

# ATARI ST USER

The  
top-selling  
Atari ST  
magazine

Volume 3  
Number 4  
June 1988  
£1.75

## BUSINESS

GFA Draft Plus and  
Campus CAD tested  
Atari DTP in action

## ADVENTURES

Full review of ST  
Adventure Creator,  
plus hints and tips

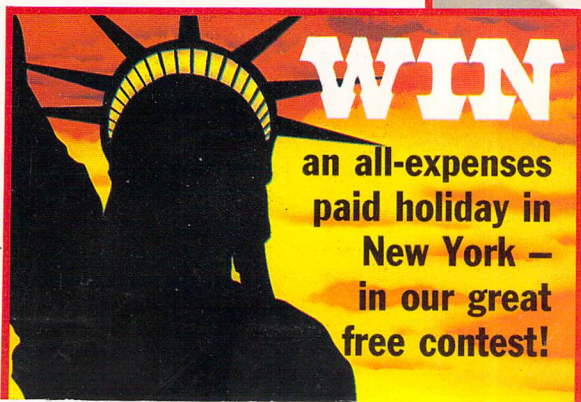
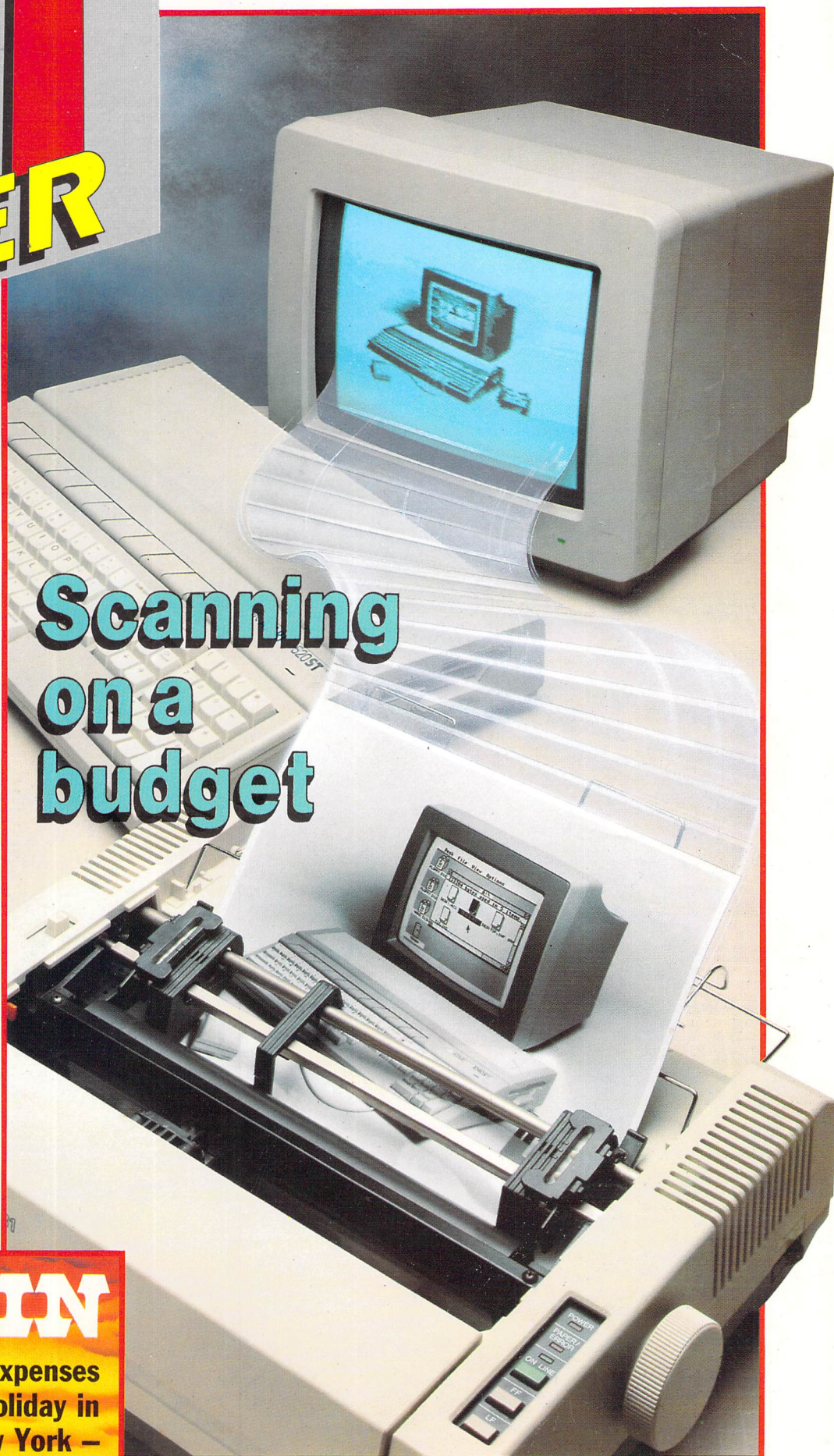
## LANGUAGES

Modula-2 vs Pascal  
Power Basic evaluated

## GAMES

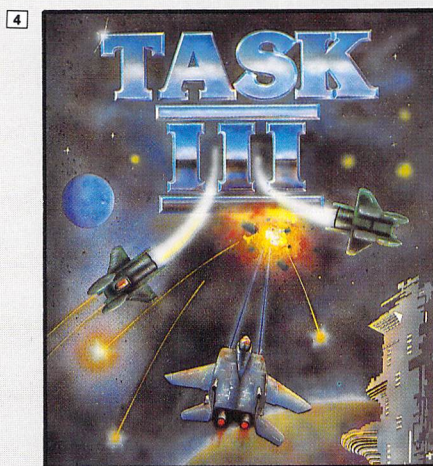
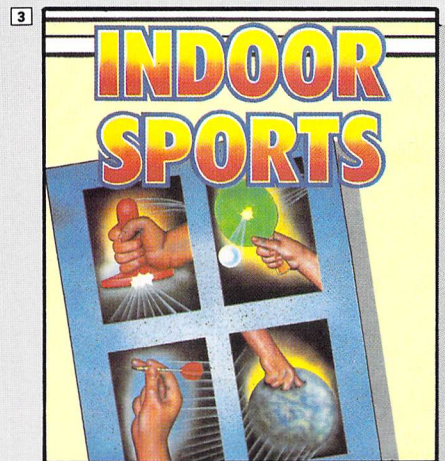
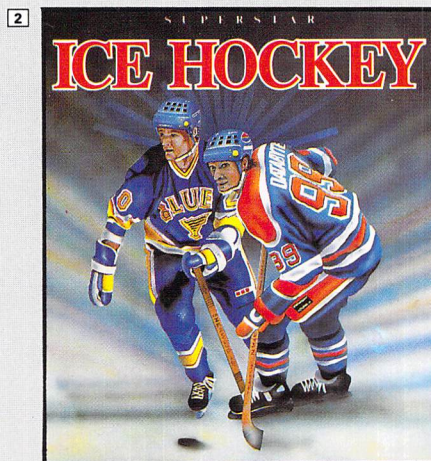
*Return to Genesis,  
Predator, Football  
Manager, Slap Fight,  
Seconds Out, Dizzy  
Wizard, Dark Castle,  
Get Dexter 2, Ikari  
Warriors, Scrabble,  
Beyond Zork, Carrier  
Command, International  
Soccer and more!*

Scanning  
on a  
budget



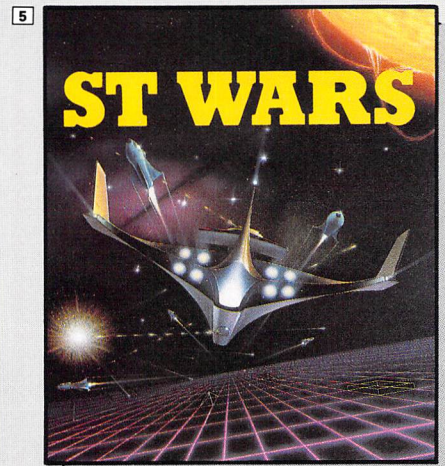


# NOW PLAYING AT A STORE NEAR YOU.



## COMING SOON GRAND SLAM

A fully animated realtime tennis simulation.  
Play the US Open, Wimbledon etc.  
£24.95 Amiga only.



### 1 SPY VS SPY TRILOGY

#### What the reviewers say:

Spy Vs Spy Vol 1 – voted the best two player game ever designed.  
Vol 2 The Island Capers – winner of several awards including game of the year.  
Vol 3 Arctic Antics – A must for fans of the original Spy Vs Spy games.

Spectrum 48K/Amstrad CPC/  
Commodore 64/128 cassette: £9.95  
Amstrad CPC/Commodore  
64/128 disk: £14.95

### 2 SUPERSTAR ICE HOCKEY

Voted the best sports simulation of 1987 – *Happy Computer*

Commodore 64/128 cass £9.95 disk £14.95  
Amiga £24.95 Atari ST £24.95  
IBM-PC + Compatibles £24.95  
IBM-PC 3½ inch £24.95

Available from all good computer stores  
or mail order from **Databyte**.  
Please make cheques and postal orders  
payable to **Databyte**. All prices  
include VAT, postage and packing.

## Databyte

15, Wolsey Mews,  
Kentish Town,  
London, N.W.5. 2DX  
Telephone 01-482 1755  
FAX 01-267 1828

### 3 INDOOR SPORTS

Highly acclaimed sports simulation – received rave reviews. A must for sports fans. Air Hockey, Darts, Bowling and Ping Pong.

Note: C64 version does not include ping pong.

Spectrum/Amstrad CPC/Commodore 64/128/  
Atari XL/XE cass £9.95  
Amstrad CPC/Commodore 64/128/  
Atari XL/XE disk £14.95  
Amiga £24.95 Atari ST £24.95  
IBM-PC + Compatibles £24.95  
IBM-PC 3½ inch £24.95

### 4 TASK III

"It really has to be played to be believed, I'm hooked" – *Commodore User*  
Commodore 64/128 Cass £9.95 disk £14.95

### 5 ST WARS

"If you liked Starglider you'll love this game – it plays better and it's much more fun to play, overall it's a much better game"  
Atari ST £24.95



Cut the cost  
**Cut the hassle**  
**Cut the coupon!**

**Compumart**

A GREAT DEAL MORE FOR A GOOD DEAL LESS!

DEPARTMENT AST  
JUBILEE DRIVE  
LOUGHBOROUGH  
LEICS LE11 0XS  
TEL: 0509-610444  
FAX: 0509-610235

Send Now for your **Free** copy of the Compumart ST Information Pack  
and discover a full range of ST Accessories at Super Low Prices . . . .

For IMMEDIATE RESPONSE, simply send this coupon to:  
**COMPUMART · FREEPOST · LOUGHBOROUGH · LEICS · LE11 0BR**

Please rush me . . . .  
A FREE Compumart ST Information Pack

Name . . . . .

Address . . . . .

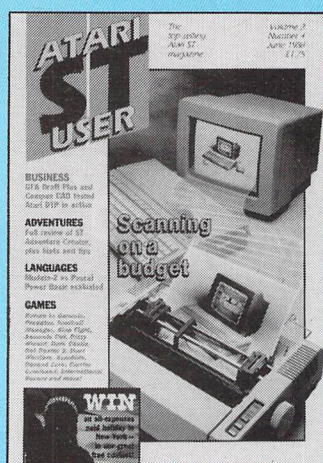
Postcode . . . . .

Date . . . . .

PLEASE  
TICK

ST





Vol 3 No 4 June 1988

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

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

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

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

**Advertisement Manager**  
**John Snowden**

**Advertisement Sales**  
**Nora Lawton**

**Reviews Coordinator**  
**Pam Turnbull**

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

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

**Tel:** 0625 878888 (All depts)  
0625 879940 (Subs)

**Telex:** 265871 MONREF G  
Quoting Ref. 72.MAG001

**Telecom Gold:** 72.MAG001

**Prestel Mailbox:** 614568383

**Fax:** 0625 879966

**Published by:**  
**Database Publications Ltd,**  
**Europa House, Adlington Park,**  
**Adlington, Macclesfield SK10 4NP.**

ISSN 0952-3006

Subscription rates for  
12 issues, post free.

£19 UK

£27 Europe (incl. Eire)

£42 Overseas (airmail)

Writing for Atari ST User: Articles and programs relating to the Atari ST are welcome. Articles should preferably be typed or computer-printed, using double spacing. Unsolicited manuscripts, discs etc. should be accompanied by a self addressed stamped envelope, otherwise their return cannot be guaranteed. Unless agreed otherwise, material is accepted on an all rights basis.

© 1988 Database Publications Ltd. No material may be reproduced in whole or in part without written permission. While every care is taken, the publishers cannot be held legally responsible for any errors in articles or listings.

Atari ST User is an independent publication and Atari Corp (UK) Ltd are not responsible for any of the articles they contain or for any of the opinions expressed.

News trade distribution: Europress Sales and Distribution Limited, Unit 1, Burgess Road, Ivyhouse Lane, Hastings, East Sussex TN35 4NR. Tel: 0424 430422.

## 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**

### DTP

Atari's DTP package has an attractive price tag. What is it like in practice?

**32**



Our expert reports on the Frankfurt music festival and reviews Music Construction Set plus EZ-Score.

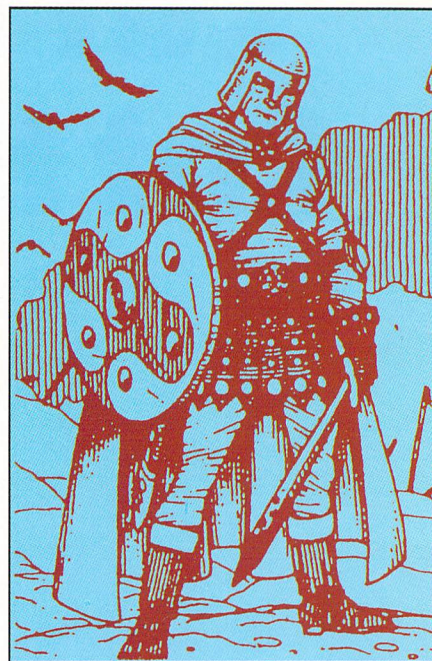
**35**

### Gallery

See the very best in computer graphics in this popular feature for artists and art connoisseurs alike.

**68**

### Adventures



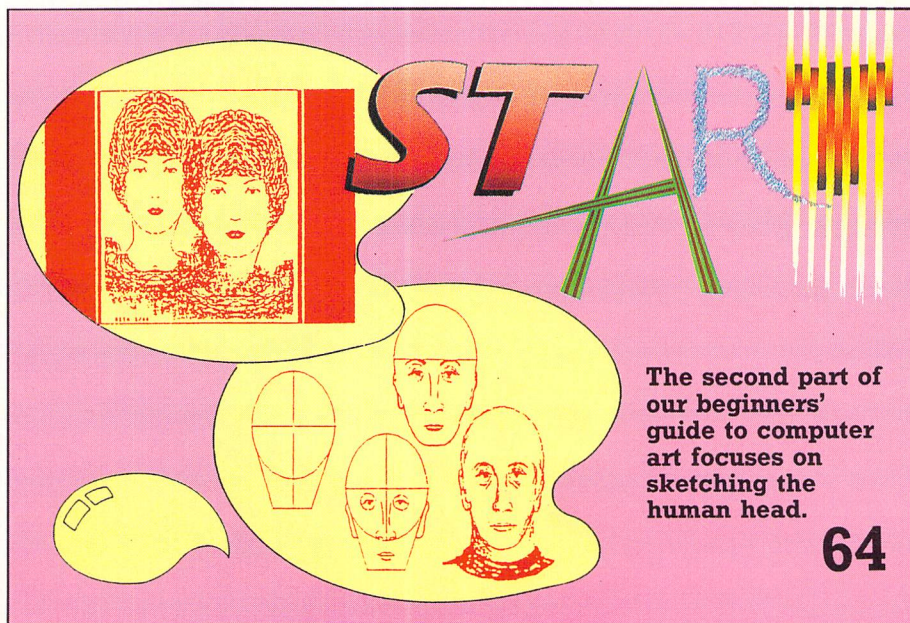
Brillig lends a helping hand to struggling adventurers, and reviews the ST Graphic Adventure Creator.

**92**

### Mailbag

The pages you write yourselves, a selection of the brightest and best letters from our bulging mailbag.

**98**



**The second part of our beginners' guide to computer art focuses on sketching the human head.**

**64**



## REVIEWS

### Power Basic

A top-quality, yet budget-priced Basic compiler has got to be good news. We give it a thorough workout.

**15**

### Campus CAD

This powerful and flexible computer aided design program is put to the test, and it comes up trumps.

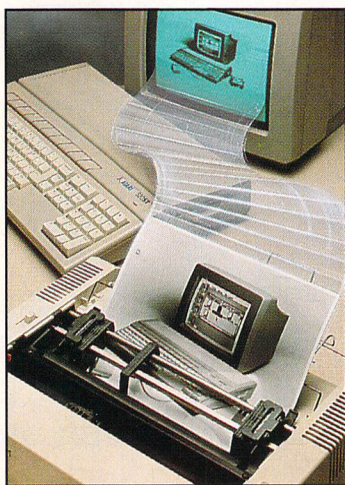
**20**

### GFA Draft Plus

We report on the subtle changes and improvements to this latest version of the popular GFA drafting program.

**25**

### IMG Scan



This budget scanner is in a class of its own. Has quality in its design been sacrificed for price? We find out.

**30**

### Games Software

Dizzy Wizard, Scrabble, Predator, Ikari Warriors, Get Dexter 2, Dark Castle, Captain Blood, Return to Genesis, Football Manager, Slap Fight, International Soccer, Beyond Zork, Seconds Out are all evaluated.

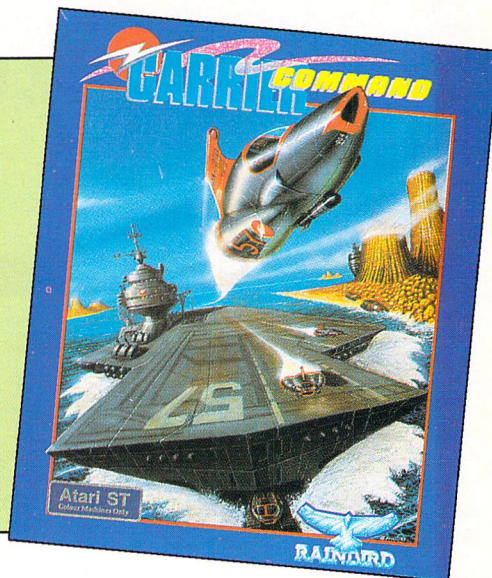
**44**

## ATARI ST AR USER GAME

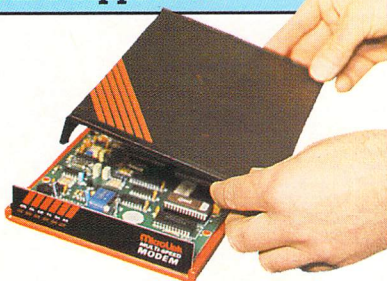
### Carrier Command

Is it a strategy game? Shoot-'em-up? Simulator? War game? Or jack of all trades and master of none? Read on and find out in this detailed report.

**44**



### BABT Approved



The inside story behind a modem's fight for the coveted accolade.

**60**

### Ruby View

We assess this viewdata-only comms package for the Atari ST range.

**63**

### Pascal vs Modula-2

We pit Prospero's Pascal against HiSoft's Modula-2 in a head-to-head battle. It's a close result, but there's a winner. Which is it? - find out here!

**73**

## LISTING

### Mapper

This powerful utility written in C enables you to keep track of the contents of your disc and graphically display the results in detail on screen.

**82**

## Chance of a lifetime!

Fancy two free air tickets to New York, three nights at the fabulous New York Hilton - plus £200 spending money? Read how to do it on Page 42.



# BARGAIN SOFTWARE

309 Goldhawk Rd, Shepherds Bush, London W12 8EZ

OPEN TO THE PUBLIC 10am-8pm 6 DAYS

## PRICE PROMISE

If you wish to purchase any product from our list and find that you can buy the same product cheaper from another mail order company, simply enclose the lower amount, stating the name of the other company and where you saw the advert (it must be a current issue). Price Promise does not apply to other companies "Special Offers".



### BUY BY PHONE

RING 01-741 1222  
01-995 3652  
0525 371884



### ENQUIRIES

RING 01-748 3597

ATARI ST	R.R.P.	OUR PRICE
221B Baker Street	14.99	9.50
AAARGH	24.95	15.99
Ace II	19.95	12.99
Advance Art Studio	24.95	15.99
Alternate World Games	19.99	12.99
Army Moves	19.95	12.99
Arena/Brattacus	24.95	19.99
Arkanoid	14.95	9.50
Backlash	19.95	12.99
Bad Cats	19.95	12.95
Balance Of Power	29.95	19.99
Barbarian (Pygnosis)	24.95	15.99
Barbarian (Ultimate Warrior)	14.95	9.50
Battleships	14.95	10.50
Bionic Commodore	19.95	12.95
Black Lamp	19.95	12.95
Blood Valley	19.99	12.99
Brave Star	19.99	12.99
Buggy Boy	19.95	12.99
Bubble Bobble	19.95	12.99
Bureaucracy	34.99	23.50
Bubble Ghost	19.95	12.99
Captain Blood	19.95	12.95
Casino Roulette	19.99	12.95
Carrier Command	24.95	15.99
Championship Football	24.99	15.99
Captain America	19.99	12.99
Check Mate	9.95	6.99
Combat School	19.95	12.95
Crash Garrett	19.95	12.95
Crazy Cars	19.95	12.99
Crusade in Europe	24.95	15.99
Dark Castle	24.95	15.99
Deep Space	24.95	15.99
Defender of the Crown	29.95	19.99
De Ja Vu	29.95	19.99
Dick Special	24.95	15.99
Dungeon Master	24.95	15.95
Eco	19.95	12.95
Enduro Racer	19.95	12.99
F15 Strike Eagle	24.95	15.99
Fight Night	19.95	12.95
Flight Sim II	39.95	27.50
Flintstones	19.95	12.95
Football Manager	14.95	10.50
Foundations Waste	24.95	15.95
Garrison	24.95	15.95
Gee Bee Air Rally	19.95	12.95
G. Lineakers Super Soccer	19.95	12.99
Gauntlet II	19.99	12.99
Get Dexter II	19.95	12.95
Gnome Ranger	14.95	9.50
Gold Runner II	19.95	12.95
Golden Path	19.95	12.99
Greater	9.95	7.45
Gryzor	19.95	12.95
Guild of Thieves	24.95	15.99
Gunship	24.99	16.99
Hardball	24.99	15.99
Hercules	19.99	12.99
Hitchhikers Guide	29.99	19.99
Hollywood Poker	14.95	9.50
Hotball	24.95	15.95
Hunt for Red October	24.95	15.99
Impact	14.95	9.50
Impossible Mission II	19.95	12.95
Insanity Fight	24.95	15.95
International Karate	19.99	12.99
International Soccer	19.95	12.95
Jewels of Darkness	19.95	12.99

ATARI ST	R.R.P.	OUR PRICE
Jinxer	24.95	15.95
Karate Kid II	24.95	15.99
All 3 Kings Quest	—	16.50
King of Chicago	24.95	15.95
Knightmare	14.99	9.50
Knight Orc	19.99	12.99
Land of the Lounge Lizard	19.95	12.95
Leaderboard	24.95	15.99
Leaderboard Tournament	9.99	6.99
Leather Goddess	29.99	19.99
Leather Neck	19.95	12.95
Legend of Sword	24.95	15.99
Living Daylights	19.95	12.99
Livingstone I Presume	14.95	9.99
Macadam Bumper	24.95	15.99
Mach 3	19.95	12.95
Masters Of Universe	19.99	12.99
Mercenary Compendium	24.95	15.99
Missing One Droid	9.95	6.99
Mission Elevator	19.99	12.99
Mouse Trap	14.95	9.50
Music Studio	34.99	23.50
Ninja	9.99	6.99
North Star	19.95	12.95
Obitector	24.95	15.99
Oids	19.95	12.95
Outrun	19.99	12.99
Pawn	24.95	15.99
Perfect Match	9.95	6.99
Phantasia II	24.99	15.99
Phantasia III	24.99	15.99
Phoenix	24.95	15.99
Pink Panther	19.95	12.95
Platoon	19.95	12.99
Plundered Hearts	24.99	15.99
Plutos	14.99	9.50
Police Quest	24.95	15.95
Pool	9.95	6.99
Pool/Shuffle Board	14.99	9.50
Powerplay	19.95	12.95
Predator	19.95	12.95
Project Stealth Fighter	24.95	15.99
Rampage	14.99	9.99
Rim Runner	24.95	15.99
Road Runner	24.99	15.99
Road Wars	19.95	12.95
Rolling Thunder	19.95	12.95
S.D.I.	29.95	19.99
Scenery Disk 7 or XI	24.95	15.95
Scrabble Deluxe	19.95	12.95
Sentinel	19.95	12.99
Shadow Gate	29.95	19.95
Shanghai	24.99	15.99
Sidewalk	19.95	12.99
Silent Service	24.95	15.99
Silicon Dreams	19.95	12.99
Slap Fight	19.95	12.95
Slaygon	19.95	12.95
Solomons Key	19.99	12.99
Space Pilot	14.95	9.99
Space Port	19.99	12.99
Space Quest II	24.95	15.95
Spitfire 40	24.95	15.95
Spy v Spy	19.95	12.95
Star Trek	19.99	12.99
Star Wars	19.99	12.99
Star Glider	24.95	15.99
Star Quake	19.95	12.95
Strike Force Harrier	24.95	15.99
SuperSprint	14.99	9.50

ATARI ST	R.R.P.	OUR PRICE
Tanglewood	19.95	12.95
Tai Pan	19.95	12.99
Terramex	19.99	12.99
Terror Pods	24.95	15.99
Tetris	19.95	12.95
Thunder	39.99	27.50
Time & Majik	19.99	12.95
Top Gun	19.95	12.99
Torquing Chopper	24.95	15.99
Tour De Force	19.99	12.99
Trantor	19.95	12.95
Trivial Pursuits	19.95	12.99
T.T. Racer	24.95	15.99
Turbo GT	15.95	10.50
Turbo ST	9.95	6.50
2 on 2 Basketball	24.99	15.99
Ultima II	29.95	19.99
Ultima III	29.95	15.99
Universal Military Sim	24.95	15.99
Vampires Empire	19.95	12.95
Verminator	24.95	15.95
War Game Construction Set	24.95	15.99
Warlock Quest	19.95	12.95
Winter Games	24.95	15.99
Winter Olympiad	19.95	12.99
Wizball	19.95	12.95
World Greatest Epyx (4 great sports titles)	29.99	20.99
Xenon	19.95	12.95

## SPECIAL OFFERS

Bally hoo	29.99	7.99
Enchanter	29.99	7.99
Hacker	24.99	8.99
Hacker II	24.99	8.99
Interdel	29.99	7.99
Mind Forever	29.99	7.99
Mind Shadow	29.99	8.99
Moon Mist	29.99	8.99
Planetfall	29.99	7.99
Sorcerer	29.99	7.99
Star Cross	29.99	7.99
Suspect	29.99	7.99
Tass Time	24.99	7.99
Trinity	34.99	7.99
Wishbringer	29.99	7.99
Witness	29.99	7.99
Zork I, II or III	29.99	7.99

## BUSINESS/UTILITY

Animatic	9.95	6.99
Art Director	49.95	37.50
Devpac ST	49.95	37.50
Digi Drum	24.95	18.75
Fast Basic (Rom)	89.90	67.50
Fast Basic (Disc)	44.85	33.50
Film Director	59.95	44.99
Fleet St. Publisher	115.00	85.50
Latex C	99.95	74.99
Paint Works	34.99	26.50
Pro Sound Designer	59.95	45.00
Pro Sprite Designer	39.95	29.99
Realtime Clock (Cart)	49.95	37.50
Sales Ledger	49.00	37.50
Saved	29.95	22.50
ST Replay	79.95	60.00
Stock Control	49.00	37.50
Super Conductor	49.95	37.50
Superbase Personal	99.95	74.99
Tool Kit	29.95	22.50

## BARGAIN SOFTWARE ORDER FORM

Please send me the following titles. BLOCK capitals please!

Type of computer

Title:	Amount

Name

Address

Tel. No.



Total Enclosed £

4 GREAT TITLES  
GAUNTLET  
INDIANA JONES  
ROADRUNNER  
METRO CROSS  
RRP £24.99 -  
Our Price £15.99

Please make cheques or postal orders payable to BARGAIN SOFTWARE  
Price includes P&P within the U.K. Europe please add £1.00 per disc  
Elsewhere please add £1.50 extra per tape

Visit our  
New Shop  
18 Market Square-  
Leighton Buzzard  
Beds



## US sales slow big ST drive

ATARI intends to hit the million mark in worldwide ST sales this year. But there will have to be a dramatic upswing in US acceptance of the machines if the magic figure is to be achieved.

After suffering a shortfall in ST manufacture last year – UK dealers alone could have sold another 20,000 – the company is determined not to let supplies lag again.

Industry observers say one million STs will be built in 1988, 600,000 of them destined for Britain, France and Germany where the machines have been warmly received, and the rest mainly aimed at America, where sales have been disappointing.

Analysts there say Atari's share of the market has slipped from four to two per cent, though the company blames this on product shortfall and "external financial matters". The latter refers to the \$8.2 million lost by Federated, the American chain of stores bought by Atari last year.

"Last year with the Yen being up and

the dollar sliding against other currencies, it was better business to sell to Europe than within the US", said an Atari source.

Regardless of whether or not the ST suddenly takes off in the States, Atari can be confident of another boom year in the UK. In fact industry analysts regard the company's projected 100,000 sales figure for this country as being on the low side.

They point to the fact that the ST is becoming increasingly accepted as a business machine and is also making significant inroads into the education sector.

"Counting actual sales and orders for STs that were not available, Atari was near to the 100,000 figure last year", said one. "If current indications are correct then UK demand for the ST in 1988 should well exceed the 100,000 mark – and perhaps even reach 150,000.

"The last thing Atari needs is to create another shortfall here while STs are gathering dust on American shelves".

## *Dram chips lawsuit*

**ATARI has filed a lawsuit in the American courts alleging a breach of contract by California based Micron Technology. Atari claims it had an agreement with the company to buy three million dram micro chips from them for \$3.75 each.**

**Since the breakdown of the deal the price has increased by 150 per cent, which has forced Atari to increase the price of its popular ST computers by £100. The dramatic rise in the basic cost of semiconductors is a direct result of Micron Technology's complaints to the American government about Japanese dumping of low-cost chips.**

**"It's a crazy situation", said Atari's president, Sam Tramiel. "First Micron pleads with the government to impose sanctions on the Japanese, then it raises its own prices to several times the cost of manufacturing the circuits.**

**"Micron Technology is destroying the competitiveness of the microcomputer business", he said.**

## **New Basic games language is launched**

A NEW Basic language for the ST which is set to revolutionise games creation has been unveiled by a leading French software house.

Known as Stos, it comes from Jawx International of Paris, a company with a world-wide reputation for its entertainment titles.

The breakthrough was announced to an audience of the UK's leading computer journalists at the official launch of Mandarin Software, the exclusive games label, in London recently.

Officials of Jawx had flown over from France for the occasion to sign a joint venture agreement with Mandarin – with Stos being the first of a number of products the deal will produce.

Stos has more than 320 commands and has been designed to make the writing of games as easy as possible. Up to 16 different sprites can be animated and three-voice music can be added.

Other commands enable the games



writer to create a scrolling background, flip, zoom or reduce the screen, define up to 16 windows, and generate pull-down menus. A line assembler is built into the Basic.

Stos comes with several demonstration games, a macro assembler, sprite editor, character set editor, music editor, various utilities and a complete Dos system. Contained on four discs, the package will cost £29.95.

"Stos is really going to set the ST market alight", says Chris Payne of Mandarin. "We're pricing the package aggressively to ensure that it becomes the leading Basic for the ST".

*Frederique Pinelet and Jacques Fleurance, (left and centre) directors of Jawx, discuss Stos with Peter Holme, business development manager of Mandarin, inscrutably dressed for the launch at a leading Chinese restaurant.*

## **Homes management**

NEW software house Gate Seven Computers makes its debut with Easyreg, a management package for administrators of registered homes. It provides for automated record generating and correspondence, medication tabulation, and incident handling procedures. Price £400.



## EXPERT ADVICE ON LINE

*MICROLINK, the UK's most innovative computer communications system, has joined forces with the University College of Swansea in a unique instant electronic information service for businesses.*

*With the new service – called ExpertLink – subscribers can get free advice from experts in various fields, and discuss business problems with others who may have experienced similar difficulties.*

*As well as being instant and free, this access to professional expertise comes with no strings attached, no axe to grind and no commercial bias.*

*The team at Swansea University answering queries includes three professors, several PhDs and experts in a large number of fields including management science, ergonomics, overseas trade, electrical and mechanical engineering, foreign languages, psychology and sociology.*

*The wide range of business sectors covered includes legal matters, exporting, industrial relations, management skills, market research, personnel and training, statistical and systems analysis.*

*Expertise is also supplied in the areas of computing and computer systems and artificial intelligence.*

*Users of ExpertLink can browse through the electronic messages and replies for items of interest, or leave a message themselves.*

*All messages are read by system operators who pass them on to the relevant expert.*

*If a query is commercially sensitive or otherwise private, users can leave a message for the system operators' eyes only.*

## Scope of Protex extended

PRODUCER of the popular Protex word processing package, Arnor, has released two new programs for the ST.

Protex Filer allows the user to keep addresses and other datafiles in good order. Arnor (0733 239011) says the database is extremely flexible, supporting alphabetical and numerical sorting, fixed or variable length fields, multiple key and tabulated columns sorting, as well as a sort facility for foreign languages.

The program is menu driven and fully compatible with Protex. Price £24.95. A

## 'No deal', IBM tells Atari

**MOVES** by Atari to buy part of transputer manufacturer Inmos have been turned down by parent company Thorn EMI. One reason given for the rejection is that Thorn prefers to have a British partner.

Atari president Sam Tramiel said: "We got as far as talking about price last December when Thorn told us that they would only sell to a British concern".

A spokesman for Inmos commented: "The company is in a much better position financially following rationalisation.

"We are now able to pick and choose who we want as our partners. We have no intention of rushing into any agreements".

Asked about plans to sell to British companies only, the Inmos spokesman declined to comment.

## 'Survivalist' BBS comes under fire

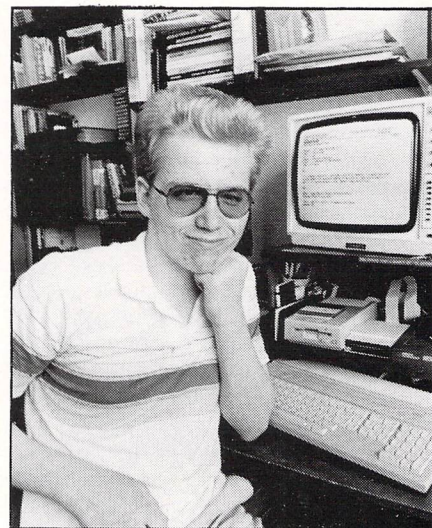
ATARI ST and comms buff Darren Ingram has been attracting less than favourable attention in the press of late. Sysop Darren, who runs the Corrupt Computing BBS from his parents' home, has come under fire because of the nature of some of the information available on the board.

The bone of contention is material aimed at "survivalists" – a band of souls who spend their leisure time devising ways to endure and prosper in a post-holocaust Britain.

Accessible under the Defence of the Realm label, this includes hints on self defence, first aid and bomb making – though not necessarily in that order. Also available are an introductory guide to shoplifting, a recipe for tear gas and a top ten of ways to kill a policeman.

Arguing that the same material is readily available elsewhere, 18-year-old Darren offers no apologies for the service he manages. He says he edits contributions carefully, and he does request users to let him know if illegal, immoral or unethical messages appear on the board.

Ethics aside, both British Telecom and



Darren Ingram

the Department of Trade and Industry are concerned at the lack of monitoring of bulletin boards.

## Some like it hot

THE prospect of another blazing English summer, with the population throwing its clothes off with gay abandon, is possibly what's prompted Anco to release Strip Poker 2 for the ST.

Anco (0322 92513) claims the game is a much-improved version of the earlier Strip Poker, with so many enhancements that "we don't know where to start describing them". With full colour, excellent graphics and a choice of "opponents", Strip Poker 2 is available now. Price £14.95

## CHEAPER TICK

CLAIMED be the least expensive clock card available for the ST, Forget-me-Clock has been released by Frontier Software (0423 67140).

It fits under the keyboard and keeps the internal clock running by means of three re-chargeable batteries. Price £22.95.



# Time and magik

## The trilogy



### Interactive fiction from **Level 9**

**T**hree of Level 9's most acclaimed adventures – Lords of Time, Red Moon and The Price of Magik – come together in one package. Each has been enhanced and enlarged with more text than ever before – 60,000 mind-expanding words creating magik and mystery round every corner. There's a powerful new parser, and most disc versions include stunning digitised pictures that help to dramatically heighten the atmosphere.

#### What the press have said:

**LORDS OF TIME:** *"Destined to become a classic" – Computing with the Amstrad.*

**RED MOON:** *Best Graphical Adventure or Best Adventure of the Year – Zzap 64, Crash, Amix, C&VG, CCI, and Amstrad Computer User.*

**THE PRICE OF MAGIK:** *"Another superb adventure... their best yet" – Commodore User. Also a Crash Smash.*

**MANDARIN**  
SOFTWARE

Europa House, Adlington Park,  
Adlington, Macclesfield SK10 4NP.

ENQUIRIES: 0625 878888 ORDER HOTLINE: 0625 879920



Screen shots from  
Atari ST version

Spectrum (cassette) Plus 3 (disc)  
Commodore 64 (cassette or disc)  
Amstrad CPC (cassette or disc)  
Atari XL/XE (cassette or disc)  
Amstrad PCW (disc)  
Apple II (disc)

**£14.95**

Atari ST  
Commodore Amiga  
Macintosh  
Amstrad PC, IBM PC  
and compatibles

**£19.95**

Available from all good stockists or order direct by sending a cheque or postal order made payable to Mandarin, together with your name and address. Price includes P&P. Access/Visa owners: Phone our hotline or send your card number with your order.



## New line in colours

A PAINT program which is claimed to put the Atari ST on a par – graphically – with more powerful and expensive machines is now available from Electric Distribution (0954 61258).

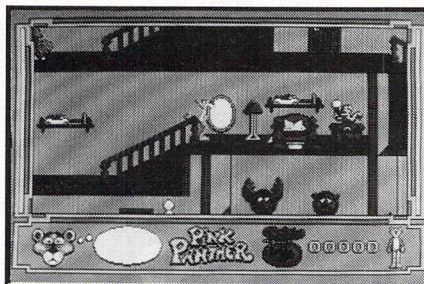
Spectrum 512, from American software house Antic, provides a range of 512 colours, all of which can be displayed on-screen at any one time.

The program will automatically graduate colours and the palette can be customised.

## Mouse switch

A DEVICE for switching between a mouse and joystick on the ST has been released by Switchsoft. The Switchbox unit allows the user to switch between devices without the need for plugging and unplugging each time a change is made.

Available mail order only, the unit costs £17.95 from Switchsoft, Hawthorn Farmhouse, Stowe-by-Chartley, Staffordshire ST18 0LG.



## Triple helping

*SPORTING spoofs, comic crime and Greek legends feature on the latest releases for the ST from Magic Bytes/Gremlin (0742 753423).*

*Alternative World Games provides an opportunity to excel at unusual sports such as boot throwing, pillow fighting and pole climbing in 18 scenic locations.*

*Pink Panther stars the well-loved feline whose role this time is that of a light-fingered butler who wants to do more than just polish the silverware.*

*Hercules – Slayer of the Damned is a mammoth, if not Herculean, mission to accomplish the hero's 12 legendary tasks. Price of each game is £19.99.*

## Get weaving

WEAVING designs can be created on an ST with the aid of a new mouse-driven program from The Computer Room (0743 231172).

Used with a colour monitor in low resolution, Weaver's Web enables a pattern to be drawn either within the constraint of twill or in blocks which represent the warp. The resulting pattern can be viewed alternatively as lines representing warp and weft.

Tools for viewing the pattern repeat in three sizes provide an overall impression of the finished item in mono and in colour, with a shadow effect to give added realism. Price £24.95.

## ZARCHALIKE

THE first solid 3D shoot-'em-up game to be produced for the Archimedes – Zarch – is to be released shortly for the Atari ST on Telecom's Rainbird label. Additions to the ST version include several new aliens and extra effects, and the name is to be changed to Virus.

Virus, like Zarch, features a flowing patchwork quilt type landscape and a mouse-controlled hovership.

# Gallup Software Chart

This month	Last month	Title (Software House)	Price	Month reviewed in Atari ST User	Comments	Marks from 10
1	8	DUNGEON MASTER Mirrorsoft	24.99	May	The real stars are the traps. Many are fiendishly clever.	9
2	•	CARRIER COMMAND Rainbird	24.95	June	Star game in this issue.	10
3	•	IKARI WARRIORS Elite	14.95	June	Another new one set in war-torn Vietnam.	8
4	3	GUNSHIP Microprose	24.95	May	There is only one word for the ST version of Gunship: Awesome.	9
5	2	XENON Melbourne House	19.99	May	An absolute must for anyone looking for the ultimate fast action shoot-'em-up.	10
6	5	TEST DRIVE Electronic Arts	24.95	May	Graphically attractive, exciting to play and feels very realistic.	8
7	1	BLACK LAMP Rainbird	19.99	April	Fast, fun and a very addictive arcade adventure.	9
8	11	PREDATOR Activision	19.95	June	Read how our reviewer managed against both the alien and the jungle.	8
9	•	JOE BLADE Players	9.95		Now available on the Atari ST.	*
10	•	OIDS Mirrorsoft	19.95	May	Grows on you the more you play this update of the old Lunar Lander.	8



# 3½

Lifetime  
Guaranteed,  
double sided,  
double density,  
135 TPI,  
bulk wrapped  
discs with labels

Quantity	Price
10 .....	£9.25
20 .....	£18.00
25 .....	£22.99
50 .....	£45.00
105 .....	£89.99

# 5¼

Lifetime  
Guaranteed,  
double sided,  
double density,  
48TPI,  
bulk wrapped  
discs with labels

Quantity	Price
10 .....	£3.50
20 .....	£6.50
25 .....	£7.99
50 .....	£15.50
105 .....	£31.00

## VERBATIM

Fully guaranteed 3.5" 135TPI Verbatim discs

Single Sided Discs	
Quantity	Price
10 .....	£11.99
20 .....	£23.49
30 .....	£34.99
50 .....	£57.99
100 .....	£114.99

Double Sided Discs	
Quantity	Price
10 .....	£13.49
20 .....	£25.99
30 .....	£37.99
50 .....	£63.49
100 .....	£125.99

### LOCKABLE DISC STORAGE BOXES

3.5"	5.25"
40 capacity .....	50 capacity .....
80 capacity .....	100 capacity .....
120 capacity .....	140 capacity .....
Plastic Storage Box – holds 10 (State 3.5" or 5.25") .....	

**AT LEAST 30% OFF ALL 16 BIT SOFTWARE**

**30% OFF ALL JOYSTICKS**  
eg Pro 5000 £11.99

**30% OFF ALL CABLES AND ACCESSORIES**

**SPECIAL!!!**

**Premium Quality Mouse Mat Now only £3.49**

### HARDWARE

**AT LEAST 10% OFF ALL HARDWARE**

Atari 520 STFM .....	£259.00*
Star NL10 .....	£189.00
Seikosha SP 180 NLQ Printer .....	only £149.99
Cumana Disc Drive Atari/Amiga .....	£117.99
NEC 1Mb Disc Drive Atari/Amiga .....	£99.99

\* While stocks last

P&P Free on all orders over £15, under £15 add 75p P&P (UK Only)  
Overseas Disc Orders Add £3 P&P. All prices include VAT

## Cestrian Software

2 Waterloo Road, off Liverpool Road  
Chester CH2 2AL

Phone 24 hour 0244 371952

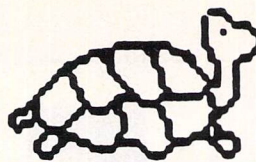
24 hour Access Hotline



U  
N  
B  
E  
A  
T  
A  
B  
L  
E  
  
P  
R  
I  
C  
E  
S



# TURTLESOFT



THE TURTLE HAS GOOD NEWS  
Limited Stocks of 520 & 1040's  
At pre increase prices  
Ring for details

!!!!!!TURTLE PRICES ARE THE ONES TO JUDGE THE COMPETITION BY!!!!!!  
!!!!!!WE ARE SURE YOU WON'T FIND LOWER PRICES AND FREE DELIVERY!!!!!!  
!!!!!!FIRST CLASS SERVICE AT FIRST CLASS PRICES!!!!!!

Computers	RRP	Our Price
520ST-M Computers/Drives/Monitors etc .....	Phone	Phone
520ST-FM Keyboard/Mouse/5 meg drive .....	399.99	359.95
520ST-FM Keyboard/Mouse/5 meg drive/SM125 Mono Monitor .....	549.98	469.95
520ST-FM Keyboard/Mouse/5 meg drive/SC1224 Colour Monitor .....	799.98	719.90
1040ST-F Keyboard/Mouse/Software only .....	599.99	539.95
1040ST-F+ Keyboard/Mouse/Software .....	648.99	579.95
1040ST-F Keyboard/Mouse/1 Meg drive/Mono Monitor .....	699.95	629.95
1040ST-F Keyboard/Mouse/1 Meg drive/SC1224 Colour Monitor .....	999.98	889.95
MEGA-ST 2 Meg Ram/Mouse/Mono Monitor .....	1034.99	929.95
MEGA-ST 4 Meg Ram/Mouse/Mono Monitor .....	1379.99	1229.95
MEGA-ST 2 Meg Ram/Mouse/Colour Monitor .....	1319.98	1179.95
MEGA-ST 4 Meg Ram/Mouse/Colour Monitor .....	1664.98	1479.95

\*\*\* All our Mega ST Computers fitted with Blitter Chips before Despatch \*\*\*

Printers	RRP	Our Price
Citizen 120D + ST Lead NLQ, Epson Comp .....	229.95	149.99
Atari SMM804 ST Printer + ST Lead .....	185.99	185.99
Panasonic KXP-1081 Printer, Epson comp, NLQ, 120CPS+ST lead .....	281.75	184.95
MP165 Plus Printer, Epson compatible, NLQ, 165CPS+ST lead .....	263.35	199.99
MP135 Printer, Epson compatible, NLQ, 135CPS+ST lead .....	194.95	149.99
MP135+ Printer, Epson/IBM compatible, NLQ, 135CPS + ST lead .....	205.85	159.99
MP200 80 Col Printer, 200CPS, Epson compatible, NLQ 40CPS .....	366.85	299.99
MP201 136 Col Printer, 200CPS, Epson compatible, NLQ 40CPS .....	424.35	349.95
MP480 80 Col Printer, Epson compatible, NLQ, 480CPS+ST lead .....	424.35	349.95
MP26 132 Column Daisywheel Printer, 26CPS, Qume/Diablo Std .....	299.95	249.95
MP40 158 Column Daisywheel Printer, 40CPS, Qume/Diablo Std .....	435.85	349.95
Atari SLM804 Laser Printer ** NEW IN STOCK ** .....	1299.99	1159.95

Atari ST Software Arcade/Adventure/Strategy	Retail Price	Our Price
Academy (Special) .....	19.99	6.99
Alternate Reality .....	24.99	16.95
American Football (GFL) .....	24.99	16.95
Arctic Fox .....	19.95	13.95
Arkanoïd .....	14.95	10.49
Auto Duel .....	24.95	16.95
Backlash .....	19.95	13.95
Barbarian .....	24.95	16.95
Barbarian (By Palace Software) .....	14.95	10.49
Bards Tale .....	24.95	16.95
Battleships .....	14.95	10.49
Black Lamp .....	19.95	13.95
BMX Simulator .....	14.95	10.49
Bridge Player 2000 .....	19.95	13.95
Bubble Bobble .....	19.95	13.95
Bubble Ghost .....	19.95	13.95
Catch 23 .....	19.99	13.95
Captain Blood .....	19.95	13.95
Casino Roulette .....	19.95	13.95
Championship Water Skiing .....	19.95	13.95
Chess (Pison) .....	19.95	13.95
Chessmaster 2000 .....	24.95	16.95
Classiques No 1 (Invaders/Paoman/Bout) .....	19.99	13.95
Crafton & Xunk .....	19.95	13.95
Crash Garrett .....	19.99	13.95
Crazy Cars .....	19.99	13.95
Deathstrike .....	14.95	10.49
Deep Space .....	24.95	23.95
Defender of the Crown .....	29.95	20.95
Deja Vu .....	29.95	20.95
Diablo .....	14.95	10.49
Dizzy Wizard .....	19.99	13.95
Echo (Sphere) .....	19.95	13.95
Enduro Racer .....	14.95	10.49
Epyx Collection .....	29.95	20.95
Extensor .....	19.95	13.95
F-15 Strike Eagle .....	24.95	16.95
Flight Sim Scenery Disc 11 or 7 (each) .....	24.95	16.95
Flight Simulator II .....	19.95	35.95
Flinstones .....	19.95	13.95
Football Manager .....	14.95	10.49
Formula 1 Grand Prix .....	19.99	13.95
Gambler .....	14.95	10.49
Gauntlet .....	24.99	16.95
Gauntlet II (Soon) .....	24.99	16.95
Genesis (return to) .....	19.95	13.95
Genocide .....	9.99	6.99
Get Dexter II .....	19.95	13.95
Goldrunner .....	24.95	16.95
Guild of Thieves .....	24.95	16.95
Gunship .....	24.95	16.95
Hard Ball .....	24.95	16.95
Hollywood Strip Poker .....	19.95	13.95
Hollywood Strip Poker 2+ .....	14.95	10.49
Hunt for Red October .....	24.95	16.95
I Ball .....	9.99	6.99
Ikari Warriors .....	14.95	10.49
Impact .....	14.95	10.49
Indiana Jones .....	19.95	13.95
International Karate (Special) .....	19.99	9.95
Jinxster .....	24.95	16.95
Joe Blade .....	9.99	6.99
Jupiter Probe .....	14.95	10.49
Karate Kid Part II .....	24.95	16.95
Karting Grand Prix .....	9.99	6.99
Kings Quest (3 Pack) .....	24.99	16.95
Knight Orc (Special) .....	19.95	12.95
Leader Board .....	24.95	16.95
Leader Board Tournament .....	9.95	6.99
Leisure Suit Larry .....	19.99	13.95
Liberator .....	12.95	11.95
Livingstone I Presume .....	14.95	10.49
Mach 3 .....	19.95	13.95
Marble Madness .....	19.95	13.95
Mercenary Compendium .....	24.95	16.95
Mission Elevator .....	19.99	13.95
Mouse Trap .....	14.95	10.49

Atari ST Software Arcade/Adventure/Strategy	Retail Price	Our Price
Music Construction Set .....	24.95	16.95
Obolator .....	24.95	16.95
Oids .....	19.95	13.95
Ogre .....	24.95	16.95
Outcast .....	9.99	6.99
Out Run (Special) .....	19.95	12.95
Passenger on the Wind .....	24.95	16.95
Pawn .....	24.95	16.95
Perfect Match .....	9.99	6.99
Phantasia III .....	24.99	16.95
Pinball Factory .....	24.95	16.95
Pink Panther .....	19.95	13.95
Plutos .....	14.95	10.49
Police Quest .....	19.95	13.95
Powerplay .....	24.95	16.95
Power Struggle .....	14.95	10.49
Predator .....	19.99	13.95
Prohibition .....	19.95	13.95
Pub Pool .....	9.99	6.99
Rampage .....	14.99	10.49
Rind Zillfin .....	24.99	16.95
Roadrunner .....	24.95	16.95
Roadwar Europa .....	24.99	16.95
Sapiens .....	19.95	13.95
Scraples .....	19.99	13.95
Seconds Out .....	19.95	13.95
Serifine .....	19.95	13.95
Shanghai (Special) .....	24.99	9.95
Shuttle II .....	24.95	16.95
Sidewalk .....	19.95	13.95
Silent Service .....	24.95	16.95
Sky Fighter .....	10.49	10.49
Sky Fox .....	14.95	10.49
Slap Fight .....	19.95	13.95
Slaygon (Soon) .....	19.95	13.95
Solomons Keys .....	24.99	16.95
Space Ace .....	19.99	13.95
Space Quest .....	24.99	16.95
Spitfire 40 (at last) .....	19.95	13.95
Staff .....	19.95	13.95
Star Glider .....	24.95	16.95
Star Trek .....	19.95	13.95
Star Wars .....	19.99	13.95
Stationfall .....	24.99	16.95
Strike Force Harrier .....	24.95	16.95
Sub Battle Simulator .....	24.99	16.95
Super Cycle .....	24.95	16.95
Super Huey .....	19.99	13.95
Super Sprint .....	14.95	10.49
Swooper .....	19.95	13.95
Tai Pan .....	19.95	13.95
Tanglewood .....	24.95	16.95
Terrorpods .....	24.95	16.95
Test Drive .....	24.95	16.95
Tetris .....	19.99	13.95
Tournament of Death .....	19.99	13.95
Tracker .....	24.95	16.95
Trash Heap .....	19.95	13.95
Trantor .....	19.95	13.95
Trivial Challenge .....	19.95	13.95
Trivial Pursuit .....	19.95	13.95
Turbo GT .....	15.95	10.49
Turbo ST (MCycle Racing) .....	9.99	6.99
U.M.S. .....	24.95	16.95
Ultima 4 .....	24.95	16.95
Vegas Gambler .....	24.99	16.95
Warhawk .....	9.99	6.99
Warlock .....	14.95	10.49
Warlocks Quest .....	19.95	13.95
Winter Olympiad 88 .....	19.95	13.95
Wizards Crown .....	24.99	16.95
Wizball .....	24.99	16.95
Xenon .....	19.95	13.95
3D Galax .....	19.99	13.95
500cc Grand Prix .....	19.99	13.95

Disc Drives	RRP	Our Price
Atari One Meg Drive 3.5" .....	199.95	169.99
Atari One Meg Drive 3.5" (with STM only) .....	199.95	129.95
Atari 0.5 Meg Drive .....	149.95	129.95
Cumana One Meg Drive 3.5" .....	149.95	124.95
Cumana 5.25" ST Drive, (CSA1000S) .....	194.35	159.95
Cumana Dual 3.5" ST Drive (CDA358) .....	275.00	229.95
Atari 20 Meg Hard Disc Drive (New Model SH205) .....	599.99	539.95
Supra 20Mb Hard Disc + Utilities .....	599.99	569.95

Monitors	RRP	Our Price
Atari Medium Res Colour Monitor .....	399.99	359.95
Philips CM8833 Colour Monitor + ST lead .....	329.95	289.95
Philips CM8852 Colour Monitor + ST lead .....	349.95	309.95
ST88 Colour Monitor + ST lead (Same Spec as CM8833) .....	319.95	279.95
Atari High Res Mono Monitor (SM 124) .....	149.95	119.95
Commodore 1084 Col Monitor + ST lead (same spec as CM8833) .....	349.95	239.95

Discs and Things	RRP	Our Price
Microdeal Battery Backed Clock 520/1040 (New Upgraded Model) .....	29.99	20.99
Colour/Monochrome Switch (Allows 2 Monitors Connected) .....	29.99	23.99
SSDD 3.5" Discs (10) + Library Case (10) - LOW LOW PRICE .....	17.95	11.95
DSDD 3.5" Discs (10) + Library Case (10) - LOW LOW PRICE .....	22.95	14.95
Top Quality Branded 3.5" DSDD Discs (10) - LOW LOW PRICE .....	27.95	17.95
Mouse Mat 265mm x 210mm .....	7.95	4.95
Disc Cleaning Kits 3.5" or 5.25" (State which) .....	7.95	4.95
Atari Dust Covers, Computers/Monitors from .....	-	8.95

\*\*\* All Computers & Peripherals now sent by Overnight Courier - Free \*\*\*

Atari ST Software Business/Languages/Utilities	Retail Price	Our Price
Advanced Art Studio .....	24.95	16.95
Aegis Animator .....	79.95	62.95
Art Director .....	49.95	34.95
Back Pack .....	49.00	35.95
Bulletin Board System V2 .....	49.95	34.95
CAD-3D Ver. 2.0 + Cybermate .....	89.95	62.95
CAD-3D Fonts & Primitives .....	29.95	20.95
CAD-3D Architectural Design .....	29.95	20.95
Degas Elite .....	24.95	17.95
Devpac Assembler (Hisoft) .....	49.95	34.95
Digi Drum .....	24.95	16.95
Easy Draw 2 .....	59.95	42.95
Easy Draw 2 General Library .....	29.95	23.95
Easy Draw 2 Technical Library .....	29.95	23.95
Fast Assembler .....	19.95	13.95
Fast Basic (Cartridge) .....	89.90	64.95
Fast Basic (Disc) .....	44.85	32.95
Film Director .....	59.95	41.95
First Word Plus .....	79.95	56.95
Fleet Street Publisher .....	115.00	89.95
GFA Artist .....	49.95	36.95
GFA Basic Interpreter .....	45.95	32.95
GFA Compiler (Needs Interp.) .....	45.95	32.95
GFA Draft .....	99.95	69.95
GFA Draft Plus .....	139.95	99.95
GFA Sheet .....	45.95	32.95
GFA Vector .....	34.95	23.95
GST C Compiler .....	24.95	16.95
Iconix Midi Software Sequencer .....	249.95	199.95
K Spread 2 .....	79.95	56.95
K-Comm 2 .....	49.95	36.95
K-Data .....	49.95	36.95
K-Graph 2 .....	49.95	36.95
K-Ministr .....	29.95	20.95
K-Roget .....	49.95	36.95
K-Word 2 .....	59.95	42.95
Lattice C Ver 3.04 (MCO) .....	99.95	69.95
Lisp (MCC) .....	149.95	114.95
Macro Assembler (GST) .....	24.95	16.95
Macro Assembler (MCC) .....	49.95	36.95
Maps and Legends .....	29.95	20.95
Modula 2 (Developers) .....	149.95	114.95
Modula 2 (Standard) .....	99.95	69.95
Music Studio .....	29.95	20.95
Paintworks .....	34.95	23.95
Publishing Partner .....	159.85	119.95
Sage Accountant .....	171.35	119.95
Sage Accountant Plus .....	228.85	159.95
Sage Bookkeeper .....	113.85	79.95
Saved (Hisoft) .....	29.95	20.95
Signum 2 * NEW PRICE * .....	184.00	149.95
ST Data Manager .....	79.95	49.95
ST SwiftCalc .....	79.95	49.95
ST Word Writer .....	79.95	49.95
Start Magazine (Disc) 6 x yearly .....	12.95	11.95
ST-Doctor .....	19.95	13.95
ST- Replay (Sound Sampling) .....	79.95	56.95
Super Conductor .....	49.95	36.95
Superbase (Database) .....	99.95	69.95
Timeworks DTP (New) .....	99.95	59.95
Timeworks Partner (Desk Accessory) .....	49.95	34.95
Trimbase .....	89.95	62.95
VIP Professional (GEM) *NEW PRICE* .....	149.95	114.95

All prices include VAT at 15% and now free overnight delivery anywhere on the UK mainland

How to order - Post: Send cheques, P.O. or Visa/Access details to the address below.

Phone: Call 0476 591040 24 Hour Service with your Access/Visa details.

Turtlesoft Dept. AST, Unit 3, The Old Malthouse, Springfield Road, Grantham, Lincs. NG31 7SE

Subject to availability, all items are despatched within 24 hrs. E&OE

Cheque orders require 7 days clearance.

Just because you don't see it - doesn't mean we haven't got it - please ring for details





# SUPER ACTION FOR YOUR

# ATARIST



ONLY  
£19.95  
EACH

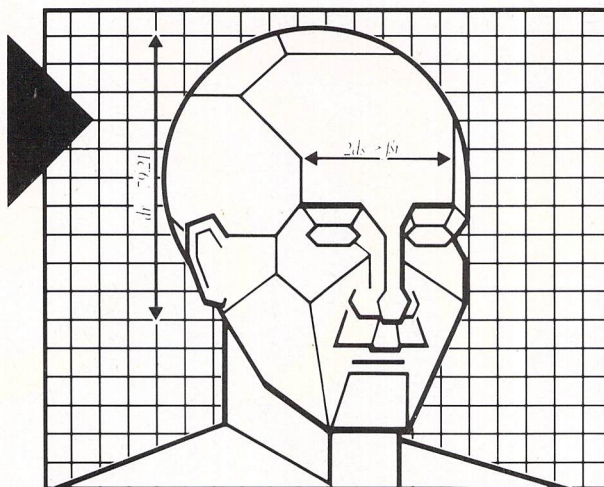
**ocean**

ONLY  
£19.95  
EACH



ALL THE POWER OF MAINFRAME LISP ON THE ST  
PRICE NOW REDUCED FOR UNBEATABLE PRICE/PERFORMANCE RATIO

# Explore the world of artificial intelligence for just £89.95



## WITH CAMBRIDGE LISP

LISP (LISt Processing) is a well established computer language, suitable for a wide range of applications in science and engineering.

As a symbolic language, it is particularly appropriate for work in artificial intelligence, where it offers a flexibility in the design of data and control structures that is not available from more traditional languages.

CAMBRIDGE LISP provides a complete and proven mainframe LISP development environment now available at an unbelievably low price on the Atari ST.

Using LISP's interpretive mode, together with the trace package, you can quickly and efficiently develop and debug programs.

CAMBRIDGE LISP helps with your program development by checking for exceptional cases and providing clear diagnostics.

Once developed, the program can be compiled for significant improvements in speed and to reduce the storage required. The control structure of LISP leads to code that is easy to read and enhance.

- Integral compiler ► 16 Megabyte address space ► Rational arithmetic ► Clear and concise error messages ► Catch, throw and errorset ► Trigonometrical functions
- Large number of built-in functions ► Full garbage collection ► Integers of any size
- Vectors ► Floating point arithmetic
- Compiled and interpreted functions can be used interchangeably ► Full tracing available in interpreted and compiled code ► Core image may be dumped ► Load on call facility
- Full access to GEM ► Complete automatic space allocation with no hard boundaries

So whether you want to experiment or are already a LISP expert, make the most of this incredible offer, a complete LISP system for under £100!

Atari ST is a trademark of Atari Corporation. GEM is a trademark of Digital Research Inc.

### METACOMCO

26 PORTLAND SQUARE, BRISTOL BS2 8RZ, UK.  
Telex: 44874 METACO G Fax: (0272) 428618

### MAIL ORDER HOTLINE (0272) 428781

LISP is only one of Metacomco's range of languages currently available for the Atari ST.

PLEASE SEND ME FOR THE ATARI ST:		PHONE TODAY, OR POST THIS COUPON TO: METACOMCO, 26 PORTLAND SQUARE, BRISTOL BS2 8RZ	
LATTICE C 3.04	£ 99.95 <input type="checkbox"/>	I ENCLOSE A CHEQUE FOR £ _____ OR DEBIT MY ACCESS/VISA NO: <input type="text"/>	
MACRO ASSEMBLER	£ 49.95 <input type="checkbox"/>	NAME _____ CARD EXPIRY DATE _____	
PASCAL 2	£ 89.95 <input type="checkbox"/>	ADDRESS _____	
CAMBRIDGE LISP	£ 89.95 <input type="checkbox"/>	COUNTRY _____ TEL NO: _____	
BCPL	£ 99.95 <input type="checkbox"/>	SIGNATURE _____	
MORE INFORMATION	<input type="checkbox"/>	Prices include VAT and P&P UK mainland only. Please add £6.00 towards delivery outside UK. Allow up to 28 days for delivery.	



# Power without the price

**W**HEN Roland Waddilove previewed HiSoft's Basic compiler last year in the September 1987 issue of *Atari ST User* he was impressed with its flexibility, ease of use and amazing speed.

Since then, the final version has been released, and in addition to this, recently a cut down budget-priced version has also been made available. Although it's £39.95, I do consider this cheap for a Basic compiler, the full implementation costing £79.95.

Power Basic runs on any combination of ST, disc drive and monitor. The source code editor in the preview version we looked at only worked in high or medium resolution. This restriction has been removed and the editor, I'm happy to report, now runs in low resolution too.

It is a fairly standard Gem-based text editor and anyone who has used one before will immediately feel at home with it. It is keyboard/mouse controlled; many of the functions accessed from the keyboard are also available from pull down menus using the mouse.

The menu bar at the top has options to load and save text, and insert or delete a file. You can search for strings, replace them, and find the next or previous occurrence. You can go directly to the top or bottom of the file – which is held entirely in memory – and go to a specific line.

Under the Options menu is Preferences. Here you can alter the text buffer size, which defaults to 10k, set the editor to automatically make backups of files, set the tab positions, auto indent, and define

**Julie Boswell reviews Power Basic, and is impressed with its speed and flexibility**

the numeric keypad for cursor or numeric operation.

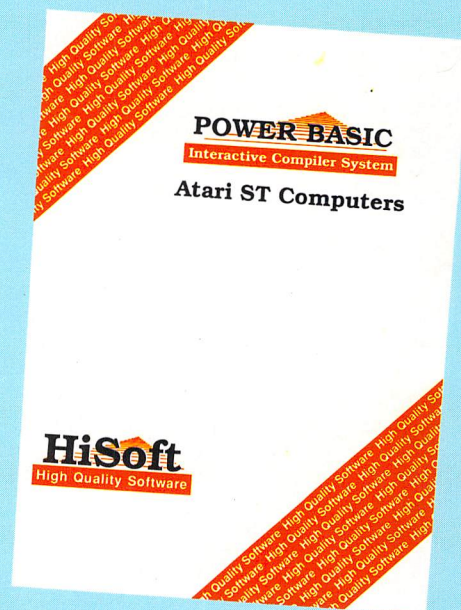
I can't see the point of this last option – you've already got cursor keys, so why would you want to duplicate them on the numeric keypad?

The Program menu enables you to compile, or compile then run the program in memory. The figure below shows the wide range of options available. To make things easy, there are two buttons at the bottom right of the box labelled Max Speed and Max Safety.

When developing a program it's a good idea to click on the Max Safety button – this resets all the other options, turning on error and overflow checking, and so on. When the program is completely bug free, you can compile it with the Max Speed button, turning off all checks and consequently speeding up the program.

You can compile the program to memory and run the code from within the editor. Power Basic contains an impressively fast compiler, typically under five seconds for a 10k program.

This makes the system just as easy to use for developing a program as an interpreter. Using the compile and run option, you can test your program from the editor



with just a five second or so delay, then break out back into the editor and edit the source code which remains intact.

You can also compile to disc producing a .TOS, .TTP or .PRG file – the compiler automatically works out which extension is required by examining the program and seeing if it uses Gem at all.

The runtime system – which is surprisingly small – is also included making a stand-alone program which can be run from the desktop. You are also free to distribute this, with no restrictions at all.

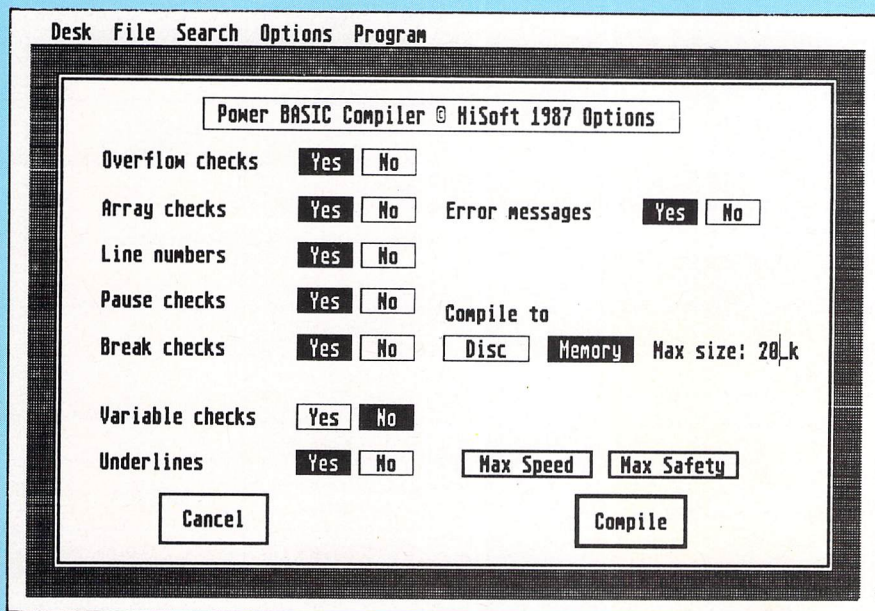
Power Basic is designed to be compatible with ST Basic – the old and most common version. As ST Basic is a bit of a dead loss at times, you might wonder why anyone would want to emulate it.

The advantage is that you can load ST Basic listings straight into the Power Basic editor and compile them with the minimum of modification. The difference in execution time is phenomenal, and what's more, Power Basic fixes the bugs in the ST Basic interpreter too.

Furthermore, many extensions have been included to substantially boost its power. It's also modelled after Microsoft QuickBasic, popular on the IBM PC and clones.

Variables can be 16 or 32 bit integer, single or double precision floating point, or string of any length. Constants can also be defined at the start of a program to aid readability.

Line numbers can be used, though



The compiler options

Turn to Page 16 ►



## ◀ From Page 15

they are optional. On the odd occasion that a GOTO or GOSUB is required it is just as easy, and a lot more meaningful, to place a label in the program. Multiple statement lines are accepted, and to complement this, lines of code may be split over two or more screen lines by ending them with an underscore.

This would be useful when editing in low resolution, because although the editor works fine in this mode, it will only show the first 30 characters of a line, and you have to scroll the screen sideways to see the rest of a longer line.

Subroutines – which HiSoft calls sub-programs – can be named. I'm not talking about labelling here, though this is possible too. It is more akin to the procedure of Pascal or function in C. Once it has been defined it can be called by name within the main body of the program.

Parameters can be passed to these sub-programs and they can be passed by reference (the actual variable itself), or by value (the value the variable represents). Variables used within sub-programs can be local (only available in the sub-program), or global (available anywhere in the program).

There are two variations of local variables: Static and local. The static type is created by default and these are totally separate from those outside the sub-program, and what's more, they also keep their value between sub-program calls.

