.

As everything looms large frantic stabbing of the fire button to activate

your twin cannon is necessary to avoid being run into.

A decreasing blue symbol in the corner of the screen illustrates the condition of your ship's shield, and when it's all gone the next collision is fatal.

The mission to reclaim a planet and halt the invasion takes place in three instalments. First there's the ground battle, then the aerial, and then finally a dogfight out in space.

Not that there's much difference between the first two, just that in the aerial section you can roll your ship

## SECOND SIGHT

Only you stand between freedom and domination by an alien life form ... how many times have you heard that before? Galactic Conqueror has little that has not been seen or played before. The strategic elements in the game and the excellent graphics and sound effects allow it to stand proud of the rest.

**Nic Outterside**

over and watch the ground do cartwheels.

A smidgen of sampled music on the title page is quite forgettable, but the sound effects used throughout the game are effective if a little sparse. Full marks to Titus for the graphics and animation - both are faultless.

Galactic Conqueror has a basically repetitive structure that is only partly redeemed by the excellent effects and strategic element. That said, it is quite entertaining in the short term and I found it to be a good romp.

**Mark Luckham**

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

# Monstrous action

Product: Victory Road

Price: £19.95

Supplier: Ocean, 3 Central Street, Manchester M2 5NS.  
Tel: 061-832 6633

**V**ICTORY Road is a vertically scrolling shoot-'em-up set in an Egyptian style landscape. The object is to shoot bloodsucking monsters, vampires and multi-headed creatures.

The game begins on a stairway to heaven littered with obstructions and hordes of nasty little green bloodsucking creatures. You control a Rambo-style figure who can either fire bullets or lob grenades.

As play progresses other weapons become available, each with different properties and varying degrees of effectiveness. A particularly good one sprays the area ahead with grenades. As most of the monsters appear from the top of the screen, a horizontal sweep across the road ahead takes

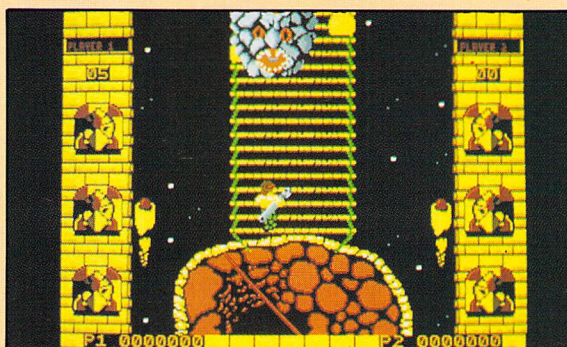
care of whole batches at a time.

Dotted around are shiny squares which provide bonus points or special effects, such as increased fire power, extra lives and smart bombs. Some bonuses are concealed by rocks or inside buildings which must be blasted away to gain access.

The game can be played by either one or two players. When in two player mode each player lives and dies independently, although the death of

one often seems to trigger off the other's demise.

Some monsters appear to kill merely by being nearby, while others seem to pass straight through you with no apparent effect. Working out what's going on is made no easier by the poor graphics, which, although reasonably well drawn, suffer from lurid, badly-clashing shades. Anyone venturing to play on a TV screen will have a hard time of it indeed.



## SECOND SIGHT

Victory Road has a rather strange scenario, it's a bit like Rambo battling against all manner of monsters and demons while travelling along a narrow walkway. It didn't really fire my imagination and I found it difficult to work up any enthusiasm.

**Roland Waddilove**

A simplistic tune plays during loading and pauses between games, but during play sound is restricted to a few pings, booms and bangs. While initially enjoyable, the game does not offer enough variety to provide addiction.

**Pat Winstanley**

Sound .....	5
Graphics .....	5
Playability .....	6
Value for money .....	5
Overall .....	5



Product: Pac-mania  
 Price: £19.95  
 Supplier: Grandslam, 12-18 Paul Street,  
 London EC2A 4JS.  
 Tel: 01-247 6434

**P**AC Man is back to challenge all his followers with a whole new twist to things. Not only does this version sport 3D graphics, but also Pac Man has acquired the power to jump over his ghostly enemies too.

In essence the gameplay is virtually identical to the original, involving a variety of mazes full of dots to be eaten. Each maze also has several power pills which turn Pac Man – under your control – into a voracious ghost eater.

While frantically attempting to gobble up all the dots you must avoid the attentions of those pesky ghosts Inky, Pinky, Blinky, Clyde, Sue and Funky. Gone are the days when being cornered with power pills nowhere in sight meant a nasty death. Now you can spring into the air over the heads of the chasing ghosts and run away laughing.

Four different worlds are available for play: Block Town, Pac Man's Park, Sandbox Land and Jungly Steps. Three are selectable initially and each has its own particular hazards. Due to the 3D



effect only a small portion of each maze is visible on screen, so route planning soon turns into frantic twisting and turning as ghosts appear from all directions.

In addition to eating dots, power pills and ghosts, you also have special items to help score points. Green pills add temporary speed, while red ones award double points. Fruit giving extra points when eaten also appears from

time to time.

Game control – either keyboard or joystick – is simple and precise, but you'll have to be quick to keep up with the breakneck speed of play.

Graphics are bright, clear and colourful with plenty of detail to bring the game alive. Smoothly scrolling detailed backgrounds give a real sense of being there and add to the tension.

Some nice touches include wobbling

## SECOND SIGHT

*Yet another Pac Man clone hits the streets. Will we never see the end of this well worn idea? I find it difficult to get excited about such an old game, and after a few goes was looking round for something different.*

**Roland Waddilove**

eyes on the ghosts and our hero spinning into an ever diminishing sphere as he bites the dust.

With four mazes and 22 levels there's more than enough here to keep the most dedicated addict going for ages, and it certainly won't take long to become addicted.

**Pat Winstanley**

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

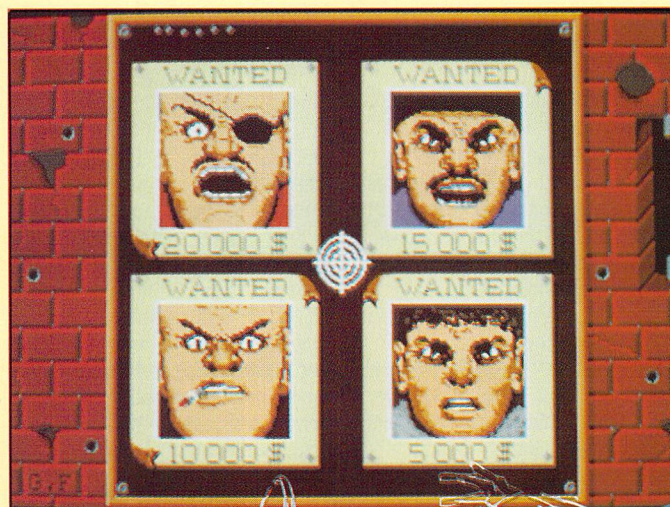
## Spaghetti software?

Product: Wanted  
 Price: £19.95  
 Supplier: Infogrames, Mitre House,  
 Abbey Road, Enfield, Middlesex EN1  
 2RQ.  
 Tel: 01-364 0123

**W**ANTED is a Wild West shoot-out set in 1880 and Infogrames must again be congratulated for coming up with an original concept. You are one of the roughest, toughest bounty hunters ever to ride the West. Armed with your Colt 45 and a bag of dynamite you're on the trail of four outlaws.

The title screen depicts a western theme with a couple of cowboys brandishing rifles. This makes way for a billboard on which are pinned four wanted posters. The ugly mug of each bandit is shown and below is the reward offered. The higher this is, the harder the game.

You start by shooting one of the posters. The easiest level places you in a canyon surrounded by steep walls shown as a bird's eye view. The screen starts to scroll vertically and you are forced to walk up the canyon. It isn't long before you meet a whole bunch of



gunslingers barring your way. Dodging the flying lead you let rip with your six shooter.

Fortunately, barrels offer some protection, but not for long. When shot several times they fall apart to reveal extra weapons with a better range, new boots to help you run faster, ammunition for your gun and dynamite. Sticks of dynamite can be lobbed if the going gets too tough, and they kill everyone

on the screen bar yourself.

Boulders which roll down the canyon must be dodged. Once through them you make your way into town. Here snipers take pot shots from windows, while gunslingers creep out from behind buildings to shoot you in the back. You need to keep your wits about you if you're to survive for long. The harder levels bring forth further dangers like barrels rolling down the

## SECOND SIGHT

*This is the first cowboy Wild West game I've played on the ST. Why hasn't it been done before? The action is fast and furious, with bullets flying in all directions. I found it one of the most addictive games on release this month.*

**Janice Murray**

street, and the wanted outlaw's gang seems to grow in number.

The graphics are detailed and clear, with smooth scrolling and well drawn sprites. The animation of the men isn't very lifelike, but this doesn't detract too much from the fun. The sound is reasonably good.

As a vertically scrolling shoot-em-up this must rate among the best, and its unusual scenario makes a welcome change from the usual space fodder.

**Roland Waddilove**

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



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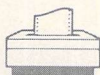
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Program: Falcon

Price: £29.95

Supplier: Mirrorsoft, Headway House,

66-73 Shoe Lane, London.

Tel: 01-377 4644

I DON'T know about you, but I don't get all that many opportunities to fly an F-16 Falcon fighter plane. Unless you happen to be very lucky then the nearest you're going to get is this latest release from Mirrorsoft, programmed by Spectrum Holobyte and called simply Falcon.

Now the Falcon is a very complex piece of technology, and any simulation worth its salt should emulate as much of that as possible. There are various skill levels, presented as ranks from 1st Lieutenant, up to Colonel.

These affect the plane's handling characteristics, making the game relatively easy to get into, and horribly realistic at Top Gun level. Not only does this affect the plane, but also friendly little factors like SAM sites and enemy MiGs.

At Colonel level with three MiGs in the sky you'll need a lot of practise if you're going to last more than 10 seconds after taking off. So I'd recommend 1st Lieutenant for a while, especially as the enemy don't shoot at you.

Missions range from the Milk Run, which is just blowing away old buildings, via Dragon's Tail which involves bombing an enemy suspension bridge, to the ultimate Grand Slam. In this you have to shoot down four incoming MiGs. If that doesn't sound overly difficult consider that during the Vietnam war the best anyone ever achieved was five MiG kills.

Your on-screen control panel takes up half the screen, but you can move it

down to leave only a HUD – head up display – and clear blue sky. Given the amount of information contained by the cockpit instruments I'm not so sure how sensible this is, but at least you have more chance of seeing incoming fighters and missiles.

As well as the out-of-the-cockpit views there is the by now standard view from outside the plane. Not that useful normally, this option does justify itself on Falcon thanks to being able to rotate

the viewpoint all the way round the plane, plus a facility to zoom in and out.

Before getting into the air you'll need to kit out your plane with the requisite armament. When playing on Lieutenant level, the Falcon is loaded with everything that the stores can theoretically supply. On the higher levels you must request the goodies from an often out-of-stock supply stores.

The sort of things that can be strapped on include the AIM-9J

Sidewinder missile, AGM-65B Maverick missile, MK84 2000lb low drag bomb, ALQ-131 ECM pod, plus extra fuel tanks. Not forgetting that you come ready armed with an M61-A1 Vulcan internal gun and 5,000 rounds of ammunition.

Once tooled up you'll find yourself out on the runway, ready to roll. Crank up the engine, and listen to those sampled sounds. Hit the thrust, then release the brakes and it's time to fly and die,

## Stimulating simulation



The Falcon loading screen



Selecting your weaponry



Get that enemy clearly in your sights



## SECOND SIGHT

While we wait for F-19 to be converted for the ST, this undoubtedly has to be the best warplane simulation currently available. It contains more options than you could imagine with well structured levels of difficulty. The weighty manual is imperative reading if you are to make the grade as a Top Gun. Highly recommended.

Nic Outterside

hotshot.

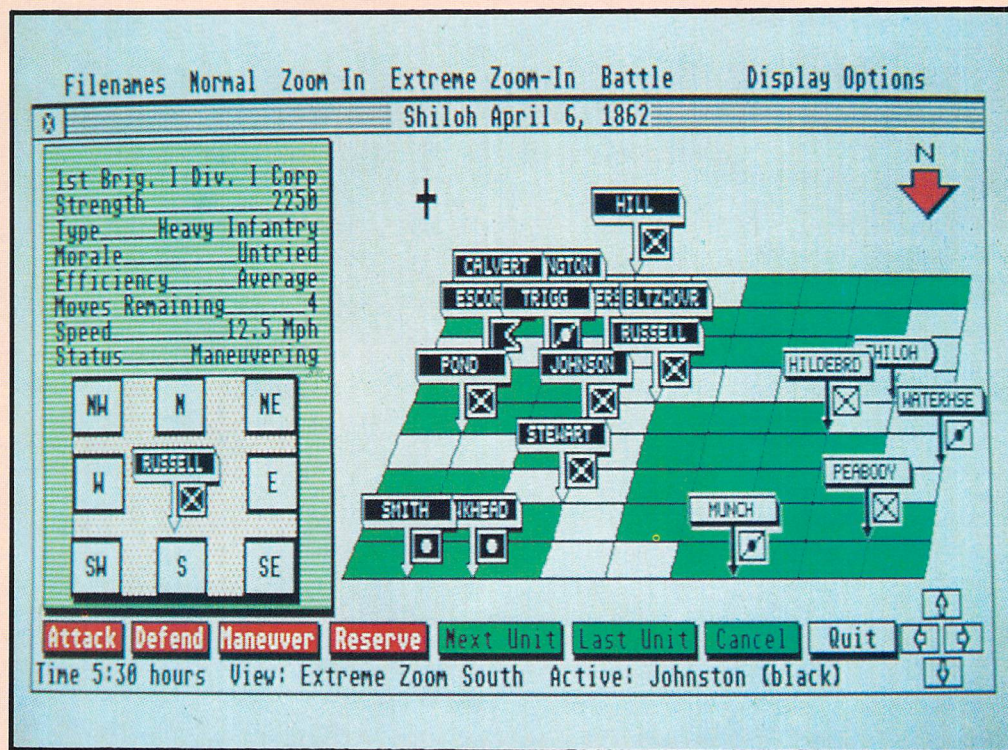
Although the world of Falcon is fairly flat a number of mountains are scattered around, as well as roads, buildings, fields, bridges over rivers, enemy airfields and SAM sites. Not only can you test your skills against the computer opposition, but if you have another ST you can connect the two machines and dogfight with a friend.

Falcon is the Gunship of flight/combat simulators. If you want to get really serious then there is a huge amount of detail to absorb, but even the neophyte can be up and flying within 10 minutes thanks to the program's clever difficulty grading.

Falcon is a magnificent piece of software and will take top place in the ranks of fighter combat simulation.

Mark Luckham

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



Organising troops at the Battle of Shiloh

## A house divided

Program: American Civil War (Scenario Disc One), Vietnam (Scenario Disc 2)  
Price: £12.95 each  
Supplier: Rainbird, 74 New Oxford Street, London WC1A 1PS.  
Tel: 01-240 8838

**A**T last Rainbird has seen fit to release – virtually a year later – a couple of scenario discs for its revolutionary wargaming program, Universal Military Simulator. The two are the American Civil War, written by UMS author D. Ezra Sidram, and Vietnam, by Edward Beaver. Each disc offers three individual battles for the strategy aficionado.

The American Civil War package is the most substantial of the two, its battles being Shiloh, Antietam and Chattanooga, and is provided with an 80 page manual. It would have helped if the maps in the manual were more readable; the illustrations are poor too.

Shiloh took place on April 6 and 7 1862 beside the banks of the Tennessee River and set General Grant of the Union against General's Johnston and Beauregard of the Confederacy.

The challenge of this scenario, if you are playing the Union, is to hold the Confederates off until reinforcements arrive, at which point it becomes possible to wallop them. If

you ever needed confirmation that missile weapons are horribly effective in UMS, you'll find it here.

If you can manage that you'll fancy the challenge offered by Antietam. Take command of General Robert E. Lee's Army of North Virginia and attempt to survive the attacks of George McClellan's Army of the Potomac. In real life it was only McClellan's poor leadership and indecision which enabled Lee – behind enemy lines and outnumbered three to one – to deny victory to the Union. The computer isn't as indecisive.

Chattanooga is an odd choice for inclusion on the Civil War disc, as the primary problem for the Union army besieged in the city of that name was lack of supplies. The Confederates were encamped in the heights around the city, and were slowly strangling the Union forces. Grant's troops were starving, and short of ammunition and clothing.

The trouble is that supply lines are not catered for in UMS, and it was only when Grant established the line, and resupplied his men that the Union army was able to drive back the Confederates.

Similar problems on the second disc affect the realism of those simulations. The problem with the three Vietnam scenarios is that the terrain around Dak To, where they are all

## SECOND SIGHT

Abraham Lincoln's famous "house divided" speech could equally be aimed at these pieces of software, with the line adjustment being: Software divided against itself will not stand. Where the American civil war scenarios succeed admirably under the UMS code, the Vietnam scenarios fail dreadfully to capture wargame realism. Best be selective in your purchase.

Nic Outterside

set, is jungle covering ridges and twisting valleys. UMS if you recall, takes no account of terrain when using missile weapons. Apart from that it's fine.

If you have invested in a copy of UMS then both scenario discs are welcome, and relatively cheap, expansions of the system. If you are looking for realism the Civil War disc certainly has the edge, and I found it to be more entertaining to boot.

Mark Luckham

Graphics.....	n/a
Sound .....	n/a
Playability .....	8
Value for money.....	9
Overall .....	9



Program: *Heroes of the Lance*  
 Price: £19.95  
 Supplier: US Gold, Units 2/3, Holford Way,  
 Holford, Birmingham B6 7AX.  
 Tel: 021-356 3388

# Down in the dungeons

**I**N this massive dungeons and dragons blockbuster from US Gold the action is set in the land of Krynn which is in deadly danger. Takhisis, the Queen of Darkness, has unleashed her powers across this once fair land, leaving death and destruction in her wake.

The majority of the populace, who have lost their belief in the old gods – are now under the spell of this foul dictator and she is close to creating the largest, most evil empire ever.

However a threat to her awesome power is the possibility of a revival of the worship of the gods. If the legendary Discs of Mishakal can be returned to the people from the ruins of Xal-Tsaroith it will prove that the forgotten gods exist and a confrontation with Takhisis will be possible.

Unfortunately, the magical discs are guarded by many evil creatures, including various species of draconians, dwarfs, trolls, men, spectral minions and wraiths. Even if a party of brave adventurers was successful in defeating these, it would still have to conquer Khisanth, the mighty Black Dragon which is the guardian of the discs. It can only be killed by a special power located deep inside the ruins of Xal itself.

The adventurers brave enough to enter Xal's ruins are the Heroes of the Lance. These eight characters are controlled by you and it is your task to ensure that they successfully complete their mission.

The eight are Tanis, Caramon, Sturm, Riverwind, Flint, Tasslehoff, Goldmoon and Raistlin. The first five are warriors skilled in various forms of combat, while Tasslehoff is a thief with scouting ability.

Goldmoon, on the other hand, is a cleric who carries a blue crystal staff with nine helpful abilities. These range from curing light wounds picked up in combat to raising the dead. The staff has 200 charges and each time it is used it wastes a certain amount of its power.

Raistlin is the magician of the party, and although he lacks physical strength, he makes up for it with a range of innate magical abilities. He can cast eight spells via his magical staff of the Magus. These range from Web which entangles and opponent for a certain amount of time, to Final Strike where the staff explodes like a nuclear bomb.

The screen is divided up into three



Gain useful information on your compatriots



Slaying dragons is only part of your problems

sections. All the action takes place at the top, and here your party, which is represented by one member, performs its routine actions such as run, walk and fight.

At the bottom left of the screen is a compass which glows red when you come to a passage that should be explored. The bottom right hand side consists of portraits of the characters. Next to each one is a green bar which indicates how badly wounded he is, if they are near death it turns red.

The portraits of the characters can be swapped around to represent a

marching order. Only the leading member of your party can get involved in physical combat at any given time, but any of the first four characters can cast spells.

*Heroes* is very exciting. The graphics are superb. All the sprites are finely detailed and beautifully animated, although the scrolling does jerk a little when you meet an opponent. Combat consists of exciting blow-by-blow confrontations, and even when dead, opponents can still cause problems.

The game is action packed and keeps you on your toes, as not only

## SECOND SIGHT

Dungeons and Dragons role playing games like *Heroes of the Lance* aren't everyone's cup of tea, so it's best to try before you buy. However, fans of this genre won't find a better version. The action and depth of gameplay are excellent.

Roland Waddilove

are there monsters to be killed, but potions to be drunk, treasure to be collected and the discs to be found.

My only criticisms are that there is too much disc swapping, and keeping your party in a decent marching order is time consuming. These moans aside, this for me is the best game for the ST to date.

Wayne

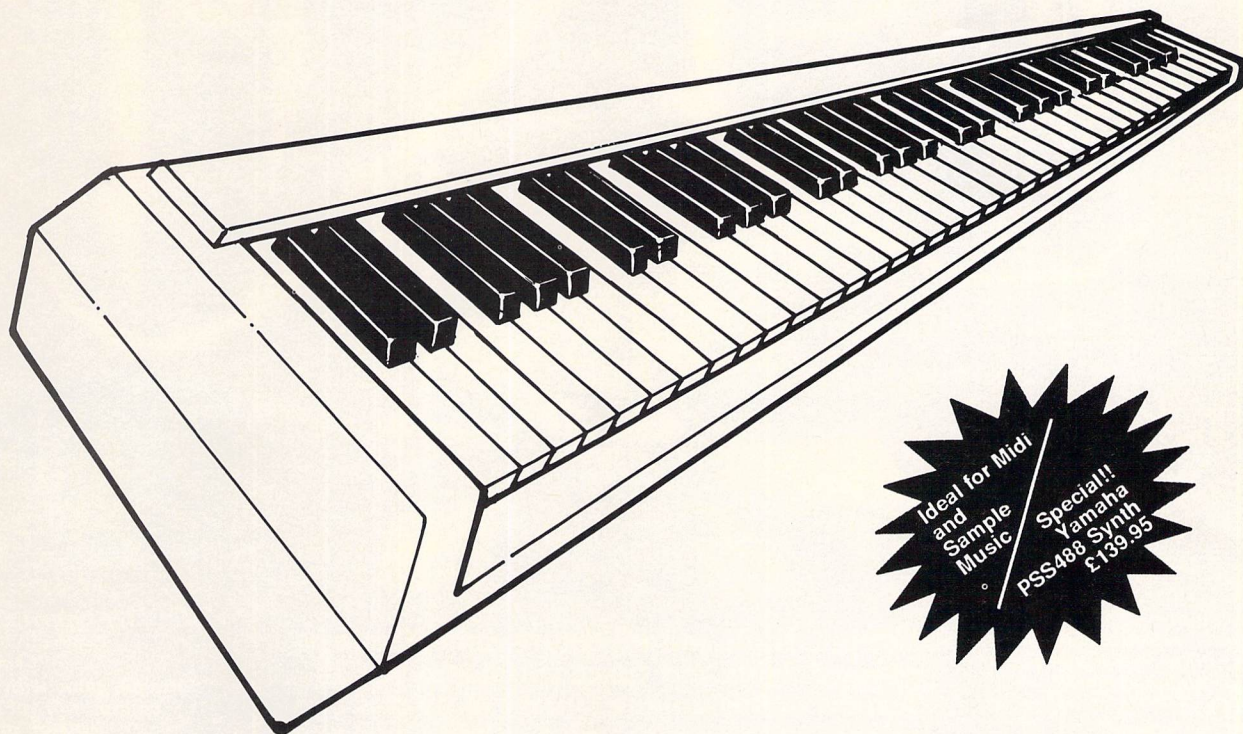
Sound .....	6
Graphics .....	10
Playability .....	9
Value for money .....	9
Overall .....	9



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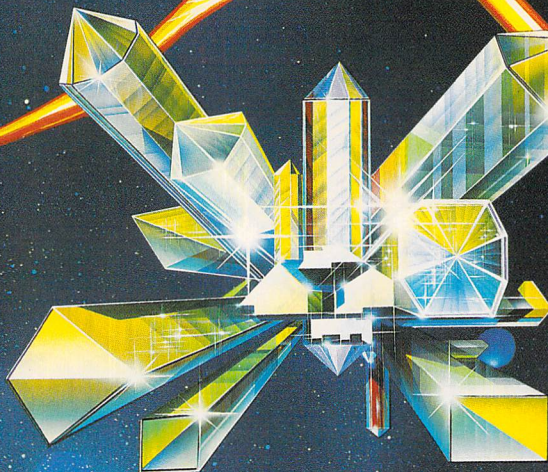


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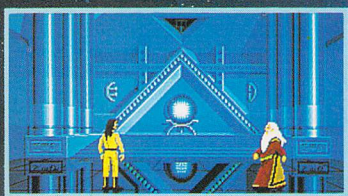
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## Cool ballgame

**Program:** Hotball  
**Price:** £19.95  
**Supplier:** Satory/Active, Greyhound House, 16 Greyhound Road, Hammersmith, London W6 8NX.  
**Tel:** 01-385 7622

**H**OTBALL is a soccer simulation which comes as a two-disc package plus a piece of hardware that needs to be plugged into the printer port of your ST. It can be played by one person against the computer, by two players or even four – thanks to the nifty hardware extension.

The sound and graphics are superb, and I still don't get bored by the initial screen and sound effects. However, it was after I'd loaded the second disc as prompted that I began to experience problems.

First, I didn't realise to begin with that it was essential to plug the hardware into the printer port to get the game to run at all, and to plug the joystick into this add-on. I merely wanted to play against the computer, and I thus wasted a great deal of time in experimenting with different combinations because of vague accompanying documentation.

There are three levels of difficulty, three playing combinations and a choice of three time, or goal-limited game durations. Pressing the fire button got things started – and then my difficulties really began.

When playing against the computer you are given the direction of play that is the more confusing of the two. Since Hotball is vertically scrolling, I found it distinctly odd to pull the joystick backwards in order to move forwards.

The scrolling is reasonably smooth, and some of the gameplay effects are amusing, particularly tackling and fouls.

At the end of the match, a new screen is loaded showing an applauding crowd – probably the weakest visual feature of this program – and a high-score table which, although I qualified for entry, proved entirely adamant in preventing my name going on to it.

Grim perseverance made me more adept at manoeuvring my player around the pitch, and I began to learn how to slide the ball into a corner of my opponent's goal. However, I can't say that I found Hotball particularly addictive, though a two-player game is much more fun than merely playing against the computer.

I have a feeling that the lack of ease in play will deter all but the most ardent soccer fans – and they won't be all that thrilled to see a New York team's colours on the screen. What's wrong with Everton?

**Bob Redrup**

## SECOND Sight

*The four-way joystick interface add-on is a superb idea. However, the software simply does not live up to expectations. The game is difficult to get into and at times awkward to play. There are much better soccer simulations around, and for my money I would rather wait for the ST conversion of Microprose Soccer.*

**Nic Outterside**

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

## High flying action

**Product:** Thunder Blade  
**Price:** £19.95  
**Supplier:** US Gold, Units 2/3, Holford Way, Holford, Birmingham B6 7AX.  
**Tel:** 021-356 3388

**R**EMEMBER the series on television featuring Airwolf, an amazing helicopter bristling with the latest gadgetry and weapons? In it Stringfellow Hawk took on Ruskies, terrorists and other associated villains, pummelling all in his way. Now you have the chance to emulate him in US Gold's new blockbuster, Thunder Blade.

The country is being overrun by a particularly revolting dictator called General Swindells and it is only a matter of time before the government falls. Can you vanquish the enemy with the aid of Thunder Blade, the most advanced attack helicopter ever built?

Scene of the first battle is in Skyscraper City, and your view of the action is from overhead. As you pull back on the joystick the chopper lifts off from a Pepsi landing pad and rises between the buildings. Immediately the enemy ground forces start strafing you, but luckily their aim isn't too good and with practise you can avoid the flak.

The best tactic is to keep a firm grip on the fire button and spray bullets and missiles in front of you. At the edge of town the action changes to an impressive 3D perspective view from just behind the chopper and you fly downtown through the skyscrapers blasting everything in your way.

## SECOND Sight

*Wow, what a toughie! Thunder Blade is a pig to fly in the first, 2D, part of the game, but once this is completed the going gets a little easier. I particularly like the 3D action – the graphics are superb. Would I buy it? I'd certainly give it careful consideration.*

**Janice Murray**

Airborne forces attack you initially, and if you survive this there are more ground forces to deal with.

Providing you come through unscathed, or at least with one of your five backup choppers in tact, you move on to the next assault which takes place on a river delta. You fly low over a heavily armed ship and must knock out all the gun emplacements and missile silos before they get you. The view is again overhead 2D.

This is as far as I've got in this difficult, but quite addictive game. There are further attacks to be carried out in mountains, deserts and oil refineries. The action is either 3D or 2D depending on the stage.

The overhead 2D graphics are pretty run of the mill, but the 3D perspective battles are quite good, especially when flying through town between the skyscrapers. The sound effects are fairly ordinary, but the digitised sound track on the title page is worth listening to.

Overall Thunder Blade is a reasonably good game. Not outstanding, but competently programmed and attractively presented. I've played the arcade game and am pleased to report that this conversion is very close to the original.

**Roland Waddilove**

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





Program: Joan Of Arc

Price: £19.95

Supplier: US Gold, Units 2 & 3 Holford Way, Holford, Birmingham B6 7AX.  
Tel: 021-356 3388

**F**OR almost a century the French and English fought a bitter battle for control of France. Corrupt French nobility were making alliances with the English, exorbitant taxes were bringing the peasantry to the brink of revolution and the land was being plundered by the armies of both sides.

Into this maelstrom rode Joan of Arc on a divine mission to help the Dauphin, Charles, to gain the throne of France and rid the provinces of the English. The game begins on May 1 1429 and you play the part of the Dauphin. With the aid of the inspired maid of Orleans and her devoted followers, your first objective is to take your rightful place on the throne of France.

To accomplish this, you must direct and assist Joan in the capture of Orleans and Rheims. Once crowned in Rheims, your mission is to drive the English out of the rest of France.

The game thus falls into two parts. In the first you are pretty well limited to attacking and defending. In the second, things get much more interesting as the King of France has far wider options to choose from to advance of his aims.

Joan of Arc opens with an historic

## Fight for the throne



background to the present situation. Play mainly revolves around a map of France from which you can obtain data on all locations, their military occupants and the current state of loyalty of all French-controlled provinces.

Battle tactics concentrate on troop movement, base establishment and combat. While fortress building, army deployment and the like takes place on the map, combat is played out over

several types of arcade sequence.

These cover the storming of a castle using ladders, or defending one by hurling rocks and boiling oil down on the besiegers, forcing an entry into a town, sword fighting on horseback and massed battles in open country.

Your archers, troops, catapult and knights are controlled by icons at the bottom of the screen. Despite their initially lack-lustre appearance, these

scenes actually work quite well.

The options available to you once you have been crowned king really open up the game. You may plot, spy, tax, murder, kidnap, ransom, arrest, intrigue, extort, double-deal, execute, pardon and battle away to your regal heart's content. A long list of characters, together with detailed information about every one of them, is instantly available.

Raising revenue is crucial to success. Tithes and taxes may be levied on the peasants but must be imposed and collected judiciously if bloody uprisings are not to result. Sacking a captured town or ransoming an English hostage may also be viable money-spinners.

Graphically, the game is not terribly impressive. The opening sequence and the map are eye-catching but the battle scenes, while they work fairly well are quite basic and monotonous. Sound effects are few and weak – a pity, as appropriate use of spot effects would have livened the atmosphere. Frequent disc accessing does nothing to keep the action moving other than at a leisurely pace.

The depth of gameplay and the extensive range of choices and decisions available to you make this one of the better strategy games on the

## Don't think – just shoot!

Product: R-Type

Price: £19.99

Supplier: Activision, Blake House, Manor Farm Road, Reading, Berkshire RG2 0JN.  
Tel: 0734 311666

**T**HE packaging provides the very briefest of descriptions to set the scene for R-Type, an arcade conversion. Man has ventured into space and a great battle is being waged against the evil Bydo empire, which is out to conquer the Earth.

The home planet is inhabited by all manner of weird creatures whose very sight strikes terror. In order to hit back you have been chosen to pilot an advanced R-9 fighter craft of awesome destructive power.

You have to navigate your ship

through a narrow sideways scrolling tunnel system while strange aliens hurl themselves at you and gun emplacements take pot shots. The game seems quite difficult at first – it soon gets much harder.

The aliens stream on in formation from the right hand side of the screen and swirl in front of your ship, blasting away. They aren't too difficult to dispose of. Some mechanical robots walk on from the right, and these can be destroyed by skimming the ground.

Extra weapons can be picked up by shooting certain alien ships which then turn into jewels. Reflection, anti-aircraft and ground lasers are available, as are homing missiles, extra speed and shield orbs. Also rotating missile launchers can be attached to the front or rear of your ship.

These bolt-on extras are essential if you hope to reach the end of the



level. Here you'll meet a gigantic alien creature with a large tentacle which lashes out as you approach. Every now and then a green head pops out from the centre and a stream of missiles or aliens – it's not clear which – comes your way. Blasting the head three times is enough to explode the alien in a ball of flame.

On then to the next level. The action is pretty similar, but there are variations on the types and number of aliens. At the end of this level there is another super alien to blast to kingdom come.

The graphics are clear and well defined and the scrolling smoothly executed. The action is addictive,



## SECOND Sight

A beautiful wargame – if that is possible with this type of software – which had me entranced from the outset. The loading sequence is delightful and prepares you for the cerebral gymnastics which are involved in the game itself. The depth of gameplay will have you glued to your ST as you fathom out the correct decisions and attempt to drive the English from French soil.

Nic Outterside

market. In these respects, Joan of Arc is far better long term value for money than those with skin-deep attractions.

With a bit more colour and realism in the animated scenes and far greater use of sound, this would have been an excellent game. Even without, it still offers much to the more thoughtful game player and is well worth the asking price.

Bob Chappell

Sound .....	2
Graphics.....	7
Playability .....	8
Value for money.....	8
Overall .....	8

## SECOND Sight

Horizontally scrolling shoot-'em-ups are only marginally less common than the vertically scrolling variety. It seems that there's a new one every month. R-Type, like the others, is fast and addictive, but so are the rest.

Janice Murray

keeping you glued to the monitor for quite some time. The sound is pretty average – nothing to write home about.

R-Type reminded me of Psygnosis' Menace, and I don't know which I prefer of the two. If you have already got Menace, try R-Type before you buy it, as it is very similar.

Roland Waddilove

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

# Lasers at dawn

Program: Last Duel  
Price: £19.95  
Supplier: US Gold, Units 2 & 3, Holford Way, Holford, Birmingham B6 7AX  
Tel: 021-356 3388

I AM snatching a few minutes away from a totally addictive game – Last Duel from US Gold – partly to write this review and partly to give my fingers a rest from the fire button.

The story involves twin planets, Mu and Bacula, the inhabitants of the latter having taken over Mu, capturing the delectable Princess Sheeta in the process.

The loading sequence depicts this blonde beauty, wearing a necklace and a frightened expression, appealing for help. To rescue her, you must battle your way through six levels of enemy-held territory. In other words, the storyline is an excuse for another vertically scrolling shoot-'em-up extravaganza.

However, there's rather more to it than that. Apart from destroying the various inimical pieces of weaponry that wait in each level, the environment itself is not always helpful.

On level one you can get stuck on the side of the roadway and lose a life, you can get sucked down into the nethermost depths – until you learn the antidote – and so on. Each level needs careful arcade-adventure style exploration.

Help emerges along the way – provided you can shoot the small icons that appear from time to time – in the shape of enhanced firepower, both in strength and direction. This can make a great deal of difference at times.

At the end of each level a treat awaits you in the shape of even more formidable nasties than you have destroyed to get there. Three fire-breathing dragons await you at the end of the first level and they are well nigh indestructible. I have managed to confront them with four out of my five lives in hand and only just survived.

A nice feature to my mind is the two-player facility. The second player is equipped with a space plane to accompany your ground car and faces different opposition to your own.

The fun can be fast and furious here, particularly if you forget which vehicle you are controlling and which baddies you are meant to destroy.



The battle is on



Obstacles must be avoided as you explore

If you can both reach the end of a level more or less intact, the nasties awaiting you have to deal with your combined firepower. On the whole, I preferred this method as guaranteeing emergence on level two.

My younger son and I are committed to Last Duel – as a twosome. Its strength is total addictiveness. However, do look before you buy as it may not be everybody's cup of tea.

Bob Redrup

Sound .....	6
Graphics.....	8
Playability .....	9
Value for money.....	8
Overall .....	8

## SECOND Sight

This is a fast do or die zapping game that succeeds where many pretenders fail. The plot isn't exactly original, but the gameplay is totally addictive and will cause much wear and tear to your joystick. Strap yourself down, hold on to your joystick as if your life depended on it and get those nasties before they get you.

Jayne West



Program: Operation Wolf

Price: £19.95

Supplier: Ocean, 6 Central Street, Manchester M2 5NS.

Tel: 061-832 6633

**A** CONVERSION from one of 1988's most popular coin-ops, Operation Wolf is an all-action DIY Rambo kit. It has all the thrills and spills of rescuing hostages and tackling an entire South American army on your own – I make it a total of 355 soldiers and 71 vehicles.

A novel feature is that the enemy shoots at you from the screen, head on. You shoot them by using crosshair sights and pressing a button – it's mouse-controlled and works superbly.

There are six levels. After a few plays you should easily clear level one – the communications set-up. Then it's on to the jungle to extract information on the whereabouts of the concentration camp.

The enemy responds very well to a magazine full in the guts. When you've cleared this screen the Boss arrives holding a pretty nurse – or is it an airline stewardess? – hostage. They jump about so fast he's very difficult to hit, so take care.

You lose energy points for hitting innocent victims and you can pick up more ammo as you go, although I don't particularly like shooting pigs and chickens to do this.



If you make it to level three, the village, you can take a rest and recover your energy. Then you attack the powder magazine and if you succeed your ammo is replenished.

My main niggles are the age old problem of having to go back to level one each time you play. There is, however, a Continue option which gives you another crack at the last level, but you only get one second chance. The nice thing about this is you get a full quota of ammunition – you'd better make the most of it.

The game is pretty fair in that if you

are down on your ammunition, spares tend to appear. But what lost the game marks in my book is the fact that you must swap three – yes three – discs each time you boot up, get shot or move from level to level. Whoever designed this wants one of their sub-machine guns poked up their nose.

The enclosed Hints and Tips tell you not to fire constantly – but if you don't you won't make it! Rambo has got nothing on this. There's a high score table but you can't save it and there's no pause facility. I mean, what does a guy do when he's breaking through the

## SECOND SIGHT

Another blood and guts slaughter-house game which owes a lot to Platoon and others of the ilk. Excuses for this type of game are wearing a bit thin, but Operation Wolf has that certain elusive addictive quality which makes it stand out from the pack.

**Nic Outterside**

perimeter defences and the phone rings?

The graphics are excellent, the music is short but very good, and there is some sampled speech. However, I don't really want to load another disc just to hear it.

Fast-finger, all-action, whizzo, shoot-'em-down experts may find Operation Wolf a leisurely stroll rather than a frantic assault. Even I made it to level six. If/when I clear it I don't think the game will warrant many repeat plays. But until then it's fun, not too demanding and a jolly good blast.

**Ian Waugh**

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

## World-leading boxers

Product: Spitting Image

Price: £19.95

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

**S**PITTING Image is an interesting joystick-operated boxing game, and in many respects similar to other unarmed combat ones. It hopes to stand out from the crowd by offering wit and the popular characters of television's Spitting Image.

You have the option to control one of six world leaders and challenge the rest, including Gorbachev, Thatcher, the Pope and Reagan. The screens are amusing and have odd things going on in the background while the fights take place.

For instance, when Thatcher is challenged the fight takes place in front of 10 Downing Street. At various times during the fight Neil Kinnock's head can be seen rolling across the bottom of the screen and Dennis also lends a hand.

When the fire button is pressed each character can hit at the opponent's head, body or feet as well as an additional move specific to each character. With no fire button pressed, each combatant can jump up, move forward or backwards, duck or back away.

The game is aimed at those who enjoy seeing cartoon-like like repre-

sentations of world leaders battering one another. While it is fun at first – the representations of the Spitting Image characters are superb – it isn't particularly playable or addictive, though it does have the occasional moments of wit.

Indeed, it seems as if the idea of making a computer game tie in with Spitting Image took precedence over



## SECOND SIGHT

I'm a great fan of the series and this computerised version of Spitting Image is hilarious. The graphics are spot on. However, I too found the play slightly lacking in depth, and once you've had a good laugh at the characters there's not much to keep you coming back for more.

**Roland Waddilove**

the actual gameplay. The sound and music are well done, as are the drawings of the political leaders. Pity the gameplay is so tacky.

Strictly for the most devoted followers of the show. For the rest, similar fighting games on the ST are more entertaining and addictive.

**Elliot Stein**

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



Operation W

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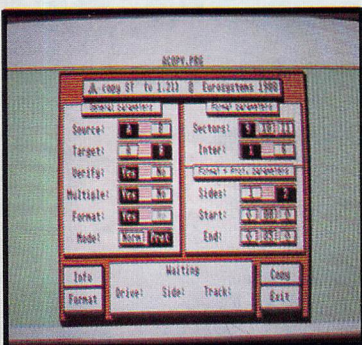
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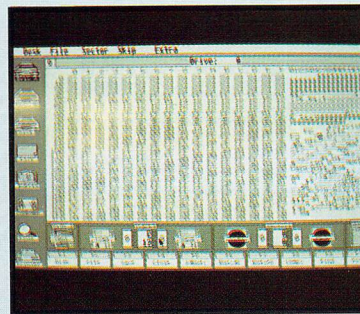
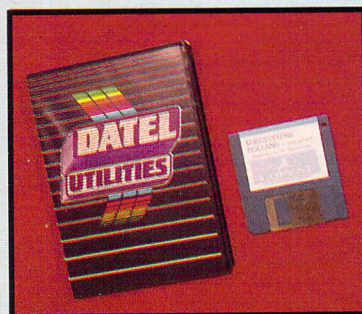


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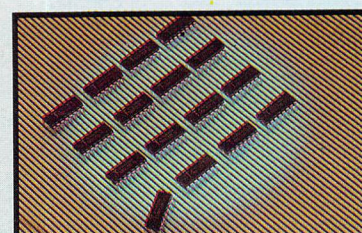


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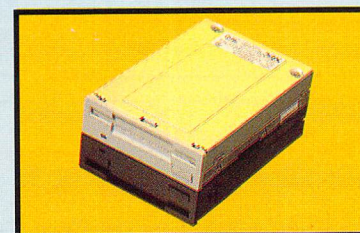
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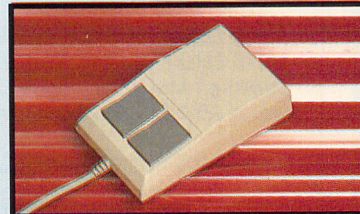
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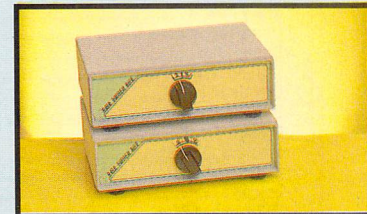
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# No hiding place

Program: Afterburner

Price: £19.99

Supplier: Activision, Blake House, Manor Farm Road, Reading, Berkshire RG2 0JN.

Tel: 0734 311666

**T**HE latest coin-op conversion from Activision has the carrier Sega Enterprise making its way through dangerous waters when suddenly its radar screens come to life with groups of unidentified aircraft closing in from all directions.

The action starts with your F-14 Tomcat lined up on the flight deck ready to depart into the cluttered skies. Once airborne you will have reached the point of no return. The display shows your navy fighter from behind, and just ahead of your jet is a square gunsight. Unlike many simulations, quite reasonable detail is also shown on the ground.

When your sight is positioned over a bandit 'Lock on' will be shown at the bottom of the screen – fire and forget! Soon you will see a ball of fire in the sky ahead, but keep the celebrations for later, that was just one of many.

Red lights at the top of the screen warn of enemy jets or missiles approaching from behind. To get rid of them it is often necessary to execute a 360 degree roll which is done by moving quickly from one side to another.

Your speed by can easily be altered by pressing the spacebar once, but to take advantage of the afterburners you have to tap it twice. During combat you will be repeatedly advised of bandits at three o'clock, although quite often they are in either a 12 or six o'clock position.

You will receive a full hero's welcome when you arrive back with your carrier on level 23. There is very little change to the overall gameplay

## SECOND Sight

*Pre-release hype launched this game to number one spot in the Gallup charts, but to be honest Afterburner is nothing very special. There are equally good flight arcade games around and if you want a dedicated flight simulator look no further than Falcon.*

**Nic Outterside**

after you've got rid of the first enemy plane with the exception of the screens where you are given extra fuel and ammunition.

When you have reached one of these levels you will be switched into autopilot mode for either landing at an airfield or air-to-air refuelling with a tanker plane.

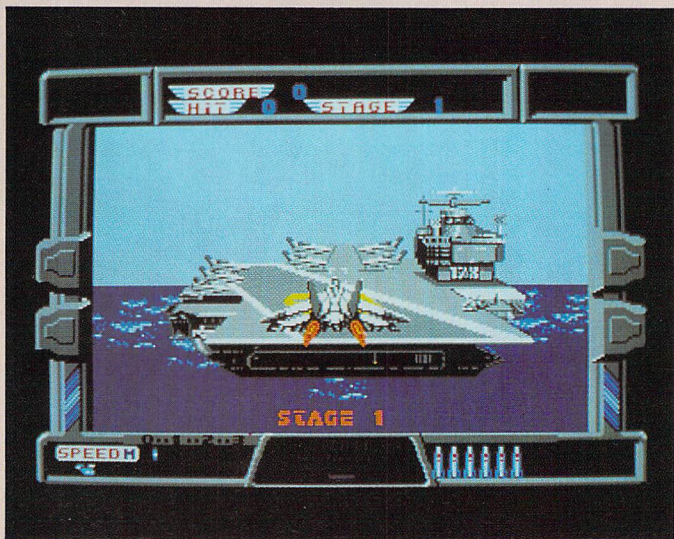
Special options include the facility to turn both the music and effects on or off, and a high score table which will save the top 15 pilots automatically. It can be reloaded when you are ready to fly your next mission.

I often run into difficulties when using the mouse for games, however Afterburner allows you to change the sensitivity easily, and this helped a great deal.

The arcade version had a moving seat and joystick which added a feeling of reality. Without these Afterburner has little to offer that has not been seen many times before.

**John Butters**

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



# Arcade action

Product: Game Over II

Price: £19.95

Supplier: Electronic Arts, Langley Business Centre, 11/49 Station Road, Langley, Berkshire SL3 8YN.

Tel: 0753 49442

## SECOND Sight

*Maybe it's just me getting old, but I found this a bit tough. In fact, I couldn't get through the first level. However, despite this, I thoroughly enjoyed the frantic joystick-snapping arcade action. The different scenarios give the game more depth than usual.*

**Roland Waddilove**

**W**HEN you complete Game Over II you won't be any wiser as to why its so named. It appears to be an arbitrary title for something which is 95 per cent arcade game and 5 per cent adventure.

Though it's hardly a breakthrough in originality, it is a fun and absorbing game which challenges your joystick skills and reactions. Unlike most games which feature the same type of gameplay from level to level in varying degrees of difficulty, Game Over II features radically different gameplay from one level to the next.

The object is to control the actions of Major Locke and rescue the hero of a rebellion from the prison planet Phantia. The first three levels are similar to countless other space shoot-'em-ups. You guide your spaceship first through space, then across the planet's surface and finally inside caverns. You must dodge meteors and incandescent magma while battling with enemy spaceships and strange creatures.

Just as you think the rest of the game will be simply flying the same ship through countless other screens, it lands and an animated man gets out. You control him throughout the rest of the six levels.

You must make your way across swamps, forests, mountains and so on, fighting creatures and prison guards using the laser and turbo charger which you'll pick up along the way.

There are 24 different types of

enemy and because of the variety of types of battle the game never becomes boring. Some levels, such as the swamp, require speedy shooting and alertness as the sea creature can swiftly swim up and eat you. Others, like the search for the access medalion, require careful planning.

Many levels smoothly lead into the next so that it isn't easy to tell where one ends and the other begins, lending the game a continuity which many similar types of software lack. The action becomes more challenging as you progress. Unfortunately, the final level is lack-lustre and not at all challenging to one who has completed the rest of the game.

Game Over II is well designed as it is like several different games in one. It is a bargain at only £19.95.

**Elliot Stein**

Sound .....	7
Graphics .....	8
Sound .....	7
Playability .....	9
Value for money .....	10
Overall .....	8



# STRETCH YO

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

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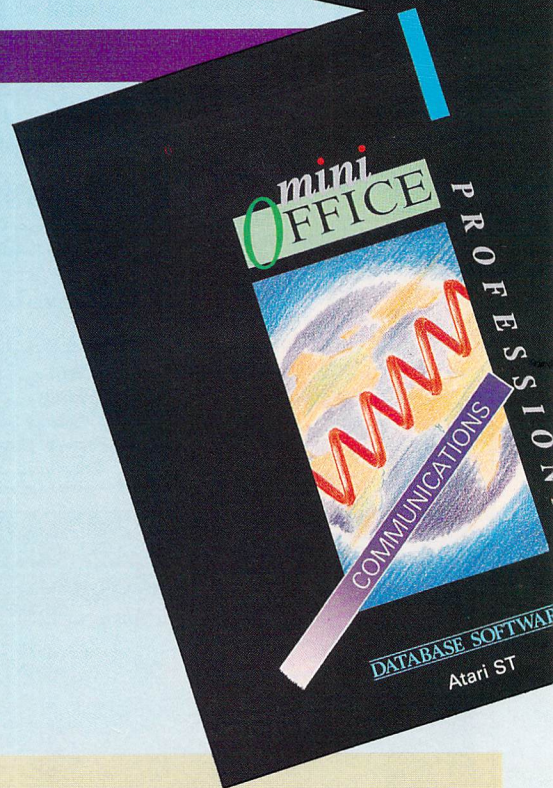
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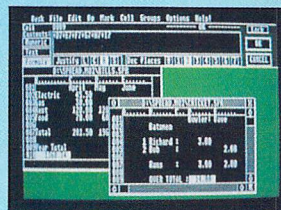
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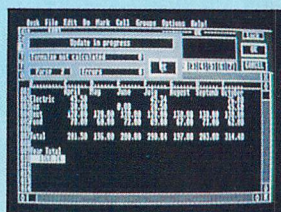
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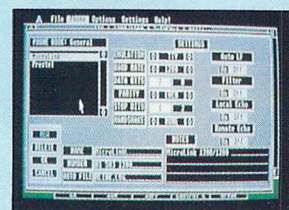
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## DATABASE SOFTWARE

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THE virtual device interface, or VDI to give it its more general label, is the part of the ST's operating system that is used to create those amazing graphic displays we see in programs and pictures. It is essentially a toolkit of drawing routines that will produce lines, circles, boxes, ellipses and so on.

Unfortunately, the VDI is not described in any of the manuals that accompany your Atari ST, so its use remains a mystery to many people. Help, however, is at hand – in this article I'm going to be examining how the VDI can be accessed from within ST Basic and used to produce a wide range of graphics functions.

You can, of course create graphic displays quite easily from ST Basic, and Basic itself uses the VDI routines to produce its graphic output whenever you

*ptsin*. The term pseudo is used to indicate that they are system variables, that is you don't have to predefine them like other variables. However, you can't assign just any old value to them, otherwise there might be some rather strange effects. The variables point to two areas of memory

# GRAPHICS SECRETS

Bruce Smith reveals how to access the ST's many powerful VDI functions

use a command such as LINEF. However, by accessing the VDI directly the whole process can be speeded up because Basic does not have to spend costly processor time working out which routines to access to produce the effect required. And there's a wider range of facilities to boot.

In addition to handling graphics the VDI routines can also manipulate the mouse, so it is possible to read what the mouse is doing from within a program – something you can't do from ST Basic. I'll be concentrating on the more popular and useful of the many VDI routines, and will supply a series of demonstration programs you can adapt for your own particular needs.

## Accessing the VDI

The VDISYS(0) command is used to bring the VDI into action from Basic. This call is used no matter what you are trying to do. Needless to say, the VDI must be told what you require of it and this is done by poking – storing – data bytes into specific areas of your ST's memory.

To help with this there are two pseudo-variables built into ST Basic – *ctrl* and

which act like arrays.

Special action codes determine exactly what the VDI is to do, and these code numbers must be passed to the *ctrl* array directly. The action code 11 is used to control many of the graphics functions, and in particular those covered here. To place 11 in *ctrl* the POKE command can be used from Basic like:

```
POKE ctrl,11
```

The *ctrl* array has a further three locations at positions expressed as offsets from the base point marked by *ctrl*. These locations should be poked with values which will determine the action taken. The points are: *ctrl*, *ctrl*+2, *ctrl*+6 and *ctrl*+10

The pseudo-variable *ptsin* is like *ctrl* in that it will require some information poked into it at various stages. Several locations are associated with *ptsin*, and the number used can be up to seven depending on the task in hand. Like *ctrl* they are accessed via offsets from *ptsin* in steps of two like this: *ptsin*, *ptsin*+2, *ptsin*+4, *ptsin*+6 and so on.

At this stage you might like to enter Program I which uses the VDI to draw a

rectangle roughly central on a monochrome screen – it shows just how simple the whole process is.

It will run in any mode, but may appear distorted or even partially off the screen in low and medium resolution due to the different number of pixels across and down the screen. To cure this, reduce the

```
10 REM VDI Demonstration
20 REM By Bruce Smith
30 REM (c) Atari ST User
40 '
50 GOSUB winset
60 y1=100 : y2=200
70 x1=400 : x2=100
80 GOSUB vdi
90 INPUT "Press the RETURN key ";a$
100 GOSUB normal
110 END
115 '
120 REM Clear windows
130 winset:
140 FULLW 2
150 CLEARW 2
160 COLOR 1,2,3,3
170 RETURN
```

Program I



x and y coordinates and size slightly.

The program is divided into four parts – the main routine, and three subroutines. The subroutines are used to set up the output window – *winset* – restore the default windows – *normal* – and call the VDI routines – *vdj*.

It is good programming practise to adopt this style as your program then develops as a series of easy-to-follow building blocks that can be edited with relative ease. It also makes the program much easier to follow.

Briefly, the program runs as follows: First the *winset* routine clears the output window and sets it to its full width with *CLEARW 2, FULLW2*. In addition the various colour display options are chosen with the *COLOR* command (the adjoining

panel sets out how the *COLOR* command works for those of you who are not quite sure).

The variables *y1*, *y2*, *x1* and *x2* are then used to define the two sets of coordinates that will define the rectangle to be displayed – illustrated in Figure I. The *vdj* subroutine is then called and first the *ctrl* variables are poked followed by the *ptsin* variables into which the coordinates of the rectangle are stored.

The *VDISYS(0)* command displays the result, and on pressing the Return key the *normal* subroutine restores the default windows.

I mentioned earlier that *ctrl* and *ptsin* are in fact locations within the ST's memory map. The addresses at which these appear can be found by entering

this line at the keyboard:

```
PRINT ctrl,ptsin
```

The values 342376 and 339386 are printed on my ST – but may be different on yours if you have accessories or ram discs installed. These are the assigned locations. The address of *ctrl*+2 then is 342376+2 or 342378. If we so desire we can re-write the *vdj* routine so that the pseudo variables are replaced entirely by addresses with the same end result as follows:

```
220 REM VDI routines with addresses
230 vdi:
240 POKE 342376,11
250 POKE 342378,2
260 POKE 342382,0
270 POKE 342386,1
280 POKE 339386,x1
290 POKE 339388,y1
300 POKE 339390,x2
310 POKE 339392,y2
320 VDISYS(0)
330 RETURN
```

A list of the parameters required by the various VDI routines is essential, and these are listed in Table I. If you examine the column of figures which are poked

## Colourful effects

*THE COLOR command – note the American spelling – is used to make three decisions – the text colour, the fill colour and the line colour. Its syntax is:*

```
COLOR T,F,L,P1,P2
```

where T is the text colour, F the fill colour, L the line colour and P1 and P2 being the fill pattern definers.

The number of colours available depends on the resolution of the screen mode. In low resolution there are 16 colours, four in medium resolution and just two in high resolution.

The parameters after the *COLOR* command are optional so if you only wish to alter the text colour then the command:

```
COLOR T
```

is sufficient where T is the text colour – a number between 0 and 15.

To fill a solid figure the *FILL*

command may also be used, but these parameters may be set in the *COLOR* command (P1 and P2). There are 36 different patterns which are set as follows:

P1	P2
1-24	2
1-12	3

To see each of these fill patterns add the following lines to Program I:

```
72 FOR p2=2 TO 3
73 x=24
74 IF p2=3 THEN x=12
75 FOR p1=1 TO x
76 COLOR 1,2,3,p1,p2
90 FOR t=0 TO 1000:NEXT
91 CLEARW 2
92 NEXT
93 NEXT
```

Extra fill effects can also be had by overlapping patterns on one another.

Action	cont	+2	+6	+10
Rectangle	11	2	0	1
Circle (filled)	11	4	2	2
Arc	11	4	2	3
Wedge	11	3	0	4
Ellipse (filled)	11	2	0	5
Elliptical arc	11	2	2	6
Elliptical pie	11	2	2	7
Rectangle (rounded)	11	2	0	8
Rectangle filled	11	2	0	9

Table I: VDI parameters

into *ctrl*+10 you will see that the numbers increment. This is deliberate, and it is this value that the VDI uses to identify what action is required – it is called the primitive ID.

## Drawing circles

You should find the table straightforward to use. If, for example, you wished to draw a circle, the following values – read from the table – must be poked into the *ctrl* block:

```
POKE ctrl,11
POKE ctrl+2,4
POKE ctrl+6,2
POKE ctrl+10,2
```

Filled circles can be drawn using action code 11, and ID 2. A circle is always defined by three parameters – the x and y coordinates of its centre and the

```
175 '
180 REM Restore windows
190 normal:
200 OPENW 2
210 RETURN
215 '
220 REM VDI routines
230 vdi:
240 POKE ctrl,11
250 POKE ctrl+2,2
260 POKE ctrl+6,0
270 POKE ctrl+10,1
280 POKE ptsin,x1
290 POKE ptsin+2,y1
300 POKE ptsin+4,x2
310 POKE ptsin+6,y2
320 VDISYS(0)
330 RETURN
```

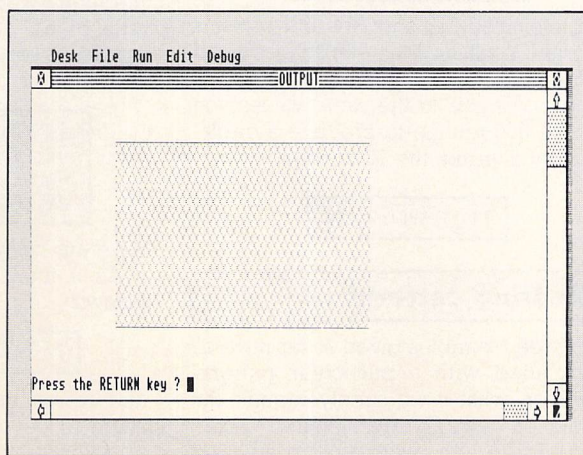


Figure I: The output from Program I

Turn to Page 40 ►



size specified by its radius. These three parameters are poked into *ptsin* locations and then *VDISYS(0)* can be called.

Using Program I as your base make the following alterations. Lines 312 and 314 are new, but the others already exist and must be edited:

```
10 REM VDI Circle
60 y1=100:x1=100
70 r=100
250 POKE contrl+2,3
270 POKE contrl+10,4
300 POKE ptsin+4,0
310 POKE ptsin+6,0
312 POKE ptsin+8,R
314 POKE ptsin+10,0
```

In lines 60 and 70 we define the position and size of the circle. Lines 250 and 270 adapt the *contrl* block and these values were extracted from Table I. The final lines set up the *ptsin* block – note that the radius *r*, is poked into location *ptsin+8*, and *ptsin+4/6/10* must be set to zero.

Save this listing as Program II. Run it and all being well a largish circle should appear in the top left hand corner of the screen. The circle actually overlaps the menu bar – VDI routines are unaware of window boundaries, so it is possible to draw things off of the screen.

If you have used graphics to any extent you will probably also have noted that the VDI coordinate system is different to that normally used. The coordinate 0,0 – the origin – is in the top left hand corner of the screen and not that of the output window. This is because the borders of each screen window take up part of the screen.

There are three graphics modes and the screen resolution of each of these depends on the size of the output window:

Mode	Pixels wide	Pixels high
Low	303	166
Medium	607	166
High	615	344

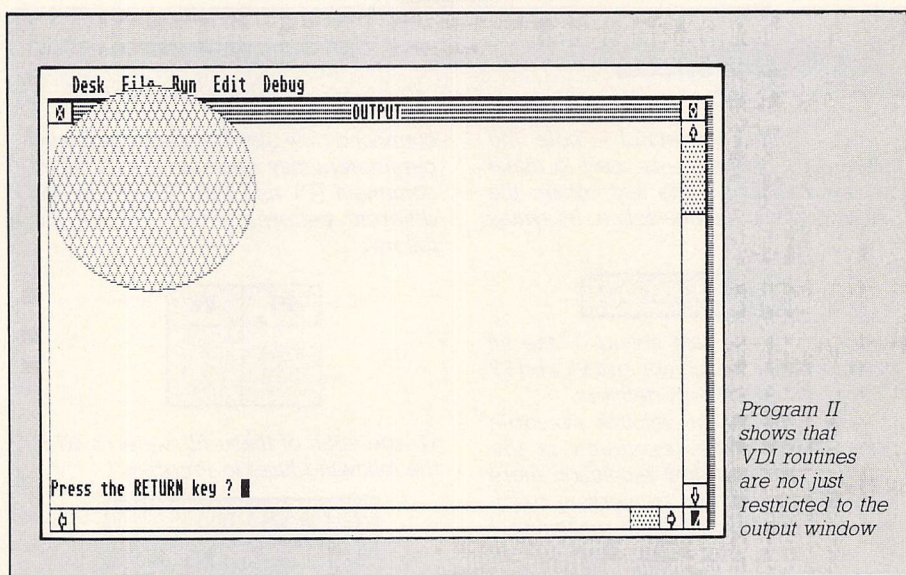
The larger the output window the higher the overall resolution as there are more points – pixels – on the screen to be plotted.

### Drawing ellipses

Ellipses are effectively stretched or squashed circles. Like circles, they too have a radius, but to take in account for the flatness factor, two radii are specified – the horizontal and vertical.

Program II can be modified to draw an ellipse. Looking at Table I we can see that the ellipse action code is 11 and its ID

# GRAPHIC SECRETS



is 5. Modify Program II as follows to give Program III which should be saved as such:

```
10 REM VDI Ellipse
60 y1=100:x1=100
70 r1=100:r2=50
250 POKE contrl+2,2
270 POKE contrl+10,5
300 POKE ptsin+4,r1
310 POKE ptsin+6,r2
```

Delete lines 312 and 314 and run this program. You'll have an ellipse displayed on the screen. By setting the horizontal and vertical axis to the same values you can use this routine to produce a circle. Try it by altering line 70 to read:

```
70 r1=100:r2=100
```

### Creating patterns

The three examples given so far have all been filled with a particular pattern. However, what if we simply require the border or circumference plotted? Looking at Table I shows that there are only filled figures. The answer lies in some

lateral thinking – fill the shape with plain white.

This requires that the *COLOR* command of line 160 in all three listings be adapted as follows:

```
160 COLOR 1,2,3,2,0
```

Make the following changes to Program III – the ellipse listing – to see how the nil-fill works, and how the horizontal axis of an ellipse can be shrunk to provide a series of semi-concentric ellipses when run:

```
70 r2=50
72 FOR r1=100 TO 5 STEP -5
74 NEXT
160 COLOR 1,2,3,2,0
```

Save this listing as Program IV.

As a final example alter line 72 as follows:

```
72 FOR r1=5 TO 100 STEP 5
```

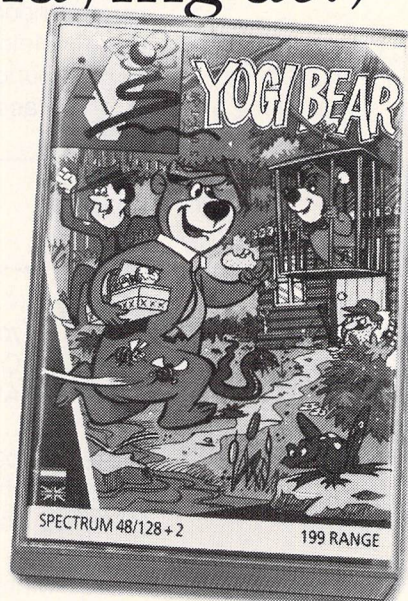
and re-run the program. This time you seem to get an animated display – but without the ellipses themselves. Why not? Think about it, it's quite simple really.



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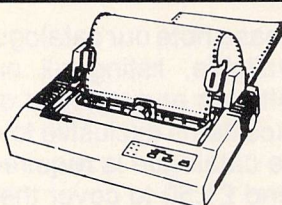


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Action Service	19.95	12.95	Football Manager II	19.95	12.95	Revenge II	9.95	6.95
Action ST	19.95	12.95	Gauntlet II	19.95	16.94	Roadwars	19.95	12.95
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Afterburner	19.95	12.95	Goldrunner I	24.95	15.95	S.D.I.	19.95	12.95
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Boulderdash Construction Set	24.95	15.95	Knight Orc	19.95	12.95	Star Wars	19.95	12.95
Bubble Bobble	19.95	12.95	Krazy Cars	19.95	12.95	Stir Crazy	19.95	12.95
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**P**ERSONAL organisers – the computerised variety that is – seem to be proliferating with new ones appearing almost every month. Latest arrival to this particular niche in the home/business market is Day by Day from Digita International.

It is aimed at anyone who has appointments to keep and tasks to be carried out. The package enables you to jot down reminders, dates and times of meetings, lists of things to be done and so on. These memos are brought to your attention at the appropriate times.

Day by Day consists of a thin 18 page manual and a single floppy disc. It is suitable for all STs and monitors, though if you're using a colour television for the display the medium resolution text may be a bit hard to read.

On booting up you are prompted to enter the date. Here a bug reared its ugly head, as I first tried the program just before the New Year and it insisted that there were 30 days in December and subtracted one day from every date entered. However, this won't be a problem any longer as we're well into 1989 and it now appears to calculate the current date correctly.

Moving on from the startup screen we come to the message categories. All the memos, appointments and notes are entered into a particular category, like Urgent, Overdue, This Week and so on. Each category is displayed in turn and the items within them come up on screen.

The options displayed along the bottom of the screen allow you to flick through the whole list of items if there's too much information to be displayed at once, add, delete and edit items and output the whole lot to the printer.

When adding a new item such as an appointment you are prompted for the date, and by setting various options, the start and finishing times too, and whether it fills the morning, afternoon or whole day. You can also set recurring items, such as a regular committee meeting, and these are replicated to appear at the correct times and dates.

The items in each category are displayed in chronological order. After printing each class of memo, appointment

# Status symbol – or useful tool?

**A new product designed to help you organise your day efficiently is tested by Julie Boswell**

and so on, you are finally presented with a menu screen. The software isn't Gem-based, but you can point at options displayed on the screen and click the mouse button to select them. Alternatively, you can select them from the keyboard by

pressing a letter or character – usually the letter the item starts with.

From this menu screen you can return to any particular category to add, edit or delete items. You can also create new classes of your own, such as a list of items required for a particular job or meeting, or goals, projects, expenses and the like.

Week and month planners are available, and these graphically map out your appointments. You can browse forward and backward through the weeks and months, or output them to the printer. It's easy to see at a glance from here when you're tied up and when you're free.

A useful search facility enables you to locate a particular item quickly. For instance, if you booked in your car for a service, but forgot which day it was, you could search for Service. You would then automatically jump to the category it was found in and the item would be displayed on screen.

## Conclusion

Day by Day is simple, but well written, and efficiently does the job it was designed for – organising your day and reminding you of appointments, meetings and so on. To make the most of it you must boot it up every day, enter coming events, delete past ones and generally keep it up to date.

There are several problems to bear in mind with computerised personal organisers. The main one is that you are tied to the micro – if you're not sitting before your ST you can't access the information stored in it. So, if you are at a meeting out of the office you can't look up information or see when and where your next appointment is.

Not only is Day by Day competing with other ST organisers, it is also up against the traditional manual version. I have got a personal organiser – the old fashioned type – but I'm so disorganised I can't remember where I put it.

Are they useful tools or just Yuppy status symbols? I'll let you answer that question. However, if you're on the lookout for a computerised version then Day by Day should fulfil most of your requirements.

## FACT FILE

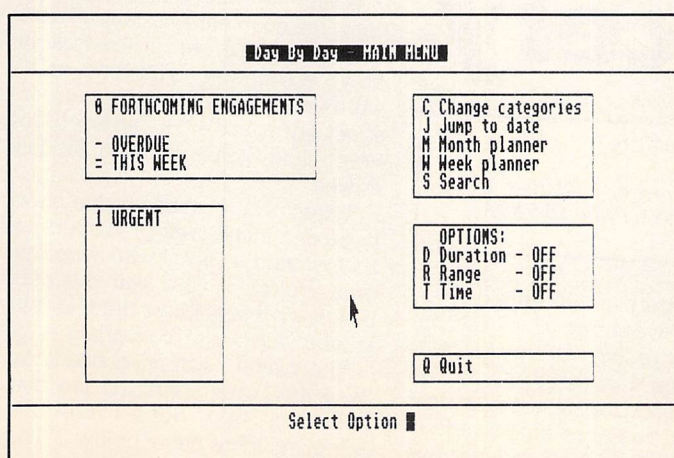
Product: Day by Day  
Price: £29.95  
Supplier: Digita International, Black Horse House, Exmouth, Devon EX8 1JL  
Tel: 0395 45059

## POINTS FOR:

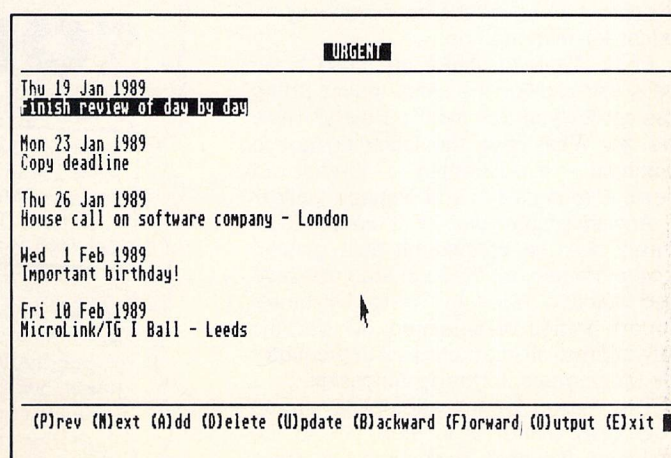
Easy to use. Week and month planner helpful. Can create your own categories.