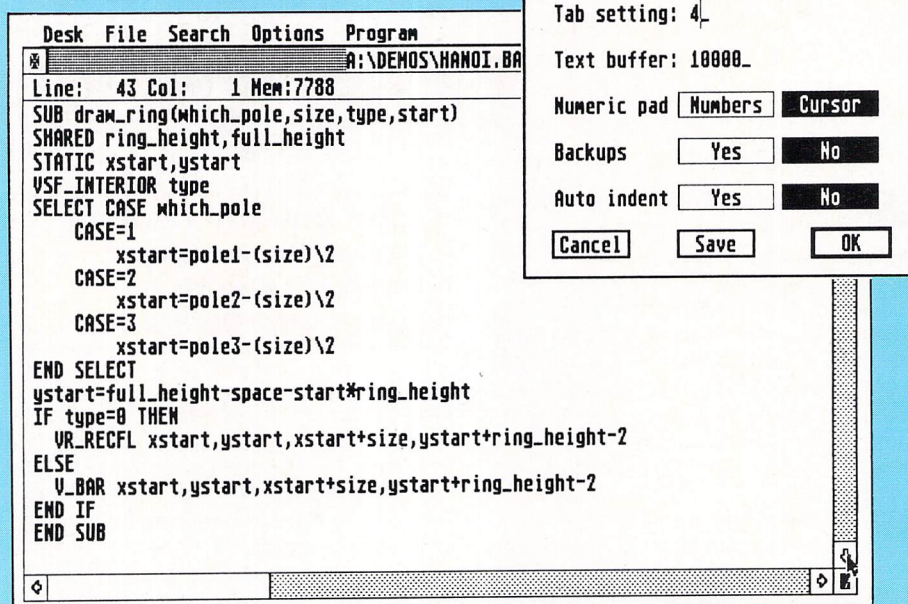
This would make recursive programming difficult, if not impossible, so an extra variable type is available – local – which is created each time the sub-program is called. The old value of the variable, if it existed before, is restored on exit.

Multi-line functions have been implemented, and this is a welcome feature as they are so much more useful than the now dated single line versions so common in older Basics.

Along with the SELECT/CASE, REPEAT/END REPEAT, DO/LOOP and WHILE/WEND statements, this is good news for structured programmers. It is possible to write libraries of useful sub-programs, storing them on disc. They can be merged into your programs as and when needed.

Power Basic has several pre-compiled libraries stored on disc, all merged into a

Setting the  
editor preferences



The editor in action

single file. These enable you to access many of the functions that would normally have you hunting round for your C or Pascal compiler.

The libraries are: Bios, XBIOS, GemDOS, GemVDI and GemAES. A LIBRARY command at the start of your program includes the runtime system and enables you to use the couple of hundred sub-programs and functions.

The manual is excellent. Each command is explained well and followed up with a brief snippet of program showing its use. On the disc are 12 long program listings which show the majority of commands in use.

There's a beginner's section for novice programmers, and this leads you through the development of the old Towers of Hanoi problem. I thought it was a bit too advanced for the absolute novice and many newcomers may well need some additional help getting started.

The more experienced programmer is catered for by a very brief section on advanced Gem techniques. This is far too brief to be of much help, but to be fair, to do the subject justice would require a whole manual on its own.

Power Basic must rate as the best all round version of Basic for the price –

there's nothing to touch it. Although GFA Basic and Fast Basic are in the same price bracket, they aren't compiled like Power Basic, so there's a significant difference in performance.

It's fast, and provides the sort of access to Gem that was previously only available to C or Pascal programmers. Although it's a compiler, the compile time is so short, and as everything is carried out in memory, it's just as easy to use as an interpreter.

If you've got the old version of ST Basic you'll be amazed by the speed, flexibility and range of functions offered by Power Basic, which is also just about as compatible as you can get.

If however, you've got the new version of ST Basic and are frustrated by the fact that the majority of existing Basic programs won't run, this will solve your problems, and it's a big improvement in performance too.

## WHAT'S ON THE DISC

**PBASIC.PRG**  
**PBASIC.LIB**  
**CHECKST.PRG**

Power Basic compiler  
Power Basic library functions  
Tells you the Dos and rom version, amount of ram and so on of your micro. Used for reporting bugs to HiSoft

**CTOBAS.TTP**

Converts C header files produced by resource editors to Power Basic format  
Demonstration of the famous Towers of Hanoi

**HANOIDEM.PRG**

**README.TXT**  
**DEMOS**

The latest changes to Power Basic  
A folder containing 12 example Power Basic listings

## FACT FILE

Product: HiSoft Basic

Price: £39.95

Supplier: HiSoft, The Old School, Greenfield, Bedford MK45 5DE.

Tel: 0525 718181

### POINTS FOR:

Extremely fast, very flexible, good access to Gem environment and very easy to use.

### AGAINST:

Manual aimed at the average programmer – absolute novices and the more experienced are given little help.

### Competitors reviews in Atari ST User:

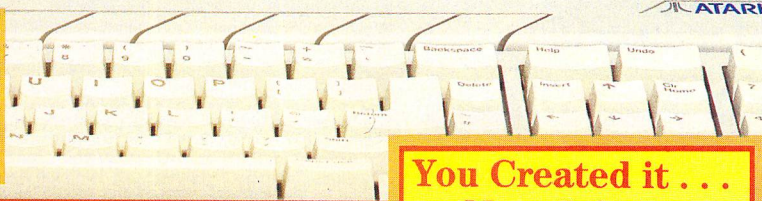
True Basic – April 1987. GFA Basic – June 1987. LDW Basic – June 1987.



# Antic



**£89.95**  
INC. VAT.



## Cyber Studio Presents . . . Your Own Living CAD 3D Works of Art!

Cyber Studio for the Atari 1040 ST is an exciting real-time package which combines the versatile CAD 3D 2 with Cybermate, an advanced animation facility.

Cyber Studio provides you with the tools to create a virtually limitless range of 3D images - from cartoons and science fiction fantasy to designing a car or landscaping your garden! The package is ideal for illustrating the various dimension of objects viewed from different angles and plane - invaluable for both educational and practical usage.

Dimensioning can be either in metres or feet, allowing for relational scaling between objects and real world situations. Additional features include arbitrary rotation points and a custom colour rendering system with up to 16 colours. Total control of light sources enables you to cast shadows from your objects - just like natural light!

The Cybermate animation facility allows you to view complex objects in a continuous sweeping movement, showing all possible perspectives. Just imagine it . . . design your own house or castle - then fly round your creation for a bird's eye view!

## You Created it . . . Now Join In — In Fabulous 3D

Want to get right in with the action on your screen? Well, now you can! These amazing Stereotek glasses will give you a startling view of your software, a 3D depth of vision you won't believe! As well as your screen adventures, enjoy your education and business presentations in glorious 3D too! Simply plug these hi-tech glasses into the cartridge port of your Atari 1040 or MEGA ST and get a whole new perspective on life.

**£149.00**  
INC. VAT.



# CYBER STUDIO

TEAR HERE

**Electric**  
SOFTWARE

## SOFTLINE

— the ultimate software support service

If you've dreamed of having access to a helpline where your questions are answered by technical experts, receiving advance warning of upgrades, tips on bugs, regular newsletters . . . your prayers are answered! Subscribe for £19.95, and all your Electric Software packages will be covered by the Softline support service. Join now!

ELECTRIC DISTRIBUTION 8 GREEN STREET, WILLINGHAM, CAMBRIDGE CB4 5JA  
TELEPHONE: 0954 61258 TELEX: 81113 (PMPROF G) FAX: 0954 80318

Cyber Studio is a trade mark of Antic.

All other trade marks are acknowledged.

Please rush me your information sheet with full specifications of Cyber Studio.

Name \_\_\_\_\_ Address \_\_\_\_\_  
Postcode \_\_\_\_\_

AST7



# Evesham Micros

**ALL Prices include VAT/Delivery**

## Disector ST

A POWERFUL set of Disk Utilities

### FEATURES INCLUDE:

- ☆ **SOFTWARE BACKUP** - handles most protected software. Uses all available drives and memory
- ☆ **ORGANISER ACCESSORY** - extremely useful provides essential disk management commands including FORMAT, RENAME, DELETE etc.
- ☆ **EXTRA FORMAT** to maximise space on your disks provides over 15% additional user storage per disk!
- ☆ **UNDELETE** to recover accidentally lost files
- ☆ **RAMDISK** and **SET DATE/TIME** Accessories
- ☆ **DISK ANALYSIS**
- ☆ **DIRECTORY PRINTOUT**
- ☆ **DISK SPEED CHECK**

**Only £24.95**

Regular upgrades will be available in the future.

**For all Atari ST Models**

## PRINTERS

All prices include VAT/delivery & cable

We use and recommend Star printers we find that they offer an unbeatable combination of features, print quality, reliability and value. Don't make the wrong decision, get it right with a Star printer at our special, all in, prices.

# star

## LC-10

The NEW No.1



- Four NLQ fonts, yes FOUR
- Paper Parking (use single sheets without removing tractor feed paper)
- IBM/parallel interface
- 4K buffer
- Comprehensive 'front panel'
- 96 NLQ print combinations
- 144/36 cps print speed
- 7-colour version now available

**Only £199.00**

Colour version also available,

**Only £234.00**

Prices include 2 extra black ribbons free of charge.

Many similarities with the highly popular NL-10 that it replaces plus some new features not seen in this price range before combine to produce the outstanding printer in this price category.

Star NB24-10 includes 2 extra ribbons free of charge ..... £469.00  
 Star NX-15 budget wide carriage printer ..... £319.00  
 Star ND-10 180/45cps high quality 10" ..... £299.00  
 Star ND-15 wide carriage version of ND-10 ..... £419.00  
 Star NR-10 240/60cps professional 10" ..... £379.00  
 Star NR-15 wide carriage version of NR-10 ..... £499.00  
 Star NB24-15 wide version of NB24-10 ..... £599.00  
 Star Laser, very high spec. for cost, send for details/samples (price inc. 1 yr on site maint) ..... £1795.00  
 NEC P2200 new budget 24 pin, great value 168/56cps plus many features ..... £349.00  
 Cut Sheet Feeders available for above dot-matrix printers at low, low prices - phone for details.

## 3.5" disks

10...£11.95 in plastic case £13.95  
 25...£27.95 in 40 cap case £34.95  
 Fully guaranteed double sided media

**All prices VAT/delivery inclusive. Next day delivery £5.00 extra.**

### How to order...

Send cheque P.O. or ACCESS/VISA details  
 Phone with ACCESS/VISA details  
 Govt., educ. & PLC official orders welcome  
 Same day despatch whenever possible  
 Callers welcome, open 6 days 9.30-5.30  
 All offers subject to availability, E.&O.E.  
 TELEX: 333294 FAX: 0386 765354

# STOP! STOP!

## Why pay more?

**ONLY £99.95**  
 inc.VAT



We can supply you this ultra neat, quality 2nd Drive for the Atari ST for an ultra low price !

- ★ Very Quiet
- ★ Slimline Styling
- ★ Fully Compatible
- ★ Suits all ST models
- ★ Top quality Citizen drive mechanism
- ★ External power supply
- ★ Long cable for location left or right of computer
- ★ 726K formatted capacity
- ★ One year guarantee

## ATARI 520 STFM - Ring us now for the best deal

520 STFM with 1meg memory upgrade.....	PHONE
520 STFM memory upgrade kit (requires soldering).....	PHONE
1040 STF.....	PHONE
1040 STF with mono monitor.....	PHONE
Mega ST2 with mono monitor.....	PHONE
Mega ST4 with mono monitor.....	PHONE
Atari SLM804 laser printer, great value at.....	£1199.00
Atari SM124/5 mono monitor.....	£134.00
Atari SC1224 colour monitor.....	£349.00
Atari SH205 hard disk, new style.....	£539.00
Atari DTP system 1 - includes Mega ST2, Mono Monitor, SLM804 laser printer, Fleet Street Publisher & 90 day on site maintenance.....	£2059.00
Atari DTP system 2 - as above, but with Mega ST4 & includes 20mb Hard Disk Drive.....	£2775.00
Cumana CSA354 1 meg drive.....	£129.95
Cumana CDA358 2 meg (dual) drive.....	£229.00
Pace Linnet Modem Pack inc.cable & software.....	£179.00
Phillips CM8833 colour monitor c/w ST lead.....	£279.00
Phillips CM8852 as above, higher resolution.....	£299.00

(Extra £10.00 discount on Phillips monitors if bought with an ST)

All ST prices include: mouse etc. PLUS 5 disks of s'ware including wordpro, utilities, graphics, game and demos.  
 We can quote you for any combination of hardware.

## software

### Timeworks

Data Manager.....	£37.95
Swift Calc.....	£37.95
Data Manager + Swift Calc.....	£59.95
Partner ST.....	£37.95
Desk Top Publisher.....	£74.95
Word Writer.....	£59.95
Desk Top Publisher + Word Writer.....	£114.95

### Antic

Cyber Studio (CAD 2.0).....	£67.95
Cyber Control (animator).....	£44.95
Cyber Paint.....	£54.95
CAD 3D 1.0.....	£18.95
Architectural/Human/Future.....	£22.95
Design Disks.....	£22.95
Genesis molecular modeller.....	£145.00
Stereotek glasses.....	£26.25
GIST (sound editor).....	£44.95
Base Two.....	£18.95
COLR (sprite editor).....	£18.95

### Simulations

Flight Simulator II.....	£37.45
F - 15 Strike Eagle.....	£16.95
Gunship.....	£16.95
Silent Service.....	£16.95

### Sage

Book Keeper.....	£84.95
Accountant.....	£129.95
Accountant Plus.....	£171.95
Financial Controller.....	£259.00

### GFA

GFA Basic.....	£37.95
GFA Compiler.....	£37.95
GFA Draft.....	£74.95
GFA Vector.....	£25.95

### GST

First Word Plus.....	£59.95
GST C Compiler.....	£15.95
Macro Assembler.....	£15.95
1st Mail (for 1st Word only).....	£15.95

### Miscellaneous

Fleet Street Publisher.....	£86.25
Easy Draw 2.....	£44.95
Fast Basic ROM.....	£69.95
Fast Basic Disk.....	£37.95
Mark Williams C.....	£99.95
Superbase Personal.....	£79.95
Degas Elite.....	£19.95
Super Conductor.....	£37.50
PC Ditto.....	£89.95
Logistix.....	£89.95
Word Perfect V4.1.....	£149.95
FTL Modula-2.....	£55.95
Signum 2.....	£149.95

### Lets make...

Signs and Banners.....	£8.95
Greetings Cards.....	£8.95
Calendars & Stationary.....	£8.95
Art Library 1 (clip art).....	£8.95
Art Library 2 (clip art).....	£8.95

GAMES SOFTWARE...Buy any item from this advert and we will match ANY price in this magazine on your requirements.

## Evesham Micros

63 BRIDGE STREET  
 EVESHAM  
 WORCS. WR11 4SF

**Tel: (0386) 765500**

ALSO AT: 1756 PERSHORE RD., COTTERIDGE, BIRMINGHAM, B30 3BH. TEL: 021 458 4564



# DESKTOP PUBLISHER



**£99.00**  
INC. VAT

## Make The Headlines With Timeworks Desktop Publisher!

With the arrival of Timeworks Desktop Publisher, everyone can make the news... literally! Available for the Atari ST, IBM, Amstrad and compatible PCs, Timeworks Desktop Publisher unlocks your printer's hidden power. It's like having your own print shop, right there on the desktop.

Newsletters, brochures, advertisements, posters, signs or specifications - anything you produce on your word processor, by hand, or using professional agencies, you can now create yourself using Timeworks Desktop Publisher. Easier, quicker, cheaper - and better, too, because Timeworks Desktop Publisher puts you in control.

Timeworks Desktop Publisher has all the essential features of desktop publishing packages costing up to eight times the price - and some you won't find anywhere else. Fully WYSIWYG with an easy to use GEM interface, it has everything you need. Frame-based page layout with style sheets and master pages, documents up to 999 pages, multiple text and symbol fonts in a range of styles and sizes, text and picture import from leading programs, word processing features and graphics creation "straight on to the page". Drivers for a whole range of popular matrix and laser printers, including PostScript, are all supplied with Timeworks Desktop Publisher.

So whether you're a budding newspaper tycoon, small business, school, college, or would-be novelist, with Timeworks Desktop Publisher at only £99, you can afford to publish without being damned. Buy your copy of Timeworks Desktop Publisher today!

## The Timeworks Family

Timeworks Desktop Publisher is one of a family of Timeworks' products from Electric Distribution. Other family members include Word Writer ST, a complete professional word processing system, Data Manager ST, a database package for report writing, SwiftCalc ST, an easy to use spreadsheet, each costing £79.95. Plus Partner ST, a suite of twelve desktop accessories to boost your efficiency for only £49.95. MS-DOS versions for IBM or Amstrad PCs and compatible computers will be available very shortly. Timeworks Desktop Publisher is available now.



**Electric**  
DISTRIBUTION

## SOFTLINE

the ultimate software support service

If you've dreamed of having access to a helpline where your questions are answered by technical experts, receiving advance warning of upgrades, tips on bugs, regular newsletters... your prayers are answered! Subscribe for £19.95 and all your Electric Distribution packages will be covered by the Softline support service. Join now!

ELECTRIC-DISTRIBUTION 8 GREEN STREET, WILLINGHAM, CAMBRIDGE CB4 5JA  
TELEPHONE: 0954 61258 TELEX: 81113 (PMPROF G) FAX: 0954 80318

TEAR HERE

Please rush me your information sheet with full specifications of Timeworks Desktop Publisher.

Name \_\_\_\_\_ Address \_\_\_\_\_ Postcode \_\_\_\_\_

AST7



# Simple, but powerful

**Ron Massey assesses the flexibility and power of Campus CAD**

**F**EW small computer systems of any kind can equal the sheer processing power of the Atari ST. Computer users, current and potential, are becoming increasingly aware of the convenience and cost effectiveness of this outstanding micro for all types of serious applications.

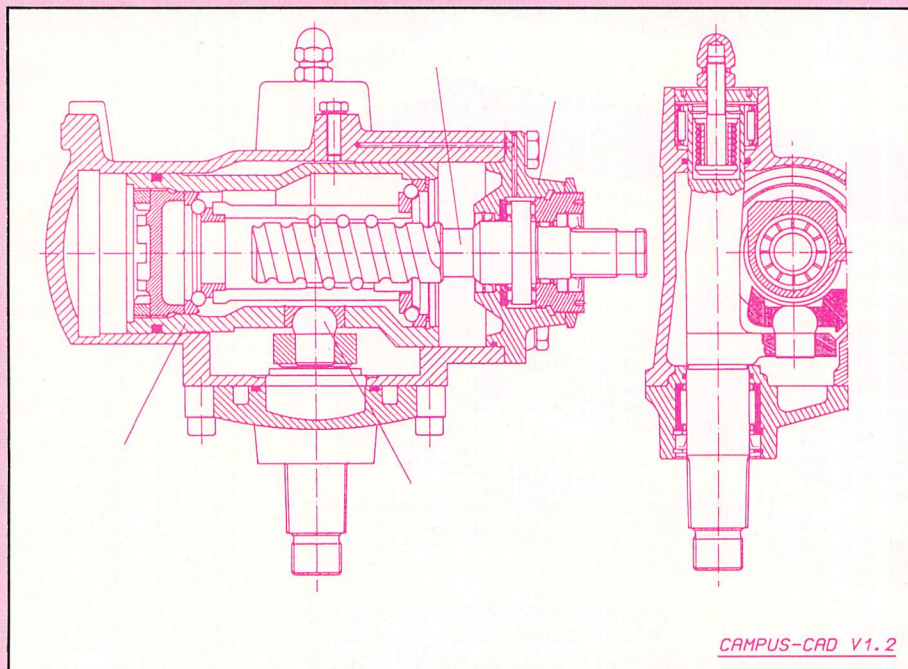
Computer graphics are used in almost every form of visual presentation, whether for initial planning or a completed project. This review covers one area of endeavour in particular – an application of visual information.

Many of the graphics systems available for the ST are intended as universal art programs and few are intended for use in specialised disciplines. Each has its own distinctive strengths and limitations.

Disregarding superficial external program differences, drawing or graphics programs generally fall into one of two basic categories – bit-mapped or object orientated, according to the way they manipulate and store picture information.

General art and painting programs usually produce bit-mapped pictures and the output obtained from this type of program is a screen dump representing the pixel construction of the image.

Bit-mapped pictures are manipulated on screen by accessing specified blocks of memory in particular ways – zooming



*Designing machine components*

## Menu bar options available when using Campus CAD

**Files:** In addition to the usual load and save options, also provides facilities for merging, in effect, layering, drawings. Merging provides a means of drawing in a structured and organised manner by allowing you to treat individual layers as separate drawings. Each can incorporate various line types and be modified to requirements.

**Global:** Accesses commands which affect all subsequent drawing functions. Although Campus CAD redraws a screen phenomenally quickly, because elements of the image are recalculated each time a screen refresh is required, this type of program can consume a significant amount of time while updating an image.

Redrawing time can be reduced considerably by switching off parts of a drawing not immediately required for the progress of the drawing, such as image text, dimensioning, symbols and/or hatching.

**Line:** Defines the line type and thickness. The options include either solid or one of five types of broken line which may also be drawn in any one of eight pen widths. Optionally, lines may be displayed in either single pixel widths or in their relative pen widths.

**Text:** Provides five preset character sizes with a range of 1.88mm to 7.00mm and an additional option for inputting specified character heights. Characters may be underscored and printed in either a normal or italic font.

Text may be input at any angle, and the cursor positioned from either the right, left or centre of the line and may be input as single or multiple lines.

**Hatching:** Provides six predefined patterns, the line spacing of which can be specified, or a further option for user defined patterns.

**Dimension:** Used in conjunction with the dimensioning icon panel, is a powerful Campus CAD feature.

Dimensioning of a drawing may be made automatically or manually between successive points, or by default, the length of a line.

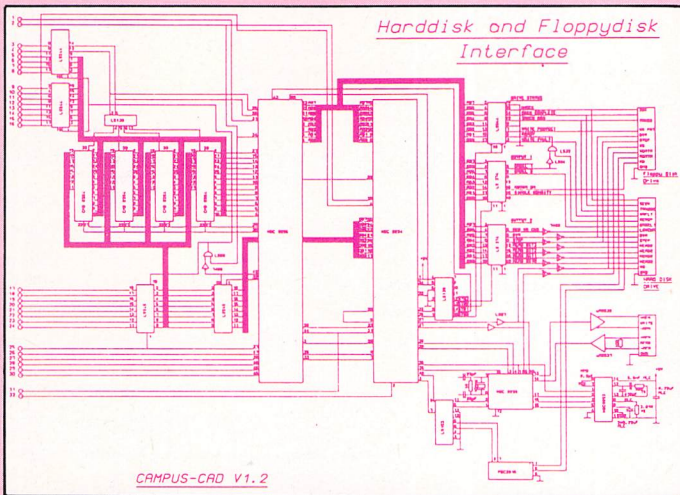
If the first method is selected, you may select the angle of the dimensions. If the last, dimensions are inserted parallel to a specified line.

**X,Y coordinates:** Defaulting to normal, may be displayed as polar coordinates in either floating point or exponential notation, and in a range of up to four decimal places. Or they may be switched off altogether.

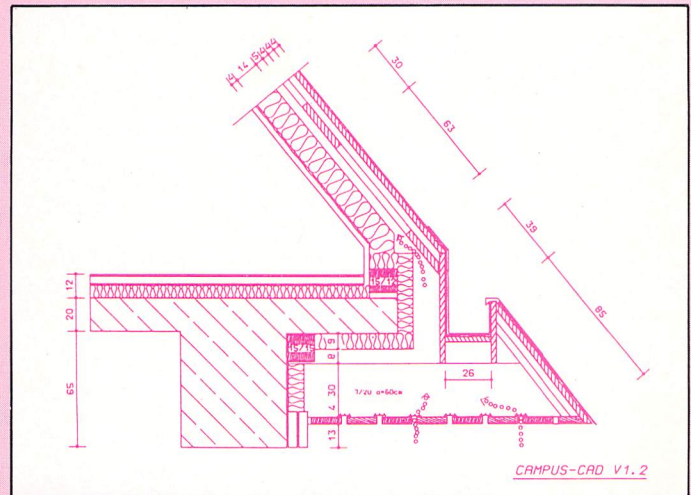
Measurements may be indicated in metric units from millimetres to metres, or in Imperial units in tenths or whole inches.

Most of the control of Campus CAD's drawing functions is made with icons displayed in four panels to the left of the drawing area. Three of the icons from the selector panel at the top of the icon window are highlighted, indicating that their associated panels are currently active in the three insets





Creating a circuit diagram



Producing precise technical drawings

in on a bit-mapped picture, as just one typical example, fails to produce greater detail, it only increases the size of a selected group of individual pixels.

Because bit-mapped pictures can occupy considerable space on disc, several different types of subroutine are available which can compress the picture data, and when they are subsequently reloaded, decode the pictures into a coherent screen image.

In common with bit-mapped pictures, an object orientated image is viewed as a pattern of pixels, but elements of the picture are manipulated as individual

shapes, by type, specified dimension and relative position. Drawings produced by this category of program are saved as parameter files and are usually relatively compact.

Both types of programs have legitimate CAD applications. The former is applied in the field of graphic arts, while the latter, being inherently more flexible, is used for almost every type of technical two and three dimensional drawing program.

A new release from Eidersoft, Digital Workshop's Campus CAD is a sophisticated two dimensional drawing system of

the latter type in which the basic drawing elements are lines, arcs and circles. The real strength of this professional-grade system lies in the manner and number of ways these simple geometric shapes can be manipulated.

On booting up the software you have the options of starting a new drawing or loading an existing one. Subsequent selection is made using Campus CAD's menu bar.

Selecting the prompt box for a new drawing, you can input the file and folder

**Turn to Page 22 ►**

beneath. If any of the four remaining icons in the selector window are clicked you are offered the choice of displacing one of the three current panels with a different set of drawing options.

Defaulting to Page control, Drawing and Editing panels, the upper group of function icons provides facilities for magnification of a defined portion of the screen, switching between two selected magnified portions of the page, a frame grabber for moving the magnified image, and resetting the screen display to full page.

While working on a drawing, Campus CAD will often leave construction marks scattered about the drawing area. Selecting the icon containing the page symbol overprinted with an asterisk, or pressing the Ctr/Home key forces the program to redraw the screen, deleting extraneous marks.

An Undo option affecting all of the drawing sequences in the current

drawing option is provided, and may be selected either from an icon or by pressing the Undo key.

Justifiably referred to in the manual as clever features, two unique drawing aids have been provided. The first is used for setting the coordinate point of origin, and may also be used for obtaining measurements.

The second, the Snap option is used for accurately connecting the free end of the current rubberbanded line to a point such as a line, circle or arc, provided the screen cursor is within a preselected distance from the end of one of the lines. Grid dimensions of a minimum of 0.86mm can be set.

**Draw panel:** Offers 19 drawing options including rubberbanded two-point lines, polygons, rectangles, triangles, perpendicular and parallel line generators, circles, four types of arc generators, a generator for producing perpendicular and tangentials relative to circles and drawing concentric circles.

**Delete and edit:** Allows you to remove or modify elements in the current drawing.

**Movement functions:** Mirror or rotate, move or copy the contents of a defined block, lines, circles text or symbols.

**Dimensioning:** Controls the type and style of dimension lines used in a drawing and caters for inside or outside dimensions of circles and shapes with straight sides.

**Symbols:** Opens a five-bar menu from which you can manipulate symbol files or alter their parameters.

**Object information:** Provides detailed data regarding selected portions of a drawing for circles, arcs, intersection points, text, angles and general drawing information. Typical data provided by selecting a particular line is its length, x,y start and end points and angle.



# ◀ From Page 21

names, select an appropriate drawing scale – defaulting to 1:1 – and choose one of six paper sizes ranging from A5 to A0. Defaulting to landscape – horizontal – format, you may also select portrait – vertical – layout as an alternative.

Program control is normally achieved using the mouse, but many of the drawing commands may also be entered from the keyboard.

This facility enables you to dimension individual elements and set angles with greater accuracy.

Once into the program, command entry may be made from one of 11 screen areas, or from the keyboard in the command line above the drawing area. The menu bar accesses from the left, ST related options such as the normal desk accessories for setting the printer and RS232.

Overall, I liked Campus CAD very much. On the surface it is deceptively simple, but in common with all good programs, the complexity of the mathematical processes involved is totally transparent to the user.

The software provides all of the power-

ful features you could reasonably expect from a package costing a great deal more.

Minimum hardware requirements for running Campus CAD are a 1Mb ST, mouse, high resolution monochrome monitor, 1Mb of disc storage and a printer or plotter. Professional users should consider adding a hard disc to their system.

Curiously, the copy of the program provided for review was a demonstration version.

The portions of the program dealing with the creation of symbols, saving and plotting the output had been disabled, so I was unable to test them.

There is little room for doubt that future profitability in diverse fields of hard and soft engineering is closely tied to structured CAD techniques.

Applications for professional quality CAD packages such as Campus CAD, include architects, civil engineers, consulting engineers, electronics and printed circuit board designers, shop fitters and designers, surveyors, mechanical engineers – the catalogue is virtually endless.

Future Campus CAD developments

will undoubtedly take advantage of its modular implementation. Future developments will extend the already impressive range of applications. Planned for release in the near future are add-ons such as symbol libraries, parts list generators and a programming language which is closely related to Basic.

Other potential specialisations include modules enabling direct output to photo-etching machines for printed circuit board manufacture, and output to CNC interfaces for computer-controlled milling machines and lathes.

## FACT FILE

Product: Campus CAD

Price: £395

Supplier: Eidersoft Software, Unit 4, Stannets, Laindon North Trade Centre, Basildon, Essex.

Tel: 0708 856468

## POINTS FOR:

Flexible; packed with features; easy to use.

## AGAINST:

Not for a 520ST or single sided drive.

## 3.5" UNBRANDED DISKS – FANTASTIC VALUE

No quibble guarantee – labels included

	10	10 cased	25	50	100
135tpi SS/DD	10.00	11.00	24.00	47.00	92.00
135tpi DS/DD	11.50	12.50	27.00	53.00	99.00

## DUST COVERS

Protect your valuable Hardware with these smart fitting anti-static natural PVC covers with brown binding

Please specify model	SF314/345	DISK DRIVE	2.95
520ST/STMF/1040STF keyboard	3.95	SM124/125/2C1224/1424 monitor	4.50

## ATARI ST BOOKS

Title	Publisher	Our Price
ST DISK DRIVES – INSIDE & OUT	ABACUS	15.95
ATARI ST 3D GRAPHICS	ABACUS	15.50
ATARI ST BASIC TO C	ABACUS	13.95
ATARI ST LOGO USERS GUIDE	ABACUS	13.95
ATARI ST MACHINE LANGUAGE	ABACUS	13.50
ATARI ST PEEKS & POKES	ABACUS	11.95
ATARI ST BASIC TRAINING GUIDE	ABACUS	11.95
THE ATARI ST FOR BEGINNERS	ABACUS	11.95
ATARI ST GRAPHIC APPLICATIONS	1ST PUBLISHING	11.45
TRICKS & TIPS OF ATARI ST	1ST PUBLISHING	11.45
ST PROGRAMMERS GUIDE	COMPUTE	14.95
1ST BOOK OF ATARI ST	COMPUTE	14.95

## ATARI ST P.D. DISK SOFTWARE ALL DISKS 2.50

DESK ACCESSORY 1 – Directory printer, selection of ram disks, Tinytool a disk editor, a simple print spooler and a desk accessory loader.

ST UTILITIES 1 – Program to reverse mono text to white with black background, some program copier, allowing quick back up. Tiny Basic (68k) and many others.

ST ADVENTURE WRITING SYSTEM – Fully documented program for writing text adventures. Comes with a sample adventure called Starship Columbus.

ST COMMUNICATIONS 1 – Comes with a simple terminal emulator, Kermit, Xmodem – file transfer util. with phone book & help util. + more

XLISP – A Lisp language disk.

ST PRINTER DRIVERS – A large selection of printer drivers for 1st word, Degas & GEM font.

ST C COMPILER – Shareware compiler with boot up utility, ram disk, and command line interpreter. The compiler is processor, parser, & code generator all rolled into one.

ST FONT EDITORS – The editors on this disk are excellent for your own use in programming or with other commercial programs where GEM fonts are used. A font loader is included that works as a Desk ACC. A mouse pointer designer is also included.

HARD DISK UTILITIES – A large selection of utilities including a way to boot from drive C, directory checking, back up to floppy util., Auto folders on your hard drive and a means to overcome the 40 folder limit.

MANY OTHER PUBLIC DOMAIN GAMES, UTILITIES, ADVENTURES etc

ATARI SH204 20 MEG HARD DRIVE	539.95	SUPRA 20 MEG	539.95
SUPRA 30 MEG	765.00	CUMANA 30 MEG	720.00
CUMANA 40 MEG (high speed)	1040.00	CUMANA 60 MEG (high speed)	1229.00
SUPRA 60 MEG	1499.00	CUMANA 3.5" 1 MEG DRIVE	139.00
EPSON LX800 150cps friction/tractor	269.95	MP165 – 165cps friction/tractor	239.00

## 3.5" SPECIAL OFFERS

25 SS/DD 135 TPI(MF1DD) & 80 or 60/90 locking disc box	£32.00
50 SS/DD 135 TPI(MF1DD) & 80 or 60/90 locking disc box	£55.00
25 DS/DD 135 TPI(MF2DD) & 80 or 60/90 locking disc box	£35.00
50 DS/DD 135 TPI(MF2DD) & 80 or 60/90 locking disc box	£61.00

## ANCILIARIES

MONITOR STAND-tilt & swivel 12"	9.95	Mouse Mat	4.50
ST to Philips scart monitor cable	11.95	ST 13 pin open and monitor cable	7.95
ST to Sony scart monitor cable	11.95	DISK CLEANING KIT 3.5"	3.50
THINGI copy holder	4.95	Twin joystick/mouse extn. lead 6"	5.75
ST to Centronics parallel printer lead	7.95	ST to RS232 serial modem lead	7.95

## SWITCHBOXES

Centronics parallel 2 to 2 changeover crossover	29.00	Centronics parallel D1 to 2 way	25.00
		RS232 Serial D1 to 2 way	25.00

## ST SOFTWARE

Valuetime software – create and print Greeting Cards, Stationery (Letterheads), Signs and Banners.			
Signs & Banners	9.50	Greetings Cards	9.50
Art Library 1	9.50	Art Library 2	9.50
The Art Library Discs contain over 75 new additional graphic elements each for use with the			
GST Fractal Generator	9.95	Procopy 1.5	29.95
Star Wars	18.50	Easy Draw 2.0	67.50
Fast Basic (disk)	39.95	VIP Professional	169.95
Desktop Publisher (Twks)	79.95	Word Writer ST	59.95
Mark William's C	115.00	Flash	36.50
Star Trek	18.50	Phantasie III	23.50
GST Macro Assembler	19.95	GST 'C' compiler	19.95
		DATA Manager	59.95

## CABLES! LEADS! CONNECTORS! CABLES! LEADS! CONNECTORS!

## MONITOR SCART LEADS – SOME PRICES REDUCED – All 2 metres

ST13 Pin to Philips monitor cable ST/M/1040	£9.50	ST13 Pin to Sony monitor cable ST/M/1040	£10.95
ST13 PIN TO TV/Monitor with scart	£9.50	CBM Amiga to Scart (analogue RGB)	£9.95
CBM64 5 pin din to TV/Mon with Scart (2m)	£5.95	XLXE 5 pin din to TV/Mon with Scart (2m)	£5.95
Scart plug (no lead)	£2.95		

## OTHER CABLES

Atan XLXE 5 pin din to Phono (Mono Monitor 2m)	£2.95	ST13 pin to open end - monitor cable (2m)	£5.95
ST 14 pin to 14pin Disk Drive cable 2 metres	£9.95	ST14 pin to 14 pin Disk Drive cable 1 metre	£8.50
ST 13 pin din to 2 Phono plugs for composite monitor (must have internal modulator – 2m)	£4.95		
Switching unit for ST between Mono and Colour monitors (Computer resets on operation)	£18.95		
13 pin molex to 13 pin molex 1 metre – I/O Cable for Atan XLXE tape/disk drives and printers etc.	£8.50		
ST 14 pin din plug to 34 way IDC socket (adaptor & cable for drives with Shugart interface)	£29.95		
ST/AMIGA/IBM PC & COMPATIBLES centronics printer lead – 1.5 metres	£7.95		
ST/AMIGA/IBM PC & COMPATIBLES centronics printer lead – 3.0 metres	£9.95		
ST/AMIGA/IBM PC & COMPATIBLES centronics printer lead – 5.0 metres	£11.95		



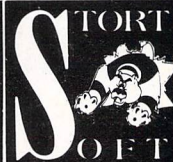
Just write for more information. Cheques etc. payable to STORT SOFT (International orders add 10% and remit in pounds Sterling by bank draft or international money order. Write for quote in any other currency).

☎ 027989509

ACCESS/MASTERCARD/EUROCARD/VISA accepted. CREDIT CARD ORDER LINE – 0279 89509  
24 HOURS A DAY, 7 DAYS A WEEK – VAT & P.P. INC. NO HIDDEN EXTRAS – WHAT YOU SEE IS WHAT YOU PAY

027989509 ☎

18 CROWN CLOSE, SHEERING, BISHOP'S STORTFORD, HERTS CM22 7NX





# *Dare you Try ?*

## BOMB DISPOSAL



ACTUAL SCREEN DUMPS



The designers, programmers and artists at Classic Software welcome you to a new concept in computerised entertainment. From the moment you first boot up Bomb Disposal you will realise that this is no shoot 'em up arcade game or graphic adventure game, **you** are the trainee bomb disposal expert, with a steady hand and steel nerves. If you are faint hearted or of a nervous disposition we suggest that you revert to a less nerve racking and explosive game.



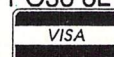
# CLASSIC SOFTWARE

Available only from CLASSIC SOFTWARE

Send Cheque or P.O. for £19.95 inclusive To: PO Box 8. Sandown. I.O.W. PO36 8LT



**Credit Card Hotline 0983 864674 or 0983 405600**





# SYSTEMS AND SOFTWARE FOR THE SERIOUS USER

## HARDWARE

<b>520 STFM</b>	<b>£ 379</b>	<b>EXTRAS</b>
<b>520 STM +</b>		
<b>SF 315 1Mb Disk Drive</b>	<b>£ 439</b>	<b>ATARI SM125</b>
<b>1040 STF</b>	<b>£ 539</b>	<b>Mono Monitor</b> £ 129
<b>Mega ST-2</b>	<b>£ 849</b>	<b>PHILIPS CM 8833</b>
<b>Mega ST-4</b>	<b>£ 1099</b>	<b>Col. Monitor</b> £ 289
<i>When purchased with one of above units.</i>		
<b>ATARI SM125</b>		<b>CUMANA Single</b>
<b>Mono Monitor</b> £ 99		<b>1Mb Disk Drive</b> £ 129
<b>PHILIPS CM8833</b>		<b>CUMANANA 5.25"</b>
<b>Col. Monitor</b> £ 269		<b>1 Mb Disk Drive</b> £ 159

## SILICON ANIMATION MACHINE

A real-time video digitiser can take pictures from video recorders, cameras or even laser vision disk players.

Digitise photographs, drawings etc. and put them on screen or save them to disk for use in your animation programmes or desk top publishing.

Phone for full details of the uses and information about our digitising service



**£ 249.95**

## SPECIAL OFFER !

### Signum 2 and the NEC Pinwriter 2200 Pack

Signum 2, the NEW version of the Classic Document Processor which now offers columns, easier cut/paste and can now import graphics from any GEM package. This superb package, along with the NEC P2200 24 Pin printer will offer the perfect solution for quality Document publishing.

The printer comes complete with the following : NEC printer drivers and Dump prg. ST lead, spare ribbon.

**£ 499**

INCLUDING VAT

Phone now for sample print of Signum 2 from an NEC P2200 Printer

## START SYSTEMS FOR BUSINESS AND GRAPHIC SOFTWARE

### BUSINESS

Signum 2 + laser driver	£ 184
Timeworks DTP	£ 79
Word Perfect (4.1)	£ 199
1st Word Plus	£ 59
Superbase Professional	£ 219
Superbase Personal	£ 69
VIP Professional (UK Gem)	£ 149
Logistix V1.15	£ 99
Materplan (VIP clone)	£ 69
SAGE Accountant plus	£ 179
PC-Ditto (UK version)	£ 79

Quantum Paintbox	£ 16
Spectrum 512	£ 59
DEGAS Elite	£ 20
Easy Draw 2	£ 59
Cyber Paint	£ 49
Cyber Studio	£ 69
Cyber Control	£ 49
Human Design	£ 20
Future Design	£ 20

### GRAPHIC

## PICTURES on DISC

**DIGITISED PICS**  
LOW-RES FOR  
DEGAS or NEO  
10 PICS on S/S DISC  
**£8.00**

**HAWK SCANNED**  
HI-RES FOR  
DEGAS P13  
10 SAMPLES—S/S DISC  
**£8.00**

**SAM DEMO DISCS**  
SEE DIGITISED  
PICTURES FROM THE  
AMAZING SILICON  
ANIMATION MACHINE  
S/S **£8** D/S **£10**

## NEC™ SUPPORT UNIT

NEW

NEC P2200 ( 80 col, 56 cps LQ & 168 DQ ) . .	£379
NEC P6 ( 80 col, 72 cps LQ & 215 cps DQ ) . . . .	£499
NEC P7 ( 136 col, 72 cps LQ & 216 cps DQ ) . . .	£599
NEC P5 XL ( 88 cps LQ & 264 cps DQ ) . . . . .	£999
NEC P9 XL ( 128 cps LQ & 384 cps DQ ) . . . . .	£1195

For prices and information on cut sheet/ tractor feeders, carbon, fabric or colour ribbons give us a call and ask for our NEC Support Unit.

# ST ~~ART~~ SYSTEMS

**ALL PRICES INCLUDE  
VAT AND DELIVERY.**  
All prices correct at time of going to  
press and supercede all previous  
advertised prices.

209 TELEGRAPH ROAD, DEAL, KENT, CT14 9DR

For any order just send a cheque, bankers draft or postal order made payable to  
START SYSTEMS to the address above and we will despatch your order to you  
within 14 days, subject to availability.



**(0304) 369364**

THE TYPE FOR THIS ADVERTISEMENT WAS PREPARED ON AN ATARI 1040 ST USING PUBLISHING PARTNER AND OUTPUT ON A LINOTRONIC TYPESETTER.



**Glentop's GFA Draft, has built itself a very firm reputation as a quality drafting program. Dick Thompson can find few faults in its successor, GFA Draft Plus**

# Drawing on experience

ON its introduction in 1986 GFA Draft was one of the first programs to herald the elevation of the ST from the games room to the office. With its large memory, high processing power, and most of all its exceptional paper-white high resolution monochrome monitor, the ST was an obvious choice for CAD, and thankfully GFA was not slow to take advantage of this.

Two years of use has not been without its minor irritations, but when the eagerly-awaited Plus version arrived it was with some enthusiasm that I investigated it to see if the faults had been remedied.

The first thing to notice was that Draft Plus, although not using Gdos, sits nicely with it and does not overwrite it. This will be a relief to the much-overworked reset button on my ST.

Early versions of GFA Draft had problems running on a Mega, but I tried the Plus version on both the Mega 2 and a 520ST and no machine related problems were encountered.

GFA Draft Plus occupies 207k against the original's 155k, leaving a little less for the drawing, but this is of no great significance, particularly with the 1040

and the Mega ST machines.

More sensible use seems to be made of available memory, for example the same drawing - Figure II - shows 75 per cent spare memory on a Mega 2 against 25 per cent spare on the same machine with the old version.

## Menu rearrangement

One of the greater irritations of the original version was the dual menu bar and the constant alternating between menu one and two. Thankfully this has been remedied.

The plain fact is that with a program offering such a wide range of facilities, there is bound to be some difficulty in getting everything on the menu. However, a total rearrangement, combined with new style comprehensive facility-related dialogue boxes, has provided a logical and sensible operating method which is soon learned.

Even with a considerable exposure to the old menu system, it was not long before I was quickly finding all the facilities required. It would have helped a

little, however, if GFA had followed the normal convention of placing the File heading on the left next to Desk. Instead it appears on the far right of the menu bar.

A considerable speed improvement is claimed over the original version of GFA draft in re-drawing the screen. In fact the manual describes this has the most useful new feature.

Well, all I can say is I haven't noticed it. In fact numerous tests with existing drawings using Draft and Draft Plus show little, if any, difference.

Incidentally, Draft Plus can be used to load drawings created by Draft, but don't try it the other way around.

Possibly the speed improvement applies only for drawings created in the first place with Draft Plus against the same drawing created with Draft. Speed of screen updating never was much of a problem anyway, particularly when compared with systems using 8 bit technology.

The drawing shown in Figure II will re-draw after seven seconds. What could be more of a problem is the time taken to delete or move sections of a drawing.

The area inside the border of Figure II takes some four minutes to delete and re-draw, and once again no speed increase using Draft Plus was noticeable. Thankfully this sort of operation is not needed too frequently.

## More facilities

Additional zoom factors have been introduced, although the x3 factor has been removed from the normal dialogue box mode of selection and is picked supposedly by clicking the bottom right window sizing box.

In fact this rarely seemed to work, but I discovered the same effect could be achieved more reliably by dragging the box a short distance up and left into the drawing area. Using this method it is possible to toggle between the selected zoom factor and the x3 factor.

At x3 the whole of an A3 drawing conveniently fits the screen and a screen

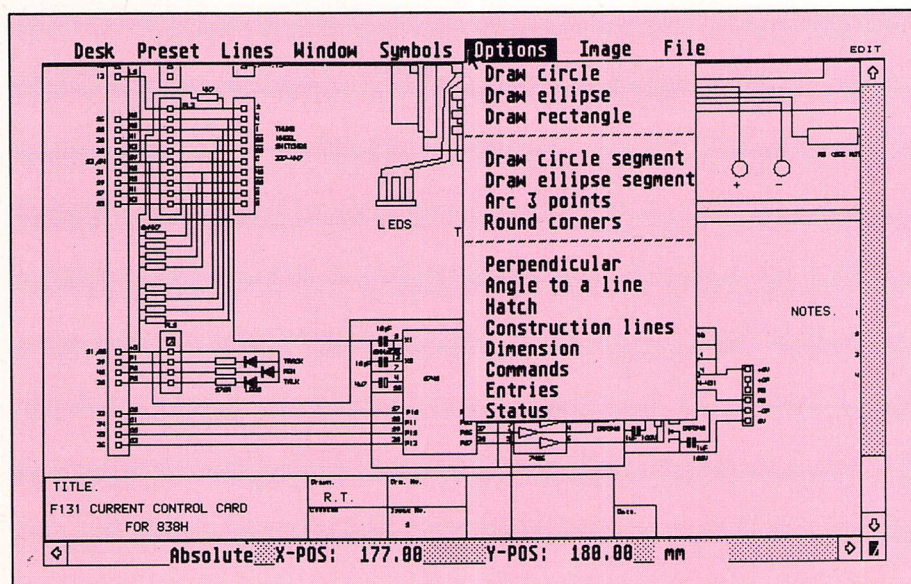


Figure I: The menu facilities have been laid out on a single bar

Turn to Page 26 ►



### ◀ From Page 25

dump can be used to give a reasonable draft output fairly quickly.

When it comes to basic drawing of lines GFA Draft could never have been described as short of features, having such facilities as line types, line thicknesses, locking, trimming, three point arcing, freehand, rectangles, circles, ellipses, rounding of corners, hatching, dimensions and levels.

To this already impressive list the Plus version adds parallel lines, tangent, lengthen and shorten, equal sided polygons, together with a locking feature that really works.

Deleting lines is a joy. Just move the cursor to somewhere near the offending line and press Delete. Alternatively Backspace will delete lines starting from the last line to be drawn, and just in case you get carried away Undo will re-draw the last deletion. (It ought to be compulsory).

### Windows

The Window facility is a powerful and much used feature of GFA Draft. Just draw a rectangular window around any part of your drawing and the contents of the window may be moved, copied, deleted, rotated, slewed, mirrored, enlarged or stretched.

Draft Plus retains all these facilities without further additions. I would have liked the opportunity to retain the window after a copy operation has not been included.

This would have enormously speeded up the common situation when an element, drawn once and windowed, needs to be replicated at numerous positions throughout the drawing.

Windowed items may be stored on disc as symbols and recalled when required. When recalled or rotated the symbols tend to lose their reference to the edges of the window which is where the cross wires of the cursor pick up the symbol.

In practice this sometimes makes attaching to the lines of the drawing difficult when working with a grid. Draft Plus overcomes this by allowing a lock point to be defined within a symbol, and with aid from the line locking function can be made to lock on to the end of a destination line.

A severe problem with the original Draft was that symbols could not be nested within symbols. Happily this has been rectified in Draft Plus, and attempts to nest to the third and fourth level proved satisfactory.

Comprehensive symbol libraries for architectural, electrical and flow diagram

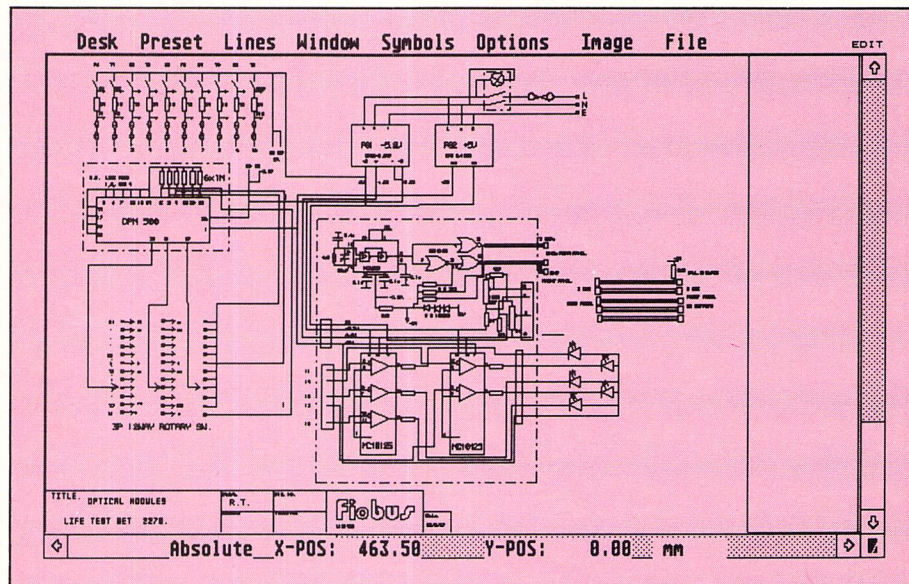


Figure II: The drawing speed is fast, but deleting everything inside the border takes four minutes

work are supplied as part of the package. One of the most welcome of Draft Plus's additional features is the way it saves extra information with each drawing.

### Saving information

In addition to the normal coordinate information, preset parameters such as scale, units, level colours, locking radius, and plotting values, are also saved. To preserve compatibility with GFA Draft files and to save some disc space the additional information is stored in a separate INF file.

For example, drawing files ASSEMBLY.000, ASSEMBLY.001, and ASSEMBLY.002, would share the same ASSEMBLY.INF information file. This still leads to a lot of extra files cluttering up the directory however, and saving images to disc is surprisingly slow.

A drawing consisting of one line in the middle of a blank page took nearly 40 seconds to save – and that is using a hard disc. This compares with about 15 seconds for GFA Draft. Storing of symbols is nearly as slow.

However, the INF files really do save time, and particularly appreciated (though not mentioned in the handbook) is the fact that any assignments of symbols made to function keys are also saved.

Turn to Page 28 ▶

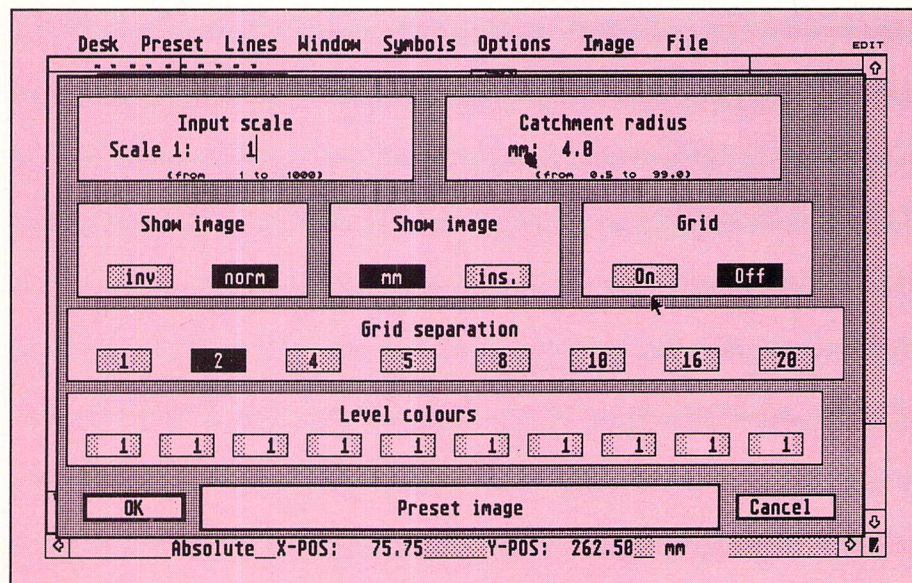


Figure III: Comprehensive dialogue boxes related to particular facilities are used



# NEW LOW PRICE ST!



THESE PRICES ARE ONLY  
AVAILABLE WHILST  
CURRENT STOCKS LAST.  
PHONE OR RETURN COUPON  
FOR DETAILS OF PRICES

## ONLY FROM SILICA

Finally, there's a personal computer that not only solves problems like other computers, but also solves the one problem that other computers have created. Affordability. Silica Shop are pleased to present the ST range of personal/business computers from Atari. The ST was designed utilizing the most recent breakthroughs in semiconductor technology, producing a personal computer that performs tasks with fewer parts. Which means it costs less to make. And less to buy. The latest ST computers now include built-in power supplies and built-in disk drives. The TOS operating system and GEM window environment are now on ROM chips which are already installed in the ST keyboard. This enables automatic instant booting when you switch on. Silica Shop are pleased to offer the complete Atari ST range. Our mail order department is situated in Sidcup and we have 3 retail outlets at Sidcup, Lion House (Tottenham Court Rd) and Selfridges (Oxford Street). We have eight years experience of Atari products, longer than any other UK company, and are well established as the UK's No.1 Atari specialist. With a group turnover of over £9 million and in excess of 80 staff, we offer you unbeatable service and support. We provide several facilities which you will find invaluable during your Atari computing life and most of these facilities are available **ONLY FROM SILICA**. We suggest that you read through what we have to offer, before you decide where to purchase your Atari ST.

### FREE STARTER KIT - Only From Silica

When you purchase any Atari ST keyboard, you will not only receive the best value for money computer on the market, but you will also receive the following from Atari Corporation as part of the package:

\* BASIC Language Disk \* BASIC Manual \* ST Owners Manual \* TOS/GEM on ROM

If you buy your ST from Silica Shop, you will also receive:

\* NEOchrome Sampler - colour graphics program \* 1st Word - Word Processor

In addition, we at Silica would like to see you get off to a flying start with your new computer, so we have put together a special **ST STARTER KIT** worth over £100, which we are giving away **FREE OF CHARGE** with every ST computer purchased at our retail outlets. This kit is available **ONLY FROM SILICA** and is aimed at providing users with a valuable introduction to the world of computing. We are continually upgrading the ST Starter Kit, which contains public domain and other licensed software, as well as books, magazines and accessories all relevant to ST computing. Return the coupon below for full details.

### DEDICATED SERVICING - Only From Silica

At Silica Shop, we have a dedicated service department of seven full time Atari trained technical staff. This team is totally dedicated to servicing Atari computer products. Their accumulated knowledge, skill and experience makes them second to none in their field. You can be sure that any work carried out by them is of the highest standard. A standard of servicing which we believe you will find **ONLY FROM SILICA**. In addition to providing full servicing facilities for Atari ST computers (both in and out of warranty), our team is also able to offer memory and modulator upgrades to ST computers.

**1Mb RAM UPGRADE:** Our upgrade on the standard Atari 520ST-M or 520ST-FM keyboard will increase the memory from 512K to a massive 1024K. It has a full 1 year warranty and is available from Silica at an additional retail price of only £286.96 (+VAT £1100).

**TV MODULATOR UPGRADE:** Silica can upgrade the 1040ST-F to include a TV modulator so that you can then use it with your TV set. This is an internal upgrade and does not involve any untidy external boxes. A cable to connect your ST to any domestic TV is included in the price of the upgrade which is only £49 (inc VAT). The upgrade is also available for early 520ST computers at the same price.

### THE FULL STOCK RANGE - Only From Silica

We aim to keep stocks of all Atari related products and our warehouse carries a stock of over £½ million. We import many software titles direct from the USA and you will find that we have new releases in advance of many of our competitors. Unlike dealers who may only stock selected titles, we have the full range. In addition, we carry a complete line of all books which have been written about the Atari ST. A range as wide as ours is something you will find is available **ONLY FROM SILICA**.

### AFTER SALES SUPPORT - Only From Silica

Rest assured that when you buy your ST from Silica Shop, you will be fully supported. Our free mailings give news of releases and developments. This will help to keep you up to date with new software releases as well as what's happening in the Atari market. And in addition, our sales staff are at the end of a telephone line to service all of your Atari requirements. If you purchase an ST from Silica and would like any technical advice, we have a full time technical support team to help you get the best from your computer. Because we have both the staff and the systems specifically dedicated to providing after sales service on Atari ST computers, we are confident that our users enjoy an exceptionally high level of support. This can be received **ONLY FROM SILICA**.

### FREE CATALOGUES - Only From Silica

At Silica Shop, we recognise that serious users require an in-depth information service, which is why we mail free newsletters and price lists to our ST owners. These are up to 48 pages long and are crammed with technical details as well as special offers and product descriptions. If you have already purchased an ST and would like to have your name added to our mailing list, please complete the coupon & return it to us. This information service is available **ONLY FROM SILICA**.

### FREE OVERNIGHT DELIVERY - From Silica

Most orders are processed through our computer within 24 hours of receiving them. Most hardware orders are sent by the overnight GROUP 4 courier service **FREE OF CHARGE** to customers within the UK. This method helps to ensure minimum delay and maximum protection.

### PRICE MATCH - Only From Silica

We hope that the combination of our low prices, FREE UK delivery service, FREE Starter Kit and FREE after sales support, will be enough to make you buy your Atari equipment from Silica Shop. If however, there is something you wish to purchase, and you find one of our competitors offering it at a lower price, then please contact our sales department, providing us with our competitor's name, address and telephone number. If our competitor has the goods in stock, we will normally match the offer (on a 'same product - same price' basis) and still provide you with our normal free delivery. We realise that we are not the only company who will match a competitor's price. However, if you come to us for a price match, you will also be entitled to our after sales service, including free newsletters and technical support. This makes our price match promise rather special, something you will receive **ONLY FROM SILICA**. We don't want you to go anywhere else for your Atari products. So shop at Silica, the UK's No.1 Atari Specialist.

# £260

+VAT=£299

## SO MUCH FOR SO LITTLE!

There is nothing that can compare with the incredible value for money offered by Atari's 520ST-FM. For only £260 (+VAT=£299), you can purchase a powerful 512K RAM computer, with a 95 key keyboard (including numeric keypad), MIDI interface, GEM, a palette of 512 colours, mouse controller, and a 512K built-in disk drive. The 520ST-FM has a TV modulator built-in, and comes with a lead to allow you to plug it straight into any domestic colour television set. The mains transformer is also built-in to the keyboard, so there are no messy external boxes. You couldn't wish for a more compact, powerful and stylish unit. Atari ST computers are now firmly established in the UK, there are nearly 500 software titles already available for a wide variety of applications and the list is growing all the time. And that's not all. When you buy your new 520ST-FM (or any Atari ST computer) from Silica Shop, you will get a lot more, including a **FREE Silica ST Starter Kit** worth over £100. Read the **ONLY FROM SILICA** section on the left, to see why you should buy your new high power, low price 520ST-FM from Silica Shop, the UK's No.1 Atari Specialists. For further details of the range of Atari ST computers and the **FREE Silica ST Starter Kit**, complete and return the reply coupon below.

**ATARI 520ST-FM NOW ONLY £260 (+VAT=£299)**  
520ST-FM with 512K RAM & mono monitor £399 (inc VAT) Upgrade from 512K RAM to 1024K RAM £100 (inc VAT)

### ATARI 1040ST-F - NEW PRICE

We are pleased to announce a new reduced price point on the 1040ST-F which is now available for only £499 (inc VAT). The 1040 is a powerful computer with 1Mb of RAM and also includes a built-in 1Mb double sided 3½" disk drive. The 1040 has been designed for use on business and professional applications most of which require a high resolution monochrome or colour monitor. It does not therefore have an RF modulator for use with a domestic TV set. Modulators can be fitted for £49 (inc VAT).

1040ST-F Keyboard - Without Monitor ..... £499 (inc VAT)  
1040ST-F Keyboard + High Res SM125 Mono Monitor ..... £599 (inc VAT)

If you would like further details of the 1040ST-F, return the coupon below.

### MEGA ST's NOW IN STOCK

For the user who requires even more RAM than the 520 or 1040 ST's offer, the new **MEGA ST** computers are now available. There are two MEGA ST's, one with 2Mb of RAM and the other with a massive 4Mb. Both new computers are fully compatible with existing ST's and run currently available ST software. The MEGA ST's are styled as an expandable Central Processing Unit with open architecture and a detachable keyboard. They are supplied with GEM, a free mouse controller and all extras as with the 520 or 1040. Prices are as follows:

MEGA ST 2Mb Keyboard + CPU ..... £899 (inc VAT)  
MEGA ST 2Mb Keyboard + CPU + SM125 Mono Monitor ..... £999 (inc VAT)  
MEGA ST 4Mb Keyboard + CPU ..... £1199 (inc VAT)  
MEGA ST 4Mb Keyboard + CPU + SM125 Mono Monitor ..... £1299 (inc VAT)

If you would like further details of the MEGA ST's, return the coupon below.

# ATARI ST

To: Silica Shop Ltd, Dept ATUSR 0688, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

## PLEASE SEND ME FREE LITERATURE ON THE ATARI ST

Mr/Mrs/Ms: ..... Initials: ..... Surname: .....

Address: .....

Postcode: .....

Do you already own a computer  
If so, which one do you own? .....



**SIDCUP (& Mail Order)** 01-309 1111  
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

**LONDON** 01-580 4839  
Lion House (1st floor), 227 Tottenham Court Rd, London, W1P 0HX

**LONDON** 01-629 1234 ext 3914  
Selfridges (1st floor), Oxford Street, London, W1A 1AB



## ◀ From Page 26

This means the long process of loading symbols into function keys does not have to be repeated every time a new drawing is loaded.

The long list of device drivers for printing and plotting has been further extended and improved, and now covers an enormous range of dot matrix and pen plotting devices.

It was disappointing however, to find that although the HP Laserjet is included, the Atari laser is not. GFA claims it has had problems with a lack of proper documentation and support from Atari, and having seen the level of documentation provided with the SLM804 I am quite prepared to believe it.

How can Atari be taken seriously as a supplier of business systems with such a state of affairs? A big minus for the Plus here as far as I am concerned.

### Printing and plotting

I tried the plotting facility using a HP7475 pen plotter with RS232, and the printing facility with an Epson-compatible 9 pin matrix printer driven from the Centronics interface.

No difficulties were encountered in either case, but it is important to select the XON/XOFF handshake mode using the Set RS232 config desk accessory.

GFA Draft Plus allows the plotting or printing of a section of a drawing, not just the whole thing. This is done by opening a window in the usual way before starting the printing/plotting function. The scale can be set to between x10 and x.01 of the original, and drawing sizes up to A0 can be accommodated.

Yet another new and important addition is the ability to control the pen's speed to allow for different quality requirements and ink flow capabilities.

Perhaps the major new capability of Draft Plus is the Commands feature. In Command mode lines may be drawn simply by entering commands. The available ones are fairly simple and few in number, consisting of move/plot absolute/relative/polar. Variables may be inserted into commands, and iteration of commands is possible.

This facility is useful for generating shapes which are better represented by their coordinates, the border of a drawing, for instance. More important, however, it represents an interface to other programs.

As an example, a Basic program could convert tables of statistics into commands for graphical representation such as pie charts or histograms.

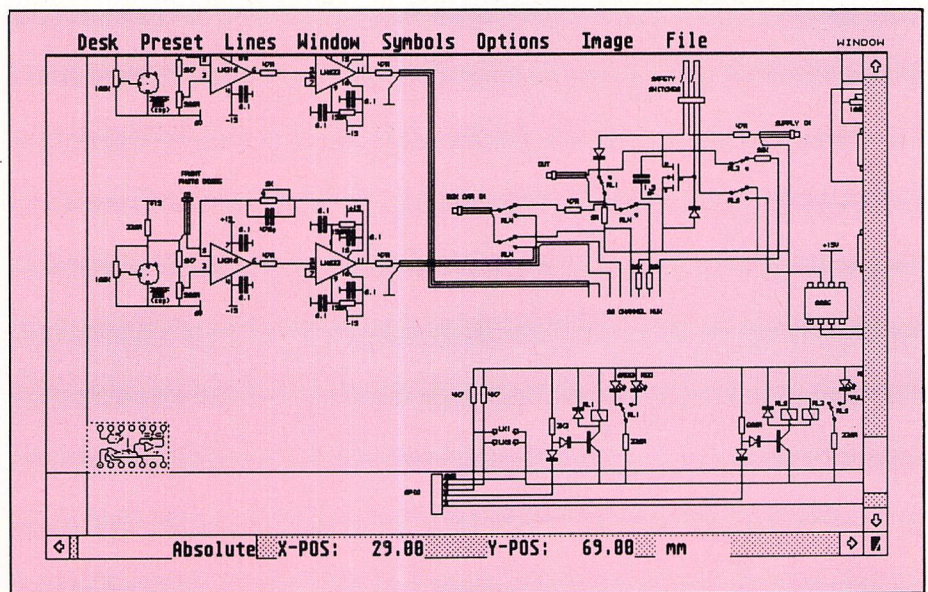


Figure IV: Symbols may be loaded from symbol libraries

Interfacing in the other direction is not so well catered for. There is no provision as such to export drawings into desktop publishing or word processing packages, so a little improvisation is called for.

The snapshot accessory, which converts a screen into Degas format, steadfastly refused to work telling me there was insufficient memory available, even with a Mega 2. However, the public domain screen grabber, which saves the screen to disc when you press Alternate+Help, did the trick.

This is not ideal, since the output resolution is limited to that of the screen, and it would be nice to have an output in an object oriented format such as an IMG file.

A separate List program enables elements of the drawing – lines, symbols, circles and so on – to be listed together with the relevant data. This information can be printed directly or filed on disc, and as such can provide an interface to other programs.

### Text facilities

The text facility offers two different type styles, one a bolder version of the other. The Plus version offers a third style which must be created with the symbol facility. How many users will be prepared to do this I don't know, but it would have been nice to have access to the Gdos fonts.

Text can be entered in seven different sizes and at different angles, and may be mirrored. If required it can also be manipulated using windows.

At first sight, the handbook appeared quite impressive, being the original GFA Draft ring binder with a PLUS sticker on

it, and comprising 234 pages. A closer inspection revealed a somewhat over brief style resulting in a large proportion of the pages being more than half blank.

Some features are not well described, and considerable experimentation is required in order to use them. For instance, the whole of page 208 is allocated to instruction regarding the Formlist program, and merely directs the reader to a (non-existing) READ.ME file on the disc.

In general however, the handbook is arranged well, and does contain a section with a worked tutorial as well as a comprehensive index.

GFA Draft Plus is undisputedly a fine program for the professional engineer or the serious amateur who wishes to improve his productivity and quality of drawings. Whether buying for the first time or updating from Draft to Draft Plus, it is certainly worth every penny.

### FACT FILE

Product: GFA Draft Plus  
Price: £139.95 (Upgrade – £40)  
Supplier: Glentop, Standfast House, Bath Place, High Street Barnet, Herts EN5 5XE.  
Tel: 01-441 4130

#### POINTS FOR:

Fast; good quality output; easy to use.

#### AGAINST:

Slow disc writing.  
No SLM804 support.  
Slow erasing of large areas.  
Poor DTP interface.



## SALE SALE SALE SALE SALE SALE SALE SALE SALE SALE

### ATARI ST SOFTWARE

Black Lamp .....	12.95
Bubble Bobble .....	12.95
Enduro Racer .....	10.25
Space Quest 2 .....	15.95
500cc Grand Prix .....	12.95

Quantum Paint Box .... 12.95

Scruple .....	13.95
Tanglewood .....	12.95
War Hawk .....	6.95
Leathernecks .....	13.95

Obliterator .....

Screaming Wings .....	10.25
Buggy Boy .....	10.50
Ranarama .....	12.95
ECO .....	12.95
Supersprint .....	10.25
Sky Fighter .....	9.95
Star Wars .....	12.95
Rampage .....	10.50
Road Runner .....	15.95
Knight Orc .....	12.95
Phantasie III .....	15.95
Impact .....	10.25
Degas Elite .....	16.95
Catch 23 .....	16.95
Barbarian (Palace) .....	10.25
Barbarian (Psynosis) .....	15.95
Chessmaster 2000 .....	16.95
Defender of Crown .....	19.95
Dega Vu .....	19.95
Deathstrike .....	6.95
Colonial Conquest .....	19.95
Chopper X .....	6.95
Bureaucracy .....	22.95
Trivial Pursuit .....	13.95

Oids .....	12.95
Pink Panther .....	12.95
Space Harrier .....	10.50
Extensor .....	6.95
Rolling Thunder .....	12.95
Gauntlet II .....	12.95
Vampire Empire .....	12.95
Gauntlet .....	12.95
Gunship .....	15.95

Hollywood Poker .....	9.95
Las Vegas .....	9.95
Nord & Bert .....	15.95
Bubble Ghost .....	12.95
Karting Grand Prix .....	6.95
Hunt for Red October .....	15.95
F15 Strike Eagle .....	15.95
Tetris .....	13.95
Sub Battle Sim .....	15.95
Ninja Mission .....	6.95
Bards Tale .....	16.95
Mortville Manor .....	15.95

\*\*\*\*\*

### ATARI ST CLEARANCE

Crazy Cars .....	11.50
Super Cycle .....	10.95
Little Computer People .....	12.95
Black Cauldron .....	12.95
Ballyhoo .....	11.95
Mind Forever Voyaging .....	9.50
Hollywood Hijinx .....	9.50
Planetfall .....	9.50
Trinity .....	9.50
Zork I .....	9.50
Zork II .....	9.50
Zork III .....	9.50
Moonmist .....	9.50
Cutthroats .....	9.50
Witness .....	9.50
Starcross .....	9.50
Sorcerer .....	9.50
Foundation Waste .....	14.95
Vixen .....	12.95
Legend of Sword .....	15.95
Time & Magik .....	12.95
Verminator .....	15.95
Xeon .....	12.95
Crash Garate .....	12.95
War Game Con. Set .....	15.95
Slap Fight .....	11.95
Sea Stalker .....	9.50
Wishbringer .....	9.50

\*\*\*\*\*  
**MOST INFOCOM  
BOOKS  
AVAILABLE  
AT £4.95**  
\*\*\*\*\*

\*\*\*\*\*  
**ST  
SOCCER**  
By MICRODEAL  
RRP £19.95  
**OUR PRICE  
£12.50**  
\*\*\*\*\*

### SECONDS OUT

ON  
OFFER AT **£12.95**

Terrorpods .....	15.95
StarGlider .....	15.95
Silent Service .....	15.95
Goldrunner .....	15.95
Skuldiggery .....	9.95
Phoenix .....	12.95
Indiana Jones .....	12.95
Blue War .....	12.95
Midi Maze .....	24.95
Mercenary Comp .....	15.95
Sentinel .....	12.95
Solomons Key .....	12.95
Strike Force Harrier .....	15.95
T.N.T. .....	12.95
Timebandit .....	20.00
Tai Pan .....	12.95
Test Drive .....	16.95
UMS .....	15.95
Arena .....	10.95
Outrun .....	12.95

### OUT RUN

SPECIAL  
OFFER **£12.95**

Road War 2000 .....	15.95
Road War Europa .....	15.95

**RETURN TO  
GENESIS  
£12.95  
ENFORCER  
£6.95**

## Karate Kid II

R.R.P. £24.95  
Our Price £9.95

Tanglewood .....	12.95
Spy vs Spy .....	9.95
Marble Madness .....	15.95
Rampage .....	10.50
Quizam .....	15.95
Microlead Wrestling .....	12.95
Roadwars .....	12.95
World Games .....	11.95
Amazon .....	7.95

### LAST FEW

### 'THE ELECTION PROGRAMME'

RRP £29.95  
**OUR PRICE  
£7.95**

Jump Jet .....	9.95
Impossible Mission II .....	12.95
Bermuda Project .....	16.95
Slaygon .....	12.95
Jinxter .....	16.95
Star Trek .....	12.95
Joe Blade .....	6.95
Get Dexter II .....	13.95
Flintstones .....	13.95
Pink Panther .....	13.95

### Coming Soon

**BARDS  
TALE II  
£16.95**

Any game not released will be  
sent on day of release

**STOP  
PRESS** Captain  
Blood

RRP OUR  
£19.95 PRICE **£12.95**

Not a Penny More .....	12.95
Perry Mason .....	12.95
SDI .....	19.95
Karate Master .....	8.95
Kings Quest Triple Pack .....	17.95
Star Trek .....	12.95

**TAU CETI  
or  
ACADEMY**

R.R.P. £24.95  
Our Price £6.95

We offer a fast reliable service by return of Post! Cheque's P.O.'s to:  
**CASTLE COMPUTERS**

Any games not listed phone our Hotline Now on 0782 575043



# Creating the right image

**If you're looking for a scanner and your budget is limited, IMG Scan could be ideal. Roland Waddilove investigates further**

**S**CANNERS, hardware add-ons which transfer images on paper to the micro's screen, are quite expensive items, and can easily run to £1,000 or more. So it was with some enthusiasm that I tackled Ladbroke's budget-priced IMG Scan. Can it match the competition for quality, yet beat them hands down on price?