## AGAINST:

You can't carry the micro and software around in your pocket like a traditional style organiser.



The menu page



Reviewing urgent appointments



# ADVENTURES

Brillig lends a hand in solving problems for fantasy fans

## Dungeon Master is mastered

**B**Y the purple toes of the tulip-eating turnip of Pognobia, do I have great news for the legions of Dungeon Master fans. Those who should be particularly excited include C. Hainsworth of York, Stephen Salt from Newark and I. Conner of Edinburgh, all of whom have written in with pleas for help with this marvellous game.

Thanks to Keith Mason, one of the efficient and ultra-helpful people at Software Express in Birmingham, I've managed to get my paws on a new adventure utility, Dungeon Master Editor. And what a super program it is.

For each of the 14 levels in Dungeon Master this spiffing utility will display a detailed map – which can also be printed out – and let you create new passages, short cuts and so on, remove all secret doors, and best of all alter it so that every door can be opened without a key!

The utility operates only on your saved game files, so there is no risk to the master program. The Dungeon Master Editor was written by Edward Penman, a genius if ever there was one, and is published by Softek.

It comes with a 20 page book of maps, statistics, information, hints and tips on playing, and is immediately available for the bargain price of £9.95 (plus £1 p&p) from Software Express, 212-213 Broad Street, Birmingham B15 2JP. Tel: 021-643 9100.

The utility is absolutely brilliant, so do get it. And don't hang about because very soon now you're going to have your hands full with Dungeon Master II. Edward Penman will no doubt be producing an editor for that one, too.

Right. Time to shake up those brain cells and answer the small teaser Brillig has set for you this month. Ready? Here we go. What have the following got in common – a policeman, a 40-year-old nerd, a young slave and a space janitor?

Any adventurer worthy of the title must surely see the connection at a glance. Yes, of course, all these characters have had starring roles in Sierra On-Line's superb series of animated 3D graphic adventures, all marketed in this country by Mediagenic, formerly Activision.

The reason for my attempt to stir up your grey matter is to alert you to the welcome fact that Sierra has lots more goodies lined up for us this year. As you

no doubt now recall, the policeman was the hero in Police Quest I: In Pursuit of the Death Angel, reviewed in September 1988 issue of *Atari ST User*.

In that game, you played the part of a police officer in a small midwest American town on the track of a vicious drugs-dealer known as the Death Angel. The adventure was realistically based around official police procedures. As a sort of slightly milder version of Dirty Harry, you were transported to a brutal world of vice, drugs and murder.

Very soon you'll be able to return to that world because the Death Angel is back in Police Quest II: The Vengeance. The local jailer has been murdered and your girlfriend has been kidnapped. Guess who's out to avenge his imprisonment?

You'll learn proper homicide investigation procedures, deal with Swat teams,

master the use of weapons, get involved with the coroner's office, become expert at disarming bombs and work with forensic scientists. All part of the job. And this sequel takes you to places where the original didn't – such as up in the sky and underwater. A policeman's life may be dangerous, but it sure isn't dull. Watch out for a full review soon.

The middleaged nerd referred to earlier was none other than our old mate Leisure Suit Larry who's ill-starred efforts to get himself wed were related in The Land of The Lounge Lizards – reviewed in our March 1988 issue. The would-be swinger's donned his drip dry suit again, put on his shades and is on the loose in Leisure Suit Larry II: Looking For Love (In Several Wrong Places).

In this latest instalment of his amorous adventures, Larry gets lucky and wins the

## Swords and sorcery

Program: *Times of Lore*  
Price: £24.95  
Supplier: Microprose, 2 Market Place,  
Tetbury, Gloucestershire GL8 8DA.  
Tel: 0666 54326

**T**HIS is another in a long line of animated adventures from Origin. The scenario is pretty well in the traditional swords and sorcery style. You know the sort – good and bold adventurer needed to rescue assailed kingdom from assorted wicked wizards and various nasty influences by duffing up the oppos-

ition and collecting sundry mystical items of power.

A long time ago King Valwyn repulsed the barbarians invading Albareth and then shot off somewhere for a long spot of rest and recuperation. Who knows when he will return? Hope it's soon, because brigands and other lawless folk are now threatening Albareth once more.

While the King's return is expected daily, the good citizens can't afford to take chances and so are on the lookout for a brave adventurer. Said hero or heroine will need to have an eye open for three special artefacts – the Tablet of Truth, the Foretelling Stones and the Medallion of Power.

Times of Lore opens with a clever title page and some well-presented, optional background material with a variety of jingles, before giving you the choice of which of three characters to play – a knight, valkyrie or barbarian.

The playing screen is neatly laid out, the action area taking up the main part with the text output window and command icons panel below it. The game is completely joystick driven – by simply



Lottery – a dream date on a TV show "The Dating Connection" and a dream cruise on the "Lover's Boat". As you'd expect things don't work out quite as our macho man expects.

Larry gets mixed up in espionage and intrigue, tangling with such bizarre groups as the Hairys Krishnas and Dr Notoonyt and the Hechettes on his trail. Can Larry find happiness this time around? I rather doubt it somehow, but at least we'll all have a good laugh seeing him try. Detailed review coming up soon in this column.

King's Quest III: To Heir Is Human – reviewed in the November 1987 issue – was where you played the part of a young male, slave to an evil wizard. The King's Quest series has proved to be extremely popular and there is now a fourth on its way. King's Quest IV.

The Perils of Rosella casts you as a princess and heroine in search of the one item that can save your father from certain death. If you're a widely travelled adventurer, this shouldn't be the first time you've played a female. Infocom's Leather Goddesses of Phobos and Plundered Hearts for instance, featured a heroine in the lead.

Sierra's decision is in line with what seems to be a growing trend to widen the appeal of adventures to both sexes, and that's very good news. I don't see why the enjoyment of an adventure should depend on the sex of the main character.

Plundered Hearts was in fact, all the

more enjoyable because it did have a female lead – and I'm as red-blooded a male as the next man. Best of all, our old space janitor friend, Roger Wilco, is back in a new adventure in the Space Quest series.

Space Quest I: The Sarien Encounter (*Atari ST User* November 1987) and Space Quest II: Vohaul's Revenge (*Atari ST User* September 1988) were very funny fare, and in my opinion the best to come out of the Sierra stable.

Now Space Quest III: The Pirates of Pestulon promises to be even more hilariously entertaining than its forerunners. In it Roger must save the universally-acclaimed software authors (The Two Guys From Andromeda) from a cruel and unusual fate.

He has to penetrate the planet Pestulon, smash his way into the Scumsoft Software Empire and spifflicate the pirates who are imprisoning the famous authors. It's bound to be too good to be missed, so watch these pages for a review soon.

And that's not all. Sierra has two other and rather different 3D animated adventures ready for release – Manhunter: New York and Gold Rush. Manhunter is a futuristic horror-cum-science fiction tale in which you play the part of a spy and assassin. Aliens have taken over the Earth and have recruited you to track, monitor and report on human and subversive activities.

The game is unusual in that it offers you

the choice of taking the side of good or evil and because very little typing is required. There are other innovations such as split screens and movement between first and third person viewpoints, so watch for my review coming up any time now.

Gold Rush is more in the King's Quest tradition and gives you the chance to experience one of the most exciting periods in America's history. You'll have the choice of travelling from any of three different ways from the East coast to the West in the mid 1800s.

You might like to go by ship to Panama and then trek on foot through the steamy jungles of Central America. Or perhaps you'd prefer to travel by stagecoach, canal boat, steamer and wagon train across the America's heartland.

Or how about becoming a sailor and proceeding down the East Coast and around the tip of Cape Horn and back up to California? Gold Rush offers three trips of a lifetime and the opportunity to take part in the greatest race of all time.

I'm afraid there's no room left to deal with your letters this month, except to say that R.G.B. Marshall of Congleton, without a mention of whom this column would now feel sadly incomplete, has finished both Chrono Quest and Fish.

I'll give you lesser mortals a chance to catch up and hold back the Hints and Tips section until next month, when I will give you the benefit of RGB's wisdom on Chrono Quest and a goodly helping of advice on another adventure that has many of you struggling, Corruption.

Until next month, keep your batteries charged and your maps legible!



selecting one of the icons and pressing the fire button that command can be executed. The spacebar acts as a toggle between control of your character in the main area and switching it into a pointer for access to the icons.

The icons are attractively designed and many give rise to sub-menus, the appropriate element of which can be highlighted and executed using the joystick. For instance, the mouth lets you talk to someone nearby, while the eye permits you to examine objects. The pouch icon lists your inventory. Other available commands are get, drop, offer an item, use a potion, spell or other object, and

pause, save or load a game.

Your character in the main area can be moved in any direction, but although the graphics are clean and sharp the scrolling is very slow and jerky. Progress is thus painfully ponderous and coupled with the fact that there is a lack of variety in the huge land that you have to traverse, Times of Lore is far less interesting to play than it might have been.

Conversation can take the form of social chitchat, specific questions from a given list, or inquiries about rumours. Some characters may let you talk about other things, for instance, innkeepers can be asked to supply provisions or bed and

board for the night.

Combat is fairly prevalent, and can be against any one of a number of creatures, human and otherwise. Among the characters taking part are guards, peasants, innkeepers, orcs, rogues, skeletons, ghosts and slime – does nasty things to your sword and dagger.

A burning candle at the bottom right of the screen gives you an indication of your current state of health. Sleep, food and drink will help restore your vitality as will certain potions and other magical items. Treasure, of course, is always there for the taking, and a little spare cash comes in handy for those rainy days.

This is a big adventure for your money, but rather seriously marred by the tediously slow and stiff scrolling and much boring landscape. If you can tolerate these drawbacks you will undoubtedly get a lot of pleasure from playing it.

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



# BACK TO BORODINO

**The first in a series of Battlescapes from Atari is playtested by our commander in the line, Nic Outterside**

**N**APOLÉON's invasion of Russia in 1812 signalled the beginning of the end for a man who threatened to rule the world. It is best remembered for the disastrous French retreat from Moscow, since immortalised by Tchaikovsky's 1812 Overture.

Napoleon failed to bring the Russians to heel in any single battle, and one of the great unanswered questions of history is what would have happened if he had achieved this at the biggest confrontation, the battle of Borodino.

Borodino is about 70 miles west of Moscow, and is where the Russian commander-in-chief, Kutusov, chose to make his stand. It was the last chance of holding out to prevent the fall of Moscow.

September 7, 1812 saw one of the bloodiest battles of all time. Before the battle the Russians had around 120,000 men and 640 pieces of artillery, while Napoleon commanded 131,000 troops and 587 guns.

However, Napoleon had one of his worst off days, and did not plan anything more than a frontal assault. Throughout the battle Kutusov continued with a resolute defence until after receiving reports of more than 40,000 Russian losses he ordered an overnight withdrawal.

Borodino was technically a French victory, but a bloody draw seems a more accurate verdict. The French army was so badly battered that it was unable to readily pursue the retreating Russian army. The rest is history.

**B**ORODINO is the first of a completely new concept in wargaming from Atari. The idea is to recreate what it would be like to be the historic commander of an army. The difference between this and other games is that in Borodino you can only give orders to subordinates – you can't directly move armies, artillery and so on.

You adopt the role of one man – in this instance, Napoleon Bonaparte – and communicate with your subordinates in the same way as your historical counterpart, giving written orders, receiving messages, asking questions and so on.

The rest of the army is played by the computer, so the various parts act on their own initiative and may disobey your orders, instruct their own subordinates and generally take an active and sometimes unpredictable role in the progress of the battle.

As Napoleon you order your corps commanders, who each order around





five or six divisional generals, who in turn order between two and eight regiment colonels. One regiment of infantry, one brigade of cavalry, or one artillery battery – 16 guns with 400 crew – are the smallest fighting units on the battlefield.

Borodino comes on two single sided discs with two wipe-clean full colour maps. One is a simple aerial representation of the battle area while the other contains an overlay of a plan of the historical action.

On loading you see a three dimensional view of the battlefield and are given an on-screen résumé of the events leading up to the battle.

You must then make some important decisions, including whether you wish to play the role of Napoleon or Kutusov, whether you wish to view communications between lesser generals, whether you wish to change historical default orders and so on.

For sheer simplicity it is probably a

wise ploy for all beginners to start by adopting Napoleon's persona and to leave the initial historical orders unaltered.

The battle runs in real time from 6am until 7pm, so takes a whole day or more to complete, depending upon how often you use the built-in save option. Though ponderous, play is never slow nor boring as things are happening all the time, and decisions must be made. Both commanders can give up to eight orders in every 15 minute turn, but just typing X enables you to enter less.

Orders are entered in the form <to who> <order> <nature of order> <place> <duration>, and may take up to three quarters of an hour to be implemented, depending upon the position of your subordinates and speed of dispatch.

The bold graphical representation of the battlefield is necessarily blockish and colourful to represent the thousands of troops involved.

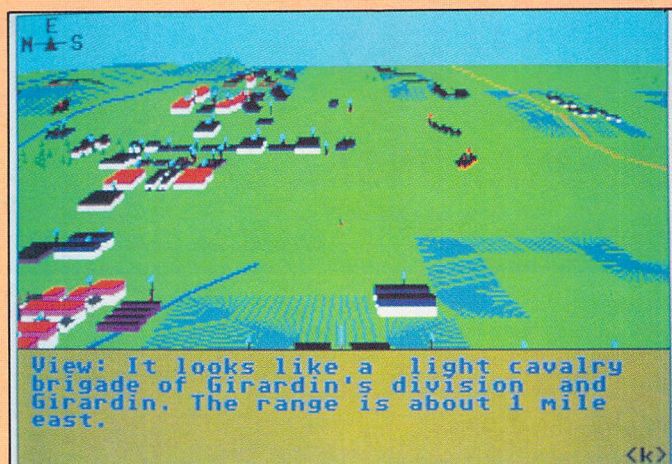
Each division of troops is coloured for quick identification, for example French light infantry are light purple with red hats, while Russian militia are brown with black hats. The respective officers are also individually colour coded.

There are also many terrain features such as houses, hills and pontoons which give the essence of realism to the play. If you wish, you can also opt to see the smoke and blast of your artillery fire, which adds a certain something to the battle.

The further additions of use of a telescope and compass and a score facility help gameplay and are nice touches which work to the game's favour.

The view shown when asked to give orders is always from the commander's position, Napoleon facing east or Kutusov facing west. The total battle area is far larger than the actual on-screen view. So it is possible, depending upon your initial choices, to view the battlefield from one of your subordinates positions, or alternatively to move your own headquarters to a more prominent position.

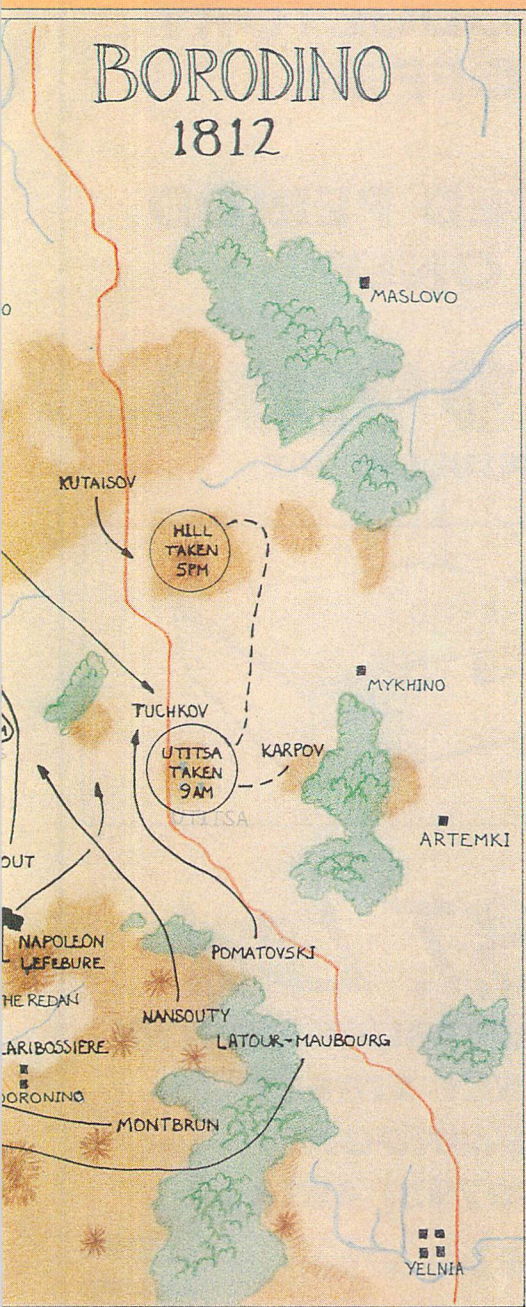
Borodino is interesting from an historical aspect and may give important background detail to GCSE, A level or



Viewing the battlefield



Giving an order to Marshall Ney



degree level modern history courses.

Equally it can be played as a game by the sheer novice, though be warned it could take you quite a few hours to get used to the procedure of the game and the geography of the landscape.

However, the real niche will be found with table top wargamers who now at last have a worthwhile equivalent of their passion for a micro.

Borodino had me transfixed like no other product I have reviewed during the past year. With The Armada and Trafalgar to follow, it looks as though Atari has taken a quality corner of the ST software market by storm.

## FACT FILE

Product: Borodino

Price: £24.95

Supplier: AtariSoft/A1 Distribution, Unit 3-6

Baileygate Industrial Estate, Pontefract, West Yorkshire.

Tel: 0977 797777

## POINTS FOR:

Addictive and high quality product. Well priced with good tutorial backup from an interesting manual.

## AGAINST:

Nothing substantial, but perhaps greater animation and sound content would have added interest.



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DAATAfax is an integrated suite of programs that contains all you need to produce personal organiser pages on your ATARI ST using DAATAfax computer stationery.

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# DAATAscan

DAATAscan is a hand-held scanner for the ATARI ST.

Easy-to-use software is provided incorporating windows, pull down menus and icons which enables an image to be scanned, cropped and printed on an Epson (or compatible) printer before saving to disc.

Images can be scanned from newspapers, photographs, books etc, and then saved in the most popular and widely supported graphics file formats.

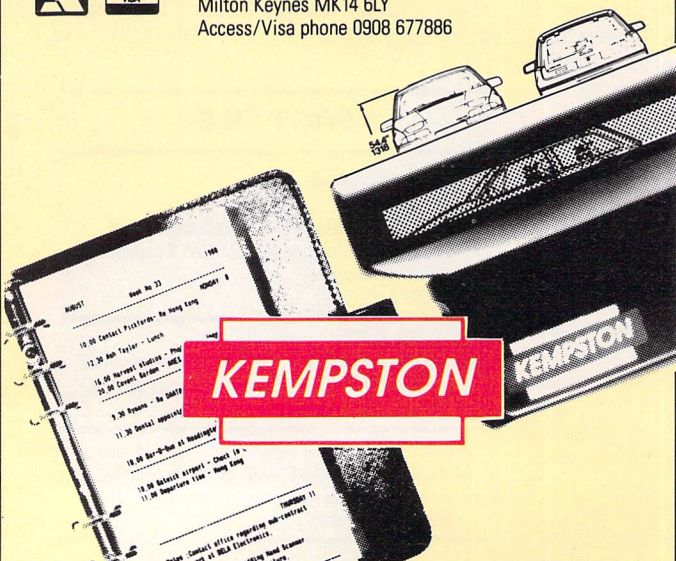
Images produced by DAATAscan can be incorporated into the pages of DAATAfax (computer based personal organiser) and can also be imported into desktop publishing and paint packages.

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Access/Visa phone 0908 677886

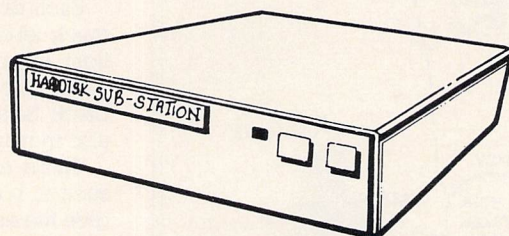


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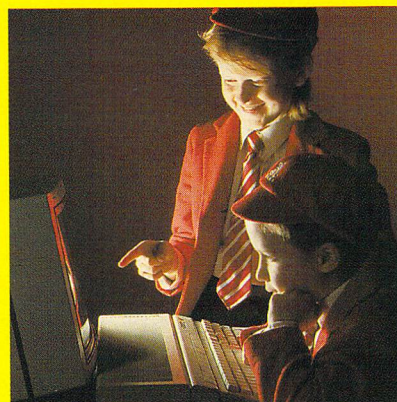




# Guide to educational software for the Atari ST

During the past year the quantity and quality of educational software for the ST has grown almost beyond belief.

We would like to think that *Atari ST User* has played a small part in bringing to your attention the role the ST is playing in British education. Here is the latest guide to what is available.



Key	Product	Price	Age suitability	Comments
<b>Pre-School</b>				
MDL	ABZoo	£14.95	4-6	Alphabet teaching program for very young children.
TEA	Count It	£9.50	3-6	Colourful program written with STOS aimed to teach counting to pre-school and infant children.
DES	Fun School 2, Under 6	£19.95	3-6	An exciting compendium of educational programs for the pre-school child.
MDL	Pre-School KidProgs	£14.95	3-6	Selection of pre-school and infant teaching programs, including keyboard and a drawing utility.
<b>English</b>				
PD	1st Word	N/A	9+	The standard word processor for the ST.
ELE	1st Word Plus	£79.95	11+	The standard commercial word processor for secondary schools.
SST	Alphabet Creator	£9.95	4-13	Tool to create your own words and pictures for use with Spellbook.
BWA	B.Spell	£14.95	4-9	Speech synthesised spelling program for primary children.
BWA	B.Spell Construction Kit	£9.95	4-9	Spelling construction kit for use with B.Spell.
HAT	First Type	£12.95	5-16	Electronic typewriter emulator for schoolchildren.
MIR	Fleet Street Publisher	£125.00	11+	An excellent DTP package for secondary school English departments and school magazine usage.
ARN	Protext	£79.95	13+	The standard commercial command driven word processor, with many applications within secondary school humanities subjects.
SIG	Signum II	£184.00	11+	Superb text processing/DTP type package which will find its true home in secondary school English departments.
SST	Spell Book 4-6	£19.95	4-7	Excellent spelling package for primary children.
SST	Spell Book 7+	£19.95	7-13	Extension of the 4-6 package. Can also be used to consolidate spelling with older remedial children.
SST	Spelling Pack 4-6	£14.95	4-7	Extra spelling discs to use with Spellbook 4-6.
SST	Spelling Pack 7+	£14.95	7-13	Extra spelling discs to use with Spellbook 7+.
LDB	Spell with Oscar	£12.99	5-13	Exciting graphical program to teach spelling using visual bias.
PD	ST Writer	N/A	9+	Command-driven word processor for the ST.
AKM	The Sun Crosswords Vols 1-4	£15.95	9+	Suitable for secondary school English lessons.
SST	Things to do with Words	£19.95	7-13	Superb suite of spelling and reading programs for primary children.
AKM	Times Crosswords Vols 1-3	£16.95	11+	Suite of crossword puzzles from The Times newspaper. Ideal for secondary school English.
AKM	Times Crosswords Jubilee	£16.95	11+	The best of The Times crossword puzzles from 1932 to 1987. Ideal for secondary school English.
ELE	Timeworks DTP	£99.00	11+	The desktop publishing part of the famous Timeworks stable, now available with coursework.
<b>Mathematics</b>				
LDB	Add with Oscar	£12.99	5-13	Mouse-controlled suite of number programs to teach addition, subtraction, multiplication and division.
MDL	Algebra 1	£14.95	11+	Package containing linear equations and written problems for secondary school maths.
KUM	K-Spread	£49.95	13+	Good spreadsheet package for use in secondary school maths and economics.
MOC	Maths 6	£35.95	11+	Assortment of secondary maths programs. Instructions in French, but excellent teaching examples within the programs.

Turn to Page 53 ►



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There are still a couple of pools programs for the Atari ST that guarantee to you performance better than chance (?) or promise to you power? to forecast the pools the way you want. Others are asking you for disk for free demos while weeks are going by and you are missing your chance for a dividend. Nevertheless **POOLS-SYSTEM** still remains the only one in the market that delivers the goods. Lets have a look at some facts. Fact, user friendly and still the only one that does not require you to be some kind of a football expert or hot shot system analyser. Fact, **POOLS-SYSTEM** is the only one that performed even slightly during the difficult & unpredictable Australian season. **Fact, 13/8/88.** 4 ways out of the recommended first 6. 10 homes out of the recommended first 15. 20/8/88, start of the English season, the system trapped 9 out of the 14 score draws & all 4 no score draws. **27/8/88.** 9 out of the 12 score draws & 3 out of the 6 no score draws. 4 homes out of the recommended first 6. **3/9/88.** 6 homes out of the recommended first 7, 4 ways out of the recommended 6. 5 out of the 7 score draws & 2 out of the 3 no score draws. 40 correct results out of the 58 possible. Fact, all forecasted printouts available at any time for any checks. So do not waste your time with any other programs or systems. They are not going to entertain your hopes or wishes. And to top all the facts, we guarantee that **POOLS-SYSTEM** performs better than any other pools program in the market on any computer, because we guarantee to you that using the **POOLSBUSTER** in cooperation with **POOLSPLANNER** you are going to win the pools more than once a year. **STOP PRESS!! what does the customer say:** "I was very impressed with the general standard of the programs & their ease of use. I had a look around the program & worked out how to input the data without the use of the manual, which shows just how good the program structure is set out. To get to the point. The very first entry I did came up trumps with 2 lines of 211/2 points. It bought me a win of **£11.80.** Not bad for a first attempt. Thanks for an amazing program. **Regards P.J.L.-Solihull.** (Name & address with held for obvious reasons.)

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Key	Product	Price	Age suitability	Comments
<b>◀ From Page 51</b>				
SCP	ST Accounts	£150.00	13+	Accounts package for use in GCSE economics.
HAB	ST Financial	£39.95	13+	Budget-priced accounts package for GCSE economics.
MIK	Tables Test	£9.95	5-13	Program to test and consolidate multiplication and division.
SST	Things to do with Numbers	£19.95	7-13	Selection of maths programs for primary aged children.
<b>Art and design</b>				
SIL	A Magic Turbo Digitiser	£149.95	11+	Popular digitiser used in many secondary school art and design departments.
EID	Campus CAD	£395.00	11+	Excellent computer aided design package for CDT departments in secondary schools. 1040ST and double-sided drive essential.
ELE	Cyber Paint	£69.95	9+	Superb painting package with marvellous animation facility for secondary art and design.
ELE	Cyber Studio	£79.95	13+	Superb design package for use in secondary CDT departments.
ELA	Degas Elite	£24.95	9+	A superb art package for use in middle and secondary school art and design.
ELE	Easy Draw 2	£59.95	11+	Good drawing and art package.
HAT	First Paint	£12.95	5-13	First painting package for primary and middle school children.
AMS	Flair Paint	£34.95	11+	Latest art package for the ST with versatile extensions for secondary school art and design.
SHA	Grafix	£16.50	9+	Budget priced drawing package for middle and secondary school art and design.
EID	Graphics Tablet	£299.00	11+	Well-priced graphics tablet for art and CDT use.
LDB	IMG Scan	£99.99	11+	Bargain-priced scanner ideal for use in secondary school art and design.
PD	Neochrome	N/A	9+	Standard art package for use in art and design lessons.
ABA	Paint Pro	£49.95	11+	Versatile paint package for secondary school art departments.
EID	Quantum Paint	£24.95	9+	Lovely bargain-priced art package for use in secondary school art and design.
ELE	Spectrum 512	£59.95	9+	Colourful art package for middle and secondary school art and design.
HAT	Sprinter	£19.95	9-18	Replication and design tool for use in silk screen printing. Especially useful at GCSE level art.
HAT	Stage Two	£19.95	7+	The next stage after First Paint, includes digitiser input option.
<b>Music</b>				
SYN	EZ-Score Plus	£129.95	11+	Score writing utility for secondary music departments.
SYN	EZ-Track Plus	£59.95	11+	Bargain-priced track mixing software.
EVE	Masterscore	£325.00	13+	Expensive but excellent score writing utility for secondary school music.
LDB	Midi Studio	£99.99	11+	Bargain-priced Midi sequencer. Ideal for secondary school music departments.
ELA	Music Construction Set	£24.95	11+	Budget music construction set which uses the ST's sound chip.
EVE	Musi-cal	£113.85	13+	New GCSE music syllabus package for the ST.
EVE	Musigraph	£150.00	11+	An excellent score printing/writing facility for secondary school music departments.
EVE	Pro-24E	£172.50	11+	The educational adaptation of the Midi sequencer for the ST; course work available.
EVE	The Twelve	£129.00	11+	Cut-down version of Pro-24 for use in education.
<b>Miscellaneous</b>				
BWA	B.Base 2	£14.95	9-18	Simple datacard program to introduce secondary pupils to data-basing.
SIL	Data Manager	£74.95	11+	Competitively-priced database program, ideal for secondary school usage.
SIL	Donald Duck's Playground	£39.95	5-13	Selection of educational programs for the primary and middle school child.
DES	Fun School 2, 6-8	£19.95	6-8	Exciting compendium of educational programs for the primary aged child.
DES	Fun School 2 Over 8	£19.95	8+	Exciting compendium of educational programs for the older primary aged child.
MDL	Invasion	£14.95	7+	Program to help with basic typing, spelling and maths skills.
KUM	K-Data	£49.95	11+	Budget-priced database program, ideal for secondary school usage.
SIL	Maps and Legends	£39.95	7-14	Beautiful program aimed at the humanities aspect of learning.
SIL	Master Type	£39.95	9-16	Useful typing tutor/utility for middle and secondary children.
MDL	Perfect Match	£9.95	7+	Selection of multiple choice questions, with emphasis on matching with answers. Can be used as a shell for own questions and answers.
PRO	Robokit	£79.00	7+	Robotics interface package for all ages. Allows linkage to Technic Lego models.
CAT	Star Struck	£19.00	13+	Astrology program for secondary school science.

Turn to Page 54 ►



**Names, addresses and phone numbers of suppliers:**

Key code	Name, address and phone number.
AKM	Akom, 51 Manor Lane, London SE13 5QW. Tel: 01-852 4575
AMS	AMS, 166-170 Wilderspool Causeway, Warrington WO4 6QA. Tel: 0925 413501
ARN	Arnor, Protext House, Wainman Road, Peterborough PE2 OBU. Tel: 0733 239011
BIT	Bit by Bit Software, 13 Spencer Street, Lincoln LN5 8JH.
BWA	B.Ware Software, 19 Southfield Road, Hinckley, Leicestershire LE10 1OA. Tel: 0455 613377
DES	Database Educational Software, Europa House, Adlington Park, Macclesfield SK10 4NP. Tel: 0625 878888
EID	Eidersoft, Unit 4, Stannets, Laindon North Trading Centre, Basildon, Essex SS15 6DJ. Tel: 0268 541212
ELA	Electronic Arts, Langley Business Centre, 41-49 Station Rd, Langley, Berkshire SL3 8YN. Tel: 0753 49442
ELE	Electric Distribution, Meadow Lane, St Ives, Huntingdon, Cambridgeshire PE17 4LG.
EVE	Evenlode Soundworks, The Studio, Church Street, Stonesfield, Oxfordshire. Tel: 0993 89228
HAB	Haba, Pier Road, North Feltham Trading Estate, Middlesex TW14 OTT. Tel: 01-844 1202
HAT	HAT Software, 21 Wyle Cop, Shrewsbury, Salop. Tel: 0743 231763
LDB	Ladbroke Computing International, 33 Ormskirk Road, Preston, Lancashire PR1 2QP. Tel: 0772 203166
KUM	Kuma, 12 Horseshoe Park, Pangbourne, Berkshire RG8 7JW. Tel: 07357 4335
MDL	Microdeal, 41 Truro Road, St Austell, Cornwall PL25 5JE. Tel: 0726 68020
MIK	Miked, 6 Devonshire House, Union House, Union Street, Plymouth PL1 3HE. Tel: 0752 671464
MIR	Mirrorsoft, Athena House, 66-73 Shoe Lane, London EC4P 4AB. Tel: 01-377 4645
PRE	Precision, 6 Park Terrace, Worcester Park, Surrey K74 7JZ. Tel: 01-330 7166
SCP	Silicon Chip, 82 London Road, Kingston upon Thames, Surrey 01-549 6657
SHA	Shacksoft, Bath Computer Shack, 8E Chelsea Road, Lower Weston, Avon. Tel: 0225 310300
SIG	Signa Publishing Systems, Trevenen House, Cricket Hill Lane, Yately, Surrey GU17 7BA. Tel: 0253 874406
SIL	Silica Shop, 1-4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX. Tel: 01-309 1111
SYN	Syndromic Music, 24-26 Avenue Mews, London N10 3NP. Tel: 01-444 9126
SST	Softstuff, 193 Sketchley Road, Burbage, Leicestershire LE10 2DY. Tel: 0455 617426
TEA	Teach Software, 31 Harrison Close, Northwood, Middlesex HA6 2PN.
PD	Public Domain software.

*If you know of any piece of educational software for the ST which we have omitted from this list, please let us have the title, price and supplier, so we can include it next time.*



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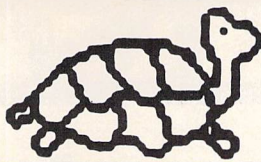
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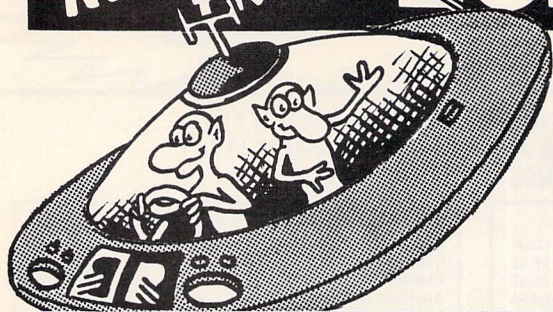
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**W**HEN looking at a sheaf of computer printout – be it program, document or letter – it is often useful to know exactly when it was printed. Is it up to date? Which of two versions is the latest?

Some good word processors will allow you to date stamp a printout, but 1st Word, probably the most common word processor for the ST, has no such facility. The small memory resident program presented here – When – repairs the omission.

Once loaded it examines all characters which are output from any program using the Bios Bconout function, and replaces either of its two special trigger characters with the current time in the form 10:32am, or date in the form Monday 9th January 1989.