Scanners are used for taking images off paper on to the micro's screen. Once there, they can be incorporated into your own drawings via art programs and into newsletters via DTP packages.

IMG Scan makes use of the printer. The picture to scan is inserted in place of the printer paper, and a hardware add-on attached to the printer and the ST transfers the image to the ST's screen. The print head runs back and forth across the paper, but doesn't actually print anything – it is probably just printing blank spaces.

The hardware consists of a single cartridge which plugs into the ST's cartridge port on the side of the micro. Two thin cables about one metre long come out of one edge and these are taped together at the end.

These are two optic fibres and the idea is that you attach them to the print head of your printer so that the ends are just a fraction of an inch above the printer paper. How you do this is up to you, and the method of fitting will be different for each printer.

I tried three or four different ways involving cotton, tape and elastic bands. The tape worked out the best, though I did find that it tended to slip down slightly in use.

As you can imagine, this sort of set-up is a bit of a bodge job and not too precise. After attaching it to the printer you may find it requires repositioning after attempting to scan an image.

The positioning is critical and it will take much trial and error to get the best

results. I was getting rather hot and frustrated at one stage, when the cable kept slipping, or got caught on the paper edges, producing blurred images and so on.

I would advise allowing an hour or so to set up the system for best results. The problem is that you can't tell whether the position is right until you attempt to scan an image – and scanning takes quite some time. This system isn't designed for speed or ease of use.

Having set up the hardware, the rest is easy – just boot up the software. Figure 1 shows the main screen display with a single menu item. The box in the top left corner is used for selecting the area of the image to scan. It can be picked up

and dragged left and right with the mouse, and its size is selected with the vertical bar to the right marked Enlarge at the top and Reduce at the bottom.

The image will always fill the screen, so these two controls can be used to pick out an item from the page and magnify it. However, as the image is magnified, it shows up the system's weaknesses. The greater the magnification, the poorer the image. So for best results use a very large picture with no magnification.

ReScan starts scanning a new picture, Scan continues scanning from wherever it was up to when it was stopped during ReScan, View allows you to examine the scanned image and ReCalc allows you to tinker with the finished image.





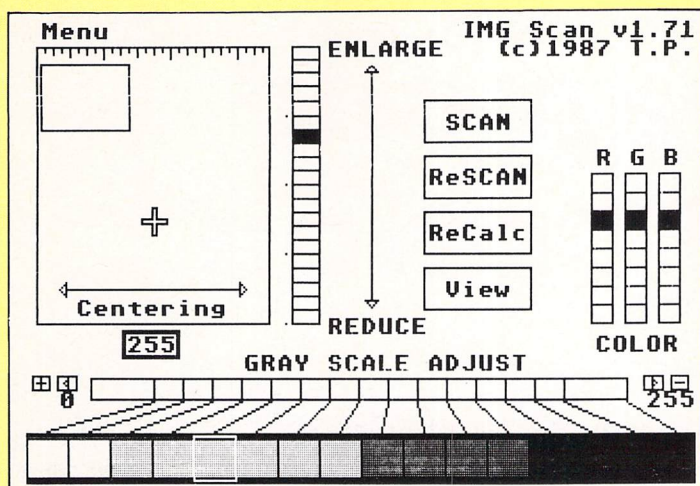
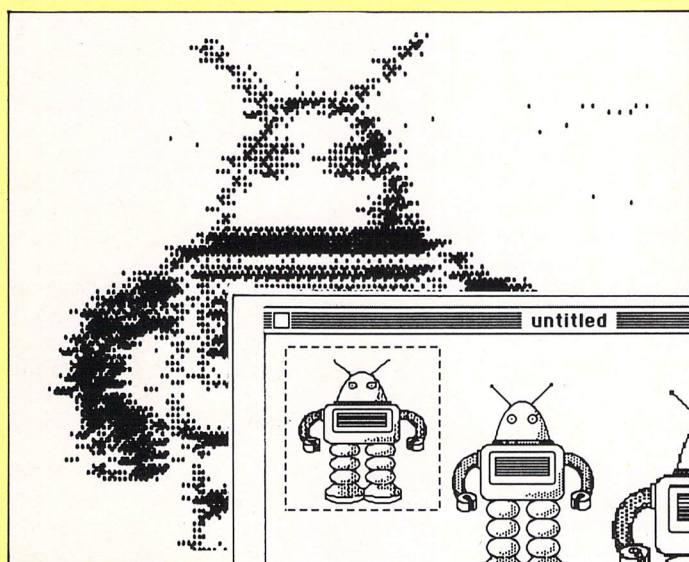
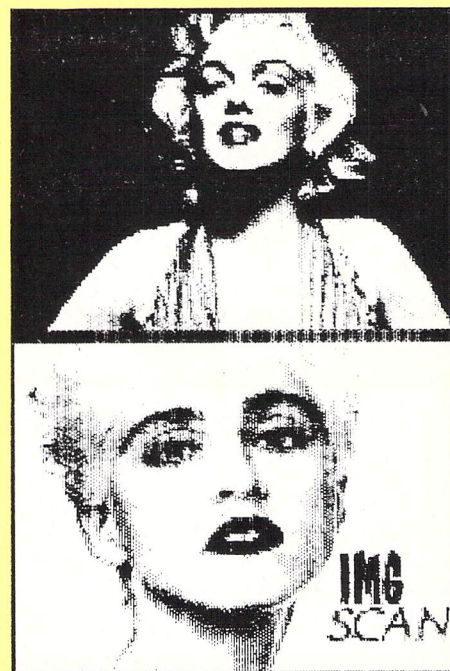
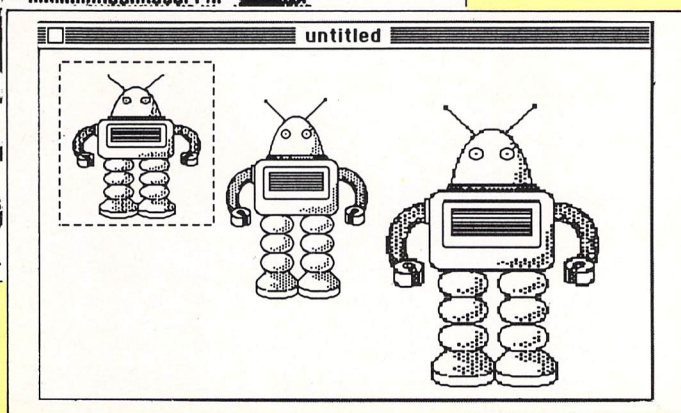


Figure I: The main editing screen



Figure II: One of the images supplied on the disc

Figure III:  
The result of  
magnifying a  
section of the  
picture below  
to A4 size

Two more samples from the disc

The Grey Scale Adjust at the bottom of the screen is used in conjunction with the ReCalc option. You can pull the grey scale left and right, and alter the RGB value of each colour – defaulting to shades of grey – then use ReCalc to re-display the image using these new settings. Basically, it alters the contrast.

The menu options allow you to save the scanned image as a Degas or Neo-Chrome file, and you can also save the raw data as it comes into the ST. These files take up a fair chunk of disc space, so it's nice to see a disc formatter included in the menu.

It would be soul-destroying to spend an hour scanning an image, only to find you can't save it because you've run out of disc space and haven't got a freshly-formatted one.

There's also an option to alter the printer settings – paper feed, time delay before the head flies back after scanning a line, and so on.

Figure II shows the best result you are

likely to obtain from IMG Scan, and is supplied on the disc. I couldn't quite achieve this standard, though at times I was close. But just when I managed to get everything set up right, the cable would slip or catch and throw the image out of focus.

Figure III shows what happens when you try to magnify an image to the limits of the system – you end up with a very fuzzy picture which isn't a great deal of use. This would require a great deal of editing with an art package such as Degas Elite to get it up to scratch.

It is often said that you only get what you pay for, and in the case of IMG Scan this is probably true on the whole. The appearance of both the hardware and software both shout "Budget quality" and the results achieved in my tests certainly weren't anything to write home about.

If you need top quality output you might best look elsewhere, but be warned: It can cost more for the scanner and software than you paid for your ST in the first

place. IMG Scan costs just a fraction of what other scanners cost.

If your budget is limited, and you don't mind the Heath Robinson set-up, IMG Scan is definitely worth considering. The results are acceptable – if you're prepared to fiddle with the optic fibre attachment, and experiment with various settings – and it won't break the bank.

## FACT FILE

Product: IMG Scan

Price: £99.99

Supplier: Ladbroke Computing, 33

Ormskirk Road, Preston, Lancs PR1 2QP.

Tel: 0772 203166

### POINTS FOR:

Cheap – nothing else available at the price.

### AGAINST:

Fiddly to set up; quality variable.



# The cheap and cheerful option

**Mike Gerrard reveals his experiences with the Atari DTP system and finds it's got a bit of catching up to do**

**A** FEW months ago Atari launched two packages which included all the hardware and software you would need for a complete desktop publishing system. The cheaper version at £1,999 was based round the Mega 2 ST, while the pricier one – £2,699 – offered you a Mega 4 and a 20Mb hard disc drive.

Both systems came with mono monitor, the Atari SLM804 laser printer, training, 90 day on-site maintenance and copies of the chosen software – 1st Word and Fleet Street Publisher.

When I suggested to David Hewson, editor of The Wordsmith magazine, that I should review the package he really threw down the gauntlet. "Fine," he said, "but what you ought to do to test it properly is produce two finished pages using the laser printer and I'll incorporate them into the magazine".

This article explores what faces the writer who's suddenly turned into a publisher – that's after he's gulped and wished he'd kept his big mouth shut – and some practical matters to consider if you're thinking of entering the world of Atari DTP yourself.

David Hewson knows the pitfalls involved in trying to produce your own magazine. Since January 1986 he's been publishing and editing The Wordsmith, one of the first and certainly one of the best magazines produced by DTP means – in his case based on the Apple Macintosh and Apple laser printer, which are considerably more costly than the Atari systems.

When you embark on desktop publishing you have a whole new language to learn, and unfortunately there isn't a Linguaphone course to help you. There are several books however, such as The Desktop Publishing Companion by Graham Jones (Sigma Press).

And Mirrorsoft's Fleet Street Publisher sensibly includes a section that deals with words such as kerning, leading, tracking and gutters.

I was vaguely familiar with some of these terms, and it didn't take too long to

discover what they all meant and why you need to understand them. But what did surprise me was the sheer number of decisions you have to make when laying out a page.

Having estimated the size of your headline to start with, and decided on the type face, what's it actually going to say? You've only got a few words to introduce the article.

And where is it going to be? That may seem obvious, but how much space is there above and below? And is it in upper case, lower case or lower case with upper case initials?

Some magazines also have an introductory few words which also include the author's name, so you have to decide where that's going to go, what the text will be, the size of it, and in some cases whether it's white on black, black on white or black on grey – in which case just how grey is the grey?

## Decisions, decisions

Fleet Street Publisher works in percentages, so is it only 20 per cent grey background, or 70 per cent, or somewhere in between? And if it's in a box, how thick are the lines around it – one centimetre, two, three?

Then you must look at the page itself. What gap is there at top and bottom, in the areas known as headers and footers

just as in word processing? Is it half an inch, three-quarters?

What measurement are you going to use anyway – millimetres, inches, points? FSP has a choice of eight units of measurement, and two basic rules are: Be consistent, and be right.

Then think about what's in the header and footer. Is the page number printed at the top and bottom and is it on every page? Is the name of the magazine and the cover date included? If so, where? What size? What type face?

There's also the whole question of illustrations. Where do they go, how much prominence should they have, what size captions?

Then to the body of the article itself. Ignoring the whole vexed question of having to fit the article into the space available, hopefully by just a little judicious trimming, how many columns are on the standard page – two, three, four?

Where does the first line start in relation to the headline? What is the exact gap between the columns? Does the first paragraph start with a dropped capital and is the first word in upper case, as in *Atari ST User*, and if so then how far does the capital drop?

Or are the first few words in upper case, as happens in many magazines? And what difference does it make to the look of the page anyway?

When you have established a maga-

## A beginner's guide to DTP jargon

**Gutter width:** The size of the gap between columns on the page.

**Kerning:** Moving individual characters closer together to improve the look of a word. Each letter of the alphabet generally gets equal space on the page, but a letter such as o is wider than a letter like l, so two consecutive wide letters look crowded and two narrow ones can look like they've lost contact with the rest of the word.

A word such as balloon might need some individual attention on the page, and good DTP software like Fleet Street Publisher allows you to do this.

**Leading:** This is the gap between the base lines of the rows of text on the page. Not the gap between lines of

text. The leading will therefore always be bigger than the size of the typeface being used.

A leading of 12 points with a 12-point typeface would mean there was no gap between the lines. A leading of zero would mean each line printed in the same place.

**Orphan:** A single word on its own at the top of a page or column, normally the last word of a paragraph that spills over. To be avoided.

**Tracking:** Moving individual characters slightly further apart, to improve the look of a word.

**Widow:** A line of type isolated at the top or bottom of a page or column. Widows are therefore also to be avoided, merry or not.



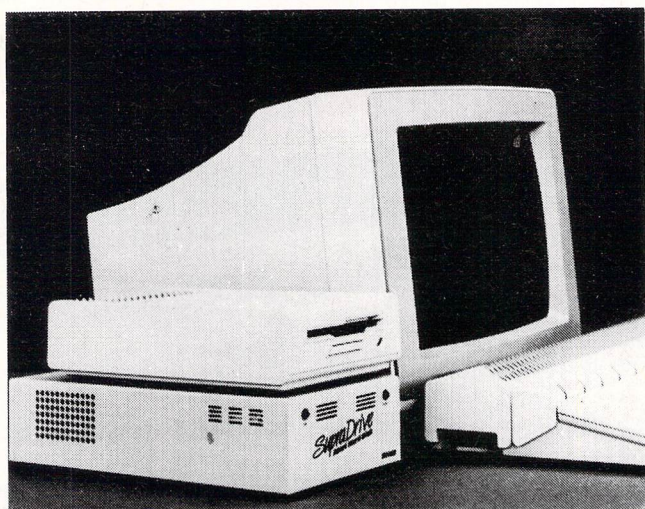




# SHIFT INTO...

## SupraDrive

Atari ST Hard Disk



- 20, 30, 60 and 198 Megabyte drives available
- Includes cables and hard disk utilities
- Attach more than one SupraDrive to your system
- Up to twelve partitions
- Comprehensive twelve month guarantee
- Free back-up and caching software
- Can boot directly from the hard disk
- All models have built-in fan
- Supplied ready to go
- Built-in power supply

20MB £599.95

30MB £849.95

60MB £1499.95

**ALL PRICES INCLUDE VAT AND NEXT DAY DELIVERY**

"The SupraDrive is the necessary peripheral for any serious Atari ST User"  
– Tom Hudson (Author of Degas and Degas Elite)

**Frontier  
Software**

P.O. Box 113, Harrogate, North Yorkshire, England HG2 0BE  
Phone (0423) 67140. Telex 265871 MONREF G Quoting 72:MAG 402 40





# Constructive utility

**Feeling musical? Here's a package that enables you to experiment with the ST's sound chip**

**Y**OU don't need mountains of equipment in order to make music on your ST, and it's nice to see programs which let you dabble with the internal sound chip. Such a creature is the Music Construction Set (MCS), written by Rich Plom, who wrote Deluxe Piano which is floating around the public domain.

With the MCS you can write up to three lines of music on the grand stave – treble and bass clef. The three parts may overwrite each other, but they are shown in different colours to minimise confusion.

You can enter music with the mouse by clicking notes onto the stave or by clicking on a keyboard underneath the stave. You can use a Midi keyboard, too, but each time you want a different duration you must escape Midi input, select the duration, reselect Midi mode then play the note. Also, if your piece has a key signature, all natural notes appear preceded by a natural sign. Irsksome.

Entering music with the mouse however, is quite straightforward and a note box displays the name of each note after it has been fixed. It would have been more helpful if it showed the names as you slide the note across the staves,

especially when you reach the ledger lines.

The program doesn't automatically insert bar lines or check bar lengths during note entry – both ideal operations for computerisation. You must make sure all the notes line up correctly otherwise the piece won't play properly, although there are verify timing and clean up score commands to help with these problems. Ties, triplets and quintuplets must be lined up by hand too.

You can enter repeat bars but not first and second time bars. You can't change key signatures during a piece and although you can theoretically change time signatures, some don't work as you would expect.

You can perform block cut, paste and move options, transpose notes, alter durations and replace instruments. Each music line can change instruments at any time which is very useful.

An easy-to-use instrument definer gives you control over an 8-stage envelope. You can switch in noise or tone and select vibrato depth.

You can print out your score on an Epson-compatible printer, but as only the grand stave is used the result may appear a little confusing.

There's an automatic save facility – although it doesn't backup old files – and you can save your score as a program file to run independently of the MCS. Instrument files can be saved separately too.

The MCS can also function as a very

simple Midi sequencer, and although it only supports three music lines, each one can be sent to a different Midi channel. It's no substitute for a dedicated Midi sequencer however.

The manual is generally helpful, although a few diagrams would not go amiss. It suggests that all you have to do to produce good music is to point the mouse and click. Well, it's not quite as simple as that, and a little musical knowledge helps enormously.

The Music Construction Set lacks sophistication in many areas, but if you want to write music for the ST's sound chip and can accept its limitations, you'll find it relatively simple to use. Excellent results are possible too, as the demonstration pieces prove.

## FACT FILE

Program: Music Construction Set

Price: £24.95

Supplier: Electronic Arts, 11-49 Station Road, Langley, Nr. Slough, Berkshire, SL3 8YN.

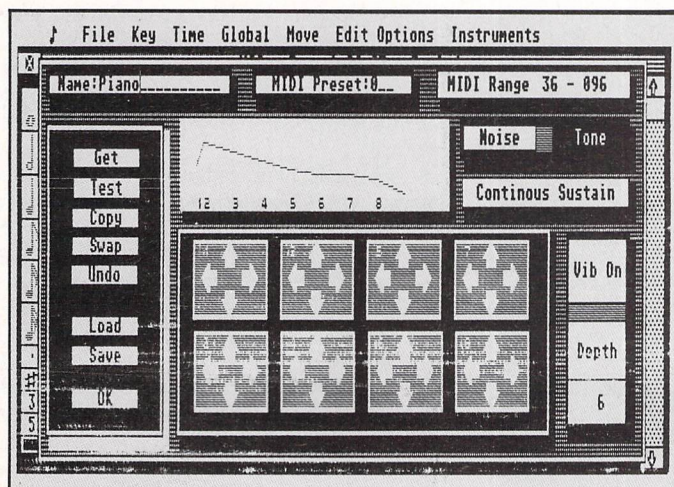
Tel: 0753 46465

### POINTS FOR:

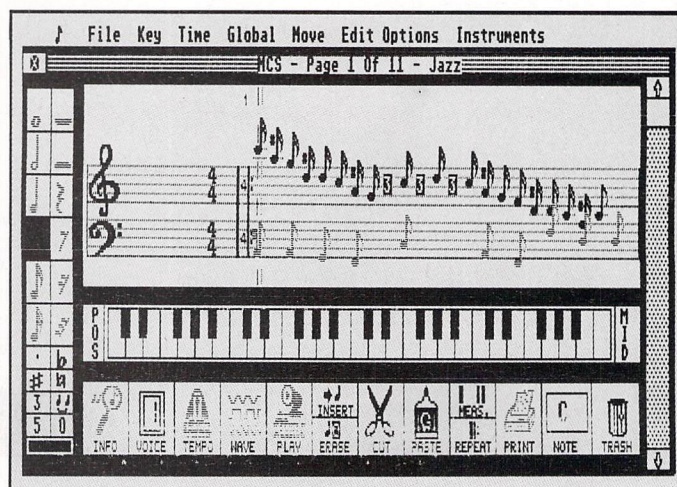
Attractive price; uses the ST's sound chip.

### AGAINST:

Awkward inputting from Midi keyboard.



Editing an instrument's waveform



The main editing screen



# MUSIC ON THE ST

By IAN WAUGH

**A report on the recent Frankfurt music festival and what it had to offer**

**T**HE Frankfurt Music Fair is big! Massive! Enormous! It was also proof that the Atari ST is the most important music

computer. It outnumbered all others there by about 10 to 1. All kinds of musical instruments were on display, everything from African hand-made drums to the latest synthesisers and samplers. It was amazing to see so many hi-tech companies using a computer to put their latest piece of technology through its paces.

All the major international software houses were demonstrating programs old and new. It was fascinating, too, to see so

## Software bonanza



*A quiet moment on the C-Lab stand*

much software not generally available in the UK.

Most of it originated from Germany, where Atari claims to have sold some 128,000 STs. That compares with around 120,000 machines in the UK. There was a lot of American ST software there, too, but most of this, fortunately, has UK distribution.

There's obviously not room to mention everything, but I'll wizz around a few stands and pick out some of the new products. We'll take a closer look at some of them when they filter through to the UK market.

### Goodies galore

Steinberg are one of the most popular software houses so I'll begin there. Its famous Pro-24 (£285) sequencer program – which it claims has sold more than 1,200 copies – has been updated to version three. Among other enhancements, it now supports the Midi file standard and Steinberg is obviously hoping it will sell another 1,200 more.

New from C-Lab is the Notator (£485) which I mentioned last month. It's a scorewriter program and comes complete with C-Lab's 64-track sequencer, the Creator (reviewed in *Atari ST User*, November 1987), which has been updated to version 1.3.

New also, is a voice editor for Roland's MT-32 which should sell for around £100. Incidentally, nearly all the companies demonstrating sequencing software were using an MT-32. They must be impressed with it.

Passport Designs, which made its name with Commodore 64 software, has now turned to the Atari ST and further enhanced MasterTracks Pro which has been updated to version 2.

It was even more excited about MasterTracks Jr, however. It works like a 64-track tape recorder (imagine it!) with a song editor grid display and uses the standard Midi file format. All this for only £99.

Dr. T was showing off the KCS level II sequencer with MPE and PVG – read last month's column for details and interpret-





*An Atari ST working with Yamaha's top-flight Electone multi-keyboards*

ation. A multiple programming environment (MPE) gives you the ability to run more than one program on the ST at the same time, and let them work interactively. It's one of the most advanced Midi music concepts to make its way into software. Powerful stuff indeed.

Dr. T's scorewriter program, Copyist (£199), has made it to version II and they are very proud of the fact that it can handle triplets. It supports the standard Midi file format so you can print out scores created on other sequencers.

It can also convert Steinberg's Pro-24 Midi files before version three which, as mentioned above, now supports the Midi file standard.

Dr. T also has a comprehensive range of voice editor programs, and making its debut was an editor for the Kawai 5 which should sell for £99.

If you own an Akai S900, Emax, Prophet 2000 or Casio SX1 sampler then check out Sample Maker (£199). It's a harmonic and tone generation program which can add harmonics and swap samples between samplers.

If you're after budget software, Dr. T is re-introducing the Midi Recording Studio version V1.1 (£49.95). It has eight tracks and will now play back through the ST's internal sound chip.

Hybrid Arts was proud of ADAP Two (£2899) a stereo, 16 bit linear, 44.1kHz, workstation which saves samples direct to hard disc.

EZ-Score Plus was there, but as it's reviewed in this issue I'll only say that it, too, has been updated and improved in the printout department. It's still, as far as I am aware, far and away the cheapest score writing program on the market.

I'm looking forward to MidiScore, a 60 stave scorewriter which should be available in the UK in a few months at an anticipated price of £229.

If you have access to a laser printer then watch out for MidiScore Plus (£279) which will be configured for just such a machine.

Hybrid Arts' SyncTrack and SMPTE-Track (reviewed in the January issue of *Atari ST User*) have undergone an update and now include graphic editing and a facility to import tracks from one song to another.

It can turn a chain into a linear track – a process called flattening – and show the tempo in film clack values, very useful for the film composer.

If you don't need sync-to-tape or SMPTE then take a look at EditTrack (£179.95), a brand new program similar to SyncTrack and SMPTETrack, but without the hardware.

The budget-priced sequencer, EZ-Track (£59.95), has been updated, too, and incorporates improved quantisation, better cut and paste facilities and a delayable tracks feature.

While not having the interactive aspect of Dr. T's KCS Level II MPE, HybriSwitch

(£24.95) lets you hold up to 10 programs in memory at once and flip between them instantly. No more powering up and down to edit a voice while using a sequencer.

Also new is MidiPlexer (£289), designed to alleviate Midi traffic jams. It effectively gives you 64 discrete Midi channels as opposed to the standard 16.

Sharing the Hybrid Arts stand was UK company Soundbits which specialises in voice editors for popular synths and expanders.

New from the company was an editor for Roland's D-50 and D550 (£99.95). An editor for the ubiquitous MT-32 is due soon along with LibMast (£29.95), a desk accessory which will allow bank uploads and downloads from the Soundbits editors.

Sonus was showing the new SST Super Sequencer (£99) – as mentioned last month – but was concentrating most of its effort on demonstrating SuperScore (£220), a fully integrated desktop music publishing system. It has been available in America for a while, but we have yet to see a copy in the UK.

It has 32 polyphonic staves and a built-in 32 track sequencer. Text can be placed anywhere on the page and lyrics can be auto aligned. It can convert files from Sonus' other sequencing programs as well as those from Hybrid Arts and Steinberg.

Even as you read this however, it is undergoing an update, so by the time it does reach us it should be even better than the version at Frankfurt. I've been promised the first updated copy and we'll bring you a full review soon.

This is just a small fraction of the available software and hardware on show. Next month I'll reveal some more that are due out soon.

## FACT FILE

*Steinberg and J.L. Cooper are distributed by Evenlode Soundworks, The Studio, Church Street, Stonesfield, Oxford. Tel: 099 389 228.*

*C-Lab is distributed by Sound Technology PLC, 6 Letchworth Business Centre, Avenue One, Letchworth, Hertfordshire, SG6 2 HR. Tel: 0462 480000.*

*Dr. T and Passport Designs are distributed by MCMXCIX, 9 Hatton Street, London, NW8. Tel: 01 258 3454.*

*Hybrid Arts and Soundbits are distributed by Syndromic Music, 24-26 Avenue Mews, London, N10 3NP. Tel: 01 883 1335.*



*Dr. T's Copyist and KCS*



# MUSIC ON THE ST

By IAN WAUGH

## The EZ way to score ...

**E**Z-SCORE from Hybrid Arts is one of the newest music scoring programs to appear on the market. It also happens to be the cheapest, falling well within the range of budget price music programs.

It will run in high or medium resolution and supports one, two or three staves. If you are used to writing for eight or more instruments (using multi-timbral synths) you may find this restrictive.

You can however, allocate two Midi channels to each staff – one to the notes with the stems pointing up and another to the notes with the stems pointing down – so you can work with up to six parts.

Music can be channelled through the Atari monitor's speakers, through the Midi sockets or through both, but the ST's sound chip can only play back three parts.

### Editing facilities

Drop down menus handle the editing functions and flip-up menus give access to notes, rests, ornaments, dynamic markings, articulation, bar lines and music symbols. There are safety options for both menus so they don't drop down or flip up if the mouse inadvertently wanders into their area.

You enter notes, rests and all the other musical bits and pieces by picking them up from the bottom menus and clicking them into place. To remove them you select Delete mode. This turns the mouse pointer into a bow and arrow which you click on unwanted symbols.

Edit mode lets you rubber band an area, and notes in it can be beamed, tied, have their stems flipped and made into

**Scoring programs can be a boon to music writers. EZ-Score Plus is one such package and at a budget price**

and so on.

You can edit with the mouse, the computer keyboard or a combination of both. You can also enter notes from a Midi keyboard – the Pitch and Mod Wheels control the cursor and you can define other controls to alter note duration and select rests. The usefulness of this option depends on the features your Midi keyboard has.

There is no provision for mapping

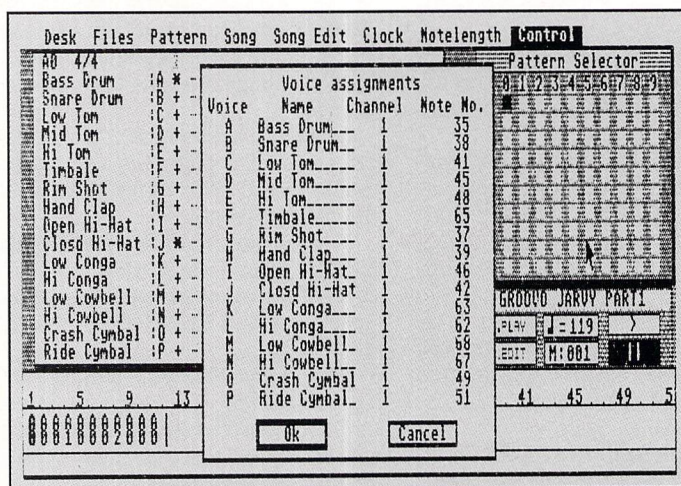
patch changes to the program which I think would have been useful.

However, it offers yet another method of input and you'll soon find a combination of methods of operating which suits your own needs.

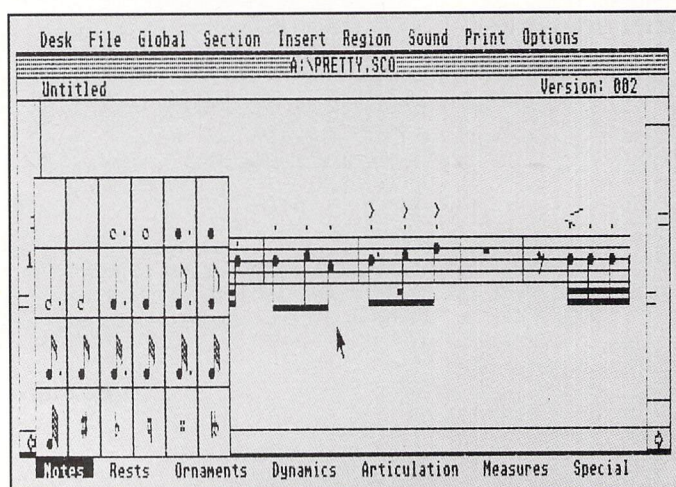
You can copy, cut and paste sections of the score, but sections must be defined as whole bars – I kept wanting to drag a window around a section.

You can't, however, copy from one staff to another to enter a repeating bass line – you must copy it with the other staves blank.

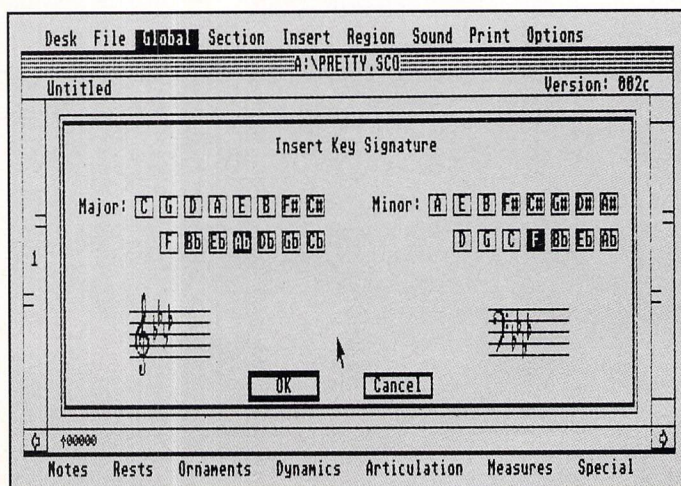
You move through the score by clicking on window scroll arrows and you can use the locate feature to move to any bar or rehearsal mark. All bar numbers must be entered from the keyboard however, which takes the edge off mouse operation. The controls have equivalent



Assigning the voices



Editing the music



Inserting the key signature



keyboard commands so if you're using the keyboard this won't seem like a problem.

An odd omission is the lack of an automatic bar insertion option. Also, the notes don't automatically line up vertically down the staves. This is essential if the piece is to sound right on playback so you must be careful to line everything up.

There are Expansion and Compression routines to help space out your score evenly, but they will put a single note in the middle of the bar instead of near the bar line. However, there are micro spacing routines which allow you to insert or delete gaps between symbols, and a little editing can soon produce a perfect score.

One option the manual suggests is to insert the bar lines first followed by the notes, but you may prefer to get the spacing right as you enter the score. None of the note beams slant which is a shame although this detracts only slightly from the presentation.

### Defining chords

Having scored your masterpiece, you can proceed to enter chord and guitar symbols, but first you must define them as none come preset with the program. You can create up to 20 of each type and form others as and when they're needed. Chords can be as complex as you like. What about this:

A#m(no 3rd)b7#9addb13/D#?

Dunno what it sounds like, though.

Frivolity aside, you can print the piano part and lead line separately from a single piano/vocal score, something which EZ-Score is well suited to, and it is ideal for Busker book music.

In lyrics mode the program automatically moves on to the next note after you enter a word. This solves positioning problems but it means you can't use it to enter performance instructions such as allegretto or moderato. Expansion and compression squeezes your lyrics too.

Any Gdos font can be used for printing the lyrics and one is supplied on the disc. Other fonts are used for the symbols and you could create your own if you have a Gem font Editor.

You can incorporate title and copyright lines, rehearsal marks, page and measure numbers in the music and, as you can see, the result is absolutely excellent.

### Auto-Score

One of the best and most powerful features of EZ-Score Plus is its Auto-Score facility. This will transform a file created with one of Hybrid Arts' sequencer programs such as EZ-Track (reviewed in the June 1987 issue of *Atari ST User*) or Midi-Track (reviewed in January 1988) into traditional notation. It can create a completely new score or you can load a

**Praeludium XVII**  
by J. S. Bach  
Demo program included with EZ-Score

The output from EZ-Score

sequence into part of an existing score.

When recording a piece you should bear in mind the conversion process to EZ-Score as there are such things as quantising, timing and overlapping notes to consider.

The manual is excellent and takes you through a guided tour of the system. The pages are thick and in a ring bound folder – there's quality – well printed and scattered with diagrams.

Finally, EZ-Score is the first program to be compatible with the new HybriSwitch program. This should be available soon, and will let you store up to 10 programs in memory at once so you can flip from sequencer to voice editor to scorewriter at the twitch of a mouse. Nice! More when it appears.

In spite of a few "I wishes" – lining up notes, justification of notes and bars, more auto features and so on – EZ-Score Plus works well, it's easy to use and it produces excellent results.

Hybrid Arts is developing a larger,

more sophisticated program called Midi-Score and there is an upgrade path from EZ-Score to Midi-Score. Meanwhile, if you want notation facilities, EZ-Score Plus does the job for a budget price and is well worth the readies.

### FACT FILE

Product: Hybrid Arts' EZ-Score Plus

Price: £84.95

Supplier: Syndromic Music, 24-26 Avenue Mews, London N10 3NP.

Tel: 01-444 9126.

### POINTS FOR:

Cheap; easy to use; drop down menu system.

### AGAINST:

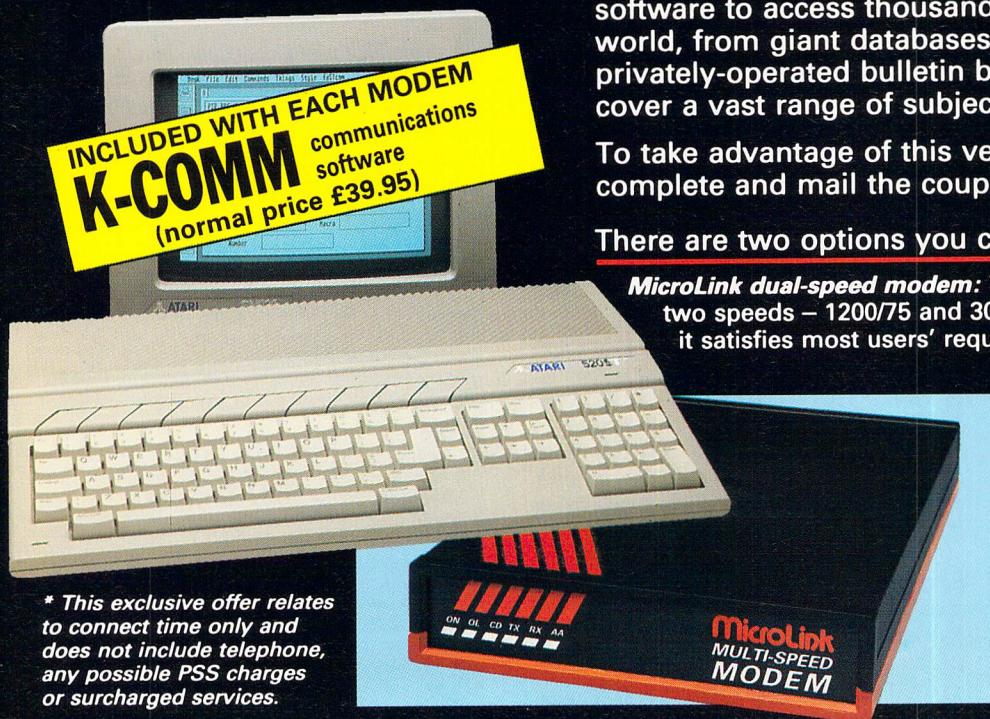
Only three staves; no note justification.



Use **TELECOM GOLD**  
**FREE\*** for a month!

# *Joining the communications revolution has never been easier...or cheaper*

**All you need to link your  
Atari ST to the exciting  
world outside is a phone  
— and the MicroLink  
Communications Pack**



\* This exclusive offer relates to connect time only and does not include telephone, any possible PSS charges or surcharged services.

The MicroLink Communications Pack contains everything you require to go online. There's a powerful modem that sits between your Atari ST and your telephone, a lead to connect them together and easy-to-use communications software.

You'll also be given a unique invitation to join MicroLink, with FREE registration and telex validation (normally costing £15), and a month's FREE\* connect-time to your MicroLink/Telecom Gold mailbox. So you can find out for yourself what MicroLink is all about without it costing you a penny.

Of course you can also use your MicroLink modem and software to access thousands of other services all over the world, from giant databases in the USA to innumerable privately-operated bulletin boards throughout Britain that cover a vast range of subjects.

To take advantage of this very special package deal simply complete and mail the coupon opposite.

There are two options you can choose from:

**MicroLink dual-speed modem:** This stylish modem works at two speeds — 1200/75 and 300/300. Fully BAPT approved, it satisfies most users' requirements for a modest price/

**£99**  
incl. VAT

**MicroLink multi-speed modem:** This offers the additional speed of 1200/1200 full duplex for users who want super-fast two-way transmission. Plus many extra features, including powerful auto-dial and auto-answer facilities. A remarkable price breakthrough for a really exceptional product.

**£169**  
incl. VAT

APPROVED for use with telecommunication systems run by British Telecommunications in accordance with the conditions in the instructions for use.





**MicroLink** is Britain's fastest-growing electronic mail service. It offers ALL the services of Telecom Gold – and a whole lot more besides.

**With MicroLink** you can link up with other users all over the world to send and receive electronic mail. It turns your ST into a telex machine – without the need for expensive equipment or special phone line. It lets you send telemessages for next-morning delivery to ANY home or business in the UK or USA.

**With MicroLink** you can tap into a weather satellite and see pictures from space displayed on your monitor (in full colour on a colour monitor). You can use it to obtain legal and financial advice, to order flowers or book theatre and rail tickets.

**With MicroLink** you can receive free telesoftware programs over the phone to feed into your ST. You can use it to turn text into typesetting or Braille. You can link in seconds to a database in New York, or key into the 400,000-word Great European Dictionary in Luxembourg. And it gives you direct access to up-to-the-minute financial information on every company in Britain.

The communications software that comes free with each modem is one of the best available for the ST – K-Comm 2. It features a Viewdata terminal, VT100 emulation, Teletype and V52, baud rates from 75 to 9600 including split baud rates, Automatic log on and autodial, auto answer and Xmodem transfer.

## ORDER FORM

### PLEASE SUPPLY:

- ☐ MicroLink dual-speed modem, software and ST lead for £99
- ☐ MicroLink multi-speed modem, software and ST lead for £169
- ☐ FREE registration and telex validation, plus FREE one month's connect time to MicroLink or
- ☐ I am already a subscriber to MicroLink

If you would like to join MicroLink and already have a modem and software simply tick the box alongside. You will then be sent full details of how to join. ☐

- ☐ Cheque enclosed made payable to MicroLink Communications Ltd
- ☐ Please debit my Access/Visa card number:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Signature ..... Expiry date  /

Name .....

Address .....

..... Postcode .....

Daytime phone .....

**Send to: MicroLink Communications Ltd,  
FREEPOST, Macclesfield, Cheshire SK10 4YB.**

**Telephone orders: 0625 879940  
Orders by Prestel: Key \*89, then 614568383  
Via MicroLink/Telecom Gold: 72:MAG001**

Allow 28 days for delivery.

A438

All prices include VAT  
& carriage (UK only).

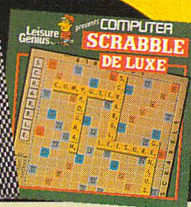
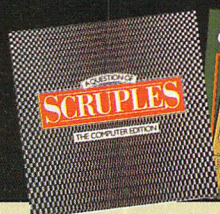


# NEW YORK NEW YORK

**1<sup>ST</sup> PRIZE**

Free flight for two to New York – plus three nights at the fabulous New York Hilton – plus £200 of spending money thrown in!

**OVER**  
£4,000 WORTH  
OF PRIZES  
TO BE WON!



## RUNNERS UP PRIZES

**50**

*copies of Scruples. All the fun of the top-selling game – and you can even create your own opponents, giving them their own individual personalities. Worth £19.95*

**50**

*copies of Scrabble De Luxe. Now better than ever, this game – with a massive vocabulary of over 20,000 words – goes beyond a being a computer conversion. Worth £19.95*

**10**

*copies of Scrabble Board Games – the original game which is still as addictive and different each time you play. Worth £6.99*





Much has been written about the glamour and excitement of New York – the cultural, commercial and financial centre of the United States. Now you have the opportunity to sample the shops, the bustle and the dazzling nightlife at first hand.

We will fly you and a friend to this marvellous city, courtesy of BRITISH AIRWAYS on one of its new seven days a week flights from Manchester to New York, where you will stay in the prestigious Hilton Hotel for three nights. What's more, we will provide £200 cash for you to spend during your stay.

There are also 110 runners-up prizes from Leisure Genius to be won.

## WHAT YOU HAVE TO DO

Answer eight questions – the four below and four that will appear in the July issue of *Atari ST User*. Then send your entry to us to arrive before July 30. The first correct entry pulled from the sack will win this trip of a lifetime.

### QUESTIONS

- 1 What is Idlewild International Airport now called?
- 2 Manhattan is separated from New Jersey by which river?
- 3 In what year was the Wall Street Crash?
- 4 What is the area called which is famous for its theatres?

What you'll find  
in next month's

# ATARI ST USER

Full details of the latest  
top business software  
including the following:

## SUPERBASE PROFESSIONAL

Is it the best database around or is it all hype? We put the bold claims to the ultimate test and come up with some surprising answers.

## SIGNUM 2

Is it a word processor or a complete DTP package? We show you how this powerful, flexible package stands up to everyday use.

## K-EXPERT

Can it create expert systems suitable for all possible applications? We pit its knowledge against our own in a head-to-head confrontation.

**PLUS action-packed  
reviews of the latest games  
releases for the Atari ST including:**

- ★ Thrust    ★ Obliterator    ★ Pink Panther
- ★ BMX Simulator    ★ Rolling Thunder
- ★ Lee Enfield's Amazon Adventure

**Place your order NOW  
– and make sure you  
don't miss your copy**





*Program: Carrier Command*

*Price: £24.95*

*Supplier: Rainbird, Wellington House,  
Upper St. Martins' Lane, London WC2H  
9DL.*

*Tel: 01-631 5168*

CARRIER Command by Rainbird is difficult to describe, and if I said it was a wargame you would probably get the wrong idea. The best description I can give is that it's a strategy game with arcade action sequences, and combines the best features of several different game types.

The accompanying 64 page manual outlines the scenario. The movement of two tectonic plates – large, separate

## Sea spectacular

areas of the earth's crust – has caused a great deal of volcanic activity in the southern oceans. This in turn has led to the creation of a vast number of small islands.

The violent volcanic activity has brought to the surface very rare and much needed minerals, rare metals and fossil fuels. And as the world is facing an energy crisis, these islands are extremely valuable.

Two large, technically advanced, aircraft carriers are constructed, and their mission is to colonise the islands, setting up bases, factories, refineries and so on.

The ships are fully automated – run entirely by computers, save for the commander, and here lies the problem. An enemy foreign power gained access to the computer operating system of one craft and implanted a virus, killing the commander at the same time. Once it reached the islands the virus took over and the ship started setting up heavily defended enemy bases.

Your task, as the commander of the other carrier, is to set up your own bases, factories and supply networks. Having established a base from which to attack, you can then take on the enemy carrier in battle.

On booting up you have the option of starting a new game, immediately

**ATARI  
STAR  
USER GAME**

entering battle or loading a previously saved position. I found starting a new game a bit slow and tedious – you have just arrived at the archipelago and your initial task is to take over all the un-occupied islands.

On these you can set up your factories, supply bases, stores, defence installations and so on. Having built up a safe base, you can proceed to engage the enemy on its islands and bases.

The battle option throws you straight in at this point in the game, and I found this much the better option. All your bases have been set up for you, you are fully armed, anchored just off an enemy island, and standing by ready to launch your attack.

There is a bewildering array of controls and functions and it's quite easy to get lost at first. Be prepared to familiarise yourself with them.

The display is taken up by a large

*Product: Ikari Warriors*

*Price: £19.95*

*Supplier: Elite, Eastern Avenue, Lichfield,  
Staffordshire WS13 6RX.*

*Tel: 0543 414188*

SOMEWHERE in central America the US Forces HQ has been overrun by revolutionaries and General Bonn taken prisoner. An all out assault would attract adverse publicity, so you have volunteered for a rescue mission. The chances of returning alive are small – I should know, I've just spent the past week playing the game.

If you pause for a moment after loading, you will be treated to a guided tour of the first stage of your mission. Employing a smooth, vertically scrolling action, you are shown the terrain, location of the major gun emplacements, and bridges.

After selecting the one or two player option you are launched into the game. Your bid to free the general may have begun as a secret, but an unfortunate, though spectacular, crash landing in the jungle soon alerts the enemy to your presence.

Travelling "light" you carry the bare minimum of weaponry – one machine gun

## Chance to be hero!

with 100 rounds of ammunition and 50 grenades. Control is via the joystick, while pressing the spacebar toggles between the two modes of machine gun operation – either you fire North all the time, or in the direction you are running.

Holding down the fire button throws a grenade. These beauties are capable of destroying bunkers, gun emplacements and enemy tanks. When attacking large targets such as these, you are advised to use hit and run tactics. The ammunition they contain will explode, destroying everything in the vicinity.

My initial assaults on the big guns tended to be messy – I was losing a warrior at every attempt. Fortunately, it wasn't long before I noticed they were only firing in three directions. By standing in the safe zone between the trajectories, I could pick them off at my leisure.

Blasting the guns not only provides



bonus points, but also unearths special tokens in the smouldering rubble. Each is embossed with an icon that hints at its effect – the gun and the grenade replenish your ammunition, the letter F arms you with a flame thrower.

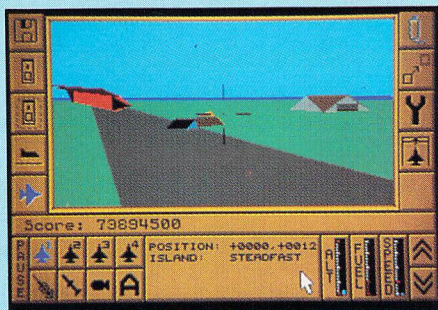
The enemy troops come in several varieties. Standard infantry are dressed in blue and provide no real threat unless present in large numbers. Next come the officers, dressed in red. They appear much less frequently, and drop a token when shot.

The third type are the bazooka men.



# SOFTWARE REVIEWS

~~~~~z~~~~~



On one of the islands

window in the centre of the screen surrounded by icons – which change according to the controls selected.

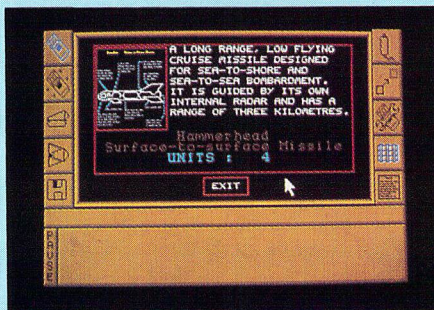
The action is shown in the window using a solid 3D drawing technique, similar in many ways to Flight Simulator II, although I thought it was updated slightly more frequently, giving a smoother appearance when moving.

A map of the area can be called up, and a destination selected. This can be programmed into the ship's automatic pilot, and off it will go under its own steam.

It will always take the shortest route, so it's often necessary to pilot it yourself round a nearby island as the water is shallow and there's a risk of running aground.

This won't do any harm – the engines automatically select full reverse power and pull you back out of danger – but it does confuse the autopilot.

Having reached an island, the four aircraft and four amphibious tanks carried on board can be sent out to investigate. They can be armed, fuelled and



A weapons information screen

loaded with a variety of devices. I found the best technique was to stand offshore and use the ship's powerful laser cannon to soften up the enemy before sending in the valuable tanks and planes. A zoom lens on the laser enables you to spot buildings from half a mile away – and blast them to bits too.

The planes can dispatch any airborne defences and the tanks can be sent to wipe out any remaining ground installations. Once this is done an automatic control centre builder can be dropped on the island. This will then set to work building up a base – you can select the type from defence, resource or factory.

Each plane and tank can either be set on autopilot by selecting a map reference to go to, or it can be driven or flown manually, just like a flight simulator. You'll need to use both techniques – manual for combat, autopilot for trundling back and forth to the carrier.

The only disappointment in the game is the sound. Although there's a superb sound track to accompany the title page, the effects in the game are few and far

between. It's difficult to get across the full scale of this complex game in such a short review. The 3D graphics are amazing, and the action brilliantly executed. Combine this with the complex strategy element, and you've got a real winner.

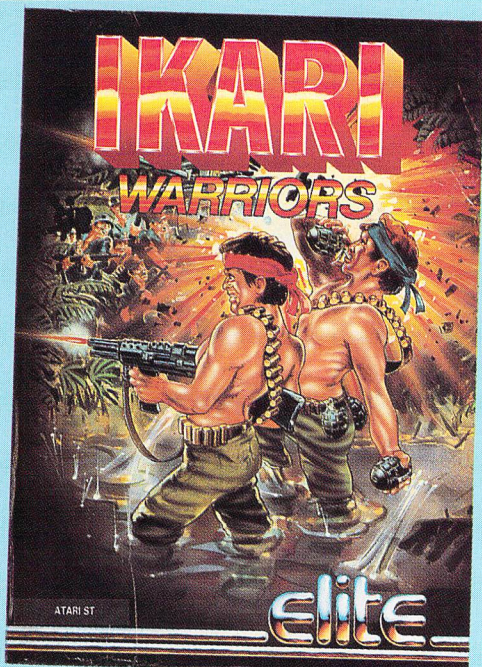
**Ann Lightfoot**

|                      |    |
|----------------------|----|
| Sound .....          | 6  |
| Graphics.....        | 10 |
| Playability .....    | 10 |
| Value for money..... | 10 |
| Overall .....        | 10 |

## SECOND sight

*Forget the strategy game option, which is deadly boring and jump straight into the battle. The 3D graphics in simulator mode are excellent, and I loved watching the planes come up from below deck on the lift, take off and fly into the distance. Then you can take over control, dive bomb and straff the enemy on the island – brilliant!*

**Roland Waddilove**



Normally present in groups of two or three, their weapons have a similar range to the infantry's, but the shells explode as they land, providing extra devastation.

As an expert in the art of survival, your training enables you to take advantage of every opportunity. You can assume the

role of tank commander and climb aboard an abandoned tank. Access to the vehicle is achieved by standing on it and holding down the fire button.

Driving it is great fun – you are impervious to machine gun fire, and can rumble over platoons of men without batting an eyelid.

Unfortunately you are still vulnerable to grenades, shells from enemy tanks, and mines. Should you suffer a direct hit, the tank will begin to bleep and flash. You are advised to get out as soon as this happens otherwise it will explode with you inside.

Landmines are used strategically throughout the game. Normally invisible, they will appear as you approach, get closer still and they will begin to bleep. They are impossible to detonate with a bullet or grenade and are often used to force you to abandon your tank and continue on foot.

The terrain you negotiate includes jungle, open plains and swamps. Although the flooded areas are linked by wooden bridges, you are free to wade waist deep through the water. The only disadvantage is that you travel a little slower.

If you're the type of guy (or gal) who

thrives on danger, surmounts insurmountable odds, and eats three Shredded Wheat for breakfast, this is for you. Ikari Warriors has just ousted Star Wars from the top slot of my personal Adrenalin Pumpers Top 10.

**Jon Revis**

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

## SECOND sight

*Ikari Warriors is a great game in which you take on the role of a Rambo type character. Armed to the teeth, you storm through the jungle dispatching countless enemy soldiers, taking over their tanks and destroying their gun emplacements. It's fun, addictive and strongly recommended.*

**Andy Richards**



Product: *Dizzy Wizard*  
 Price: £19.95  
 Supplier: Robtek, Unit 4, Isleworth Business  
 Complex, St John's Road, Isleworth, Mid-  
 dlesex.  
 Tel: 01-847 4457

YOU need a steady hand and a cool head to manoeuvre your way through *Dizzy Wizard*, the latest Tomy Software game on the Diamond label. It's soon apparent why the game requires a one Mb machine; the graphics are stunning, and the size of the game intimidating.

If you think this is just another *Marble Madness* clone, think again. There are some resemblances – your task is to steer a spinning top down a series of ramps, avoiding various nasties and fighting a time limit. However, it's more complex than that, if only because once you have reached the bottom you have to make your way back up to the top.

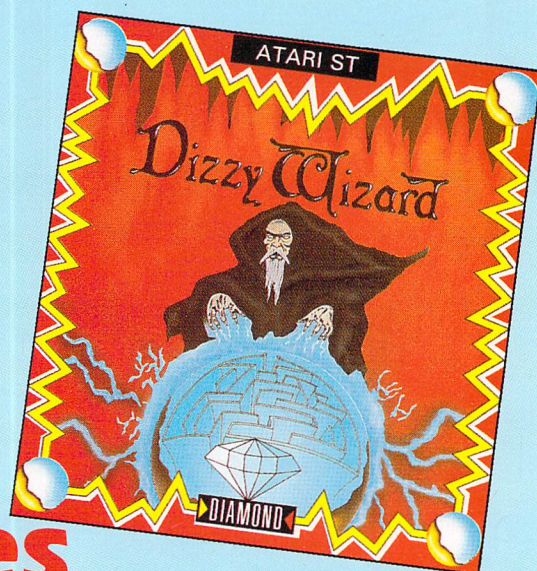
The 3D perspective backgrounds show giant constructions looking like Escher's famous optical illusions. The backgrounds scroll smoothly as you steer the spinning top along the ramps.

Up to three players can compete simultaneously, controlling different tops with separate controls. It's important not to fall behind. If you do, you'll lose points each time the leader passes off the screen ahead of you.

Bonuses can be picked up by running into dice, and question marks can also score you a bonus, but they can also lose you time or transport you to an unexpected part of the maze. If you're lucky, a mystery bonus will show you a map which will help you negotiate the maze.

To complete each level you have to find a ball of fire, pick it up, return to the

# Don't lose your marbles



start of the maze and light a torch. You can then leap a chasm to the next level. You must score 10,000 points per level – if you lose too many penalty points, you have to serve a period in the factory to earn them back.

This screen includes some brilliant animation of flowing water, rotating discs, rolling causeways and slippery slopes, which you must negotiate over and over again until your score is up to scratch.

It's not as easy as it looks, though with practice it becomes less challenging and a bit repetitive. The only other drawback is the infuriating protection system, consisting of an on-screen request to enter a symbol from a badly printed grid of numbers on a card.

*Dizzy Wizard* is impressive with some cute gimmicks, nice sampled jazz music and challenging gameplay. Check it out if your ST is big enough.

Chris Jenkins

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

## SECOND sight

*I found this very similar to *Marble Madness*, and if you've got that, you probably won't want this as well. It's a good game with good graphics and sound, but is spoilt by the fact that it won't run on a 520ST, which severely limits its appeal.*

Andy Richards

Program: *Dark Castle*  
 Price: £24.95  
 Supplier: Mirrorsoft, Athene House, 66-73  
 Shoe Lane, London EC4P 4AB.  
 Tel: 01-377 4645

ALTHOUGH at heart *Dark Castle* is only another platforms and ladders variant, some of the ingredients in this three disc game help raise it above the mundane.

The introductory sequence is impressive – the title screen depicts a gloomy castle atop a hill while lightning flashes and thunder rolls. The options screen which follows shows yet another attractively drawn castle, beside which is the high score table displayed on a parchment scroll.

Below this are two rows of buttons, each representing an option. Before you select one of the three difficulty levels, call up the Help option. This provides a title screen followed by four illustrated

# Castle capers

screens of instructions, hints and scoring information.

It also has a surprise in store. A funny little gremlin toddles back and forth waving his long arms and making rude noises. He will be joined by another gremlin, and another, until there's a small mob of these creatures marching about making a din.

A demonstration option lets you watch the hero, an animated youth, do battle. It's worth watching to see some of the actions and timing required. There are a number to control – run left and right, climb up and down, execute a standing, running or downward jump, aim your throwing arm in a number of directions, hurl rocks, duck, pick up objects and fight.



The 14 screens are mainly of the platforms, ropes and ladders variety, all set in a castle interior. Among the hazards are rats, guards, bats, dragons, whip and rock-wielding henchmen, blazing eyes, mutants and gargoyles. Leaping on to



# Return of Dexter

Program: *Get Dexter 2*

Price: £19.95

Supplier: Infogrames, Mitre House, Abbey Road, Enfield, Middlesex EN1 2RQ

Tel: 01-364 0123



DEXTER needs to get to Andines and he knows the only way is through the Swappis' secret passage. They are a suspicious bunch, so in order to use it Dexter has to gain their trust.

To do this they have set him three tests, the nature of which are to be read on boards in each of the three Swappi homes. The first is a sort of question of life, the universe and everything: What are our origins?

Off Dexter goes, pursued by his ever-faithful – Xunk, a one-legged hopping mouth. He may not win any prizes at Crufts, but he is indispensable, and a real character too. If a collection of animated pixels on a monitor screen can be called cute, then I confess, I found Xunk cute.

Apart from performing certain tasks, Xunk can offer clues too. Watching him can be very rewarding, revealing the whereabouts of regenerative power points, for instance. Xunk also chases Xunkettes, should he meet any. This may be irrelevant as far as completing the game is concerned, but still amusing.

Clues on the notice boards indicate that four statuettes should be in place on their respective columns in the temple. Dexter will find that only one is in place. He must hunt around the countryside, houses, depots and stores to find the other three and return them.

With all four statuettes replaced the

altar slides apart and The Great Swappi Himself appears. Dexter must persuade the Great One to give him the Big Book about the origins of the Swappis, and then work out what to do with it. Dexter's trust rating then shoots up from 10 to 40 per cent, and he is a third of the way to Andines.

The second task involves working out the ingredients for a potion to cure sick Swappis. Dexter has to find the ingredients, make up the potion and work out what to do with it.

The third task has him tracking down an insane Ouak – a Swappi's pet dog – calming it down and enticing it back to its owners.

These tasks are tricky enough in themselves, but Dexter also has constant irritations and menaces to deal with along the way.

Pink bilbos, big teeth, rhinopigs, hydra and blue quistiti feature among the array of obscure creatures ranged against him.

All these sap Dexter's energy level, but the means of avoidance or retaliation are scattered about him. For instance, a sandwich can be picked up and thrown

## SECOND sight

*This is a superb follow-up to Get Dexter. It's packed full of puzzles and is great fun to play. I thought he graphics could have been better, and they seem to be a straight copy from the Amstrad CPC version of the game. Still, it's well worth playing, and I don't think you'll be disappointed.*

**Andy Richards**

to distract some animals. Dynamite and smoke bombs have more obvious effects. If energy levels dwindle, most buildings have at least one power point at which he can fully recharge himself.

The graphics are bright, cheerful and well drawn and the animation is faultless. Sound effects are well utilised and with restraint. The introductory music is good.

Movement can be controlled by mouse, joystick or keyboard. As Dexter's other actions have to be controlled from the keyboard, the movement commands must really come from joystick or mouse. You can use the keyboard exclusively at a pinch, but with around 10 commands available it will help if you're ambidextrous.

The last part of Dexter's quest has him in Andines negotiating robots and traps and striving to find his way to the final resting place of a great traveller. He came to die on the Swappi planet countless years ago and, having found him, Dexter must awaken him.

If successful, the spirit of the ancient traveller takes up residence in Dexter's body, endowing it with incredible powers – in readiness for Get Dexter 3 perhaps? I hope so.

All through Get Dexter I had the feeling that the French programmers had really taken a pride in their work. Attention to detail was apparent and a real sense of humour and charm ran throughout the game.

It is a delightful graphic arcade adventure. Obviously the puzzles aren't as cryptic as those in a pure adventure game, but are pitched at just the right level so most players will be able to enjoy it.

**Niels Reynolds**

swinging ropes requires a sharp sense of timing and your aim will have to be good to keep the nasties at bay. My favourite is the hooded henchman who is contentedly whipping three chained prisoners until you turn up.

He'll turn his whip on you and the only way to render him unconscious while you get the keys he is guarding is to bash him with a weapon. Digitised sound effects enhance the fun. Bats and rats squeak while the hero lets out many a grunt and shout of despair or elation.

Animation of the hero and some of the opponents is quite good with some added touches – the hero staggers around when dazed, for example, and old whiplash Willie is quite a giggle to watch.

While the game may only be ringing a few changes on an old theme, it does so with a degree of panache that makes Dark Castle worth playing.

**Bob Chappell**

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

## SECOND sight

*I wasn't too keen on this arcade offering. It's an old fashioned ladders and levels, and fairly primitive too compared to others of this type now on the market. The graphics and animation didn't impress me at all; neither did the sound. I suggest you try it before you buy.*

**Andy Richards**

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





# MILES BETTER SOFTWARE



221 Cannock Road, Chadsmoor, Cannock,  
Staffs WS11 2DD. Tel: (0543) 466577/8

## GAMES

|                            |       |
|----------------------------|-------|
| North Star .....           | 16.95 |
| Rolling Thunder .....      | 16.95 |
| Computer Hits .....        | 22.95 |
| Scrabble .....             | 16.95 |
| Scruples .....             | 16.95 |
| Casino Roulette .....      | 8.95  |
| American Pool .....        | 8.95  |
| i Ball .....               | 8.95  |
| War Hawk .....             | 8.95  |
| Carrier Command .....      | 19.95 |
| Spitfire 40 .....          | 19.95 |
| Flintstones .....          | 16.95 |
| International Soccer ..... | 16.95 |
| Mission Genocide .....     | 8.95  |
| Return to Genesis .....    | 16.95 |
| BMX Simulator .....        | 11.95 |
| Dungeon Master .....       | 19.95 |
| Oids .....                 | 17.95 |
| Ikari Warrior .....        | 12.95 |
| Thrust .....               | 8.95  |
| Xenon .....                | 16.95 |
| Battleships .....          | 12.95 |
| Strip Poker II .....       | 11.95 |
| Power Struggle .....       | 12.95 |
| Catch 23 .....             | 15.95 |
| Crazee Cars .....          | 15.95 |
| Get Dexter 2 .....         | 17.95 |
| Mach .....                 | 17.95 |
| Joe Blade .....            | 8.95  |

|                         |       |
|-------------------------|-------|
| Black Lamp .....        | 17.95 |
| Slap Fight .....        | 15.95 |
| Road Wars .....         | 16.95 |
| Obliterator .....       | 19.95 |
| Pink Panther .....      | 17.95 |
| Nightmare .....         | 19.95 |
| Arcade Force Four ..... | 19.95 |
| Deflektor .....         | 17.95 |

## ADVENTURE

|                                    |       |
|------------------------------------|-------|
| Phantasy III .....                 | 17.95 |
| Time and Majik .....               | 16.95 |
| Crash Garrett .....                | 16.95 |
| Dark Castle .....                  | 19.95 |
| War Game Construction<br>Set ..... | 19.95 |

## GRAPHIC/DESIGN

|                           |       |
|---------------------------|-------|
| Quantum Paint .....       | 15.95 |
| G.F.A. Draft+ .....       | 99.00 |
| Cyber Stride .....        | 63.00 |
| Cyber Controller .....    | 48.00 |
| Degas Elite .....         | 20.95 |
| CAD 3D .....              | 21.95 |
| Easi Draw 2 .....         | 55.00 |
| Spectrum 512 .....        | 49.95 |
| Cyberpaint .....          | 56.00 |
| Krikki .....              | 17.95 |
| GFA Vector .....          | 29.95 |
| Advanced Art Studio ..... | 15.95 |

## UTILITIES/BUSINESS

|                          |        |
|--------------------------|--------|
| Lattice C (3.04) .....   | 69.95  |
| GSTC Compiler .....      | 17.95  |
| Super Conductor .....    | 44.95  |
| Mark Williams C .....    | 109.00 |
| Desk Top Publisher ..... | 79.00  |
| Fast Basic (Rom) .....   | 69.00  |
| Fast Basic (Disk) .....  | 39.95  |
| First Word+ .....        | 59.95  |
| Word Perfect .....       | 185.00 |
| Logistix .....           | 85.00  |
| Swift Calc .....         | 59.00  |
| Data Manager .....       | 59.00  |
| Signum II .....          | 184.00 |
| Pro Pascal .....         | 89.00  |
| Pro Fortrun .....        | 109.00 |

## ACCESSORIES

|                                |       |
|--------------------------------|-------|
| ST to Scart Lead .....         | 11.99 |
| ST TO Centronics Lead .....    | 11.99 |
| ST to Composite Lead .....     | 6.45  |
| Mouse Mat .....                | 5.99  |
| Joystick/Mouse Ext. Lead ..... | 5.95  |

## HARDWARE

|                               |        |
|-------------------------------|--------|
| Philips CM 8833 Monitor ..... | 260.00 |
| Philips CM8852 Monitor .....  | 299.00 |
| Linnet + Fastcomm .....       | 170.00 |
| Epsom LX800 Printer .....     | 249.00 |
| Star LC10 Printer .....       | 229.00 |

## SOFTWARE SPECIAL OFFER

|                                       |       |
|---------------------------------------|-------|
| Terrapods .....                       | 15.95 |
| Test Drive .....                      | 17.95 |
| Solomans Key .....                    | 13.95 |
| Alternate Reality .....               | 15.95 |
| Predator .....                        | 13.95 |
| Ranarama .....                        | 9.95  |
| Boulderdash Construction<br>Kit ..... | 9.95  |
| Ring of Zilfin .....                  | 15.95 |
| Spy v Spy .....                       | 9.95  |

All prices are correct at time of going  
to press. Access or Visa orders  
welcome.

Please add £1 per item for overseas  
orders

Please make Cheques or Postal  
Orders payable to:

**"MILES BETTER SOFTWARE"**  
Phone or write for comprehensive  
stock list for Atari and ST software +  
hardware



WHILE  
STOCKS  
LAST



# SOFTWARE EXPRESS

EUROPE'S LARGEST  
ATARI MAIL ORDER  
COMPANY  
(021) 328 3585



## OPENING SOON

OUR NEW ATARI STORE AT

9, EXETER STREET

# PLYMOUTH

## PHONE (0752) 265276

ALSO AT 514/516 ALUM ROCK ROAD, BIRMINGHAM B8 3HX (021) 328 3585  
212/213 BROAD STREET, BIRMINGHAM B15 2JP (021) 643 9100



# Two shots at goal

Product: *Football Manager*

Price: £19.95

Supplier: Addictive, Unit 1, Baird Road,  
Enfield, Middlesex EN1 1SJ.  
Tel: 01-804 8100

Product: *International Soccer*

Price: £19.95

Supplier: Microdeal, 41 Truro Road, St  
Austell, Cornwall PL25 5JE.  
Tel: 0726 68020

THE successful computerisation of football has been a long standing challenge for generations of programmers. Here two games tackle this problem from very different angles.

**Football Manager** is a game of strategy in which you attempt to take your team from the bottom of the Fourth Division, to the top of the First.

**International Soccer** attempts the rather more difficult task of simulating the game itself.

Managing a team is probably one of the most precarious jobs in the world. One minute the club committee is convinced you can walk on water, the next it



*Football Manager game highlights*

is stabbing you in the back. Addictive's *Football Manager* allows you to sample the thrills and spills without having to give up your day job.

Once the program has loaded you are required to make the only easy decision of the game – which team to manage. The 12 players that make up the squad are chosen at random by the computer. Each has individual skill and energy ratings. The former are fixed, but energy can be replenished by resting the player.

As well as the 19 league matches, you are also eligible for entry into the FA Cup. The forthcoming fixture, along with values for energy, morale, defence, midfield and attack are displayed for both teams.

After selecting the team, you sit back

and watch edited highlights of the game. Miniature footballers run around goal-mouths and fire shots at nimble goal-keepers. After this you will receive an update on who's on the transfer market. The player's name, position and value are displayed, and if he's suitable, make a bid.

As you gain promotion you will find everything is more expensive – wages, ground costs and transfer fees. If a player you want is too expensive you can always take out a bank loan, but you will have to repay it with interest.

I found *Football Manager* totally absorbing. Playing on the lowest of seven skill levels, I managed to gain promotion from the Fourth Division and won the FA Cup in the same year. A bid for the First Division championship could take several days.

If you fancy yourself as Brian Clough or Terry Venables, get yourself a copy of Addictive's *Football Manager* – it's better than the real thing!

*International Soccer* sets out to provide a football game as entertaining and skilful as the real thing and I am pleased to report that it comes close to achieving these goals. It's a game for one or two players. When choosing the computer as an opponent you are asked to select its skill level from nine available.

In practice I found little difference between them, and the ST beat me no matter which I chose. The best way to gain experience is to select the two player option and play alone.

You may specify the playing formation you want your team to adopt – out of four on offer. And as in real life, the weather can influence the game, so *International Soccer* can be played in either wet or dry conditions. Attempt a quick change of direction in the wet and you'll soon land on your posterior.

You control one player at a time, indicated by a white square beneath his feet. To switch control to another player, release the joystick and toggle through the footballers using the fire button. The

rest of your team runs in a reasonably intelligent manner.

The kicking routine is particularly good. By holding down the fire button for increasing lengths of time, you can choose between a low drive, a chip and a long pass.

The only disappointing aspect of the game is the sound. A choice of four excellent background tunes is provided, but no sound effects. I would have much preferred kicks, crunching tackles and the roar of the crowd.

Whether you want to experience managerial stress, or fight it out on the pitch, these two programs constitute la crème de la crème on the ST.

**Steve Brook**

## Football Manager

|                      |    |
|----------------------|----|
| Sound .....          | 5  |
| Graphics.....        | 7  |
| Playability .....    | 10 |
| Value for money..... | 10 |
| Overall .....        | 9  |

## International Soccer

|                      |   |
|----------------------|---|
| Sound .....          | 4 |
| Graphics.....        | 8 |
| Playability .....    | 8 |
| Value for money..... | 8 |
| Overall .....        | 8 |

## SECOND sight

These games are an absolute must for all football fans, and they are different enough to make it worth while getting both. You can have a go at managing in Addictive's offering, or get your knees dirty in Microdeal's simulation. I did find the ST a bit tough to beat – I'm sure it cheats.

**Andy Richards**



# Adventurous indeed

Program: *Beyond Zork*

Price: £29.95

Supplier: Infocom, c/o Activision, 23 Pond Street, Hampstead, London NW3 2PN.  
Tel: 01-431 1101

THIS latest adventure from the master Infocom, written by Brian Moriarty of Wishbringer and Trinity fame, has a number of features never seen in its products before.

First, there's a coloured title screen – nothing sensational, but a welcome addition. Then there's the layout – location descriptions and, when requested, inventory and status information appear in a titled frame in the top half of the screen while commands and responses are displayed in the lower half.

Just to the right of the framed text is a portion of a map. This is a superb innovation. While it doesn't do away with the need to draw your own, it is very handy being able to see the linkages between all locations in the immediate vicinity of your current position.

All the function keys control pre-set

commands. Text, frame and maps are coloured and there are several new commands.

But if there's one word that describes how good the new system is, it has to be flexibility. You can play around with these features, and set them up to your own taste by using special commands.

Define lets you change the settings of the function keys while Colour allows you a choice of colour schemes. Priority lets you decide what will appear in the frame at the top of the screen and you can revert to Infocom's traditional style of presentation using the Mode command.

You can view and change the various displays and priorities at any time using the Settings command. The map can be switched off and on and a zoom facility is available.

New to Infocom adventures are the assignment of attributes such as strength, intelligence, endurance and so on, which can be developed as you play, plus the introduction of combat.

You can play with a pre-defined character or generate a new one and assign

attributes to your own requirements. These appear in bar chart form on-screen, and can be called up by the Status command.

Using Undo you can take back the last command (but not in combat, or if you're dead), and the game will continue as if you had never made that move – just the job if you've just opened a chest which exploded destroying all your possessions.

Beyond Zork is a swords and sorcery type of adventure concerned with your hunt for the fabled Coconut of Quendor during a time when evil stalks the earth. You'll encounter a host of bizarre monsters during your quest, and this means plenty of combat.

Combat in adventures is not something I have ever enjoyed – it interrupts the flow too much – so I did not welcome this particular development. However, I must say that Infocom has implemented it very stylishly.

The usual powerful parser, massive vocabulary, richness of prose and wit is still much in evidence and I liked the

Program: *Seconds Out*

Price: £19.95

Supplier: Tynesoft, Unit 3, Addison Industrial Estate, Blaydon, Tyne & Wear, NE21 4TE.  
Tel: 091-414 4611

THIS boxing game is novel in that your perspective is from behind the character you control. He's actually a wire frame model, and you see your opponent through him. The only solid parts are his head, gloves and the top of his shorts.

Such games usually have so many possible actions it takes a long time before control becomes instinctive. Not so with Seconds Out, partly because the action is only two dimensional.

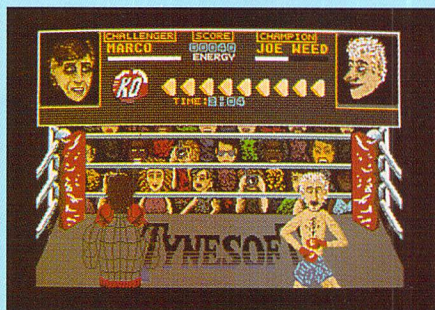
Control is by joystick, and you move left and right across the canvas in front of a backdrop of eager punters. The graphics are good and the expressions on the faces of some boxers is quite hilarious.

You control challenger Marco and must take on five champions to win your way through to fame and fortune. First up is feeble Joe Weed, a very slow old man. Even on my very first attempt I managed to knock him out.

Next is Bonecrusher Jones who takes rather more putting down, followed by Mike "Hammerhead" Hagman. Hammerhead tends to put the nut on you – there's no ref in the game – and seems impervious to normal punches.

At the top of the screen is a status

## It's a knockout



gauge which shows both boxers' energy. A KO meter tells you when you have weakened your opponent sufficiently to try a right hook. If neither knocks the other out the computer makes a points decision.

At the end of each round you control the trainer. The faster you can make him rub Marco's shoulders and give him water and smelling salts the more energy you can restore.

As you progress through the champions, they acquire greater strength and resilience. A practice mode would have helped, but what miffed me more was the fact that when you get beaten you must start again with Joe Weed. It would be nice if you could pick your opponent.

There is no title music. The only sounds are the crowd cheering and a crack

when a punch connects. The game has quite a humorous element and a few sampled groans and oofs would have gone down a treat.

In spite of a few quibbles Seconds Out is fun, although perhaps not quite a knockout as it could have been. Do take a look at it though, even if only for the shifty eyes of Bonecrusher Jones.

Ian Waugh

|                      |   |
|----------------------|---|
| Sound .....          | 4 |
| Graphics.....        | 9 |
| Playability .....    | 7 |
| Value for money..... | 6 |
| Overall .....        | 7 |

**SECOND**  
*sight*

Boxing simulations are quite rare beasts, so Seconds Out does have a fair bit of novelty value. Unfortunately, it couldn't hold my attention for long. If you like combat games and are looking for something a little different it is worth investigating.

Andy Richards





references to the original Zork trilogy. For instance, you'll meet an old salt early on and if you're a seasoned Zork adventurer, you'll greet him with "Hello, sailor!". Do so and he'll remember you from old times.

The Frobozz Magic Company and our old arch-enemies, the grues, also feature in Beyond Zork. Such nostalgic references make the playing additionally pleasurable for old Zork-timers like myself, but

you don't need to have experienced the originals to enjoy this one.

The game environment is huge and while key locations are in fixed positions, locations linking them are randomly positioned each time you play. On the positive side, that adds to the unpredictability of the game, but on the negative side it makes map-making and object collecting a bit tough.

It's possible to trek a long way without coming to a halt, mainly because there doesn't seem to be many puzzles. But this is a big game and there may be a lot more testing brain-teasers further on. What will stop you in your tracks though, is the number and variety of monsters which must be overcome.

An accompanying booklet describes the assorted beasts and other lore and legends of Quendor, while a large colour map shows the main topography. A manual and reference card complete the expected well-presented documentation.

Beyond Zork is a superb game, breaking new ground for Infocom. The on-screen map and versatility of text display is a joy, and the challenge of character development adds a fresh dimension.

Infocom has done an excellent job at

implementing combat and it will be welcomed by many players.

I am delighted to report that all these extras have not been at the expense of Infocom's famed prose, depth and atmosphere. Beyond Zork has to be a mandatory purchase. The price is not low, but the quality is tops.

**Bob Chappell**

|                              |           |
|------------------------------|-----------|
| <b>Presentation</b> .....    | <b>10</b> |
| <b>Atmosphere</b> .....      | <b>9</b>  |
| <b>Puzzlement</b> .....      | <b>8</b>  |
| <b>Value for money</b> ..... | <b>9</b>  |
| <b>Overall</b> .....         | <b>9</b>  |

## SECOND sight

*You can guarantee that any Infocom adventure will be a smash hit, even before it's released. This one represents a slight departure from the standard format, but is nevertheless, welcome. I enjoyed the change of style. Recommended for all true adventure addicts.*

**Andy Richards**

Program: Slap Fight

Price: £19.95

Supplier: Imagine, 6 Central Street, Manchester M2 5NS

Tel: 061-832 6632

# Slap but no tickle

THERE have been several excellent vertically scrolling shoot-'em-ups for the ST already, but even so, Imagine still felt it worthwhile converting this coin-op to the ST to add to the number.

Slap Fight is basically the same as the others – you simply move around the screen, waiting for the next alien to scroll into sight from the top, and then blast it to pieces. Great fun.

The game adds a couple of novel twists – some of the aliens leave stars behind when they exploded.

If you collect them you gain extra features such as double speed, shields, side-ways firing and so on. These come in handy in later stages when the going gets really tough.

The graphics are well-detailed, but somewhat uninspiring, and similar to other games of the genre. The instructions don't provide much information as to what the different objects are supposed to represent – you are simply told you are flying over the planet Orac, and must destroy the evil swarms coming towards you.

Crucial to a game of this nature is the quality of the scrolling graphics, and I can't fault Slap Fight here. What is less acceptable though, is the slow speed,

which ruins the atmosphere.

On later stages this gives you more time to zap the aliens before they disappear, but it also means that in the early stages you can be twiddling your thumbs for longish periods just waiting for the next candidate to zap.

There should be a facility to go straight through once you have reached a set point. This would be very easy to organise by using a password entry scheme to



the various sections. You have a choice of either a tune or sound effects during the game. The tune is OK, but nothing special, and the sound effects pretty ordinary.

Slap Fight is nothing new. It takes an old game concept, adds a few nice touches, but ruins it with poor sound, and needless, lengthy repeats. What could and should have been the vertical scroller to beat all vertical scrollers, sadly misses its mark.

**David Lester**

|                              |          |
|------------------------------|----------|
| <b>Sound</b> .....           | <b>3</b> |
| <b>Graphics</b> .....        | <b>7</b> |
| <b>Playability</b> .....     | <b>4</b> |
| <b>Value for money</b> ..... | <b>5</b> |
| <b>Overall</b> .....         | <b>5</b> |

## SECOND sight

*This must be the year of the vertically scrolling game. Every other release seems to feature it, and it's getting a bit tiresome. I must admit though, it's quite well executed. The graphics are good, and the sound is OK. The only disappointment is that we've all seen the same format countless times before.*

**Andy Richards**



**STOP!!!****LOOK NOW****NEW!! FOR ST**

# POOLSBUSTER!! AND POOLSPLANNER!!

MAIL ORDER  
ONLYTRADE  
WELCOME

Two programs for the football pools with a difference. They guarantee you to win. **YES IT'S NOT A DREAM** so stop pinching yourselves and do something about it, **ORDER YOUR COPY NOW.**

**POOLSBUSTER** is the only pools program on the market on any computer that we know of, with **ARTIFICIAL INTELLIGENCE.** It forecasts a set of draws for you on one Saturday and as soon as you enter the pools results, it analyses where it went wrong, and it fine tunes itself for a correct forecast next Saturday.

You've probably used programs that forecast based upon team form or position, or based on the team's past results, or based upon the team's goal difference etc. But if you use Poolsbuster you'll see that it's quite a different beast. It combines all the necessary elements for the calculations it needs to analyse the matches and compares them with a mass of data collected and corrected over a period of years, of virtually **OVER 10,000** matches. We've even taken care of the hardship, of typing the necessary information into the program each time you want to use it. Everything is laid out to you for easy reading and selection via the mouse. **POOLSBUSTER** - it's the friendliest pools program in the market. **POOLSBUSTER** is good for all seasons, for any country, for any kind of football pools (German, Italian, Greek, Dutch, etc). **POOLSBUSTER** comes with all the teams that are used in the coupons, even Beazer, GM Vauxhall, Northern Premier, etc. **POOLSBUSTER** allows you to add your own teams for different pools. Example German, Australian, etc. We guarantee that **POOLSBUSTER** performs better than any other pools program in the market on any computer, because we **GUARANTEE** to you that using the **POOLSBUSTER** YOU ARE GOING TO WIN THE POOLS MORE THAN ONCE A YEAR.

**POOLSBUSTER COSTS ONLY £35.00 INCLUSIVE VAT & POSTAGE**

**POOLSPLANNER** is the partner to Poolsbuster. It can be used to create for you the ideal system, the system that you can afford to play. It can create for you lines and combinations that can be useful for the pools, fixed odds or lotteries. It can even forecast for you. For this reason it can be used without the Poolsbuster entirely on its own. Combined though with Poolsbuster you have a pools forecasting system, second to none, which the pools experts would love to put their hands on.

**POOLSPLANNER COSTS ONLY £15.00 INCLUSIVE VAT & POSTAGE**

**BUY BOTH PROGRAMS AND SAVE YOURSELF £10.00**

**POOLS SYSTEM (POOLSBUSTER+POOLSPLANNER) COSTS £40.00 INCLUSIVE**

Make cheques/POs payable to:

**APOLONIA SOFTWARE**

and send to **10 Kingsgate House, Cowley Estate, Oval, London SW9 6JX**

**CBS****COMPUTERS****GAMES/STRATEGY**

|                          | RRP   | Our Price |
|--------------------------|-------|-----------|
| 500cc Grand Prix         | 24.95 | 16.50     |
| Airball                  | 24.95 | 16.50     |
| Arcade Force 4           | 24.95 | 16.50     |
| Backlash                 | 19.95 | 13.50     |
| Balance of Power         | 29.95 | 19.95     |
| Barbarian                | 24.95 | 16.50     |
| Bards Tale               | 24.95 | 16.95     |
| Black Lamp               | 19.95 | 13.50     |
| BMX Simulator            | 14.95 | 10.00     |
| Bubble Ghost             | 19.95 | 13.50     |
| Bubble Bobble            | 19.95 | 13.50     |
| Carrier Command          | 19.95 | 13.50     |
| Chessmaster 2000         | 24.95 | 16.50     |
| Crazy Cars               | 24.95 | 17.50     |
| Crash Garrett            | 19.95 | 13.50     |
| Dark Castle              | 24.95 | 16.50     |
| Defender of the Crown    | 29.95 | 19.95     |
| Deja Vu                  | 24.95 | 16.50     |
| Dungeon Master           | 24.95 | 16.50     |
| Eagles Nest              | 19.95 | 13.50     |
| Enduro Racer             | 14.95 | 10.00     |
| Flight Simulator 2       | 49.95 | 35.50     |
| Flintstones              | 19.95 | 13.50     |
| Football Manager         | 24.95 | 16.50     |
| Gauntlet                 | 19.95 | 13.50     |
| Get Dexter II            | 19.99 | 13.50     |
| Goldrunner               | 24.95 | 16.50     |
| Grid Iron (DS Disc only) | 24.95 | 16.50     |
| Guild of Thieves         | 24.95 | 16.50     |
| Gunship                  | 24.95 | 16.50     |
| Hollywood Poker          | 19.95 | 13.50     |
| I. Ball                  | 9.95  | 7.95      |
| Impact                   | 14.99 | 10.00     |
| Indiana Jones            | 19.95 | 13.50     |
| Jinxter                  | 24.95 | 16.50     |
| Jump Jet                 | 24.95 | 16.50     |
| Karate Kid 2             | 19.95 | 13.50     |
| Knightmare               | 19.95 | 13.50     |
| Knight Orc               | 19.95 | 13.50     |
| Las Vegas                | 9.95  | 7.95      |
| Leaderboard              | 24.95 | 16.50     |
| Major Motion             | 19.95 | 13.50     |
| Marble Madness           | 19.95 | 13.50     |
| Micro-League Wrestling   | 19.95 | 13.50     |
| Mission Genocide         | 9.95  | 7.95      |
| North Star               | 14.95 | 10.00     |
| Obliterator              | 24.95 | 16.50     |
| Ods                      | 19.95 | 13.50     |
| Powerplay                | 19.95 | 13.50     |
| Power Struggle           | 14.95 | 10.00     |

**GAMES/STRATEGY**

|                        | RRP   | Our Price |
|------------------------|-------|-----------|
| Predator               | 19.95 | 13.50     |
| Prohibition            | 19.95 | 13.50     |
| Rampage                | 19.95 | 13.50     |
| Rolling Thunder        | 19.95 | 13.50     |
| Scraples               | 19.95 | 13.50     |
| Sentinel               | 19.95 | 13.50     |
| Silent Service         | 24.95 | 16.50     |
| Slap Fight             | 19.95 | 13.50     |
| Solomons Key           | 19.95 | 13.50     |
| Space Ace              | 19.95 | 13.50     |
| Spidronic              | 19.95 | 13.50     |
| Spitfire 40            | 24.95 | 16.50     |
| Spy vs Spy             | 24.95 | 16.50     |
| Staff                  | 19.95 | 13.50     |
| Starfighter            | 24.95 | 16.50     |
| Star Trek              | 19.95 | 13.50     |
| Star Wars              | 19.95 | 13.50     |
| Super Sprint           | 14.95 | 10.00     |
| Test Drive             | 24.95 | 17.50     |
| Terrameax              | 19.95 | 13.50     |
| Terrorpods             | 24.95 | 16.50     |
| Tetris                 | 19.95 | 13.50     |
| The Pawn               | 24.95 | 16.50     |
| Thrust                 | 9.95  | 7.95      |
| Tournament of Death    | 19.95 | 13.50     |
| Trivial Pursuit        | 19.95 | 13.50     |
| Ultima IV              | 24.95 | 16.50     |
| Universal Military Sim | 24.95 | 16.50     |
| War Hawk               | 9.95  | 7.95      |
| Wizball                | 19.95 | 13.50     |
| Xenon                  | 19.95 | 13.50     |

**PERIPHERALS**

|                                 | RRP    | Our Price |
|---------------------------------|--------|-----------|
| CUMANA 1 Meg Disc Drive         | 129.95 | 129.95    |
| Philips 8833 Colour Monitor     | 274.95 | 274.95    |
| Star NL10 Printer + Cable       | 219.95 | 219.95    |
| Parallel Printer Cable          | 9.95   | 9.95      |
| 10 D/S D.D. Discs Including Box | 12.95  | 12.95     |
| Quickshot II Turbo              | 11.95  | 11.95     |
| Mousemat                        | 6.95   | 6.95      |

Phone for  
Latest Releases

**BOOKS**

|                             | RRP    | Our Price |
|-----------------------------|--------|-----------|
| Atari ST Internals          | 171.35 | 149.95    |
| Intro to MIDI Programming   | 14.95  | 14.95     |
| ST Gem Prog Reference Guide | 24.95  | 14.95     |
| ST Logo Reference Guide     | 14.95  | 14.95     |
| Disc Drives Inside and Out  | 14.95  | 14.95     |

**BUSINESS/UTILITIES**

|                                  | RRP    | Our Price |
|----------------------------------|--------|-----------|
| Accountant (Sage)                | 171.35 | 129.95    |
| Accountant Plus (Sage)           | 228.85 | 159.95    |
| Advanced Art Studio              | 24.95  | 16.50     |
| Assembler (Metacom)              | 49.95  | 34.95     |
| Back Pack                        | 49.95  | 34.95     |
| CAD 3D (GST)                     | 49.95  | 34.95     |
| Cashlink Integrated Accounts     | 339.25 | 249.95    |
| Degas Elite                      | 24.95  | 17.50     |
| Dewpac                           | 49.95  | 32.95     |
| Fast Basic (Disk)                | 44.95  | 35.95     |
| Fast Basic (Computer Concepts)   | 89.90  | 69.95     |
| First Word Plus                  | 79.95  | 54.95     |
| Fleet Street Publisher           | 115.00 | 89.95     |
| GFA Basic                        | 45.95  | 31.95     |
| GFA Basic (Advanced Programming) | 19.50  | 13.50     |
| GFA Compiler                     | 45.95  | 31.95     |
| GFA Companion                    | 29.95  | 23.95     |
| GFA Draft                        | 99.95  | 68.95     |
| Juggler                          | 24.95  | 16.50     |
| K-Comm                           | 49.95  | 35.95     |
| K-Data                           | 49.95  | 35.95     |
| K-Graph                          | 29.95  | 25.95     |
| K-Minirel (Mid)                  | 79.95  | 56.50     |
| K-Spread 2                       | 99.95  | 68.95     |
| Lattice C 3.04 (Metacom)         | 39.95  | 29.95     |
| Microtime Clockcard              | 24.95  | 17.50     |
| Music Construction Set           | 89.95  | 72.95     |
| Pascal V.2 (Metacom)             | 59.95  | 44.95     |
| Pro Sound Designer               | 159.85 | 124.95    |
| Publishing Partner               | 19.95  | 13.50     |
| Quantum Paint                    | 49.95  | 34.95     |
| Super Conductor (Mid)            | 99.95  | 67.95     |
| Superbase Personal               | 228.95 | 174.95    |
| V.I.P Professional (GEM)         |        |           |

Offers subject to availability. Prices may change without notice.  
Goods are normally despatched within 24 hours



All prices include VAT + Free delivery  
To Order - Cheques + Postal Orders to **CBS COMPUTERS** or send Visa/Access Details - Please state ST  
Please send SAE for full price list. Please endorse cheques with bankers card/credit card number

**Mail Order Division, 17 Eversley Road, Bexhill-on-Sea, East Sussex. Tel: (0424) 221931**





Product: Computer Scrabble De Luxe  
 Price: £19.95  
 Supplier: Virgin Games, 2-4 Vernon Yard,  
 Portobello Road, London W11 2DX  
 Tel: 01-727 8070

# Exciting conversion

SCRABBLE, the computer game, has been around for many years – I've played it on three different machines. Thankfully Virgin is not a company to rest on its laurels, so the latest version makes full use of the increased processing power and memory capacity of the ST to make it the best to date.

The transition from board to screen is very rarely successful – the final product is usually little more than a gimmick. However, Scrabble is one which actually benefits from the conversion.

Scrabble Deluxe contains a dictionary of more than 23,000 words, held in ram and used for the program's own selections and to verify those entered by a player. The computer will challenge any word not found in the dictionary, but will concede to your better judgement if you maintain that the word is valid.

The board fills most of the screen and is beautifully created in pastel hues. To the right is a bank of miniature tile racks, with a large scale representation of the current player's rack at the bottom of the screen. Across the top of the screen are the pull-down menus through which the game features are accessed.

To begin a game you must first click on the File menu, which offers a choice of New game, Resume game, or Save game. Selecting New game prompts the computer to request the names of up to four players – computer opponents must be assigned a skill rating in the range one to eight; humans have to rely on their grey matter.

Skill levels one to four are limited to a subsection of the dictionary, whereas five to eight can use all two, three, and four letter words – some of which are very obscure.

A mouse controlled pointer is used to

indicate the starting square for your word; the correct orientation is shown by clicking on either the Down or Across box. Assuming the computer doesn't challenge your word, the points for your turn are totalled and added to your score. Control then passes to the next player.

The Options menu is used to access the game options available in the board game, plus a few more that aren't. If you are staring at the rack of letters, desperately trying to visualise a feasible word, the Juggle option can be used to shuffle the letters around and maybe spark an idea.

Pass and Change tiles are identical to their board game counterparts. Hint is a new one – if you are willing to admit that you can't take on the computer without cheating, you can request this. Your ST will look in its dictionary and throw you the first word that fits and it will even show you where to put it.

Force provides a second way of cheating. By clicking this option you force the computer to play the word it is currently thinking of. If it hasn't thought of one, it will pass or change tiles.

The Display menu lets you determine how much information is to be shown on the screen. If just you and the ST are playing you may want to have your tiles on permanent display, thus giving you chance to think while it is making its own move.

When two or more human competitors are playing it is advisable to have the View racks option switched off as it is not unknown for a preceding player to block your next move rather than lay a higher

scoring word. The on-screen clock is probably the most useful of the new features. No longer do you have to sit patiently while an opponent decides how best to lay his Qs and Zs. As soon as the clock reaches a pre-determined time limit the move is forfeit and the next person takes their turn.

Scrabble is the perfect game for those evenings when your starfighter has blown a turbo, or the dragon has eaten the princess. Just sit back, relax, and wrap your brain around a more intellectual challenge.

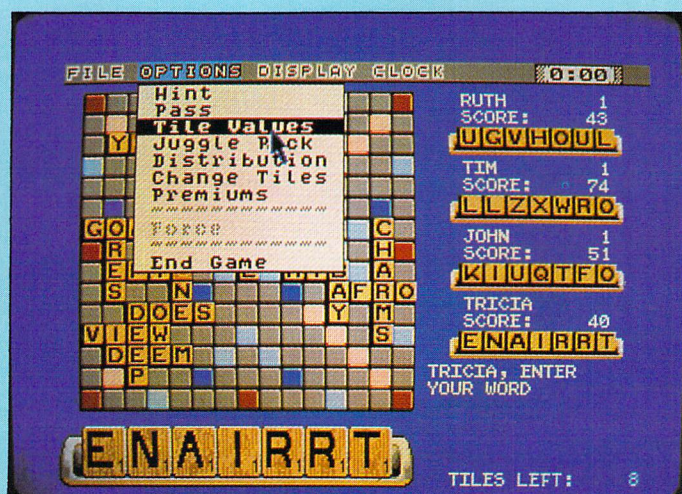
Jon Revis

|                      |    |
|----------------------|----|
| Sound .....          | 1  |
| Graphics.....        | 8  |
| Playability .....    | 10 |
| Value for money..... | 8  |
| Overall .....        | 8  |

## SECOND sight

*I'm a great fan of the original, so I welcomed this computerised version. However, it still doesn't prevent those cries of "What, you can't have that – it's not a proper word!". It plays a mean game, and on several occasions I ran for my dictionary to check whether the ST was cheating. It wasn't.*

Andy Richards





# Achieving the impossible

Program: *Return to Genesis*

Price: £24.95

Supplier: Firebird, 64-76 New Oxford Street, London WC1A 1PS.

Tel: 01-240 8838

WHETHER or not you actually liked Microdeal's Goldrunner, there can be few who would dispute that in it Steve Bak created the fastest and smoothest vertically scrolling shoot-'em-up on the ST.

After going on to produce Jupiter Probe and Karate Kid 2, with Pete Lyons providing the graphics, the dynamic duo has taken time out to stretch the ST's capabilities yet again with *Return to Genesis* for Firebird.

Up until now it was said that the ST wasn't very good at horizontal scrolling because there wasn't the hardware support. But that man Bak has again come up with the goods and done what many would have said was impossible – Ultra fast, smooth horizontal scrolling.

The game's accompanying booklet reveals the scenario. The story starts in the middle of the Bacterial Revolution in the year 4600. Twelve top scientists were asked to volunteer for the Genesis Project.

This entailed cloning each one 50 times and setting them up on newly-constructed worlds in the Zephyr region. The scientists soon made the breakthrough that saved mankind, and the discoveries continued for another 1600 years.

In the year 6204 came the Zephyr invasion by the Mechanaughts. The defences were overwhelmed, the scientists were enslaved and forced to bolster the Mechanaughts' cause. This is

where you come in. Piloting an assault ship, you search the the various worlds, picking up scientists and avoiding, or destroying, the defending Mechanaught ships.

The screen is split with the top half taken up by a control panel showing your score and lives remaining. The bottom half is where the action takes place, with the view being from above.

The foreground scrolls horizontally in either direction incredibly quickly and smoothly, and gaps in it reveal a detailed background underneath. The effect is stunning.

The first world is a pretty bleak place, consisting of grey metallic pipes, blocks, panels and generators. It gets much brighter further on with glowing cherry red worlds, and one which is quite memorable as it is so revolting.

At the bottom of the screen is a thin strip making up a scanner showing the foreground scenery and the obstructions on it, and the positions of the scientists and Mechanaughts. The aliens appear off screen and rapidly head towards you. By the time you've noticed them on the scanner they are likely to be on screen and firing.

The scenery is not flat, so you have to fly round certain objects. Fly into something at full speed and you don't explode, but rebound and fly backwards at a terrific rate – usually into the alien that was chasing you.

I particularly liked the tunnels. Some of the scenery is hollow, enabling you to fly inside it. On one of the levels it is necessary to fly through one of two parallel long coils, and if you get an alien behind you it's panic stations. Halfway down is your



one chance to shake the pursuer, because there's a gap leading into the other coil.

In your defence you have the ubiquitous laser. This isn't much help if you're surrounded by aliens taking pot shots, but help isn't far away. Each scientist has his or her own field of interest, and may have a completed project that can be incorporated into your ship.

The instructions list each scientist and his speciality, and details the type of bolt-on extra you can hope to receive. Alas, on the first world it appears that only one scientist, Elderet, has a finished project you can use.

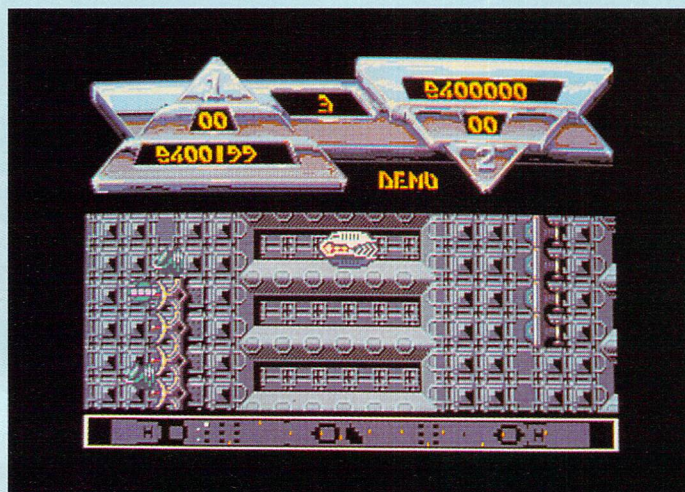
Jab the Help key and the faces of the scientists you've picked up appear. Select one, and if a completed project is available it will be used: Elderet's adds triple laser fire. The next objective is to pick up someone who will fit your ship with a shield.

While your adventures on the Zephyr worlds take place a typically energetic musical soundtrack hammers along, interspersed with zapping noises and explosions, and the odd sampled phrase.

Technically, *Return to Genesis* is stunning, but it is very difficult. For those who can think and react fast enough it represents one of the finest arcade blasts yet to grace an ST.

**Mark Luckham**

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



## SECOND sight

Just as *Goldrunner* is the ultimate vertically scrolling shoot-'em-up, setting the standard which no one has yet matched, *Return to Genesis* is set to become the standard for horizontally scrolling games. It is technically brilliant, though some found it too difficult to play. It's frustrating, but fun.

**Andy Richards**





Screenshots from Atari ST version

The best-selling Starquake, created by Steve Crow and Bubble Bus, is at long last available for the Atari ST and Amstrad PC – and it's been well worth the wait!

There's 500 action-packed screens and a gameplay that's second to none as you navigate BLOB, the Bio-Logically Operated Being through underground caverns to re-stabilise the planet's core.

Cleverly-animated graphics and exciting sound combine to produce a classic arcade-type game.

**MANDARIN**  
SOFTWARE

Europa House, Adlington Park,  
Adlington, Macclesfield SK10 4NP.

ENQUIRIES: 0625 879940

ORDER HOTLINE: 0625 879920

#### Look at the ratings Starquake has received:

*Crash: Smash (96%)*  
*Zzap 64: Sizzler (93%)*  
*Amtix: Accolade (91%)*  
*C&VG: Game of the Month*  
*Commodore User: Screen Star*

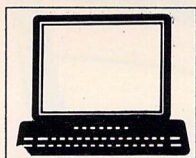
*Commodore Computing:*  
*Mega Rating*  
*Sinclair User: \*\*\*\*\**  
*Amstrad Action: AA Rave*  
*... and many more!*

**£19.95**

Available on Atari ST,  
Amstrad PC, IBM PC  
and PC compatibles

Available from all good stockists or order direct by sending a cheque or postal order made payable to Mandarin, together with your name and address. Price includes P&P. Access/Visa owners: Phone our hotline or send your card number with your order.





# BYTEWARE

**BUYING ANYWHERE ELSE CAN  
SERIOUSLY DAMAGE YOUR  
WEALTH!!**

| Title                  | RRP    | Our Price | Title                     | RRP   | Our Price |
|------------------------|--------|-----------|---------------------------|-------|-----------|
| Dungeon Master         | 24.95  | 16.50     | Arcade Force 4            | 24.95 | 16.50     |
| Police Quest           | 19.95  | 13.50     | Enforcer                  | 9.95  | 6.70      |
| Ultima 4               | 24.95  | 16.50     | Buggy Boy                 | 19.95 | 13.50     |
| Carrier Command        | 24.95  | 16.50     | Damecles                  | *     | *         |
| Power Basic            | 39.95  | 25.95     | Impact                    | 14.95 | 9.95      |
| Predator               | 19.95  | 13.50     | Obliterator               | 24.95 | 16.50     |
| Roadwars               | 19.95  | 13.50     | Gunship                   | 24.95 | 16.50     |
| Supersprint            | 14.95  | 9.95      | Kings Quest Triple Pack   | 24.95 | 16.50     |
| Crash Garret           | 19.95  | 13.50     | Time & Magik              | 19.95 | 13.50     |
| Xenon                  | 19.95  | 13.50     | Test Drive                | 24.95 | 16.50     |
| Tempus                 | 34.95  | 22.95     | Tanglewood                | 19.95 | 13.50     |
| Star Wars              | 19.95  | 13.50     | Battleships               | 19.95 | 13.50     |
| International Soccer   | 19.95  | 13.50     | Football Manager 2        | *     | *         |
| Comp. Hits             | 29.95  | 19.50     | Bubble Bobble             | 19.95 | 13.50     |
| Star Trek              | 19.95  | 13.50     | Ikari Warriors            | 14.95 | 9.95      |
| Fast ST Basic          | 44.95  | 29.50     | Sinbad                    | *     | *         |
| Fast ST Basic (Rom)    | 79.95  | 51.50     | Chessmaster 2000          | 24.95 | 16.50     |
| Deja Vu                | 24.95  | 16.50     | Star Glider 2             | 24.95 | 16.50     |
| Backlash               | 19.95  | 13.50     | E.P.T.                    | 24.95 | 16.50     |
| Barbarians (Psygnosis) | 24.95  | 16.50     | Degas Elite               | 24.95 | 16.50     |
| Flight Simulator 2     | 44.95  | 29.50     | Spitfire 40               | 24.95 | 16.50     |
| Formula One Grand Prix | 19.95  | 13.50     | Jinxter                   | 24.95 | 16.50     |
| Winter Olympiad '88    | 19.95  | 13.50     | Ancient Mariner           | *     | *         |
| Space Harrier          | *      | *         | Dark Castle               | 24.95 | 16.50     |
| Devpac                 | 49.95  | 32.50     | Rampage                   | 14.95 | 9.95      |
| Enduro Racer           | 19.95  | 13.50     | Gauntlet 2                | *     | *         |
| Captain Blood          | *      | *         | Academy                   | 19.95 | 13.50     |
| Rockford               | 19.95  | 13.50     | Marble Madness            | 24.95 | 16.50     |
| Pink Panther           | 19.95  | 13.50     | Music Construction Kit    | 24.95 | 16.50     |
| Football Manager       | 14.95  | 9.95      | Legend of the Sword       | 19.95 | 13.50     |
| Fleet Street Publisher | 115.00 | 75.50     | Barbarian (Palace)        | 14.95 | 9.95      |
| Outrun                 | *      | *         | Bards Tale I              | 24.95 | 16.50     |
| Defender of the Crown  | 29.95  | 19.50     | * Please phone for price! |       |           |

**LARGE RANGE OF TITLES AVAILABLE WITH UP TO 35% OFF RRP  
ORDERS DESPATCHED IN 24 HOURS  
ADVANCE ORDERS TAKEN FOR FORTHCOMING RELEASES -  
DESPATCHED ON DAY OF RELEASE  
UPDATED PRICE LIST SENT WITH EACH ORDER**

**PRICES INCLUDE POSTAGE + PACKAGING**

**BYTEWARE  
9 MARITIME TERRACE, SUNDERLAND, TYNE & WEAR SR1 3JT  
TEL: 091-514 4222**

## SOFTWARE ORDER FORM (BLOCK CAPITALS PLEASE)

| TITLE | AMOUNT |
|-------|--------|
|       |        |
|       |        |
|       |        |
|       |        |
|       |        |

CHEQUES/P.O'S PAYABLE TO BYTEWARE LTD

ATARI ST USER - APRIL '88



Name .....

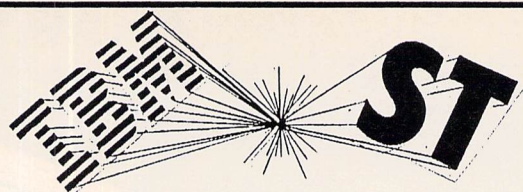
Address .....

.....

.....

.....

Tel: .....



**"NOW there is NO need for  
COMPARISON"**

Introducing from Australia the Atari ST IBM Emulator package. . .

## The LIGHTSPEED PC PACK

"All you'll ever need to run hundreds of IBM programs on your Colour OR Mono ATARI ST or MEGA System."

Supplied with a state of the art 40/80 track disc drive, tinted acrylic case, interface cabling, 240 volt power adapter, and of course the worlds best and most compatible emulator software, PC Ditto.

This pack allows you to use "out of the box" IBM software, there is nothing else to buy in order to make your ATARI run hundreds of IBM programs. Just plug in and go.

The drive can also be used as a second ATARI double sided drive saving you money by utilising the cheaper 5.25" rather than the expensive 3.5" discs.

Includes full warranty, Insurance and Postage. All this for only

**£215.00**

Add £16 for Air Mail or £8 for Surface Air Lifted Mail. (Disk Drive £140, PC Ditto £75). Australian price \$560 includes 20% sales tax and delivery anywhere in Australia.

Available from Computer Oasis, see address below

## AUSTRALIAN MAIL ORDER

You'd have to go a lot further than this to get better prices

*Free comprehensive price list*

Why send away to the USA or the UK for your software and Hardware needs? We are the agents for some of the largest European and American companies and can offer you discounts normally only associated to bulk buying.



- Software
- Modems
- Cables
- Diskettes
- Dust Covers
- Printer Ribbons
- Ram Upgrades

WE SELL TO USER GROUPS THE WORLD OVER. IS YOUR CLUB GETTING A DISCOUNT TOO?  
SUPPLIERS OF 3rd PARTY HARD/FLOPPY DISK DRIVES  
LASER PRINTING SERVICE

**Computer  
Oasis**



Shop 37, Upper Level, Grove Plaza,  
460 Stirling Highway,  
Cottesloe, Western Australia 6011  
Telephone: (09) 385 1885 Fax: (09) 385 1765  
Telex: AA94891

**\* INTERNATIONAL IMPORTERS AND EXPORTERS \*  
Dealer enquiries welcome.**



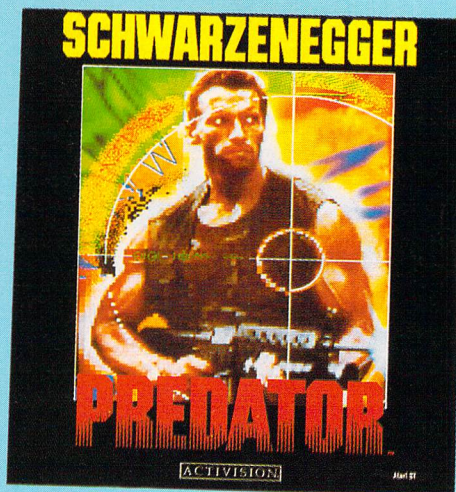
# Rambo role playing

Program: *Predator*

Price: £19.99

Supplier: Activision, 23 Pond Street,  
Hampstead, London NW3 2PN.

Tel: 01-431 1101



THE peace of the jungle is disturbed by the drone of an approaching helicopter. Hovering above the ground it disgorges six commandos who disappear into the bush. Bringing up the rear you follow them in as the chopper lifts away.

You soon find the wreckage of the senators' missing helicopter which you have been sent to find – but no sign of the eminent politicians themselves. Enemy guerillas have also found the wreckage, and some of your comrades too.

A sniper hiding in the crashed chopper is quickly despatched with a short blast of your sub machine gun, but you then come under attack by swooping vultures. They inflict serious damage to your energy levels and must be shot if you are to survive.

The ordeal of vultures over, you come across the remains of their last meal – one of your former team mates, lying in a pool of blood. Ammunition is now low, but you are gratified to find your comrade's gun still has a full magazine.

Suddenly the screen turns blue, a sinister hum pervades the air and you get the feeling you're being watched. An alien creature has fallen to Earth and has picked you out as its next victim. Tracking you through the jungle, it will

kill you with two laser bolts if you hang around long enough to be caught in its sights.

Continuing with your mission you come under constant attack from enemy guerillas, rushing-straight at you, popping out of concealed foxholes, firing from sand-bagged gun emplacements, or from the cover of buildings.

You have the option of hurling grenades as well as shooting, but keep an eye on ammo levels. If your ammunition is depleted you are able to defend hand-to-hand, but unless you can get a strike in straight away you're done for.

You start part two of this escapade with whatever ammunition you had left over from part one. The game continues with more attacks to deal with and weapons to

collect as you run out of ammo in nail biting situations.

The graphics in *Predator* don't stretch the ST. Walking behind tree stumps or weapons can give the impression that they are floating in mid air. Solid sandbagged walls can be walked through and the overall quality of the background illustration lacks the atmosphere which the game demands.

*Predator* has a lot going for it. Reflexes must be sharp, the feeling of tension builds as you progress through the jungle and the action is fast and furious.

**Niels Reynolds**

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

## SECOND sight

*This is very similar to Ikari Warriors. The difference is that here the scenery scrolls sideways, whereas Ikari scrolls vertically. It's basically a Rambo type game in which you cut, hack and blast your way through the jungle. It's good, but I think I prefer Ikari.*

**Andy Richards**

# Stylish conversion

Product: *Captain Blood*

Price: £19.95

Supplier: Infogrames, Mitre House, Abbey  
Road, Enfield, Middlesex EN1 2RQ.

Tel: 01-364 0123

TWO months back, in the April 1988 issue of *Atari ST User* we reviewed the spectacular French epic *Captain Blood*.

The English conversion has just arrived and there are quite a few (minor, but important) changes and enhancements to the game which make it even better.

The first change you'll notice is the title screen, which is quite different, and I prefer it. When the game starts a terrifying creature reminiscent of the one in the film *Alien* slides down the ramp on the right of the screen. You've just given birth!

Unlike the original, not all planets have

defence systems, which makes flying to the rendezvous point with the alien much simpler, even boring.

Down on the first planet – you always start in orbit above an inhabited world – the alien is different, and is quite keen to be teleported aboard your ship. Communicating with him is much easier as the icons used by the upcom module are in English.

Selecting your destination from the galactic chart is now achieved by dragging a horizontal and vertical line so that they intersect at your intended target.

The amazing graphic display on entering hyperspace is now accompanied by the throbbing sound of your ship's engines. While on the subject of sound, I should also mention that the French digitised speech is now in English.

The documentation is also in English,

and I discovered several new features which had previously gone unnoticed, partly because of my poor knowledge of French.

What I had previously considered to be a bug – *Blood*'s violently shaking hand – is actually a feature: He is degenerating and must replenish his vital fluids by disintegrating his clones in the Ark's frigidarium.

*Captain Blood* was a brilliant game in its original French form. The English conversion has been significantly improved, and is now even better.

**Roland Waddilove**

|                      |    |
|----------------------|----|
| Sound .....          | 10 |
| Graphics.....        | 10 |
| Playability .....    | 10 |
| Value for money..... | 10 |
| Overall .....        | 10 |



Mail Order  
For all your  
software needs

# Cottage Software

All prices  
include VAT  
and delivery

OUR AIM IS TO SUPPLY YOU, THE CUSTOMER, WITH THE BEST VALUE FOR £££££

## GAMES /STRATEGY

|                               |       |                              |       |
|-------------------------------|-------|------------------------------|-------|
| Arkanoid .....                | 9.50  | Leaderboard .....            | 14.95 |
| Barbarian .....               | 15.50 | Little Computer People ..... | 9.95  |
| Black Lamp .....              | 13.50 | Mercenary Compendium .....   | 15.95 |
| Bubble Bobble .....           | 12.50 | Moebius .....                | 16.95 |
| Crystal Castles .....         | 11.95 | Nord & Bert .....            | 18.95 |
| Dark Castle .....             | 15.50 | Plundered Hearts .....       | 15.75 |
| Defender of the Crown .....   | 18.95 | Pawn .....                   | 15.75 |
| Dejavu .....                  | 15.95 | Red October .....            | 15.50 |
| Diablo .....                  | 9.95  | Road War 2000 .....          | 15.95 |
| Enchanter .....               | 18.95 | Space Quest II .....         | 15.75 |
| Enduro Racer .....            | 9.50  | Starglider .....             | 15.75 |
| Flight Simulator II .....     | 31.95 | Star Trek .....              | 12.50 |
| Gauntlet .....                | 14.95 | Tass Times .....             | 10.50 |
| Guild of Thieves .....        | 15.95 | Terramax .....               | 12.95 |
| Hacker I .....                | 9.50  | Terramex .....               | 12.95 |
| Hacker II .....               | 9.50  | Terrapods .....              | 15.75 |
| Hollywood Poker .....         | 9.50  | Time Bandit .....            | 22.50 |
| Indiana Jones .....           | 12.75 | Thai Boxing .....            | 6.95  |
| Jewels of Darkness .....      | 10.50 | Trivia Trove .....           | 8.95  |
| Jinxter .....                 | 15.95 | Ultima IV .....              | 16.50 |
| Joe Blade .....               | 6.95  | Western Games .....          | 13.50 |
| Jump Jet .....                | 9.50  | Winter Olympiad 88 .....     | 12.50 |
| Karting Grand Prix .....      | 6.50  | Wishbringer .....            | 10.35 |
| Kings Quest Triple Pack ..... | 16.95 | Zork 1, 2 or 3 (each) .....  | 10.50 |
| Knight Orc .....              | 12.50 | 500cc Grand Prix .....       | 13.50 |

## BUSINESS SOFTWARE & UTILITIES

|                              |        |                            |        |
|------------------------------|--------|----------------------------|--------|
| Accountant .....             | 128.95 | K-Rikki .....              | 13.95  |
| Advanced Art Studio .....    | 16.95  | K-Roget .....              | 35.95  |
| Aegis Animator .....         | 41.95  | K-Seka .....               | 34.95  |
| Analyse .....                | 69.95  | K-Spell .....              | 13.95  |
| Art Director .....           | 37.95  | K-Spread 2 .....           | 55.50  |
| Book Keeper .....            | 84.95  | K-Word 2 .....             | 41.50  |
| Cambridge Lisp .....         | 109.95 | Lattice "C" Ver 3.04 ..... | 68.95  |
| Devpac ST .....              | 35.95  | Mac Roms .....             | 51.95  |
| Digi Drum .....              | 16.95  | Mailshot .....             | 17.95  |
| Digi Interface .....         | 27.95  | Mailshot Plus .....        | 34.95  |
| Film Director .....          | 43.95  | MCC Assembler .....        | 35.95  |
| Fleet Street Publisher ..... | 85.95  | MCC Pascal .....           | 64.95  |
| GFA Basic Compiler .....     | 31.50  | Modula 2 Dev .....         | 109.95 |
| GFA Basic Interpreter .....  | 31.50  | Modula 2 Std .....         | 71.95  |
| GFA Draft .....              | 68.50  | Prodigitizer .....         | 169.95 |
| GFA Vector .....             | 23.95  | Promidi Interface .....    | 11.95  |
| Graphic Sheet .....          | 45.95  | Prosound Designer .....    | 42.95  |
| Habadox .....                | 19.95  | Purchase Ledger .....      | 36.95  |
| Habapak .....                | 61.95  | Quantum Paintbox .....     | 12.95  |
| Jack Font .....              | 34.95  | Realizer .....             | 83.95  |
| K-Comm 2 .....               | 35.95  | Sales Ledger .....         | 36.95  |
| K-Data .....                 | 33.95  | Superbase Personal .....   | 64.95  |
| K-Graph 2 .....              | 34.95  | Tool Kit .....             | 21.95  |
| K-Minstrel .....             | 19.95  | Word Perfect .....         | 165.50 |
| K-Occam .....                | 41.95  | 220ST .....                | 20.95  |

Just because you don't see it – doesn't mean we haven't got it

For full details, send a stamped, addressed envelope

Please make cheques or postal orders payable to: 'COTTAGE SOFTWARE'

Please endorse cheques with bankers card number

ATARI ST

P.O. Box No. 8, Shaw OL2 8QN. Telephone: 0706 845365

ATARI ST

# UNBEATABLE 3 1/2" VERBATIM DISC PRICES

|              | 10     | 25     | 50     | 100     | 250     |
|--------------|--------|--------|--------|---------|---------|
| Single sided | £11.85 | £29.45 | £56.95 | £105.75 | £259.95 |
| Double sided | £13.95 | £34.65 | £67.95 | £127.95 | £299.95 |

PHONE  
24  
HOUR

Disc Value



- Life-time guaranteed, double density 135 TPI **verbatim** discs for your machine. (Single-sided available.)
- Don't be put off by the low price! These discs are **not recertified but top quality** media direct from the verbatim warehouse
- "No quibble," money back guarantee
- Absolutely no extras, price includes VAT, label sets plus first class/ Datapost to your door.



# DOCTOR SOFT 0903 776000

OR CHEQUE/P.O. TO P.O. BOX 66 EAST PRESTON WEST SUSSEX BN16 2TX





# Computer Adventure World



Bank Buildings, 1A Charing Cross, Birkenhead L41 6EJ  
Telephone: 051-666 1132

We carry over 200 ST titles at our retail shop and are specialists in Adventures, Fantasy, Wargames, Strategy, Sports & Simulations.  
The latest titles include:

## ADVENTURE/FANTASY

|                           |        |
|---------------------------|--------|
| Legend of the Sword ..... | £21.50 |
| Dungeon Master .....      | £21.50 |
| Ultima IV .....           | £21.50 |
| Bards Tale .....          | £23.00 |
| Wizards Crown .....       | £21.50 |
| Beyond Zork .....         | £21.50 |
| Time & Magik .....        | £18.50 |
| Leisure Suit Larry .....  | £18.50 |
| Captain Blood .....       | £18.50 |

## WARGAME/STRATEGY

|                                |        |
|--------------------------------|--------|
| Wargame Construction Set ..... | £21.50 |
| Carrier Command .....          | £21.50 |
| Univ. Military Sim. ....       | £21.50 |
| Power Struggle .....           | £13.75 |
| Spitfire 40 .....              | £21.50 |
| Gunship .....                  | £21.50 |
| Hunt for Red October .....     | £21.50 |
| Chessmaster 2000 .....         | £23.00 |
| Shanghai (Mahjong) .....       | £12.99 |

## SPORTS

|                            |        |
|----------------------------|--------|
| Soccer Supremo .....       | £13.75 |
| International Soccer ..... | £18.50 |
| Seconds Out .....          | £18.50 |
| Mean 18 .....              | £19.99 |

## ACTION

|                     |        |
|---------------------|--------|
| Obliterator .....   | £21.50 |
| Goldrunner II ..... | £18.50 |
| Leathernecks .....  | £18.50 |
| Outrun .....        | £18.50 |

**SPECIAL TITLES:** Please check before ordering as these are US imports & subject to stock fluctuations.

However if you do order, your cheque or credit card will not be cashed until we despatch the programmes:

Empire £35.00; Great Battles £34.00; Breach £34.00 and Scenario Disc £19.00

Simul. Canada Wargames at £35.00 each (Golan Front, 5th Escadra, 7th Fleet, Stalingrad, Grey Seas/Skies, Long Lance & Fall Gelb). Lance Haffner's 3 in 1 Football £32.50.

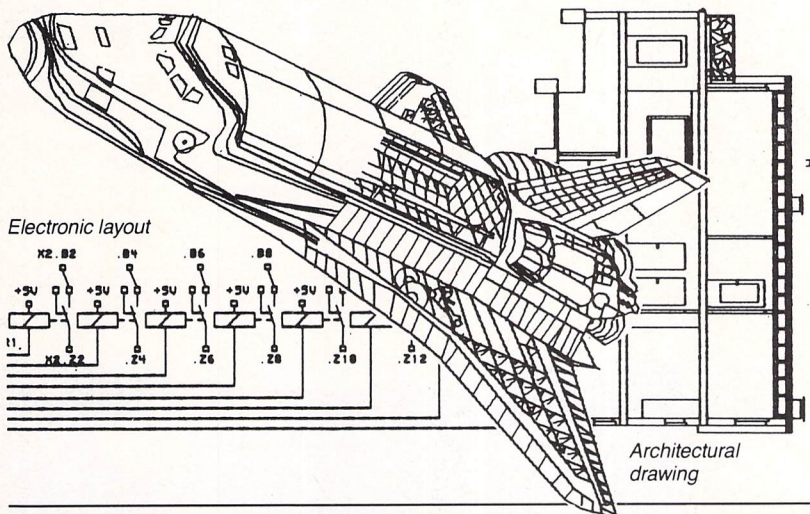
Avalon Hill games including Super Sunday £30.00. We constantly seek new releases.

Postage: UK Free; Europe £2 per game; Outside Europe £4 per game (Air Mail).  
Payment: Visa, Mastercard, UK cheque, Postal Order, Eurocheque or Girocheque

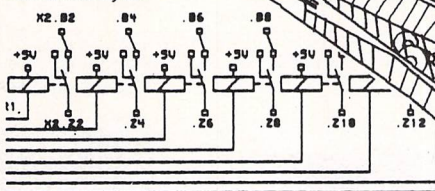
**SEND LARGE SAE FOR FREE PRICE LIST & SOFTWARE EXTRA DISCOUNT VOUCHER**

# GFA DRAFT Plus

*Mechanical design*



*Electronic layout*



*Architectural drawing*

- Powerful GEM based
- Runs in inches, mm, metres
- Symbols and picture elements can be rotated, skewed, etc.
- Arcs through three points
- Corners to straight lines
- 255 drawing planes – 10 displayed simultaneously
- Hatching of chosen area
- Printer and Plotter support
- No limit on symbol library

**£139.95 (incl. VAT)**

**For details of other products for ST's and many other computers, write or phone for free catalogue.**

Glentop's products are available from computer stores and bookshops or, in case of difficulty, directly from Glentop. When ordering directly from Glentop, please enclose £1 p&p and allow 28 days for delivery.

Glentop Press Ltd  
Bath Place  
High Street  
Barnet, Herts  
EN5 5XE



Telex: 22828 Telephone: 01-441 4130

**GLENTOP**



*It used to be a combination of the labours of Hercules and Waiting for Godot. Today it still takes plenty of puff and patience, but at least things are getting better. What are we talking about? Bringing a new modem to market. Here TONY LEAH describes what is involved in putting a modem on to your local micro dealer's shelf.*

**G**ETTING a modem through the British Approvals Board for Telecommunications used to be a tortuous process. It could – and in many cases did – take anything up to 12 months to obtain the right to put BABT's green sticker on a comms device. Since September last year, however, things have changed for the better.

To solve the problem of ever-lengthening queues of applications at the Board's Walton on Thames headquarters a pilot scheme has started which transfers some of the work to three independent laboratories accredited by BABT.

The new MicroLink modem could have gone to any of them for testing, but it was decided – for reasons of convenience as much as anything – to send it to Kingston Telecommunications Laboratories at Hull.

The procedures announced last year to speed up the BABT approval process enable KTL to arrange approval testing directly with the manufacturer. In addition KTL can discuss a new device with the manufacturer while it is under development, eliminating much time-wasting in technological blind alleys.

When the manufacturer is ready, he submits detailed technical information about the product to the laboratory. This includes the full technical description, circuit diagrams, parts lists and user guides.

"We go through that documentation thoroughly and work out what tests are required and to what standards", said KTL's laboratory manager Stephen Denison. "Only then can we write our test and assessment schedule".

Having written the test schedule, KTL

sends the manufacturer its quotation for the work that has to be carried out and, if accepted, makes arrangements for the job to begin. "We're usually able to start within a fortnight of receipt of the order", said Denison. Normally the manufacturer is asked to supply at least two samples of his device along with associated spare components – "just in case".

Another time-saver under the new system is that once the project begins KTL sends off a duplicate set of all information supplied by the manufacturer, plus a copy of the test and assessment schedule, to BABT.

Testing is mainly a mixture of two things – safety and network compatibility. The first is to ensure that the device protects the user from voltages likely to arrive on the network and the network is

hits a failure the lab wastes no time informing the manufacturer and mutually agreeing a formula for modification, and re-testing if necessary. This can be an important factor due to the knock-on effect of component failure. For instance, if a device fails an impedance test the problem could affect signal power levels.

A major task is to check that the manual supplied with the modem contains ALL the statements necessary to meet BABT and Ofitel standards. Failure to "get the words right" is as common a reason for rejection as bad wiring according to Stephen Denison.

Another key area the lab looks at is labelling of the device, but that concerns only the "back and underneath" of the equipment – all those little labels that start off with "warning" or "caution" – but

## How a modem gets its seal of approval

protected from the device. The second involves measurement of impedance, dialling characteristics, signal power levels and so forth.

"The manufacturer can witness the tests – in fact we encourage him because it is beneficial to both parties", said Denison. "For instance, he can save a lot of time by helping configure equipment for testing, particularly where transmission speeds are concerned. We're quite happy to have his representatives looking over our shoulders, and in keeping with our policy of complete confidentiality we have six separate testing rooms so visiting engineers can't see another firm's equipment".

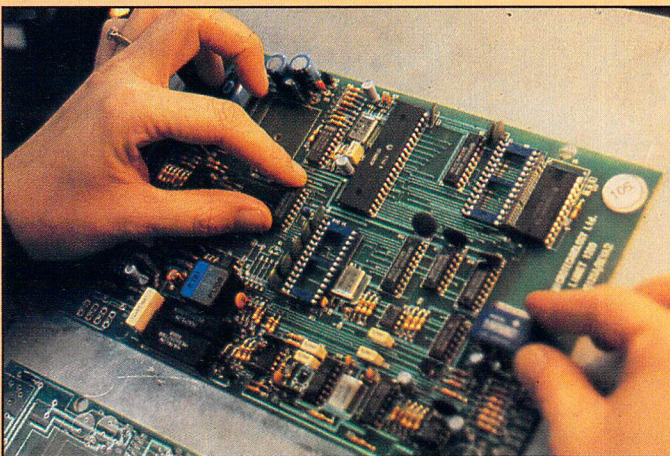
During testing KTL keeps a close liaison with BABT, whose engineers visit the laboratory at least once a fortnight to check on the progress of all the equipment undergoing examination. If a device

not the business end the user sees when operating the device.

Odd though it may seem to comms users like myself, the lab doesn't concern itself with whether, for example, the modem connect button actually connects the modem if you push it. Or whether the line hold light works or is merely decorative.

"It has been decided by the powers that be that the user and market forces control the quality of data transfer", explained Stephen Denison. "We don't check if the modem transfers data to other equipment correctly – it isn't our job. Correct interfacing with the telephone network is what we're paid to ensure".

When the test and assessment schedule is completed, KTL makes out a full report describing everything that has happened since the device came through





its front door. This is no light task. The average report is more than half an inch thick, weighing nearly as much as the modem itself.

The report includes a full analysis of all the test results – and even colour pictures of the modem's insides for BAPT records to make sure it continues to be made the same way as the original version.

Depending on the type of modem, the test alone can cost up to £2,500. But the manufacturer at least knows that the toughest part of the approvals process should now be over.

Contrary to popular opinion, BAPT is not a quasi autonomous bureaucracy armed with a big stick to bash innocent modem manufacturers. Assistant director Barry Cartman was at pains to point out: "We're no quango – we're a private limited company set up to operate on a commercial basis and given responsibility by the government to ascertain whether communications devices meet the standards of the 1984 Telecommunications Act.

"The main concern is to decide if the device is safe for the user and the network and, particularly in the case of slower modems, this also means safe for connection to the mains – all of which is in everyone's interests.

"Dialling and answering capabilities and functions are checked out to ensure they won't interfere with other network users.

"Assuming that one of the three independent laboratories has handled the test and assessment procedures, BAPT comes into the picture in three ways.

"First we have to exercise our professional judgement and decide if the test data is satisfactory – the lab does not have this authority – so that the approvals process can go forward. Then we have to check out the manufacturing facilities for the device and, finally, we have an ongoing responsibility to ensure that approved standards are maintained".

To do all this, BAPT – set up in January 1983 – maintains a permanent staff of 20

professional engineers plus an equal number of support staff at its headquarters in suburban Walton on Thames.

Perhaps surprisingly, the engineers at BAPT don't usually see the modems they are dealing with. Documentation from the manufacturer and the test lab is what's important.

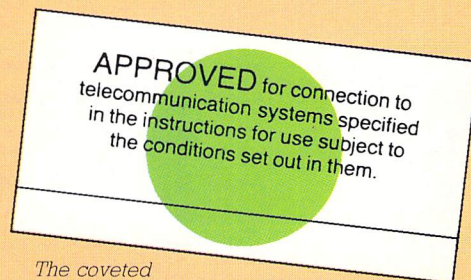
"But let me make it clear that this is far from being a mere paper-shuffling exercise", Barry Cartman insisted. "When the test data report and product information is allocated to an engineer he goes through it with a toothcomb from start to finish and back again.

"In addition to checking that the test data is fine, we also inspect the production facilities to see that they are capable of producing a modem to the required standards".

At the end of the day if the factory arrangements are satisfactory and BAPT feels it has an approvable modem on its hands it issues a recommendation to OfTel and the manufacturer is free to market the device. The legal approval document is issued by OfTel, usually within weeks.

However, BAPT's interest doesn't stop there. The manufacturer will have paid between £1,000 to £1,800 to BAPT in addition to the hefty sum he has also paid the testing laboratory. And he has to continue paying an ongoing annual licence fee – 20 per cent of the original BAPT charge for approval – for as long as he wants to go on selling the product. This annual fee covers any modifications and changes to the device and a once-yearly check on the factory. Inspections of overseas manufacturing facilities naturally incur an extra charge.

The purpose of this ongoing interest by BAPT is to make sure that manufacturers continue to supply products that are made to the original approved standards. As a further check BAPT also procures



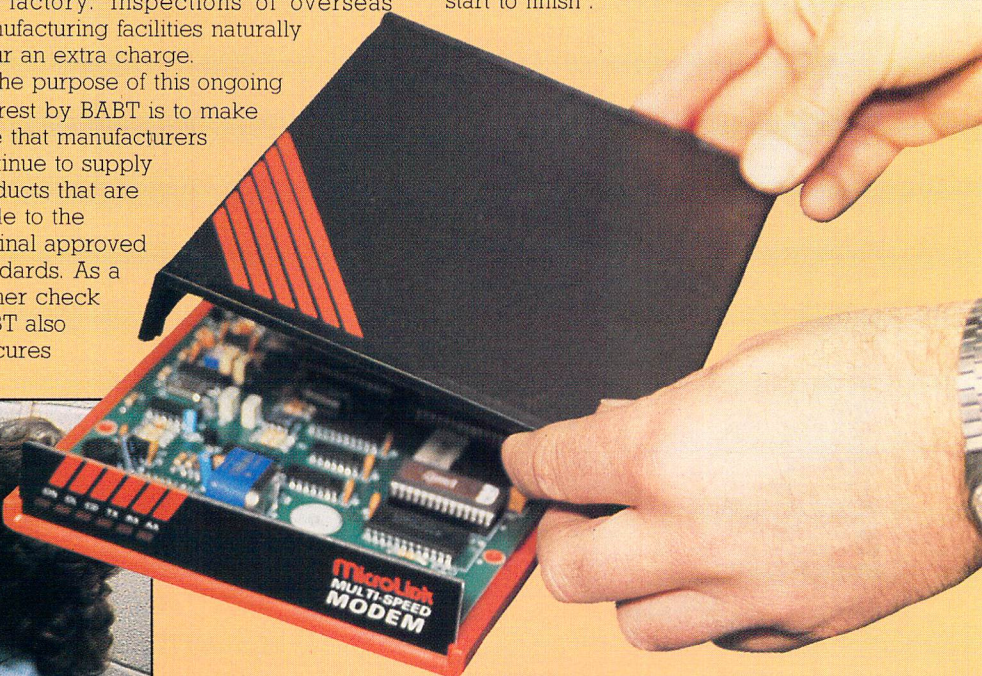
*The coveted seal of approval*

random samples from various sources to check against the original. Remember those colour photos?

In the extreme BAPT can terminate approval of a device if the manufacturer ceases to meet the requirements laid down. "We can call back all the units he's made and force him to issue a public warning notice", said Cartman. "We've never had to do it yet, but the authority exists".

The picture is of a shortening approvals time-span. Although the majority of devices being processed today have been carried over from last year, there is nothing like the overload of pre-September.

"The theory is that now, under the new system, it's possible for modems to go through the approvals process in six to eight weeks", said Barry Cartman. "However that hasn't happened yet and our current record is nine weeks' from start to finish".



*Making the MicroLink multi-speed modem: The task involves more than 200 components requiring 600 soldered joints – every one of them inspected at least once. The device is built around the new K222 V21/22 chip from the US which is much more reliable and easier to interface than the old 7910 V21/V23 chip. Only after two full-function tests – interposed by a 24-hour soak test to burn in the components – is the MicroLink modem ready for the customer.*





# BYTEBACK

THE ATARI ST SPECIALIST

**BEST PRICES FASTEST DELIVERY**

| GAMES                        | ONLY  |                            | ONLY  |
|------------------------------|-------|----------------------------|-------|
| Captain Blood .....          | 12.95 | International Soccer ..... | 12.95 |
| Dungeon Master .....         | 16.95 | Carrier Command .....      | 16.95 |
| Oids .....                   | 13.95 | Pool .....                 | 6.95  |
| Flintstones .....            | 13.95 | Mach 3 .....               | 13.95 |
| Trantor .....                | 13.95 | Rolling Thunder .....      | 13.95 |
| Knightmare .....             | Phone | Strip Poker II .....       | Phone |
| Battleships .....            | 10.45 | Get Dexter II .....        | 13.95 |
| Scruples .....               | 13.95 | Seconds Out .....          | 13.95 |
| Screaming Wings .....        | 10.45 | Xenon .....                | 13.95 |
| Predator .....               | 13.95 | Dark Castle .....          | 16.95 |
| Slapfight .....              | 13.95 | Tournament of Death .....  | 13.95 |
| Joe Blade .....              | 6.95  | Crash Garrett .....        | 13.95 |
| Black Lamp .....             | 13.95 | Slaygon .....              | 13.95 |
| Gunship .....                | 16.95 | Powerplay .....            | 13.95 |
| Tetris .....                 | 13.95 | Terramex .....             | 13.95 |
| Universal Military Sim ..... | 16.95 | Sapiens .....              | 13.95 |
| Enduro Racer .....           | 13.95 | ECO .....                  | 13.95 |
| Warlock .....                | 10.45 | Wizball .....              | 13.95 |
| Rampage .....                | 10.45 | Bubble Bobble .....        | 16.95 |
| Star Trek .....              | 13.95 | Star Wars .....            | 13.95 |
| Test Drive .....             | 16.95 | Backlash .....             | 13.95 |
| Chessmaster 2000 .....       | 16.95 | Winter Olympiad .....      | 13.95 |
| Test Drive .....             | 16.95 | Tanglewood .....           | 16.95 |
| Defender of the Crown .....  | 20.95 | Bards Tale .....           | 16.95 |
| Barbarian (Palace) .....     | 13.95 | Chopper X .....            | 6.95  |
| Rings of Zilfin .....        | 16.95 | Trivial Pursuit .....      | 13.95 |
| F15 Strike Eagle .....       | 16.95 | Terrorpods .....           | 16.95 |
| Goldrunner .....             | 16.95 | Hunt for Red October ..... | 16.95 |
| Barbarian (Psychosis) .....  | 16.95 | Plutos .....               | 9.95  |
| Sub Battle Simulator .....   | 16.95 | Eagles Nest .....          | 13.95 |
| Leaderboard .....            | 16.95 | Marble Madness .....       | 18.50 |
| * Tournament Disk .....      | 6.95  | Arkanoid .....             | 10.45 |
| Silent Service .....         | 16.95 | Gauntlet .....             | 16.95 |
| Strike Force Harrier .....   | 16.95 | Starglider .....           | 16.95 |
| Flight Simulator 2 .....     | 34.95 | Colonial Conquest .....    | 20.95 |
| *Scenery Disks 7 & 11 .....  | 16.95 | Balance of Power .....     | 20.95 |

| ADVENTURES              | ONLY  | ONLY                     |       |
|-------------------------|-------|--------------------------|-------|
| Jinxter .....           | 16.95 | Police Quest .....       | 13.95 |
| Ultima 2, 3 or 4 .....  | 16.95 | Leisure Suit Larry ..... | 13.95 |
| Annals of Rome .....    | 16.95 | Gnome Ranger .....       | 10.45 |
| Guild of Thieves .....  | 16.95 | Pawn .....               | 16.95 |
| Silicon Dreams .....    | 13.95 | Jewels of Darkness ..... | 13.95 |
| Alternate Reality ..... | 16.95 | Hitch Hikers Guide ..... | 20.95 |

Kings Quest 3 Pack! (Kings Quest I, II, and III) ..... 18.50

| ART AND DESIGN                              |       | ONLY                       | ONLY   |
|---------------------------------------------|-------|----------------------------|--------|
| Quantum Paint .....                         | 13.95 | Spectrum 512 .....         | 47.95  |
| Advanced Art Studio .....                   | 16.95 | Degas Elite .....          | 16.95  |
| GFA Draft .....                             | 69.95 | Easy Draw 2 .....          | 55.95  |
| Pro Sprite Gen .....                        | 29.00 | CAD 3D .....               | 39.00  |
| Cyber Studio (Cad 3D 2.0 + Cybermate) ..... |       |                            | 62.95  |
| Cyber Control .....                         | 48.00 | Cyber Paint .....          | 56.00  |
| Genesis .....                               | 64.00 | 3D Developers Disk .....   | 24.00  |
| Human Forms Disk .....                      | 24.00 | Architecture Disk .....    | 24.00  |
| Future Design Disk .....                    | 19.50 | StereoTek 3D Glasses ..... | 145.00 |

| UTILITIES                 | ONLY  |                          | ONLY  |
|---------------------------|-------|--------------------------|-------|
| Desktop Publisher .....   | 79.00 | Superbase Personal ..... | 74.95 |
| Procopy .....             | 27.50 | Word Writer .....        | 59.95 |
| Masterplan .....          | 79.00 | First Word Plus .....    | 59.95 |
| Trimbase .....            | 67.50 | ST Doctor .....          | 13.95 |
| Zoomracks 2 .....         | 47.95 | Fastcom .....            | 36.95 |
| Pro. Sound Designer ..... | 45.00 | Stuff .....              | 18.50 |
| Saved .....               | 20.95 | Back Pack .....          | 35.95 |
| K-Data .....              | 36.95 | K-Switch .....           | 22.50 |
| K-Comm.2 .....            | 36.95 | K-Spread 2 .....         | 59.95 |

| LANGUAGES                   | ONLY  | ONLY                      |       |
|-----------------------------|-------|---------------------------|-------|
| Power Basic .....           | 29.95 | HiSoft Basic .....        | 59.95 |
| GST Macro Assembler .....   | 18.50 | GST C Compiler .....      | 18.50 |
| Fast ASM .....              | 13.95 | Mark Williams C .....     | 99.00 |
| Fast Basic (Disk) .....     | 32.95 | Fast Basic (Rom) .....    | 64.95 |
| GFA Basic Interpreter ..... | 36.95 | GFA Basic Compiler .....  | 36.95 |
| K-Seka .....                | 36.95 | MCC Assembler (NEW) ..... | 36.95 |
| MCC Lattice C (3.04) .....  | 69.95 | MCC Pascal (2) .....      | 69.95 |

| HARDWARE                           | ONLY  | ONLY                      |       |
|------------------------------------|-------|---------------------------|-------|
| Locking Disk Box (80) .....        | 14.00 | Furry Mouse Cover .....   | 7.50  |
| Locking Disk Box (40) .....        | 11.00 | Mouse Mat .....           | 8.00  |
| 3.5" Disks SS/DD (x10) .....       | 12.00 | Keyboard Cover .....      | 8.00  |
| 3.5" Disks DS/DD (x10) .....       | 13.00 | Suncorn Joystick .....    | 6.50  |
| Competition Pro 5000 (Black) ..... | 14.50 | Wiz Card Controller ..... | 3.95  |
| Competition Pro 5000 (Clear) ..... | 15.50 | Quickshot Turbo .....     | 13.00 |
| Joystick/Mouse extension .....     | 4.95  | Quickshot II .....        | 8.00  |

MEDIA BOX - Holds 150 Disks, compact and Stacking ..... 17.50

START: ST quarterly magazine with disk! Winter edition £12.95  
(Includes new version ST Writer + Arcade game etc. . .)

ALL PRICES INCLUDE VAT AND FIRST CLASS POST  
All Stock Items sent by RETURN OF POST  
TELEPHONE (0636) 79097 FOR 24 HOUR SERVICE!  
Send Cheque/Postal Order/Credit Card Details to:

**BYTEBACK** Dept. AST, 6 MUMBY CLOSE,  
NEWARK. NOTTS NG24 1JE



## ST OWNERS

The Ultimate Sound  
Digitiser on cartridge  
from Innovated Software

### HARDWARE

Plugs into cartridge port.  
Powered by the computer.  
Sound sampling from 4 to 25 KHz on record and playback.  
4 or 8 bit sample resolution.  
Memory free on 1040ST, 926K.  
Memory free on 520ST, 402K.  
Input socket, Phono on cartridge.  
Output, monitor or Phono to amplifier on cartridge.

### SOFTWARE

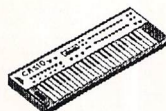
Works on both colour and monochrome monitors.  
Uses all available RAM.  
Built in echo and reverb effects.  
Dot graph input level indicator and line graph sample display.  
Monitor sound on input, output and sampling.  
Edit samples and waveforms using mouse and keyboard.  
Full software filters and sample magnification, (up to 610 bytes).  
Cut and paste, reverse and digital mix options.

### LANGUAGE SUPPORT

BASIC, Assembler and C fully supported.

Comes with full documentation on sampling software and details of  
using the samples in your own programs.

*"Possibly the best ST sampler in the World".*



## The I.S. MIDI SAMPLE PLAYER

from Innovated Software

### FEATURES

Assign one sample per key for as many keys as the keyboard has.

Play samples through the Atari's monitor or to amplifier via the  
audio output socket on the I.S. Digitiser.

Multiple keyboard splits allowing as an example; 5 octaves all  
starting with middle C and each with a different sample.

Fade in and fade out of samples.

A different loop point for each key.

You can save a complete keyboard arrangement to disk, including  
all keyboard splits and the samples assigned to them.

Selectable Midi channels including Omni on/off.

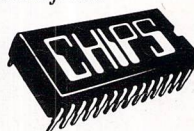
*"Brings you close to the power of a Fairlight  
at a fraction of the cost".*

### COST

The I.S. Digitiser **£79.95**  
The I.S. Midi Sample Player **£19.95**

All prices include V.A.T., Carriage, 12 month warranty.  
Software updates available to registered users.

Available from:



53 Rugby Road,  
Worthing,  
West Sussex.  
BN11 5NB  
(0903) 700804 24 hours

Trade enquiries welcome



# Good, but limited view

**R**UBY-VIEW is a viewdata only communications software package for the ST from veteran communications software house Y2 Computing. It was originally written for the Commodore Amiga, and Y2 has now produced a version for the Atari.

The first and most important thing to note about this software is that it is viewdata-only. So it isn't suitable for scrolling services such as MicroLink/Telecom Gold, or most bulletin boards. However, Y2 is working on a program called RubyTerm which will link with this program sharing a common dialling directory.

The program works with most popular modems, including Hayes, Dacom standard (as used in modems supplied free to schools), autodialling but otherwise dumb modems, and plain manual modems.

You set up a configuration file once and for all on your backup disc and the manual clearly explains what to do. Ruby-View performs speed conversion to the ST modem port for 1200/75 baud modems, and if you are using 1200/75 with a speed buffered modem such as a Pace Linnet or MicroLink multispeed then this can be catered for in the configuration file.

## Directory entry

The directory entry system allows you to specify a list of systems to call. The name and number of the service are accompanied by logon strings and passwords.

If you have an autodial modem, a single mouse click will log you on to a service. Manual modem owners are given a message to dial the number and then connect their modem. The directory is of course, saved to your program disc.

To use the program you open an online window, which takes you through the logon steps and then displays the initial viewdata page. From then on, you select pages in the normal way using the numeric keypad for most functions.

The Enter key returns a hash to make life easier. Surprisingly the hash key on the ST, which unlike most computers does not require a Shift key, cannot be used, neither can the main keypad Return. Prestel of course, also allows you

**Under the microscope comes the Ruby-View viewdata comms pack. David Atherton gets on line and gives it a thorough workout**

to select pages by name, and for this, normal alpha keys are used.

An excellent feature is that you can move round a viewdatabase by moving the pointer – which is active at all times – to a number on screen and clicking, and this is equivalent to pressing that number.

Even more exciting, if two numbers are together – many menus offer double-digit options – the click is equivalent to both. As startup is also mouse-driven, this allows you to go through an entire viewdata session without once touching the keyboard.

## Character set emulation

Viewdata character set emulations are always an important point and the Ruby-View emulation is good, with characters in the correct proportion, and all colour selected correctly. Separated graphics are ever so slightly thinner than those produced by hardware viewdata screen chips, but on the other hand the double-height characters are particularly good.

Ruby-View supports telesoftware downloading which is sent to a disc file. The format supported is one shortly to be used by Prestel for 16 bit software, but no material is available yet, and I was not able to try out this feature. The program will not download software for other micros in the standard CET format.

While on line you can save frames to disc, or print them out. Also saved frames can be printed out later – a better option in view of the time it takes.

The print options allow either full graphics dumps or text only, where graphic characters are replaced with asterisks. Output will work with any Epson-compatible printer, or in the case of the text dump, any Ascii printer.

Ruby-View allows offline mailbox preparation in a straightforward manner. A separate edit window can capture live

frames, or be used to prepare them from scratch.

Y2 has particularly catered for viewdata editor, people who edit their own sections on viewdatabases, by providing a full frame editor with proper insertion and deletion, and even a pixel paint option where painting can be done with the mouse.

## High-speed uploads

The terminal supports all speeds up to 9600 baud, making it ideal for high-speed uploading. The editing facilities are of course available to mailbox users, making the sending of graphics frames very easy.

The 27 page manual is, I'm sad to say, not very helpful to beginners. Experienced viewdata users should be able to work out how to use all the features after two or three readings.

There is no "Your first session" section, merely a straight list of what each menu item does, and an implicit assumption that users know what frame, mailbox, systel, mosaic and other such terms mean.

Overall, the package is a good viewdata terminal. For beginners I have reservations about the manual, but otherwise this software will do everything you want in viewdata.

At £49.95 it's not cheap, especially when compared to Fastcom which offers a scrolling terminal as well. Nevertheless, experienced viewdata users should consider this one carefully.