All programs which send output to the printer use this Bconout function, as do a few – mainly non-Gem – programs which write to the screen. Most Gem-based programs use VDI calls to write to the screen, and these are not intercepted by When. 1st Word's screen display will not be affected, but its printout will be.

### Trigger characters

There are two trigger characters, one for the time and one for the date. These should be set to characters which are never needed, because while When is enabled it is not possible to print them. The two characters are defined at the start of the program as *TCHAR* and *DCHAR*.

Their initial values are \$FE (254) for the time and \$FF (255) for the date. Either could be changed to any number in the range 0 to 255, but silly values will produce silly output.

The first step in using When is to install it, carried out simply by running it. Put it in the Auto folder on your boot disc and then forget about it.

Using the utility is then simply a matter of inserting its trigger characters in your output. With 1st Word this is very easy to do using the Ascii table that is always on its desktop. Move the cursor to the correct position in the text and click on the last two characters in the table with Ascii codes 254 and 255.

Note that 1st Word doesn't know that the translation is going to take place, so if you put trigger characters into justified text you will get a ragged right margin. You must also ensure your 1ST\_PRNT.DOT or 1ST\_PRNT.DSY translation file is configured to allow the trigger characters to pass through unaltered – it may strip them out.

If you want to use When to put the time or date into output from your programs you have to insert the trigger characters into a string. In assembler this is trivial. In C it can be done using a backslash like "The date today is \377.\n".

**November**

16	<div style="font-size: 2em; font-weight: bold; text-align: center;">Make a date with your ST</div>	Monday Week 47
17	Tuesday	Tuesday
18	Wednesday	Wednesday
19	Thursday	Thursday

Jeremy Roussak adds a  
time and date facility  
to printouts with some  
clever machine code

### Problems

When is designed to work with most programs. However, three types of software may cause problems. One will break the trigger character down into a pattern of dots and send that pattern to the printer rather than sending the character itself. An obvious example of this kind of program is Signum.

Because When takes over the Trap #3 vector to allow an easy way of enabling and disabling it, other programs which

themselves use the Trap #3 vector will not work. However, I am not aware of any such programs.

Clever interrupt-driven print spoolers which intercept Bios traps themselves and then do not use Bconout to send characters to the printer will only work with When if they are installed after it.

If When is active when a graphics program is running it might intercept trigger characters which were meant to be interpreted as graphics characters by the printer and chaos would result.

To avoid this the program Toggle is provided. It disables When if it was enabled, or enables it if it was disabled, and prints a message telling you what the state of play is. While When is disabled it passes all characters straight through itself and so is totally transparent.

### How it works

When works by making itself resident in memory and installing itself in the Bios trap vector so that all Bios calls are intercepted. In addition, it commandeers the Trap #3 vector to allow instructions to enable or disable itself.

To find the time and date it calls the XBios trap routine with function code \$17 – Gettime. When can't use the Gemdos codes \$2A (Tgetdate) and \$2C (Tgettime) because it might have been called from inside Gem.

It is therefore vital that whichever program is used to set up the time and date uses the XBios \$16 – Settime – function as well as the Gemdos ones. Most utilities I have seen will do this. Certainly the Control Panel desk accessory works fine.

Once started When simply takes over the two vectors it requires, calculates the amount of memory needed for itself – just over 1k, in fact – and exits using the terminate and stay resident Gemdos function.

The Trap #3 handler loads the current state of the activity flag into D0.W, toggles

**Turn to Page 58 ►**

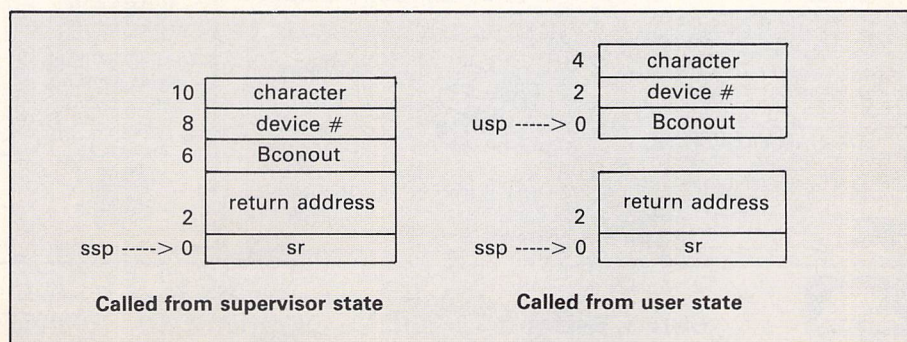


Figure 1: State of the stack pointers on entry to a trap routine. If the call was from supervisor state, both the return parameters and the arguments are on the supervisor stack. If the call was from user state, the return parameters are on the supervisor stack, but the arguments are on the user stack



## ◀ From Page 57

it and returns. The value reflects the previous state of When. A value of zero means that When was inactive, but is now active, and a value of -1 means that it was active before the trap but is now disabled.

The Trap #13 handler is the real body of When. It first tests the activity flag and exits into the original Bios routine if appropriate. Otherwise it gets the address of the Bios argument list into register A0.

If the trap took place from supervisor mode both the argument list, return address and status register will be on the supervisor stack, with the argument list beginning at offset six.

If the trap was from user mode the argument list will be on the user stack pointed to directly by the user stack pointer, and the return address plus status register on the system stack.

When then checks that the call is a Bconout function and that the character is one of the two triggers, exiting into the original Bios vector if this is not the case. The variable *tdflag* is set to \$FF if the time is required and to \$00 if the date is needed. If the trigger character is found

some registers are saved and *get\_td* and *show\_td* are called.

The former routine calls the Xbios directly, simulating a trap by putting the return address and status register onto the stack before jumping into the Xbios - it's quicker that way. It then dissects the time or the date (depending on the value of *tdflag*) into the appropriate variables. Hours greater than 12 are converted into the range one to 12 and an am/pm indicator is set accordingly.

The day of the week is calculated using the formula:

$$\text{dofw} = \left( \left( 2.6m - 0.2 \right) + d + y + \left\lfloor \frac{y}{4} \right\rfloor + c + \left\lfloor \frac{c}{4} \right\rfloor \right) \bmod 7$$

where *dofw* is the day of the week (zero is Saturday, one is Sunday and so on), *m* is the month (January and February are months 11 and 12 of the preceding year), *d* is the date in the month, *y* is the year in the century and *c* is the century (assumed to be 19).

The values stored by *get\_td* for the day of the week and the month are in fact, pointers to the name of the day and week. The *show\_td* routine just prints the values found by *get\_td*. It uses the original Bios vector to print each character, with the same device number as was originally passed to Trap #13.

Two versions of When and Toggle are provided. Programs I and II are written in assembly language and can be assembled with Devpac. The files should be given a TOS file extension. Programs III and IV are written in ST Basic (suitable for both old and new versions). Load ST Basic, then load and run each program to create WHEN.TOS and TOGGLE.TOS on disc.

Once the utilities have been created they should be double clicked on from the desktop.

## PROGRAM I

\* When  
\* By Jeremy Roussak  
\* (c) Atari ST User

```
TCHAR equ $fe ;time trigger char
DCHAR equ $ff ;date trigger char
GEMDOS equ 1 ;GEMDOS trap
TGETDATE equ $2a ;Tgetdate()
TGETTIME equ $2c ;Tgettime()
PTRES equ $31 ;Ptermres()
T3NUM equ 35 ;trap #3 vector
BIOS equ 13 ;BIOS trap number
```

Turn to Page 109 ▶

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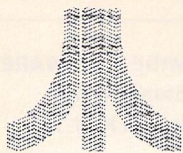
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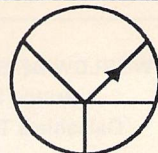
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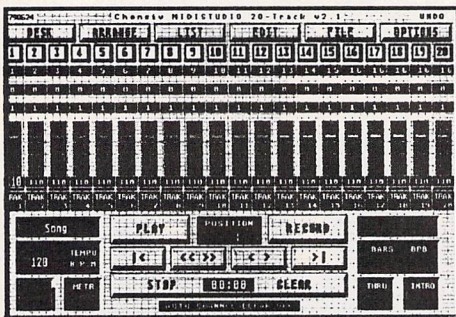
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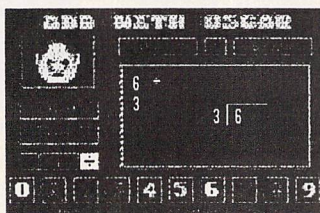
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*Atari ST User Jan 89*

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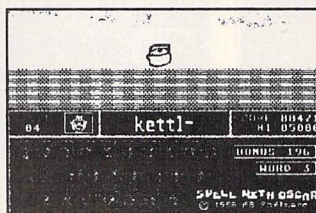
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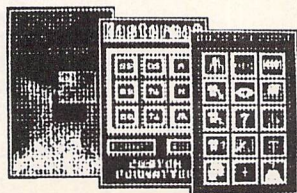


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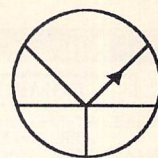
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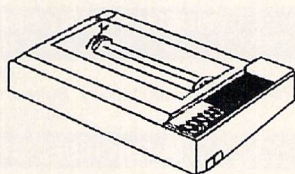
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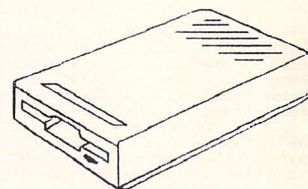


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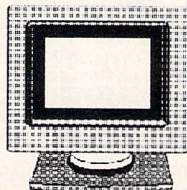
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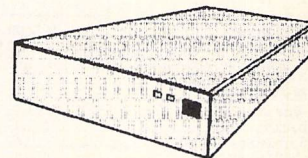
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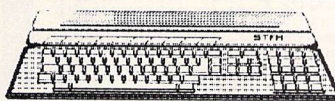
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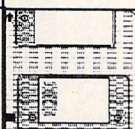
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**H**AVE you ever had problems trying to sort out your bank statement, and after hours of head-scratching you're still wondering why your figures fail to agree with the bank's? If so, and I suspect that most of us meet this problem from time to time, then help is at hand.

Microdeal's latest release in its increasing range of useful application programs, Personal Finance Manager (PFM), doesn't pretend to be a full-fledged accounting package. Instead, it is a user-friendly specialised database intended to provide a range of information, including statistical, about your bank account.

As such it is equally useful for keeping track of home and business accounts,

a file or save the current one. You are also offered the option to quit. Selecting this last option a dialogue box will warn you if you have made alterations to the current file and offers you the choice of either returning to the program or to quit regardless.

Update accesses the system's record input control options. From here you can choose to input new entries, edit or delete existing ones, clear all deferred entries, force the program to perform an auto-balance and alter the ST's date.

The Options menu allows you to change your file's maximum number of entries, re-define the print options, specify your budget details and account

account file, but may be decreased only down to the number of actual entries. They can be increased up to the memory limit of your micro at any time.

Once you reach the maximum number of standing order entries your system has been set for, you will not be able to input any more. Account transactions exceeding your specified upper limit however, are treated differently. If you have set the file for a maximum of 100 account entries, after you have entered your 101st entry you will find that the starting balance and the second entry have been added together.

# Balancing act

however large or small.

Typical applications for PFM include savings, credit card and current accounts. In addition to the normal range of account information, you are provided with facilities to produce reports which can include specific entries of interest in either alphanumeric or graphical format.

On start-up you are asked to input the current date which is used for processing standing orders or other regularly recurring transactions. The next option presented is a dialogue box for selecting an account name. If you are starting a new account you can either accept the system's default filename or input your own.

PFM's normal display is like a standard bank statement, with five of six possible columns representing information for each transaction. From left to right, screen information includes transaction date, item description or reference, a column each for debit or credit, a budget code and the balance remaining after calculating the current entry.

## Gem-based menus

Personal Finance Manager uses a standard Gem menu bar to provide access to the option menus for File, Update, Report and system Options. File allows you to open

**A new utility package to help manage your finances is put through its paces by Ron Massey**

filter, select graph dates and change the date format.

When setting up a new account you can specify several file structure options for your records. The first of these, system defaults, allows you to pre-define the size of your database. PFM defaults to maximums of 200 account entries and 50 standing orders.

These two parameters may be altered after you have established a working

Adding new entries to the end of the file causes the system to add the starting balance to successive following entries, thus maintaining correct balances throughout the file and deleting information regarding earlier entries. In this way you can maintain an on-going record of current account information with the system automatically discarding the older records.

Up to 10 budget categories can be defined for use with account entries, and can be specified for purposes of monthly, quarterly or annual accounting. You also have the option of toggling each debit entry off and on, and the latter will integrate them into PFM's two graphic displays and one of its tables.

## Checking expenditure

When comparing your budget to actual expenditure, calculations are based on a comparison of the budget period to the actual period. For this reason, the actual amounts may not always agree with the budget figures, so PFM includes two powerful accounting options.

It is a customary convention to tick cheques off which have been cleared by the bank. It is a very rare event to find that bank statements include all cheques written on an account. For this reason, PFM allows you to defer individual entries without deleting them.

Deferred entries are displayed as shaded and don't affect the following balances until reinstated by either clicking on

**Turn to Page 64 ►**





### ◀ From Page 63

Clear all Defers or by Checking them. This updates all subsequent balances.

You can also reconcile your current account by asking PFM to calculate an auto balance. Clicking on this option from the Update menu bar, you are asked to input the target date, amount – that is, the date of your statement and its reported balance – and the scope of the match.

The latter option defaults to 14 entries, which should be adequate for the majority of accounts, but can be altered as required. The value of the scope figure determines the number of entries to be juggled, starting at the target date and working backwards.

A limitation of this option is that an increase by a value of one will double the time taken to perform the auto balance function.

Another point that users should be aware of is that this facility always defers entries after the target date but will also attempt to defer entries prior to the target date in an attempt to reconcile the bank's balance with your own calculations.

### Report options

The limitation of the auto balance facility is that if you have two or more entries of the same value, there is no way for the system to be able to ascertain which of them should be deferred and selection will be made on the first entry encountered satisfying the calculation criteria.

If PFM reports a failure to reconcile the balance asked for, you will probably find that you are missing one or more transactions.

Clicking on the Report menu enables you to go to a specified date, transfer selected parts of your file into the system's buffer or select how you want your file presented. Although you will normally be working with the statement sheet, you can also have your file displayed as a pie chart, budget-to-actual expenditure bar chart or a balance plot graph.

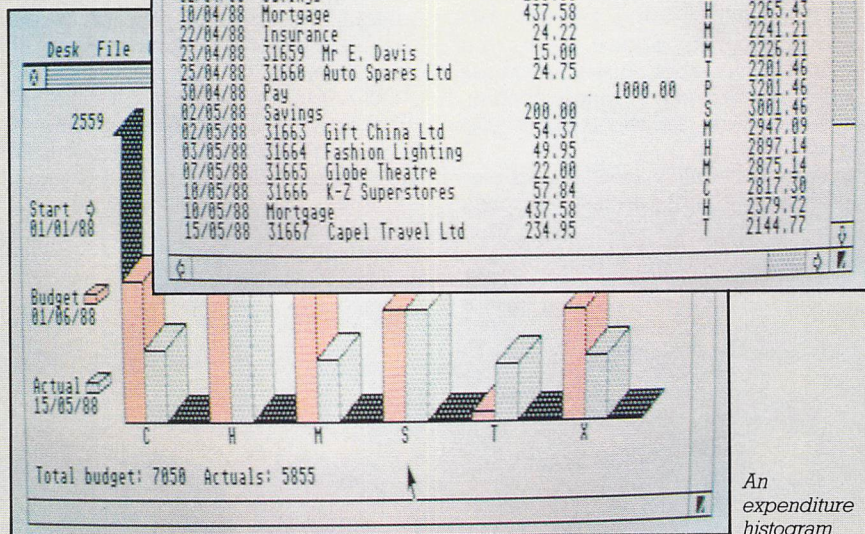
PFM's pie chart can display expenditure distribution of any or all of your budget categories within any specified period of your account. The balance plot displays the positive and negative balances of the current account, with the starting and terminating date of the period being examined.

If you are interested in the visual effects of a developing accounts file, you can display up to four on the screen displays at one time.

Program output normally defaults to the screen, but hardcopy may be produced for an entire file or be confined to set groups of entries specified by selecting a range of budget codes. Hardcopy can be further selective by defining a starting and terminating date.

Choosing Print Options from the Options menu you can select a number of

Checking  
your  
bank balance



parameters for both printer control and entry filtering. Printer options include a choice between fan fold or single sheet feed paper which can be paged or unpagged, you can set the number of lines per page and define your printer's initialisation codes.

You can also choose to print an account and/or standing orders for either the entire account or entries within a specified range of dates. Once initiated, printing may be aborted by pressing a key.

### Conclusion

I liked Personal Finance Manager very much. It is a genuinely useful tool which is also very well presented. Perhaps more to the point, PFM is one of those rare programs with which it is easy to feel comfortable from the first time you run it.

You would have to look very hard to find faults. Even so, the few which occurred to me were limited to possible minor refinements. I would have liked to see a provision for saving altered printer options for future use. Any settings must be defined each time you use the program.

Another minor refinement which could prove useful is that if you are using the

program with a colour monitor (the program works in either medium resolution colour or with monochrome monitors), overdrawn balances would have more impact if they were displayed in red.

I especially liked the information provided by the range of graphic displays. The trend of an account is quite often more easily appreciated by graphic means than it is in a conventional display.

Surprisingly, PFM is not provided with any means of dumping the graphic displays or any of its information tables. However, it you can always use a separate snapshot utility or Alternate+Help to print a graphic screen.

Nitpicking aside, PFM will undoubtedly be a valuable addition to anyone's library of programs. Although provided with many of the features available in full accounting systems, Personal Finance Manager is easy to use. Overall, I would give full marks for a very handy, easy-to-use package.

### FACT FILE

Product: Personal Finance Manager

Price: £29.95

Supplier: Microdeal, PO Box 68, St Austell, Cornwall PL25 4YB.

Tel: 0726 68020

#### POINTS FOR:

Easy to use. Good graphical display of account and budget details.

#### AGAINST:

Very difficult to find fault with. A little expensive for such a simple utility





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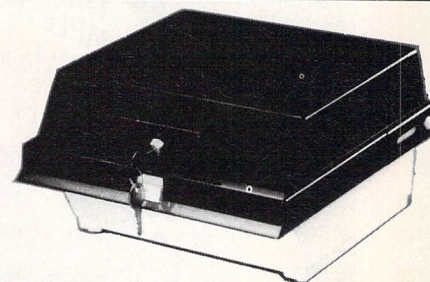
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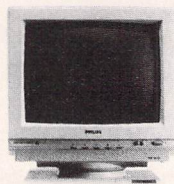
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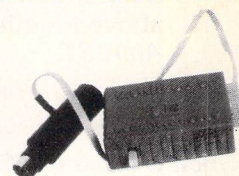
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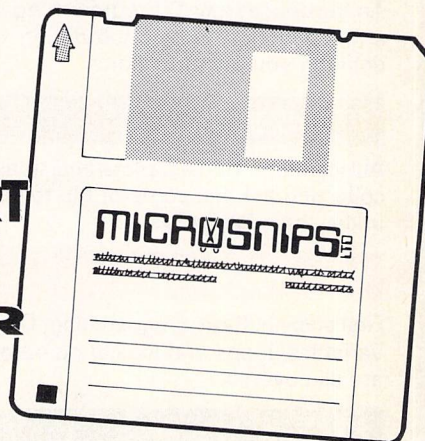
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Creating emotional feelings in your ST generated graphics

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#### COMING NEXT MONTH

- Examining the emotional response to colour
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**Please turn to the order form on Page 133**



## Psychology

### of colours

UNDERSTANDING the emotional play of the colours in the ST's wide ranging palette allows you to be in full control of your picture. The emotionality of colour is a fascinating subject.

As a discrete user of colour, the knowledge of how to elicit certain mood responses to your computer artwork can add another dimension, or extra emotional depth, to your picture. It's very easy to create any mood you desire which means you can actually influence the viewer to respond exactly the way you want him to respond.

Red is considered to be the psychologically dominant warm colour, while blue is the dominant cool colour. Red symbolises fire and heat, while blue is the symbol of water, ice, sky and coolness. Therefore the more red a colour contains the warmer the colour will be and the more blue it contains the cooler it will be.

Yellow is considered a warming colour when added to others. It also lightens colours as it is the lightest tone on the wheel we looked at earlier.

When using yellow – a mixture of red and green – as a warming colour

IT is well known that certain colours can create specific moods and bring forth emotional responses. This knowledge is used to advantage in designing hospital rooms, industrial work areas and especially in advertising. In the last area colour is used to entice you to buy a product by portraying a mood or symbol that you can identify and associate yourself with.

it's generally thought of as sunlight, and some yellows on the warm side of the wheel (more red than green), do actually appear to enhance the temperature of the colour to which it is added. A cool yellow (more green than red) will lighten a cool colour rather than warm it.

In creating a landscape on your ST with say, Degas Elite, morning colours are usually cooler than midday and afternoon ones. Late afternoon colours are not only warmer than at any other time of the day, but also can be used to create very dramatic effects.

Early morning colours are cool, crisp and fresh. The sky is more pastel and cooler than the afternoon or evening sky. Each season also has its predominant colours.

## Playing

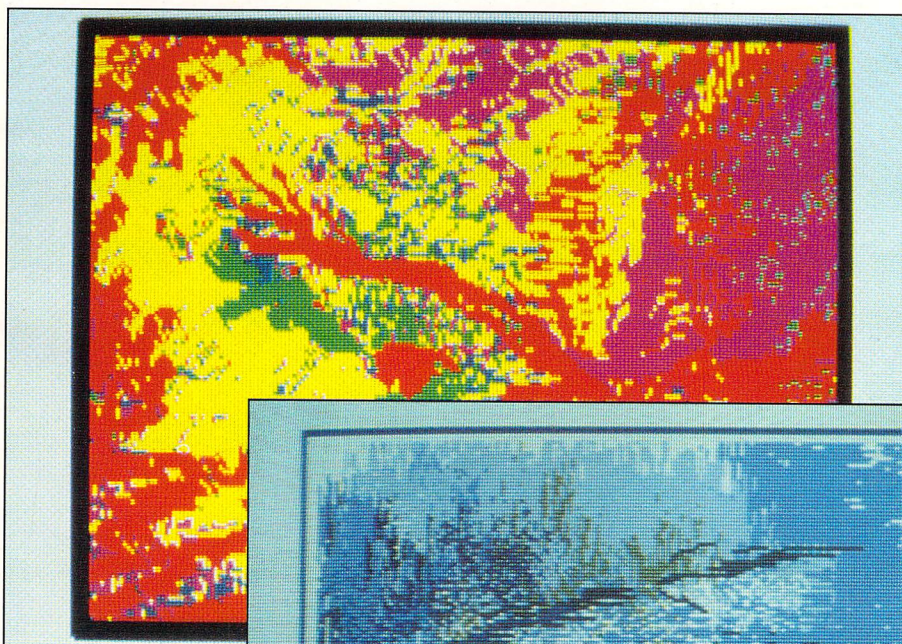
### with colour

BY painting the same scene, but altering your colour selection by changing the on-screen palette, you can produce quite different pictures. This is done by the emotional play of the colours themselves.

If you have not tried doing this type of colour substitution in your pictures, have a go at it – it's such an easy task on a micro like the ST. You could be very surprised by some of the results, especially when you start incorporating such things as symbolic and traditional motifs into your work, and combining that with unexpected use of colour.

Expressionistic artwork relies very heavily on colour. Here it plays a dominant role, all other aspects of the picture being subordinate to it. Line, composition, rhythm, realism and so on all play a secondary and minor role to the visual and emotional response to colour itself.

Using the information in the panel as a base on which to build you could portray the following types of feeling by selecting your art package's colour palette accordingly. Take a look at the



*Bright, pure complementary colours are loud and unsettling. Try combining these with strong diagonal lines or short, sharp contrasts*



*Use lightened colours from the cool side of the colour wheel to create a feeling of cool softness. Combine these with thin horizontal lines*



accompanying pictures produced on the ST using Degas Elite, and then try creating your own examples.

When using these guidelines the colours do not have to be pure ones. Yellow itself is a warm sunlit colour, red conveys the feeling of heat, danger or excitement.

The heat of the red can be brought to a climatic crescendo by adding a small amount of yellow – raise the green slider on the palette selector and make sure that there is no blue present. Only a small amount of yellow is required for this – too much and you end up with an orange which does not have the same intensity of either the red or the yellow.

By greying a colour you introduce a quieter mood and, depending on the degree, somberness and discomfort. The aim of the exercise is for you to take a dominant colour and slightly change it by adding another colour to it.

Instead of mixing complementary colours to grey them, try mixing them optically by placing them side by side. Your eye will try to combine them to produce a grey, but because it cannot do so each colour will appear to become brighter and more vibrant.

The effect will be even more pronounced as the colours move optically from coloured neutrals – unequal complementaries, one weaker than the other – to grey complementaries equal in intensity.

Your eye becomes stimulated as any two colours approach a complementary relationship and this can be used to advantage to produce all types of effects, including very dramatic ones.

For maximum contrast, complementary colours should be in the same temperature scale, therefore use warm colours to warm and cool colours to cool. For instance, a warm blue – blue with some red in it – against a warm orange, or a cool yellow – yellow with a green tinge – opposite a cool pink, violet and so on.

## Planning

## your picture

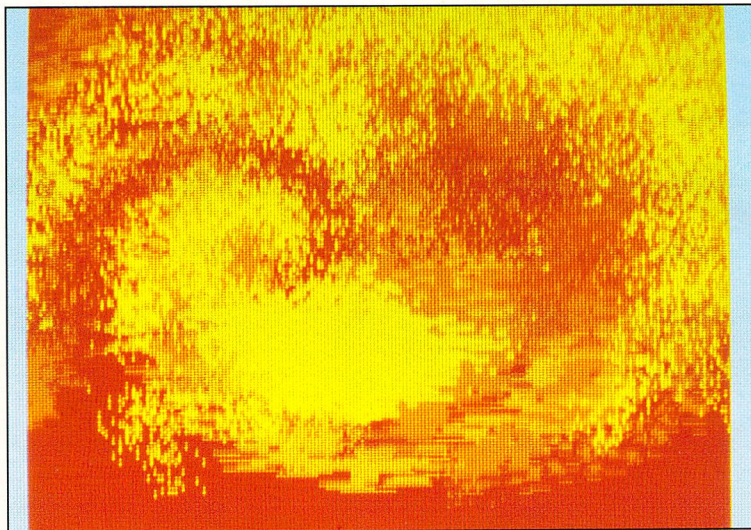
YOU should first choose your subject matter, then select the mood you want to portray. This in turn will help you to select the correct palette from the ST's 512 available colours. Skilful use of colour will add subtlety, interest and life to your picture and is very often the difference between success and failure.

After choosing your subject, colour and mood, test your palette selection in a series of mini sketches. In each one make minor adjustments to see if you can get a better combination of factors to finally produce the exact result you planned on.

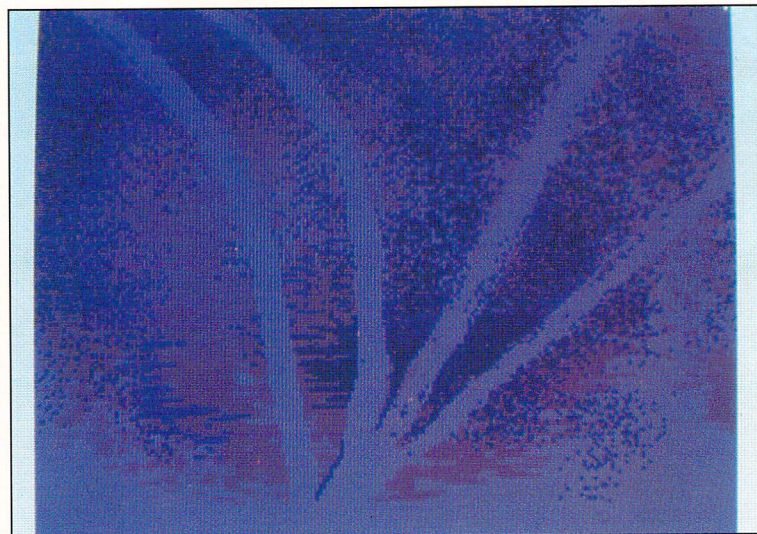
When you've got it right you'll know. There will be no doubt about it, as all the factors within the picture will convey the same meaning. There will be a feeling of completeness to it

## Emotional responses to colour

<b>Yellow</b>	Sunlight, warmth, happiness, comfort
<b>Orange</b>	Light, warmth, happiness, comfort
<b>Red</b>	Fire, heat, excitement, danger
<b>Red/purple</b>	Darkness, intrigue, night, uneasiness
<b>Purple</b>	Darkness, intrigue, night
<b>Blue/purple</b>	Darkness, uneasiness, intrigue, night
<b>Blue</b>	Water, ice, coolness, calmness, moonlight, sky, distance
<b>Blue/green</b>	Water, cool serenity, airiness, distance
<b>Green</b>	Foliage, nature, calming, quietness, coolness
<b>Yellow/green</b>	Sunlight, richness, happiness



*Use yellows and yellow oranges to create light and warmth*



*Purples and blues produce a mystical or mysterious mood*

regardless of whether it is a soft sentimental piece or a strong emotional statement. All will be in harmony.

## Last, but

## not least

A FINAL point that should be mentioned is that the border colour of your picture around the edge of the monitor screen is very important.

When your work is viewed it is seen together with the border or background colour. This should be treated as an integral part of your picture.

As you have already seen, colours change depending on what is next to them or surrounds them. Your picture is surrounded by the border colour and as such it has a significant influence on the picture as a whole.

To test this, take one of your pictures in which you have not used the background colour within the picture itself and change the border colour. Look at the effect it has on the picture.



## Wiping windows

**W**HEN we have finished with our window we will ultimately wish to wipe it from the ST's memory. The AES provides us with two useful functions for this purpose – *wind\_close* erases the window from the screen. It can be subsequently redisplayed at any time using a single call to the *wind\_open* function.

Another important command is *wind\_delete* which deletes a window definition completely. One side effect is to

release the old window handle for future use. You should always remember to call *wind\_close* before using *wind\_delete*. The format of these two instructions is identical:

```
r=wind_close(whandle)
r=wind_delete(whandle)
```

In both cases *r* will be set to zero if an error has occurred.

## Clipping output

**A**RATHER better idea is to assume that every window contains just the visible portion of a larger "virtual" screen. You can implement this approach by simply clipping away the parts of your image which lie outside the current window before they are drawn. The VDI provides a useful *vs\_clip* command for this purpose which limits the action of the VDI's drawing operations to a specific region of the screen. The format is:

```
vs_clip(handle,flag,coord);
```

The *handle* parameter is the standard screen handle used by the VDI. Don't confuse this with the window handle returned by the *wind\_create* function. The *flag* parameter is used to control the action of the *vs\_clip* function. A value of one at this position turns the clipping on and a value of zero restores the VDI's drawing operations to normal.

The final parameter, *coord*, is a list of integers used to determine the position and size of the clipping rectangle. These numbers hold the coordinates of the interior of our window.

```
coord[0] = Top left x coordinate
coord[1] = Top left y coordinate
coord[2] = Bottom right x coordinate
coord[3] = Bottom right y coordinate
```

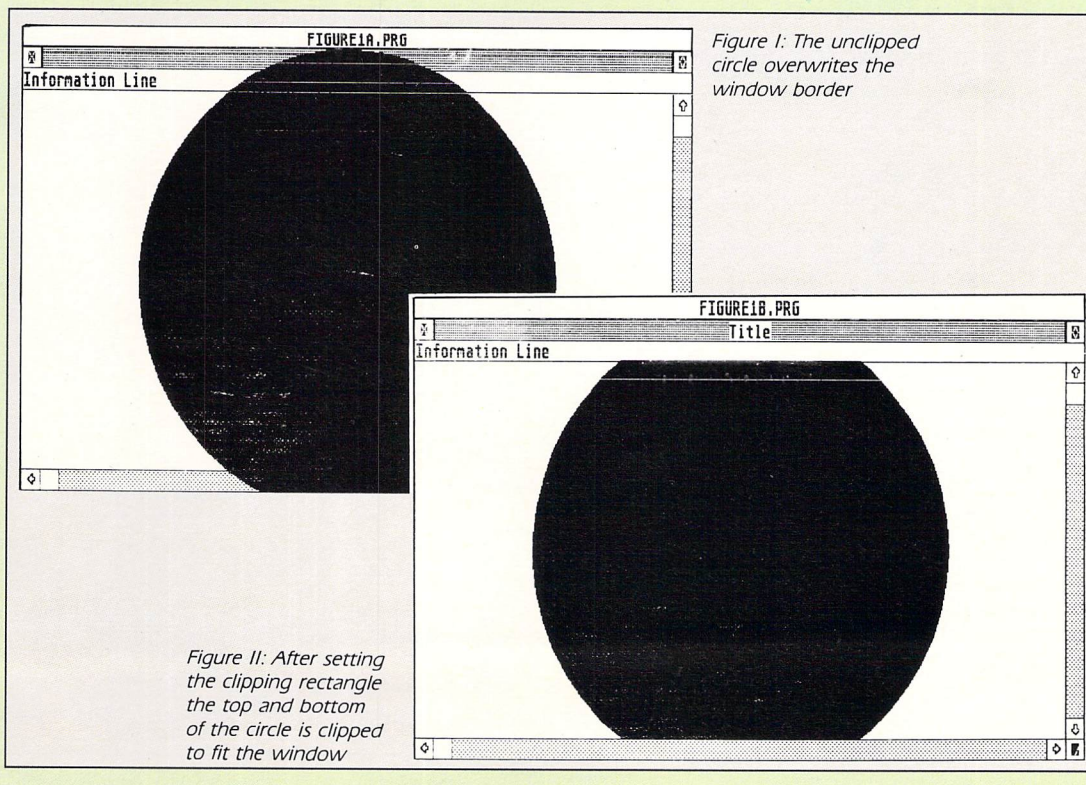
Look at the following procedure. This calls the *vs\_clip* function to limit the VDI's drawing operations to a particular window.

It assumes, of course, that the current dimensions of the window have been previously placed in the arrays *wx*, *wy*, *ww* and *wh*.

```
wclip(w)
int w;
{
  int coord[4];
  coord[0]=wx[w];
  coord[1]=wy[w];
  coord[2]=wx[w]+ww[w];
  coord[3]=wy[w]+wh[w];
  vs_clip(handle,1,coord);
}
```

In order to demonstrate how this clipping works take a look at Figures I and II which show the result of drawing a filled circle inside a simple Gem window. Figure I is the unclipped version, and as you can see, the circle completely overwrites the window's borders.

If however, the drawing is clipped using *vs\_clip*, only the parts of the circle which lie inside the window will be drawn. This can be readily observed from Figure II.





## Scaling images

**A**S we have stressed, the overall responsibility for the management of a window's contents rests entirely on your shoulders. This task is complicated by the fact that the VDI doesn't completely understand about Gem windows. You are therefore forced to generate all your graphics using absolute screen coordinates. So you can't simply draw something inside a particular window, irrespective of its size and position on the ST's screen.

There are two possible solutions to this problem. First, you can write a special routine to scale your image to the correct size before you draw it. This effectively treats each window as just a miniature version of the entire screen.