## FACT FILE

Product: Ruby-View  
Price: £49.95  
Supplier: Y2 Computing, 111 St. Albans Road, Watford, Herts WD1 1RD.  
Tel: 0923 50161

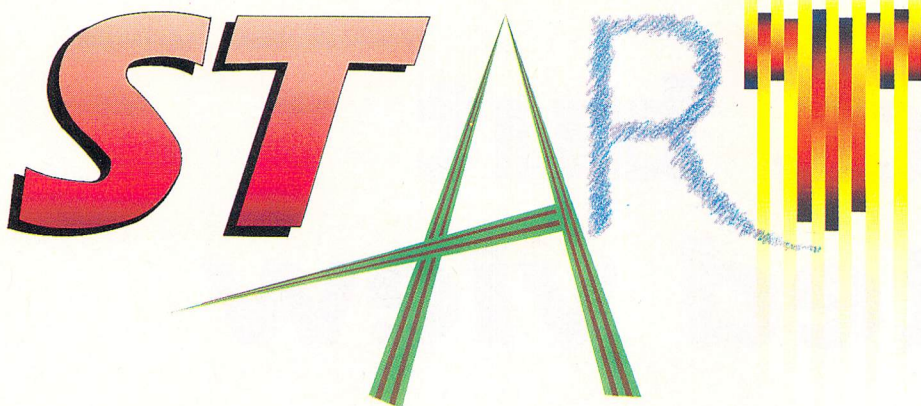
## POINTS FOR:

Supports most modems; good character set emulation; caters for 9600 baud rate.

## AGAINST:

Viewdata only; little help for beginners.





## Get ahead with your drawing

**Rita Plukss shows you how easy it is to draw the human head – by following her simple beginners' guidelines**

**L**ET's take a step further on the road to acquiring the techniques artists use when creating such masterpieces as those shown in the Gallery section of *Atari ST User*.

Last month we looked at different ways of drawing the human body. Now we'll concentrate on the head. The art package I use is Degas Elite, but don't worry if you haven't got it, as the techniques work equally well with NeoChrome, Art Studio and the rest.

Before we start drawing I should stress that you should not expect too much. Don't expect to get it right the first time, or even the third, but keep trying and eventually you will produce good work.

It is very difficult for a beginner to draw acceptable faces. It takes artists a long time studying the skull and general anatomy to achieve the harmony, form and structure that you see in their finished works.

Once you feel comfortable with the standard, basic drawing technique then you can start attempting to draw heads from different angles. First get the feel of where things ought to be, and then concentrate on detail and experimentation.

Most people are unable to construct a well proportioned face because they violate the equilateral law of facial feature arrangement. Individual features may be well drawn, but if they are not in the right place the whole thing will look wrong.

When you look directly at a face an equilateral triangle outlines its two main features. Draw a line from one outer eye socket to the other outer eye socket, then

to the middle of the base of the bottom lip, and then back up to the starting point. If everything is positioned correctly you will find that all three lines are of equal length.

The most common mistakes people make when drawing faces are eyes that are too close together and or the wrong size, noses that are too long or too short, mouths that are too far removed from the eyes and chins that are too big or too sharp.

By using the equilateral triangle to test your arrangement of the eyes and mouth you have less chance of placing them in the wrong position.

If these two features are right then you can either adjust the others, or at times even get away with incorrect treatment of the less important features.

The human head, like the human body,

has a basic structure. In this article I will concentrate on what I find is the easiest method of drawing a face.

Apart from the egg shape and basic circle that we will be using as guides, there are many other structures including double circles, squares and so on.

If further instruction is required I would suggest you have a look in your local library for "How to draw" books or anatomy books for the artist.

As you practice drawing, think about what you are doing, especially when drawing the framework. When this is correct you will be off to a good start.

If you can find a bald person, grab him. Have a good look at how the head, neck, shoulders and back are connected and how the lines flow into each other. Just concentrate on the basic head shape, forgetting about the features.

If you are not lucky enough to find a cooperative baldy, study drawings and keep checking that your proportions are correct, or at least sympathetic to each other. In the same way that the understructure of the human body must be correct, so must the understructure of the head be right.

### The egghead method

The method we shall use to draw our human head is the egghead method shown in Figure I. (I have used the female head instead of the male as it seems to be more popular. It doesn't really matter which you learn from, as the structure can be used for both.)

Using your art package draw an ellipse in the shape of an egg – use the circle mode to create the ellipse. Make the height about twice the width.

Divide the egg equally both horizontally and vertically. Mark off the horizontal line in fourths and the bottom half of the vertical line in fifths as shown in Figure I.

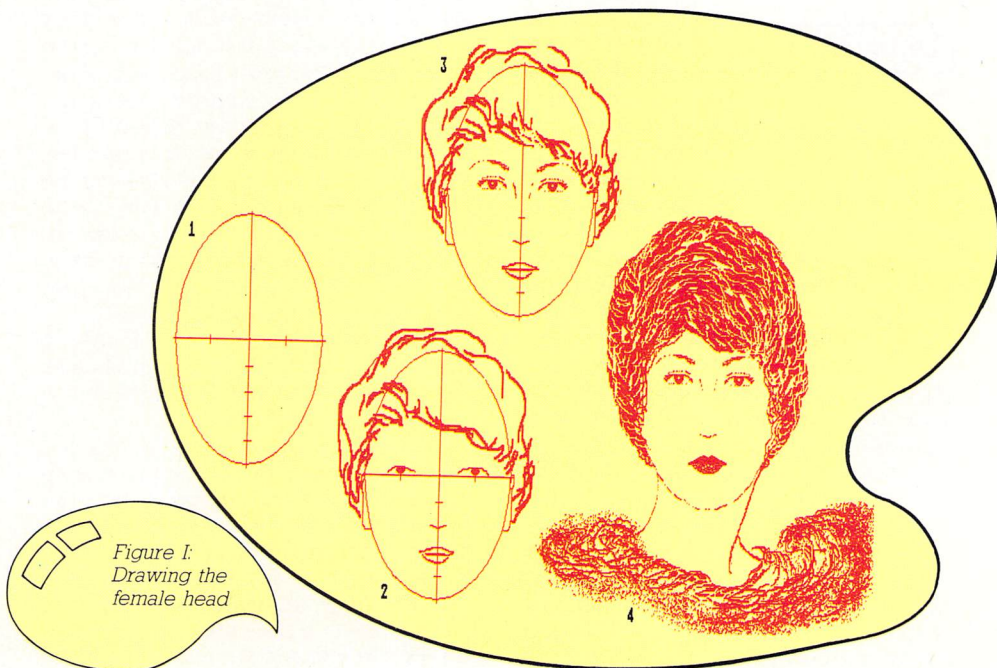


Figure I:  
Drawing the  
female head



If you want to be more precise you may divide the egg vertically into fifths, as the average head is approximately five eyes wide and you can then use this as a further guide for the size of the various features.

The eyes would then go into positions two and four. The width of the nose is the same as the eye and would go in position three. Because of simplicity I will continue using fourths.

Place the eyeballs above the two marks on the horizontal line. Mark in the nose line – nostrils – on the second mark down on the vertical line and the mouth line on the second mark up from the bottom on the vertical line. Sketch in the upper eyelid lines and the outer lip lines, which are approximately one and a half to two eyes long.

### An eye for detail

The width of the average female mouth is half an eye, the distance from the top of the mouth to the nose is another half an eye. The width of the top lip is usually about one third the depth of the mouth, but this will vary.

Draw the ears. The tops start level with the eyes and finish near the nose line. The size and shapes of ears also vary.

Draw in the outline for the hair. Sketch in the crevices for the top eyelids over the eyes and the suggestion for the lower lids. The inside corners of the eyes will be on the horizontal line while the outside corners may be on it or above it.

Add a couple of eyelashes to the top eyelids, and smooth out the eyes to a more circular shape and add the pupils. It would probably be easier if you did this using the magnify mode.

Draw in the eyebrows about half an eye's distance from the eye. Add the bridge line of the nose. Colour in the hair and the lips. Clean up the nostril area – all you need is a slight V shape to suggest the shadow under the nose.

Erase your guidelines, and draw in the chin, neck and shoulder lines. Look at your drawing and adjust anything that doesn't look right, paying particular attention to the chin, neck and shoulders.

Congratulations, you have now drawn a face in just a few easy steps. Every one you draw will look slightly different so don't stop with one. Carefully draw a dozen or more until they begin to look right.

After a while you will find you no longer need to carefully mark off and measure each step of the way, but you will be able to visualise the understructure as you draw.

I find it easier when I work never to start on an individual feature and carry it to completion, but to think of the head as a whole unit.

I indicate feature placements and then go back and forth several times from one feature to another. This prevents me from losing the concept of the whole at the

| Feature                           | Eye width |
|-----------------------------------|-----------|
| Height of eye                     | 0.5       |
| Gap between eyes                  | 1         |
| Width of nose (nostril area)      | 1         |
| Length of nose                    | 1.5       |
| Length of mouth                   | 1.5 to 2  |
| Bottom of mouth to chin           | 1         |
| Top of outside nostril to mid eye | 1         |
| Bottom of nose to bottom of lips  | 1         |
| Bottom of eye to top of eyebrow   | 1         |
| Width of lips                     | 0.5       |

*The ratios of the size of facial features compared to the eye*

expense of the individual features.

If you find it difficult to get both eyes matching try drawing just one eye and eyebrow and do a block copy. Then flip this to get an exactly reversed duplicate for the other one.

Carefully place it in position. Make a few minor changes, because both sides of the face are never identical. Don't rely on this method, but it could save you frustration in your early attempts.

When you have a drawing you are happy with and have made your final save – you should be saving your work on a regular basis, especially before any major or difficult changes – start manipulating it by stretching, flipping and distorting.

Try doing a block copy of one half of the face, flip it and paste it to the original half. Compare the subtle differences between the original face and what you have now. Then take the other half of the face and do the same thing.

Subtle differences are interesting and can be put to use in a composition involving faces. This is the technique I used in the monochrome screen Twofaces –

shown below – which is based on the demonstration exercise for this article.

After studying and practising the female head you can use the same approach in drawing the male head. This reveals more of the bone structure, and thus is more angular. The eyebrows are straighter, heavier and lower placed, the lip line is thinner and wider.

The jaw is heavier and more strongly defined and the cheekbones are more stressed. The neck is also thicker. Figure III shows a typical male face. I used a circle structure for this, but only to demonstrate another method for drawing the basic head shape.

Look at the steps involved and draw it for yourself. The basic oval is approximately one and a half by one and the width of the eye is one fifth of the width of the face. Use the width of the eye as the unit of measurement for size and position of the other facial features.

● Next month we'll move on to discuss more different drawing techniques using our STs.

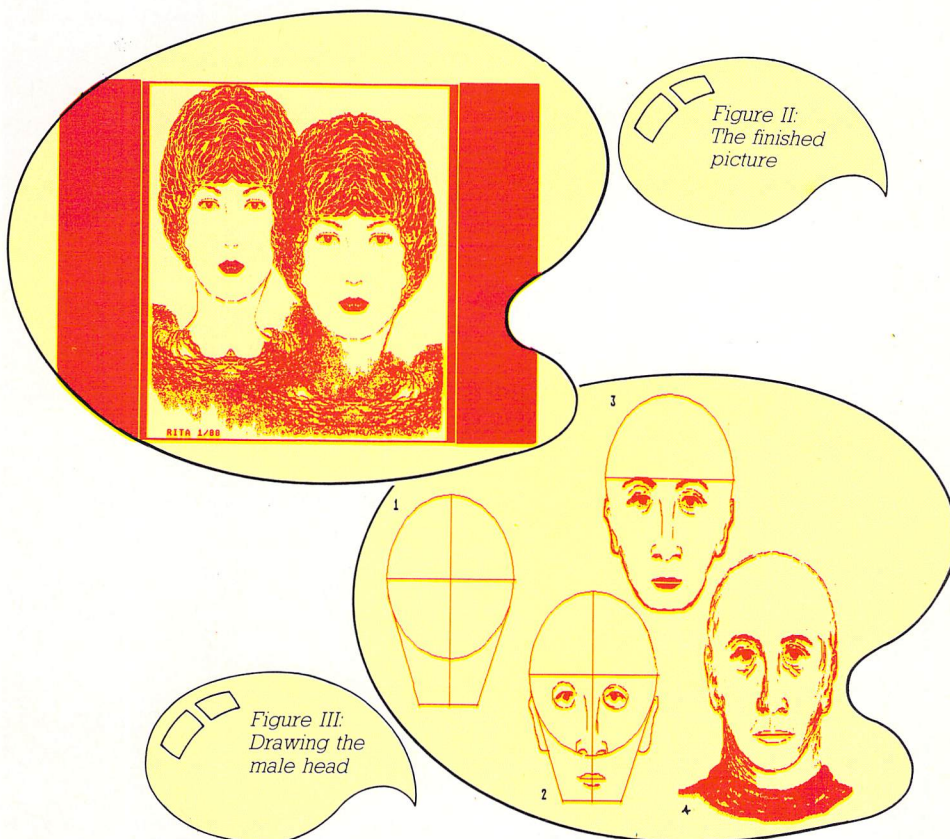


Figure II:  
The finished  
picture

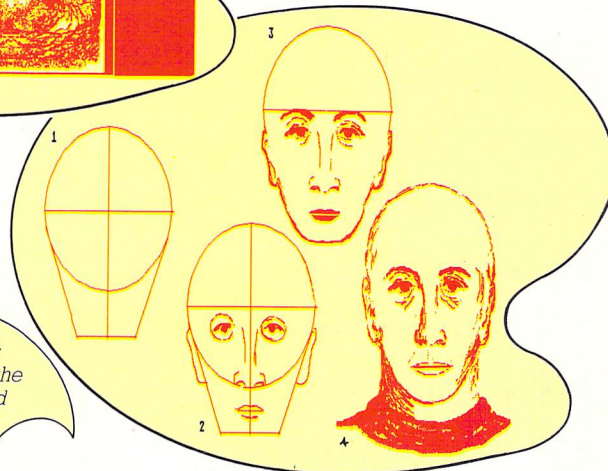


Figure III:  
Drawing the  
male head



# SILICON SYSTEMS

## THE BIGDISK-ATARI ST HARD DISK DRIVE

*As reviewed in April ST USER*

The **BIGDISK** comes complete with all **FORMATTING, PARTITIONING and BOOT** software. The case is designed to sit under your monitor and is completely self contained with power supply and all cables. Now Available From **STOCK !!!!!!!**

**20 Megabyte £549.00 40 Megabyte £799.00**

### FLOPPY DISK DRIVES

**3.5" ST DRIVE – 1 MEGABYTE** complete with it's own power supply. Other companies are selling drives that use the joystick port for power – **THIS CAN DAMAGE YOUR ST's HEALTH!!** Our Disk Drive uses a state of the art NEC mechanism and is priced at **£129.00 EX STOCK**

**5.25" Dual Format**, perfect for use as Drive 'B' and has it's own power supply. It is designed for running PC software when used with PC DITTO etc. **£149.00**

*All our prices include VAT and Postage*

### TRADE INQUIRIES WELCOME

**Tudor Industrial Estate, Ashton Street, DUKINFELD, Cheshire SK16 4RN**  
**061 343 1765**

All disks are sent by Trackback or Courier service at no extra cost

### TOP QUALITY DISKS AT ROCK BOTTOM PRICES

| 5.25" BULK PACKED-TOP QUALITY    | 10    | 25     | 50     | 100    | 150    | 250     |
|----------------------------------|-------|--------|--------|--------|--------|---------|
| Single Sided 48T.P.I.            | £5.49 | £10.50 | £18.50 | £32.50 | £41.50 | £61.50  |
| Single Sided 96T.P.I.            | £5.95 | £10.75 | £19.00 | £33.50 | £43.00 | £63.00  |
| Double Sided 48T.P.I.            | £5.95 | £11.00 | £19.50 | £34.50 | £45.00 | £66.00  |
| Double Sided 96T.P.I.            | £6.95 | £11.50 | £20.50 | £36.00 | £46.50 | £69.50  |
| Double Sided Coloured 96T.P.I.   | £7.95 | £13.75 | £25.75 | £48.50 | £67.50 | £99.75  |
| Double Sided Reversible 96T.P.I. | £7.95 | £15.00 | £28.50 | £50.50 | £65.50 | £102.50 |
| Coloured & Reversible 48T.P.I.   | £8.95 | £17.25 | £32.75 | £63.25 | £86.25 | £129.75 |
| Coloured & Reversible 96T.P.I.   | £9.95 | £18.75 | £34.50 | £65.50 | £94.75 | £143.75 |

Packs of 10 5.25" Disks come with Free Plastic Library Case (worth £1.49!)

Coloured Disks come in five colours (Red, Blue, White, Yellow, Green)

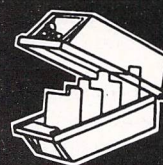
Reversible disks have two index holes and two notches!

Coloured and reversible disks come in five colours and have two holes and notches. All Centec disks are packed with a protective jacket (envelope) and come with a full user set, including a label and a write protect tab. The disks are manufactured to top international standards and have a hub ring for added protection. All disks carry our no quibble replacement guarantee and are certified 100% error free

### SPECIAL OFFERS 3.5" DISCS + LOCKABLE BOXES

20 x 3.5" DS-DD DISKS PLUS  
40 CAPACITY LOCKABLE BOX FOR  
**ONLY £24.95**

OR  
40 x 3.5" DS-DD DISKS PLUS  
40 CAPACITY LOCKABLE BOX FOR  
**ONLY £44.95**



50 x 3.5" DS-DD DISKS PLUS  
80 CAPACITY LOCKABLE BOX FOR  
**ONLY £54.95**

OR  
80 x 3.5" DS-DD DISKS PLUS  
80 CAPACITY LOCKABLE BOX FOR  
**ONLY £79.95**



#### Storage Boxes

|                            |        |
|----------------------------|--------|
| 3.00" Lockable – Holds 25  | £7.49  |
| 3.50" Lockable – Holds 40  | £7.49  |
| 3.00" Lockable – Holds 60  | £8.49  |
| 3.50" Lockable – Holds 80  | £8.49  |
| 3.50" Lockable – Holds 120 | £10.95 |
| 5.25" Lockable – Holds 50  | £7.49  |
| 5.25" Lockable – Holds 100 | £8.49  |
| 5.25" Lockable – Holds 140 | £10.95 |

|                           |       |
|---------------------------|-------|
| 3.5" Cleaning Disc .....  | £4.99 |
| 5.25" Cleaning Disc ..... | £3.99 |
| Disk Notcher .....        | £3.49 |
| ST Printer Cable .....    | £8.49 |



#### PROFESSIONAL PRINTER STAND

This new printer stand is very space efficient as it takes hardly any more room than your printer. Due to the unique positioning of the paper guide mechanism and refold compartments that is one above the other, the desk space is effectively halved. The space saving design allows easy access to the paper from both sides, the special dial controlled paper feed system with adjustable deflector plates ensures smooth paper flow and automatic refolding.

|               |        |
|---------------|--------|
| 80 Col .....  | £29.95 |
| 132 Col ..... | £34.95 |

#### JUDGE FOR YOURSELVES

You'll be guilty of paying more & getting less if you go elsewhere



#### COPY HOLDERS



YU-H32 Copy Holder with Adjustable Arm  
Size 9.5" x 11.5" with smooth slide line guide – **£19.95**  
YU-H34 Copy Holder with Adjustable Arm  
Size 19" x 12" (A3) – **£29.95**

#### 3.5" TOP QUALITY BULK PACKED DISKS

|                        | 10     | 25     | 50     | 100    | 150     | 200     |
|------------------------|--------|--------|--------|--------|---------|---------|
| Single Sided 135T.P.I. | £12.49 | £23.95 | £46.95 | £91.95 | £129.95 | £169.95 |
| Double Sided 135T.P.I. | £14.49 | £26.95 | £52.95 | £98.95 | £145.95 | £189.95 |

#### Rainbow Pack of five colours – New product!

|                        |        |        |        |         |         |         |
|------------------------|--------|--------|--------|---------|---------|---------|
| Single Sided 135T.P.I. | £17.95 | £35.95 | £62.95 | £119.95 | £169.95 | £219.95 |
| Double Sided 135T.P.I. | £19.95 | £39.95 | £75.95 | £145.95 | £214.95 | £279.95 |

Packs of 10 3.5" Disks come with Free Plastic Library Case (worth £1.49!)

All discs are supplied with labels and are certified 100% error free

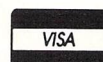
### CENTEC DISK SUPPLIES

UNIT 3, THE METRO CENTRE, BRIDGE ROAD, ORPINGTON, KENT BR5 2BE

TEL: (0689) 35353 (6 Lines) (24 Hours) Fax: 0689 77737

Please note we operate a call stacking system. Outside office hours a telephone answering machine will take your order.

Remember – all prices include VAT and delivery! There are no hidden extras to pay! Personal callers welcome: Monday-Friday 9.30am-4.30pm





# 17 BIT SOFTWARE

## JUST THAT BIT BETTER THAN THE REST

We are a club **Run by enthusiasts** for enthusiasts. We supply **Commercial and Public Domain** software for Atari ST and Amiga. We are so confident that the service we give is unbeatable, we are prepared to back our confidence with an offer you can't refuse.



The Contents of the Disc are:- Our latest Public Domain Library Catalogue, and the very latest playable demonstration of Leatherneck by Microdeal.

All you have to do to receive your **FREE** disk is to simply write to us telling us your name and address and we will send you the Free disk by return absolutely **FREE!!!** without strings!!! and without obligation!!!. We aren't even asking for a stamped addresses envelope.

We are sure that once you have received your free disk and our information pack you will be so impressed that you will want to join our rapidly expanding membership.

We offer many services adding new ones when asked. To find out what we can offer you, just write and try us out.

On writing please state machine owned

This offer is limited to 1 disc per household only.

**17 BIT SOFTWARE**  
**P.O. Box 188, Leeds LS1 6BS**

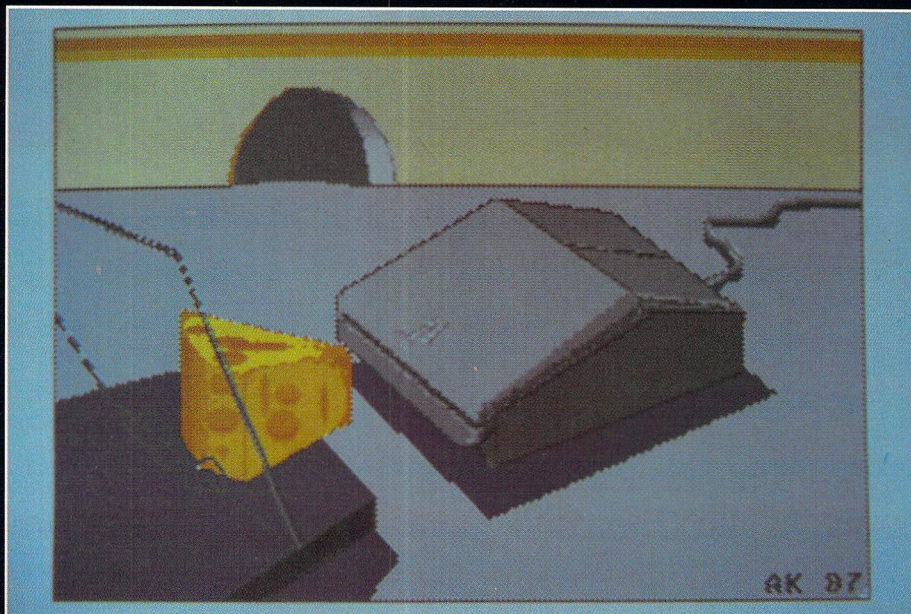


Quite a varied selection of pictures hang in this month's Gallery display of top computer graphic art.

They range from the abstract art of Richard Williams and Alistair Kerr to the still life of Alex Dewdrey, the wildlife of John Thornton, Australian Lowlands of Peter Honey and flowers of Paul King.

Gallery is an opportunity for anyone with the slightest artistic bent to demonstrate not only their own ability, but also the superb graphic capability of the Atari ST.

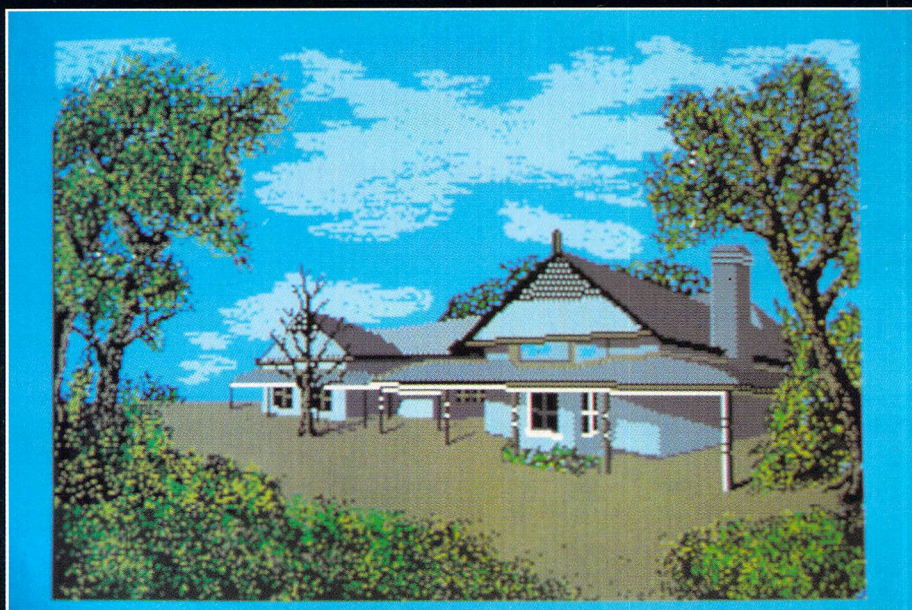
If you have a work of art you would like to see exhibited on our world wide stage, why not send it to Gallery. Remember though, anything you submit must be your own work, you must own the copyright and you must provide us with written permission to publish it.



ST mouse

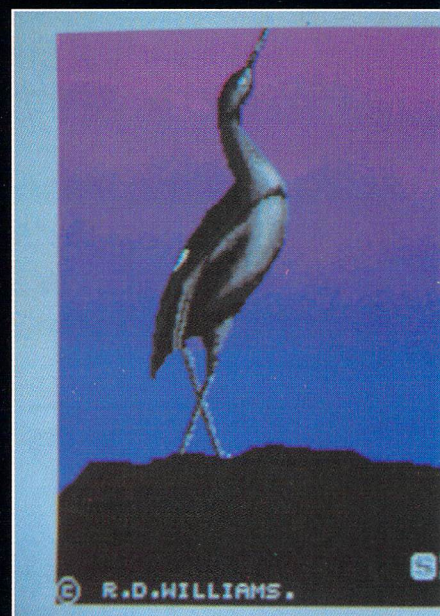
Alistair Kerr

# GALLERY



Australian lowlands

Peter Honey



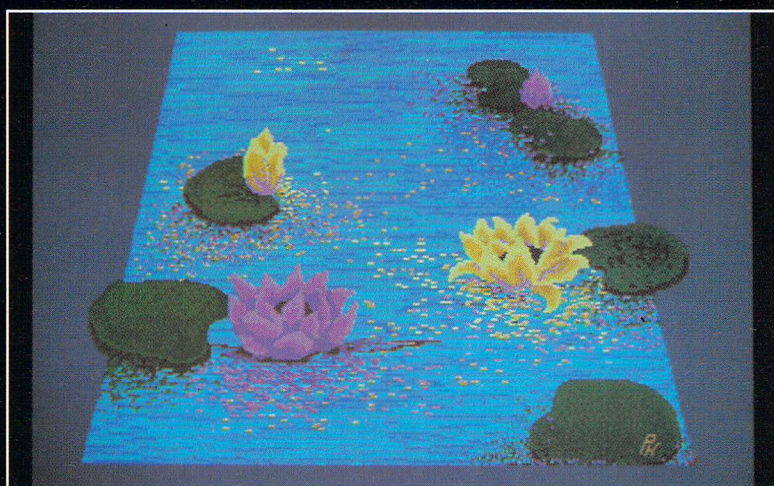
Steel bird





Still life

Alex Dewdrey

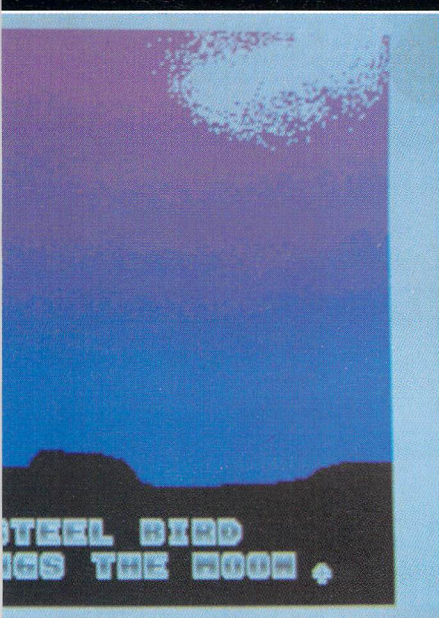


Water lilies

Paul King

Please enclose an sae for the return of your discs. The address to send your masterpieces is:

Gallery,  
Atari ST User,  
Europa House,  
Adlington Park,  
Adlington,  
Macclesfield  
SK10 4NP



Richard Williams



Leopards basking in the sun

John Thornton



# L E L

Established 1979

Logram Electronics Limited

## Computer Hardware & Software Suppliers

430 Clifton Road, Aberdeen, AB2 2EJ

Telephone: (0224) 699696

TURN YOUR ST INTO A P.C. CLONE  
WITH THE L.E.L. 5.25" DISK DRIVE AND  
ROBOTEC P.C. DITTO

**£25 OFF**  
**£184.25**

### HARDWARE

|                                                |         |
|------------------------------------------------|---------|
| Real Time Clock .....                          | £23.75  |
| 1 Meg Disk Drive with Power Supply .....       | £93.56  |
| 0.5 Meg Disk Drive with Power Supply .....     | £59.65  |
| Internal 1 Meg Disk Drive (exchange) .....     | £60.25  |
| Memory Upgrade to 1 Meg .....                  | £97.45  |
| Atari SM125 High Resolution Mono Monitor ..    | £125.65 |
| Atari SC1224 Colour Monitor .....              | £308.61 |
| Amstrad DMP 3160 Printer inc. Atari lead ..... | £169.95 |
| Amstrad DMP 4000 Printer inc. Atari lead ..... | £258.50 |
| Atari SMM 804 Printer inc. lead .....          | £158.75 |
| Atari 520 STFM inc. Mouse & Floppy Drive ..    | £304.26 |
| Atari 1040 STFM inc. M.Ouse & Floppy Drive     | £478.25 |
| Atari Mega ST2 .....                           | £phone  |
| Atari Mega ST4 .....                           | £phone  |

### ATARI ST

#### SOFTWARE

|                              |         |
|------------------------------|---------|
| Metacomco Lattice 'C' .....  | £75.99  |
| Fleet Street Publisher ..... | £89.45  |
| Publishing Partner .....     | £99.00  |
| Timeworks D.T.P. ....        | £89.45  |
| First Word Plus .....        | £69.00  |
| Dagas Elite .....            | £21.69  |
| Textpro .....                | £30.20  |
| Forth/MT .....               | £37.76  |
| P.C.B. Designer .....        | £147.44 |
| Data Retrieve .....          | £30.20  |
| Power Ledger .....           | £52.88  |
| Chartpack .....              | £37.76  |
| Paintpro .....               | £37.76  |
| Assempro .....               | £37.76  |
| Defender of the Crown .....  | £26.04  |
| Enduro Racer .....           | £17.38  |
| Ninja .....                  | £12.60  |
| Chopper-X .....              | £12.60  |
| Outcast .....                | £12.60  |
| 3D Chess .....               | £21.69  |
| Star Trek .....              | £17.34  |

WE ARE CERTIFIED AMSTRAD  
DEALERS, AND OFFER 100%  
IN-HOUSE TECHNICAL AND  
MAINTENANCE SERVICE ON  
ALL AMSTRAD AND ATARI  
COMPUTERS AND  
PERIPHERALS

VISA

**VISA CARDS ACCEPTED**  
**POST & PACKING FREE**  
**PLEASE ADD VAT @ 15%**  
**MAIL ORDER**  
**PHONE (0224) 699696**

## WHOLESALE PRICES - DIRECT FROM THE WAREHOUSE!

Importers . . . Manufacturers . . . Distributors . . .

Telephone: 0664 410666

### STORAGE BOXES



|                                  |        |
|----------------------------------|--------|
| 3.50" Lockable - Holds 40 .....  | £6.95  |
| 3.50" Lockable - Holds 80 .....  | £8.95  |
| 3.50" Lockable - Holds 120 ..... | £10.95 |
| 5.25" Lockable - Holds 50 .....  | £6.99  |
| 5.25" Lockable - Holds 100 ..... | £8.99  |
| 5.25" Lockable - Holds 140 ..... | £10.99 |

ALL WITH LOCK & TWO KEYS  
DIVIDERS & ANTISTATIC!

### ACCESSORIES

|                                  |        |
|----------------------------------|--------|
| Mouse Mat .....                  | £6.95  |
| BBC Printer Cable .....          | £5.95  |
| Atari etc Printer Cable .....    | £6.95  |
| 3.5" Cleaning Kit (fluid) .....  | £4.95  |
| 5.25" Cleaning Kit (fluid) ..... | £3.95  |
| Disk Notcher .....               | £4.95  |
| 12" Monitor Stand .....          | £11.95 |
| 14" Monitor Stand .....          | £14.95 |
| Desk Top Copy Holder .....       | £14.95 |
| A3 Copy Holder .....             | £19.95 |
| Space Saver Printer Stand .....  | £29.95 |
| Economy Printer Stand .....      | £13.95 |

### !!! FLOPPY DISKounts !!! THE MORE YOU BUY - THE MORE YOU SAVE !!!

|                              |      |     |     |      |      |
|------------------------------|------|-----|-----|------|------|
| 3.5" Bulk Packed-            |      |     |     |      |      |
| Price each disk .....        | 25+  | 50+ | 75+ | 100+ | 150+ |
| Single Sided 135 T.P.I. .... | 94p  | 90p | 86p | 82p  | 80p  |
| Double Sided 135 T.P.I. .... | 105p | 99p | 94p | 91p  | 89p  |

ALL DISCS ARE SUPPLIED WITH LABELS AND ARE  
CERTIFIED 100% ERROR FREE

|                                  |     |     |     |      |      |
|----------------------------------|-----|-----|-----|------|------|
| 5.25" Bulk Packed-               |     |     |     |      |      |
| Price each disk .....            | 25+ | 50+ | 75+ | 100+ | 150+ |
| Single Sided 48 T.P.I. ....      | 42p | 37p | 32p | 30p  | 29p  |
| Double Sided 48 T.P.I. ....      | 44p | 39p | 34p | 32p  | 31p  |
| Double Sided 96 T.P.I. ....      | 46p | 41p | 36p | 34p  | 33p  |
| Double Sided Col. 96 T.P.I. .... | 55p | 49p | 45p | 39p  | 38p  |
| Double Sided Rev. 96 T.P.I. .... | 55p | 49p | 45p | 39p  | 38p  |

COLOURED DISKS COME IN FIVE COLOURS (RED,  
BLUE, WHITE, YELLOW, GREEN)  
REVERSIBLE DISKS HAVE TWO INDEX HOLES AND  
TWO NOTCHES!

ALL DISKS COME WITH ENVELOPE AND LABEL SET  
AND HAVE A HUB RING AND FULL GUARANTEE

### BULK PACKED OFFERS - BEST VALUE IN TOWN

|                                                              |        |
|--------------------------------------------------------------|--------|
| 25 Double Sided 5.25" Disks with our 50 Capacity Box .....   | £15.95 |
| 50 Double Sided 5.25" Disks with our 50 Capacity Box .....   | £24.97 |
| 75 Double Sided 5.25" Disks with our 100 Capacity Box .....  | £32.97 |
| 100 Double Sided 5.25" Disks with our 100 Capacity Box ..... | £39.97 |
| 20 Double Sided 3.5" Disks with our 40 Capacity Box .....    | £24.93 |
| 40 Double Sided 3.5" Disks with our 40 Capacity Box .....    | £45.93 |
| 60 Double Sided 3.5" Disks with our 80 Capacity Box .....    | £63.93 |
| 80 Double Sided 3.5" Disks with our 80 Capacity Box .....    | £79.93 |

ALL BOXES COME WITH LOCK, 2 KEYS, DIVIDERS AND ARE  
ANTISTATIC

ALL DISKS COME WITH LABELS AND ARE 100% GUARANTEED  
ERROR FREE

### UK MADE LIBRARY CASE

**5.25" or 3.5"**  
(10 capacity)  
**ONLY 95p**  
(if bought with disks)

All Disks are sent  
by Trackback or  
Courier Service  
at no extra cost!



### MELTON COMPUTER SUPPLIES

PO Box 2, Melton Mowbray, Leicestershire.

Telephone: 0664 410666 (24 hrs)

Phone for our best price before placing your order  
EDUCATIONAL & GOVERNMENT ORDERS WELCOME



SPECIAL CLEARANCE  
JVC or Goldstar MF2-DD  
Branded Disk Pack  
Only £15.95  
(price per 10 disks)

Remember the price you see is all you pay (U.K. only). Prices include VAT and carriage



# COMPUTER

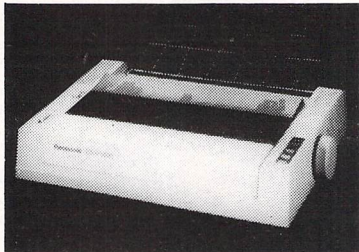


# EXPRESS

**ESTABLISHED 1979**  
The leading mail order computer firm in the UK.  
**OVER £1 MILLION OF STOCK**  
Rapid despatch of all popular items.  
**SHOWROOM & SHOP**  
Friendly personal service and sales advice.  
**TECHNICAL SUPPORT**  
Don't worry—if you bought it from us we're happy to help.  
**ALL GOODS GUARANTEED**



## PANASONIC 1081



This 120cps draft/30cps NLQ little beast is a surprising winner. It continues to sell very well, no doubt helped by the fact that everybody (led by us!) discounts it so massively! But it has excellent 9-pin quality, is Epson and IBM compatible, comes with a tractor feed, is 80 columns wide and amazingly cheap! Has helped to up Panasonic's U.K. market share greatly!  
**£142.00**

## EPSON LX800



Although previous LX series printers were considered under-specified compared to the NL10 and others and tended to sell more on name than on spec, the range continues to be the best seller ever, and the LX-800 not only outsells everything in sight but offers a specification that is better than most competitors at this price. This latest offering zips along at 150cps draft and 25cps NLQ and comes with Parallel Esc-P or IBM Parallel interfaces as standard, plus a top-mounted tractor feed. Good, clear typeface, 80 column wide.  
**£189.00**

## STAR LC10



We just can't praise this printer too highly! It will knock the LX800 off its perch. The best printer Star ever made. The 9-pin quality has to be seen to be believed. Back-mounted tractor saves paper, you can insert letterheads without removing the continuous. Very small footprint, and quiet to boot. And look at the price! Colour version available as well. Demand is so great Star is airlifting them in from Japan! You get everything except a plug!  
**Standard version.....£179.00**  
**Colour version.....£199.00**

**Special:** New shipping charges. Next day delivery. We will ship any consignment up to 25kgs anywhere in the U.K. (except the highlands of Scotland) for only **£8.50**. For small software orders the charge is **£6.50**.

Official Purchase orders accepted from Government, Local Authorities, Universities and PLC's. Others with prior approval only. All prices exclusive of VAT and subject to availability and change without notice. Delivery charges extra. All items guaranteed. No returns or repairs accepted without a Returns Authorization Number obtainable from our Technical Support Department. Defective dead on arrival (within 28 days from purchase) merchandise repaired or replaced immediately at our carriage expense. Carriage on warranty repairs is paid by the customer. Non-defective credit returns subject to a 10% restocking fee. All correspondence to head office.

Showroom/shop: Monday-Friday 9am to 6pm, Saturday 10am to 5pm, Technical/Hot Line support: Monday-Friday 9am to 1pm, 2pm to 5.30pm, Telephone orders: Monday-Friday 9am to 5.30pm.

FOR FULL PRICE LIST PLEASE CALL  
EXPORT & TRADE ENQUIRIES WELCOME  
TELEPHONE & MAIL ORDERS WELCOME

**HEAD OFFICE • UNIT A • CAXTON CENTRE • PORTERS WOOD • ST ALBANS • HERTFORDSHIRE • AL3 6XT • (0727) 37451**  
**FAX: 0727 50819 • TELEX: 895 0511 ONE ONE G (Quote Ref: 15412001)**

**ST ALBANS SHOWROOM • 99 PARK STREET LANE • BRICKET WOOD • ST ALBANS • HERTFORDSHIRE • AL2 2JA • (0727) 72790**  
**MANCHESTER SHOWROOM • 89 WASHWAY ROAD (A56) • SALE • GREATER MANCHESTER • CHESHIRE • M33 1TQ • 061 973 2432**  
**COMPUTER EXPRESS HOLLAND • NIJVERHEIDSWEG NOORD 120 • 3812 PN • AMERSFOORT • NETHERLANDS • (033) 638222**  
**COMPUTER EXPRESS AMERICA • 1713 S.E. ELLIS STREET • PORTLAND • OR • 97202 USA • TELEPHONE (503) 235 0277**

## UNBEARABLY LOW PRICES

# £299 + VAT

## ATARI 520ST-FM

### ATARI HARDWARE

|                                                       |      |
|-------------------------------------------------------|------|
| Atari 520STFM, 512K RAM, Disk Drive, Mouse.....       | £299 |
| Atari 1040STF, 1MB RAM, Disk Drive, Mouse.....        | £449 |
| Atari 1040STFM with Modulator.....                    | £489 |
| Atari 1040 with SM125 Mono Monitor.....               | £509 |
| Atari 1040 with Philips 8833 Colour Monitor.....      | £699 |
| Atari Mega ST2, 2MB RAM, D/D Mouse, Mono Monitor..... | £799 |
| Atari SM125 12" High Res Mono Monitor.....            | £119 |
| Atari SC1224 12" Med Res Colour Monitor.....          | £309 |
| Philips 8833 Med Res Colour Monitor.....              | £249 |
| Supra Drive 20MB Hard Disk—Auto Boot!.....            | £459 |
| Cumana 1MB Double Sided 3.5" Disk Drive.....          | £119 |

### ATARI TOP SELLING LEISURE SOFTWARE

|                                                        |        |
|--------------------------------------------------------|--------|
| Advanced OCP Art Studio—Low Cost Art Package.....      | £18.45 |
| Art Director—Perfect Partner For Film Director.....    | £36    |
| Barbarian—Exciting Role Playing Adventure.....         | £18.45 |
| Chessmaster 2000—3D Graphics With Speech!.....         | £18.45 |
| Degas Elite—The Most Powerful Art Package.....         | £18.45 |
| DX Heaven Editor—Mid Synth Editor.....                 | £88    |
| Easy Draw II—Great With Timeworks DTP.....             | £56    |
| Film Director—Animation Package For Art Director.....  | £44    |
| Flight Simulator II—Very Realistic Best Seller.....    | £36    |
| Flight Simulator Scenery Disks—For Use With Above..... | £18.45 |
| Super Conductor—16 Track Midi Sequencer.....           | £36    |
| Terrorpods—Watch Out They're Here!.....                | £18.45 |
| Star Trek—The Long Awaited Space Adventure.....        | £13.50 |
| Star Wars—The Exciting Arcade Game For The ST.....     | £13.50 |

MANY OTHER TOP RELEASES AVAILABLE

### ATARI BUSINESS & PRODUCTIVITY SOFTWARE

|                                                             |      |
|-------------------------------------------------------------|------|
| Timeworks Desk Top Publisher—Xerox Ventura Clone.....       | £69  |
| Timeworks Datamanager & Swiftcalc—Database Spreadsheet..... | £56  |
| Timeworks WordWriter—Wordprocessor.....                     | £56  |
| Sage Accountant Plus—Powerful Accounting Package.....       | £169 |
| Back Pack Desk Accessories—Handy Accessories.....           | £36  |
| CAD 3D 2.0/Cyberstudio—The Best 3D Drawing Kit.....         | £66  |
| ALL CYBER STUDIO ADDONS AVAILABLE                           |      |
| Fast ST Basic (ROM)—It's really fast!.....                  | £66  |
| Fast ST Basic (Disk)—Disk Version of Above.....             | £33  |
| Fastcom—Popular ST Communications Package.....              | £36  |
| First Word Plus—Still The Most Popular WP.....              | £56  |
| Kuma K-Data—Low Cost Database.....                          | £36  |
| Kuma K-Spread II—Low Cost Spreadsheet.....                  | £59  |
| Lattice 'C' Compiler—Still Very Popular.....                | £71  |
| Mark Williams 'C' Compiler—'C' How You Like This.....       | £90  |
| PC Ditto—At Last A Full IBM Emulator.....                   | £90  |
| Superbase Personal—Powerful Relational Database.....        | £73  |
| Trimbase—The Integrated Database.....                       | £66  |
| VIP Professional—Lotus 1-2-3 Clone.....                     | £149 |
| Spectrum 512—The Ultimate Paint Program.....                | £41  |
| Logistix—Integrated Package.....                            | £69  |

## LARGE STOCKS ATARI SOFTWARE DISCOUNT PRICES

### FREE STARTER KIT

Buy any Atari ST Keyboard from Computer Express and receive completely free-of-charge, our special starter kit:

- BASIC LANGUAGE DISK
- MOUSE MAT
- ST OWNERS' MANUAL
- TOS/GEM ON ROM
- 5 PUBLIC DOMAIN DISKS WITH ART SAMPLES, GAMES AND USEFUL UTILITIES

### AFTER SALES SERVICE

Don't worry—if you buy from Computer Express we're always ready to help. New software, product developments, hints-and-tricks — call us for friendly advice and encouragement.

### ENORMOUS STOCKS

Enormous stocks of Atari Hardware and Software for speedy despatch from our own vast warehouse in St Albans.

### TECHNICAL BACK-UP

Highest possible standards of service from the Computer Express technical department. Any problems, just give us a call.

### FAST DELIVERY

Straight from stock to the customer by means of our super-reliable, ultra-efficient delivery service. Computer Express won't keep you waiting.

### SUPER PRICES

Call us for a copy of our price list or an on-the-spot quotation — no obligation.



**0727-37451**



**MICRO-COMPUTERS, PERIPHERALS  
SOFTWARE SALES & SUPPORT  
CREDIT CARDS NOT DEBITED UNTIL DESPATCH**



# The ST Club

PO Box 136 • London • E1 1LL

## Members Benefits:

• **Monthly Newsletter** packed with News, reviews, articles, hints and tips, programming articles, free classified adverts, and more. Now 28 pages in A4 format; produced using DTP software and an Atari Laser. Single issues 80pence - Annual subscription just £5.00 per year! (Subscribe now - Increase due soon)

• **Bi-Monthly Disk Magazine** containing the best and latest Public Domain Software; many with source codes. Disk Mag and Newsletter subscription: £22.50

• **Public Domain and Shareware Software** - over 250 disks at the last count. All available on quality branded single and double sided disks from as little as £2.35 each.

• **Local and International User Groups:** contacts, support and reduced rate group membership. Special Interest Groupings; including: C, Pascal, Comms and Adventure.

• **Members discounts** on Public Domain disks, commercial software, hardware etc. Big discounts on Commercial software.

• **Own Label Software** - we commission software for both commercial and PD distribution. Interested programmers please contact us with proposals and examples of your previous work.

• **Laser printing service** - Write for details and a price list.

## PUBLIC DOMAIN SOFTWARE DISKS

These are just a small selection of the hundreds available - write for a FREE copy of the latest catalogue.

### GRAPHICS APPLICATIONS

GRA.04: MANDLEBROT (Colour)  
GRA.10: FRAKTAL - Landscape  
GRA.22: AIM V2.31 Image processor (D/S - 1meg). Mono demos.  
GRA.23: AIM plus colour demos.

### DRAWING APPLICATIONS

DRG.05: NEOCHROME (Colour)  
DRG.06: Degas Utilities  
DRG.07: Masterpaint & Little Painter drawing package with a font editor.  
DRG.08: The ArtIST (mono)

### COLOUR DEMONSTRATIONS

SSC.03: The Flying bird  
SSC.05: The GLOBE (D/S - 1 Meg)  
SSC.06: Shiny Bubbles

### SSC.14: The Planets (D/S Disk)

GRA.15: The Juggler & ManyBoink  
GRA.20: Cyberstudio animation - a short film for the ST? (1meg - D/S)

### Tiny format Colour Slide Shows

SSC.10: Cartoon and space themes  
SSC.11: Maps, portraits, planes, cars.  
SSC.12: Page3 - Nudes and pin-ups.

SSC.16: The Empire Strikes Back  
Games - Colour

GAM.13: Space strategy & arcade

GAM.19: PacMan, Trivia & Yahtzee

GAMES - Need Mono Monitor

GAM.10: Puzzle Puzzle - jigsaw

GAM.14: Solitaire MacPan

GAMES Mono or Colour

GAM.21: EAMON - adventure writer

GAM.03: HACK! - D&D adventure.

GAM.04: ADVENTURE WRITER

GAM.11: LARN - Text adventure

### UTILITIES

UTI.07: Floppy disk utilities

UTI.08: Hard disk utilities

UTI.09: PACKERS - file archivers.

### COMMUNICATIONS UTILITIES

COM.03: XMODEM

COM.07: Kermit

COM.08: UNITERM V1.7

### WORD PROCESSORS etc

WPR.06: Micro EMACS

WPR.07: ConTEXT, FOGGER

LESS - SPELL - 32k SPOOLER.

FON.03: FONTEDIT Version 3

WPR.16 and WPR.17: Deluxe

Fontmaster ST v2.0 - excellent multi

page layout package (mono)

WPR.18: STWRITER V1.75

### LANGUAGES

LAN.01: ASSEMBLER, FORTH-83.

LAN.08: C Compiler, TINY BASIC,

Disassembler, Make.

LAN.09: ToyProlog V3.0

LAN.13: Little Smalltalk

LAN.14: ST ICON v6.0

XLS.01: XLISP & TINY PROLOG

### Disk\_Mags

DMG.08: Disk\_Mag Sampler

## PD Disks £2.70 each

copied onto PARROT branded disks

## SUBSCRIBERS DISCOUNTS

Newsletter Subscribers Deduct 10%

Disk Mag Subscribers Deduct 15%

(Discounts on PD disk prices only)

## SPECIAL OFFER

Top quality PARROT branded

disks (10) in Free library case.

Single Sided £13.95

Double Sided £16.95

All prices include VAT and Post & Packing

Please supply: ( ) Subscription (Newsletter/Disk Mag)  
( ) Sample Newsletter (80p) ( ) Sample Disk Mag (£2.00)  
( ) FREE PD Catalogue ( ) PD disks:

£ . Cheque/PO enclosed

NAME:

ADDRESS:

Post Code:

The ST Club. Edco House, 10-12 Colliers Wood High Street,  
Wimbledon London SW19 2AE

STU 6

No surcharges on European orders • Other countries add 5% for Air Mail despatch

NEW from **microdeal**  
ELECTRONIC PUBLISHING

# PAYROLL FOR THE ATARI ST

This new payroll program has been designed around GEM to make it as easy as possible to use.

## Features include:

- ★ Easy access to employee records
- ★ Easy movement within records
- ★ On screen comparison of records
- ★ Fail-safe menu selection
- ★ Time-saving features to
  - simplify regular entry of pay
  - remove typing of duplicates
- ★ No limit to extra payments/deductions
- ★ Up to 6 pension schemes
- ★ Inclusion of ALL employees paid:
  - weekly; 2-weekly; 4-weekly; monthly on one payroll
- ★ Court orders
- ★ Automatic calculation of all dates, tax periods etc.
- ★ Simple way to change tax rates etc
- ★ Global taxcode updates.
- ★ 90-day free technical support with ongoing maintenance available

## PLUS an unique treatment of SSP:

- ★ Fully automatic ★ Interacts with payroll ★ Exceptional ease of use ★
- ★ All linking calculated ★ Retains dates of all sickness, including qualifying days.

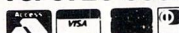
**- ALL you have to tell it is the days that an employee was off sick!**

A demonstration disk is available at a nominal charge from your local ST dealer or by sending £3 to the address below

**PRICE £99.95 including V.A.T.**  
available from Atari ST dealers or from

By phone with credit card

**Tel 0726 68020**



Box 68, St Austell  
Cornwall PL25 4YB  
Telephone 0726 68020

By Post

MICRODEAL LTD  
BOX 68  
ST AUSTELL  
CORNWALL  
PL25 4YB

**CARE ELECTRONICS**

OPEN  
9am-5pm Mon-Thu  
9am-4pm Fri-Sat

800 ST. ALBANS ROAD,  
GARSTON, WATFORD,  
HERTS WD2 6NL.  
Tel: 0923 672102

**NEW ATARI EPROM CARTRIDGE**  
**NEW LOW COST 3.5" DRIVE**  
**NEW ATARI 3.5"+5.25" MULTI DRIVE**

| RUN "PC" SOFTWARE ON YOUR ST                                                                                                                                         |           |          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|
| The complete package you need to run PC software on your ST. PC Ditto MsDos emulator plus an external 5.25" disc drive with PSU and suitable cables for the Atari ST | Ex. VAT   | Inc. VAT |
| PC Ditto (Ms Dos Emulator) (UK version)                                                                                                                              | @ £204.00 | £234.60b |
|                                                                                                                                                                      | @ £69.00  | £79.35d  |

**\*NEW\* ATARI ST EPROM ROM CARTRIDGE (INTRODUCTORY OFFER)**

|                                 |          |        |         |
|---------------------------------|----------|--------|---------|
| Suitable for 2x27256 or 2x27512 | EACH @   | £13.00 | £14.95c |
| DEALER ENQUIRIES WELCOME        | 10 off @ | £11.00 | £12.65  |

**PHILIPS MONITORS/TV MONITORS: Including Lead**

|                                          |           |          |
|------------------------------------------|-----------|----------|
| Philips 8833 Med Res Colour              | @ £260.83 | £299.95a |
| Philips 8873 High Res Colour             | @ £515.00 | £592.25a |
| Philips 1010 TV/Monitor (Pushbutton)     | @ £230.00 | £264.50a |
| Philips 1210 TV/Monitor (Remote control) | @ £234.00 | £279.45a |
| AV7300 TV Tuner Module for 8833          | @ £65.00  | £74.75b  |

**READY MADE LEADS**

|                                          |   |        |         |
|------------------------------------------|---|--------|---------|
| Atari ST to 7 pin RGB (Ferguson)         | @ | £11.00 | £12.65c |
| Atari ST to Scart (Not Sony)             | @ | £12.00 | £13.80c |
| Atari Printer Lead (1.5 Metres) Screened | @ | £12.00 | £13.80c |

**DISC DRIVES: Full Spec Drives**

|                                                          |           |          |
|----------------------------------------------------------|-----------|----------|
| Single 3.5" 1 x 1Mb with INTERNAL Power Supply           | @ £112.00 | £128.80b |
| Dual 3.5" 2 x 1Mb with INTERNAL Power Supply             | @ £190.00 | £218.50b |
| Single 5.25" 1 x 1Mb with INTERNAL Power Supply          | @ £135.00 | £155.25b |
| <b>*NEW*</b> 3.5" 1xMb with External power supply        | @         | £85.00   |
| <b>*NEW*</b> 3.5" Plus 5.25" Combined Disc unit with PSU | @ £250.00 | £287.50b |

**SWITCHING UNITS: All Lines Switched**

|                                             |   |        |
|---------------------------------------------|---|--------|
| 1 Micro to 2 Printers 2 Micros to 1 Printer |   |        |
| Centronics 2 to 1 + Lead                    | @ | £31.00 |
| Centronics 4 to 1 + Lead                    | @ | £62.00 |
| RS232C 2 to 1 (25 way D)                    | @ | £33.00 |
| RS232C 4 to 1 (25 way D)                    | @ | £64.00 |

**MAGNETIC MEDIA:**

|                                   |   |        |         |
|-----------------------------------|---|--------|---------|
| 3.5" D/S D/D Disc EACH            | @ | £2.00  | £2.30c  |
| 3.5" D/S D/D Discs (Packet of 10) | @ | £18.00 | £20.70c |

GOVERNMENT & EDUCATION ORDERS WELCOME.  
HOW TO ORDER:  
Enclose your cheque/P.O. made payable to CARE ELECTRONICS.  
Or use your ACCESS/VISA Credit Card. Please allow 7 days for delivery.  
Please add carriage. a=£10.35 b=£5.75 c=£1.15 d=£2.30



# Structured programming workout

## Modula 2 and Pascal are compared and contrasted by Stephen Hill. Which of them comes out on top?

THE C programming language has rapidly established itself as the standard development system for the Atari ST. Some people love C, but others find its programs hard to read, and even worse to debug. This month I shall be comparing two possible alternatives, Prospero's Pascal, and HiSoft's FTL Modula-2.

Pascal was originally designed in the early seventies as a teaching medium, to train programmers to adopt a structured approach to programming. Over the years it has been extended considerably to enable it to cope with the sort of practical problems found in the real world.

Modula-2 uses most of the ideas inherent in Pascal, but takes them a stage further. At first glance it often appears almost identical to its older cousin, which is hardly surprising considering that the same man, Niklaus Wirth, was largely responsible for both.

The main difference between the two concerns the use of modules. Standard Pascal has no built-in facilities for splitting a large program into several separately compilable chunks, although many of the latest versions, such as Turbo Pascal, do incorporate some such capability at the expense of portability.

The use of these modules is fundamental to Modula-2, and is a standard part of the language. Modula-2 also supports a powerful form of multi-tasking, which makes this language particularly well suited to systems programming applications such as operating system design.

### Pascal

I'll start with an examination of Prospero's new Gem-based Pascal compiler. It comes on two single sided discs, along with all the bundled software enclosed with their Fortran compiler I reviewed in the February 1988 issue of *Atari ST User*.

As so much of the underlying structure of this package is indistinguishable from

that found in Prospero Fortran, I'll concentrate on the aspects of the system especially relevant to Pascal programmers.

The cornerstone of both Prospero languages is the Gem Workbench, which combines the functions of a Gem-based editor with those of a shell program like Metacomco's Menu+.

The Pascal version is almost identical to that used by Fortran. The only differences are an extra item on the link menu, and a new set of compiler options.

I loved this programming environment from the first, and the fact that I was able to use it straight from the box over four months later says a great deal for its user-friendly interface.

One aspect of particular importance to Pascal programmers is an automatic indentation facility. This enables you to produce beautifully laid out programs without having continually to enter long strings of spaces.

Having attempted this feat many years ago at college, I was relieved to find

Prospero Pascal supported just this feature.

Prospero provides you with several optional extensions which correct a number of minor flaws in the current Pascal standard.

These include an OTHERWISE clause for the CASE statement, hexadecimal constants, and an effective form of segmentation vaguely similar to that built into Modula-2.

As with Fortran, all these facilities can be turned off using one of the many compiler options from the menu. This allows you to create programs which can then be readily transported to another machine.

### Compatibility

My own experiments with the compiler, using Pascal-7 programs written on a large mainframe, augured well for its compatibility with other systems. Not only did it compile and run my routines without any problems, but it also caught a number of logic errors due to typing mistakes.

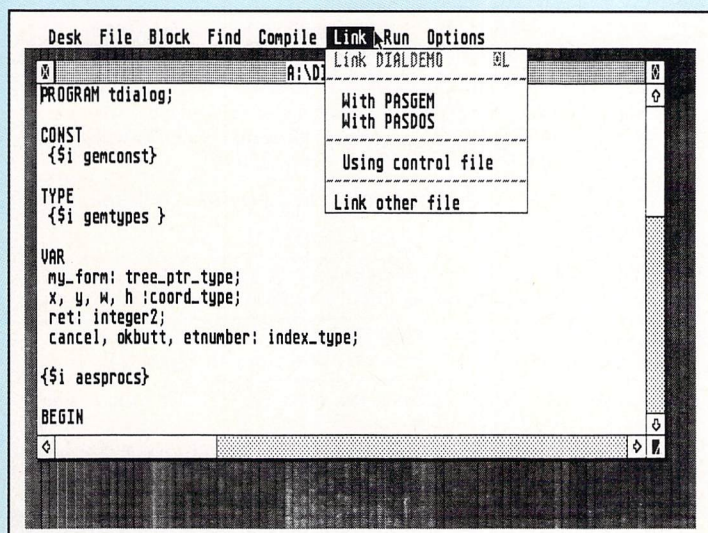
Before you can run the programs generated, you first need to link them with the supplied library routines. Since most are exactly the same as those found in Fortran, it would be fairly easy in practice to combine programs written in these two languages.

Unlike HiSoft's Modula-2, this compiler uses the common GST linker format, which therefore makes it theoretically possible to incorporate previously compiled routines written in a variety of other programming languages.

This is a serious consideration for anyone thinking of changing from another language such as C, as it avoids the necessity of converting any of your favourite C routines into Pascal in order to use them from within your new programs.

Two libraries of procedures are included on the distribution disc. Probably the most important is the Gem library, which contains all the functions you need to utilise the amazing power of the Gem environment from Pascal programs.

There's also a special Gemdos library



Linking a Pascal file

Turn to Page 75 ►



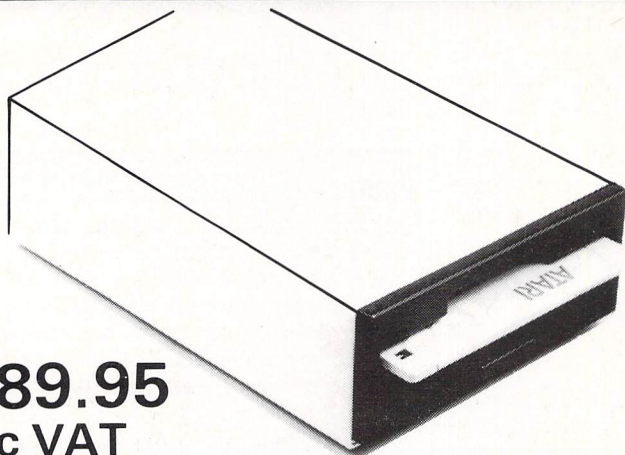
# Atari ST's UNBEATABLE

ALL ITEMS AT DISCOUNT PRICES  
AND FAST DELIVERY!  
SATISFACTION GUARANTEED!

## COMPUTERS

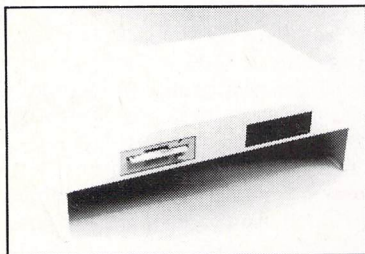
|                                     |        |
|-------------------------------------|--------|
| 520 STF + MOUSE + 1 MB drive.....   | £359   |
| 520 STF + MOUSE (1/2 MB drive)..... | £359   |
| 1040 STF + MOUSE.....               | £499   |
| 1040 STF + MOUSE + SM 124/5.....    | £619   |
| ST 2 + SM 124/5.....                | £885   |
| ST 4 + SM 124/5.....                | £1,185 |
| LASER PRINTER.....                  | £1,185 |
| SH 205 20MB HARD DISC.....          | £521   |
| PC1 SD.....                         | POA    |
| PC2 SD + PCM.....                   | £616   |
| PC2 DD + PCM.....                   | £668   |
| PC2 30MB SD + PCM.....              | £976   |
| 20MB HARD CARD FOR PC2.....         | £239   |
| 20MB HD FOR PC2.....                | £259   |
| 40MB HD FOR PC2.....                | £333   |

## AS & T 1 MEGABYTE DRIVES



**£89.95**  
inc VAT

# NEW LOW PRICE!



**PLINTH  
£10  
TO CLEAR**



Carriage: Please allow £3 for small items, £7 for large items.

**ADVANCED SYSTEMS AND TECHNIQUES  
UNIT 32/33 RUTHERFORD CLOSE  
PROGRESS ROAD, EASTWOOD INDUSTRIAL ESTATE  
SOUTHEND-ON-SEA  
ESSEX SS9 5LQ**

# 3 1/2"

DS/DD 135TPI

## BRANDED FLOPPY DISKS

|          |        |
|----------|--------|
| 10 ..... | £12.00 |
| 20 ..... | £20.00 |

Inc. Free Library cases

|           |        |
|-----------|--------|
| 40 .....  | £40.00 |
| 50 .....  | £46.00 |
| 100 ..... | £89.00 |

Inc. Free Lockable box

**100% Certified Lifetime Guarantee**

Prices inc. VAT & Carriage. Cheque & P.O. to:



**Manor Court Supplies Ltd**

Dept. AT6,

Glen Celyn House, Penybont,  
Llandrindod Wells

Powys. LD1 5SY Tel: 0597 87792

## Softville PD Service

55 Highfield Avenue, Waterlooville  
Hampshire PO7 7PY. England

### OVER 300 PUBLIC DOMAIN DISKS FOR ST's

ACC1 - DESK ACCESSORIES including CLOCK, PUZZLE, CALENDAR, CALCULATORS etc. Over 50 files in all!

ACC24 - ARCHiving utility, CODER-set up printer from desktop, KEYEDIT - configure your keyboard. MONOEMU-make your ST think you have a high-rez monitor. RESET, forces a complete system re-boot. Over 15 utilities in all!

WP12 - STWriter ELITE, a new GEM'd version of the best WORD PROCESSOR available. Even drives lasers!

WP10 - MAILMERGE - for use with WP12 or 1st Word. KUVERT, an envelope addresser. KOUNT, a word counter & SPELL, a spelling checker. Great value disk!

ART1 - NEOCHROME, two versions of this popular and versatile ART/DRAWING package. Includes NEOFUN & 6 great pictures for you to practice your skills on!

GAME3 - ST version of HACK, the adventure. Brilliant!

GAME6 - ST Version of the COLOSSAL CAVE adventure!

GAME7 - AZARIAN, SPACEWAR & FIRESTORM. Three great shoot 'em ups on one disk. You need a joystick for these!

INTRO - A disk full of PD for you to sample, includes games, utilities, accessories etc. & a full catalogue.

Above disks only £3.00 each inc. disk, P&P. (£2.75 each if you buy over 6). INTRO disk only £1.50 inc. Send cheques or Postal Orders made payable to SOFTVILLE or an 18 pence stamp for FREE details of the COMPLETE PD SERVICE. Phone Rod Gearing on 0705-266509 for details.



### ◀ From Page 73

which gives you access to the ST's many operating system features. Commands exist to enable you to use any of the Gemdos, Bios or XBIOS routines in your programs.

Furthermore, a number of extra options are available. To my mind, the most interesting was MakeFQlist, which took a standard directory specification and produced a list of all the files found in this directory.

Since the directory name could include either of the wildcards ? or \*, this meant you could perform some quite complicated file searches with this procedure.

I'm happy to say that Prospero has provided the excellent Probe debugging program from its Fortran with this system. This makes debugging even the largest Pascal programs relatively straightforward, and is a real bonus for ST programmers.

The quality of the documentation supplied with the package was consistent with the extremely high standard established by Fortran.

There were, as before, a number of minor inconsistencies between the example programs mentioned in the text and those on the discs. Even the README file appeared to be slightly inaccurate in this respect.

For Gem programmers, Prospero has converted the separate VDI and AES manuals from Fortran. These books are the best introduction to Gem programming I've seen in any language, and can be highly recommended.

## Modula-2

I'll now have a look at HiSoft's FTL Modula-2, which is packaged on three single-sided discs containing programs, utilities and compiler libraries. The first thing you need to do before installing the system on your ST is to look up the appropriate section of the user guide.

This gives detailed, step-by-step

instructions, telling you precisely how to set things up on anything from a Mega-ST with a hard disc, to an unexpanded STFM. I found this information extremely helpful, and even relatively inexperienced ST users should be able to get their system up and running within about half an hour.

In order to make it as easy as possible to access the various parts of this package directly from the desktop, HiSoft has

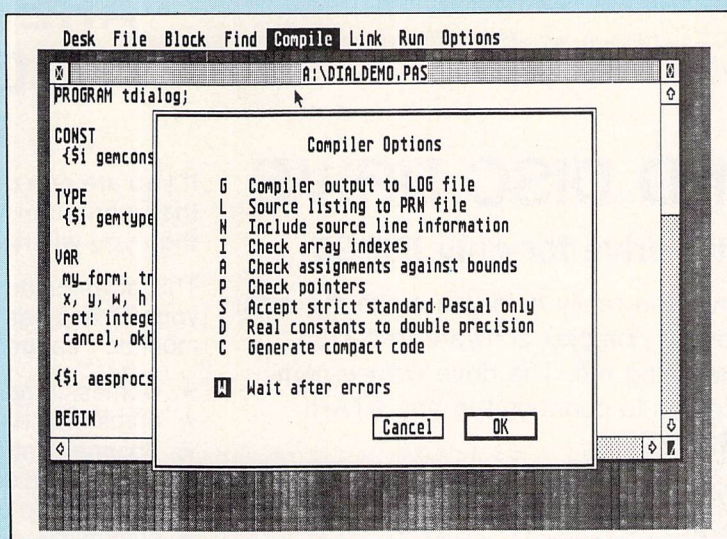
created a small program called ADDINF. This uses the install application feature from Gem, to enable you to edit, or link, a file with the appropriate extension, simply by double clicking on it.

The editor supplied, is itself written in Modula-2, and HiSoft will happily provide the source code to registered users for an additional charge. In many respects it's a very good advertisement for the language, being fast, efficient, and packed with features.

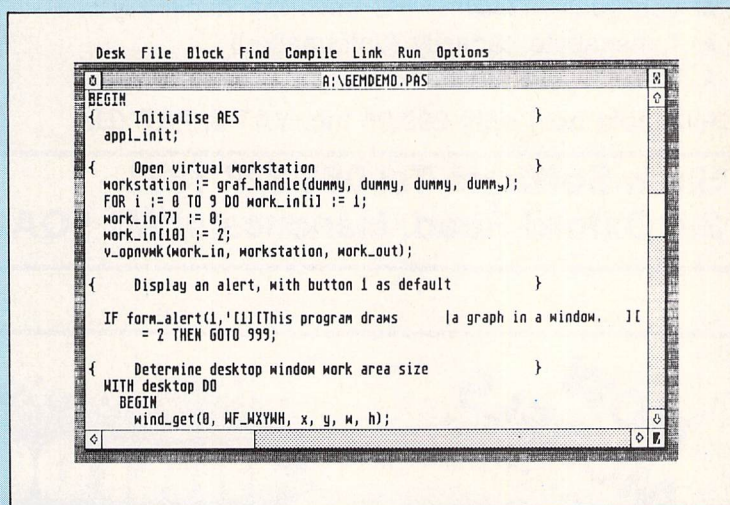
Alongside the more normal options such as cut and paste, HiSoft has included a number of useful extras. My favourite is the macro facility, which enables you to assign any sequence of keystrokes or mouse movements to an arbitrary string. This list is then executed faithfully any time you type in your new command from the keyboard.

Several sets of macros come ready to use on one of the discs, and you can easily modify them to customise the editor to your own needs.

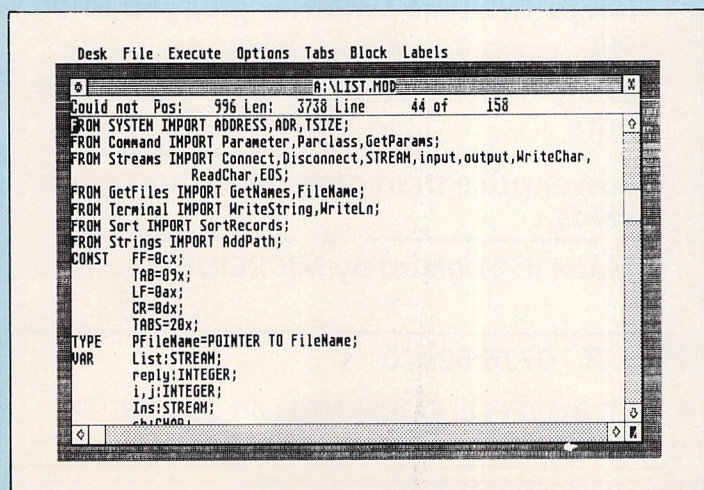
My only real gripe with this editor concerned the search and replace commands, which were only available from



Prospero Pascal's compiler options



Editing a Pascal file



The Modula-2 editor

Turn to Page 77 ▶



## ARE YOU GETTING SOUND FROM YOUR ST?

### SECOND DISC DRIVE

Add an extra drive for only £99.95

Our superb drive can really help you make the most of your ST allowing complex software to be run without disc swapping etc. The drive comes complete with all cables to connect it to any ATARI 1040 STF or 520 STFM

- ★ ultra quiet
- ★ slim styling, colour matched to the ST
- ★ Top quality Citizen/NEC drive mechanism
- ★ 1 megabyte capacity (unformatted)
- ★ full one year parts and labour guarantee.

Available now only £99.95 inc. VAT & P&P (UK)

If you are one of the many ST users who are using their computer with a monitor without audio output, then you will need a SOUNDBLASTER.

This powerful amplifier connects to the monitor socket on your ST and has a through connector to connect to your monitor. Features include:

- ★ Comes complete with a 20 watt 3-way speaker.
- ★ on/off switch with indicator
- ★ Volume control
- ★ Headphone socket
- ★ very easy to connect
- ★ compatible with all software

Available now only £34.99

\*\*\*FREE HEADPHONES WITH EVERY SOUND  
BLASTER ORDERED\*\*\*  
(For a limited period only)

Siren Software Tel 061 228 1831  
2-4 Oxford Road, Manchester M1 5QA



**NOW  
2 MODELS**  
\*\*\*\*\*



**NEW  
EXTERNAL  
MODEL NOW  
AVAILABLE**  
\*\*\*\*\*

## CLOCK CARDS

FOR THE 520 OR 1040 ATARI ST

### 1. INTERNAL FITTING.

Runs on ni-cad batteries that re-charge when you switch the computer on.

Easily fitted inside machine and easily removed if required.

Supplied with software to check time etc.

Fits under keyboard; no need to remove the metal shield.

Lower price than other clock cards.

### 2. EXTERNAL ROM PORT FITTING.

Long life battery.

Keeps the time whether plugged in or out.

Easily fitted; simply plugs into ROM port.

Lower price than other ROM port clock cards.

Made in England by MICRODEAL.

**TO  
ORDER**

BY PHONE — WITH CREDIT CARD

BY POST — SEND CHEQUE OR P.O.

**JUST £27.50**  
(£1 Post & Packing)

TO MICRODEAL LTD. BOX 68, ST.AUSTELL, CORNWALL PL25 4YB

STATE WHETHER INTERNAL OR EXTERNAL CLOCK CARD REQUIRED.



0726 68020



## ◀ From Page 75

the keyboard, and not from one of the menus.

This problem was exacerbated by a mistake in the default keystroke assignments, which prevented the search/replace function, as outlined in the documentation, from working properly.

The solution was to load a copy of the default assignment file found in one of the libraries, and correct the problem by hand. After this had been done, the search/replace routine performed as expected.

Another irritating flaw concerned the block copy facility, which seemed to be unable to move any text between two currently open files.

Like Prospero, HiSoft has placed its editor at the centre of the program development cycle. Most components of the system can be called up and executed at any time directly from the one of the menus.

One major difference with Prospero's workbench was that such programs stay resident in the ST's memory after they have been used. This means that once you have loaded them you can access them again and again practically instantaneously.

Although this works fine if your ST has a lot of memory, there doesn't appear to be enough space on a standard 520 to load both compiler and linker simultaneously. You therefore have to exit to the desktop, and call the linker manually in this situation.

This is less of an inconvenience as it might at first seem because, providing the linker is on the same disc as the compiled version of your routine, double clicking on this file will immediately convert your program into executable form.

HiSoft appears to have taken great pains to accelerate the process of program development as much as possible. To that end, it has come up with a number

*Benchmark results  
for Pascal and  
Modula-2*

| Test     | Pascal |      | Modula-2 |      |
|----------|--------|------|----------|------|
|          | Time   | Size | Time     | Size |
| Intmath  | 0.114  | 19k  | 0.052    | 16k  |
| Realmath | 0.40   | 20k  | 1.47     | 22k  |
| Trilog   | 6.33   | 19k  | 22.3     | 31k  |
| Textscrn | 45.88  | 20k  | 32.11    | 16k  |

of strategies to minimise disc access during compilation.

The most important improvement in speed is that all programs are compiled directly from the source text held in the editor's memory. The main disadvantage with this approach is that in the event of something going wrong with the compiler, you can lose any changes made during the editing session.

HiSoft has, however, anticipated this problem, and allows you to use a special safe mode which automatically saves your source text before you compile your program. This is very fortunate, because a number of small bugs have yet to be eliminated from the compiler, and these can occasionally cause the ST to crash.

As a finishing touch, HiSoft has optimised the compiler itself. This has reduced the turn around time for your programs still further.

Typical timings for compiling a program approximately 200 lines long range from 10 to 25 seconds depending on the options used and whether the compiler was already resident in memory. It is a major achievement by HiSoft to have produced a compiler capable of performing this quickly.

Support for Gem is provided by a number of library modules. They use the standard names for the many Gem functions rather than the expanded monstrosities used by TDI's version of the language – reviewed in the May 1987 issue of *Atari ST User*.

Although this makes it much easier to translate Gem programs written in other

languages, it also leads to incompatibilities between the HiSoft and TDI versions of Modula-2.

In contrast to Prospero Pascal, all these routines are stored as part of the main system library, so you don't need to give special instructions to the linker before they can be accessed.

Furthermore, a special option has been built into the linker to enable you to produce desktop accessories in the correct format. An example accessory is available in one of the source libraries to get you started.

HiSoft has thoughtfully included a number of utility programs with this package. They comprise a 400/800k disc formatter, a batcher program, a reset proof ram disc and a menu creator.

Although the quality of most of these programs is no higher than their equivalents in the public domain, many people will find them extremely valuable, and it's a very nice gesture on HiSoft's part.

Another useful extra was the inclusion of a small 68000 assembler. HiSoft specifically makes no assurances as to its reliability and, as you might expect, recommends using its excellent Devpac ST for serious 68000 development work.

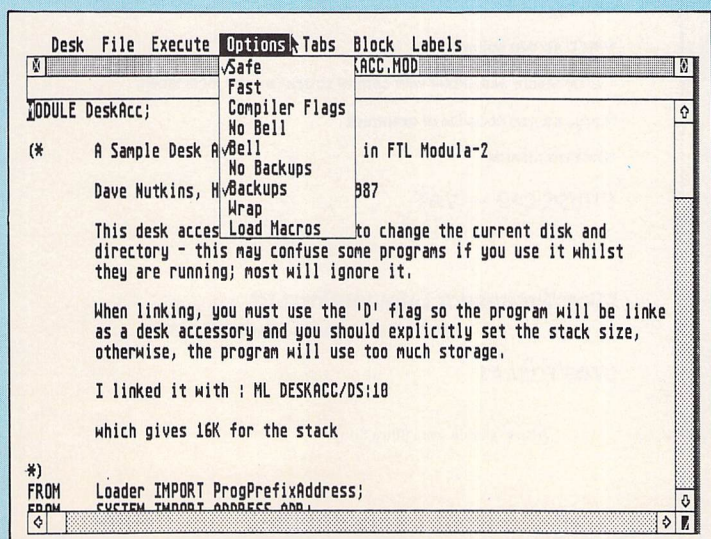
The HiSoft documentation is split into two volumes, one a general Modula-2 reference manual giving a basic description of the specification of the language as implemented by the compiler. This section is the same for a number of versions of this program running on various machines.

It's fairly well constructed and reasonably helpful, but unfortunately it lacks any decent form of index. There is however, a really useful appendix, which explains the numerous differences between Modula-2 and Pascal. This would be of great assistance to any experienced Pascal programmers wishing to learn this language.

The second part of the manual is specific to the ST. It is written in the light and slightly jokey style we have come to expect from HiSoft these days.

Although there is an index, it appears to have been put in as an afterthought, and isn't really much use. I'm fairly certain all the information you need is in there somewhere, but it isn't always easy to find.

Overall the documentation is much



*Modula-2's  
option menu*

Turn to Page 78 ▶



## ◀ From Page 77

better than average, but fails to achieve the same high standards established by Prospero, especially in the sections concerning Gem.

### Conclusions

Both Prospero Pascal and FTL Modula-2 compare well with any of the currently available C compilers when considered as possible ST development systems.

HiSoft's Modula-2 does score over Prospero's compiler in terms of speed, but Prospero Pascal incorporates an excellent debugging aid in Probe, and provides much better support for routines written in other programming languages like C. Furthermore, Pascal also appears to be slightly more reliable than its younger counterpart.

It's also important to note that, as yet, only the ST versions of Modula-2 allow you to use Gem. This means you would be unable to convert Gem-based Modula-2 programs written on the ST to another machine.

Since an almost identical copy of Prospero Pascal already exists with these facilities for PC compatibles, this is hardly

likely to be a problem for Pascal users.

Unfortunately neither of these packages currently supplies a resource construction set, which is a real pity, as such a utility is practically essential for any extensive Gem programming.

Another thing to consider is FTL Modula-2's current limitation of 64k of code for each separately compiled module. This is unlikely to be a problem for most users though, as the only real limit to the number of modules you can include in your programs is the ST's available memory.

The choice between these packages

largely depends on your personal opinion on the relative merits of Pascal and Modula-2. Although they may on the surface look similar, they are in fact very different languages.

For me, Pascal seems considerably easier to use, but slightly less powerful than Modula-2. In many respects, it all comes down to a question of personal taste.

What I can say is that if you wish to write serious programs on the ST, but don't feel comfortable using C, either of these systems could well be the one for you.

### FACT FILE

*Product: FTL Modula-2*  
*Price: £69.95*  
*Supplier: HiSoft, The Old School, Greenfield, Bedford MK45 5DE.*  
*Tel: 0525 718181*

#### POINTS FOR:

*Fast and flexible; lots of extras.*

#### AGAINST:

*One or two minor bugs in the editor.*

### FACT FILE

*Product: Pascal*  
*Price: £99.95*  
*Supplier: Prospero Software, 190 Castelnau, London SW13 9DH.*  
*Tel: 01-741 8531*

#### POINTS FOR:

*Excellent documentation; good debugger.*

#### AGAINST:

*Nothing worth mentioning.*

# MWD COMPUTING OFFER

### DISCS

Bulk SS/DD 135TPI .....£8.95  
 Freeflow with free plastic case  
 DS/DD 135TPI .....£10.95  
 Freeflow Write 'n' Wipe with  
 free plastic case DS/DD 135TPI .....£11.95  
*Includes Special Pen*

### ATARI MEGA ST DESKTOP PUBLISHING SYSTEMS

Do you own an ST but cannot afford a Laser Printer?  
 No problem MWD can print your artwork with our  
 LASER BUREAU

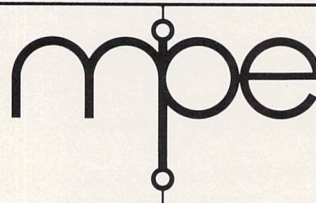
Phone for latest prices

**DOUBLE JOYSTICK EXTENSION LEADS  
 FOR 520 STFM and 1040 ST £6.95**

### SERIOUS SOFTWARE TO SUIT YOUR NEEDS FULL BACK-UP SERVICE

*All prices include VAT*

**HOW TO ORDER:** Please make cheque/P.O. payable to MWD Computing and send to MWD Computing, Suite 28, Horsehay House, Horsehay Estate, Horsehay, Telford, Shropshire.  
 Tel: 0952 506240



### GEM-FORTH/ST

#### VERSION 2.0 FOR THE ATARI ST/MEGA WITH:

- \*Graphics and Windows through GEM VDI and AES interfaces
- \*Fast Line-A Graphics
- \*Multi-tasking
- \*Floating Point
- \*FRED screen editor
- \*68000 Macro assembler with control structures and local labels
- \*Large source code file of examples
- \*Detailed manual

**PRICE £49 + VAT**

**MicroProcessor Engineering Ltd**

133 Hill Lane, Shirley, Southampton SO1 5AF

**0703 631441**

Also available from Silica Shop.



FREE PRIZE  
VOUCHER WITH  
EVERY GAME  
ORDERED

# CUT PRICE SOFTWARE LTD.

FREE PRIZE  
VOUCHER WITH  
EVERY GAME  
ORDERED

| ATARI ST GAMES         | RRP   | OUR   | ATARI ST GAMES        | RRP   | OUR   | ST BUSINESS PRODUCTS          | RRP    | OUR      | ATARI ST ADVENTURES     | RRP   | OUR   |
|------------------------|-------|-------|-----------------------|-------|-------|-------------------------------|--------|----------|-------------------------|-------|-------|
| Elite                  | 24.95 | 15.95 | Defender of the Crown | 29.95 | 18.95 | P.C. Ditto                    | 89.95  | 59.95    | Legend of the Sword     | 24.95 | 15.95 |
| Out Run                | 19.95 | 12.95 | Bridge Player 2000    | 19.95 | 13.95 | Superbase Personal            | 99.95  | 64.95    | Time and Magik          | 19.95 | 12.95 |
| Dungeon Master         | 24.95 | 14.95 | U.M. Simulator        | 24.95 | 15.95 | Superbase Professional        | 249.95 | 169.95   | Stac ST Advntr. Creator | 39.95 | 24.95 |
| Gauntlet 1 or 2        | 24.95 | 15.95 | Star Trek             | 19.95 | 12.95 | Fleet Street Publisher        | 115.00 | 74.95    | Lounge Lizards          | 19.95 | 14.95 |
| Road Runner            | 24.95 | 15.95 | Backlash              | 19.95 | 12.95 | Home Publisher                | 24.95  | 16.95    | Guild of Thieves        | 24.95 | 15.95 |
| Xenon                  | 19.95 | 12.95 | Mercenary Compendium  | 24.95 | 15.95 | Pascal (Metacomco)            | 89.95  | 59.95    | Bermuda Project         | 24.95 | 16.95 |
| Foundations Waste      | 24.95 | 15.95 | Dark Castle           | 24.99 | 15.99 | Lattice C (Metacomco)         | 99.95  | 69.95    | Knight Orc              | 24.95 | 15.95 |
| Bubble Bobble          | 19.95 | 12.95 | Gunship               | 24.95 | 15.95 | Macro Assembler (Meta.)       | 49.95  | 34.95    | De-Javu                 | 24.95 | 16.95 |
| Barbarian              | 24.95 | 15.95 | Flight Sim II         | 44.95 | 29.95 | Cambridge Lisp (Meta.)        | 149.95 | 99.95    | Jinxter                 | 24.95 | 15.95 |
| Terrapods              | 24.95 | 15.95 | Gold Runner 1 or 2    | 24.95 | 15.95 | BCPL (Metacomco)              | 99.95  | 69.95    | Zork (1, 2 or 3)        | 29.99 | 19.99 |
| Scrabble               | 19.95 | 12.95 | Impossible Mission II | 19.99 | 12.95 | Make (Metacomco)              | 49.95  | 34.95    | Hitch Hikers Guide      | 29.99 | 19.99 |
| Obliterator            | 24.95 | 15.95 | ST Soccer             | 24.95 | 15.95 | Menu+ (Metacomco)             | 19.95  | 14.95    | Leather Goddess         | 29.99 | 19.99 |
| Epyxs Epixs            | 29.95 | 18.95 | Leatherneck           | 19.95 | 14.95 | Mailshot Plus                 | 49.95  | 34.95    | Space Quest II          | 24.95 | 15.95 |
| Black Lamp             | 19.95 | 12.95 | Fright Night          | 24.95 | 15.95 | Mailshot                      | 24.95  | 16.95    | Lurking Horror          | 29.99 | 19.99 |
| Verminator             | 24.95 | 15.95 | Wizard Warz           | 19.95 | 12.95 | Home Accounts                 | 24.95  | 16.95    | Stationfall             | 29.99 | 19.99 |
| F15 Strike Eagle       | 24.95 | 15.95 | Brave Star            | 19.95 | 12.95 | Digicalc                      | 39.95  | 29.95    |                         |       |       |
| S.D.I.                 | 29.95 | 18.95 | Captain America       | 19.95 | 12.95 | K-Graph 2                     | 79.95  | 49.95    |                         |       |       |
| Art Director           | 49.95 | 31.95 | Trantor               | 19.95 | 12.95 | K-Spread 2                    | 79.95  | 49.95    |                         |       |       |
| Psion Chess            | 24.95 | 16.95 | Shackled              | 24.95 | 15.95 | K-Word 2                      | 59.95  | 39.95    |                         |       |       |
| Advanced Art Studio    | 24.95 | 15.95 | Rockfords             | 19.95 | 12.95 | K-Roget Theasaurus            | 49.95  | 34.95    |                         |       |       |
| Alt World Games        | 19.95 | 12.95 | Oids                  | 19.99 | 12.99 | Protext                       | 79.95  | 49.95    |                         |       |       |
| Wizball                | 19.95 | 12.95 | Battleships           | 14.95 | 8.95  | Word Perfect 4.1              | 228.85 | 139.95   |                         |       |       |
| Space Quest II         | 24.95 | 15.95 | Ace 2                 | 19.95 | 12.95 | G.F.A. Basic                  | 45.95  | 29.95    |                         |       |       |
| Rampage                | 14.95 | 9.95  | Carrier Command       | 24.95 | 15.95 | G.F.A. Draft                  | 99.95  | 69.95    |                         |       |       |
| Arkanoid               | 14.95 | 9.95  | Captain Blood         | 19.95 | 12.95 | G.F.A. Draft Plus             | 139.95 | 99.95    |                         |       |       |
| Tetris                 | 19.95 | 13.95 | ECO                   | 19.95 | 12.95 | G.F.A. Compiler               | 45.95  | 29.95    |                         |       |       |
| Balance of Power       | 24.95 | 16.95 | Terrormex             | 19.95 | 12.95 | Sage Bookkeeper               | 113.85 | 89.95    |                         |       |       |
| Star Wars              | 19.95 | 12.95 | Crash Garret          | 19.95 | 12.95 | Sage Accountant               | 171.35 | 129.95   |                         |       |       |
| Leaderboard            | 24.95 | 15.95 | Rimrunner             | 14.95 | 10.95 | Sage Accountant Plus          | 228.35 | 179.95   |                         |       |       |
| Leaderboard Tournament | 9.95  | 6.95  | Starquake             | 19.95 | 12.95 | Sage Financial Cntrlr         | 343.85 | 259.95   |                         |       |       |
| Indiana Jones          | 19.95 | 12.95 | Sky Fighter           | 14.95 | 9.95  | Disc Box 3.5 x 40             | 12.95  | 6.95     |                         |       |       |
| Buggy Boy              | 19.95 | 12.95 | Football Manager      | 14.99 | 9.99  | Disc Box 3.5 x 80             | 15.95  | 8.95     |                         |       |       |
| Blood Valley           | 19.95 | 12.95 | Enduro Racer          | 19.95 | 12.95 | ST Programmers Reference      |        |          |                         |       |       |
| Predator               | 19.95 | 12.95 | Scraples              | 19.95 | 12.95 | Guide-Essential Reading       | 19.95  | 15.95    |                         |       |       |
| Flintstones            | 24.95 | 15.95 | Midi-Maze             | 34.95 | 22.95 | (Business orders include VAT) |        |          |                         |       |       |
| Trivial Pursuit        | 19.99 | 12.95 | Hunt for Red October  | 24.95 | 15.95 | Next day delivery             | £6.95  | Recorded |                         |       |       |
|                        |       |       |                       |       |       |                               |        | £2.50    |                         |       |       |

**HOW TO ORDER:**  
All Prices include VAT  
Game products postage Free  
(U.K. mainland only)  
Overseas orders add £1.00  
Per disk Airmail add £2.00  
Per disk Cheques/P. Orders  
(Sterling only please)

Made payable to:

**CUT PRICE SOFTWARE LTD.**  
Unit 6, Stort House  
Riverway, Harlow  
Essex CM20 2DW

Visa or Access orders  
(24 hour Ansaphone)  
(0279) 24433/31956



Collect vouchers for ... Free Discs ... Free Games ... Free Day Trip to France ... Free Weekend Breaks ...

## PUBLIC APOLOGY

We at M.D. Office Supplies would like to take this opportunity to apologise to all our competitors. We shall with IMMEDIATE effect supply COMPUTER DISCS, STORAGE BOXES, ETC, AT INCREDIBLE PRICES.

|              | 10   | 25    | 50    | 100   | 150   | 250   | 500    |
|--------------|------|-------|-------|-------|-------|-------|--------|
| SS-DD 48 TPI | 5.49 | 10.50 | 18.50 | 32.50 | 41.50 | 60.50 | 115.00 |
| SS-DD 96 TPI | 5.95 | 10.95 | 19.00 | 33.50 | 43.00 | 63.00 | 119.00 |
| DS-DD 48 TPI | 5.95 | 11.00 | 19.50 | 34.50 | 45.00 | 66.00 | 115.00 |
| DS-DD 96 TPI | 6.95 | 11.50 | 20.50 | 36.00 | 46.50 | 69.50 | 125.00 |
| Coloured     |      |       |       |       |       |       |        |
| DS-DD 96 TPI | 7.95 | 13.75 | 25.75 | 48.50 | 67.50 | 99.75 | 175.00 |

|               | 10    | 25    | 50    | 100   | 150    | 250    | 500    |
|---------------|-------|-------|-------|-------|--------|--------|--------|
| SS DD 135 TPI | 12.49 | 23.95 | 45.95 | 81.95 | 128.95 | 188.95 | 329.95 |
| DS DD 135 TPI | 14.99 | 26.95 | 52.95 | 98.95 | 145.95 | 199.95 | 379.95 |

**STOP PRESS  
NOW IN STOCK**

120 Capacity 3.5" Lockable Disc Box .....£11.99  
140 Capacity 5.25" Lockable Disc Box .....£11.99

Our bulk discs are in no way inferior to the branded product. A bulk disc is what software houses, duplicators, corporate companies etc would buy instead of the higher priced boxed product. Each disc is tested to top international standards and is offered with our NO QUIBBLE LIFETIME WARRANTY.

Printer Stand



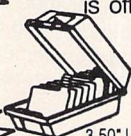
Storage Boxes

|                            |      |
|----------------------------|------|
| 3.50" Lockable - Holds 40  | 6.49 |
| 3.50" Lockable - Holds 80  | 7.49 |
| 5.25" Lockable - Holds 50  | 6.49 |
| 5.25" Lockable - Holds 100 | 8.49 |

|         |       |
|---------|-------|
| 80 Col  | 26.99 |
| 132 Col | 29.99 |

**OFFER 1**  
100 D/S D/D 96tpi  
+ 100 capacity  
lockable box only  
£34.99

**OFFER 2**  
80 D/S 135tpi +  
80 capacity box  
only £79.99



**OFFER 3**  
40 D/S 135tpi + 40  
capacity box  
£41.99

**OFFER 4**  
3 x offer  
Number 1  
£89.99

REMEMBER ALL PRICES INCLUDE V.A.T. AND DELIVERY!!

Cheques P/O to: M. D. OFFICE SUPPLIES, 18 Cresnet Way, Farnborough, Kent BR6 9LS  
CREDIT CARD HOTLINE: 0689 61400

VISA





# HARDWARE

## COMPUTERS

|                                                |                 |
|------------------------------------------------|-----------------|
| Amiga A500 + TV Modulator .....                | £499.00         |
| CBM 64C Starter Pack .....                     | £149.99         |
| CBM 64C Computer only .....                    | £129.99         |
| CBM 1541C Disk Drive .....                     | £169.99         |
| ZX Spectrum 128+2 .....                        | £139.95         |
| ZX Spectrum 128+3 .....                        | £199.95         |
| Nintendo Games Console + free game .....       | £99.00          |
| Sega Games Console + free game .....           | £99.00          |
| <b>ATARI COMPUTERS</b>                         |                 |
| 520 STFM (while stocks last!) Still only ..... | £295.00         |
| 520 STM + Mouse + 0.5Mb Drive .....            | Phone for Price |
| 520 STM + Mouse + 1Mb Drive .....              | Phone for Price |
| 1040 STF + Mouse + Hi-Res Monitor .....        | £595.00         |
| Mega ST2 (while stocks last!) Still only ..... | £999.00         |
| Mega ST4 (while stocks last!) Still only ..... | £1299.00        |
| Mega STs include High Res. Mono Monitor!       |                 |
| <b>MONITORS</b>                                |                 |
| Atari SM-124 Hi-Res Mono Monitor 12" .....     | £140.00         |
| Atari SM-124 When bought with computer .....   | £125.00         |
| Philips CM 8833 Med. Res Colour 14" .....      | £285.00         |

## DISK DRIVES

|                                   |         |
|-----------------------------------|---------|
| Atari SF354 0.5 Mb .....          | £99.00  |
| Atari SF314 1Mb .....             | £189.00 |
| Cumana 1Mb (Amiga or ST) .....    | £139.00 |
| Eidersoft 1Mb (Amiga or ST) ..... | £139.00 |
| Supra 20Mb Hard Disk .....        | £599.99 |

## PRINTERS

|                                           |         |
|-------------------------------------------|---------|
| Micro P. MP 135 .....                     | £169.00 |
| Citizen 120-D (Special Offer!) .....      | £185.00 |
| Epson LX-800 .....                        | £275.00 |
| Star LC-10 .....                          | £249.00 |
| Star NB-24 Pin Printer + Sheet Feed ..... | £654.00 |

YORCOM ARE A CITIZEN PRINTER SUPER DEALER

- FULL RANGE OF CITIZEN RANGE IN STOCK INC. LASER - PHONE FOR DETAILS

## ACCESSORIES

|                                        |        |
|----------------------------------------|--------|
| 10 x 3.5 SS/DD Branded Disks .....     | £14.95 |
| 10 x 3.5 DS/DD Unbranded Disks .....   | £16.00 |
| 10 x 3.5 DS/DD Branded .....           | £19.95 |
| Mouse Mat .....                        | £4.95  |
| Joysticks (Full range) from only ..... | £7.50  |

# SOFTWARE

## 10 BEST ST GAMES

|                               |        |
|-------------------------------|--------|
| 1 Carrier Command .....       | £22.45 |
| 2 Black Lamp .....            | £17.99 |
| 3 Backlash .....              | £17.95 |
| 4 Bubble Bobble .....         | £17.95 |
| 5 BMX Simulator .....         | £13.49 |
| 6 Predator .....              | £17.95 |
| 7 Wizball .....               | £17.95 |
| 8 Oids .....                  | £17.99 |
| 9 Defender of the Crown ..... | £26.95 |
| 10 Test Drive .....           | £22.45 |

## 10 BEST ST BUSINESS PROGRAMS

|                              |         |
|------------------------------|---------|
| 1 First Word Plus .....      | £71.95  |
| 2 VIP Professional .....     | £205.85 |
| 3 Trimbase .....             | £80.95  |
| 4 Publishing Partner .....   | £143.85 |
| 5 K-Spread II .....          | £71.95  |
| 6 Sage Accountant Plus ..... | £205.85 |
| 7 Superbase Personal .....   | £89.95  |
| 8 K-Data .....               | £44.95  |
| 9 Tempus .....               | £26.95  |
| 10 Habaview .....            | £67.45  |

## 10 BEST ST ADVENTURES

|                          |        |
|--------------------------|--------|
| 1 Dungeon Master .....   | £22.45 |
| 2 The Pawn .....         | £22.45 |
| 3 Phantasie III .....    | £22.45 |
| 4 Bard's Tale .....      | £22.45 |
| 5 Guild of Thieves ..... | £22.45 |
| 6 Space Quest .....      | £22.45 |
| 7 Beyond Zork .....      | £22.49 |
| 8 Plundered Hearts ..... | £22.45 |
| 9 Gnome Ranger .....     | £13.45 |
| 10 Knight Orc .....      | £17.95 |

All our software is marked at the recommended retail price but we give discount of 5% for Access/Visa sales or a full 10% discount for payment by Cash or Cheque

OPEN 9AM TO 5.30 MONDAY-SATURDAY  
MAIL ORDER & CREDIT CARDS WELCOME



THE YORK COMPUTER CENTRE, 9 Davygate Centre, York YO1 2SU. Telephone: (0904) 641862

# The truth about TELEX

## How much does it cost to go on Telex?

You could go the conventional way and buy a dedicated Telex machine. The cheapest will cost you £1,604 (the Whisper), the dearest £2,892 (the Cheetah). You will also need a separate telephone line, costing £101 to install, plus £404 a year rental. That's a total outlay over the first year of a minimum of £2,109. (All prices include VAT.)

Or you could do what more and more Atari ST users are doing - use your computer to double as a Telex machine. And just use your ordinary telephone!

## How do I turn my Atari ST into a Telex machine?

All you need is a modem and appropriate communications software (see the advertisements in this issue), a telephone, and a subscription to *MicroLink*. Telex is just one of a growing number of services available to Atari ST users on *MicroLink*. With *MicroLink* you can also read the news as it happens, go teleshopping, create your own closed user group, send telemessages and electronic mail right round the world, download free programs directly into your micro... and much more.

## But why use Telex?

Because it's a standard means of instant communication between businesses. Today there are 150,000 Telex machines in use in Britain - and more than 2 million worldwide. Telex dramatically speeds up business communications - it's just as quick as using the phone but far more efficient, because you have a hard copy of every "conversation" for your records.

But there's a big bonus you get when you use *MicroLink* for Telex that the conventional way doesn't offer.

With *MicroLink* you don't HAVE to be in your office to send or receive Telex messages. You can just as easily use your computer at home (or even a portable). So now you can check whether there are any Telex messages waiting for you - anywhere, anytime. How's that for your business efficiency?

How to join:  
See Page 40





# >> MAILSOFT <<

VISA

\*\*\*\*\* Simply the Cheapest Mail Order Company \*\*\*\*\*

| TITLE               | Atari ST | AMIGA | IBM PC | TITLE              | Atari ST | AMIGA | IBM PC | Accessories          | Our Price |
|---------------------|----------|-------|--------|--------------------|----------|-------|--------|----------------------|-----------|
| Airball             | 14.99    | -     | -      | Carrier Command    | 14.99    | 14.99 | 14.99  | Quick Shot 2 J/S     | 7.99      |
| Annals of Rome      | 14.99    | 14.99 | 12.99  | Starglider II      | 14.99    | 14.99 | 14.99  | Q. Shot Turbo        | 12.99     |
| Arena/Bratcass      | 19.99    | 19.99 | -      | King of Chicago    | 18.99    | -     | -      | Konix Joystick       | 9.99      |
| Arenoid             | 19.99    | 12.99 | -      | U.I.S.             | 14.99    | 14.99 | 14.99  | Konix + A Fire       | 10.99     |
| Autoduel            | 14.99    | -     | -      | Jinxter            | 14.99    | 14.99 | 14.99  | Euromax Prof.        | 17.99     |
| Backlash            | 11.99    | 11.99 | -      | E.P.T.             | 14.99    | 14.99 | -      | Euromax Non-Auto     | 14.99     |
| Balance of Power    | 19.99    | 18.99 | 15.99  | Legend of Sword    | 11.99    | 11.99 | 11.99  | Cheetah 125+         | 7.99      |
| Barbarian-PSY       | 14.99    | 14.99 | -      | Bobble Bubble      | 11.99    | 11.99 | -      | Cheetah Mach 1       | 12.99     |
| Beyond Zork         | 14.99    | 19.99 | 15.99  | Captain Blood      | 11.99    | -     | -      | Cheah 125 Special    | 11.99     |
| Colonial Conquest   | 20.99    | -     | -      | Roadwars           | 11.99    | -     | -      | Comp Pro-Black       | 12.99     |
| Crash Garra!        | 11.99    | -     | 15.99  | Defender of Crown  | 14.99    | 14.99 | 16.99  | Comp Pro-Clear       | 13.99     |
| Crazy Cars          | 12.99    | 14.99 | 12.99  | Time + Magic       | 11.99    | 11.99 | 12.99  | Comp Pro-Extra       | 13.99     |
| Deja Vu             | 14.99    | 19.99 | -      | Bonic Commandos    | 11.99    | 14.99 | 12.99  | Cruiser Joystick     | 9.99      |
| Dungeon Master      | 14.99    | -     | -      | Soccer Supreme     | 9.99     | 9.99  | -      | Konix IBM J/SI       | 18.99     |
| Eco                 | 11.99    | 14.99 | -      | Jewels of Darkness | 9.99     | 9.99  | 9.99   | Konix IBM Card       | 18.99     |
| F-15 Strike Eagle   | 14.99    | -     | 14.99  | Strike F. Harrier  | 14.99    | 14.99 | -      | Konix IBM J/S + CD   | 27.99     |
| Form 1 Grand Prix   | 11.99    | 11.99 | -      | Badcats            | 11.99    | 14.99 | 16.99  | Delta Joystick       | 9.99      |
| Frost Byte          | 9.99     | 9.99  | -      | Super Ice Hockey   | 14.99    | 14.99 | 14.99  | 10 x 3.5" DS/DD      | 14.99     |
| Guid of Thieves     | 14.99    | 14.99 | 15.99  | Interceptor        | -        | 16.99 | -      | 10 x 5.25            | 7.99      |
| Gunship             | 14.99    | -     | 24.99  | 3D Helicopter      | 14.99    | 14.99 | 12.99  | 10 x 3" Disks        | 24.99     |
| Hitchhikers Guide   | 14.99    | 14.99 | 19.99  | Return to Genes    | 11.99    | -     | -      | Marauder 2           | 29.99     |
| Knight Orc          | 11.99    | 11.99 | 15.99  | Indoor Sports      | 14.99    | 14.99 | 14.99  | Desk Dissector       | 24.99     |
| Leaderboard         | 14.99    | 14.99 | -      | Pink Panther       | 11.99    | 11.99 | -      | Digi View            | 189.00    |
| Leather Goddess     | 19.99    | 19.99 | 19.99  | Three Stooges      | 14.99    | 18.99 | 18.99  | Digi Paint           | 54.99     |
| Macadam Bumper      | 11.99    | -     | 12.99  | Flying Shark       | 11.99    | -     | -      | Digi View Adaptor    | 19.99     |
| Police Quest        | 11.99    | 11.99 | 12.99  | Rolling Thunder    | 11.99    | 14.99 | -      | Mouse Mat            | 4.99      |
| S.D.I.              | 19.99    | 19.99 | 15.99  | Kari Warriors      | 9.99     | -     | 12.99  | Amiga A500 Cover     | 6.99      |
| Silent Service      | 14.99    | 14.99 | 15.99  | Gold Runner II     | 11.99    | -     | -      | Atari STFM Cover     | 6.99      |
| Starglider          | 14.99    | 14.99 | 15.99  | Vampire Empire     | 11.99    | 11.99 | -      | PC1512/1640          | 10.99     |
| De Luxe Scrabble    | 11.99    | -     | 15.99  | Foot Manager 2     | 11.99    | 11.99 | 12.99  | 14" Antiglare Screen | 19.99     |
| Battle Ships        | 9.99     | 9.99  | -      | Foot Manager 2     | 11.99    | 11.99 | 12.99  | Head Cleaner 3.5"    | 6.99      |
| Gnome Ranger        | 9.99     | 9.99  | -      | Rock Ranger        | 14.99    | 18.99 | 18.99  | Head Cleaner 5.25"   | 5.99      |
| Into Eagles Nest    | 11.99    | 11.99 | -      | Test Drive         | 16.99    | 16.99 | 16.99  | Light Pen-PC1512     | 17.99     |
| Strike F. Harrier   | 14.99    | 14.99 | -      | Obolator           | 14.99    | 14.99 | -      | **SEGA SOFTWARE**    |           |
| Star Wars           | 11.99    | 11.99 | -      | Out Run            | 11.99    | -     | -      | Sega System + Game   | 89.99     |
| Tetris              | 11.99    | 11.99 | 12.99  | Alien Syndrome     | 11.99    | 11.99 | -      | Light Phaser         | 42.99     |
| Elite               | -        | 15.99 | 15.99  | Silicon Dreams     | 9.99     | 9.99  | 9.99   | 3-D Glasses          | 38.99     |
| 50000 Grand Prix    | 11.99    | -     | 15.99  | Xenon              | 11.99    | 11.99 | -      | Sega Joystick        | 13.99     |
| Impact              | 9.99     | 9.99  | 10.99  | Black Lamp         | 11.99    | -     | -      | Konix Joystick       | 11.99     |
| Ogre                | 14.99    | 14.99 | 15.99  | Hotball            | 14.99    | 14.99 | -      | My Hero              | 13.99     |
| Pirates M/Pro       | -        | -     | 15.99  | Leathernecks       | 11.99    | 11.99 | -      | Spy V Spy            | 13.99     |
| Tomahawk            | -        | -     | 15.99  | Buggy Boy          | 11.99    | -     | -      | Black Belt           | 17.99     |
| Trivial Pursuit     | 11.99    | -     | 15.99  | Infra Soccer       | 11.99    | 11.99 | -      | Space Hammer         | 22.99     |
| Chuck Yeagers       | 11.99    | 16.99 | 16.99  | Red October        | 14.99    | 14.99 | 16.99  | Rocky                | 22.99     |
| Destroyer           | -        | 14.99 | 15.99  | Gee Bee Air Rally  | -        | 13.99 | -      | Outrun               | 22.99     |
| Power Struggle      | 9.99     | 9.99  | 9.99   | Flight Sim 2       | 26.99    | 26.99 | 39.99  | World Grand Prix     | 17.99     |
| Mach 3              | 11.99    | 11.99 | 15.99  | Oids               | 11.99    | -     | -      | World Soccer         | 17.99     |
| E. Weavers Baseball | 16.99    | 16.99 | 16.99  | Sentinals          | 11.99    | 11.99 | -      | Gangster Town        | 17.99     |
| Chessmaster 2000    | 16.99    | 16.99 | 16.99  | Thundercats        | 11.99    | -     | -      | Great Golf           | 17.99     |
| Jinxter             | 14.99    | 14.99 | 15.99  | Micky Mouse        | 11.99    | -     | -      | After Burner         | 22.99     |
| Sokoban             | -        | 19.99 | 12.99  | Barbarian-Palace   | 9.99     | 11.99 | -      | Zaxxon 3-D           | 22.99     |
| Dark Castle         | 14.99    | 14.99 | 15.99  | Aaargh             | 11.99    | 11.99 | -      | Alien Syndrome       | 22.99     |
| The Pawn            | 14.99    | 14.99 | 15.99  | Amagodon Man       | 14.99    | 14.99 | 14.99  | Zillion II           | 17.99     |
| Adv Art Studio      | 14.99    | -     | -      | Andorra            | 11.99    | 11.99 | -      | Fantasy Zone II      | 22.99     |
| Ultima 4            | 14.99    | -     | 15.99  | Shackled           | 14.99    | -     | -      | Global Defence       | 22.99     |
| Flinstones          | 11.99    | 11.99 | -      | Verminator         | 14.99    | 14.99 | -      | Super Wonderboy      | 22.99     |

Prices Include P&P in U.K. Europe add £1 per tape, elsewhere £1.50. Cheque/P.O. payable to: MAIL-SOFT (ACE) P.O. BOX 589, London N15 6JJ. Please specify machine type in your order. Add £5 P&P for SEGA Machine. Price matching: If you see a title cheaper by another company in this mag we will match the price. If you don't see the title you require, simply deduct 30% off the R.R.P. and send to us. (Except Budget, Sega, Electronic Arts, Nintendo Titles). We stock software & Joysticks for all machines. Access and Visa cards accepted

## BRK Computer Services Ltd.

Tel: 01 572 5457  
216 Great West Road, Hounslow  
Middlesex TW5 9AW  
(Near Hounslow West Tube)

### 520 ST FM

# £223

While Stocks last

|                               |      |
|-------------------------------|------|
| Atari 1040 STF                | £369 |
| Atari 1040 STF + Mono         | £446 |
| Atari SM125                   | £119 |
| Atari SC1224                  | £297 |
| Amiga A500                    | £383 |
| Amiga A500 +1084 Colour       | £579 |
| Amiga A500 business pack Mono | £555 |
| Amiga A500 business pack Col. | £659 |

Please telephone for Hardware and software prices not listed

### LOWEST PRINTER PRICES

|                |      |
|----------------|------|
| Citizen 120D   | £143 |
| Panasonic 1081 | £143 |
| Micro P MP135  | £139 |
| Star LC10      | £169 |
| Epson LX800    | £198 |

Please telephone for printers not listed

Prices exclude VAT, Free delivery,  
please make cheques/postal orders to:  
**BRK Computer Services Ltd.**

All prices subject to change without notice - the above prices  
mail order, shop prices may vary from above.

# ATARI ST USER

# Classifieds

Use this space to sell your unwanted Atari products to our readers. They're all looking for a bargain!

● Half meg internal drive for STFM, good condition £50. Tel: 0622 65589.

● Atari SH204, Fast Basic Rom, kissed debugger, tempus, MCC assembler, perfect for any serious programmer £600. Tel: 0365 81274.

● Laser OMK8 Rrp £2288 will accept £1600. Tel: 0424 434214.

● New ST user group, monthly newsletter, hints, penpals and more. Contact L.Riby, 133 Sutton Road, Hull, HU6 7DP.

● Atari 520STFM new,

boxed over £300 worth original software, Xenon, Dungeon Master etc joystick, cover, mags £475 o.v.n.o. Tel: Nick (0227) 69189 after 6pm.

● Original software: Test Drive, Chamonix Challenge, Shuttle II, Colonial Conquest, Star Trek, Hunt for Red October £10 each. Flight Sim II £25, Defender of the Crown £15, Universal Military Sim £16. Tel: 0696 60548.

● Atari SF354 0.50 mega drive, hardly used as new Psu and leads £60 o.n.o. Tel: 0423 501789 (evenings).

Ads will be accepted under the following conditions:

- This service is EXCLUSIVELY for the use of private readers. No trade ads will be allowed.
- To avoid encouraging software piracy, all ads will be carefully vetted before they are accepted.
- Ads can only be accepted on this form (or a photocopy of it).
- There is no maximum to the number of words you include. If there is insufficient room on the form, continue on a separate sheet of paper.
- The cost is 20p per word, with a minimum of 10 words.
- We GUARANTEE your ad will go in the next available issue of Atari ST User.

**AN ADDED BONUS**

Your advert will be automatically displayed on MicroLink, the electronic mail service operated in conjunction with Telecom Gold. This means it will be seen by thousands of computer enthusiasts who can send an instant response.

PLEASE PRINT THIS AD IN THE NEXT AVAILABLE ISSUE

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Cheque enclosed for £ (minimum £2 for 10 words), payable to Database Publications Ltd.

Name \_\_\_\_\_

Address \_\_\_\_\_

POST TO: Atari ST User Classifieds, Europa House, Adlington Park, London Road, Adlington, Macclesfield, Cheshire SK10 4NP.



**Phil Stubbington  
presents a very handy  
utility to graphically  
display the complete  
contents of your discs**

**M**APPER is a powerful Gem application that performs many handy disc functions. For instance, it will graphically display a disc, marking those parts that are allocated to the system, those used by you or free for use, and any unusable sections.

It also shows any files you have recently deleted – though it isn't capable of recovering them – and fragmentation.

The utility makes extensive use of the file allocation table, or FAT, stored on the disc. This very important chunk of data provides Gemdos with vital information about a file.

It is a coded table which contains one entry for every cluster – two disc sectors – a file uses. Each entry can indicate the cluster is bad – that is, there is a fault on the disc at that point – free, used, or is the last one used by a file.

The way the FAT is encoded is quite complicated and a little confusing at first sight. Numbers on the ST are normally stored high byte first, then low – it's the way the 68000 processor works.

However, Gemdos is designed to be fairly compatible with MSdos, the operating system used on the IBM PC and clones, and on the PC numbers are usually stored low byte first, then high.

This means that any numbers in the FAT and the directory, will appear to be back to front to the ST programmer. So if we have a value of \$0200 in memory on the ST, it would look like \$0002 on the PC – remember this fact when looking at the FAT on a disc.

Now for the really difficult bit. Entries in the FAT are (for drives A and B) 12 bits wide – three nybbles. This means we can pack two entries into 24 bits, rather than 32. The index starts at \$002 because the first two entries contain format information.

This coding only applies to floppy discs, not ram discs, hard discs, networks

| Entry       | Description                   | Size |
|-------------|-------------------------------|------|
| Name        | Filename                      | 8    |
| Extension   | File type – PRG, TOS, DOC     | 3    |
| Attribute   | Normal, read-only directory   | 1    |
| Reserved    | For expansion                 | 10   |
| Time        | When file was last written to | 2    |
| Date        | When file was last written to | 2    |
| FAT pointer | Index to start of FAT entry   | 2    |
| File size   | Length of the file            | 4    |

Table I: The structure of the file allocation table

# C your discs with all the FAT facts

and so on. FAT entries are a full 16 bits wide on these devices, primarily so we can have far more clusters, which is especially important on hard discs.

This is why, in case you have ever tried it, you can't place a floppy disc icon over a ram disc icon to copy the files across.

As far as Mapper is concerned, FATs are all 12 bits wide so the results will be correct for both floppy discs and ram discs, but nonsense values will be given

for anything else. From the FAT we can find out what clusters a particular file uses, but we can't tell which file they refer to. This is where the directory comes into use.

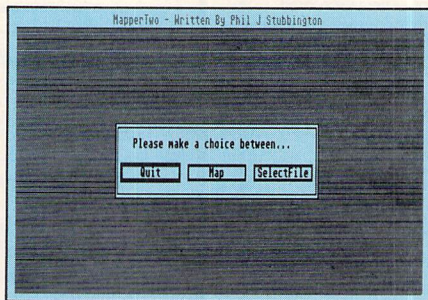
This, like the FAT, is held on the disc, and consists of a number (usually 112) of 32 byte long records, each containing the information shown in Table I.

Note that the filename and extension are padded out with spaces. And another point we have to be aware of is that each folder, or sub-directory, contains its own disc directory, in exactly the same format.

This shouldn't present any problems though. All we really need to know about the directory is the filename and extension, and the starting entry in the FAT.

This is the bit where you either go off and make a cup of tea, or hopefully get your hands dirty and find out exactly how Mapper works. The Mapper application, which is listed here, is written entirely in C.

For those of you who are Pascal,



The mapper start-up screen

## Technical terms

|                       |                                                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Track</b>          | Concentric ring on the disc, numbered 0 to 80.                                                                                                    |
| <b>Sector</b>         | Portion of a track, numbered from 1 to 10.                                                                                                        |
| <b>Logical sector</b> | Same as an ordinary sector, but we don't need to specify the track, because the numbering is from 1 to 800.                                       |
| <b>Cluster</b>        | The smallest amount of a disc which a file can be allocated, usually two sectors.                                                                 |
| <b>FAT</b>            | File Allocation Table, tells us what the clusters are – free, used or bad.                                                                        |
| <b>Directory</b>      | A series of 32-byte records containing the filename, extension and so on.                                                                         |
| <b>Fragmentation</b>  | When a file can't be allocated adjacent clusters. So the drive head has to move to different points on the disc to find the contents of the file. |
| <b>Gemdos</b>         | The operating system – handles just about everything. Creating, deleting, renaming, opening and closing files, and many other things besides.     |
| <b>Gem</b>            | The operating environment – gives you all those nice windows, menu bars and rodents.                                                              |



Modula 2 or Basic addicts, I would like to point out that I could have made the program far more readable. However, doing so makes it much longer, and you would have got extremely sore fingers typing it all in.

The program was written using Megamax and Mark Williams C, although it should be possible to use any full C compiler. I have commented the program fairly heavily, so hopefully it shouldn't be

too difficult to pick up what it is doing.

When the application is started, the FAT and directory are read off the disc in drive A, and the FAT is decoded. A dialog box will then appear, giving you the option to quit, map the disc, or select a file.

Choosing to map the disc will produce a Gem window, showing you the current file, the cluster types, and a diagram of the clusters. You can print out the diagram by pressing Alternate and Help keys.

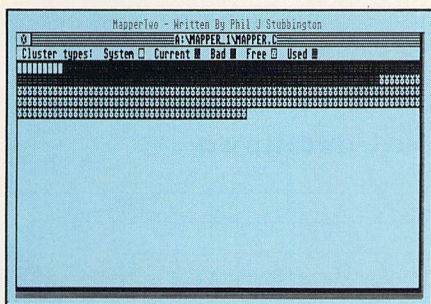
Clicking on the close box at the top left of the window returns you to the dialog box. Selecting a file allows you to change the current file, drive and folder (directory).

If you look at the start of the application you will see that there is a line starting `#define MEGAMAX`. As the comment suggests, if you aren't using Megamax then delete this line.

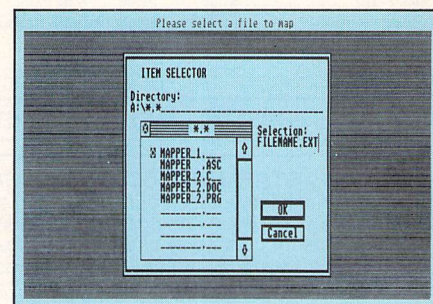
C is very nice to lazy programmers, as it will close any files for you on exit if you

have forgotten to do so. As we don't open any files, this code is not needed, so we fool the linker into thinking the code is already included, and save ourselves about 2500 bytes in the process. Quite a useful saving.

The program uses quite a few Gem and Gemdos functions, and there are several good books which cover both these subjects, including the Megamax compiler documentation.



Map of a file



Selecting a file