Unfortunately, this technique is only really useful when you are displaying an actual picture of some sort. If you attempted to output a piece of text to such a window the contents would rapidly become totally unreadable.

## Calculating window sizes

**I**T is important to remember that each window is effectively defined by two different sets of coordinates. One holds the total dimensions of the window, and includes the regions occupied by the title line and the window borders. These are the coordinates which are required by the *wind\_create* and *wind\_open* functions during window initialisation.

Additionally, there's also a second set which represents the inner working area of this window. It is these coordinates which are used in conjunction with the *vs\_clip* command. When we are manipulating a window it's often useful to be able to convert between the working coordinates and the total coordinates. The AES incorporates a helpful function called *wind\_calc* which performs this operation for us directly:

```
r=wind_calc(flag,type,wxin,wyin,wwin,
            whin,&wxout,&wyout,&wwout,&whout);
```

The parameter *flag* determines which of two possible operations are to be performed by this function. A value of zero indicates that the coordinates of the working area of the window should be converted into the total area. Alternatively, you can also calculate the working area of the window from the total area by setting the flag to one.

The next parameter, *type*, consists of a bit field representing the window attributes you have selected. The format is identical to the equivalent parameter used by the *wind\_open* and *wind\_create* functions.

Before the *wind\_calc* function can be called, *wxin*, *wyin*, *wwin* and *whin* must be loaded with the appropriate input coordinates. These may hold either the working area or the total area, depending on the precise operation you have selected.

Once the calculation has been performed, the resulting set of coordinates will be placed in the variables *wxout* to *whout*. If an error occurred during the function, a value of zero will be returned in *r*. Any other number indicates that the operation was a success.

At first glance *wind\_calc* may look extremely complicated, but in practice it's surprisingly easy to use. Here are a couple of simple examples which should make things a little clearer. Supposing *wx*, *wy*, *ww* and *wh* currently hold the total coordinates of a window. You could convert these into the coordinates of the working area using a line like:

```
r=wind_calc(1,TITLE,wx,wy,ww,wh,&wx,
            &wy,&ww,&wh);
```

The variables will now contain the working coordinates of the window. These could then be used in a subsequent call to *vs\_clip*. Similarly, you could convert these new coordinates back to the total area like so:

```
r=wind_calc(0,TITLE,wx,wy,ww,wh,&wx,
            &wy,&ww,&wh);
```

Now for a somewhat larger example.

```
/* Define clip array */
int cp[4];
/* define working variables */
int wx,wy,ww,wh,r,whandle;
/* Set the coords of total area */
wx=50;
wy=50;
ww=100;
wh=100;
/* Create window using coords */
whandle=wind_create(NAME,wx,wy,ww,wh);
/* Open the window */
r=wind_open(whandle,wx,wy,ww,wh);
/* Set name of window */
r=wind_set(whandle,2,"Title");
/* Get coordinates of working area and
   place them into clip array */
r=wind_calc(1,NAME,wx,wy,ww,wh,
            &cp[0],&cp[1],&cp[2],&cp[3]);
/* Activate clipping */
vs_clip(whandle,1,cp);
/* Draw circle inside window */
v_circle(whandle,150,150,100);
```

Note that the above routine will not compile as it currently stands, as it omits a large chunk of essential Gem initialisation. If you're feeling adventurous however, you can easily expand this fragment into a real program.

## Limitations

**O**NE serious limitation of the *wind\_calc* function is that it assumes that you already know one of the sets of coordinates in advance. Unfortunately, this information is often simply not available. In these circumstances, you can utilise the AES command *wind\_get*. This is a powerful function which can return an impressive range of information about any window which has previously been defined using *wind\_create*.

The format of the *wind\_get* command is:

```
r=wind_get(whandle,option,&i1,&i2,
            &i3,&i4);
```

where *whandle* is the handle of the window you wish to examine, *option* indicates one of a number of alternative operations which can be executed by this command, and *i1*, *i2*, *i3*, and *i4* are a set of variables which will be used to hold the results. As you might expect, their exact significance varies considerably, depending upon the particular operation you have chosen. The variable *r* indicates whether an error has occurred during the command. If a value of zero is returned, then the call to *wind\_get* has failed in some way.

For the moment we'll restrict ourselves to the two commands which are directly relevant to this present discussion. These are options number four and five, which return either the working coordinates, or the total coordinates of a window, respectively.

After these functions have terminated, the appropriate coordinates will be placed in the variables *i1-i4* like so:

```
i1 = x coord of top corner
i2 = y coord of window
i3 = Width of window
i4 = Height of window
```

The standard use of this command is to determine the maximum area available from the Gem desktop. This enables you to position your window so that it doesn't accidentally overwrite the Gem menu line. The desktop is automatically assigned a window handle of zero, so if you wanted to calculate its working area you could call *wind\_get* in the following manner.

```
r=wind_get(0,4,&wx,&wy,&ww,&wh);
```

You can also use this function to work out the area of the total screen.



## The quid pro quo

THE best commercial word processors for the ST contain the same standard editing aspects as featured in their PD contemporaries – such as search and replace – plus a lot more besides. All run in 80 column mode on colour medium resolution or monochrome high resolution monitors, but working in colour on a TV will cause severe eyestrain, and is best avoided.

Each permits variation in font style, whether this is limited to normal, italic, bold and underline type as in K-Word 2 or a more comprehensive selection available in HB Marketing's Word Up. Equally, unlike 1st Word and ST Writer, the commercial alternatives also have in-built wordcounters. These are invaluable when you need to write to a set total word length.

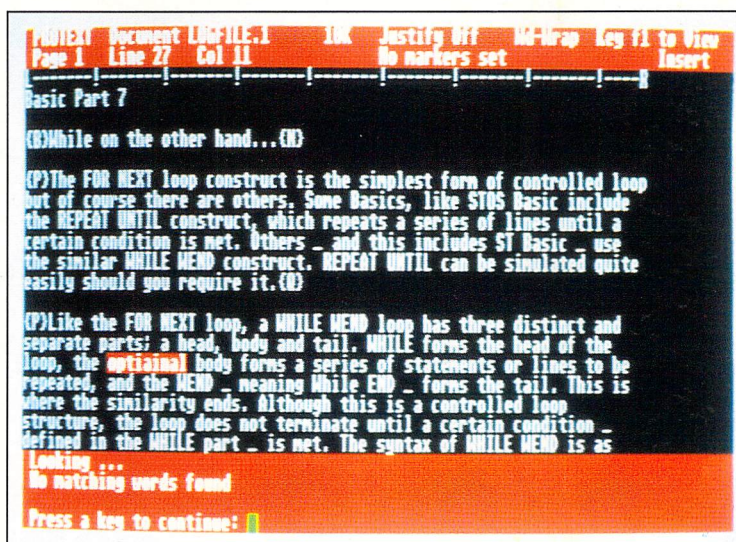
All allow selective page numbering and some include a master page which can be customised with details such as a heading or chapter number and set as a default for each page you type.

TextPro, Word Perfect and Word Writer ST also have an index facility. This enables you to index large pieces of work to ease cross-referencing and quick searching for important facts and figures.

Unique additions also include 1st Word Plus' Spill File which enables use of a hard disc for overflow of memory – particularly useful if you need to write book-length pieces of text.

Other special features are included

PUBLIC domain word processors for the ST are powerful utilities which outperform by several orders of magnitude their contemporaries on the 8 bit micros. However, the commercial equivalents are even more breathtaking, and despite their often high price tags will repay the small businessman by automating many aspects of his day to day work, thus saving time and money. Let's look at what the market leaders have to offer.



Protex spell-checking a document

in the table below which covers seven of the top word processors for the ST. Though new products appear on the market all the time and updates are part of an ongoing process, these titles

have a proven pedigree.

Basically it's a matter of selecting an affordable piece of software, looking at what it has to offer and then trying it out for yourself.

Word Perfect's thesaurus in operation

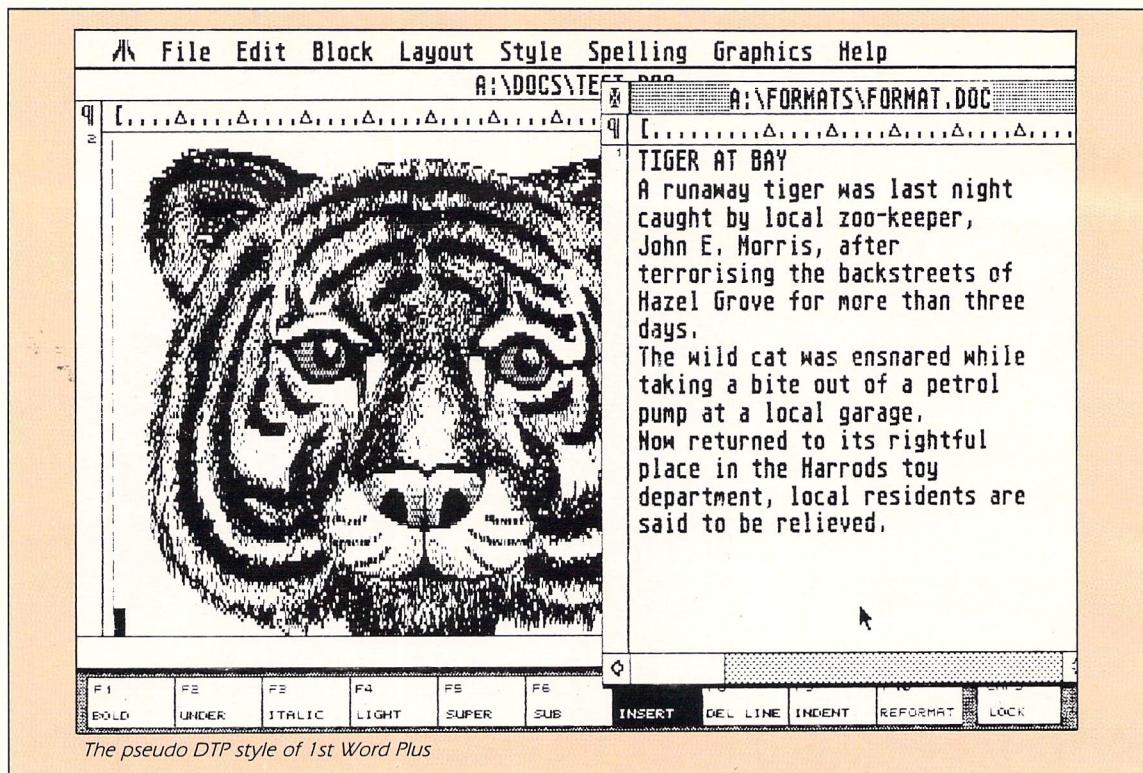
Word Writer ST showing a form letter for mail merging

Wordprocessor	Supplier	Price	Wysiwyg	Operation	Spell-check	Thesaurus	Mail merge	Preview	Microjustification	Pseudo DTP
TextPro	Precision	£39.95	No	Gem	No	No	Yes	Yes	No	No
Word Up	HB Marketing	£59.95	Yes	Gem	No	No	Yes	No	No	Yes
K-Word 2	Kuma	£59.95	Yes	Gem	Yes	*	Yes	No	No	No
1st Word Plus	GST	£79.95	Yes	Gem	Yes	No	Yes	No	No	Yes
Word Writer ST	Timeworks	£79.95	Yes	Gem	Yes	Yes	Yes	No	No	No
Protex	Arnor	£99.95	Yes	Non-Gem	Yes	No	Yes	Yes	Yes	No
Word Perfect	Sentinel	£228.85	Yes	Both	Yes	Yes	Yes	Yes	Yes	Yes

The facilities offered by the top word processors for the ST

(\* Available as a separate desk accessory)





## Common wordprocessor features

**Wysiwyg:** This determines whether the screen display matches the output you will get on your printout. Such a display gives an easier indication that what you are typing is what you really want to achieve – something which is not available on dedicated stand-alone word processors.

In all cases – with the exception of Protex – this is standard on the ST, and such displays may or may not show all margins, headers and footers. However, even Protex has the facility to toggle to a wysiwyg-type screen display.

**Operation:** Most software is primarily operated via the mouse, making use of an on-screen menu to quickly select various options – though typing is of course still via the keyboard. The style of this operation varies enormously from partial Gem loyalty – which can make word processing a little clumsy – to full implementation of Gem.

While Protex makes no concessions to this mode of working and as such is similar in use to a stand-alone word processor – Word Perfect allows both an orthodox keyboard approach and a flexible Gem usage.

**Spell-check:** This refers to the inclusion of a spelling checker dictionary which will selectively or globally search and correct spellings in your text. These facilities may be available within the program or loadable from a separate disc. If separate, then the dic-

tionary is often larger, though spell checking may be slower than with a smaller glossary stored in the word processor program.

The size of these dictionaries varies, and includes 1st Word Plus' 40,000 word tome and Protex's hefty 66,000 which is more than adequate for most small business purposes. In many cases these dictionaries may be supplemented as new words crop up. For instance, 1st Word Plus and Protex allow user-created supplementary dictionaries – particularly useful if you wish to store spellings of commonly used technical, foreign or medical terms. Protex also includes a quick checker for the 10,000 most commonly used words, which is fast and important for checking spelling as you type.

**Thesaurus:** A few packages also boast a thesaurus which will aid searching for synonyms. This is particularly handy if writing is the core of your concern or if you need to express yourself lucidly.

Once again this addition normally has to be loaded from a separate disc before a selective search and replace can be put into operation.

**Mail merge:** This almost universal facility allows you to quickly merge data from spreadsheets and database programs into your text for many purposes. By transferring names and addresses from a database it also permits the production of macros – or form letters – to mailshot customers and suppliers. Each letter can also include its own personalised unique

message, address and name.

This speedy process negates the need to write the same letter to dozens or even hundreds of clients, and is a professional time-saving boon to all progressive businesses.

**Preview:** This indicates a facility to allow you to see accurately on screen what you will receive on your final printout. It is particularly helpful with the non-wysiwyg display of Protex, and is also a useful addition on other word processors such as TextPro as it gives a clearer indication of the finished product than a straightforward wysiwyg display.

**Microjustification:** A most advanced addition which will create perfectly balanced lines when right justification is chosen. It creates microspacing between letters, allows for varying sizes of characters and alters spaces to create an almost typeset feel to your work.

**Pseudo DTP:** If home produced fly ads or graphically enhanced mailshots are called for, some word processors can emulate a pseudo desktop publishing environment. They do this by allowing inclusion of home drawn or imported graphic images into your text.

Such an environment will also allow you to columnise your text to produce a newsprint type layout – hence the term desktop publishing. Though these pseudo facilities are useful for many business concerns, none possesses the power and flexibility of a dedicated DTP package.



## I/O functions

It is about time we looked in more detail at how to get information into and out of C programs – input and output functions, or I/O for short. We have used a couple of functions already – *printf()* and *getchar()*.

We implemented the latter function as a pause by tagging it on to the end of our listings. It reads a single character from the keyboard, but works in a peculiar way. When you call *getchar()* you can type away until you hit Return, then, and only then, the first character is read.

The rest of them, up to and including the carriage return character itself, are stored in a buffer somewhere in memory and are read by subsequent calls to *getchar()*.

To read a character you would use a line like:

```
int c;
c = getchar();
```

where the variable *c* is an integer. Don't be tempted to make it a character variable because you're reading a character, as the value might not always lie in the 0 to 255 *char* range.

So far we have used the function *printf()* to display characters, strings of text and numbers on the screen. This is in fact a very complex function to use, and a simpler, more primitive one is also available called *putchar()*. It takes just one parameter, an integer, which it outputs as an Ascii code.

We can use *putchar()* to output single codes and characters that *printf()* isn't suitable for. Suppose we want to clear the screen by sending the codes Escape E to the VT52 emulator, we could use two *putchar()* function calls like:

```
putchar(27);
putchar('E');
```

Let's see these input and output functions in use. The listing below clears the screen using two *putchar()* functions calls, prints a prompt on the screen and then allows you to enter your name by successively reading characters from the keyboard by calling *getchar()*:

```
/* Get input from keyboard */

#include <stdio.h>

main()
{
    int c;

    /* Clear the screen */
    putchar(27);
    putchar('E');

    /* Print the prompt */
    printf("Enter your name:");

    /* Read the keyboard */
    c = 0;
    while ( c != '\n' )
        c = getchar();
}
```

## Storing input

AS it stands, this demonstration isn't a great deal of use, as it won't store the input – each character read is simply discarded straightaway. We need to store the input so it can be recalled and manipulated later on.

In order to do this, C enables us to reserve space in memory by creating a character array. In some ways the process is similar to dimensioning an array in Basic. First we have to decide how much space we're going to need – in other words, how many characters is the user of the program likely to input? To be on the safe side we could allow for a 50 character name with:

```
char string[50];
```

The keyboard input routine used in the last listing could

be expanded to store the characters in the array *string*:

```
c = 0;
i = 0;
while ( c != '\n' ) {
    c = getchar();
    string[i] = c;
    i = i + 1;
}
```

However, this is isn't good C programming style, and several shortcuts are normally taken. Everything in C has a value, and that value is the result of the last operation performed. So, the value of:

```
c = getchar();
```

is the value of the character read from the keyboard. This means we can compact the *while* routine to give:

```
while ( (c=getchar()) != '\n' )
```

Another common shortcut is to pre-increment and post-decrement variables. For instance, the following two lines mean exactly the same thing:

```
i = i + 1;
i++;
```

Combining all these shortcuts, and incorporating the whole lot in our first listing we end up with:

```
/* Get input from keyboard V2 */

#include <stdio.h>

main()
{
    char string[50];
    int c, i;
    putchar(27);
    putchar('E');
    printf("Enter your name:");
    i = 0;
    while ( (c=getchar()) != '\n' ) {
        string[i++] = c;
    }
    string[i] = '\0';
    printf("\nYour name is:%s",string);
    getchar();
}
```

## Input functions

It is also common C practice to split up programs into small sections or functions, each performing a simple, but specific task. We can do this with our example program by taking out the input routine and making it into a general function that can be included in any program where we wish to read the keyboard.

The main body of the code remains the same, with a *while* loop structure reading the keyboard and storing the characters in a *char* array. However, as we saw earlier, functions have their own private (local) variables and normally can't access those defined elsewhere in the program.

This means that we have to pass the character array *string* as a parameter. In fact, this is an advantage as it makes the function quite general and it will work with any program:

```
input(s)
char s[];
{
    int c, i;
    i = 0;
    while ( (c=getchar()) != '\n' )
        s[i++] = c;
    s[i] = '\0';
}
```



It would be called with a chunk of code like:

```
char string[50];
input(string);
```

and the text input would be stored in the *string* array. An alternative way of writing this would be to use a *for* structure, and some programmers prefer this as it is shorter, albeit only one line:

```
input(s)
char s[];
{
    int c, i;
    for (i=0; (c=getchar())!='\n'; ++i)
        s[i] = c;
    s[i] = '\0';
}
```

This can be compacted even further, and it is quite tempting to do so, but C programs are difficult enough to read and debug as it is without adding to the problem by squeezing as much code into as small a space as possible.

## Limiting input

THE one problem with the routines we have looked at so far is that they don't check that the string will fit into the space allocated. We have allowed for a string of 50 characters, but suppose a novice accidentally holds a key down and then hits Return afterwards, inputting 60 or 70 characters. What will happen?

In this case the program is quite likely to crash, and possibly the ST will bomb out. Only pressing the reset button or switching off will enable you to regain control of your micro. C gives you a great deal of power and flexibility, but this means you have to be especially careful that your programs behave themselves and are bug-free.

What we have to do is somehow restrict the number of characters input so the limit of the character array isn't

## Strings

STRING variables are handled by C in a completely different way to other languages like Basic, and none of the standard string manipulation functions is present in the language – you have to write your own. However, it isn't too difficult, and the code is usually quite short and compact.

A string is stored in memory as a string of characters terminated by a zero, or to be more precise, '\0'. You can initialise a string constant with the following declaration:

```
static char msg[] = "Hello there..."
```

The compiler will automatically place a zero at the end of the string, so its length is actually one more than the number of characters. You can also assign a string to a pointer, as we'll see when we discuss this complex topic.

An alternative method of incorporating a string into your program is to allocate space by defining a character array, and then to assign the string to that array like:

```
char s[50];
int i;
for (i=0; (s[i]=getchar())!='\n'; ++i);
s[i] = '\0';
```

Note that a zero is appended to the end of the input string. Also note that 'A' and 'A' are two completely different things in C. The former is a one character string terminated by a zero, and the latter represents the Ascii code for the letter A – an integer.

exceeded. This isn't a difficult task and involves just one extra check:

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

Here an extra parameter *m* is passed to the *input()* function, and this tells it the maximum number of characters that it can place into the array *s*. In fact, we only store *m*-1 characters, as space needs to be left for the zero character terminating the string. If '\0' is omitted from the end of the string your program is quite likely to crash, or at the very least, display garbage.

## String functions

STRING variables – or to be more precise, character arrays – are extremely useful structures in C programming. So as you might expect, functions are available for manipulating them. However, they aren't built in to the language, but are supplied as pre-defined library routines ready to be incorporated into your programs.

We could easily make use of these, but as many are quite simple and involve very little code it is good practice to have a go at writing them yourself. For instance, how long is a string? They can in fact, be any length, but frequently programs need to know exactly how many characters they contain. We'll write a short function to do this.

As we've seen, a string is always terminated by a zero character – or '\0', which the compiler interprets as zero. So to find the length we simply start at the beginning and count the characters until we come to this zero end-of-string marker. It can be implemented like:

```
how_long(s)
char s[];
{
    int i;
    i = 0;
    while ( s[i]!='\0' )
        ++i;
    return(i);
}
```

The character array containing the string is passed as the parameter *s*. A counter, *i*, is set to zero and a *while* loop structure increments the counter while the array item is not equal to zero.

Another function we may require is one that reverses a string. We can write a function *backwards()* that reverses any character array passed to it. The function will need to know the length, and this can either be passed as a parameter or found using *how-long()*:

```
backward(s,len)
char s[];
int len;
{
    int i,j;
    char temp;
    i = 0;
    j = len-1;
    while ( i<j ) {
        temp = s[i];
        s[i++] = s[j];
        s[j--] = temp;
    }
}
```



# COMPLETE INDEX TO THE FIRST 8 MONTHS



## ST Hardware

Page		
10	Disc bus	5 Motorola MC68000 microprocessor
7	Disc problems	7 Mouse problems
9	Disc tracks	7 Power problems
9	Floppy discs	7 Printer problems
9	Floppy disc drive	1 Roms and ram
4	Glossary of terms	7 Software problems
10	Hard disc drives	5 ST's internal structure
2	Inside a 520STFM	1 Support chips
3	Inside the Mega ST	4 User ports
9	Magnetic disc storage	8 User ports detail
6	MC6850 asynchronous communications interface	6 Yamaha YM2149 sound generator
4	Mega ST components	6 WD1772 floppy disc controller
4	Mega ST user ports	
7	Modem port	

## ST Gem

Page	
4	Accessing the VDI
12	Calculating window sizes
11	Clipping output
9	Creating a window
7	Defining fill patterns
9	Defining a window
10	Displaying windows
7	Drawing polygons
5	Fill styles
2	Gem programs
1	History of Gem
6	Improving readability
2	Initialisation
6	Initialising Gem
3	Initialising the VDI
2	Installing the application
12	Limitations of wind-calc
12	Scaling images
1	Structure of Gem
3	Tos
5	VDI attributes
11	Wiping windows

## ST Business

Page	
4	Block movement
4	Calendar
5	Commercial word processors
3	Defining rulers
1	Equipping yourself for the job
6	Extra facilities in commercial word processors
1	Getting set up
1	Good habits
2	Installing and application
5	K-Word 2
4	Non-wysiwyg display
4	Note pad
3	PD word processors
5	Protext
3	ST Writer
5	Text Pro
1	The set-up
5	Word Perfect
5	Word processing facilities
5	Word Up
4	Word window
5	Word Writer ST
4	Wysiwyg display
3	1st Word
5	1st Word Plus

## ST Graphics

Page	
7	Adding primary colours
9	Avoiding ambiguity
2	Basics
3	Choosing colours
8	Colour cube
6	Colour intensity
13	Colour psychology
7	Colour theory
5	Colour wheel
6	Complementary colours
10	Composition structure
3	Creating a palette
9	Creating mood
1	Drawing trees
5	Effects of colour
14	Emotional response to colour
10	Impressionism
10	Isolating the subject
7	Mixing colours
1	Painting trees
14	Planning
13	Playing with colour
3	RGB values
12	Shapes
11	Tonal values
4	Using colour
11	Using perspective

## ST Languages

Page	
11	AND/OR/XOR
3	Arithmetic symbols in Basic
7	Avoiding knots
9	Conditional programming
1	Direct commands in Basic
12	Equivalence
3	First Basic program
1	First principles
8	FOR ... NEXT loops
1	Getting started in Basic
7	GOTO
4	INPUT
10	IF ... THEN
11	Logical operators
2	Logical order
7	Loops
1	PRINT
5	Real numbers and integer variables
7	Repetition
5/6	Strings
3	Simple arithmetic
2	ST Basic screen
8	Step size
10	Testing conditions
10	True or false
3	Variables
4	Variable differences

## ST Adventures

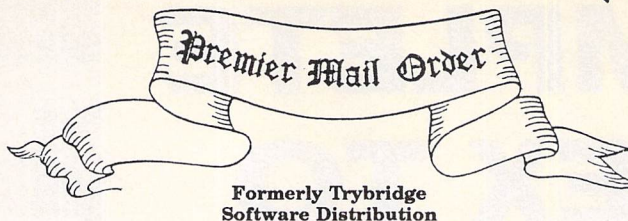
Page	
12	Additional commands
3	Adventure topography
11	Alternatives to text
2	Basics
1	Beginning
9	Collecting objects
3	Colossal Cave
8	Comedy
3	Creating atmosphere
5	Deciphering riddles
11	Glossary of adventuring terms
5	Hints and tips
6/10	Lateral thinking
4	Mazes
11	Parser and vocabulary
7	Plot
2/5	Puzzles
6	Red Herrings
9	Searching
7	Science Fiction
1	Structure of an adventure
7	Thrillers
9	Utilising objects

## ST Programming

Page	
8	C Strings
5	Defining your own functions
8	Defining strings in C
1	First steps in C programming
7	Functions in C
5	Function libraries in C
2	Glitches
1	History of C
7	Input routines in C
7	Inputting text from keyboard
6	Local variables
5	Parameters
4	Print formatting
3	Repetition
6	Returning a result
8	Reversing strings in C
3	Structure of a C program
3	Variables in C
1	Which C compiler?



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# SCRAPBOOK

**T**HIS month's entry into our Scrapbook of short, simple routines and utilities is a desk accessory loader from **Stuart Burton** of Luton, Bedfordshire. Any desk accessories – programs with .ACC file extensions – placed in the root directory of your disc will be installed automatically when the ST is booted up.

Sometimes though, we require the ram they consume, or on occasions they are incompatible with the software we wish to run. In these cases we need some method of preventing them from being loaded. The utility presented here will ask whether you want a desk accessory to load or not, and if you don't the ST is prevented from loading it.

The assembly language listing should be compiled using HiSoft's Devpac or a similar assembler, and the program placed into the AUTO folder on your disc. Note that it must have a .PRG file extension.

The listing as it stands will ask whether you want the control panel installed or not, but this is easily altered if you have a different accessory. The accessory's

filename is stored at the end of the listing – simply rename this to whatever you require. If you have two accessories you should compile the listing twice, once with each filename, and put both programs in the AUTO folder.

The program is clever, not because it is very complex, but because it is so simple.

It just prints a message on the screen using Gem Bdos function \$9 (C\_CONWS) and waits for you to press Y or N using Bdos \$8 (C\_NECIN). Then it renames the desk accessory's file extension using Bdos function \$56 (F\_RENAME) to either .ACC or .ACX depending on whether you pressed Y or N respectively.

\* Accessory Loader  
\* By Stuart Burton  
\* Atari ST User 1988

\* Replace CONTROL.ACC with the  
\* name of your accessory

```

PEA prompt(PC)      Prompt
MOVE.W #9,-(SP)      Cconws
TRAP #1              Gemdos

ADD.L #6,SP
PEA cursor(PC)       Set cursor
MOVE.W #9,-(SP)
TRAP #1

ADD.L #6,SP          Tidy stack
PEA oldname(PC)      Filename
MOVE.W #9,-(SP)      Cconws
TRAP #1              Gemdos
ADD.L #6,SP          Tidy stack

input
MOVE.W #8,-(SP)      Cnecin
TRAP #1              Gemdos
ADD.L #2,SP          Tidy stack
AND.W #$DF,D0        Upper case
CMP.W #'Y',D0        Is it Y ?
BEQ yes
CMP.W #'N',D0        Is it N ?
BEQ no
BRA input            Loop to input

yes
PEA oldname
PEA newname
MOVE.W #0,-(SP)      Dummy
MOVE.W #$56,-(SP)    Rename
TRAP #1

```

```

ADD.L #12,SP
BRA fin

no
PEA newname
PEA oldname
MOVE.W #0,-(SP)      Dummy
MOVE.W #$56,-(SP)    Rename
TRAP #1
ADD.L #12,SP
BRA fin

fin
MOVE.W #0,-(SP)      Pterm
TRAP #1

prompt
DC.B 7
DC.B "*****",13,10
DC.B "* Accessory Loader *",13,10
DC.B "*"              ",13,10
DC.B "*"              ",13,10
DC.B "*"              ",13,10
DC.B "*"              ",13,10
DC.B "* Load it (Y/N)?",13,10
DC.B "*"              ",13,10
DC.B "*****",13
DC.B 0
newname
DC.B "CONTROL.ACX",0
EVEN
oldname
DC.B "CONTROL.ACC",0
EVEN
cursor
DC.B 27,"A",27,"A",27,"A",27
DC.B "A",27,"C",27,"C",27,"C",0
EVEN
END

```

**SCRAPBOOK** is a regular feature consisting of short, simple programs sent in by our readers. It's a place where we can publish all of the interesting little routines that don't end up in our regular features but are too good for us not to share with other readers.

If you have a short program which you think other readers would find useful, send it to:

*Scrapbook, Atari ST User,  
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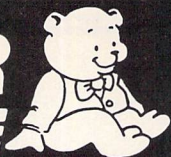
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# GALLERY

**D**URING the past few months we have featured work by artists from as far afield as Germany, Australia and the United States. This time we return home with four outstanding pictures created by British ST artists. All have the common and complicated theme of the human face. Each achieves its objective in a different and interesting way.

Alasdair Hobb's brilliant and haunting picture of Blues man Muddy Waters was created using Mirrorsoft's Art Director. It captures the air of a New Orleans night club. Using the

same package, Shaun Davies of Barnsley has used a colourful primary technique to draw the face of transatlantic Phil Collins.

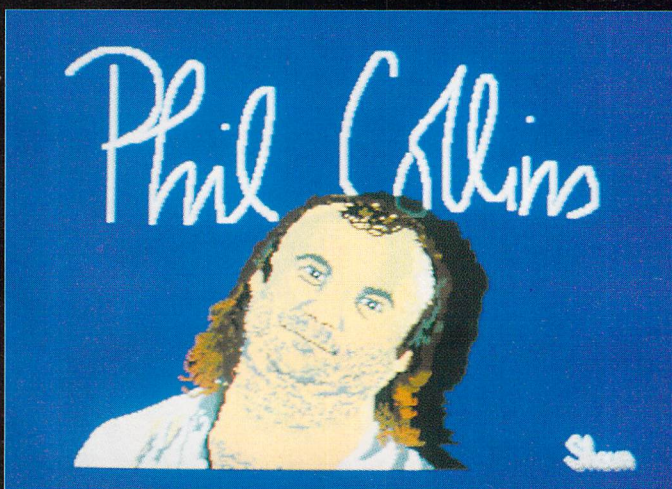
Meanwhile, Surrey girl Stephanie Shaw has used Degas Elite's high resolution mode to form a monotonal image of Phil's friend, Peter Gabriel.

Finally, Philip Bennett of Chichester has drawn a superb Neochrome air-brushed portrait of a friend asleep – nothing quite like having a mortal among the stars.

If you have a work of art you would like to see exhibited on our worldwide

stage why not send it in on disc to Gallery. Remember though, anything you submit must be all your own work. You must own the sole copyright and provide us, in writing, with confirmation of this fact, as well as your express permission to let us publish your work.

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Phil Collins



Peter Gabriel



**F**LAIR Paint is AMS's offering in an already crowded ST art market, providing both colour and monochrome capabilities. I was impressed by the level of creativity and design in the packaging, and hoped it reflected the quality of the software, expecting great things from it.

Before the main program loads you are offered the opportunity to alter the printer and driver set-up, as well as installing the software as a Gem desktop accessory. Using a DTP package with Flair Paint installed as an accessory could be very useful.

For instance, you could produce an image, save it using the ram disc option, move to the DTP program and load the new image into it – all without rebooting. AMS does suggest however, that it is only practical with machines with at least one megabyte of memory available.

Once loaded, you'll probably be itching to start painting and experimenting. Flair Paint doesn't make this too easy though. There isn't a chapter in the manual for getting started quickly, and the information needed to actually put an image on to the screen is buried near the end of the text.

Sure, some people are going to discover how to draw for themselves, but many more novice users may be floundering about in frustration until then. Otherwise the manual is well laid out and uses screen dumps to illustrate the text.

Once loaded, Flair Paint presents you with its main tablet. This is the heart of what AMS calls its unique and visually attractive user interface. Yes, it is attractive, but it does the same job as pull down menus, offering no improvement in speed of use.

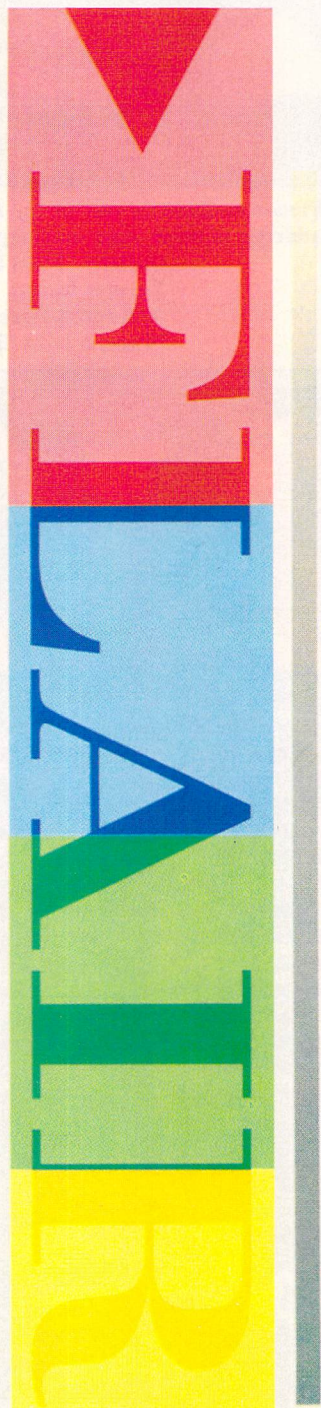
At first I actually found it a bit fussy, and consequently slow. However, with practice and familiarisation I got used to it and really enjoyed it. Most of the options available are commonly found in other art packages, so what has it to offer that is a little bit different?