```

/* Disc Mapper */
/* By Phil J Stubbington */
/* (c) Atari ST User */

#include <stdio.h>
#include <ctype.h>
#include <gemdefs.h>
#include <obdefs.h>
#include <osbind.h>
#include <string.h>

#define TRUE 1
#define FALSE 0

typedef struct { /* DIR - directory entry */
    char name[8]; /* name, padded with spaces */
    char ext[3]; /* extension, padded with spaces */
    char attr; /* attribute - read only, etc. */
    char resrv[10]; /* reserved for expansion */
    int time; /* time last written - packed */
    int date; /* date last written - packed */
    unsigned stfat; /* index to starting entry in FAT */
    long fsiz; /* size */
} DIR;

typedef struct { /* BPB - the Bios Parameter Block */
    int reclsiz; /* sector size in bytes */
    int clsiz; /* cluster size in sectors */
    int clsizb; /* cluster size in bytes */
    int rdlen; /* directory length in sectors */
    int fsiz; /* FAT size in sectors */
    int fatrec; /* sector # of the second FAT */
    int datrec; /* sector # of the first data cluster */
    int numdcl; /* # of data clusters on the disk */
    int bigfat; /* if TRUE then 16-bit FAT else 12-bit */
} BPB;

#define MEGAMAX /* only if you have Megamax C! */
#ifdef MEGAMAX
#define void
#define boolean int
#endif
#define FORWARD extern /* for readability */

#define WL_GADGETS (CLOSER|NAME|INFO) /* window gadgets */
#define WD_NAME " MapperTwo " /* window name */
#define BLK_READ 0 /* for Rwbabs */
#define FAT char /* for readability */
#define CLS int /* ditto */
#define FATSIZ (BiosPB->reclsiz*BiosPB->fsiz)
#define CLSSIZ (sizeof(int)*BiosPB->numdcl)
#define DIRSIZ (BiosPB->reclsiz*BiosPB->rdlen)
#define SYS_CLST (BiosPB->datrec/BiosPB->clsiz)
#define DIR_CLS (BiosPB->fatrec+BiosPB->fsiz)
#define AL_FLAG 0x1000 /* allocated to current file */
#define FAT_SIZED(a) ((a) & 0xffff) /* twelve bits */
#define FLAG(a) ((a) & 0xf000) /* the other bits */
#define LO_NYBBLE(a) ((unsigned)((a) & 0xf))
#define HI_NYBBLE(a) ((unsigned)((a) & 0xf0))
#define FIRST_CLS 2 /* 1st real life cluster # */
#define LAST_CLS 0xff /* and the last */
#define CL_BAD 0xff7 /* bad cluster */
#define CL_LAST 0xffff /* last cluster in chain */
#define CL_FREE 0x000 /* free cluster */
#define CL_NA 0xffe /* cluster not available */
#define WORDTOI(a) ((a<<8) | (a>>8)) /* Intel->Motorola */

FORWARD char *MyRealloc();
FORWARD DIR *FindDirEntry();
BPB *BiosPB; /* pointer to BIOS param block */
FAT *FatBuf = NULL; /* raw file allocation table */
CLS *ClusterBuf = NULL; /* cluster buffer */
DIR *DirectoryBuf = NULL; /* raw directory buffer */
DIR *CurrentEntry = NULL; /* guess what? */
int Drive; /* current drive */
int WorkHand; /* VDI virtual+physical workstation handle */
int WindHand; /* window handle */
int CharPixW, CharPixH; /* width+height of a char */
int DeskX, DeskY, DeskW, DeskH; /* coords of desk window */
int WindX, WindY, WindW, WindH; /* coords of our window */
int Dummy; /* someone who doesn't buy Atari ST User? */
int work_out[57], work_in[11] = {1,1,1,1,1,1,1,1,1,2};
int contrl[12], intin[128], ptsin[128];
int intout[128], ptout[128];

```

Turn to Page 85 ►



# LIGHTSPEED SOFTWARE

31a Broadweir, Bristol BS1.  
Telephone: (0272) 225604

MAIL  
ORDER  
ONLY

| TITLE                            | RET PRICE | OUR PRICE | TITLE                    | RET PRICE | OUR PRICE |
|----------------------------------|-----------|-----------|--------------------------|-----------|-----------|
| CAD 3D .....                     | 24.95     | 20.00     | Pool .....               | 9.95      | 7.75      |
| Carrier Command .....            | 24.95     | 16.95     | Powerplay .....          | 19.99     | 16.50     |
| Crash Garnett .....              | 19.95     | 13.95     | Predator .....           | 19.95     | 13.95     |
| Dungeon Master .....             | 24.95     | 16.95     | Pro Sound Designer ..... | 57.44     | 43.50     |
| Flight Simulator II .....        | 49.95     | 39.95     | Procopy 1.5 .....        | 34.95     | 27.50     |
| Flt Sim II Scenery Disk II ..... | 24.95     | 19.00     | Pro Light .....          | 16.95     | 12.50     |
| Flt Sim II Scenery Disk 7 .....  | 24.95     | 19.00     | Pro Midi .....           | 16.95     | 12.50     |
| Home Publisher .....             | 24.95     | 16.95     | Rolling Thunder .....    | 19.99     | 13.95     |
| Hunt for Red October .....       | 24.99     | 16.95     | Quantum Paint .....      | 19.95     | 13.95     |
| Ikari Warriors .....             | 14.99     | 9.99      | Rampage .....            | 14.99     | 9.99      |
| Jinxster .....                   | 24.95     | 16.95     | Sapiens .....            | 19.99     | 13.95     |
| Lurking Horror .....             | 29.95     | 19.99     | Scrupes .....            | 19.95     | 13.95     |
| Mach III .....                   | 19.95     | 13.95     | Seconds Out .....        | 19.95     | 13.95     |
| Midi Maze .....                  | 34.95     | 29.95     | Slap Fight .....         | 19.95     | 13.95     |
| Oids .....                       | 19.95     | 13.95     | Store Breaker .....      | 14.95     | 9.99      |
| Outrun .....                     | 19.95     | 13.95     | ST Replay .....          | 79.95     | 58.50     |
| Phantasia II .....               | 24.95     | 19.00     | UMS .....                | 24.95     | 16.95     |

## SPECIAL OFFER TAU CETI £8.50

### STARLIGHT ST GAMES CREATOR

Using an implementation of modular 2 this package allows you to create your own arcade games. Comes complete with library routines for commonly used features and 2 demonstration games allows sprite to be animated from OCP Art Studio  
**LIGHTSPEED PRICE £24.95**

Please make cheques P.O.'s payable to:  
**LIGHTSPEED SOFTWARE**

All orders sent within the UK post free and normally despatched within 24 hours, but please allow 7 days.

All titles subject to availability

# Public Domain

software for the Atari ST from

## ST UK

Announcing some NEW software titles for the Atari ST range of personal computers. We have hundreds of titles (650 in fact) packed onto 220 disks. There are wordprocessors (GEM based and traditional text based with manuals, spell checkers and a text formatter). Full graphics packages of 'Degas Elite quality' for monochrome and colour modes. RAM disk, spoolers,

converters, programming languages - C, Fortran, Smalltalk, BASICs, Assembler, Toy Prolog, ST Icon, Xlisp, Logo etc., including programming help with C, GFA basic, STBasic, Pascal etc. Archivers, loads of communication packages including support for Prestel and Compunet and Full BBS systems. We can let you run GEM based programs from booting up your system, we even have a monochrome monitor emulator and Amiga and Atari 8-bit emulators! There are 2 dozen disks full of excellent monochrome and colour games (you'll be surprised at the quality), there are hard disk utilities - backup programs,

directory listers, formatters etc. There is clip art to be used in application programs. Also dozens of desktop accessories - calculators, clocks, spoolers, RAM disks, sector editors, games, wordprocessors, notes pads, disks repairers, alarm clocks and loads more (4 disks full). We have drivers for Degas and let word and loads of utilities for Degas Elite. The are hundreds of titles - We even have Midi sequencers, spreadsheets, databases, Astronomy and Pack-at-Term radio packages! This ad has only mentioned a small selection of what is available for the ST through the Public Domain Software Service run by ST UK. We have not even

mentioned the hundreds of sound and graphics demos and picture disks. But we are saving the best bit until last - we charge only 50p for the handling fee on demos and picture disks, and £1 handling fee on the application disks. We put as much as possible onto each disk, so you will get more than you expect! All our disks are branded with lifetime guarantee. To find out more about the P.D. experience, experience ST UK: The leader for ST public domain in the UK. Fill in the form at the bottom of the page and send it with a large stamped addressed envelope to the address below. It's cheap enough to 'Buy it and Try it!'

Please send full details to:-

Please tick - 520ST ..... 1040ST ..... Mega ST ..... Colour ..... Monochrome .....  
Single sided floppy ..... Double sided floppy ..... Hard disk .....

The catalogue is updated every month usually with about 10 to 20 new disks. Our latest catalogue is now available so send the clip to ST UK at:-  
1 Bartholomew Road, Bishops Cleeve, Shropshire CM23 3TP

Special Offer!  
All 200 disks for  
only £200!  
Fully inclusive

# MICRO MEDIA

Computer Supplies Ltd. 0707 52698 (5 lines)

| 3 1/2" Unbranded Discs | SS       | DS       | 10    | 20    | 50    | 100    | 150    |
|------------------------|----------|----------|-------|-------|-------|--------|--------|
| MICRO MEDIA            | SS 13.70 | DS 14.90 | 10.95 | 21.50 | 51.50 | 98.05  | 142.50 |
|                        |          |          |       |       |       | 104.35 | 151.50 |
|                        | SS 13.70 | DS 14.90 | 26.90 | 28.60 | 64.40 | 122.60 | 236.00 |
|                        |          |          |       |       | 68.20 | 130.50 | 252.00 |

### Printer Ribbons

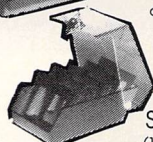
| Price (£) per Ribbon | 2    | 6    | 12   |
|----------------------|------|------|------|
| Atari 1029           | 2.70 | 2.55 | 2.40 |
| R, BL, GR, BR, Y     | 3.70 | 3.55 | 3.30 |
| Atari SMM804         | 4.10 | 3.85 | 3.55 |
| Centronics GLP       | 3.65 | 3.45 | 3.15 |
| Canon 1080/1156      | 2.99 | 2.85 | 2.60 |
| Citizen 120D         | 4.70 | 4.35 | 4.15 |
| Epson LX80/86 GX80   | 2.80 | 2.65 | 2.40 |
| MX/FX/RX80 FX800     | 3.35 | 3.20 | 3.05 |
| KAGA KP810/910       | 2.99 | 2.85 | 2.60 |
| Panasonic KXP 1080   | 4.65 | 4.40 | 4.20 |
| Star NL10            | 5.25 | 4.95 | 4.70 |

One off if ordered with other products.  
Please mix colours and types for best prices.  
R = Red, BR = Brown, BL = Blue, GR = Green,  
Y = Yellow

MD 80 3 1/2" x 80  
Disc Box  
1 £9.90  
3+ £9.40  
6+ £8.95



MD 40 3 1/2" x 40  
Disc Box  
1 £7.90  
3+ £7.50  
6+ £7.10



### Computer Paper

| Plain fanfold, micro perf edges | Size           | Weight | 1000's | Price per box |
|---------------------------------|----------------|--------|--------|---------------|
|                                 |                | gsm    | per bx | 1 box         |
|                                 | 11x9 1/2       | 60     | 2000   | 14.50         |
|                                 | 11x9 1/2       | 60     | 1000   | 9.50          |
|                                 | 11x9 1/2       | 80     | 2000   | 19.75         |
|                                 | 11x9 1/2       | 80     | 1000   | 11.90         |
|                                 | EXACT A4       | 70     | 2000   | 20.50         |
|                                 | 11 3/4 x 9 1/4 | 90     | 1000   | 13.90         |

### Computer Labels

| Continuous fanfold, sprocket fed | Price per 1000 | 1000 | 3000 | 5000 |
|----------------------------------|----------------|------|------|------|
| 70 x 36 2 3/4 x 1 7/16th         |                | 4.85 | 4.30 | 3.85 |
| 89 x 36 3 1/2 x 1 7/16th         |                | 5.35 | 4.50 | 4.10 |
| 89 x 49 3 1/2 x 1 15/16th        |                | 7.50 | 6.60 | 5.90 |

Please state no of labels across sheet (1, 2 or 3)  
ACCESS! OR VISA  
**0707 52698**  
(5 LINES)  
OUT OF OFFICE HOURS  
(ANSWER MACHINE)

ALL PRICES INCLUSIVE OF VAT & DELIVERY  
Orders despatched 24 hrs. Please allow 5 days for delivery. Guaranteed next day delivery from £1.50 extra, please ask inc delivery covers UK only.

Personal callers welcome  
Weekdays 8.30am - 5.30pm  
Saturdays 9.30am - 1.00pm

SPRING CATALOGUE OUT NOW  
(16 pages) Please ring or write for your free copy.

# JACKPOT 1

The ultimate POOLS forecasting and PLANS  
developing program for the ATARI ST version 1.96

Analyses every team's past performance and forecasts the results. Three tuning levels. Not only DRAWS but HOME and AWAY wins. You can create your OWN league tables with teams from ANY COUNTRY with up to 220 teams per file (All league teams for this season included). You can develop your own PLANS with any number of selections from the pools coupon and you will know what the percentage of you winning will be, if a predefined amount of draws by you, come. Thousands of plans are possible. They can be used for POOLS, CORRECT SCORE PERMUTATIONS and anything that requires you to FORECAST results from any number of selections up to 99 with up to 24 selections per line. Also keeps a file of every week's SCORE-DRAWS, for useful manipulation, which is IDEAL FOR STANDING ENTRIES. Predicts the score-draws, checking for the likely numbers from the last 20, 30 or 40 weeks. Includes data for the last two years. Latest predictions include 13/2/88 7 Score draws, 20/2/88 10 Score draws, 27/2/88 8 Score draws. Works with colour or monochrome monitor for the 520, 1040 and MEGA ST. Comes on 2 DISKS and full instructions.

## ORDER YOUR COPY NOW.

ONLY £24.95 (Inc. VAT & P+P)  
Send cheque or postal order to:

### FUTURESOFT

11 Meath close Hayling Island. Hants PO11 9QN



## ◀ From Page 83