Apart from the visual user interface, some of the options have been tweaked slightly, some successfully, others perhaps frivolously. After all, what use is the option to allow command windows to sparkle when dragged across the screen? It may look pretty, but surely the aim is to provide comprehensive art origination and editing facilities. I was beginning to think too much of this package was concerned with presentation – however well done – with substance suffering as a result.

Clicking on any of the 12 main tablet icons opens a command box which can be dragged by the mouse pointer anywhere on the screen. Once a command has been selected the canvas fills the whole screen, but when going back to the command stage all command boxes are exactly as you left them.

In this way I was able to call up nine of the 12 icons from the main tablet, making

# Painting with

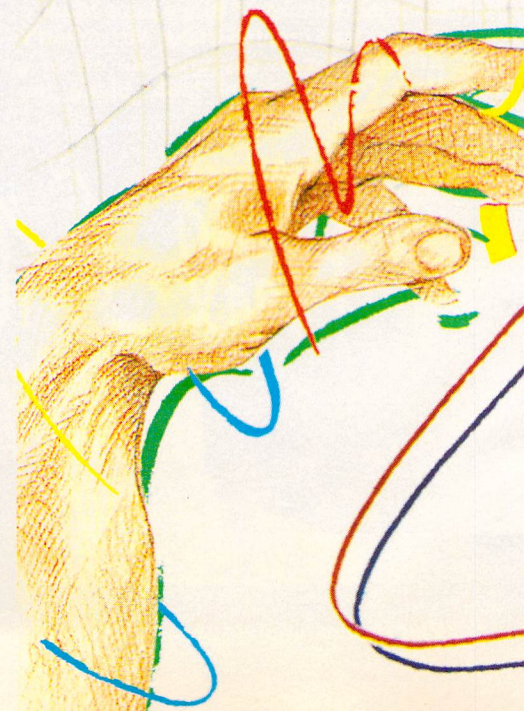
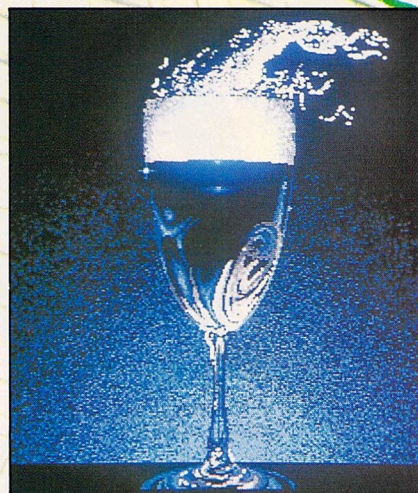


**Niels Reynolds tries out an unusual art package from AMS, and finds it packed with features**

their command boxes instantly accessible under the canvas. In fact the desktop accessories icon itself is subdivided into another six icons, three of which could be displayed in addition to the other nine.

Admittedly, this was a bit of a jumble in low resolution, but all 13 command boxes – including the main tablet – could be clearly seen and accessed in high resolution monochrome.

The palette is said to be at the centre of Flair Paint. It is in truth more than a mere palette. Colours are selected and mixed as usual, but you also have access to the





full range of patterns as well as line styles and thicknesses.

Colour options allow you to copy one colour on the palette to another, select a range of tones between any two colours, or select a colour from the screen. There are 36 patterns to choose from and a further 14 may be designed. A snapshot facility allows you to capture a pattern from anywhere on the screen. Pattern options including edit, flip, rotate, invert and slide make it a comprehensive and powerful feature.

Brush styles can be designed and edited in much the same way. These are accessed through the Paint icon. No pen

option is available, but this is no problem as the Paint option takes this under its wing in that any size brush or nib can be designed.

The Paint tablet shows two ordinary brushes and an airbrush. One brush is for colour selection, the other for pattern choice. The current brush style number is shown over its graphic representation and by clicking on directional arrows you can quickly flick through all the styles.

Selection of colours and patterns is made by a similar process. If you prefer to use the airbrush, simply click on the spray icon, select the spray density by topping up or emptying its colour bowl, and click on the first brush icon to paint. While speed and density of colour flow are catered for, nozzle size is not, which is a shame.

As if to make up for this, AMS includes Selective Painting which allows you to define the colours you wish to spray or paint. The newly-applied colour will then only be allowed on to the highlighted areas, leaving the rest of your painting splatter-free, thus saving a lot of fiddly cleaning up.

Twelve levels of magnification accessed through the Magnify tablet are available for picture editing and fine detail work. All the palette colours are there, as are the usual cut and paste commands.

The package offers more comprehensive fill commands than many of its competitors. The usual options enable you to fill enclosed areas with a colour or pattern and additionally there are fill to selected boundaries, colour swapping, diagonally connected fill and selected re-colouring.

Diagonal fill re-colours diagonally connected pixels – in patterns for instance – while selected re-colouring works in two ways. You can choose the colours of the areas you want to re-colour and then pick the new colour or pattern by clicking on Over in the Fill command box. Alternatively, you can select areas you want to keep as they are and re-colour everything else by using Fill Under. You

can define the size of your canvas from a minimum 32 pixels square to one that is many times larger than the screen. Large canvasses have to be reduced to be displayed on the screen in their entirety – a straightforward operation using the Viewport tablet.

An image can be resized or otherwise manipulated in a number of ways. Using the Resize tablet it can be made thinner, fatter, flipped horizontally or vertically, rotated or sheared at any angle.

Slip and Slide is the last resize option. This makes a continuous repeat pattern of the selected area and gives you a moving viewing window over it. Slide the window over the pattern until you are happy with the result.

Included is a feature often missing from art packages – Grid Locking, a system whereby images pasted on to the canvas automatically align to the nearest grid line.

Imagine you are drawing a side elevation of a building with 12 identical windows. These would need to align exactly horizontally and vertically – no easy task working visually on a small screen.

The Grid Lock enables you to paste on the drawing the same identical windows, all aligning perfectly and with great ease. The size of the grid can be defined, and for scale drawings, even measured in centimetres or inches.

Twelve automatically-generated shapes and lines are on offer through the Shapes and Lines tablet. These include rays, connected lines, arcs, Bezier curves, rectangles, circles and polygons. All can be defined in various line thicknesses.

Lastly, the Desktop Accessories tablet includes a clock and calendar, note pad, mouse speed control, print controls, load and save options, file naming/re-naming and disc formatting.

## Conclusion

After having initial reservations about Flair Paint, I found I got on with it very well. Its graphic tablets did add something to the quality and feel of the package, and the various elements of the program itself worked well. It is certainly worth checking out for yourselves.

## FACT FILE

Product: Flair Paint

Price: £34.99

Supplier: AMS, 166-170 Wilderspool Causeway, Warrington WA4 6QA.

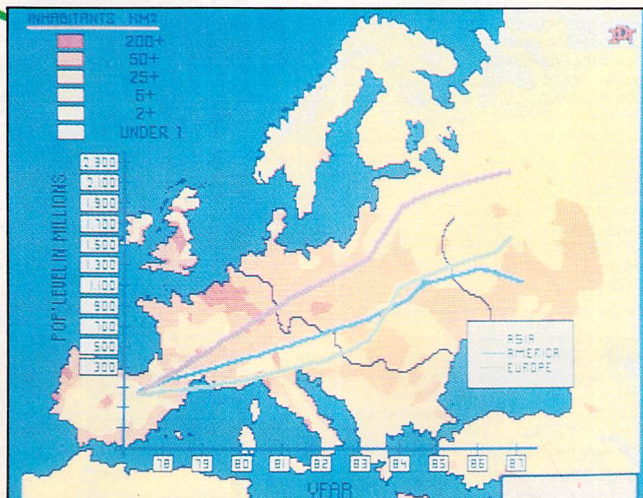
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Manual lacks a beginner's quick tutorial



The command boxes are hidden under the picture





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# WHICH MODEM?

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All models featured in this survey are BABT approved.

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● MicroLink Communications, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP. Tel: 0625 878888

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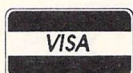
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# Cumana's OS/9

**T**HE ST's Gem graphics system absorbs a pretty sizeable chunk of the micro's overall computing power, which is the reason for the relative sluggish performance of many Gem-based programs. The fact is that the 68000 processor at the heart of the ST was never really designed for this type of Wimp-based system.

Originally, the first 68000-based computers were centred around a potent multi-user operating system called OS/9. Over the past few years this environment has provided a valid alternative to Unix for small applications. And now Cumana has released a new version of OS/9 especially for ST users.

The package is supplied on five double sided discs containing an impressive range of development software. The programming languages include a C compiler, a Basic interpreter and a 68000 assembler. In addition, Cumana has also provided a complete set of applications, comprising a database management system, a word processor and spreadsheet. As you might expect from the above list, the cost is equally impressive at over £550.

The minimum system configuration is a standard 520ST with a double sided drive. Unlike Sahara's Mirage, OS/9 supports the whole range of the ST's graphics modes. It can therefore be used equally well on either a monochrome or colour monitor.

## — the good, the bad and the ugly



**Cumana's new OS/9 operating system is examined by Stephen Hill who finds one or two warts, but a few hidden gems as well**

### Installing OS/9

On paper, installation is simply a matter of running the CONFIG program from the master disc. This is intended to back up the entire package in one smooth operation. In practise however, I found that it failed to recognise any of the system discs I placed into the drive, and seemed to have been left over from an earlier version of the package.

As a result I was forced to use the alternative BACKUP command, but copying the five discs using my single drive seemed to take forever. I then discovered to my extreme annoyance that the tutorial had failed to mention the default buffer size was a mere 4k. After I had changed this to a more reasonable 400k I was finally able to backup all the discs relatively quickly.

In order to load OS/9 you first need to boot up using the supplied startup disc. This prompts you for the master disc and then places the core of the operating

system into the ST's memory. If you try to load the system on a standard 520ST you are invariably greeted with a couple of complex looking error messages. These are generated by the absence of a second drive and a hard disc, and can be removed by editing the STARTUP file on the master disc.

During initialisation a ram disc containing half the available memory is created automatically. This leaves you with approximately 500k for programs and data on a 1040ST.

Most OS/9 commands are stored in a directory on the master disc called CMDS. One problem with this approach is that a number of the more useful system commands, such as BACKUP, appear to have been hidden away in a subdirectory.

Fortunately, OS/9 does include a useful option allowing you to specify which directories are to be searched for these

system commands. It's a pity that an example of this directive isn't provided somewhere at the start of the tutorial section, as it would avoid a great deal of unnecessary confusion.

The operating system is exceptionally powerful. I particularly like the multi-tasking ability which goes far beyond simple applications such as print spooling. All the many OS/9 commands can be run either as a foreground or a background process. You can also execute a number of different applications concurrently, and then pipe data from one process to another.

Even the humble DIR command is something special. It has the unique ability to generate a formatted list of all the files on the disc, directory by directory. It can therefore be used to map out the entire contents of your discs in one easy operation.

**Turn to Page 91 ►**



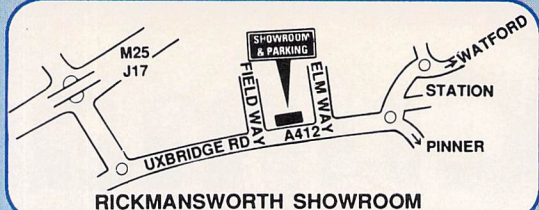


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## Applications

The third system disc contains the three application programs supplied with the OS/9 package. I'll start with a brief look at Stylograph, a word processor.

Editing is performed using four different operating modes. The first is Insert mode which allows you to enter your text one line at a time. Cursor control is limited to simple deletion using the backspace key.

If you want to move the cursor around your document you have to enter Escape mode, which enables you to manipulate the cursor using the I, J, K, L and comma keys.

The third mode allows you to briefly retype part of a line without having to leave Escape mode completely. Finally, there is Supervisor mode which lets you call a number of high level commands such as LOAD and SAVE.

Stylograph is supplied with a mail merge utility and spell checker. Only mail merge is capable of serious use. This is because the 42,000 word spelling dictionary has apparently been corrupted. Cumana is hoping to correct it in the near future.

Overall, while Stylograph is usable, many of its features are difficult to exploit. It compares badly with any word processor currently available for the ST, including 1st Word.

At first glance Dynacalc, a spreadsheet program, seems rather more promising. It provides a comprehensive set of functions suitable for both business and scientific use. These range from the trivial Sin and Cos to a number of useful statistical operations.

Dynacalc allows you to manipulate sheets up to 18,000 rows by 9,999 columns. It also includes a clever online Help command which makes it particularly accessible for beginners.

There is however, one major drawback. Despite numerous references to the cursor keys in the manual I was only able to move through the spread-

sheet using the GOTO command. This complicated the entire process of creating and using the software.

Cumana says the problem is caused by the omission of a keyboard initialisation file from the disc. They helpfully suggested a number of possible solutions, but none worked. Hopefully later versions of Dynacalc will include this initialisation code as standard. It would improve the usefulness of the program beyond recognition.

OS/9 also incorporates a database management system called Sculptor. This provides you with the ability to create and maintain large files of information. Sculptor is split into a number of separate program modules which can be accessed

**Compared to the other applications supplied with OS/9, Sculptor stands in a class of its own**

either directly from OS/9 or from an integrated menu program. The core of the package consists of a database manager called Sage and the report generator Sagerep.

First step in the creation of your database is to specify the structure of your records using the Describe utility. You can now generate a Sage program automatically with the SG utility. You can also use SR to create a Sagerep routine which allows you to output a report of the contents of your file to the screen or printer.

Either of these programs can be edited to customise the application precisely to your individual requirements. If you are confident about your programming skills you can write a Sage or Sagerep program

completely from scratch.

I like this program. I'm especially impressed with the automatic program generators which enable you to create a full working database painlessly in a matter of minutes. The documentation is very good indeed and includes a large number of worked examples which are extremely useful to beginners. Compared to the other applications supplied with OS/9, Sculptor stands in a class of its own.

Finally, Cumana has provided a fourth disc full of public domain software which includes a number of utilities allowing you to access Tos format discs. There is also a version of the popular Micro-Emacs text editor, a powerful program which is let down slightly by its complicated command structure.

Normally, Micro-Emacs is incredibly difficult to learn, but Cumana has helpfully bundled a 50 page tutorial in one of the files so you can familiarise yourself with the program fairly quickly.

I had a great deal of trouble getting the editor to work. It appears to require a separate terminal initialisation file in the SYS directory. After much searching I finally found a discussion of the problem in the file TERM.DOC.

The quality of the OS/9 documentation is often rather disappointing. There are several irritating incompatibilities between the software discussed in the manuals and the package supplied. Furthermore, the sections concerning Dynacalc and Stylograph make references to system files which don't exist.

Although the documentation includes plenty of tutorial material, this often casually omits vital pieces of information. The worst example of this comes in the installation procedure, which cost me around 30 minutes of almost total confusion. Most of the information you need is available somewhere, but you sometimes have to scour through the manuals very carefully in order to find it.

◀ From Page 89

## Programming languages

The system disc also contains a version of Basic, but despite being designed in early 1980 it appears to be surprisingly modern. The implementation includes all the latest extensions like IF ... THEN ... ELSE, REPEAT ... ENDREPEAT, WHILE ... ENDWHILE and DO ... LOOP. There's also a TYPEDEF command which allows you to create complex data structures such as lists and records.

Arrays can be defined with up to three dimensions, and can be passed in their entirety to any Basic procedure. Furthermore, you can copy the contents of one array to another using a simple

assignment statement. The only real problem with this version of the language lies with its rudimentary editing facilities. Having said that, OS/9 Basic is still one of the most effective versions of the language I've so far seen.

The second disc holds the C compiler and 68000 assembler, along with a vast number of essential library routines. The C compiler supports a full version of the current Kernighan and Ritchie standard, and provides complete access to the OS/9 operating system's many features.

As with Manx's Aztec C, all programs are first converted into an intermediate file of assembly language, which allows you to modify the program by hand before the final assembly stage. You can also use assembly language directly from C using the ASM and ENDASM com-

mands. Normally, all the header and library files are assumed to be found in the ram disc.

If you have less than a couple of megabytes of memory this won't be large enough to contain all the necessary data. You will therefore be required to override this setting using one of the many options from the command line.

The compiler is divided into three separate modules which need to be loaded into memory as your programs are compiled. This tends to slow down the entire compilation process significantly. While OS/9 C is hardly up to the high standards of Laser C, it's still capable of generating serious applications from within OS/9, and is unlikely to disap-

Turn to Page 92 ▶



## ◀ From Page 91

point even the most demanding of C programmers.

The OS/9 package also includes a powerful macro assembler which incorporates special facilities for accessing OS/9 commands directly. All the standard Motorola directives are available, and there are a number of common extensions such as conditional assembly and include files.

There's also a clever REP command, which allows you to repeat long sequences of 68000 instructions in just one line. As an additional bonus, Cumana has supplied a machine code monitor called Debug. Although this is relatively crude by modern standards, it does provide assistance when debugging complicated 68000 programs.

I found the assembler package performed commendably well. It's not really equivalent to something like Devpac or Workbench, but it will certainly prove more than adequate for the majority of users.

### Conclusion

OS/9 provides an interesting alternative to the standard Gem programming

environment on the ST, being aimed at the business and scientific market rather than the casual home user. It is important to note that it is not the sort of package you can learn overnight. Inexperienced users would probably be far better off sticking with Gem, warts and all.

The biggest problem lies in the quality of some of the applications programs. During the changeover from version 2.1 to 2.2 Cumana appears to have accidentally omitted a number of essential files from the system discs. Additionally, the existing system documentation desperately needs updating.

Cumana is very friendly and helpful, but I get the impression that the transition from V2.1 to V2.2 has caught it on the hop slightly. I hope that as the package evolves these nagging problems will be completely eliminated.

I expect rather better support from a package costing more than £550. I appreciate that this is not really expensive in the IBM PC market, but it's an exorbitant price for a piece of software on the ST. You can, for instance, easily acquire an equivalent package of Gem-based software with money to spare.

Considering that Sahara sells a bare-bones implementation of its Mirage operating system for around £120, it's

very clear that OS/9 is going to have difficulty penetrating the current marketplace. If Cumana was to sell the various components of the package separately, OS/9 would probably do rather well. I'm certain that Sculptor alone could easily fetch around £200.

However, unless you have money to burn, or you are already committed to OS/9, you are unlikely to be able to afford the complete package as it presently stands. Its success or failure will depend entirely on the size of this professional market for the ST. I wish it well.

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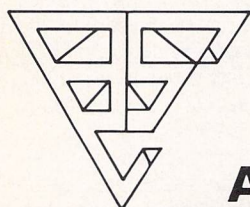
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### POINTS FOR:

Reasonably good alternative to Gem. Very good database program.

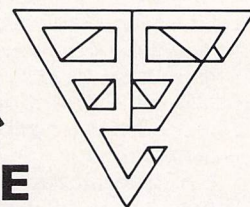
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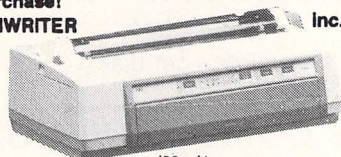
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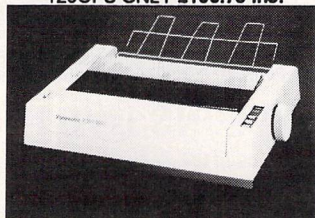
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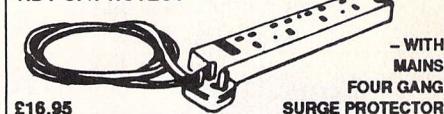
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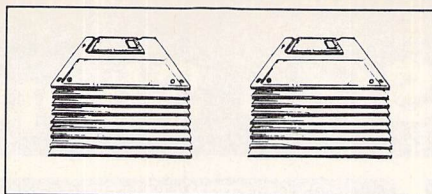
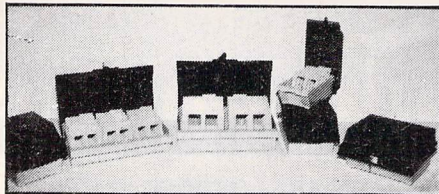
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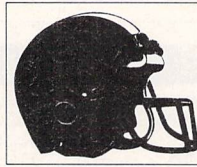
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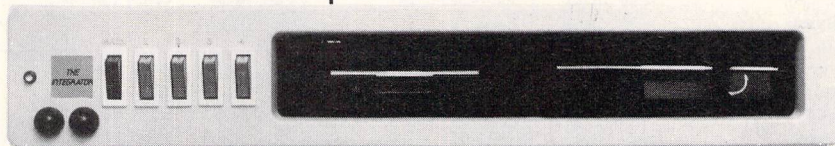
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**S**ERIOUS utilities which meet a specialist market demand are beginning to proliferate from HAT Software. Like Colours, which I reviewed in the February 1989 issue of *Atari ST User*, Sprinter is aimed at a particular sector of the art and design field.

It aims to provide a simple way of creating and replicating patterns, then providing colour separation for silk screen printing. The program is quite sophisticated yet simple to use and features variable repeat sizes, six built-in pattern orientations, three grab sizes from Degas PII format pictures, manual positioning with four graphics modes and an auto sequenced dump facility.

Click on the program icon and Sprinter loads in about six seconds to display 10 menu boxes along the right hand side of a clear screen and a further six options down the left along with a default colour palette.

You can begin by either drawing your own design using the Draw option or by loading in any Degas PII picture. Figure I shows such a picture of a girl's face which I immediately sliced up into four 100 pixel blocks by simply clicking once on the Blit command box.

Having cut either a 25, 50 or 100 pixel block using the Size and Cut commands – the Blit option enables it to be instantly replicated across the screen. This function is controlled by the menu functions H (horizontal offset), V (vertical offset), MAN (manual block positioning), G (graphics mode), P (pattern orientation) and the aforementioned Size command.

The Graphics mode can be changed and this affects the way the block is displayed on the screen while using the manual option of dragging and swapping selected blocks. Equally, pattern layout – can also be altered to affect the way the block is blitted to the screen.

I took the girl's face in Figure I and simply cut and blitted part of it to produce the startling rose-like pattern in Figure II. I then saved the whole screen design as a working model. Alternatively a facility exists to save an individual block using a BLK picture extension label for later use in pattern development.

Clicking on the Draw menu box toggles the selected block on to a draw screen, where it can be colour filled, colour swapped, overdrawn or have lines, ovals and boxes superimposed upon it. In less than 15 minutes I had created the symmetrical design in Figure III from the working model I had saved earlier.

A Hues option allowed me to alter the screen colour palette to produce the variation in Figure IV. Although this will not affect the silk screen design templates it does give you an indication of the effect that different colours will give to your design.

On the design screen each colour used

# Designing by repetition

**Nic Outterside tests a utility which takes the hard work out of creating patterns for silk screen printing**

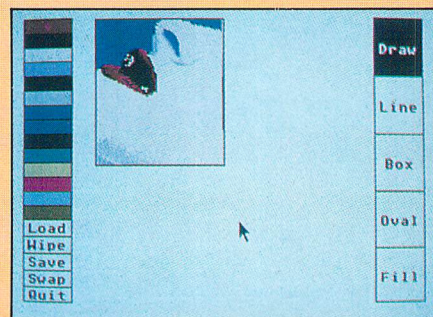


Figure I: The original picture

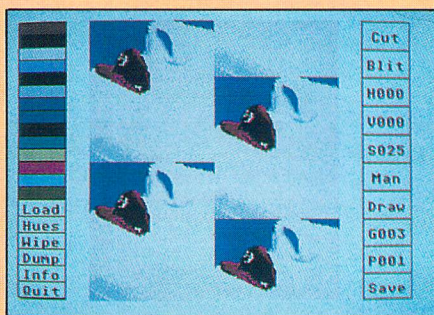


Figure II: A simple blit

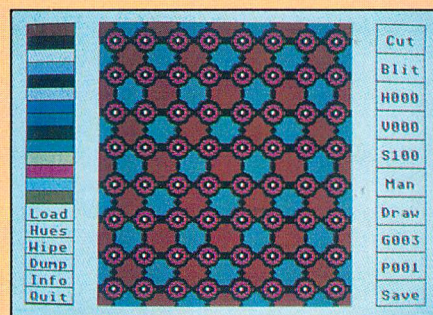


Figure III: Design created from Figure II

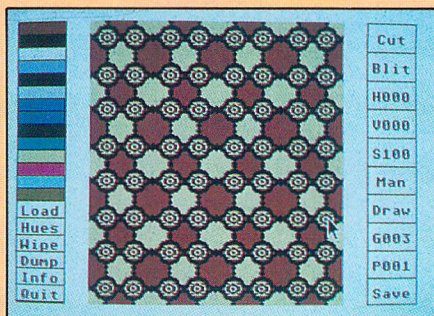


Figure IV: Colour variation

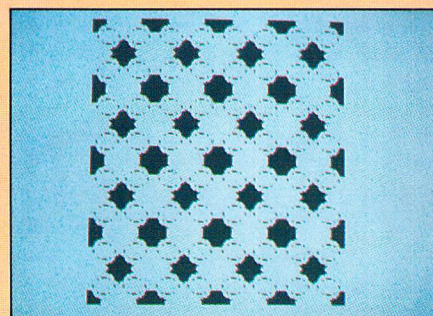


Figure V: Colour separation

can be separated ready for silk screen printing – by a manual colour strip – into a black silhouette by left clicking on the chosen colour on the palette – An example can be seen in Figure V.

Further to this, the Wipe command clears the dump sequence markers which are set by right clicking on the required colours. These markers indicate which colours are to be stripped automatically to black and dumped to the printer when the Dump function is selected.

This program will be a boon to many serious silk screen designers. It is also priced at an affordable level to be of great use to many school art departments. All in all, a most impressive utility.

## FACT FILE

Product: Sprinter

Price: £29.95

Supplier: HAT Software, 21 Wyle Cop, Shrewsbury, Shropshire.

Tel: 0743 231763

### POINTS FOR:

Intelligent and speedy utility for silk screen designers or school art departments. Flexible and easy to use.

### AGAINST:

Nothing substantial except that no facility exists to enlarge or shrink a cut box on the draw page.



# Spinning a good tale



**W**HETHER or not computer users are willing to confess to having an interest in playing games, the number and types available across the entire spectrum of micros are a clear indication of the fascination of testing our skills against a machine. However, a frustrating limitation imposed on many of

us is the lack of programming skills necessary to produce professional quality products matching our enthusiasm.

Up to the beginning of 1987 ST games generally fell into two main categories – adventures and graphic games. The former are very popular and are closely related to story-telling. You map out your progress on paper, type in your commands and read the computer's responses. On the other hand, graphic games, which include a wide variety of arcade adaptations, range from frantic shoot-'em-ups to life-like sophisticated simulations.

The last year or two has seen an emerging trend for users to demand a pictorial content with their text adventures. In the past, games of this nature

**Ron Massey tries out a neat utility for writing your own adventures and finds it flexible and very user-friendly**

required a very high degree of programming skill. The popularity of good quality games, such as *Defender of the Crown*, is a good example of having the best of both worlds with text and graphics in a single program.

Recently ST users have seen the release of three completely different types of games writing systems, all aimed at developing programs incorporating a wide range of features. The newest is Microdeal's *Talespin* which is likely to have a wide appeal for anyone who has a serious interest in visually orientated adventure games.

## Overview

One of the features which separates *Talespin* from other games writing systems is that, except for text input while in development mode, its user interface is the mouse.

The package consists of manual and a single disc with three files on *THEGRAIL.TAL*, *TELLTALE.PRG* and *TALESPIN.TOS*. The first file is an

incomplete version of Microdeal's latest adventure, *The Grail*, and is provided as a working tutorial. The second file is the runtime system which is used to play the adventures created with the package, including *The Grail*.

The last program is *Talespin* itself, which is used to create your adventures. *Talespin*'s first menu offers the choices of creating a new game, selecting an existing one, setting the drive and folder, getting help or quitting the system.

Looking at the program for the first time, I would recommend loading *THEGRAIL.TAL* and browsing through it to get a feel of how the game is constructed. You could also experiment with some of the editing options.

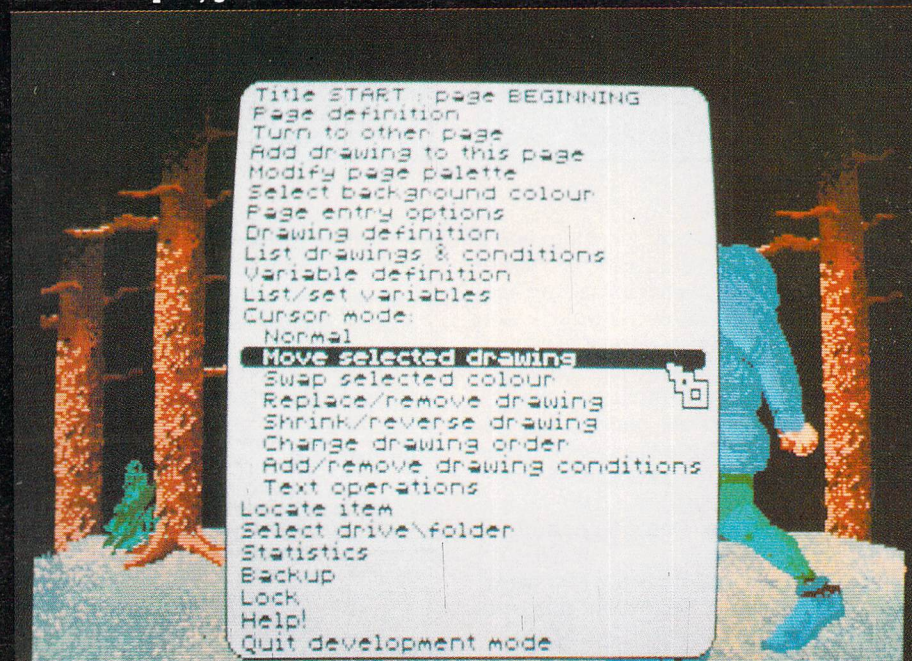
Click on Choose Title and you will be offered *The Grail*. If you left click where the loading screen appears you will progress through the game as if you were playing it.

Right clicking, will open the editor's top level menu. You have the option of selecting autorun mode, in which the ST will make random choices of play, clicking on Help or switching into development mode.

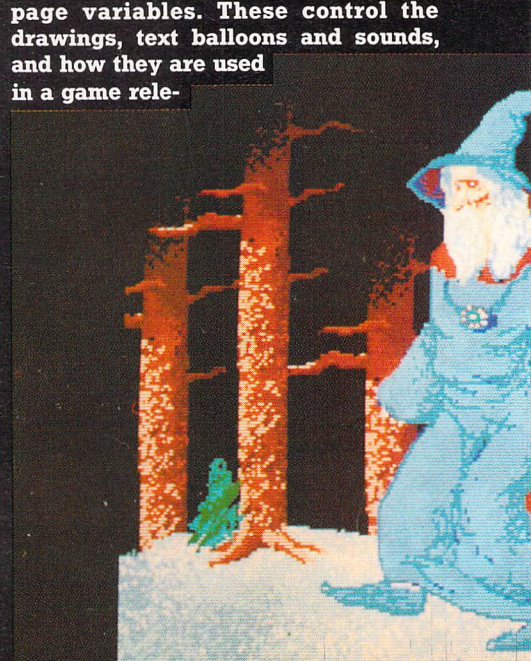
Choosing the last option enables the editor's main menu and gives the first indication of *Talespin*'s real power. The names of the file and the page you are editing are printed at the top of the menu – the adventure is created as a series of linked graphic pages.

Information is provided at each stage of development and help is available from most menus. Prompts are provided as reminders of your present status and each menu is headed by information relevant to the option, such as filename and page title.

A *Talespin* game consists of a collection of pages, each of which is governed by the values of one or more page variables. These control the drawings, text balloons and sounds, and how they are used in a game rele-



*Making your selections*



*A scene from The Grail*



vant to a succession of choices. A simplistic example of program control occurs where, if you don't make a succession of correct choices and in the correct order, you can either suffer a penalty, or be prevented from progressing from the current page, or both.

The main editing menu gives you the options of creating or altering the definitions for page, drawing, sound and variables. Clicking on any of these opens a sub-menu listing further options.

Direct page addressing is available by clicking on Turn to Other Page. If you have made any changes to the current one you are first asked if you would like to save it. You are then presented with a list of the pages currently available. Individual pages may be modified globally in terms of palettes and background colours within the usual 16 colour range.

Game flow is developed by first mapping – on paper – locations for each stage of play. From a visual point of view, this also means developing pictures like a theatre stage on to which your players and props will be later positioned.

Defining, editing and information for game flow occurs across several menu options:

- Page entry conditions – sets variables to a known state on entry to a page.
- List drawing conditions – indicates all the drawing elements on a page in addition to any condition governing their appearance or probability of appearance.
- List/set variables – allows you to alter any of the conditions in order to affect the outcome.

Any picture you can get into your ST can be used as part of a game, and as many times and in as many ways as you wish. A wide range of sources include digitised pictures and imported

drawings in either Degas or Neochrome formats. A built-in drawing utility can be used to generate complete pictures, but this is mainly intended as a touchup facility for drawings acquired outside Talespin's working environment.

Although entire pages are used at each stage of play, individual drawings within them can be edited independently in terms of height and width in nine stages for each parameter, left/right facing orientation and lateral and plane position on each page. Separate drawings can also be repositioned for good composition or other characters can be included.

Once you have defined, say, a tree, you can use several copies in identical or different sizes, different colours with palette definition, in several positions by using Add Another, and planes by using Change Drawing Order on a page. This last feature provides dimensional depth to a page and up and down stage positioning.

## Conclusion

There is something immensely satisfying with being able to put your fantasies into a workable game. If it has any commercial value as well, then so much the better. Making a choice between the ST games writing systems available will depend upon the type you want to produce, and your ability to adapt your programming skills to the system of your choice.

Talespin's user interface is entirely mouse-orientated. Play progresses by clicking on elements provided in each page, whether they are on characters, objects or a succession of dialogues between characters. Clicking on a character opens dialogue balloons. Putting the cursor into this may invert the colour of its contents. When this happens, it means that the dialogue is interactive – either with the player, other characters or both.

The main requirement for using Mandarin's STOS – a competitor of Talespin – is a reasonable knowledge of Basic programming and a good sense of what the completed program is supposed to do. This isn't however, needed with Talespin.

Incentive's STAC is an easy-to-use game organisation tool which also includes facilities to link in a large number of related illustrations. Graphic games usually occupy a lot of file space, but STAC uses compression techniques for Neochrome-type pictures and each screen typically occupies 10 to 16k disc space.

However, Talespin can accommodate a monumental number of drawing elements, each of which can be combined and modified to provide unique pages, often using elements from other pages. File requirements for drawings used in The Grail range from 64 bytes to about 12k.

In terms of ease of use for budding writers with a minimal experience of programming, I would have to rank Talespin, STAC and STOS, in that order. However, this does reduce flexibility, so for more experienced programmers the reverse order is true.

Putting its money where its mouth is, and at the same time exhibiting justifiable faith in a very good product, Microdeal is interested in having a look at any good quality games written with Talespin. Rates of pay are reported to be quite good.

## FACT FILE

**Product:** Talespin

**Price:** £49.95

**Supplier:** Microdeal, 41 Truro Road, St Austell, Cornwall PL25 5JE.

**Tel:** 0726 68020

### POINTS FOR:

Easy to use. plenty of on-line help.  
Mouse driven. Compact graphics.

### AGAINST:

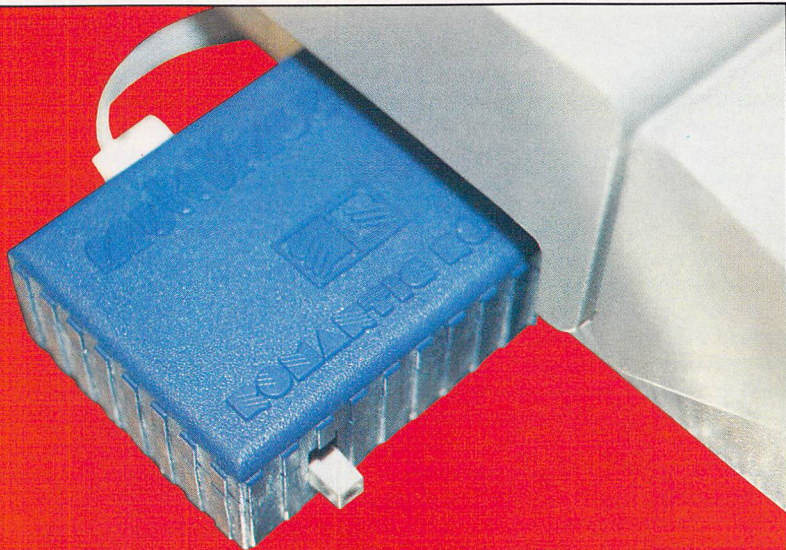
Adventures created can be slow paced.



Communications using Talespin



# Success wears many faces



**Chris Jenkins tries out a new hardware add-on providing full control over your Atari ST.**

**F**OR some time users of other micros like the Amstrad CPC and Spectrum have had the benefit of that indispensable peripheral the Multiface from Romantic Robot. Now, a couple of months late, but welcome nevertheless, the ST version has appeared.

Combining disc management, program backup, printer output and memory manipulation functions, at almost £50 the Multiface ST is a moderate investment, but be assured it's well worth the money.

The menu-driven operating system packs in dozens of facilities in a 64k rom. Admittedly, most are available in various software utility packages, but the convenience of having them combined in a cartridge is only one of Multiface's advantages.

Its unique function is its ability to take "snapshots" of programs in memory as they are executed. It then allows you to modify them in various ways, something not possible using a software-only utility.

## The hardware

Multiface can be used with any model of ST, though with the 520ST it may be more difficult to stop and compress some programs due to lack of free workspace.

The hardware takes the form of a standard cartridge with a small reset button on the front. There's no follow-on slot, so you won't be able to use it with software which uses a cartridge-port dongle, or with software which is itself on cartridge.

From the back of the unit protrudes a four-pin connector, with two extremely flimsy wires leading to a two inch long barrel-shaped extender. This is plugged into the monitor port, and your high resol-

ution or colour monitor, if used, connects to its end. This whole arrangement looks decidedly rickety, and hopefully later Multifaces will be more stoutly made.

Once everything is connected up you can switch on your ST, and in a moment the Welcome menu appears at the bottom of the display. This will reappear every time you reset your ST, and gives a number of options with their control keys shown in inverse.

Pressing A or B executes any autoboot program on a disc in the drive. If none is present the ST displays a normal Gem menu from which you can load a program as usual or select the cartridge icon to activate Multiface.

Pressing C on the main menu fully resets the ST, disabling Multiface, while D accesses the disc organiser and M takes you to the main menu.

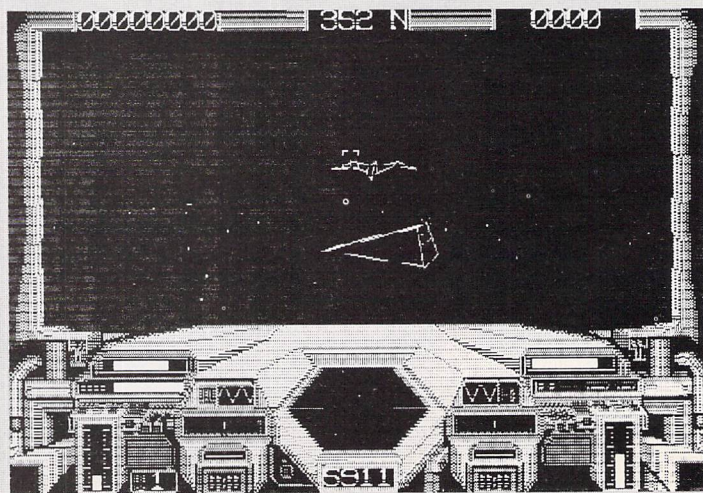
## The magic button

Let's assume you have set up and loaded a favourite program. What does Multiface allow you to do with it? The Magic Button lets you freeze the program at any stage of execution. After a short pause, during which the entire ST memory is compressed, the screen goes inverse and black and white, the main menu appears and you can choose what to do next.

In some cases, especially with the 520ST, you may have to try different sections of the program until you find one where it will freeze properly. On a 1040ST I had no problems freezing any program.

From the main menu, Undo exits and returns the program to normal operation

Freezing  
a  
screen





at the point where you left it. Alternatively, if you want to take a photograph of the frozen screen just press Insert and the display will reappear until you press another key. This is a valuable function for games reviewers trying to cope with programs without a pause facility.

You can also print out a dump of the frozen screen using any Epson-compatible printer. It's also possible to save frozen programs at any chosen point – again, an invaluable aid to the games player when a game has no built in save facility.

Having selected Save from the menu you are asked to specify a filename of up to eight letters. Once this is entered you proceed to another menu where you can choose to save either an entire compressed program or just the current screen to floppy or hard disc. Having made your choice, Multiface compresses the data and saves it, automatically adding the file extender MFC.

### Import snag

Screens are saved in uncompressed form, though as the format is non-standard it's hard to see how this would allow you to import them into, say, graphic design programs.

Since the memory capacity of even the 520ST is greater than that of a single sided disc, Multiface allows you to perform multiple saving across several discs. If there is insufficient space on the current one to save the entire program a warning prompt appears.

You then have the choice of finding a new disc with sufficient space, or saving what you can on the current one, then inserting another to save the program in sections. To combat piracy you can't reload discs created with Multiface without the unit connected.

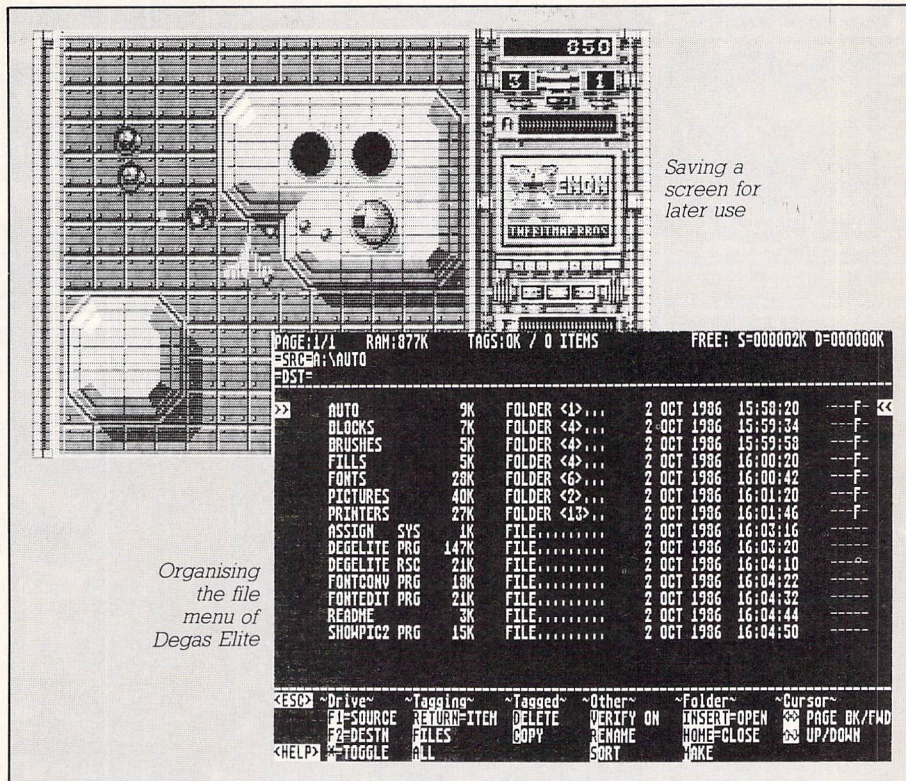
On the loading menu you first enter a filename, then select drive A-P. Error trapping informs you of corrupt, unformatted or missing discs. You must reload multi-part programs in the same order you saved them.

As an extra aid to saving programs, Multiface also allows you to format discs with up to two extra tracks, plus a new sector per track giving an extra 50k per disc. The Format option allows you to specify the disc drive, A or B, and the required number of sectors, tracks and sides.

### The toolkit

The MultiToolkit facility is useful if you ever feel the need to inspect or alter any of the ST's 68000 registers and memory. Selecting T from the main menu brings up a display of the currently selected addresses and their contents in hex and Ascii.

You can then move a cursor to the required address, print out the contents, perform a block fill, find or replace a



string, save or load blocks of memory and edit the contents of the registers in hex, decimal or Ascii.

These functions would be of most use to someone with knowledge of machine code who wanted to alter the form of a program – say, to add infinite lives to a game.

More useful for most of us though, will be the Disc Organiser function. This is a hierarchical non-Gem filing system which offers many advantages over the normal desktop functions.

The main screen is divided into three sections. Two sets of disc information can be stored at the same time, displayed as SRC (source) or DST (destination) at the top left. Function keys toggle between the current displays and drives.

The centre section of the screen shows the current disc directory, including folders, hidden and system files in the order in which they appear on the disc. Their size and type, and the free space available on the disc, are also shown. All the normal functions such as creating new folders, sorting and renaming files, are available using the cursors and control keys shown in the Help menu on the bottom four lines of the display.

Files or other items can be tagged in any order, then the required function – copy, delete, rename, sort, or whatever – selected with the control keys. Functions are performed on the files in the order in which they were tagged.

As the manual points out, you can speed up subsequent reloading times by copying longer files first. Single drive file copying can be performed with the minimum of disc swapping because all available memory is used to buffer as many files as possible. It's also possible to

switch off verification to speed up the process even more.

The disc organiser can also be accessed from Gem by creating a cartridge icon on your desktop.

### Conclusions

The first production models of Multiface are designed for the very latest roms, and I experienced some difficulty booting on my old 1040ST. However, Romantic Robot promises a version for older roms. Make sure you get the right one.

Despite the fact that the manual is full of disclaimers stating that due to the design of the ST it cannot offer 100 per cent success with all functions and all programs, it is definitely a device which will end up plugged permanently into many STs.

Registered owners will be informed of updates and improvements which are on the way. If the history of the Spectrum Multiface is anything to go by, these will be well worth seeing.

### FACT FILE

Product: Multiface ST  
 Price: £49.95  
 Supplier: Romantic Robot, 54 Deanscroft Avenue, London NW9 8EN.  
 Tel: 01-200 8870

#### POINTS FOR:

Many invaluable functions, easy to use.

#### AGAINST:

No guarantee of success every time, flimsy connector.



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# MUSIC ON THE ST

By IAN WAUGH

I AM sure almost every ST user has heard of public domain software – programs which have been given to the public by their authors and which can be freely copied and distributed. It should come as no surprise to discover that among them are lots of music programs for the ST.

You can obtain PD programs from anyone who is willing to give you a copy. Enterprising individuals and companies have set up distribution services. Because the programs are free, these distributors are precluded from making lots of money from the sale of PD discs but they do charge for copying, postage and their time. Prices vary, but you can expect to pay somewhere between £2 and £4 for each disc.

Softville has one of the largest selections of PD music discs in the UK and SOS specialises in nothing but PD music – but beware, SOS discs are £7 each.

Over the next few months we'll take a look at the public domain music scene where there are lots of programs for both the ST's internal sound chip and Midi.

Many discs contain demonstration versions of commercial programs. Some are excellent and contain most of the features of the full program without, say, the save function. As an added safeguard many will crash too, after a random period, but they are a super way to test drive a program before forking out hard earned cash on the real thing.

SOS Software has a good selection of interactive demonstration programs, including Intelligent Music's M and Passport's MasterTracks. Also on its list is Soundbits' Yamaha 4x4 Editor – for four operator DX synths – Ensoniq ESQ/SQ80 and Roland D-50 and Alpha Juno Editors.

SOS also has working demonstrations of Hybrid Arts' EZ-Track – reviewed way back in the June 1987 issue of *Atari ST User*, but since updated – and EZ-Score.

If you want to try before you buy, these are all worthwhile investments.

If it's samplers you're interested in, SOS has Lynex Sampler and Hybrid Arts' ADAP demonstration discs. These purport to contain complete software versions of the programs, but you need the sampling hardware in order to make full use of them. You can still go through the motions however, to see what facilities the programs have and how they work. Both discs contain comprehensive manuals.

SOS provides lots of demonstrations of Steinberg programs including Pro-24 III, MasterScore and Editors for the DMP-7, the Roland D-50 and MT-32, Yamaha DX/TX synths and Akai S-900. These are slide shows however, rather than interactive usable programs, but they take you on a guided tour of the system and contain lots of explanatory text.

Softville can supply a demonstration disc of EZ-Track plus three other discs full of songs you can play on it. It's a bit like having your own jukebox. Softville also has a run-time only demonstration of Eidersoft's Pro Sound Designer which is quite impressive.

Softville's MUS 3 contains a demonstration of American company Intersect's Orchestrator program and another to convert Amiga Music Studio files to ST format. It also houses two CZ librarians for storing CZ voices on disc – well worth it for the saving you can make in ram packs.

That's not all, for it also contains 37 music files for Activision's Music Studio. You can play them through your monitor's speakers or via Midi. MUS 6 and 7 together contain 111 more Music Studio tunes. They should keep you busy for a few days!

## FACT FILE

Softville, 55 Highfield Avenue, Waterlooville, Hampshire PO7 7PY.  
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## NEW ON THE ST MUSIC SCENE

**S**ONUS SuperScore has just been upgraded to version 1.3. You are now able to click a new score directly on to the stave and the program will turn it into a playable sequence, thus removing one of the major restrictions of the system. A metric ruler shows beat divisions within the bar and helps you position the notes in exactly the right place.

It also has new quantise facilities and the score will now follow dynamic instructions entered from the miscellan-

eous palette menu such as pp and fff.

Crescendo and decrescendo markings represented by hairpins can also determine the velocity of the notes. If you like working in step time with traditional notation it is certainly worth checking out.

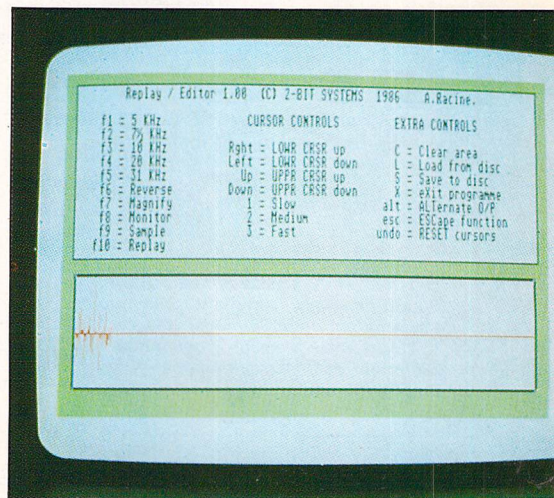
Sonus says that Jack Goldzweig and Stephen Soghoian of the London School of Jazz are producing a Jazz Piano Method Book and audio cassette tape using Super-

# In search of the lost chord

PD music programs and their wealth of utilities and demos come under our expert's microscope



A sampling session using 42-Crew (Softville library number DEM 34)



The menu screen from ST Replay (Softville library number DEM 60)

Turn to Page 107 ►





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## ◀ From Page 105

Score and Timeworks DTP on the Atari ST.

New arrivals! At last, from distributor MCM, Dr.T's Tunesmith (£135) has landed on my desk. It's a theme and variations generator and looks fascinating. If you thought Fingers – reviewed in the February 1989 issue of *Atari ST User* – was intriguing, this looks doubly so.

A new program from Intelligent Music also arrived in the same package from MCM. MidiDraw, £69.95, converts your on-screen doodles into Midi information. Yes, it's different.

And a program from a company new to the software scene – First Rate. Trackman (£199) is a sequencer with a very friendly user interface. It comes with a programmable footswitch and an extra Midi port to give you 32 channels. The presentation drips quality.

A demonstration version of Trackman is available from First Rate for £10 and this includes a 44 page tutorial manual. The program has no sequence save functions but gives you 30 minutes of playing time and 15 minutes of recording time – as distinct to running time. It also includes 1000 DX patches and a D-50 Patch Librarian. Well worth investigating. Watch out for reviews of all these very soon.

Music software is notorious for being

continually updated, and each manufacturer and distributor seems to have a different attitude towards such improvements.

Steinberg distributor Evenlode Soundworks has asked us to clarify its software update policy. For Pro-24 III owners a fee of £23 will cover all future upgrades including postage and packing, addenda and so on. Users of version 2.1 who have not yet subscribed can upgrade to version 3.0 for £23 but if your version is earlier than that it will cost you £34.50.

£23 will cover all future upgrades if you have Masterscore, while users of all other Steinberg products are upgraded free of charge as long as they have returned their registration form to Evenlode.

News from the States reveals that a college in Silicon Valley is sponsoring a BSc course in music technology. Facilities include 10 Atari 1040STs.

Stiletto Sound Systems has started a customer discount service which, after your first buy, entitles you to 10 per cent discount on all future purchases. This includes Atari hardware and products from Hybrid Arts, Dr.T, Passport and Intelligent Music among others. Stiletto also sells the budget-priced Philip Rees Midi switching boxes and has a very large range of DX7/TX7 voices at quite competitive prices.

Finally, bulletin boards seem to be proliferating like rabbits and many have extensive areas dedicated to music. One such board called Crystal apparently has 10,000 DX voices on line. It can be contacted on 01-886 2813.

If anyone else out there is running a board of particular interest to Atari ST musicians, drop us a line so we can tell everyone about it.

## FACT FILE

*Sonus, PO Box 18, Wokingham, Berkshire, RG11 4BP.*

*Tel: 0734 792699.*

*London School of Jazz*

*Tel: 01-883 0454.*

*Evenlode Soundworks, The Studio, Church Street, Stonesfield, Oxford OX7 2PS.*

*Tel: 099 389 8484.*

*MCMXCIX, 9 Hatton Street, London NW8.*

*Tel: 01-258 3454.*

*Stiletto Sound Systems, 14 Nelson Street, Dumfries, Scotland DG2 9AY.*

*Tel: 0387 65276.*

*First Rate, La Ramee, St. Peter Port, Guernsey, Channel Islands.*

*Tel: 0481 23169.*

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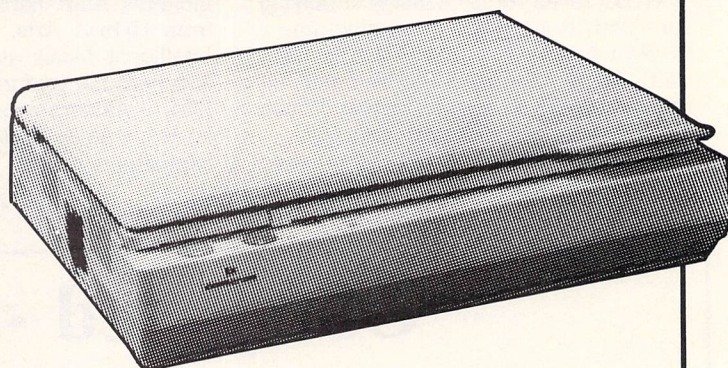
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## ◀ From Page 58

```

BNUM      equ 45      ;BIOS trap vector
BCONOUT   equ $3      ;Bconout() code
SETEXC    equ $5      ;Setexc() code
XBIOS     equ 14      ;XBIOS trap number
XBVEC     equ $b8     ;XBIOS trap vector
SETTIME   equ $16     ;Settime() code
GETTIME   equ $17     ;Gettime() code
SUPBIT    equ 5       ;supervisor state
SPACE     equ $20     ;ASCII space
COLON     equ $3a     ;ASCII colon

```

```

* initialisation - first find our own
* size for a later Ptermres() call
move.l 4(sp),a0      ;base page addr
move.l #100,d6       ;base page len
add.l $c(a0),d6      ;+ code length
add.l $14(a0),d6     ;+ data length
add.l $1c(a0),d6     ;+ bss length
* now install our BIOS trap handler
lea trap13(pc),a0    ;trap handler
move.l a0,-(sp)      ;onto stack
move.w #BNUM,-(sp)   ;vector number
move.w #SETEXC,-(sp) ;code
trap #BIOS
addq #8,sp           ;clean up
move.l d0,savetrp    ;save old vec
* and our trap 3 handler
lea trap3(pc),a0     ;trap handler
move.l a0,-(sp)      ;onto stack
move.w #T3NUM,-(sp)  ;vector number
move.w #SETEXC,-(sp) ;code
trap #BIOS
addq #8,sp           ;clean up
* get out of here
clr.w -(sp)          ;return code
move.l d6,-(sp)      ;amount to keep
move.w #PTRES,-(sp)  ;func code
trap #GEMDOS         ;no return

```

```

* trap3 routine - used to toggle
* trap13 on & off. Return the old
* state in d0 $0000 -> was off, now on
* $FFFF -> was on, now off
trap3:
lea onoff(pc),a0     ;flag address
move.b (a0),d0       ;get old value
ext.w d0             ;extend to d0.w
eor.b #$ff,(a0)      ;toggle it
rte

```

```

* This is the BIOS trap routine
* we can mangle a0 here without qualms
trap13:
tst.b onoff          ;are we active?
beq boring           ;nope
lea 6(sp),a0         ;supervisor mode
btst #SUPBIT,(sp)    ;is it?
bne super            ;yup
move usp,a0          ;user stack ptr
super
cmpi.w #BCONOUT,(a0) ;Bconout call?
bne boring           ;no
cmpi.b #TCHAR,5(a0)  ;time trigger?
seq tdfld            ;just in case
beq gotit
cmpi.b #DCHAR,5(a0)  ;or date trigger?
beq gotit
boring
movea.l savetrp,a0   ;get trap vec
jmp (a0)             ;and go to it
gotit
movem.l d2-d4/a3-a4,-(sp)
movea.l a0,a4        ;avoids saving a0
bsr get_td

```

```

bsr show_td
movem.l (sp)+,d2-d4/a3-a4
rte                ;back to user

* Find and dissect time or date
* entry: tdfld ? time: date required
* uses: d0-3, a3, calls: none
get_td
move.w #GETTIME,-(sp) ;func code
lea xbret(pc),a3      ;return addr
move.l a3,-(sp)       ;onto stack
move sr,-(sp)         ;like trap
move.l XBVEC,a3        ;where to go
jmp (a3)

```

```

xbret
addq #2,sp           ;clean up stack
move.l d0,d1         ;save time & date
tst.b tdfld          ;which do we want?
beq getd             ;only the date
lsr.w #5,d1           ;shift secs off end
move.w d1,d0          ;into work register
andi.w #$3f,d0        ;only the minutes
move.w d0,mins
lsr.w #6,d1           ;shift the mins away
cmpi.w #12,d1         ;see if afternoon
sgc ampm             ;set am/pm
blt savehrs          ;set am/pm
subi.w #12,d1         ;12 hour clock
savehrs
tst.w d1              ;zero hours?
bne save1             ;no...
moveq #12,d1          ;yes, so make 12
save1
move.w d1,hours
rts                   ;go home

```

```

* This part dissects the date
get_d
swap d1              ;date to low word
move.w d1,d0         ;date to d0
move.l #23,d2        ;d of w calc
andi.w #$1f,d0       ;only day of month
move.w d0,d1         ;day
add.w d0,d2          ;d of w calc
move.w d1,d0         ;restore date
lsr.w #8,d0          ;get year in d0
lsr.w #1,d0          ;year
add.w #80,d0         ;real year
move.w d0,year
lsr.w #5,d1          ;shift day in month
andi.w #$0f,d1       ;only the month
move.w d1,d3         ;for d of w calc
cmpi.w #2,d3         ;is it Jan or Feb?
bhi notjf            ;no
subq #1,d0           ;fiddle year
add.w #10,d3         ;and month
bra jf               ;continue
notjf
subq #2,d3           ;adjust month
jf
add.w d0,d2          ;add year to d of w
lsr.w #2,d0          ;get year/4
add.w d0,d2          ;and add to d of w
muls #26,d3          ;int(month*2.6-0.2)
subq #2,d3
divs #10,d3
add.w d3,d2          ;add to d of w calc
* we want month offset to add to base
* of month name offset table
subq #1,d1           ;0-11
lsl.w #1,d1          ;x2
lea montab,a3        ;base
adda.w monoff(pc,d1.w),a3 ;pointer
move.l a3,month
* get pointer for the day of week
divs #7,d2           ;mod 7
swap d2              ;remainder

```

```

lsl.w #1,d2          ;offset
lea dofwtab,a3       ;base
adda.w dofwoff(pc,d2.w),a3 ;pointer
move.l a3,dofw
rts

```

```

* offsets into day+ month name tables
dofwoff: dc.w 0,9,16,23,31,41,50
monoff:  dc.w 0,8,17,23,29,33,38
         dc.w 43,50,60,68,77

```

```

* Write date/time
* uses: d1, d3, d4, a3
* calls: outchar, outdec, outstr
show_td
tst.b tdfld          ;which do we do?
beq show_d           ;the date
move.w hours(pc),d3  ;hours first
moveq #1,d1          ;no leading zero
bsr outdec           ;write hours
moveq #COLON,d3      ;delimiter
bsr outchar          ;delimiter
move.w mins(pc),d3   ;mins
moveq #0,d1          ;leading zero
bsr outdec           ;write minutes
lea amstr(pc),a3     ;assume morning
tst.b ampm           ;is it?
beq morning          ;yup
addq #3,a3
morning
bra outstr           ;write it
show_d
movea.l dofw(pc),a3  ;pointer to day
bsr outstr
moveq #SPACE,d3      ;delimiter
bsr outchar          ;delimiter
moveq #1,d1          ;no leading zero
move.w day(pc),d3    ;day
bsr outdec           ;show date
lea thstr(pc),a3     ;assume "th"
cmpi.w #1,d4         ;date 10..19?
beq use_th           ;yes
swap d4              ;get date mod 10
tst.w d4             ;zero?
beq use_th           ;yes
cmpi.w #4,d4         ;or >=4?
bge use_th           ;yup
lsl.w #2,d4          ;offset
adda.w d4,a3         ;appropriate suffix
use_th
bsr outstr
movea.l month,a3      ;month name
bsr outstr           ;show it
lea centstr(pc),a3   ;assume 20th
bsr outstr
move.w year(pc),d3    ;get year
moveq #0,d1          ;leading 0
bra outdec           ;returns

```

```

* outdec - output 2-digit decimal num
* entry: d1.w: if 0, write leading 0
* d3.w: number
* uses: d3, d4, calls: outchar
* exit: d4: num div 10 in bottom word
* num mod 10 in top word
outdec:
andi.l #FFFF,d3      ;clear upper .w
divs #10,d3          ;separate digits
move.l d3,d4         ;save for return
tst.w d1             ;test the flag
beq firstdig         ;leading 0
tst.w d3             ;is it 0?
beq outdec1          ;only 2nd digit
firstdig
addi.b #0,d3         ;convrt to ASCII

```

Turn to Page 110 ▶



## ◀ From Page 109

```

bsr      outchar    ;out 1st digit
outdec1
swap     d3         ;remainder
addi.b   #'0',d3    ;cvrt to ASCII
bra      outchar    ;return

```

```

* output a string
* entry:  a3: string address
* uses:   d3, calls: outchar
outstr:
  move.b (a3)+,d3    ;next character
  beq    outback     ;done
  bsr    outchar     ;write it
  bra    outstr      ;carry on
outback
  rts

```

```

* Output a character
* entry:  d3.b: the character
*        a4: argument list
* uses:   none, calls: none
outchar
  move.w d3,-(sp)    ;the char
  move.w 2(a4),-(sp) ;device
  move.w #BCONOUT,-(sp) ;func code
  lea    chret(pc),a0 ;return addr
  move.l a0,-(sp)    ;onto stack
  move   sr,-(sp)    ;like trap
  move.l savetrapp(pc),a0 ;where to go
  jmp    (a0)
chret
  addq   #6,sp      ;tidy stack
  rts

```

```

* data areas: first the bss, then
* the various tables and strings
savetrapp: ds.l 1 ;save trap13 vec
tdflag:    ds.b 1 ;time or date?
mins:      ds.w 1 ;time values
hours:     ds.w 1
ampm:      ds.w 1
dofw:      ds.l 1 ;date values
day:       ds.w 1
month:     ds.l 1
year:      ds.w 1
dofwtab:   dc.b 'Saturday',0,'Sunday',0
           dc.b 'Monday',0,'Tuesday',0
           dc.b 'Wednesday',0
           dc.b 'Thursday',0,'Friday',0
montab:    dc.b 'January',0,'February',0
           dc.b 'March',0,'April',0
           dc.b 'May',0,'June',0
           dc.b 'July',0,'August',0
           dc.b 'September',0
           dc.b 'October',0,'November',0
           dc.b 'December',0
amstr:     dc.b 'am',0,'pm',0
thstr:     dc.b 'th',0,'st',0,'nd',0
           dc.b 'rd',0
centstr:   dc.b '19',0
onoff:     dc.b $FF
           EVEN

```

## PROGRAM II

```

* Toggle
* By Jeremy Roussak
* (c) Atari ST User

GEMDOS equ 1 ;GEMDOS trap
CNECIN equ 8 ;Cnecin() code
CCONWS equ 9 ;Cconws() code

  lea    msg1(pc),a0 ;opening message
  bsr    outstr
  trap   #3          ;do it
  tst.w  d0          ;what was it?
  beq    enable      ;was disabled
  lea    dismsg(pc),a0 ;now disabled
  bra    wrt
enable
  lea    enmsg(pc),a0 ;is now enabled
  wrt
  bsr    outstr
  lea    msg2(pc),a0 ;message
  bsr    outstr

```

```

move.w #CNECIN,-(sp) ;wait for a key
trap   #GEMDOS
addq   #2,sp         ;clean up
clr.w  -(sp)         ;Pterm0()
trap   #GEMDOS

```

```

* outstr: write string using Cconws()
* entry:  a0: string address
outstr
  move.l a0,-(sp)    ;string
  move.w #CCONWS,-(sp) ;code
  trap   #GEMDOS
  addq   #6,sp      ;tidy up
  rts
msg1    dc.b 10,13,'Encoding is now ',0
enmsg   dc.b 'en',0
dismsg  dc.b 'dis',0
msg2    dc.b 'abled.',10,13
        dc.b 'Hit a key to continue...'
        dc.b 0
        EVEN

```

## PROGRAM III

```

10 REM Create WHEN.TOS
20 REM By J.Roussak
30 REM (c) Atari ST User
40 REM ST Basic (Old+New)
50 FULLW 2:CLEARW 2
60 code$="ABCDEFGHIJKLMNOPQRSTUVWXYZ
bcdefghijklmnopqrstuvwxyz0123456789+-"
70 GOTOXY 1,1:name$="WHEN.TOS"
80 OPEN "R",#1,name$,1
90 FIELD #1,1 AS buffer$
100 newdata$=""
110 loop:
120 READ data$
130 IF data$="*" THEN CLOSE #1:END
140 FOR i%=1 TO LEN(data$)
150 nybble%=INSTR(code$,MID$(data$,i%,1))-1
160 FOR j%=0 TO INT(nybble%/16)
170 newdata$=newdata$+HEX$(nybble% MOD 16)
180 NEXT
190 WHILE LEN(newdata$)>1
200 byte%=VAL("&H"+LEFT$(newdata$,2))
210 LSET buffer$=CHR$(byte%):PUT #1
220 newdata$=MID$(newdata$,3)
230 WEND
240 NEXT
250 GOTO loop
260 DATA GABKwADfCwwwwwwwwwwCAGPgECMD
270 DATA MwABQNMKIgMNMKIqBENMKIQMBEPK
280 DATA QEAcpAIDpDMqCNDpMgFEONFAEPC
290 DATA DMwQCJAEBPKqBKPAIDpMQCTpDMg
300 DATA FEONFAEPCGHCpAGDPDMqDBEOEBE
310 DATA BPKADAFBABAeyqKBgfEOHDEKDJwAD
320 DATA FBGHwDCeBOPgGAIBHGFwAUOGIAMF
330 DATA wDWwBAMCIQpQpVHPJwACJEGHwBEA
340 DATA MCiQfgFGHwAKCAHJwACJAeONAEIOH
350 DATA DIBICIEIGBwAMGBgBAUMNPBIMEOH
360 DATA TPDmqBHEHPKqOCpALEAOHCgHJwQLI

```

```

370 DATA EONDfUPSqEKDJwACJEGHwDEOKEJDQ
380 DATA BACEgDPTMwQCJGOMEJAMEBgmFMPJw
390 DATA ACJkGNwAGAUBgMEKEBwWAEHCAMTMB
400 DATA wACJIEOHFEIEBDqBCEDMwQBHACEgB
410 DATA PTMwQCKANuADqBOAEIOCEIAGEgFAT
420 DATA MwQCKGOKEJACEBgPDGABAMEdgCGCw
430 DATA AMFDEQGEDgKGwQEVEDNUAOIUINuAMH
440 DATA PMqBKVEDIHpmgKNUdFDEBODEJEHPJ
450 DATA wACOBNGPLBADACDMLwACKCIPFMgHE
460 DATA IEcODEKEHPJwACKINGPLCqCKDMLwA
470 DATA CJMEOHfWgJBqBHBqBPQCJDcWgIQAR
480 DATA QBHQBqNCBqCGqCLqDCQDMQUENEKD
490 DATA JwACJEGHwDADgDKQCHCABGBwHOGH
500 DATA DKGBwLcDgDKQNAHCqGBwGOEHpkABG
510 DATA HEKDJwACJkGhWAEfGELGwAIECGHkA
520 DATA LiGBwHMHGcAGBwIGHcABDgDKqKMGb
530 DATA WECEHPKABEBAMUgBGHwBGEIKKUGHw
540 DATA AOAMUgEGMwAGOFEMNGMEGBwEICGHJ
550 DATA wACKCGBwDOEHpkABCDGBwDGDGDKQH
560 DATA EHCqGwQCACIDw-IHPmGKCIADeKEBg
570 DATA HwAIEKEDGHwAKAGADqDAGBwBMEIED
580 DATA AGADqDAGwABCBGLGHwAKGBwAIGgv
590 DATA UOHfDPATPCkGhWAEfGELGwAIECGHkA
600 DATA EAoHCAHKgIEONAFMEpEOHfwwwwww
610 DATA wwwwwwFDGBHEHfHCgEGBHJqDFHFGOG
620 DATA EGBHJqENGpGOGEGBHJqFEHfGfHDGE
630 DATA GBHJqFHFgEGOGFHDGEGBHJqFEGIH
640 DATA FHCHdGEGBHJqEGHCGJGEGBHJqEKGB
650 DATA GOHfGBHCHJqEWfGCHfGBHCHJqEN
660 DATA GBHCGDGIqEBHAHCJGMqENGBHJqEK
670 DATA HFgOGfGqEHfGMHJqEBHfGfHDHEqF
680 DATA DGFHAHEGfGNGCGfHCqEPGDHEGPGCG
690 DATA FHcQEOGPHwFGNGCGfHCqUGfGDFGN
700 DATA GCGfHCqGBGNqHAGNqHEGICgHDHECG
710 DATA GOGEGcHCGEGcCADDJqfWqCKDcACGB
720 DATA EDEBCAMGBGBCDIAKOAKCOCIEmq
730 DATA *