```

int Point[4],MessageBuffer[16];
boolean Finished;
int ExitButton;

static char FileName[13]="FILENAME.EXT";
static char FileSpec[80]="A:\\*. *";
static char Path[64]="A:\\*. *";

#ifdef MEGAMAX
exit()
{
    Pterm0();
}
_exit()
{
    Pterm0();
}
#endif

/* Initialise, make sure we aren't in low rez */
/* then process options chosen by user until finished */
void main(void) /* level 0 */
{
    appl_init();
    WorkHand = graf_handle(&CharPixW,&CharPixH,&Dummy,&Dummy);
    wind_get(0, WF_WORKXYWH, &DeskX,&DeskY,&DeskW,&DeskH);
    v_opnvwk(work_in, &WorkHand, work_out);
    if(Getrez() == 0) {
        form_alert(1,["Sorry, MapperTwo can't run in low-rez.\\
        |Switch resolution and try again| OK"]);
        Finished = TRUE;
    }
    else {
        Finished = FALSE; /* finished, I haven't even started! */
        Drive = 0; /* start with drive A */
        InitBuffers();
    }
    while(!Finished) {
        WriteMessage("MapperTwo - Written By Phil J Stubbington");
        switch(form_alert(1,["Please make a choice between....\\
        ..| Quit| Map| Select File|"])) {
            case 1: Finished = TRUE; break;
            case 2: /* draw map of current disk */
                OpenWindow();
                ReadDiskInfo();
                DrawMap();
                WaitForCloseBox();
                CloseWindow();
                break;
            case 3: /* select a new drive and/or file */
                WriteMessage("Please select a file to map");
                SelectFile();
                break;
        }
    }
    GemAbort();
}

/* Find out what size they should be and initialise 'em */
void InitBuffers()
{
    if((BiosPB = (BPB *)Getbbp(Drive)) == NULL)
        form_alert(1,["Sorry, couldn't find the Bios parameter \\
        |block for| that device.| Abort"]);
    else
        if((FatBuf = (FAT *)MyRealloc(FatBuf,FATSIZE)) == NULL) |
        ((ClusterBuf=(CLS *)MyRealloc(ClusterBuf,CLSSIZE))==NULL) |
        ((CurrentEntry = DirectoryBuf =
        (DIR *)MyRealloc(DirectoryBuf,DIRSIZE)) == NULL))
            GemAbort(form_alert(1,["Sorry, can't get any memory|for \\
            |buffers.| Abort"]));
}

/* Read and decode the FAT */

```

```

boolean ReadDiskInfo(void) /* level 1 */
{
    int ClsNum; /* cluster number */
    int Index; /* index to our original buffer */
    int Incr; /* increment value for index */
    int RightFat = FALSE; /* FAT value to decode */
    graf_mouse(HOURLASS,NULL);
    Rwabs(BLK_READ,FatBuf,BiosPB->fsiz, BiosPB->fatrec,Drive);
    if(BiosPB->bigfat) { /* if 16-bit FAT */
        Incr = FIRST_CLS;
        Index = (Incr*FIRST_CLS); /* ignore 1st two entries */
    }
    else /* 12-bit FAT */
        Incr = Index = 3; /* ignore 1st two entries */
    for(ClsNum=0; ClsNum <= BiosPB->numdcl; ClsNum++) {
        ClusterBuf[ClNum]=DecodeFatEntry(&FatBuf[Index],RightFat);
        if(BiosPB->bigfat) /* if 16-bit FAT */
            Index += Incr; /* find next */
        else /* 12-bit FAT */
            if(RightFat) Index += Incr; /* find next */
            RightFat = !RightFat; /* invert flag */
    }
    ClsNum = WORDTOI(CurrentEntry->stfat) - FIRST_CLS;
    while((FAT_SIZED(ClusterBuf[ClNum]) != CL_LAST) &&
    (FAT_SIZED(ClusterBuf[ClNum]) != CL_FREE)) {
        ClusterBuf[ClNum] |= AL_FLAG; /* flag this cluster */
        ClsNum = FAT_SIZED(ClusterBuf[ClNum]);
    }
    ClusterBuf[ClNum] |= AL_FLAG; /* flag this cluster */
    graf_mouse(ARROW,NULL);
}

/* Assumes a fairly intelligent version of "realloc" */
/* is implemented - David Beckemeyer's for example */
char *MyRealloc(Ptr,Size) /* level 2 */
{
    unsigned Size;
    {
        if(Ptr == NULL)
            return(malloc(Size));
        else {
            #ifdef MEGAMAX /* not quite the same thing, but close */
                free(Ptr);
                return(malloc(Size));
            #else
                return(realloc(Ptr,Size));
            #endif
        }
    }

    /* Close workstation & exit current GEM application */
    GemAbort() /* level 2 */
    {
        v_clswwk(WorkHand);
        appl_exit();
        exit();
    }

    /* Convert packed value to logical cluster # */
    int DecodeFatEntry(PtrToFat, RightFat) /* level 2 */
    {
        char *PtrToFat; /* pointer to individual FAT entry */
        int RightFat; /* if TRUE decode the right hand entry! */
        {
            int Temp;
            if(RightFat) /* ie. right hand entry */
                Temp=(FAT_SIZED((PtrToFat[2] << 4) +
                (HI_NYBBLE(PtrToFat[1]) >> 4)));
            else
                Temp=(FAT_SIZED((LO_NYBBLE(PtrToFat[1]) << 8) +
                (PtrToFat[0])));
            if((Temp>=FIRST_CLS) && (Temp<=LAST_CLS))
                return(Temp-FIRST_CLS); /* was a cluster */
            else /* otherwise it is a type - bad, free, etc. */

```

Turn to Page 86 ▶



## ◀ From Page 85

```

    return(Temp);
}

/* Centre a string in the "menubar" area */
void WriteMessage(p) /* Level 1 */
char *p;
{
    v_clrwk(WorkHand); /* clear the workstation */
    form_dial(FMD_FINISH,0,0,0,DeskX,DeskY,DeskW,DeskH);
    vst_color(WorkHand, RED); /* change text colour */
    v_gtext(WorkHand,(80-strlen(p))/2 * CharPixW,CharPixH,p);
}

/* Fiddle dimensions to multiple of character size */
void OpenWindow(void) /* Level 1 */
{
    register char *p; /* ptr to next ? */
    int i; /* offset from Info to next ? */
    char Title[80],Info[80]; /* window title and info lines */
    int x,y,w,h; /* fiddled window dimensions */
    x = DeskX; y = DeskY; w = DeskW; h = DeskH;
    WindHand = wind_create(WI_GADGETS, x, y, w, h);
    strcpy(Title,FileSpec);
    wind_set(WindHand, WF_NAME, Title, 0, 0);
    strcpy(Info," Cluster types: System ? Current ? Bad ? Free ? Used ?");
    wind_set(WindHand, WF_INFO, Info, 0, 0);
    wind_open(WindHand, x, y, w, h);
    wind_get(WindHand,WF_WORKXYWH,&WindX,&WindY,&WindW,&WindH);
    WindW = (WindW / CharPixW) * CharPixW;
    WindH = (WindH / CharPixH) * CharPixH;
    wind_calc(0,WI_GADGETS,WindX,WindY,WindW,WindH,&x,&y,&w,&h);
    wind_set(WindHand, WF_CURRXYWH, x, y, w, h);
    i = 0; p = Info;
    /* find question marks in info line - turn into cluster */
    while((p = index(p,'?')) != NULL) {
        DrawRectangle(i,(p-Info) * CharPixW,(CharPixH * 3)-1,
            CharPixW,CharPixH-2);
        i++;p++;
    }
}

/* With a pattern corresponding to cluster key */
void DrawRectangle(type,x,y,w,h) /* Level 2 */
int type; /* rectangle type */
int x,y,w,h; /* where you want it */
{
    Point[0]=x; Point[1]=y; Point[2]=x+w; Point[3]=y+h;
    vsf_interior(WorkHand,2); /* default */
    switch(type) {
        case 0: vsf_interior(WorkHand,0); break;
        case 1: vsf_style(WorkHand,7); break;
        case 2: vsf_interior(WorkHand,1); break;
        case 3: vsf_style(WorkHand,1); break;
        default: vsf_style(WorkHand,4); break;
    }
    v_bar(WorkHand,Point);
}

/* Draw entire cluster map in window work area */
void DrawMap() /* Level 1 */
{
    register int ClsNum;
    register int xpos,ypos;
    FlipMouse();
    DrawRectangle(0,WindX,WindY,WindW,WindH);
    vsf_color(WorkHand,BLACK);
    ClsNum = -SYS_CLST;
    for(ypos=WindY; ypos < (WindY+WindH); ypos += CharPixH)
        for(xpos=WindX; xpos < (WindX+WindW); xpos += CharPixW)
            DrawCluster(ClsNum++,xpos,ypos,CharPixW,CharPixH);
    FlipMouse();
}

```

```

}

/* If we think it's hidden, show it. Else hide it! */
void FlipMouse(void) /* Level 2 */
{
    static boolean Hidden = FALSE; /* current state */
    if(Hidden)
        graf_mouse(M_ON,NULL);
    else
        graf_mouse(M_OFF,NULL);
    Hidden = !Hidden;
}

/* Turn cluster type into something for DrawRectangle */
void DrawCluster(ClsNum,x,y,w,h) /* Level 2 */
int ClsNum; /* the cluster number */
int x,y,w,h; /* position and dimension of block */
{
    int type = 0; /* default cluster type is system */

    if(ClsNum>BiosPB->numdcl) /* if gone past last cluster */
        return; /* we are not interested */
    if(ClsNum>=0) {
        /* values of ClsNum < 0 are used for system clusters, */
        /* everything that isn't data cluster is for system use */
        if(FLAG(ClusterBuf[ClNum]))
            type = 1;
        else
            switch(ClusterBuf[ClNum]) {
                case CL_BAD:
                case CL_NA: type = 2; break;
                case CL_FREE: type = 3; break;
                default: type = 4; break;
            }
    }
    DrawRectangle(type,x,y,w,h);
}

/* Hang around until the close box is clicked */
void WaitForCloseBox(void) /* Level 1 */
{
    do {
        evt_mesag(MessageBuffer);
    }while(MessageBuffer[0] != WM_CLOSED);
}

/* Close and deallocate the window */
void CloseWindow(void) /* Level 1 */
{
    wind_close(WindHand);
    wind_delete(WindHand);
}

/* Find the file to map in the directory */
void SelectFile(void) /* Level 1 */
{
    if(fsel_input(Path, FileName, &ExitButton) == 0)
        return; /* just cop out if they chose to cancel */
    if(isupper(Path[0])) Drive = Path[0] - 'A';
    MakePathName(FileSpec, Path, FileName);
    InitBuffers();
    CurrentEntry = FindDirEntry(FileSpec);
}

/* Concatenate Path & FileName into Destination */
void MakePathName(Destination,Path,FileName) /* Level 2 */
char *Destination; /* where you want it! */
char *Path,*FileName;
{
    char *p;

    strcpy(Destination, Path);
    p = rindex(Destination, '\\');
}

```

Turn to Page 89 ▶



## SOFTWARE SUPA SALES

(Blank 3.5" Discs with labels only £9.95 per 10)

| Atari ST Games              | RRP   | Our   | Atari ST Adventures           | RRP    | Ours   |
|-----------------------------|-------|-------|-------------------------------|--------|--------|
| Elite .....                 | 24.95 | 14.95 | Jinxer .....                  | 24.95  | 14.95  |
| Gunship .....               | 24.95 | 15.95 | Annals of Rome .....          | 24.95  | 14.95  |
| Predator .....              | 19.95 | 11.95 | Deja-Vu .....                 | 24.95  | 16.95  |
| Out Run .....               | 19.95 | 11.95 | The Pawn .....                | 24.95  | 14.95  |
| U.M.S. ....                 | 24.95 | 14.95 | Guild of Thieves .....        | 24.95  | 14.95  |
| Gauntlet 1 or 2 .....       | 24.95 | 14.95 | Lounge Lizards .....          | 24.95  | 14.95  |
| Road Runner .....           | 24.95 | 14.95 | Tanglewood .....              | 24.95  | 14.95  |
| Trivia Trove .....          | 14.95 | 8.95  | Bermuda Project .....         | 24.95  | 15.95  |
| Superstar Soccer .....      | 19.99 | 11.95 | Knight Orc .....              | 24.95  | 14.95  |
| Dungeon Master .....        | 24.95 | 13.95 | Space Quest 2 .....           | 24.95  | 15.95  |
| Barbarian .....             | 24.95 | 14.95 | Police Quest .....            | 24.95  | 15.95  |
| Terrorpods .....            | 24.95 | 14.95 |                               |        |        |
| Obliterator .....           | 24.95 | 14.95 | <b>Infocom ST Adventures</b>  |        |        |
| Epixs Epyxs .....           | 29.95 | 18.95 | Infidel .....                 | 29.99  | 18.99  |
| Terramex .....              | 19.99 | 11.99 | Sea Stalker .....             | 29.99  | 18.99  |
| U.M. Simulator .....        | 24.95 | 15.95 | Zork (1,2,or 3) .....         | 29.99  | 18.99  |
| F15 Strike Eagle .....      | 24.95 | 14.95 | Hitch Hikers Guide .....      | 29.99  | 18.99  |
| Art Director .....          | 49.95 | 38.95 | Leather Goddess .....         | 29.99  | 18.99  |
| Psion Chess .....           | 24.95 | 15.95 | Planetfall .....              | 29.99  | 18.99  |
| Advanced Art Studio .....   | 24.95 | 14.95 | Stationfall .....             | 29.99  | 18.99  |
| Carrier Command .....       | 24.95 | 14.95 |                               |        |        |
| E.C.O. ....                 | 19.95 | 11.95 | <b>ST Business Products</b>   |        |        |
| ST Soccer .....             | 24.95 | 14.95 | Fleet St. Publisher .....     | 115.00 | 79.95  |
| Rampage .....               | 14.95 | 8.95  | Home Publisher .....          | 24.95  | 14.95  |
| Gold Runner 1 or 2 .....    | 24.95 | 14.95 | P.C. Ditto (1040 only) .....  | 89.95  | 59.95  |
| Leviathan .....             | 14.95 | 8.95  | Superbase .....               | 99.95  | 69.95  |
| Crash Garret .....          | 19.95 | 11.95 | Protext .....                 | 79.95  | 49.95  |
| Balance of Power .....      | 24.95 | 15.95 | Word Perfect .....            | 228.85 | 139.95 |
| Star Wars .....             | 19.95 | 11.95 | Pascal (Metacomco) .....      | 99.95  | 59.95  |
| Leaderboard .....           | 24.95 | 14.95 | Lattice C (Metacomco) .....   | 99.95  | 69.95  |
| Buggy Boy .....             | 19.95 | 11.95 | D Base 2 .....                | 119.00 | 89.95  |
| Defender of the Crown ..... | 29.95 | 18.95 | Mailshot Plus .....           | 49.95  | 34.95  |
| Bridge Player 2000 .....    | 19.95 | 13.95 |                               |        |        |
| Film Director .....         | 59.95 | 39.95 | <b>Sage Atari ST Products</b> |        |        |
| Star Trek .....             | 19.95 | 11.95 | Book Keeper .....             | 113.85 | 89.95  |
| Back Lash .....             | 19.95 | 11.95 | Accountant .....              | 171.35 | 129.95 |
|                             |       |       | Accountant Plus .....         | 228.35 | 179.95 |
|                             |       |       | Financial Controller .....    | 343.85 | 259.95 |

(Game products Postage free U.K. Mainland only. Overseas orders add £1.00 per disk. Air Mail £2.50 per disc. Price List available please send S.A.E.)

Cheques/Post Orders (Sterling only please) made payable to:

### Software Supa Sales

Unit 1, 64 The Hornbeams, Harlow, Essex,  
Access or Visa orders please ring (0279) 29076  
During Normal Office Hours Thankyou



## SHACKSOFT

A mail order service for people who know what they want



# ATARI®

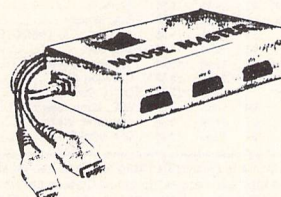
Power Without the Price™

Beat the price increase

**HURRY!!** These prices only  
whilst current stocks last

Atari 520STFM inc Mouse and five FREE PD discs £279  
Atari 520STFM inc SM125 Monitor and five FREE PD discs £379  
Atari 1040STF keyboard, 1 Meg drive, five FREE PD discs £459  
Atari 1040STF inc SM125 Mono Monitor, and as above £559  
Atari Mega 2 inc SM125 Mono Monitor, five discs & storage box £899  
Atari Mega 4 inc SM125 Mono £1149  
Atari SLM804 Laser Printer £1149  
Please call for other Atari system prices  
**Atari Prices INCLUDE VAT**

### MOUSE MASTER



Instantly select either your mouse or joystick (or other controller) in  
port 0. A switch on the top does the swapping for you! Additionally,  
port 1 is brought out to make all the ports easily accessible.

**ONLY £24.95**



### MONITOR MASTER

Switch between your Mono and Colour  
monitors. Inc. Audio output and  
(Video on STFM)

**ONLY £35.00**

### PRINTERS

Panasonic KXP1081 9 Pin NLQ Printer £175  
Micro P MP165 NLQ Printer £225  
Star LC10 Multi Font, NLQ Printer £199  
Star LC10 Colour Printer Multi font NLQ Printer £259  
**All Printer Prices INCLUDE VAT**

### PHILIPS MONITORS

Philips BM7502 12" CVBS & Audio input Green display £79  
Philips BM7522 12" Amber screen £95  
Philips CM8833 14" Med res colour with Mono switch £259  
**ALL PHILIPS MONITORS INC. LEAD FOR YOUR COMPUTER  
PLEASE SPECIFY TYPE WHEN ORDERING**

### SOFTWARE

**WE STOCK A VAST RANGE OF ATARI AND AMIGA SOFTWARE ALL AT  
HUGE SAVINGS. PLEASE ASK FOR FULL LIST**

### CONSUMABLES

**RIBBONS, DISCS, PAPER, DISC STORAGE BOXES, KEYBOARD COVERS  
AND ATARI ACCESSORIES**

Prices subject to change without notice

### HOW TO ORDER

**All prices include 24 hour carriage by courier**  
Phone with your ACCESS or VISA number, or send cheque or  
postal order to

### SHACKSOFT

**Units 11/12, White Hays South**  
**West Wilts Trading Estate, Westbury, Wiltshire**  
**Tel: (0373) 858031 (2 lines)**



# 1066

## Software

Modern Technology at Historical Prices!  
Tel: 24 Hours, (0424) 722297

### ST GAMES

|                          |       |                            |       |                           |       |
|--------------------------|-------|----------------------------|-------|---------------------------|-------|
| Barbarian .....          | 17.50 | Flintstones .....          | 14.00 | Preditor .....            | 14.00 |
| Battleships .....        | 10.95 | Get Dexter II .....        | 14.00 | Scrabble De-Luxe .....    | 14.00 |
| Black Lamp .....         | 14.00 | Gunship .....              | 17.50 | Scraples .....            | 14.00 |
| BMX Simulator .....      | 10.95 | International Soccer ..... | 14.00 | Seconds Out .....         | 14.00 |
| Captain Blood .....      | 17.50 | Joe Blade .....            | 8.95  | Star Trek .....           | 14.00 |
| Carrier Command .....    | 17.50 | Leaderboard .....          | 17.50 | Star Wars .....           | 14.00 |
| Chamonix Challenge ..... | 14.00 | Mach 3 .....               | 14.00 | Tanglewood .....          | 14.00 |
| Crash Garrett .....      | 14.00 | Obliterator .....          | 17.50 | UMS .....                 | 17.50 |
| Defector .....           | 14.00 | Outrun .....               | 14.00 | Vampires Empire .....     | 14.00 |
| Dungeon Master .....     | 17.50 | Phoenix .....              | 14.00 | Winter Olympiad '88 ..... | 14.00 |
| ECO .....                | 14.00 | Pink Panther .....         | 14.00 | Wizball .....             | 14.00 |

### COMPUTER AIDED DESIGN

|                            |       |                           |        |                         |        |
|----------------------------|-------|---------------------------|--------|-------------------------|--------|
| CAD 3D .....               | 17.50 | Cyber Studio .....        | 71.95  | Human Design Disk ..... | 21.00  |
| 3D Developers Disk .....   | 21.00 | Future Designs Disk ..... | 17.50  | PC Board Designer ..... | 159.95 |
| Architectural Design ..... | 21.00 | Graphic Artist V1.5 ..... | 159.95 | Degas Elite .....       | 17.50  |

### COMMUNICATIONS

|                   |       |                            |       |                |       |
|-------------------|-------|----------------------------|-------|----------------|-------|
| K-Comm V2.0 ..... | 37.00 | Mi-Term .....              | 21.00 | I'S Talk ..... | 37.00 |
| Kernit .....      | 17.50 | PC Intercomm (VT100) ..... | 99.95 | I'S Talk ..... | 14.00 |

### ART/GRAPHICS/HOME PUBLISHING

|                           |       |                          |       |                           |       |
|---------------------------|-------|--------------------------|-------|---------------------------|-------|
| Advanced Art Studio ..... | 17.50 | Colourspace .....        | 12.00 | The Navigator .....       | 36.00 |
| Art Director .....        | 37.00 | K-Rikki .....            | 14.00 | Quantum Paintbox .....    | 14.00 |
| Desktop Publisher .....   | 75.99 | Publishing Partner ..... | 79.95 | Fleet St. Publisher ..... | 99.95 |

### MUSIC

|                          |        |                   |        |                       |        |
|--------------------------|--------|-------------------|--------|-----------------------|--------|
| Pro 24 V2.1 .....        | 209.95 | Pro MIDI .....    | 13.00  | Master Score .....    | 245.00 |
| GI Sound Tool .....      | 31.00  | Iconix .....      | 199.95 | ST Replay .....       | 63.95  |
| Pro Sound Designer ..... | 46.00  | EX Track ST ..... | 47.95  | Super Conductor ..... | 36.50  |

### HARDWARE

|                                |         |                                         |        |
|--------------------------------|---------|-----------------------------------------|--------|
| 520 ST-FM .....                | 360.00  | Eldersoft 1Mb Disk Drive (single) ..... | 139.00 |
| 1040 ST-F .....                | 535.00  | 5.25 Cumana 1Mb D/Drive (single) .....  | 150.00 |
| 1040 ST-F + Mono Monitor ..... | 615.00  | SF354 .5 Mb D/Drive (single) .....      | 139.00 |
| MEGA ST 2 + Mono Monitor ..... | 979.00  | Cumana 30Mb Hard Disk Drive .....       | 715.00 |
| MEGA ST 4 + Mono Monitor ..... | 1250.00 | Atari 20 Mb Hard Disk Drive .....       | 535.00 |

### COVERS

|                                      |      |                                        |       |
|--------------------------------------|------|----------------------------------------|-------|
| ST/ST-M Keyboard Cover .....         | 4.00 | Centronics Printer Cable .....         | 9.50  |
| ST-FM/1040 ST-F Keyboard Cover ..... | 5.00 | MIDI Cable 5 pin to 5 pin (DIN) .....  | 2.69  |
| SM124/5 Dust Cover .....             | 5.95 | 6' Ext. Cable for mouse/joystick ..... | 5.25  |
| SC1224 Dust Cover .....              | 5.95 | Monitor/TV Switching Unit .....        | 19.95 |

### DISCS

|                                    |       |                                   |       |
|------------------------------------|-------|-----------------------------------|-------|
| Misc. Bulk 10 x S/S D/D .....      | 10.45 | Replacement Mouse .....           | 22.00 |
| Misc. Bulk 10 x D/S D/D .....      | 11.00 | 520ST/ST-FM Power Supply .....    | 49.99 |
| Memorex Branded 10 x S/S D/D ..... | 14.00 | Quickshot II Turbo Joystick ..... | 11.25 |
| Memorex Branded 10 x D/S D/D ..... | 15.50 | 3.5" Disk Cleaning Kit .....      | 5.80  |
|                                    |       | Printer Cleaning Kit .....        | 7.45  |
|                                    |       | Microtime ST Clock .....          | 22.00 |

This is just a small example of what we can provide. Send S.A.E. (26p) for our COMPREHENSIVE price list. Price includes P&P (UK only) - NO hidden extras to pay! Cheques/P.O.s payable to:



### 1066 SOFTWARE

62, Bulverhythe Road, Hastings, East Sussex TN38 8AE 24 Hour - 0424 722297



# ASHCOM

## ATARI HARDWARE

520 STFM Keyboard/Mouse/0.5 Meg Drive ..... Phone  
1040 STF Keyboard/Mouse/1 Meg Drive ..... Phone  
1040 STF as above with SM125 Mono Monitor ..... Phone  
1040 STF as above with SC1224 col. monitor ..... Phone  
Mega ST2 2Meg Ram/Mouse/Mono Monitor ..... 954.95  
Mega ST2 2Meg Ram/ Mouse/Colour Monitor 1184.95

ALL MEGA ST's ARE FITTED WITH ATARI BLITTER CHIPS  
Cumana 1Meg 3.5" disc drive ..... 135.00  
SH205 20Meg hard disc drive ..... 535.00  
SM125 mono monitor ..... 129.95  
ST-Printer lead (Centronics) ..... 15.00  
ST-Scart lead ..... 15.00

## COMMODORE HARDWARE

Amiga A500 Keyboard/Mouse/1 Meg Drive ..... 435.00  
Amiga A500 as above + TV Modulator ..... 455.00  
Amiga A500 as above + Philips 8833 Col. Mon. 700.00  
ALL AMIGA A500's COME WITH DELUXE PAINT,  
BASIC, UTILITIES, MANUALS AND TUTORIAL DISC  
A501 512 k expansion ..... 115.00

Cumana Disc Drive ..... 135.00  
MPS1200 Dot Matrix Printer ..... 210.00  
MPS1500 Colour Printer ..... 320.00  
MP 135 Printer ..... 159.00  
Philips 8833 Colour Stereo Monitor with ST or  
Amiga leads ..... 270.00

## DISCS

3.5" DS/DD discs (certified, guaranteed with labels)  
10 in library case ..... 12.00  
25 ..... 25.00  
50 ..... 47.00  
100 ..... 90.00

500 ..... 425.00  
1000 ..... 825.00

Trade enquiries welcome for larger quantities

Lockable disc boxes - Holds 80 3.5" discs ..... 11.00

## SOFTWARE

|                       | RRP | Ours           |                       | RRP | Ours                |
|-----------------------|-----|----------------|-----------------------|-----|---------------------|
| Backlash              | AM  | ST 19.95 13.95 | Portal                | AM  | ST 34.99 23.95      |
| Barbarian (Palace)    | ST  | 14.99 10.50    | Roadrunner            | ST  | 24.99 16.95         |
| Barbarian (Psychosis) | AM  | ST 24.95 18.95 | Sentinel              | ST  | 19.95 13.95         |
| Bubble Ghost          | ST  | 19.95 13.95    | Star Glider           | AM  | ST 24.95 16.95      |
| Defender of the Crown | AM  | ST 29.99 20.50 | Star Trek             | ST  | 19.95 13.95         |
| Firepower             | AM  | ST 24.95 16.95 | Star Wars             | ST  | 19.95 13.95         |
| Fight Simulator II    | AM  | ST 49.95 36.95 | Terrapods             | AM  | ST 24.95 16.95      |
| Gauntlet I & II       | ST  | 24.99 16.95    | Timeworks             | ST  | 79.95 56.95         |
| Guild of Thieves      | AM  | ST 24.95 16.95 | Wordwriter            | ST  | 79.95 56.95         |
| Impact                | AM  | ST 14.95 10.50 | Data Manager          | ST  | 79.95 56.95         |
| Impossible Mission II | ST  | 19.99 13.95    | +                     |     | LIMITED OFFER 74.95 |
| Indiana Jones         | ST  | 19.95 13.95    | Swift Calc            | ST  | 79.95 56.95         |
| Indoor Sports         | AM  | ST 19.95 13.95 | Desktop Publisher     | ST  | 99.95 74.95         |
| Leader Board          | ST  | 24.95 16.95    | First Word Plus       | ST  | 79.95 56.95         |
| Leviathan             | AM  | ST 19.95 13.95 | GST C Compiler        | ST  | 19.95               |
| Living Daylights      | AM  | ST 24.95 16.95 | GST Macro Assembler   | ST  | 19.95               |
| Montville Manor       | ST  | 24.95 16.95    | GFA Basic Interpreter | ST  | 49.95 34.95         |
| Outrun                | ST  | 19.99 13.95    | GFA Basic Compiler    | ST  | 49.95 34.95         |

New Software and Hardware is constantly being added to our list at massive discounts  
so if you do not see what you require, do not hesitate to call us on (0530) 411485  
All prices include VAT @ 15% and P&P on UK Mainland. Send SAE for full price list.  
All items despatched within 24 hours, subject to availability.



Courier service on hardware and large parcels  
To order send cheques/PO or Visa/Access details to the address below.  
Credit card orders also taken by telephone

ASHCOM, 10 THE GREEN, ASHBY-DE-LA-ZOUCH, LEICESTERSHIRE LE6 5JU  
Ashcom is a trading name of Ashby Computers and Graphics



# BOOKS FOR THE ATARI ST

## COMPUTE! BOOKS

First Book of the Atari ST ..... £12.95 ST Applications ..... £14.95  
Second Book of ST (inc. disk) ..... £19.95 More ST Applications ..... £14.95  
ST Programmers Guide ..... £14.95 Elementary Atari ST ..... £14.95  
Sound and Graphics ..... £11.95 ST Artist ..... £14.95  
Kids and the Atari ST ..... £12.95 Elementary ST Basic ..... £11.95  
ST Appl. Guide: Prog in C ..... £16.95 Learning C: Prog. Graphics ..... £16.95  
Tech. Ref. Guide Vol. 1 ..... £16.95 Tech. Ref. Guide Vol. 2 ..... £16.95

## ABACUS BOOKS

Atari ST for Beginners ..... £12.95 Basic Training Guide ..... £12.95  
Tricks and Tips ..... £14.95 Basic to C ..... £14.95  
Graphics and Sound ..... £14.95 Atari ST Internals ..... £14.95  
GEM Reference Guide ..... £14.95 Midi Programming ..... £14.95  
Logo User's Guide ..... £14.95 3D Graphics ..... £16.95  
Machine Language ..... £14.95 ST Disk Drives ..... £16.95

## \*\* SPECIAL OFFER \*\*

Free 3.5" ds blank disk with every Abacus book listed above if purchased  
this month (offer ends 20th June).

## GLENTOP BOOKS

Concise 68000 Programmers Reference Guide (revised edition) ..... £16.95  
Practical Basic ..... £4.50 Practical Logo ..... £4.00  
Using ST Basic (new ed.) ..... £7.95 Using Logo ..... £4.00  
68000 Pocketbook ..... £1.95 First Steps in 68000 ..... £9.95  
Program in GFA Basic ..... £12.50 (available with disk at) ..... £17.50  
GFA Basic: Advanced Prog. ..... £15.95 (available with disk at) ..... £19.50

## OTHER ATARI ST BOOKS

1st Atari ST Book (First Publishing) ..... £4.95  
Graphics Applications (First Publishing) ..... £9.95  
Advanced Programmers Guide (Sigma) ..... £10.95  
The Atari ST Explored (Kuma) ..... £8.95  
MC68000 Programmers Ref. Manual (Motorola) ..... £8.95  
Graphics and Sound Programming (Tabs) ..... £11.95  
1001 Things To Do With Your ST (Tabs) ..... £10.95  
Introducing C (Collins) ..... £9.95  
ST Basic Source Book & Tutorial (Atari) ..... £11.95  
GFA Basic Quick Ref. Guide (Abacus) ..... £9.95  
Atari ST Applications Programming (Bantam) ..... £19.95  
Program listings from some of the above books are available on disk which can  
be supplied on a sale or hire basis.

Send SAE for a descriptive catalogue of Atari ST Books.  
All prices include P&P in U.K. Overseas add 25% for airmail on books, £1 per  
order surface mail books, software post free  
ACCESS orders accepted - Tel: 0706 524304

**adamson**

18, Norwich Avenue, Rochdale, Lancs. OL11 5JZ

# DELTA COMPUTERS

## ATARI 520 STFM PACK

- \* Built in Disc Drive
- \* Mouse Controller
- \* Basic Language Disc
- \* 5 Demo/Utility Discs

Ring for current price

## ATARI 1040 STF PACK

- \* Atari ST 1Mb Computer
- \* Atari SC1224 Colour Monitor
- \* Atari SM804 Printer
- \* 5 Demo/Utility Discs
- \* 1st Word

Ring for current price

## PRINTERS inc lead

Atari SM804 ..... £169.00  
Amstrad DMP3160 ..... £199.00  
Amstrad DMP4000 ..... £310.00  
Amstrad LQ3500 ..... £310.00  
Citizen 120D ..... £169.00  
Panasonic KX-P1081 ..... £169.00

## DISC DRIVES

Atari SF354 0.5mb ..... £129.99  
Atari SF314 1.0mb ..... £175.99  
Cumana 3.5" Single 1Mbyte ..... £119.99  
Cumana 3.5" Dual 2Mbyte ..... £224.99  
Cumana 5.25" + 3.5" Dual ..... £284.99  
Cumana 5.25" 40/80 1Mbyte ..... £139.99  
Cumana 20Mbyte Hard Drive ..... £679.99  
Cumana 30Mbyte Hard Drive ..... £689.99  
Cumana 40Mbyte Hard Drive ..... £1009.99  
Cumana 60Mbyte Hard Drive ..... £1199.99

## MONITORS

Atari SC1224 Colour ..... £352.00  
Philips 8833 Colour ..... £259.00

**All prices include VAT**

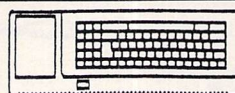
Please add £5 carriage on orders over £100

Mail Order only at this address

Trade and Educational enquiries welcome

**85 Union Street Oldham Lancs**

**061-626 3841**



# LUDES SOFTWARE

**Little Eye Club, Sixth Avenue, Manor Park,  
London E12. Telephone: 01-478 2727**

## 16 Bit

## Disc

Trivial Pursuits ..... £17.00  
Silent Service ..... £17.00  
F15 Strike Eagle ..... £19.00  
Jewels of Darkness ..... £17.00  
Guild of Thieves ..... £19.00  
Spitfire 40 ..... £17.00  
Flight Simulator 2 ..... £35.00  
Wizards Crown ..... £21.00  
Star Wars ..... £17.00  
Gauntlet 2 ..... £17.00  
Indiana Jones ..... £17.00  
Strike Force Harrier ..... £19.00  
Last Ninja ..... £13.00  
Deep Space ..... £28.00  
Defender of the Crown ..... £25.00  
Hunt for Red October ..... £20.00  
Winter Games ..... £21.00  
221b Baker Street ..... £20.00  
Karate Kid Part 2 ..... £13.00  
Crystal Castles ..... £17.00  
Super Cycle ..... £20.00

**All prices include Post & Packing  
Cheques & Postal Orders payable to  
LUDES SOFTWARE**

If you don't see what you want then Phone or write today.  
Orders over £20 receive a FREE tape game or £2 off your  
next order



## ◀ From Page 86

```

    **p = NULL;
    strcat(Destination, FileName);
}

/* Find raw directory entry for FileSpec */
DIR *FindDirEntry(FileSpec) /* level 2 */
char *FileSpec;
{
    register char *p, *j;
    DIR *DirectoryCur; /* current entry in directory */
    char FileOne[12], FileTwo[12];
    /* read the root directory */
    Rwabs(BLK_READ, DirectoryBuf, BiosPB->rdlen, DIR_CLS, Drive);
    DirectoryCur = DirectoryBuf;
    /* work our way down the pathname until we find the file */
    for(p = FileSpec; (p = index(p, '\\')) != NULL; ) {
        if((j = index(++p, '\\')) == NULL) j = p + strlen(p);
        StripNCopy(FileOne, p, (unsigned)(j-p));
        while(DirectoryCur->name[0] != '\0') {
            StripNCopy(FileTwo, DirectoryCur->name, 11);
            if(strcmp(FileOne, FileTwo) == 0) {
                if(DirectoryCur->attri & 0x10) {
                    Rwabs(BLK_READ, DirectoryBuf, BiosPB->rdlen,
                        DecodeStfat(DirectoryCur->stfat), Drive);
                    DirectoryCur = DirectoryBuf;
                    break;
                }
                else
                    return(DirectoryCur);
            }
        }
    }
}

```

```

    DirectoryCur++;
}
}
return(DirectoryBuf);
}

/* Copy n chars from s to d, stripping out non-alphanums */
void StripNCopy(d,s,n) /* level 2 */
register char *d, *s;
register int n;
{
    while(n-- >= 0) {
        if(isalnum(*s))
            *d++ = *s++;
        else {
            *d = NULL;
            s++;
        }
    }
}