```

## PROGRAM IV

```

10 REM Create TOGGLE.TOS
20 REM By J.Roussak
30 REM (c) Atari ST User
40 REM ST Basic (Old+New)
50 FULLW 2:CLEARW 2
60 code$="ABCDEFGHIJKLMNOPQRSTUVWXYZ
bcdefghijklmnopqrstuvwxyz0123456789+-"
70 GOTOXY 1,1:name$="TOGGLE.TOS"
80 OPEN "R",#1,name$,1
90 FIELD #1,1 AS buffer$
100 newdata$=""
110 loop:

```

```

120 READ data$
130 IF data$="*" THEN CLOSE #1:END
140 FOR i%=1 TO LEN(data$)
150 nybble%=INSTR(code$,MID$(data$,i%,1))-1
160 FOR j%=0 TO INT(nybble%/16)
170 newdata$=newdata$+HEX$(nybble% MOD 16)
180 NEXT
190 WHILE LEN(newdata$)>1
200 byte%=VAL("&H"+LEFT$(newdata$,2))
210 LSET buffer$=CHR$(byte%):PUT #1
220 newdata$=MID$(newdata$,3)
230 WEND

```

```

240 NEXT
250 GOTO loop
260 DATA GABKwQHmwwwwwwwwwEBPKQDOGBw
270 DATA COEOEDEKEAGHwAKEBPKqUGwqGEBPK
280 DATA QDJGBwBGBPKqDIBGwAODpDMgIEOE
290 DATA BFUPECgHEOEBcPAIDpDMgJEOEBfME
300 DATA PEOHfAKANefGOGDGPgEGJGOGHCAGJ
310 DATA HDcAGOGPXcGfGfGOGEGJHDGGBGCGM
320 DATA GFGEcOAKANEIGJHEcAGBcAGLGFHJC
330 DATA AHGEGcAGGDPGGOHEGJGOGHfGfCOCOC
340 DATA www
350 DATA *

```



# Lombard



# rally



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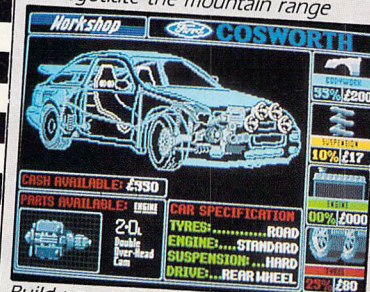
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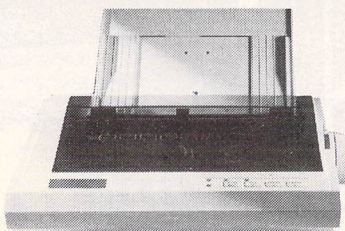
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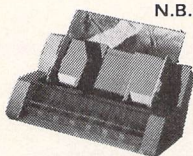
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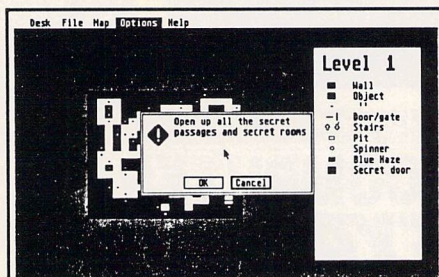


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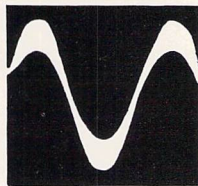
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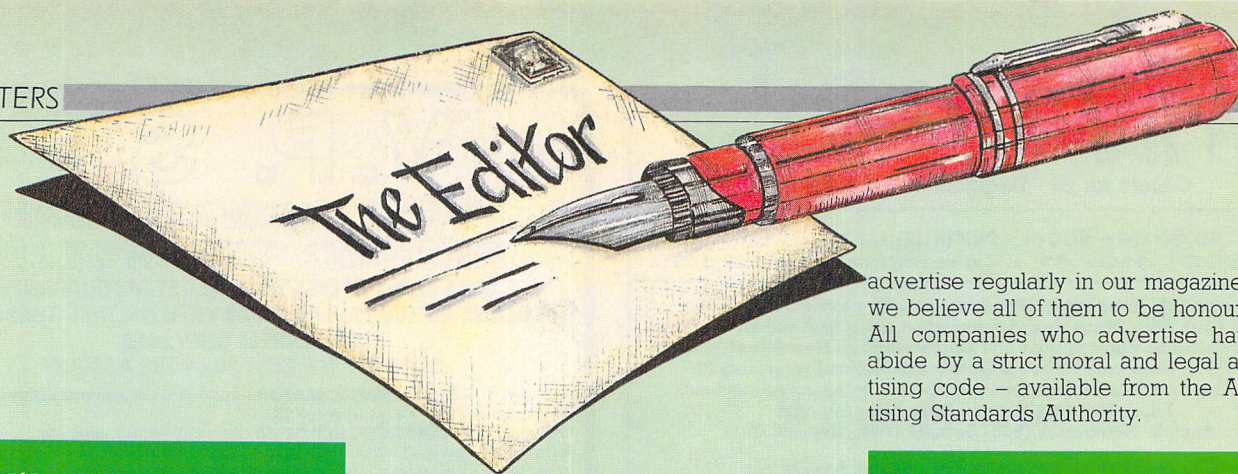
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## Drugs are no game

I AM not normally one to write to magazines or newspapers, but feel a moral obligation to put pen to paper and express my disgust at some recent ST software.

My complaint does not concern the worn arguments over sexism, violence or piracy, but something much more insidious and sinister. It concerns a quite horrifying moral stance taken in a particular game recently released for the Atari ST.

Three years ago I lost my niece to the demon called smack – or heroin if you like. As a family we fought to help her but then had to watch as her life was destroyed by drugs. Yet we now have a game – which many young children will play – glorifying the street battle over drugs. I am of course talking about Entertainment International's Manhattan Dealers.

Drugs is not a game, so why make it one? Are software developers so devoid of original inspiration that they have to scrape the bottom of the cesspit for new ideas? I am sure Entertainment International wouldn't dream of creating a game about cancer – which is equally insidious and life threatening. That would only be a matter of bad taste, yet a game concerning drugs also introduces an element of temptation which children should never see.

Surely the day has not already arrived when we even have to censor our children's games? – **J. Garmy, Mile Oak, East Sussex.**

● A very interesting observation which we are sure will stir strong feelings in many readers. How do ST users feel about this and other dubious stances on morality taken in games such as SDI, Platoon and Mindfighter?

## The early bird has to wait

AS a regular reader of Atari ST User may I say I admire the high level of class which your magazine exudes. However, there is one thing that really annoys me, that is mail order companies who advertise products months before they are released. One particular company offered 26 titles which were not available

at the time of publication of the advert.

These companies appear to be banking the punters' money, letting it earn interest before despatching the software many weeks later. – **Allan Gore, Chorley, Lancashire.**

★ ★ ★

THIS is the first time I have ever written to a magazine. I am writing to air my feelings on something that has annoyed me for some time – the fact that some companies advertise products that simply are not available.

The Powerdrome advertisement by Electronic Arts is a prime example of what I am talking about. The product was originally advertised as "Now available for the Atari ST" in September 1988. Yet Powerdrome was not released to the public until early November.

However, the worst offenders are mail-order companies, who often advertise software as "Coming soon" many weeks or even months before official release dates. – **Mark Claverling, Ashington, Northumberland.**

● These two letters are a small sample of many we have received recently concerning this problem. Basically the reasons for these anomalies are threefold, yet these in no way condone bad advertising practise.

First of all, in order to achieve an early publication date to satisfy our many readers and give our production department time to produce quality pages, advertising copy is lodged almost a month before the cover date of the magazine. This is true of most other monthly magazines available in the UK.

Secondly, our advertisers themselves want you, the reader, to be aware of all new releases as they become available, but are also at the mercy of the software producers. Computer software, by its very nature can be temperamental, and bugs are often picked up only days before official launch dates.

Mail order companies advertise in good faith that a product will become available on a specific date. As such they, too, are at the mercy of the free market, which includes software developers, marketing and PR companies, cover artists, copywriters, packaging firms and distributors. However, we firmly believe that advertisers should not bank your cheque more than four working days before despatch of your order.

More than 100 different companies

advertise regularly in our magazine, and we believe all of them to be honourable. All companies who advertise have to abide by a strict moral and legal advertising code – available from the Advertising Standards Authority.

## Programmers' food for thought

DOES anyone know of a dietary analysis program for the ST? What I want to do is to key in the relevant quantities of all the food that I eat and have the program work out for me what amounts of various vitamins, minerals and nutrients I am getting.

I suspect that such a program isn't available for the ST, but almost certainly will be for IBM PC compatibles. In that case, would it merely be necessary for me to buy PC-Ditto and a 5.25in drive in order to run such a program? – **Dr C.G. Giles, Bradford, West Yorkshire.**

● We do not know of such a program for the ST or IBM compatible PCs which will run on the ST under PC-Ditto. Perhaps a reader can supply us with information which may help Dr Giles.

## Education in the antipodes

I AM writing to tell you how pleased I was to read the recent series of articles on the ST in education. Our school – Marlborough Boys' College – is, I believe the first in New Zealand to buy a class set of Atari STs. We are very pleased with our acquisition, especially for teaching computer studies.

Very timely is the review of Robokit. We have a new national syllabus for 7th form computer studies coming up later this year, and there is a section on robotics. With a product like Robokit it should be a lot easier to teach such concepts.

Our school uses computers to a large extent in subjects such as science, English, economics, technical drawing, social studies and mathematics. However, we have a problem as the New Zealand importer of ST software seems only to push the games side of the machine, and it is hard to find the sort of software we are constantly looking for.

Can you help us with a list of educational software available for the ST, with appropriate contacts of distributors? – **Geoffrey Pearson, Head of Computer Studies, Marlborough Boys' College, New Zealand.**

★ ★ ★

HELP please! I am a primary school teacher in Adelaide, South Australia. Our



## Star Game for a Star Letter

### Incommunicado printers

AS a regular reader of Atari ST User since May 1988, I have noticed the number of users who have written in frustrated when trying to get their ST and printer to communicate satisfactorily. This particular problem seems to affect newcomers with the 1st Word word processor.

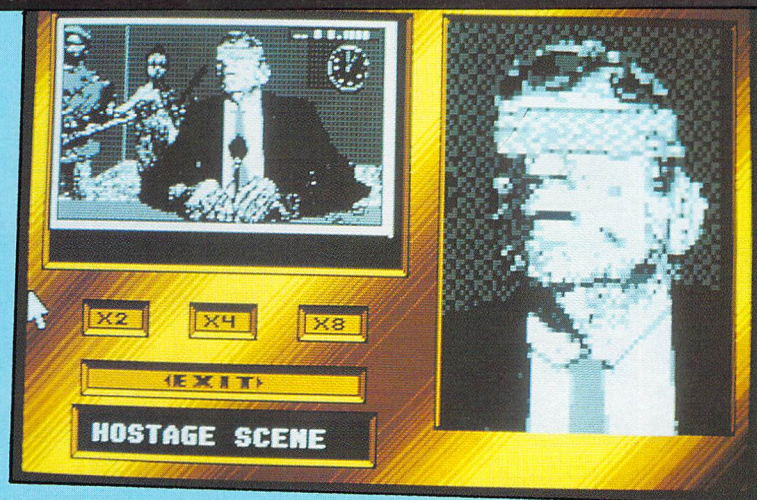
Correct setting of the DIP switches is a large part of the battle, but understanding the printer driver and being able to modify it for individual printers is just as important.

1st Word as supplied has an installed printer driver for dot matrix machines, called 1st\_PRNT.DOT. This is for Ascii only printers and all the codes for special text modes are disabled.

Run the 1st Word program and print out the printer installation guide and all the files found in the PRINTER folder, ignoring BRO\_HR15.HEX and QUME.HEX, as these are for daisy-wheel printers. You should now have four file printouts of about six pages in length, which are hex configuration files for several dot matrix printers.

Quit to the desktop, create a new folder, copy the original 1st\_PRNT.DOT to this and delete it from

Each month we'll select a letter of the month – and the sender will receive the program which our reviewers have rated Atari ST User Star game. This month K.S. Jagger will receive *The President is Missing*, which is reviewed on Page 18. Letters on every subject of interest to Atari ST users are welcome. Send them to: The Editor, Atari ST User, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP



the root directory.

Compare the printouts with each other and with the commands in your printer manual for the various print styles and you should be able to see which file requires the least modification to match your machine.

You can then re-enter 1st Word in WP mode, load the most suitable .HEX file, modify the codes as necessary and save the new file under a different name, but still with the .HEX extender, using the SAVE AS option.

Quit to the desktop again, open the PRINTER folder and run INSTALL.PRG. This will give a directory window from which you can select your modified .HEX file which will be read and a new 1st.PRNT.DOT file created. This should be copied to the root directory with the 1st Word

program in. You can then re-enter 1st Word and print your documents, hopefully using all the print styles available on your printer.

I hope this is of some help, as I nearly gave up in the struggle. If anyone needs an installed printer driver for a Micro Peripherals' MP 165+ printer, perhaps you could put them in touch with me. I would be glad to provide the .HEX files as well. – **K.S. Jagger, Sutton, Surrey.**

● Thank you very much for your most helpful tips. We will certainly put any reader requiring help with the MP 165+ printer driver in touch with Mr Jagger. We have covered this topic before, but as it was a long time ago we'll look into the possibility of an update for newcomers.

school has a number of Atari 520STs, but there seems to be very little educational software available.

I have seen some American products by Unicorn, but that seems to be about it. What we need is a list of PD and commercial educational software available for the ST.

Without software these fabulous machines will simply not take off over here. Even drill and practise in maths and languages would be of great assistance to us. – **Rainer Mayer, Our Saviour Lutheran School, Aberfoyle Park, South Australia.**

● More evidence that the ST is finding its niche in education worldwide. This month we have published a guide to educational software for the ST which you can find on Page 51. The number of titles available is increasing every month, and the quality of software is almost unsurpassed.

### Plagued with viruses

I READ the article on piracy in the November 1988 issue of Atari ST User with great interest. I then found it very amusing when you gave an example of unphotocopyable text the following month with your review of Sorcery Plus!

On a more serious note, I think your article on viruses in the December 1988 issue may have shone some light to the ignorant, but I think it was a touch naive to dismiss viruses almost as a passing irrelevance.

More than eight different viruses are circulating on software for the ST, one of which is capable of knocking the disc drive's drive head out of alignment. However, there is a commercial virus

destruction utility available for £6.95. This will search and destroy both boot-sector and link viruses and immunise your disc against them.

Over here in Germany, viruses are rife – especially on the Amiga – and I know of more than one owner who has installed a hardware latch which will show when a virus is present in the micro.

I believe it will soon reach similar proportions on the ST. Destructive viruses will get to you, so take it more seriously and be prepared. – **S. Carolan, RAF Bruggen, BFPO 25.**

● The missing review of Sorcery Plus in our December 1988 issue of was due to a freak printing error.

On a more serious note, we don't believe that Stephen Hill's article dismissed viruses as irrelevant, but set out their current state of play on the ST –

Turn to Page 118 ►



## ◀ From Page 117

which is not as advanced as some people would have us believe.

A lot of alarmist talk has proliferated during the past year concerning viruses on the ST. Such talk is based more on what has happened on the Amiga and confuses the real problem.

If all ST users follow Stephen Hill's 10 simple pointers outlined in his article – we believe there is no reason why any current virus should infect your machine and damage precious software or hardware.

## Word processing in Arabic

*I READ in the July 1987 issue of Atari ST User that there is an Arabic word processor available for the ST. Is it still available and which company sells it? I need such a facility quite urgently.* – **Marzouk Ghazna, Dhahran, Saudi Arabia.**

● The word processor you are looking for is produced by Micro Praxis of Enterprise Workshops, Nursery Street, Sheffield S3 8GG. Tel: 0742-739982. Alternatively, if you own a 1040ST or Mega ST, a wise investment is Signa's Signum II which allows use of an Arabic font and character set.

## Combining WP and DTP

*I POSSESS an Atari 520ST, an SF314 disc drive, a SM124 high resolution monitor and an Epson RX-100+ printer. I need to know the answers to the following questions: What extra hardware will I have to buy to use a desktop publishing program on my present system?*

*Also I am thinking of replacing my 1st Word word processing program with Protext, but will this be a waste of money if I have bought a DTP package? I would be grateful for any advice to help me in my predicament.* – **Robert Lee, Penrith, Cumbria.**

● Fleet Street Publisher, Publishing Partner and Timeworks DTP are perhaps the most highly thought of DTP packages for the ST. They cost about £80 and have full facilities for desktop publishing, including word processing. However, they are not dedicated word processors and you would be better equipped for such a task with something like Arnor's Protext.

You appear to have most of the correct hardware for DTP purposes, though you may struggle with ram capacity on some tasks with only a 520ST – a 1040ST or Mega are more suitable for desktop publishing.

## Why no rom boards?

*I HAVE recently upgraded from a BBC Micro to an Atari 520STFM and have immediately warmed to my new machine. The graphics and sound capabilities far outshine the efforts of my tired old BBC Micro.*

*However, there is one thing I really miss and wonder why it is lacking on the ST – that is a rom board. I loved the ability to instantly key-in a language or utility from a rom I had fitted into my rom board.*

*Instead I have to load each language or utility laboriously from disc on my ST. Are roms and rom boards available for my ST, and where do I fit them?* – **Chris West, Richmond, London.**

● Only a few commercial roms are available for the ST, and these include the ever popular Computer Concepts' Fast Basic. These have to be individually plugged into the ST's cartridge port.

As far as we know no rom boards have been produced to accept either home-programmed or commercial roms. However, rom blowers are now available for enthusiasts to blow their own eproms.

The reason for the absence of roms for the ST has a lot to do with the large amount of ram available and the high cost of ST roms. The old BBC Micro had only 32k of ram, so dedicated roms were required for languages and many utilities.

The ST's massive 512k memory obviates the need for extra dedicated roms, as all programs can be loaded directly into ram via disc. However, we do sympathise with your point concerning speed of access, and wonder what other readers' opinions are on this topic.

## Tackling the Tower of Babel

*THANK you for a marvellous magazine, I always find it an invaluable tome of reference. I would like your opinion concerning programming languages as I have decided to progress from being a hobbyist on my 520STFM to a serious programmer. Unfortunately, I can't decide which professional language to choose.*

*I would like to program educational software for my children and the odd aid for my business, so which of the multitude should I go for? A friend, a professional programmer, has suggested Cobol. Do you agree? Can you suggest a package for the ST which will get me off the ground?* – **S.R. Foster, Milton Keynes, Buckinghamshire.**

● The number of programming languages for the ST is at times quite con-

fusing. You do not say whether you have any previous programming experience, and really the choice is a matter of different horses for different courses.

However, taking the horse by the reins, we can thoroughly recommend GFA Basic or Computer Concepts' Fast Basic as good introductions to structured programming.

You could later follow this by learning C, which is the most popular modern programming language. The Prospero and Aztec versions of this language were reviewed in the February 1989 issue of *Atari ST User* and are both good implementations, as are Laser C – reviewed in September 1988 – and the latest Mark Williams C – reviewed in November 1988.

## Popular listings

*CONGRATULATIONS on producing two winners in a row. November 1988's listing of Trivia Test was great – I have written my copy of Call my Bluff using it and filling the data with words from the Oxford English Dictionary instead of questions.*

*December's Destroyer was also a most useful addition to my disc library. It appears to be highly effective and I have already used it widely.*

*However, I do have one small problem. I was forced to break off half-way through typing in the Trivia listing. Without thinking, I saved what I had done as a BSC file, not having appreciated that the program contained an automatic save-to-disc procedure.*

*Consequently on running the completed listing I got an error message Badly formed address at line 1070. Unable to think of any other way out of this predicament, I was forced to type the whole thing again – this time with the right result.*

*I would be interested to know if there is any way I could have recovered the listing intact.* – **John Higham, St Helens, Merseyside.**

● Correctly saving a Fast Basic listing at any point during typing will not corrupt a program upon running. The problem you encountered during your first transcription was more likely due to a simple typing error. Without looking at your listing, it is impossible to say just where the error was made, even though the badly formed address occurred at line 1070.

Before going to the hassle of re-typing a listing, always check and double check your original, if possible with the help of a third party. They can in turn read out each line as you check it. In particular look out for correctly positioned upper and lower case letters, spaces, commas, colons and speech marks.





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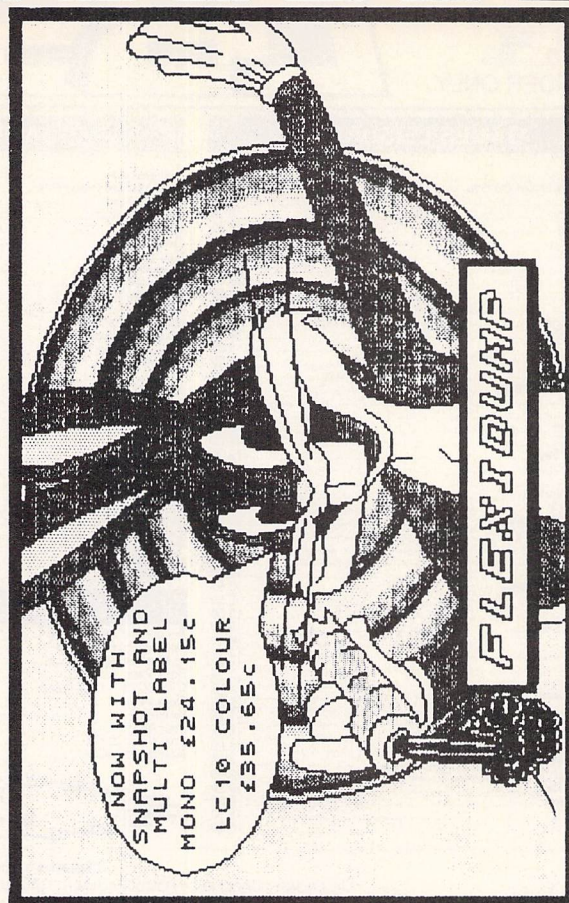
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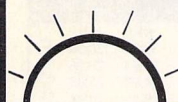
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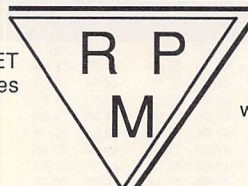
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Before you decide when to buy your new Atari ST computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer and expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Atari ST related products in the UK, a full time Atari ST specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years with an annual turnover in excess of £8 million and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. But don't just take our word for it. Complete and return the coupon below for our latest literature and begin to experience the Silica Shop specialist Atari service.

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The MEGA ST computers are styled as as lightweight keyboard with a separate CPU, connected by a coiled telephone style cable. There are two versions of the MEGA ST, one with 2Mbytes of RAM and the other with 4Mbytes. Each version has a 1Mbyte double sided disk drive built-in to the CPU unit. The MEGA ST's do not come with modulator built-in and must therefore be used with a monitor. With every MEGA ST purchased, we will add the 'Professional Pack' software (worth £384.83) detailed above, plus the Silica ST Starter Kit (worth over £200), both Free Of Charge. Return the coupon for further details.

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+ mono monitor = £998  
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Desktop Publishing (DTP) is one of the fastest growing applications for personal computers. We are pleased to announce a powerful low cost package for the Atari ST called PageStream. PageStream costs only £149 (+VAT=£171.35) and, because it works with an Atari 1040ST and a Seikosha SP-180AI printer, you can be up and running with a complete system for less than £1000. Some of the features of PageStream are listed to the right. If you would like further information on this program, complete and return the coupon below, ticking the 'DTP' box in the corner.

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If you already own an Atari ST computer and would like to be registered on our mailing list as an ST user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist ST service that is second to none.

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# The word is PROTEXT...

More and more people are now recognising Protex as the word processor that the ST has been waiting for. Developed over a period of 4 years, Protex has been designed to be fast, flexible and efficient. The emphasis is very much on word processing.

Unlike its competitors, Protex does not use Gem. The scrolling speed is four times faster than that of Gem based word processors. Yet Protex is still WYSIWYG and still allows access to desktop accessories.

Protex is faster all round; for example the search and replace command is six times faster than First Word +, and the spelling checker, too, is faster.

Protex has all the features you would expect from a good word processor - many text editing commands, print commands, spelling checker and mailmerge. What you might not expect though, is the refinement and thought that has been put in to make Protex ideal for the novice or the experienced user alike.

*"To sum up, Protex is probably the most powerful word processor on the Atari ST and is quite likely to become the best selling too"...* ST USER 4/88

*..."At last one that seems to fit most of what I call essential in a word processor"* PAGE 6 #34

*..."Extremely good for manipulating and merging large text files". "Wins hands down as the all round package".* ST USER 8/88

## A brief summary of some of Protex's features ...

Box manipulation	move, copy, or delete any box as well as blocks	Proportional text	will print proportionally spaced, right justified text
Configuration	configure most features to your own preferences	Quick dictionary	dictionary held in memory is very fast
Dictionaries	add/delete words to/from supplied dictionary. Create additional specialised dictionaries.	Ruler lines	any number of ruler lines to define document layout, left/right margins and normal/decimal tab stops
Disc utilities	copy files, erase, rename, type, create directory, change directory, remove directory, catalogue files	Spelling checker	check from disc or current text. Suggests alternative spellings. Works with foreign languages
Exec files	store sequences of commands in files for easy use	Symbol	Screen character symbols may be redefined
File conversion	flexible file conversion utility for other WP files	Time and date	set time and date, use within document
Find & replace	very powerful and fast with many options.	Tutorial files	help you to start using Protex
Foreign languages	10 built in keyboard languages. Easy to use accented letters: ä æ ç ö ü è é ß à ù ô ê ñ etc.	Two file editing	two documents in memory, copy text between them
Headers & footers	up to 9 lines of text, different even/odd headers and footers possible, automatic page numbering	Typewriter mode	direct printing for envelopes etc.
Help	edit and command help available on-screen	Undelete	retrieve text deleted in error
Keyboard macros	string any sequence of letters together on a single key e.g. "Yours sincerely". Load and save macros.	Word count	quick count at any time, whole text or just a block
Line spacing	variable in half lines, including 0, ½, 1, 1½, 2, 2½, 3	Word puzzles	anagram and crossword solving features
Printer support	works with any parallel or serial printer. Wide range of printer drivers supplied, incl. lasers and 24-pin printers; or create your own drivers or edit ours.	Wysiwyg	on-screen bold, underline, italics, sub/superscript
Printing styles	bold, condensed, double strike, elite, italics, enlarged, pica, NLQ, subscript, superscript, microspacing, proportional spacing, any other printer fonts		<b>Mail merge</b>
Program mode	suppresses formatting; auto-indent; set tab stops		The most comprehensive mail merge program available. Use it for labels, personalised "standard letters", club membership lists, and much more:

## Protex is a professional word processor

If you want a fast efficient program for processing words, get PROTEXT

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The background printing feature allows you to continue your word processing while waiting for your printer to finish printing.

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### Prices

Protex Word Processor	£79.95 *
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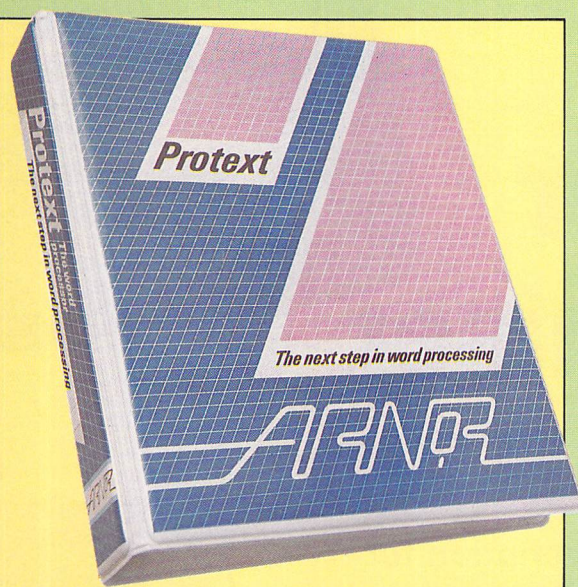


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And now we are knocking a hefty £20 off the retail price of the new version 4. So send your order today. You'll have a pleasant surprise, and will wonder how you ever managed without it.

### Press comments

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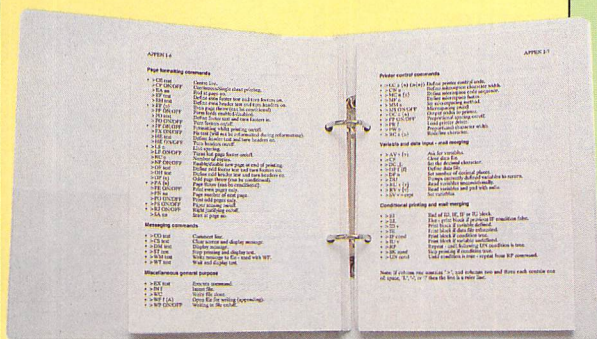
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### Some of Protext's features

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- Page breaks shown during editing
- Can spell check as you type
- Over 70,000 word English dictionary
- Macro record mode
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- Menu driven configuration program
- Auto indent for program editing
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# '...probably the most powerful word processor for the ST'

David Davenport  
Atari ST User  
August 1988

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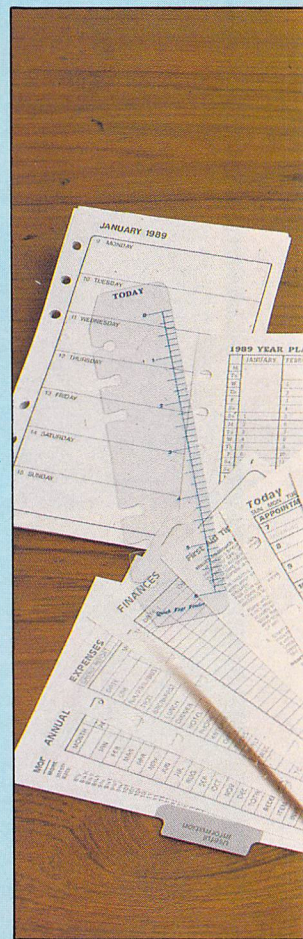
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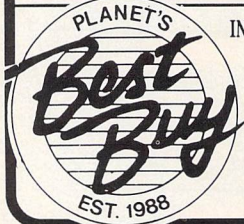


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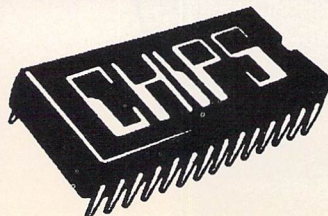
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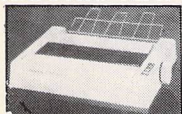
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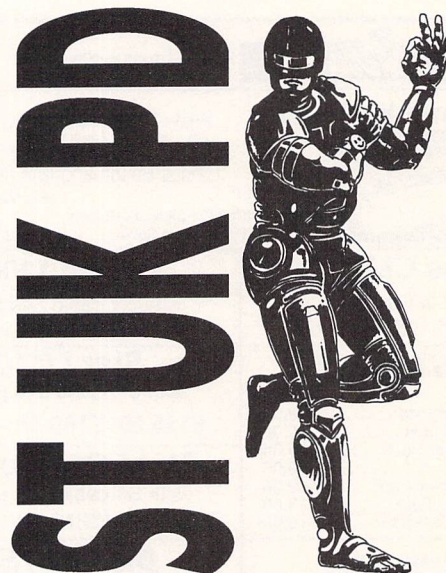
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## ADVERTISERS' INDEX

16 Bit Software .....	137	Lan Computers .....	13
Apolonia Software .....	52	Llamasoft .....	20
Arnor .....	128	Lowmac Software .....	135
Arran Computers .....	62	Mail Centa .....	125
B&S Computing .....	54	Mailsoft .....	134
Bargain Software .....	122	Mandarin Software .....	111
B Bytes Computer Stores .....	123	MC Soft .....	138
Best Byte Software .....	136	M C Supplies .....	130
Boots The Chemist .....	41	M D Office Supplies .....	121
BRK .....	126	Medusa Computers .....	106
B Soft .....	106	Melton Computer Supplies .....	94
Byteback .....	104	Micro Check .....	136
Byteware .....	120	Microdeal .....	8
Cambridge Business Systems .....	92	Micromedia .....	134
Care Electronics .....	120	Micro Partners .....	112
Castle Computers .....	42/43	Microsnips .....	65
Cavendish .....	79	Miked .....	138
CBS .....	119	Miles Better Software .....	84
Centec .....	58	Mirrorsoft .....	2
Cestrian Software .....	135	MJC Supplies .....	88
Chips .....	134	Monitor Magazines .....	124
Click ST .....	95	Mydisk .....	124
Computer Express .....	80	New Computer Express .....	113
Computerwise .....	114	Once Bytten .....	129
Condor International .....	96	Power Computing .... 14,15,27,123,129	
Cottage Software .....	78	P M Engineering .....	136
C.S.T .....	50	Premier Mail Order .....	76
Cut Price Software .....	137	Premiersoft .....	136
D&H Games .....	16	Prism Leisure .....	28
Database Software .....	36/37	Prospero Software .....	107
Dataplex .....	115	Psynosis .....	140
Datel Electronics .....	34	Qualsoft .....	94
DGA Software .....	129	Rise Time Electronics .....	126
Digicom .....	84	Romantic Robot .....	56
Dr.Soft .....	86	RPM Computer Services .....	126
EDA ST .....	126	SCC .....	87
Electric Distribution .....	3	Silica Shop .....	127
Equinox Business Systems .....	16	SJB/Compumart .....	23
Evesham Micros .....	102,103,108	S K Marketing .....	17
Excell Software .....	138	Softsellers .....	33
Fidget Computerware .....	44	Softstuff .....	59
Forest Computer Services .....	86	Softville PD .....	78
Frontier Software .....	6,124	Software Express .....	114
Futuresoft .....	125	Special Reserve .....	125
Goodman PDL .....	138	Stortsoft .....	130
Gould Computer Services .....	134	ST Amiga Club .....	138
Gultronics .....	139	ST Club .....	115
Hat Software .....	86	ST UK .....	136
Homesoft .....	119	Telecomsoft .....	11
Homeview .....	62	Titan Games .....	136
Instant Catalog .....	134	Turtlesoft .....	55
KCS .....	93	VPST .....	115
Kempston Data .....	50	Weserve .....	135
KLR Electronics .....	90	Worldwide Software .....	59
Ladbroke Computing .....	60,61		

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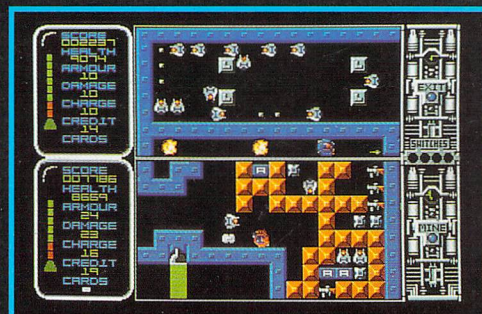
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