/* Turn entry from raw dir into logical cluster number */
int DecodeStfat(val) /* level 2 */
int val;
{
    int temp;
    temp=(((WORDTOI(val)-FIRST_CLS) * BiosPB->clsiz)+
        BiosPB->datrec);
    if(temp < BiosPB->datrec)
        return(FALSE);
    else
        return(temp);
}
** N *

```

# TIMESOFT

35 LONDON ROAD, TOOTING SW17 9JR  
Tel: 01-685 9849 (24 hour ordering)

## ATARI ST SOFTWARE

|                      |        |
|----------------------|--------|
| Roadwars .....       | £15.50 |
| Obliterator .....    | £19.95 |
| ST Soccer .....      | £15.50 |
| Flintstone .....     | £14.95 |
| Pink Panther .....   | £14.95 |
| Ikari Warriors ..... | £10.95 |
| Mach 3 .....         | £14.95 |
| Zeon .....           | £15.50 |
| Out Run .....        | Phone  |
| Captain Blood .....  | £19.95 |
| Arcade Force 4 ..... | £19.95 |
| Computer Hits .....  | £24.95 |
| Scrabble .....       | £15.50 |
| Trentor .....        | £15.50 |

## BUSINESS & UTILITIES

|                              |         |
|------------------------------|---------|
| Superbase Personnel .....    | £75.00  |
| Pascal 2 .....               | £69.00  |
| Dekstop Publisher .....      | £75.00  |
| First Word Plus .....        | 59.00   |
| K Spread 2 .....             | £69.95  |
| Superbase Professional ..... | £230.00 |
| Cyber Studio .....           | £75.00  |
| Fast Basic (Disc) .....      | £36.00  |
| Fast Basic (Rom) .....       | £69.00  |

## BUSINESS & UTILITIES

|                         |         |
|-------------------------|---------|
| Quantum Paint .....     | £15.50  |
| Film Director .....     | £42.00  |
| Degas Elite .....       | £19.95  |
| OCP Art Studio .....    | £17.95  |
| Easy Draw II .....      | £63.00  |
| Stereotec Glasses ..... | £125.00 |

## ACCESSORIES

|                        |        |                     |        |
|------------------------|--------|---------------------|--------|
| Mouse Pad .....        | £5.95  | Pro 5000 J/S .....  | £14.95 |
| Mouse Controller ..... | £22.95 | Speedking J/S ..... | £11.95 |

Phone orders are welcome (24 hour ordering)

Please make cheques P/Orders Payable to:

**TIMESOFT**

Phone if you don't see what you require



# INTERNATIONAL SOCCER

FOR THE  
ATARI ST

## SOCCER FANS TAKE NOTE

*If you spend most of your spare time either watching or playing SOCCER then this is the game for you.*

**This has to be the best SOCCER game on the Atari ST!!!**

Wind, weather and nightplay options ensure that 1 or 2 players have a really hard match with highly competitive play. SOCCER has superb Hi-Res graphics, plus team colours and animated supporters, electronic scoreboard and on screen refereeing to keep play fast and furious for the entire match.

*With this game the SOCCER season's never over*

**PRICE £19.95**

*Don't get left outside the ground. . .  
ST Soccer's Playing! ! !*

For further information contact MICRODEAL LTD  
Tel: 0726 68020  
Telex: 45218  
Fax: 0726 69692

Mail order your copy NOW!  
with ACCESS, VISA or AMERICAN EXPRESS





## TRYBRIDGE SOFTWARE DISTRIBUTION

| Title                | Atari ST | Title                | Atari ST | Title             | Atari ST |
|----------------------|----------|----------------------|----------|-------------------|----------|
| Adv Art Studio       | 15.50    | Golden Path          | 10.00    | Quizan            | 21.50    |
| Academy              | 9.50     | Goldrunner           | 15.50    | Rolling Thunder   | 12.50    |
| Art Director         | 32.50    | Guild of Thieves     | 15.50    | Rimrunner         | 10.00    |
| Autoduel             | 17.50    | Garrison             | 15.50    | Roadwars          | 12.50    |
| Arctic Fox           | 13.50    | Hacker               | 9.00     | Sentinel          | 10.00    |
| Army Moves           | 12.50    | Hitchhiker           | 19.50    | Skyrider          | 11.00    |
| Arkanoid             | 9.00     | Hot Football         | 15.50    | Silent Service    | 15.50    |
| Backlash             | 12.50    | Hollywood Hijinx     | 9.00     | Skuldiggery       | 10.00    |
| Barbarian Psynosis   | 15.50    | Hunt for Red October | 15.50    | Slaygon           | 15.50    |
| Black Cauldron       | 10.00    | Impact               | 9.00     | Skyfox            | 10.00    |
| Black Lamp           | 12.50    | Ikari Warriors       | 10.00    | Space Station     | 6.50     |
| Barbarian Palace     | 9.00     | I Ball               | 6.50     | Strip Poker 2     | 7.00     |
| Ballyhoo             | 9.00     | Impossible Mission 2 | 12.50    | Solomans Key      | 10.00    |
| Borrowed Time        | 9.00     | Insanity Flight      | 15.50    | Star Glider       | 15.00    |
| Balance of Power     | 19.50    | International Soccer | 12.50    | Sapiens           | 13.50    |
| Bards Tale           | 18.00    | Jump Jet             | 12.50    | Star Trek         | 12.50    |
| Captain Blood        | 12.50    | Joe Blade            | 6.50     | SDI               | 19.50    |
| Catch 23             | 12.00    | Jinxter              | 15.50    | Star Wars         | 12.50    |
| Carrier Command      | 15.50    | Jewels of Darkness   | 9.00     | Space Quest II    | 15.50    |
| Combat School        | 12.50    | Karate               | 6.50     | S.F. Harrier      | 15.50    |
| Crafton 11           | 13.50    | Knight Orc           | 12.50    | Sub Battle Sim    | 15.50    |
| Crash Garrett        | 12.50    | Leaderboard          | 15.50    | Super Cycle       | 10.00    |
| Crazy Cars           | 13.50    | Livingstone          | 9.50     | Supersprint       | 12.50    |
| Chessmaster 2000     | 16.50    | Leather Goddess      | 19.50    | Terramex          | 12.50    |
| Dick Special         | 15.50    | Liberator            | 5.00     | Taipan            | 12.50    |
| Dark Castle          | 15.50    | Marble Madness       | 18.50    | Tetris            | 12.50    |
| Degas Elite          | 16.50    | Missing One Droid    | 6.50     | Tass Times        | 9.00     |
| Defender of Crown    | 19.50    | Moonmist             | 9.00     | Terrorpods        | 15.50    |
| Diablo               | 9.50     | Mindshadow           | 9.00     | Tracker           | 15.00    |
| Deja Vu              | 19.50    | Mach 3               | 12.50    | Trivial Pursuit   | 13.50    |
| Dungeon Master       | 15.50    | Music Con Set        | 19.50    | Tee Up            | 6.50     |
| ECO                  | 10.00    | Nord & Bert          | 15.50    | Tau Ceti          | 9.00     |
| Epyx Collection      | 19.50    | North Star           | 12.50    | Trinity           | 10.00    |
| Flight Sim 2         | 32.00    | Obiliterator         | 15.50    | Testdrive         | 16.50    |
| Scenery Disc 7 or 11 | 15.50    | Oids                 | 12.50    | Thrust            | 6.50     |
| Football Manager     | 10.00    | Outrun               | 12.50    | Univ Military Sim | 15.50    |
| Flintstones          | 12.50    | Pink Panther         | 12.50    | Uridium           | 13.50    |
| Football Manager 2   | 13.50    | Pirates of Barbary   | 5.00     | Ultima 2          | 19.50    |
| Fireblaster          | 6.50     | Planetfall           | 9.00     | World Games       | 12.00    |
| F15 Strike Eagle     | 15.50    | Predator             | 12.50    | War Zone          | 6.50     |
| Fleet St Pub/Editor  | 85.00    | Protector            | 6.50     | Wizard Warz       | 13.50    |
| Frighlight           | 12.50    | Police Quest         | 15.50    | War Hawk          | 6.50     |
| Gryzor               | 12.50    | Pawn                 | 15.50    | Winter Olympiad   | 12.50    |
| Gunship              | 16.50    |                      |          | Xenon             | 12.50    |

Please send cheque/P.O./Access, Visa number and expiry date to:

Trybridge Ltd, 72 North Street, Romford, Essex RM1 1DA.

Please remember to state the make and model of your computer when ordering. P&P INC. UK. Europe add £1 per item. Elsewhere add £2 per item for AIR MAIL. Telephone order: 0708 765271

## CONCEPT SOFTWARE

All the latest games available

### MUSIC

|                             |                           |         |
|-----------------------------|---------------------------|---------|
| <b>MUSIC SOFTWARE ST.</b>   | D-50                      | £129.95 |
| <b>HYBRID ARTS SOFTWARE</b> | <b>PHILIP REES</b>        |         |
| EZ-Track Plus               | 5 x 5 Midi Switch         | £85.00  |
| EZ-Score Plus               | <b>STEINBERG SOFTWARE</b> |         |
| Synctrack                   | Pro-24                    | £285.00 |
| Sympte Track                | Time Lock                 | £399.00 |

More music software available on request

### HARDWARE

|                |       |                            |         |
|----------------|-------|----------------------------|---------|
| Colour monitor | phone | Atari 520STFM (inc Mouse)  | phone   |
| Atari 1040 STF | phone | Panasonic KX-P1081 printer | £220.00 |

Goldstar branded discs box of 10 £15

All prices include VAT & P&P for UK Mainland. Make cheques payable to

**Concept Software, Red Tape Studios,**

50 Shoreham St., Sheffield S1 4SP

Tel: 0742 760970 S.A.E for latest Cat.

### ATARI ST SOFTWARE AT BARGAIN PRICES

|                               |        |                       |        |
|-------------------------------|--------|-----------------------|--------|
| Masterplan                    | £69.99 | Xeon                  | £13.95 |
| Mach 3                        | £12.95 | Univ. Milt. Sim.      | £18.25 |
| Scrabble Delux                | £14.95 | Defender of the Crown | £19.75 |
| First Word Plus               | £55.95 | Rings of Zelfin       | £19.95 |
| Personal Pascal               | £56.95 | Mortville Manor       | £20.50 |
| Calligrapher                  | £49.85 | Creator               | £17.35 |
| 3.5" Discs from £11.70 per 10 |        | STFM Dustcovers £3.60 |        |

All prices include VAT, P&P UK.  
Cheque or PO's  
Payable to

Full range of software available.  
Please send SAE for catalogue or  
phone for latest prices.

**KSOFT**

(Mail Order Only)

70, Severn View Road, Woolaston  
Nr. Lydney, Glos., GL15 6QB  
Tel: Netherend (059452) 478



### Atari ST Image Editor *plus*

For colour systems with Fast Basic.

AniMatic is a great new animation design package.

With it you can easily produce full colour, movable animated objects for use in your own Fast Basic programs.

Use it to create animated graphics for games... Produce your own computerised cartoons...

AniMatic is compatible with NEOchrome, so you can use NEOchrome backgrounds. Or animate a NEOchrome screen in your own Fast Basic program.

AniMatic objects can be any size up to 30 pixels square. They can be loaded into your own Fast Basic programs, moved and animated under program control.

The AniMatic disk comes with several demonstration programs, including the game 'Smashout'. Together with six program modules written in Fast Basic containing set-up and manipulation routines.

#### Review

"...far ahead in terms of value for money."

ATARI ST USER, August '87

#### Review

"A must for anybody interested in writing programs with moving graphics."

NUGGET, November '87

Please note: AniMatic is specifically for users of Computer Concepts FAST BASIC. It is not directly compatible with other versions of Basic.

**only  
£9-95**  
including P & P.

Please send cheque or P.O. to:-

SOFT BITS Dept. ST  
5 LANGLEY STREET  
LONDON WC2H 9JA

or order by phone:- 01-836 2533

All orders despatched immediately.

**SOFT  
BITS**

TRADE ENQUIRIES WELCOME

## FIDGET COMPUTERWARE

# NEW

## FIDGET DISCOUNT SOFTWARE CLUB STARTING

Write or phone for free  
catalogue and details of free life  
membership

**(0494 33144)**

Dept. STU6, 150 Desborough Road,  
High Wycombe, Bucks HP11 2QA  
Telephone: 0494 33144



# How to get your Atari to talk to a BBC Micro

(or a Spectrum or a Commodore  
or an Amstrad or an IBM . . . or  
ANY other computer).

Language problems become a  
thing of the past when you join  
MicroLink. Now you can use your  
Atari (plus your telephone) to  
send messages to any other  
computer user, with no  
restriction on make of machine –  
or even on  
distance.

**MicroLink** *electronic mail and  
much, much more!*

Details from 0625 878888

## ATARI 520 STFM

### PACK A

Atari 520 STFM, Basic  
Reference Guide, Owners  
Handbook, UK Language Disk  
£ CALL  
Plus!! Free!! Five Disks,  
Public Domain Software Inc.  
Neochrome, Sampler, First  
Word etc.

### PACK B

All items in Pack A  
Plus!! 2 Mystery Games  
RRP at least £40  
£ CALL  
Please state what type of game  
preferred. i.e. Arcade, Adventure,  
Sports simulation etc.

### PACK C

All items in Pack B  
Plus!!  
80 Disc Storage Box  
10 Blank Discs  
10 Disc Labels  
Mouse Mat  
Twin Joystick Ext. Leads  
£ CALL

PLEASE CALL FOR PRICES ON ABOVE PACKS AS WE MAY STILL HAVE  
SOME AVAILABLE AT THE PRICE ADVERTISED LAST MONTH

### SOFTWARE

| LATEST RELEASES |        | Dungeon Master   |        | Terrorpods        |        |
|-----------------|--------|------------------|--------|-------------------|--------|
| Knightmare      | £13.95 | Oids             | £13.95 | Pawn              | £16.95 |
| BMX Simulator   | £13.95 | Obliator         | £16.95 | Guild of Thieves  | £16.95 |
| Ikari Warriors  | £10.95 | UMS              | £16.95 | Jinxter           | £16.95 |
| Battleships     | £10.95 | Carrier Command  | £16.95 | Starglider        | £16.95 |
| Thrust          | £6.95  | OLD FAVOURITES   |        | Backlash          | £13.95 |
| I Ball          | £6.95  | Super Sprint     | £10.95 | Xenon             | £13.95 |
| Flintstones     | £13.95 | Star Wars        | £13.95 | Crash Garrett     | £13.95 |
| Defektor        | £13.95 | Trivial Pursuits | £13.95 | SERIOUS STUFF     |        |
| Slapfight       | £13.95 | Chessmaster 2000 | £17.95 | Degas Elite       | £17.95 |
| Scrabble        | £13.95 | Bards Table      | £17.95 | Advanced Art      | £17.95 |
| Mach 3          | £13.95 | Test Drive       | £17.95 | Back Pack         | £34.95 |
| Int Soccer      | £13.95 | Black Lamp       | £13.95 | 1st Word Plus     | £57.50 |
| Pink Panther    | £13.95 | Defender/Crown   | £20.95 | K Data            | £34.95 |
| Vampires Empire | £13.95 | Balance of Power | £20.95 | Fast Basic (ROM)  | £69.95 |
| Gunship         | £16.95 | Barbarians       | £16.95 | Fast Basic (Disc) | £34.95 |

Please Note! We have a strict policy of not advertising games which are not  
released. If it is listed above it is available. For latest releases please call the  
number below and ask for Martin (Mon-Fri) or Steve (Sat).

### PERIPHERALS

| JOYSTICKS          |        | DISC DRIVES  |         | MISCELLANEOUS            |        |
|--------------------|--------|--------------|---------|--------------------------|--------|
| Cheetah 125+       | £6.95  | Cumana 1Mb   | £129.95 | Atari Mouse              | £24.95 |
| RAM Delta          | £8.95  | Triangle 1Mb | £129.95 | 10 Blank Discs           | £10.95 |
| Professional       | £13.95 | Atari SF314  | £159.95 | 80 Disc Box              | £9.95  |
| Professional +     | £15.95 | MONITORS     |         | Twin Joystick Ext. Leads | £5.95  |
| Comp Pro 5000      | £12.45 | SM125        | £139.95 | Mouse Mat                | £5.95  |
| Micro-Ace          | £11.95 | Philips 8833 | Call    |                          |        |
| Kraft Micro Switch | £9.95  |              |         |                          |        |

### MAIL-CENTA

17 Campbell Street, Belper, Derby DE5 1AP.  
Tel: 0773 826830

All prices include VAT and Delivery. All items despatched same day whenever possible.  
Personal callers welcome, but please bring this advert. Shop Closed Wednesday.

## ARE YOU MAKING ENOUGH MONEY ON THE STOCKMARKET? . . . . . . with our Software, your computer could make you more!

'ShareMaster is a valuable piece of software . . . its  
analysis option can even improve your performance  
sufficiently to pay for itself in a reasonable space of time' –  
Which PC

'The program represents value for money which does not  
seem to be equalled in its field' – Acorn User

ShareMaster is a powerful and easy to use  
integrated investment system for the analysis  
of price trends, investment performance and  
portfolio profitability. The package employs a  
comprehensive range of advanced predictive  
and analytical measures to help you improve  
the timing and success of investment  
decisions.

ShareMaster's portfolio management features  
have been designed to meet the varying  
needs of private and professional investors.  
The charting features alone can be found only  
on systems costing many times the purchase  
price.

#### MAIN FEATURES . . .

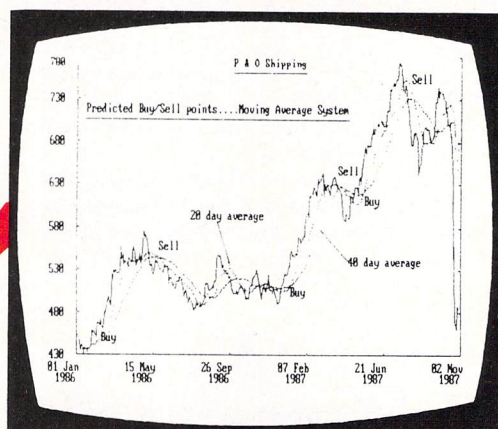
\* Profit Analysis facilities include Valuation,  
Profit Statements, Performance Reporting,  
Profit Analysis, etc.

\* Predictive features include moving  
averages, log/linear scaling, point & figure,  
linear regression, curve smoothing, relative  
strength, comparisons, momentum, Rate of  
Change, stochastics, trendlines, etc.

\* ShareMaster can maintain an extensive database of share price and  
purchase/sale/dividend information which can be rapidly updated, amended or  
displayed as required. Transactions can be entered on behalf of one or more  
parties and valuation/profit statements produced in seconds.

\* ShareMaster is exceptionally easy to use and is supplied with a 96-page  
manual which includes sections on interpreting the predictive indicators  
provided and their use in investment strategy.

These are only a fraction of the facilities offered. ASK FOR OUR FREE  
COMPREHENSIVE BROCHURE.



'A sophisticated combined portfolio and price graphics  
program . . . comprehensive and easy to follow' – Investors  
Chronicle

'There's no reason why ShareMaster shouldn't grace the  
portfolio of every interested investor' – Complete Guide to  
the Amstrad PCW

We believe that no other investment package  
can match ShareMaster's combination of  
facilities, performance, flexibility, ease of use  
and price. We are confident that investors  
will find it an indispensable aid, one which  
should repay your investment many times over.

ShareMaster is available for most popular  
computers including:  
Amstrad/IBM PC/XT/AT and compatibles  
BBC Model B and Master  
Amstrad CPC 6128, PCW 8256, 8512, 9512  
Atari 520 ST

**Now available – our latest advanced  
investment analyst . . .**

ShareMaster for the ATARI ST offering greater  
convenience and flexibility in addition to  
providing more powerful charting and portfolio  
analysis features. These include a chart  
memory, increased file capacity and an autorun  
facility.

Ask for further details on the range of additional  
features offered.

**New Release—OptionsMaster. A traded options valuation and analysis package**  
Ask for details.

Amstrad/IBM PC/XT/AT and compatibles only.

**ORDER FORM – Prices include VAT, p&hp, etc. Orders normally despatched within 24  
hours. Overseas orders deduct VAT but add £7 (Europe) or £10 (rest of world) for  
airmail despatch. Cheque, Access, Visa orders accepted. When ordering, please state  
your computer type. Dealer enquiries welcome.**

ShareMaster – IBM/Amstrad PC & compatibles (512K) £149.95 ☐

ShareMaster for the ATARI 520/1040 ST £99.95 ☐

ShareMaster – BBC/Master/Amstrad PCW/CPC6128/Atari 520 £99.95 ☐

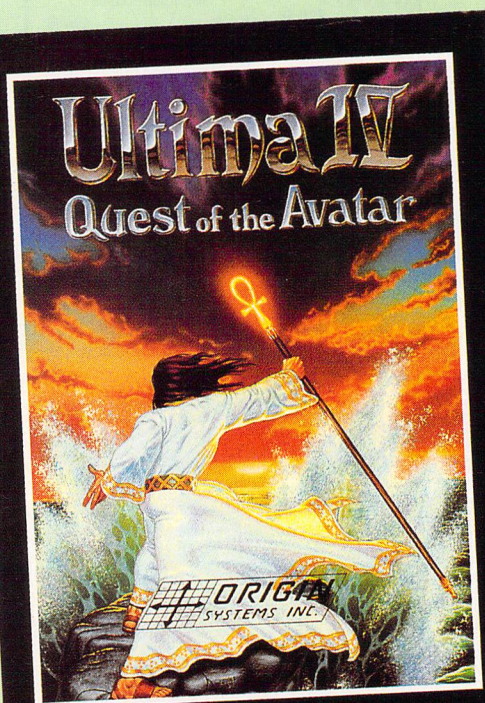
Synergy Software, Dept M, 7 Hillside Road, Harpenden, Herts, AL5 4BS  
Tel. (05827) 2977



# ADVENTURES

Brillig lends a hand in solving problems for fantasy fans

## New adventures to keep you busy



An Adventure of Epic Proportions

**A**N adventurer's life is a busy, but exciting one. No sooner have you finished rescuing the kidnapped heir of the Emperor of Ezzibonn, than along come the Guardians of The Golden Gizmo to ask if you can please pop over because they want to discuss your helping them recover said Gizmo which some lightfingered villain has half-inched with the intent of using it to take over the world.

To prove my point, Microprose has brought out Ultima IV for the ST, and it shouldn't be long before Electronic Arts brings out an ST version of The Bard's Tale II. It obviously feels that an adventurer is never really content unless he's got plenty of new tasks, puzzles and dangers to face.

Ultima IV, subtitled Quest of the Avatar, is a massive graphics-oriented

strategy adventure which offers a playing time of anything from 100 hours upwards. Your main objective is to transform yourself into a better person through courage, truth and love.

For those who have never experienced any of the Ultima series, a potted history is in order. Ultima I chronicled the first era of the dark ages of Britannia which came to an end with the overthrow of the evil wizard Mondain and his minions by an intrepid adventurer who tracked the foul Mondain to his lair and slew him.

Unfortunately, Mondain's female apprentice Minax lived on and a new and greater reign of terror soon prevailed, brought to an end by a hero in Ultima II.

Twenty years of peace and prosperity ensued before disturbing omens began to darken the tranquillity, followed by the mysterious appearance of a fiery island. Ultima III dealt with four adventurers who were called forth to destroy the sinister Exodus, and so ended the third era of the dark ages of Britannia.

With the final vanquishing of Mondain, Minax and Exodus, such evil now only abounds in isolated pockets and in the hearts of men. In Ultima IV, the

perfect mortal is now sought to lead the realm into a golden age. And this is your quest – to become an Avatar.

It won't be easy. There is much magic, mystery and mayhem in Ultima IV, and you will also be confronted with the ultimate challenge – yourself. The game is one of the most handsomely documented and presented adventures ever, so watch this space for a full review.

The Bard's Tale II: The Destiny Knight, from Electronic Arts should be with us before too long. Bard's Tale I was reviewed in the April 1988 issue of *Atari ST User* and this sequel is the



mixture as before, but with enhanced features. The game is about half as big again in code terms and features an expanded world to explore, and advanced magic and combat systems.

The plot centres around the destiny wand, forged long ago by the archmage Turin, but recently stolen by lawless mercenaries. These crafty crooks have broken it into seven pieces and hidden each fragment in a different part of the realm. Your task, and that of your band of adventurers, is to recover all the fragments and make the destiny wand whole again.

Once again, in addition to hunters, warriors, paladins and rogues, the singing bard plays in the band (no pun intended) with seven new tunes at his disposal.

One new feature is that foes can pop up as close as 10 feet away or as far as 90, so combat and magic proficiency is even more important. You can't take on



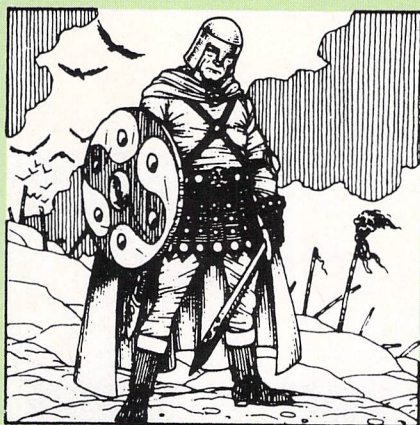


a troll with a sword if he's 40 feet away from you, but missiles and spells might do the trick.

Bard's Tale II looks to be an engaging sequel to its challenging predecessor, and will be reviewed in these pages just as soon as it is available.

Another interesting adventure which may have been released by the time you read this is Mindfighter from a new company, Abstract Concepts.

The game is being programmed by Fergus McNeill who you may know was responsible a couple of years or so



ago for producing some enjoyable Quill-based spoof adventures, such as the popular Bored of the Rings, Robin of Sherlock and The Boggit for Commodore 64 and Spectrum owners.

Now he's teamed up with the authoress of the book Mindfighter, Anna Popkess, to produce a tale concerning Robin, a young boy with power-

ful psychic abilities.

One day his mind thrusts Robin forward into a post-nuclear holocaust world where he tries to assist the survivors to rebuild a community. However, the survivors are being cruelly suppressed by The System, an extreme fascist regime which has seized control.

Robin decides the only way he can really help is by changing the course of history. He must return to the present and attempt to prevent the nuclear war that will shortly devastate the whole world.

The program is being developed using a system called Swan and

reputedly features digitised graphics, icons and a sophisticated command parser. Included are certain characters who, although you can interact with them, live out their own lives with no predefined course – this means every game is different.

A copy of the book Mindfighter will be included with each pack. Certainly sounds worth waiting for and we'll have a detailed review for you as soon as we can.

This month's hints and tips concentrates, by popular demand, on two recent adventures, Jinxter and Plundered Hearts.

See you next month.

## HINTS AND TIPS

### JINXTER

*Why does the gardener run away with the sack?*

He must hear you coming. Try putting some oil on the runners of the boat-house door.

*How do I get the oil?*

Get the plastic bottle, pour the contents into a suitable container and try some cold magic.

*Can't open Xam's mailbox?*

Warm the plastic key with something hot.

*Hole in the canoe a problem?*

You could try blocking it up with the dead mouse! It works but later you'll wish you hadn't. Instead, find

something that pongs, put the bung inside it then put the cheesy thing in the hole.

### PLUNDERED HEARTS

*Can't stop the explosive situation down below?*

Tear a piece from your frock, soak it in liquid and throw it over the gate.

*Escape from the ship impossible?*

Climb into the cask and cut the line. Bon voyage.

*Duelling pistols stuck to the wall?*

Ignore them! They are not for your use.

*Chandelier rope a puzzle?*

Wait until later when eventually the Falcon and Lafond will be fighting below you in the ballroom.

# Play out your fantasy

Program: Rings of Zilfin

Price: £24.99

Supplier: SSI/US Gold, Units 2/3, Holford Way, Holford, Birmingham B6 7AX.

Tel: 021-356 3388

RINGS of Zilfin is yet another in the long line of fantasy role-playing games from Strategic Simulations. You either love this type of game or else it leaves you cold.

The graphics and screen presentation are about the best I've seen for a game of this type, and certainly do much to enhance the atmosphere – so often undermined by lacklustre artwork.

Zilfins, as I'm sure you know, were powerful wizards who created two rings which, when worn together, imbued the wearer with supernatural abilities.

But there's always a worm in the apple in tales of swords and sorcery, and the maggot in this case is the dastardly Lord Dragos who has snatched one of the rings

and now only needs the other to attain invincibility.

To the rescue comes your good self, a hardened adventurer blessed with magical powers and all set to explore the dangerous expanses of Batiniq in search of both rings.

Your quest will take you across a wide land, attractively depicted on a three-dimensional map which you can call up whenever you wish. Your position on it is highlighted, so you can always find your bearings.

The screen is split into three sections, the main part showing the current scene with you as a diminutive, but nicely animated, figure squarely to the fore.

In many cases you will be trudging along to the right while the colourful, but somewhat monotonous, scenery scrolls slowly but smoothly to the left. There's a lot of walking to be done as this is a big land, and this part of the game – as in so many of these strategic fantasies – can



*Your adventure starts one cold morning*

become rather boring.

To the right of the main picture is a box containing all your current options. Game control is via these which can be exercised by single key presses or by pointing with the mouse. The layout and highlighting of the options is clearly and

Turn to Page 94 ►



### ◀ From Page 93

professionally presented. Below the central picture is another box used to show your input and the game's responses. The game is played in real time so responses can pop up even when you're doing nothing very much.

A toggle facility lets you bring up a status screen which depicts the current state of all your attributes – strength, fatigue, endurance, sword and magic skill – along with a detailed list of your possessions.

Combat with the many meanies and monsters you'll meet is simply animated and mostly involves lunging and slashing away at your opponents with whatever weapon you have to hand. Attacks can be



*A welcome respite can be found in the inn*

from the air as well as the ground. Lots of magic spells are at your disposal and with experience you be able to use quite powerful ones.

Among the many choices available from time to time are being able to talk to

someone, drink – but not eat, oddly enough – sing, pray, rest, offer something to someone, get and use objects, prepare and cast spells, walk and stop. Games can be saved for future restoration.

Rings of Zilfin is graphically a generous cut above most fantasy strategy games, is attractively presented, has a fair range of commands, has some reasonable sound effects and is very easy to get to grips with. No doubt it will please all devotees of the role-playing fantasy/strategy genre.

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

## DIY adventures galore

Program: *ST Adventure Creator*

Price: £39.95

Supplier: *Incentive Software, 2 Minerva House, Calleva Park, Aldermaston, Berkshire RG7 4QW.*

Tel: 07356 77288

WAY back in the history of home computers, a program was produced that was to set the adventure world by its ears. That program was *The Quill*.

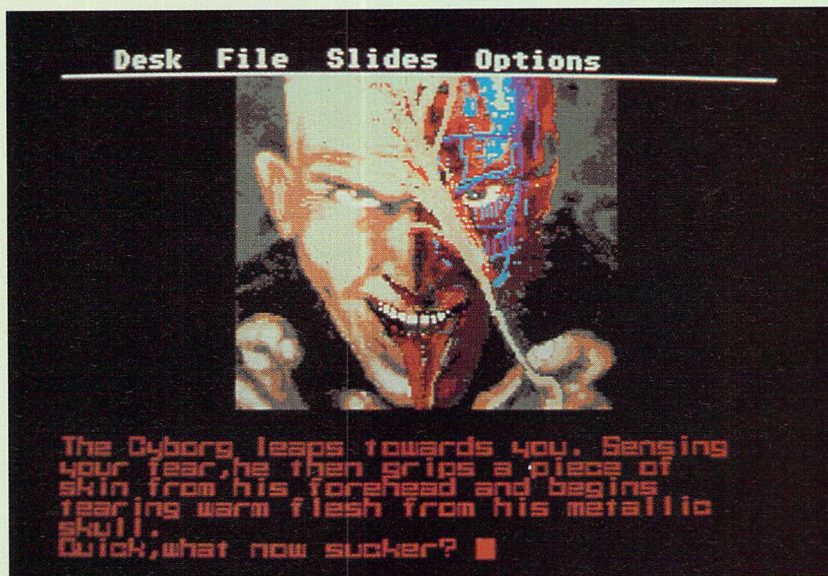
Produced initially for the Sinclair Spectrum and later for the Commodore 64, *The Quill* was a piece of software which took much of the donkey work and technical know-how out of writing text adventures.

Apart from knowing how to use the various facilities that came with the *The Quill*, practically all you had to supply was the story-line. So provided you had the imagination to dream up an adventure, you no longer had to worry about acquiring the skills to turn it into a working program – *The Quill* did that for you.

The programs generated were free-standing and the publisher's master stroke was to allow any *Quill* owner free licence to do what he liked with such programs, just so long as an acknowledgement was given within the adventure.

Before very long, *Quill*-generated adventures were thick on the ground. To be sure, some were not terribly good and some were downright awful, but there were enough quality ones to prove the software had wrought a minor revolution and brought adventure writing within the reach of all.

And now a similar revolution in the world of ST adventures could be just



*Create your own cybernoid*

around the corner, thanks to the advent of a superb new utility program from Incentive Software.

The *ST Adventure Creator*, or *STAC* for short, is a sophisticated piece of software that will enable you to produce your own home-grown text and graphic adventures.

Written by Sean Ellis, a 21-year-old graduate in Cybernetics and Computer Science from the University of Reading, it is a major development of Incentive's earlier and highly successful *Graphic Adventure Creator* (GAC). This program still seems to be the standard adventure utility for many 8 bit micros.

Having mapped out your basic adventure ideas on paper – and don't let's underestimate the hard work that goes

into devising a good adventure – you are ready to start turning your masterpiece into a free-standing and free-licensed program.

*STAC* is entirely menu-driven, making it simple to use. The data-entry type facilities all allow you to insert, amend and delete entries at any time and in any order. It will automatically sort them into the appropriate order for you – the system is wonderfully flexible.

All locations, messages, objects, verbs, nouns, adverbs and separators have to be allocated a unique number from within their own specified range. For instance, rooms can be numbered from 1 to 9999 while verbs use their own range of 1 to 255.

A total room entry (program prompted)



consists of a number, connections or exits to other rooms, and a short and long description of the room.

Each object has a number, a weight and the number of the location where it is initially to be found.

The central intelligence of the adventure focuses on conditions since these determine what happens in any given situation.

STAC handles four categories of conditions – high and low priority, local and special. Most take the form of tests and are fed into the system as English-like statements. They can be as simple or as complex as you wish.

High priority conditions are executed before the player enters his next command and are controlled by the program.

An example would be to check that if the adventurer has not taken the antidote within three moves after ingesting the contents of the blue vial, he is to be turned into a jellybean!

Low priority conditions are used for interpreting the current command and acting upon it, and are generally independent of the room the player is in.

Local conditions are specific to a room. For instance, the verb "shout" may have no effect in any room – except the one that contains delicate, vibration-sensitive icicles.

Special conditions are standard responses to cover situations such as the player trying to pick up something that is too heavy. These come supplied with the program, but you can tailor them to your own taste.

There are 512 markers and counters available. Markers are used for anything that can be in one of two states. Setting and unsetting them lets you keep track of, for instance, whether a treasure chest is open or closed, or whether a fire is lit. Counters are just that – they are used to store numbers and can be initialised,

increased and decreased.

Integrated within the program are a rudimentary, single-voice, music generator and far from rudimentary font and graphics editors. The font editor lets you determine how your text will appear on the screen – you can choose from a number of pre-designed sets or create your own.

The inbuilt graphics editor is there to let you construct your own 16-colour pictures to go with the adventure. All the expected functions are present including draw, line, fill, circle, ellipse, rectangle, undo, airbrush and paintbrush. And there is a good selection of brush sizes and types.

If you don't like using the built-in editor, the program will even let you import your own Degas and Neochrome pictures. Wherever possible, each is stored in a compressed format to save on memory.

Other miscellaneous features include

ramsaver and ramload, string handling so you can talk to characters, 40 or 80 column text mode including split screen allowing you to have pictures with 80 column text, colour switching and random number generation.

The disc menu lets you format a disc, load and save a complete set of adventure data, erase a file, check how much free space is available on the disc, generate a free-standing runnable adventure and encode and save a link file for multi-disc adventures.

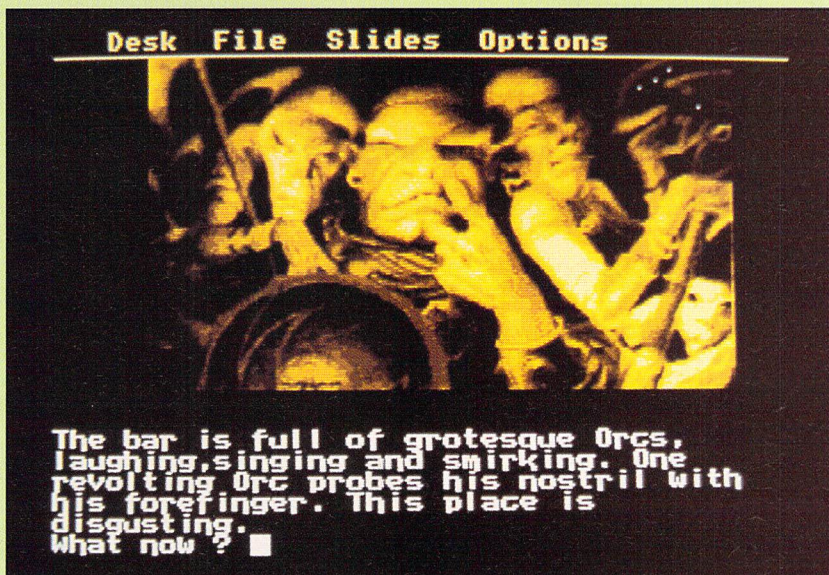
You can even save a section of data, such as verbs or pictures, for future merging back into an adventure – ideal for building libraries of material.

STAC itself takes up about 100k, leaving you with some 300k of memory to play with on a 520ST. A quickstart file comes supplied with the program which contains special conditions and a number of commonly used nouns, verbs and messages.

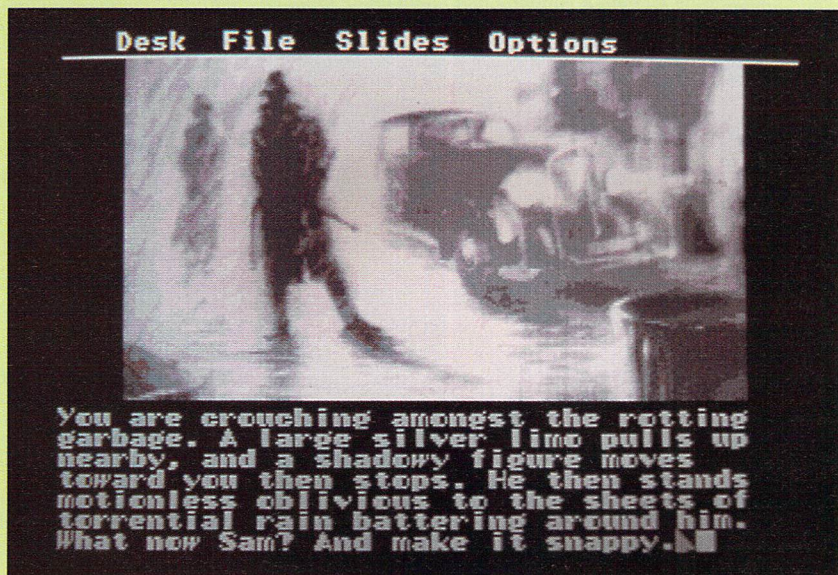
The 68 page instruction manual is clear and easy to follow. STAC is that rarest of products, a program that is flexible and rich in features while remaining relatively easy to get to grips with and enjoyable to use.

All you have to supply is the imagination and a bit of logical thinking – STAC takes care of the rest. It is a superb accomplishment, and in my book is unquestionably the adventure product of the year.

Will a STAC-generated adventure one day out-Infocom Infocom? Having seen some of the first fruits of this program, I wouldn't take any bets against it happening.



*You decide the style of picture and text*



*Moods can be cleverly imposed*

|                              |           |
|------------------------------|-----------|
| <b>Presentation .....</b>    | <b>10</b> |
| <b>Facilities .....</b>      | <b>10</b> |
| <b>Ease of use .....</b>     | <b>10</b> |
| <b>Value for money .....</b> | <b>10</b> |
| <b>Overall .....</b>         | <b>10</b> |





THE LEADING NORTH WEST  
SPECIALIST ATARI DEALER



**ADBROKE  
COMPUTING**  
INTERNATIONAL

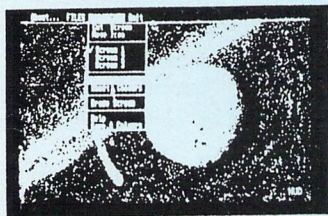
33 Ormskirk Road,  
Preston, Lancs., PR1 2QP.  
Tel: (0772) 21474 (1 line)  
(0772) 203166 (5 lines)  
Bul/Board (0772) 27236  
6.00pm to 9.00pm

DEALER  
ENQUIRIES  
WELCOME

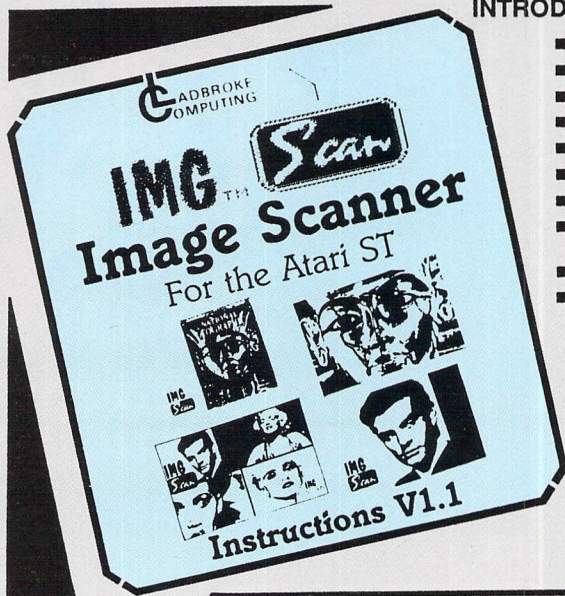
## PICSTRIP

ARE YOUR GFA BASIC LOADING SCREENS AND  
ALERT/INFORMATION BOXES DRAB & DREARY?  
THEN NEVER FEAR - PICSTRIP IS HERE!

- SUPPORTS GFA BASIC, FAST BASIC AND ST BASIC
- GIVE YOUR PROGRAM IN BASIC A TRULY PROFESSIONAL LOOK
- MANIPULATE PICTURE FILES WITH EASE
- DEGAS, NEOCHROME AND AB ANIMATOR COMPATIBLE
- DROP DOWN MENUS
- WORKS IN ALL RESOLUTIONS
- GRAB ALL OR PART OF A PICTURE FILE
- 3 SCREENS - HAVE 3 PICTURES IN MEMORY AND SWITCH INSTANTLY
- WORKS WITH ANY DRIVE (including hard drives)
- CONVERTS FROM DEGAS/NEO TO BASIC SCREEN OR ICON AND VICE VERSA
- INSTRUCTIONS, BASIC ROUTINE AND FREE DEMONSTRATIONS ON DISK



**£6.99**



### INTRODUCTORY OFFER PRICES

- SO EASY TO USE
- USES YOUR OWN PRINTER
- SET IT UP IN ONLY 5 MINUTES
- PRINTER CODES ETC. SUPPLIED BY SOFTWARE
- MOUSE CONTROLLED
- WORKS WITH MONO OR COLOUR MONITOR
- RUNS IN HIGH OR LOW RESOLUTION
- ALL IMAGES CAN BE ALTERED (COLOURED) AT ANY TIME DURING SCANNING BY USING THE GREY SCALE
- IMAGES CAN BE SAVED AS DEGAS, NEO OR IMG (TM) FILES
- VIRTUALLY TURNS YOUR ST INTO A FAX

IMAGE QUALITY BETTER THAN MOST SYSTEMS  
AT 10 TIMES THE PRICE

**£79.99**

## SPELL WITH OSCAR

BY AB SOFTWARE FOR THE ATARI ST

- FULL COLOUR SCREENS
- SOUND & PICTURES
- AGE RANGE 5 - 10
- SIMPLE TO OPERATE
- MAKES SPELLING FUN
- MULTIPLE LEVELS (SELECTABLE)
- HI-SCORE TABLE
- TEACHES KEYBOARD SKILLS
- IMPROVES MOTOR CO-ORDINATION



**£12.99 EACH**



- FULL COLOUR SCREENS
- SOUND & PICTURES
- AGE RANGE 5 - 10
- SIMPLE TO OPERATE
- ADD, SUBTRACT, MULTIPLY & DIVIDE
- MULTIPLE LEVELS (SELECTABLE)
- FULLY MOUSE CONTROLLED
- HI-SCORE TABLE

Educational Software written for under ten's.  
Let your children use the computer  
for fun and learning

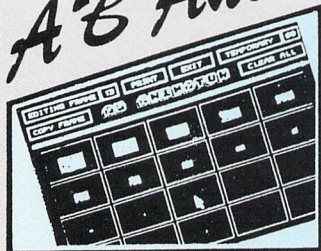
## ADD WITH OSCAR

YOU'D LIKE TO WRITE YOUR OWN GAME IN BASIC,  
BUT YOU CAN'T HANDLE THE ANIMATED GRAPHICS?  
NOW WE HAVE THE ANSWER...

## AB Animator

**£12.99**

- SUPPORTS GFA BASIC AND FAST BASIC
- ANIMATE UP TO 20 BIG FRAME (56 pixels wide by 33 pixels high)
- FULLY ICON CONTROLLED
- COMPATIBLE WITH DEGAS AND NEOCHROME PICTURE FILES
- FULL DESIGN FACILITIES SUCH AS DRAW, FILL, GRID COPY, ETC.
- MULTI-SCREEN LAYOUT
- COLOUR SELECTION FROM DISK, OR CONTROLLABLE FROM AS ANIMATOR
- VCR STYLE ANIMATION CONTROLS
- SAVES FRAMES, COLOUR PALETTE AND ANIMATION DATA IN BASIC FORMAT
- INCLUDES BASIC ROUTINES AND FREE DEMONSTRATION PROGRAMS

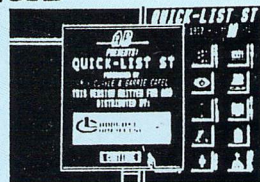


## Quick-List Plus

NEED THAT DOCUMENT FILE BUT CAN'T FIND IT?  
LOST AN IMPORTANT PROGRAM BUT CAN'T  
REMEMBER WHICH DISK YOU PUT IT ON?

QUICK-LIST PLUS IS THE ANSWER!

- AVAILABLE FOR 8 BIT
- WORKS IN COLOUR OR MONO
- SEARCH FOR DISK
- SORT ON DISK OR NAME
- READS DISKS FROM ANY DRIVE (including hard disk)
- SAVES TO DATA FILE
- ADD FILES MANUALLY
- RENAME FILES
- BUILT TO HELP
- PRINTER OUTPUT
- FULLY ICON DRIVEN
- EASY TO USE



also - on the same Disk  
**Mastermat**

- WORKS IN COLOUR OR MONO
- WORKS ON A OR B DRIVE
- CUSTOMISED FORMATS
- COPY PROTECTS YOUR SOFTWARE
- MULTI-SECTOR, MULTI-TRACK FORMAT
- FAST READ FORMAT

**£6.99**



by A.B. Software for the  
Atari ST





THE LEADING NORTH WEST  
SPECIALIST ATARI DEALER



**ADBROKE  
COMPUTING**  
INTERNATIONAL

33 Ormskirk Road,  
Preston, Lancs., PR1 2QP.  
Tel: (0772) 21474 (1 line)  
(0772) 203166 (5 lines)  
Bul/Board (0772) 27236  
6.00pm to 9.00pm

DEALER  
ENQUIRIES  
WELCOME

This Company has given years of full support to ATARI users Countrywide from their retail shop premises at Ormskirk Road, Preston. Now from their NEW Mail Order Depot they can offer the same excellent service to all Mail Order Customers. All Software and Hardware is fully tested prior to selling. This ensures that Customers receive working items so that returned goods, and all attendant frustration are a thing of the past. All Hardware is supported by our 'ON SITE' engineers, therefore quick turn round on all repairs is guaranteed.

All prices quoted are fully VAT inclusive and there are no 'hidden extras', what you see is what you get. Prices include delivery in Mainland UK. For next day delivery add £3.00. Phone for latest prices/releases.

## hard disks

All Hard Disks come with Utilities to cure the 40 Folder problem + Backup Utilities, Fast Read Write etc.

|                          |         |
|--------------------------|---------|
| Atari 20 mg              | £575.00 |
| Triangle 20 mg Hard Disk | £575.00 |
| Supra 20 mg              | £550.00 |
| 30 Meg (Cumana)          | £699.00 |
| 40 Meg (Triangle)        | £799.00 |

## printers

|                              |         |
|------------------------------|---------|
| Dot Matrix                   |         |
| Star LC 10                   | £225.00 |
| Star LC 10 colour option     | PHONE   |
| National Panasonic           | PHONE   |
| MP165                        | PHONE   |
| MP135                        | PHONE   |
| LQ800 24 pin D/M             | PHONE   |
| NEC Pinwriter - 2000 (24pin) | PHONE   |
| Epsom LQ 500 (24pin)         | PHONE   |

GREAT NEW PRICES ON  
24 PIN PRINTERS

|                |       |
|----------------|-------|
| Mega ST's      | PHONE |
| Lazer Printers | PHONE |
| PC Clones      | PHONE |

ALL OTHERS PHONE

All Printers, Disk Drives, etc., supplied with cables, etc.

NO HIDDEN EXTRAS

All Hardware is covered for 12 months by our service dept. and is tested prior to delivery to assure satisfaction.

### SOFTWARE

WE HAVE A COMPLETE RANGE  
OF SOFTWARE IN STOCK  
AND FULLY TESTED

ALL DEDICATED BOOKS & MAGS  
IN STOCK

ANY SOFTWARE PROBLEMS?  
QUERIES?  
GIVE US A RING,  
WE USUALLY HAVE THE ANSWER

## PRICES

|                                  |          |
|----------------------------------|----------|
| 520STM Packages                  | PHONE    |
| 1040STF + Mouse                  |          |
| + Software                       | £480.00* |
| 1040STF + Mouse                  |          |
| + Hi-Res Mon                     |          |
| + Software                       | £580.00* |
| 1040STF + Mouse                  |          |
| + Colour Mon                     |          |
| + Software                       | £780.00* |
| 520STFM + Mouse                  |          |
| + Software                       | £285.00* |
| 520STFM + Mouse                  |          |
| + Software                       |          |
| + 1 Meg Upgrade                  | £350.00* |
| MEGA PACK                        |          |
| 520STFM + Mouse                  |          |
| + Software                       |          |
| + 1 Meg Upgrade                  |          |
| + 1 Meg 2nd Drive                | £485.00  |
| Equal to 1040STF + 0.5 Meg Drive |          |
| + Modulator                      |          |
| *Whilst current stocks last      |          |
| For Med Res Col Mon add          | £299.00  |
| For High Res Mono add            | £129.00  |

## dust covers

|             |       |
|-------------|-------|
| Computers   | £3.99 |
| Monitors    | £4.99 |
| Disk Drives | £2.99 |
| Hard Disks  | £4.99 |
| Printers    | £7.99 |

## peripherals

|                           |         |
|---------------------------|---------|
| Triangle 1 mg D/Drive     | £139.00 |
| Triangle 2 x 1 mg D/Drive | £229.00 |
| Pro Draw Graphics Tab.    | £299.00 |
| Cumana 1 Meg D/Drive      | £139.00 |

All Drives come complete with Software.

## disks

|                   |         |           |
|-------------------|---------|-----------|
|                   | 3.5 D/D | 5.25 D/S  |
|                   | D/D     | D/D 46TPI |
| Per Disk          | £1.99   | £0.80     |
| 10 Disks          | £16.00  | £6.50     |
| 10 Disks +        |         |           |
| Plastic lib case  | £17.00  | £7.50     |
| 100 Disks + cases | £150.00 | £60.00    |
| 500 Disks + cases | £650.00 | £280.00   |

All Disks are covered by an unconditional lifetime guarantee.

We also stock a full range of quality P/D ST Software at £3.99 per Disk. Send S.A.E. for catalogue.

Our ATARI trained engineers will repair all Hardware in minimum time at competitive rates. Please carry a 90 day warranty.

## upgrades

2.5 and 4 Meg Upgrades available for the 520 STFM's. These are very easy to fit. So no need to sell your 520/1040, just upgrade to a 'Mega ST'.

|                              |         |
|------------------------------|---------|
| Upgrade Boards               | £135.00 |
| Boards + 2.5 Meg             | PHONE   |
| Boards + 4 Meg               | PHONE   |
| 1 Meg Upgrade STM            | £70.00  |
| 1 Meg Upgrade STFM           | £55.00  |
| STFM Upgrade fitting service | £15.00  |

If any of the above Upgrades are purchased with Hardware then deduct £5.00 from total.

WE ALSO STOCK A FULL RANGE  
OF ATARI 8 BIT HARDWARE  
AND SOFTWARE INCLUDING  
THE NEW XE RANGE.  
PLEASE RING FOR PRICES.

TO ORDER simply send, or phone your order, stating full name, address, Visa or Access No.'s, Cheque or Money Order.

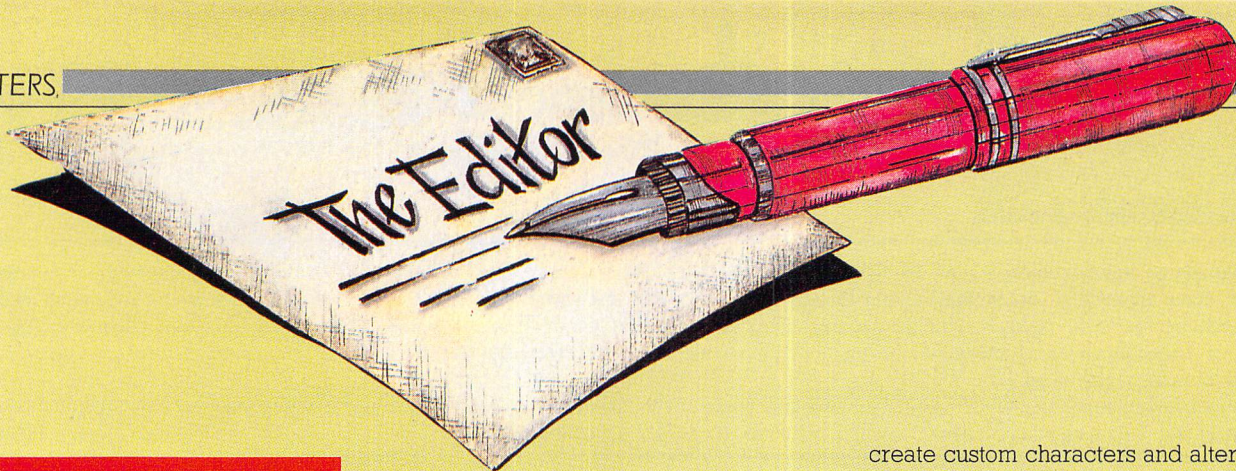
Make payable to :

LADBROKE COMPUTING INTERNATIONAL  
33 Ormskirk Road, Preston, Lancs., PR1 2QP.  
Telephone (0772) 21474 / 27236

*If it's available -  
we have it!*

SEND S.A.E. FOR FULL CATALOGUE





## Prolog for the ST

WHEN reading Mr Maynagh's letter in the March 1988 issue of Atari ST User concerning a version of Prolog for the ST, I remembered having heard about Epsilon Software somewhere.

In fact I found a report about its MProlog in an old issue of the German ST Computer magazine. Furthermore, a second Prolog – Salix Prolog – exists that should also be available in the UK.

I am well aware that you are not allowed to recommend a certain product or software house, but you may convey this information to him.

By chance I found the last issue of Atari ST User on a newsstand at a station. As the magazine costs DM 9.50 when buying it over here, I am thinking of subscribing to it.

As the postal employees don't handle print media with too much care I want to be sure to get a whole magazine, and not a bunch of single pages. So can you tell me how you dispatch it? – **Susanne Bolus, Mannheim, West Germany.**

● We certainly do recommend software and software houses in our reviews. But as we haven't seen either of these versions we can't comment on them.

The magazine is sent out in a polythene wrapper. We have many overseas subscribers and they all receive their magazine in excellent condition, so there shouldn't be any problems.

## Get away from Basic

IN your March 1988 issue of Atari ST User you referred to FProlog at £90. I would like to mention that Paul Glover's ST Club – a PD library – has a very good version for £2.70 – some £87.30 cheaper. It uses Edinburgh syntax.

In the January issue you advised G. K. Ruffle to use Basic rather than C for serious programming, as the former is easier to learn. He mentioned that he used assembler and Forth, so he should be able to get on with C.

Why is it that you – and all other other magazines – push Basic? All the serious programmers I know use C, Pascal and assembler. How do you expect the ST to be taken seriously when all the maga-

zines advocate Basic?

Most programmers as far as I can see, are in the non-commercial world and computer literate. They are used to things like Unix and Lattice C. The ST will not make it in the commercial world because it is not IBM compatible and unless you stop this fascination with Basic, it will not make it anywhere except in the home for games.

You will also miss out on the large academic market that uses STs, but does not read Atari ST User because it is full of Basic and games.

So can we have more listings and features using C and Pascal before the ST dies through the lack of the right kind of support?

The user port has great potential. Does anyone do any add ons for it? – **Chris Hills, Birmingham.**

● We try to cover all languages, and that includes Basic, C, Pascal and assembly language. A beginner's guide to C programming starts next month – and also one on Basic.

## NLQ printer poser

I AM considering buying a printer for use with desktop publishing software on my STFM. My main concern is that the printer will do justice to the wide range of fonts available for most packages.

I would be satisfied with the quality of print produced by a good 9 pin printer in NLQ mode. However, is NLQ limited to those print styles which come as standard with the printer, or can all printers be driven to produce NLQ in custom designed fonts?

I am particularly interested in the Star NL-10 and the new Citizen LSP-100. Also, many printers boast the ability to download fonts. What does this mean? Does either the Star or Citizen have this facility, and is there any DTP advantage? – **Stephen Hall, Belfast.**

● The printer's built-in fonts aren't used by DTP software as they drive it in bit image mode.

The fonts available are those that are stored within the DTP software, not the printer. Also, the printer's NLQ mode won't be used – it's not available in bit image mode. The software will provide a draft and NLQ output mode.

Some printers allow you to redesign the built-in character sets so you can

create custom characters and alternative fonts. This feature won't be used by DTP software. Most good DTP packages support a very wide range of printers, and although we haven't tried either the Star or Citizen, you should find them catered for.

## Business v pleasure

HAVING for the first time bought your magazine, I would like to say how impressed I am with it. The presentation of all the articles, reviews and so on is excellent, as is the use of illustration, particularly screen shots included, where possible, alongside software reviews.

I primarily bought your publication to give me some idea of what to expect, since I am presently looking at buying myself an STFM. I have long grown out of the Spectrum phase of my life, and currently getting bored with the limitations of my BBC Micro – which I intend to hand down to my son.

I would like to know, if possible, to how much of an extent I will benefit from the ST, and how closely it resembles a PC, since I hope to use it as such, as well as playing some of the excellent games I know exist.

My congratulations once more on a wonderful magazine. – **Paul Watson, Wisbech, Cambridgeshire.**

● The Atari ST is a completely different micro to the IBM PC or its clones, and both are aimed at different markets.

The PC is primarily a business machine, and vast quantities of business software are available. There are also a few games too, for quiet moments of relaxation.

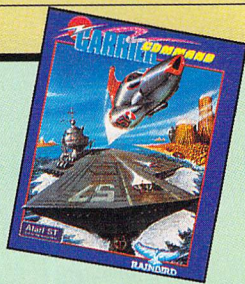
The ST however, is ideally suited to arcade games, and there are literally hundreds of titles currently on sale, with more coming out each week. The basic ST also has better graphics capabilities and there are some superb art programs around. Music is especially well catered for too, with an abundance of Midi packages to choose from.

In addition to this, there are quite a few business packages available – word processors, spreadsheets, DTP and so on – though nowhere near as many as for the PC.

The choice is difficult, and it depends on what you want your micro to do. The best advice we can give is to first choose the software you wish to use – spreadsheet, game, DTP and so on – then



## Star Game for a Star Letter



Each month we'll select a letter of the month – and the sender will receive the program which our reviewers have rated *Atari ST User* Star game. This month, reader Julie Fudge will receive *Carrier Command*, which is reviewed on page 44.

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.

### Beating Bubble Bobble trouble

I HAVE recently completed the arcade game Bubble Bobble on the ST. During early screens you need to collect as many potions as possible for points, and as many letters as possible for extra lives – which you will definitely need later.

On later screens – 40 upwards – look out for umbrellas as they skip screens (some of which you may find very difficult), and help you on your way. You will find that from screens 80 upwards it will become harder, and potions, bombs, clock – which freezes all creatures enabling you to bubble and pop them – and the invincibility shield will be a great help.

On the 100th screen, which automatically loads in separately, there are two small bottles, each containing light-

ning. To capture the monster, which is a much bigger version of Bonner, you have to collect one bottle – the other is for player two – then blow bubbles of lightning by pressing your fire button, then popping the bubbles, hitting Bonner.

The best way to do this is to face a wall at the bottom of the screen and press the fire button repeatedly.

The lightning automatically pops from Bub's back, striking big Bonner in the process. After a series of lightning bolts hits him, he is encased in a bubble.

This is where the game ends. You can't pop the large bubble now holding big Bonner. The 100th screen freezes and a new one is displayed. It says "Congratulations. You have finished Bubble Bobble and have found the true magic of life, love, friendship and Happiness. THE END?"

At the bottom of the screen big Bonner is whizzing from side to side. – **Julie Fudge, Newport, Gwent.**

choose the micro-which can run this software. Also worth bearing in mind is the price difference between an IBM PC and an ST – the ST is a fraction of the cost of a PC.

### Second drive on 1st Word

AFTER buying a Cumana 1 Meg disc drive as a second drive for my Atari STFM, I have found a few problems with using 1st Word on my new set up – the Atari 1/2 Meg as drive A and the Cumana as B:

□ On the desktop screen why can I backup the whole disc from drive A to B, but have to copy the files separately to go from B to A?

□ After copying the files to drive B I find I can't print a file from there when using 1st Word.

□ When I load a file from drive B, I use:

B:\\*.\*

on the item selector. Is that correct? – **T. Chiu, Hull.**

● A 1 Meg drive will quite happily copy

a disc in a 1/2 Meg drive, but not vice-versa. The reason is that a 1 Meg drive writes to both sides of a disc, whereas a 1/2 Meg drive only writes to one side – you can't fit a double sided disc on to a single sided one.

So you can backup A to B, but not vice-versa. You must copy the files from B to A one by one. Remember that they may not all fit on one disc, so have another ready just in case.

1st Word will only print out a file stored on the 1st Word disc itself. If you swap discs it won't be able to find the printer driver.

### 1st Word form feed

I HAVE encountered a most frustrating problem when using 1st Word, which concerns the printing of letters.

What happens is that when I come to output anything, the printer executes a form feed every time. If I want to get several prints of the same letter I have to wind back the paper to the head of the

previous page so I don't waste a page every time.

I've had better brains than mine on the problem. We've changed Dip switches and tried to amend various instructions in the printer driver – still without success.

I have read your series on customising printer drivers in the December 1987 to February 1988 issues of *Atari ST User*, but I'm afraid I had some difficulty in following some of it.

Do you have an idiot's guide to the solution of this particularly infuriating problem? – **Bernard Melling, Blackpool.**

● The only thing we can suggest is to try altering the initialisation codes in the printer driver. You'll need to load the driver for your type of printer from the drivers folder and search through it for a line that looks similar to:

1B, 65 \* Termination: printer reset

Try changing the line to:

0 \* Termination: printer reset

and see what happens. Have any readers got any suggestions?

### Printer compatibility

COULD you tell me if the 1029 printer for the 8 bit Atari will work with the 520STFM, and if so, could you tell me where I could get a lead or a wiring diagram to construct one? – **Freddie Elliott, Belfast.**

● The printer can't be adapted to be used with the ST.

### Practice makes perfect

I BOUGHT a 520STFM in the middle of March, immediately after learning that Atari was upping its prices by £100. I would like to say how much enjoyment I have had from it – but I can't. At least, not honestly.

For me it has just been one problem-solving hour after another with the brief respite coming when I decided to jack the whole thing in and play *Star Trek* instead.

But having forked out for what still seems to be decent hardware, I am determined to work my way out of the vortex I appear to be in.

I am a novice at programming, so I would welcome your help in the following matter. I tried typing in the listing for 3D Noughts and Crosses from your May 1987 issue and as far as I can see, I have entered it perfectly. When I try to run it, however, I can't get past line 300 which

Turn to Page 99 ►



### ◀ From Page 99

reports illegal function call. The line in question reads:

```
300 xpos=peek(gout+2):.....
```

and similar arguments containing PEEK that appear in other listings in your magazine achieve the same frustrating result.

Furthermore, when I try to run some of my PD software written in ST Basic, I get the same response and on investigation discover that it has stopped on a similar argument.

My dealer says that the language is always being updated and that PD programs cannot always keep up with it. This would seem to be an odd explanation for two reasons:

Firstly, I seem to be using PEEK correctly according to the not very helpful manual that came with the language disc. And secondly, it would mean that none of the expensive manuals that are supposed to help would ever be up to date.

I have searched through back issues of Atari ST User but can find no help so I would be grateful for an answer to this one.

Finally, do you think it is too much to expect Atari to put a little more effort into helping first time buyers get as much as possible out of their machines?

In spite of the letters you print decrying ST Basic, it is still given away with little or no documentation to support it. It seems I shall have to to shell out another £12 on a manual before I can even begin to understand it, or still more on a different language.

Amstrad gives away an extremely helpful manual with its PCW range. Why can't Atari adopt a similar approach?

Congratulations on an excellent magazine – one that persuaded me to sweat for hours trying to understand the first thing

about computing. Please keep up the great work. – **Paul D. Ibbott, Watford.**

● The problem is likely to lie with your version of ST Basic. It sounds as though you've got the latest version, and the programs you are trying to run were written for the old one. There are slight incompatibilities which prevent many programs from running.

There are too many differences to go into here, and we had hoped to run an article this month dealing with these problems and outlining how to solve them, but our copy of the new ST Basic arrived too late. The article will now be featured next month.

## Higher levels in Backlash

HERE'S a useful tip for getting on to higher levels in Novogen's Backlash:

When the game starts you will be near a white dome that opens to allow enemy ships to emerge. There are two of these in radar range and you must locate them then place yourself behind the nearest so that both line up vertically on the screen.

Press the joystick auto-fire button and a line of fire will shoot up the screen and anything that pops up from the domes will be destroyed.

You will not be attacked from behind as no ships will enter your radar. The only danger is from heat-seeking missiles, which will give you plenty of warning – even these don't approach from behind.

The only other way you can be killed on later stages is at the hands of a ship that fires at you as soon as the dome opens. If you get too close to the first dome you will be hit.

A way round this is to reverse so that the dome furthest away is near the cross in the radar. Using this method you will

be out of range of the furthest dome and able to destroy fire from the nearest before it has time to reach you. – **Tony Oldridge, Goole**

## Designs on sprites

I AM looking for a good sprite designer and animator, and I know of five packages which could be what I want: AB Animator by AB Software, Make it Move, by Michtron, Advanced Art Studio, by Rainbird, Quantum Paintbox and Pro Sprite Designer by Eidersoft.

Could you tell me which of these programs is the best for generating colourful and well animated sprites? Do you know if any of these programs allow the integration of sprites into programs written in GFA Basic?

Also, do you know a way of changing the horse demonstration provided with GFA Basic so that it works in medium or low resolution? There must be a way of changing the data.

Thanks for the best ST magazine on the market. – **Jason Anderson, Portmead Swansea.**

● You'll find a review of Quantum Paint in this issue, Pro Sprite Designer in the January 1988 issue, and Advanced Art Studio in the September 1987 issue of Atari ST User. We haven't tried the other two packages yet.

All are excellent pieces of software, though they are each biased toward a particular aspect of graphics, design or animation. The best all round package is probably Advanced Art Studio. Even though this is primarily an art package, it has excellent sprite and animation facilities.

GFA Basic has built-in sprite and other related commands for accessing the screen, though for best results you would be better off writing your own routines in machine code.

We're not sure how to get the horse demonstration running in medium and low resolutions. Can any readers help?

## Centronics compatible?

I HAVE just bought an Atari 520STFM and I also have a Centronics GLP printer which I use with a BBC Micro. I am having trouble getting the printer working with the Atari. Can you tell me if I am wasting my time? – **P. Haley, Chatham, Kent.**

● Any printer which works on the BBC Micro will work perfectly on the ST – you'll need a new printer lead. You must set the Dip switches inside the printer so that it produces line feeds. If you have to type \*FX6,0 on the BBC Micro before printing anything, the Dip switches need altering.

## Which word processor?

I BOUGHT my nine-year-old son a 520ST for Christmas. Being a complete novice to the computer world, I would be grateful for your advice on the following:

My son thoroughly enjoys playing games on the micro, but he also wants to write on it – like using a typewriter. I am aware that in order to do so he will require a word processing package.

As these can be rather expensive I want to make the right choice. Reading through your magazine I notice that 1st Word Plus appears to be popular with advertisers.

Does it contain a spell checker – my son needs help in that area? Do you feel it is suitable for my son's needs or can you recommend another package?

My second query is that I received the

UK language disc with the micro. However, there's no manual to explain the information contained on the disc. Can you recommend a suitable book to do this?

I have found your magazine excellent, especially the games reviews. – **Lesley Ferguson, Stirlingshire.**

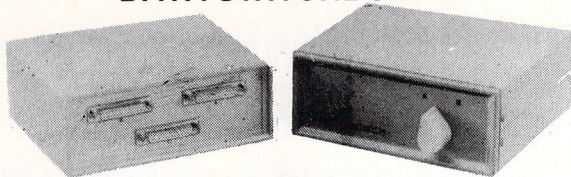
● 1st Word Plus is an excellent word processor and quite popular too. Kuma's K-Word 2 is almost identical and is around £20 cheaper at £39.95. Both include spelling checkers.

A Basic manual is available, though many readers find that it doesn't give enough examples, and it doesn't cover the new version of ST Basic either. We'll be starting a new Beginner's Basic series next month.



## We'll point you in the right connection!

### DATA SWITCHBOXES



Slimline switchboxes enable you to quickly switch between micros & printers.

| RS232 (Serial) metal cased                                                    | Centronics (Parallel) metal cased            |
|-------------------------------------------------------------------------------|----------------------------------------------|
| 25-way 'D1 to 2-way ..... £40.00                                              | 36-way Centronics 1to2-way Para ..... £38.00 |
| 25-way 'D1 to 3-way ..... £50.00                                              | 36-way Centronics 1to3-way Para ..... £48.00 |
| 25-way 'D1 to 4-way ..... £60.00                                              | 36-way Centronics 1to4-way Para ..... £58.00 |
| PARALLEL CROSSOVER 36-way Centronics 2 to 2 changeover crossover ..... £52.00 |                                              |

### We'll lead you in the right connection!

|         |                                                                                                                            |
|---------|----------------------------------------------------------------------------------------------------------------------------|
| CL76    | Atari ST to Scart. 13-pin Din to Scart. Suitable for Philips, Ferguson and Fidelity etc. 2m ..... £12.75                   |
| CL77    | Atari ST Cable. 13-pin Din to open end. All pins con. 2m ..... £11.75                                                      |
| CL78    | Atari Floppy Disk Drive Cable. 14-pin Din to 14-pin Din 2m. .... £12.75                                                    |
| CL79    | Atari to Cumana Disk Drive. Adaptor Cable 13-pin Din to 34-way socket 1m. .... £12.95                                      |
| P24     | Circular Plug. 14-pin Floppy Disk connector on Atari ST computers ..... £5.25                                              |
| P25     | Circular Plug. 13-pin Din. Monitor connector on Atari ST computers ..... £5.25                                             |
| P26     | 19-way D Plug. With hood. Disk connector for Atari ST. Disk connector for Apple IIc and Apple Macintosh computers .. £5.50 |
| IPL-1.8 | Atari printer lead. Flexible moulded, fully shielded parallel cable 1.8m ..... £8.75                                       |
| CL16    | Atari joystick Extension lead 3m. .... £3.50                                                                               |
| P27     | Surge protector. Safely eliminates dangerous voltage surges/spikes from domestic and professional appliances ..... £10.25  |



#### UNIVERSAL PRINTER STAND

The adjustable Printer Stand 2-piece construction, fits all standard and wide carriage printers. Also provides convenient space for paper storage. Rubber feet, vibration absorbing pads

ONLY £12.95

#### SWIVEL BASE



Tilt or swivel base for 12" Monitor or T.V. £14.75

RS 232 CABLES, MODEM LEADS MADE TO ORDER FOR ALL TYPES OF COMPUTER AND MODEMS

75p P&P IN UK. Access and Visa accepted. Add 15% VAT to all orders

Cheques made payable to:

**RSD Connections Ltd., Dept AT6**  
PO Box 1, Ware Herts.

Telephone: (0920) 5285/66284 Fax: 0920 66191



£8.75



## THE ATARI DUST COVER COLLECTION



Tailored in soft grey nylon fabric that has been treated with an anti-static inhibitor. Attractively finished with royal blue piping. Can be washed and ironed without fading or cracking.

### ATARI 520 & 1040 COVER SETS

Comprising covers for the keyboard, the monitor and the mouse  
Mono Sets £9.00  
Colour Sets £9.50  
Please state which monitor

### INDIVIDUAL ATARI COVERS

|                               |                                 |
|-------------------------------|---------------------------------|
| 1040 STF Keyboard ..... £4.50 | 1029 Printer ..... £5.00        |
| 520 STFM Keyboard ..... £4.50 | SF 354 Disc Drive ..... £3.00   |
| 130 XL Keyboard ..... £4.50   | SF 314 Disc Drive ..... £3.00   |
| SM 125 Monitor ..... £5.00    | 1050 Disc Drive ..... £3.00     |
| SC 1224 Monitor ..... £6.00   | SH 804 Hard Disc ..... £3.50    |
| SC 1424 Monitor ..... £6.00   | XC 12 Data Recorder ..... £3.50 |
| SMM 804 Printer ..... £5.00   |                                 |

BBD Dust Covers are leading manufacturers of professional covers for the Computer Industry and carry a wide range of other covers for printers etc. Please enquire.

Please make cheques payable to:



**BBD DUST COVERS**

The Standish Centre, Cross Street, Standish, Wigan WN6 0HQ  
Telephone: 0257 422968 (Ext. 22)

Fax: 0257 423909

Personal Callers & Dealer enquiries welcome.

Available in Belgium from the Atari Computer Shop, 59 Rue Gretry -4020 Liege

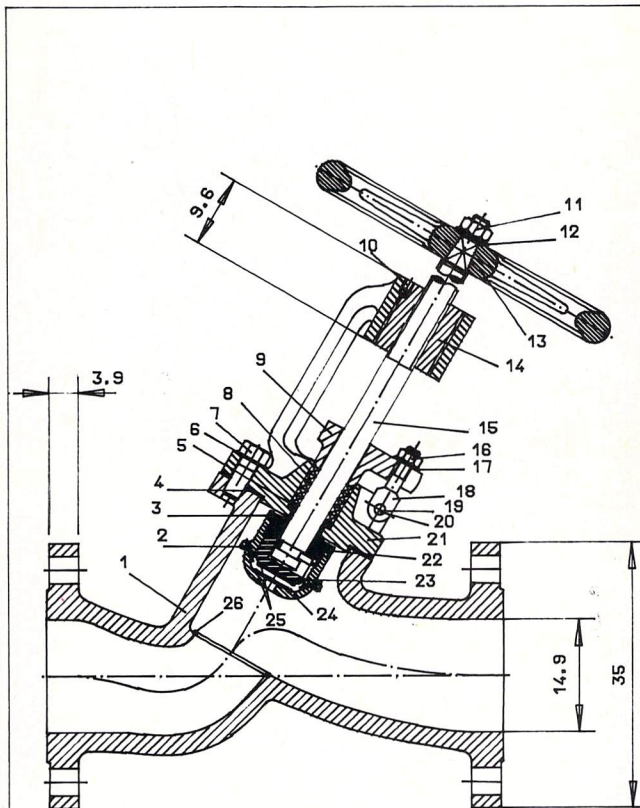
Tel: 041/43.99.33



# CAMPUS

## C • A • D

### S Y S T E M S



### **CAMPUS C.A.D.**

by Technobox

Two-dimensional professional CAD systems.  
Produces mathematically accurate draughting.  
Multi-layer, auto-dimensioning, hatching at any angle, symbol libraries, compatible with most plotters including Graphtec and HP.

**Ideal for engineers, architects, PCB designers  
and all professional C.A.D. applications**

This plot was produced using Campus C.A.D. v1.2 and a Graphtec MP3200 plotter.  
The diagram was originally designed on an A0 drawing area and rescaled to A5  
and pasted straight into this advertisement.

*Prices from £79.95 to £2000*

Please call or write for a free detailed  
information pack with sample plots.

**E I D E R S O F T**

*Creative Computing*

• UNIT 4 STANNETTS • LAINDON NORTH TRADE CENTRE •  
• BASILDON • ESSEX • SS15 6DJ •  
• TEL: 0268 541212



For full information please phone:

**FREE 0800 581 742**

We are an official Graphtec Dealer.

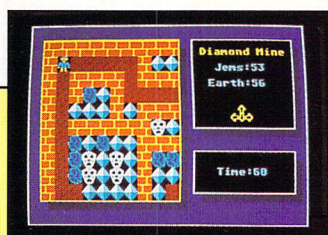


**Subscribe to Atari ST User today – and get ALL this absolutely FREE!**



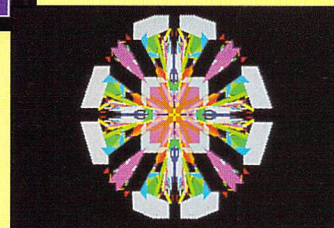
The ultra-slim, solar powered, credit card sized Atari ExecuCard is a five-function calculator. It has an eight-character display showing a comma after every three digits. And it comes with a smart protective wallet.

normally  
~~£5.99~~  
**FREE!**



Diamond Mine

Kaleidoscope



*This very useful disc is packed with programs from the pages of Atari ST User. It's the perfect way to learn more about this superb computer, as well as being an entertaining diversion. And all the programs come on one 340k disc – together with Computer Concepts' Fast Basic runtime interpreter, which you'll need for some of the programs.*

## WHAT YOU GET:

**Diamond Mine** – Dig for diamonds in this fast-action multi-screen arcade game (*colour monitor or TV*).

**Mandelbrot Set** – Explore the fascinating world of fractals. A sample image is also included.

**Othello** – Play against the computer in this classic oriental strategy game (*low res colour*).

**Codebreaker** – Crack the five-colour code using clues provided by the computer.

**Kaleidoscope** – Sit back and prepare to be mesmerised by the ever-changing patterns' (*low res colour*).

**Automation** – An interesting variation on John Conway's game of Life (*low res colour*).

**Recursion** – Two programs to demonstrate recursive

routines (*high res or medium res colour*).

**Golf** – Play a round with this exciting game of pitch 'n' putt (*high res monochrome or medium res colour*).

**Molecule** – Fire probes down the grid to find four carefully hidden atoms (*high res monochrome*).

**First Count** – A word count for First Word installed as a desk accessory. C source listing included.

**Alert Box and File Selector** – Two demonstration programs written in C.

**Charset** – Find the Ascii code of any character with this useful desk accessory.

**PLUS** a number of machine code programs from Stephen Hill's assembly language series.



The editorial team at Atari ST User have put together two exciting discs packed with some of the very best public domain software available. By using the Archiver program we've managed to squeeze a massive 600k of utilities software onto a single-sided 350k disc!

Altogether there's 27 excellent programs – and they're all designed to help you make the most of your Atari ST.

## GAMES AND COMMS DISC

**Battleships** – The classic board game comes to the ST. (H). **Popcorn** – An amazing demonstration of animated bouncing balls. (L). **Ripcord** – Land the paratroopers safely on the target. (L). **Black Box** – An excellent game of deduction. (L). **Clewso** – Deduce the murderer's name, weapon used and the crime. (H M). **Journey** – A mind-boggling text adventure game. (H M). **Biorhythm** – Calculate your chart and forecast critical days. (L). **Megaroids** – Blast the asteroids in this classic arcade game. (H M). **Pachinko** – Drop pennies in the machine and aim for high scores. (L). **Scratch** – A text adventure that's packed with devious puzzles. (L). **ST Talk** – A powerful comms package to enable modem owners to get online to MicroLink and bulletin boards. **Checkers** – Play draughts against a friend or your Atari ST. (M).

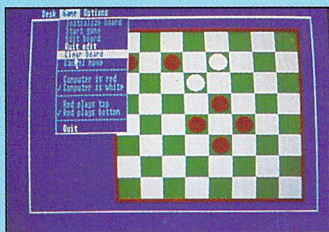
## UTILITIES DISC

**Archiver** – Compact programs, source and object code, pictures and so on into as small a space as possible. (H M). **Browse** – Move forwards and backwards through text files on disc, then print them out. (H M). **Less** – Similar to the above, but you can display files in different formats. (H M). **Calc** – A multiple function calculator written as a desk accessory. (H M). **Clock** – An interrupt-driven clock, constantly displayed in the top right corner of the screen. (H). **Dir** – Produce a complete listing of all the files on a disc, searching all folders and folders within folders. (H M). **Deskman** – Many useful disc management functions in a single desk accessory. (H M). **External** – An auto-booting ramdisc which will survive a reset. **Format** – Format discs from within any Gem-based application. (H M). **Mickey Mouse Monitor** – A very good machine code disassembler and memory monitor. (H M). **Notepad** – Jot down brief notes and recall them at any time with this desk accessory. **SecEdit** – Recover lost files, examine disc contents and more with this disc editor. (H M). **SeekTS** – Test the performance and reliability of your disc drive. (H M). **ST520RPM** – Measure the speed of your disc drive. (H M). **ST Writer** – A powerful word processor complete with full documentation on the disc. (H M).

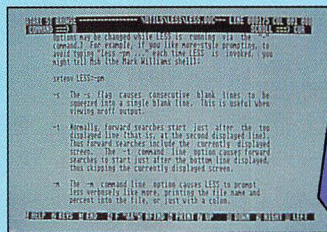
H – High resolution (requires monochrome monitor)

M – Medium resolution (requires colour monitor or television)

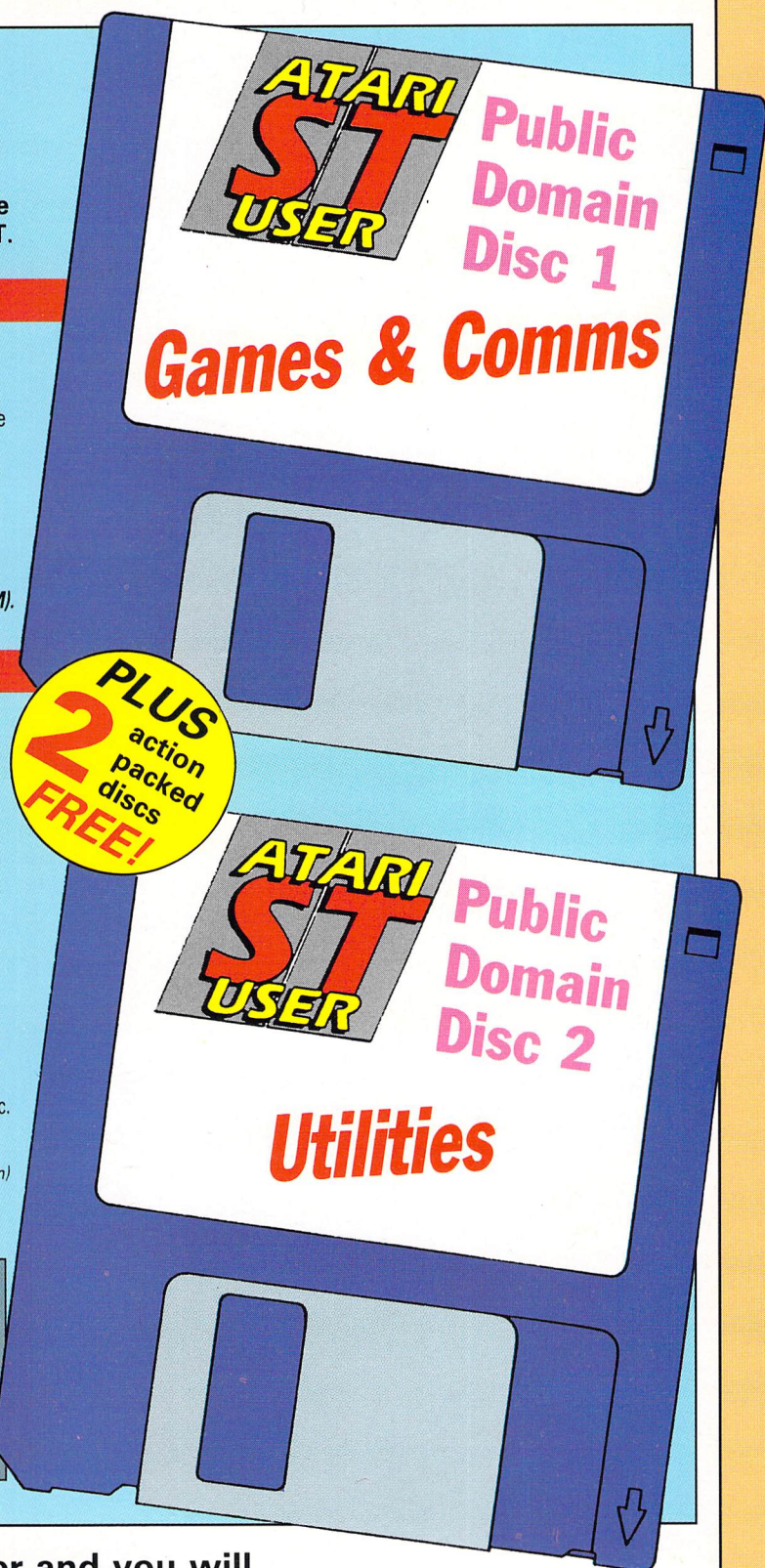
L – Low resolution (requires colour monitor or television)



Checkers



ST Writer



Take out a subscription to Atari ST user and you will receive ALL these products FREE OF CHARGE – the slimline Atari calculator, the ST Compendium and two public domain discs packed with excellent programs. The whole bundle is worth well over £17!

Note: Existing subscribers can renew early to take advantage of this offer.

Don't miss out on this limited offer – turn to the order form on Page 105 NOW!



## Perfect companions for your Atari ST

① **Binder.** Twelve rods hold your issues in place and keep them in pristine condition in this handsome pale grey pvc binder.

**£4.95**

② **Disc box.** This luxury padded box is the ideal storage medium, holding up to 50 3.5in discs.

**£4.95**

③ **Dust cover.** Protect your ST with this top-quality cover made of clear, water-resistant vinyl. It's bound with strong cotton and features the impressive Atari ST User logo.

**£3.95**

④ **Mouse mat.** The perfect desktop environment for your mouse with its specially-designed, perfect-grip surface. It ensures much smoother movement, gives super-positive control and protects your tabletop from scratches.

**£4.95**

⑤ **Fast Basic.** This ultra-fast Basic interpreter has its own easy-to-use word processor-like editor which makes full use of Gem. Up to 10 separate programs can be held in memory at once – each with its own editing window. There's even a built-in 68000 assembler. The package



includes a 380-page manual, reference card and example programs on disc.

Fast Basic is essential for many of the listings in this magazine, so this is one of our most popular offers.

**Rom version: £79.90 (£10 off)**

**Disc version: £37.85 (£7 off)**

⑥ **Back Pack.** This versatile desk accessory on rom makes nine useful functions always available on your ST: Scientific calculator, clock and alarms, diary, notepad, typewriter, printer buffer, address book, mini clock and ramdisc.

**RRP £49.00 Offer price £39**

## Build up your reference library!

**August issue:** Reviews – CAD 3D-2, Lattice C upgrade, Animatic, ST Doctor, games, books. Programming – 3D graphics (free 3D glasses), Gem, 68000 assembly language, wireframe graphics, sound. Features comms, Gallery, Adventures.

**September issue:** Reviews: Art Studio, Easy-Draw, Assempro, CAD 3D-2, K-Max transputer, HiSoft Basic, Barbarian, Hardball and Hades Nebula. Listings: Improve disc access timings, create 3D wireframe graphics, play Code Breaker.

**October issue:** Listings: Play Molecule, create a flight simulator, add a word counter desk accessory, keep track of your investments on the stock market. Reviews: Signum, Publishing Partner, GFA Draft, STuff, VIP, Road Runner, TNT, Eagles Nest.

**November issue:** Reviews: Knight Orc, Deathstrike, Sidewalk, Tai-Pan, public domain comms, MicroStuffer and Mirage. Create GFA Basic menus. Listings: DIY comms program, memory editor plus Diamond Mine – a multi-screen arcade game.

**December issue:** Reviews: Forth, sound samplers, four-headed printer, Pascal, Terrorpods, Addictaball, Impact and much more. Listings: Knight on the Tiles and multi-formatter. Construct your own printer driver, choosing a word processor.

**January issue 1988:** Reviews: Midi Maze, Star Trek, Indiana Jones, Nord and Bert, K-Word 2, TextPro, TuneUp, Fortan, Paint-

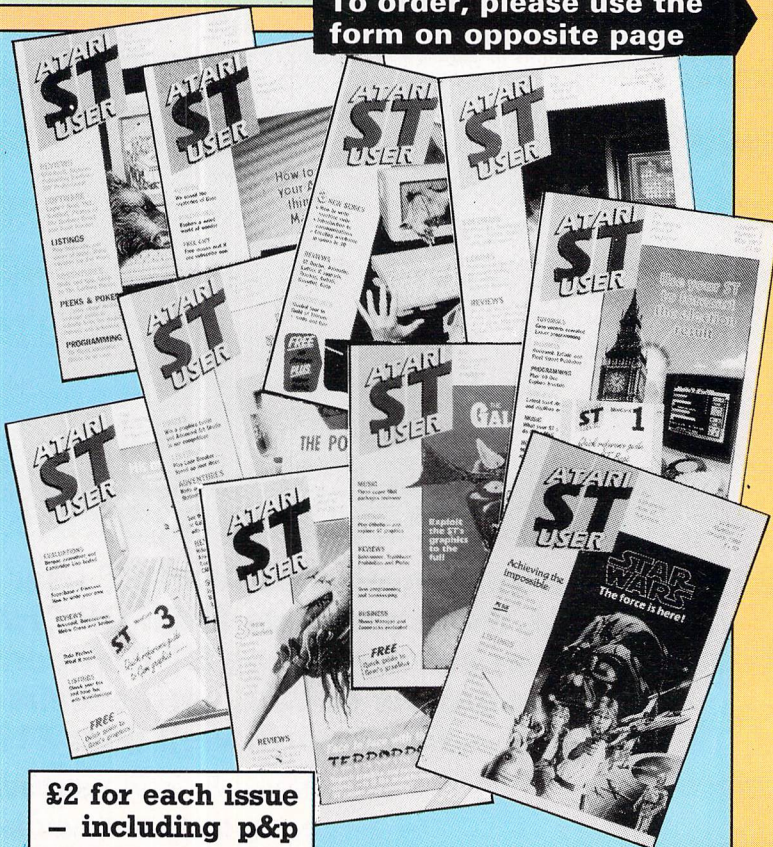
Pro. Listings: Alternative function key definer, Sliding block puzzle. Features: Atari ST User show report, Gallery, adventures with Brillig.

**February issue:** Reviews: Midi Maze, Star Trek, Indiana Jones, Nord and Bert, K-Word 2, TextPro, TuneUp, Fortan, PaintPro. Listings: Alternative function key definer, Sliding block puzzle. Features: Atari ST User show report, Gallery, adventures with Brillig.

**March issue:** Reviews: Tempus, PD Disc Utilities, PCB Designer, WordPerfect, Winter Olympiad, Wrestling, Tanglewood, Marble Madness, Backlash, Bubble bobbie, Frost Byte, UMS, Bad Cat Leisure Suit Larry. Listings: Palette switching, accessory selector, mpg calculator. Features: Magnetic Scrolls, Tynesoft and US Gold interviews.

**April issue:** Reviews: Captain Blood, Eco, Super Sprint, Black Lamp, Wizball, Skyriider, Solomon's Key, Bard's Tale, MCC Assembler, Protekt, True Basic, A Magic digitiser, GFA Vector and Companion. Listings: Mandelbrot upgrade, custom keyboard, disc verify. Features: Gallery, adventures, product guide.

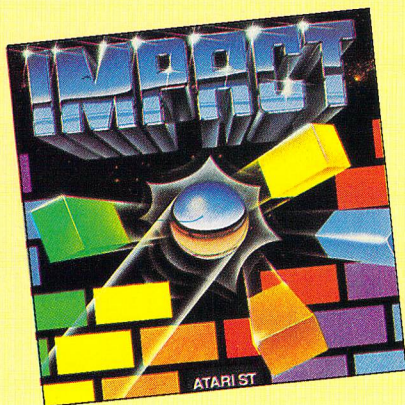
**May issue:** Reviews: Gem-Forth, PD Forth, Partner, Quick-List, Certificate Maker, Creator, Timeworks DTP, MasterPlan, Grafix. Features: Transputers, Music, interviews with Pete Johnson and CRL, Adventures. Listings: Dynamic relaxation, Mouse designer, prime numbers.



**To order, please use the form on opposite page**

**£2 for each issue  
– including p&p**





## Get addicted to Impact!

Play the game which brought the Atari ST User office to a standstill! Impact is one of the most addictive games ever created for the ST. This Breakout derivative has many exciting new features:

- ★ Surprise bricks which deflect your laser fire
- ★ Stun bolts which immobilise your bat for one second
- ★ Hit BONUS bricks in the right order for bigger scores
- ★ Design your own screens and challenge your friends

**How it was rated in Atari ST User:**

|                       |    |
|-----------------------|----|
| Sound .....           | 10 |
| Graphics .....        | 9  |
| Playability .....     | 10 |
| Value for money ..... | 10 |
| Overall .....         | 10 |

| Suitable for                       | Product | Format | RRP    | Special reader offer | YOU SAVE | Offer including subscription | YOU SAVE |
|------------------------------------|---------|--------|--------|----------------------|----------|------------------------------|----------|
| Atari ST with colour monitor or TV | Impact  | Disc   | £14.95 | £11.95               | £3       | £27.95                       | £6       |

# ORDER FORM

Valid to June 30, 1988

★ Special price if accompanied by subscription or renewal

Overseas orders despatched by Airmail.  
All prices include postage, packing and VAT  
Please allow 28 days for delivery

### Annual subscription

(✓) £ p

|                        | NEW  | RENEWAL |
|------------------------|------|---------|
| UK £19                 | 9100 | 9103    |
| Europe & Eire £27      | 9101 | 9104    |
| Overseas (Airmail) £42 | 9102 | 9105    |

Commence with \_\_\_\_\_ issue

**FREE**  
with  
subscriptions

|                      |      |                                     |
|----------------------|------|-------------------------------------|
| Atari ExecuCard      | 9124 | <input checked="" type="checkbox"/> |
| ST Compendium        | 9127 | <input checked="" type="checkbox"/> |
| Games and Comms Disc | 9128 | <input checked="" type="checkbox"/> |
| Utilities Disc       | 9129 | <input checked="" type="checkbox"/> |

### Back Issues

(see page 104)

|                        |                |      |                          |
|------------------------|----------------|------|--------------------------|
| £2.00 UK               | April 1987     | 9200 | <input type="checkbox"/> |
| £2.50 Europe inc. Eire | May 1987       | 9201 | <input type="checkbox"/> |
| £4.25 Overseas         | June 1987      | 9202 | <input type="checkbox"/> |
|                        | July 1987      | 9203 | <input type="checkbox"/> |
|                        | August 1987    | 9204 | <input type="checkbox"/> |
|                        | September 1987 | 9205 | <input type="checkbox"/> |
|                        | October 1987   | 9206 | <input type="checkbox"/> |
|                        | November 1987  | 9207 | <input type="checkbox"/> |
|                        | December 1987  | 9208 | <input type="checkbox"/> |
|                        | January 1988   | 9209 | <input type="checkbox"/> |
|                        | February 1988  | 9210 | <input type="checkbox"/> |
|                        | March 1988     | 9211 | <input type="checkbox"/> |
|                        | April 1988     | 9212 | <input type="checkbox"/> |
|                        | May 1988       | 9213 | <input type="checkbox"/> |

### Backlash

★ £11.95 £15.95 9119/9120 ☐

### Impact

(see page 105)

★ £8.95 £11.95 9106/9107 ☐

### Atari ExecuCard

(see page 102)

£5.99 9122 ☐

### ST Compendium

(see page 102)

£7.95 9306 ☐

### Fast ST Basic

(see page 104)

|               |        |      |                          |
|---------------|--------|------|--------------------------|
| Rom cartridge | £79.90 | 9112 | <input type="checkbox"/> |
| Disc          | £37.85 | 9136 | <input type="checkbox"/> |

Add £5 for Europe inc Eire/£7 Overseas

### Back-Pack

(see page 104)

Rom cartridge £39.00 9113 ☐

Add £3 for Europe inc Eire/£6 Overseas

### Dust Covers

(see page 104)

|                          |       |      |                          |
|--------------------------|-------|------|--------------------------|
| 1040ST/520 STFM keyboard | £3.95 | 9117 | <input type="checkbox"/> |
| 520 ST keyboard          | £3.95 | 9116 | <input type="checkbox"/> |
| SC1224 monitor           | £5.95 | 9108 | <input type="checkbox"/> |
| SM124 monitor            | £5.95 | 9109 | <input type="checkbox"/> |

### Atari ST User Mouse Mat

(see page 104)

£4.95 9126 ☐

### Disc Storage Box

(see page 104)

£4.95 9135 ☐

### Binder

(see page 104)

£4.95 9118 ☐

Add £2 Europe inc Eire/£7 Overseas

Add £2 for Europe/Eire, £5 Overseas per item unless otherwise indicated

TOTAL \_\_\_\_\_

Send to: Database Publications, FREEPOST,  
Macclesfield, Cheshire SK10 4YB

(No stamp needed if posted in UK) Please allow 28 days for delivery

Order at any time of the day or night

Telephone Orders: 0625 879920

Fax Orders:  
0625 879966

Orders by Prestel:  
Key \*89, then 614568383

MicroLink/Telecom Gold  
72:MAG001

Don't forget to give your name, address and credit card number

ENQUIRIES ONLY: 0625 879940 9am-5pm

Payment: please indicate method (✓)

☐ Access/Mastercard/Eurocard/Barclaycard/Visa

Expiry Date \_\_\_\_\_ / \_\_\_\_\_

No. \_\_\_\_\_

☐ Cheque/Eurocheque made payable to Database Publications Ltd.

Name \_\_\_\_\_ Signed \_\_\_\_\_

Address \_\_\_\_\_

Post Code \_\_\_\_\_

Tel \_\_\_\_\_ ST6



# ATARI ST PUBLIC DOMAIN

Why reinvent the wheel? We have a large selection of languages, demo's, utilities, comm's and games etc. available. Send a stamp for our list, which will save you hours of frustration.

DISCS from £1.50

**McSOFT**  
21 PURBROOK ROAD, TADLEY,  
BASINGSTOKE, HANTS, RG26 6PR

## SUNARO

PO BOX 78 MACCLESFIELD CHESHIRE SK10 3PF  
Telephone (0625) 25228

ARCADE ACTION  
CARRIER COMMAND  
DUNGEON MASTER  
OBLITERATOR

£19.95 each  
or  
£36.95 for 2

FLINTSTONE  
PINK PANTHER  
OUT RUN  
SCRABBLE DELUX

£15.95 each  
or  
£29.95 for 2

SUNARO

Cheques/PO's payable to:  
SUNARO SOFTWARE (AST)  
Girobank Transcash to account: 664 6638



## ADVERTISERS' INDEX

|                                    |        |                               |            |
|------------------------------------|--------|-------------------------------|------------|
| 17 Bit Software.....               | 67     | Lightspeed Software.....      | 84         |
| 1066 Software.....                 | 87     | Logram Electronics.....       | 70         |
| Adamsoft.....                      | 88     | Luds Software.....            | 88         |
| Advanced Systems & Techniques..... | 74     | Macsoft.....                  | 106        |
| Apolonia Software.....             | 52     | Mail Centa.....               | 91         |
| Arnor.....                         | 106    | Mailsoft.....                 | 81         |
| Ashby Computers.....               | 88     | Mandarin Software.....        | 9.55       |
| Bargain Software.....              | 6      | Manor Court Supplies.....     | 74         |
| BBD Dust Covers.....               | 101    | M.D. Office Supplies.....     | 79         |
| BRK.....                           | 81     | Melton Computer Supplies..... | 70         |
| Byteback.....                      | 62     | Metacomco.....                | 14         |
| Byteware.....                      | 56     | Microdeal.....                | 72, 76, 89 |
| Care Electronics.....              | 72     | MicroLink.....                | 40, 41     |
| Castle Computers.....              | 29     | Micromedia.....               | 84         |
| CBS.....                           | 52     | Microprocessor.....           | 78         |
| Centec.....                        | 66     | Miles Better Software.....    | 48         |
| Cestrian Software.....             | 11     | MWD.....                      | 78         |
| Chips.....                         | 62     | Ocean Software.....           | 13         |
| Classic Software.....              | 23     | Psygnosis.....                | 108        |
| Compumart.....                     | 3      | Romulus Data Systems.....     | 106        |
| Computer Adventure World.....      | 59     | RSD Connections.....          | 101        |
| Computer Express.....              | 71     | Shacksoft.....                | 87         |
| Computer Oasis.....                | 56     | Silica Shop.....              | 27         |
| Concept.....                       | 90     | Silicon Systems.....          | 66         |
| Cottage Software.....              | 58     | Siren Software.....           | 76         |
| Cut Price Software.....            | 79     | Soft Bits.....                | 90         |
| Databyte.....                      | 2      | Softville P.D. Service.....   | 74         |
| Delta.....                         | 88     | Software Express.....         | 48         |
| Dr. Soft.....                      | 58     | Software Supersales.....      | 86         |
| Eidersoft.....                     | 101    | Start Systems.....            | 24         |
| Electric Distribution.....         | 17, 19 | Storsoft.....                 | 22         |
| Evesham Micros.....                | 18     | ST UK.....                    | 84         |
| Fidget Computerware.....           | 90     | Sunaro Software.....          | 106        |
| Frontier Software.....             | 34     | Synergy Software.....         | 91         |
| Futuresoft.....                    | 84     | The ST Club.....              | 72         |
| Glentop.....                       | 59     | Timesoft.....                 | 89         |
| Hisoft.....                        | 107    | Triangle TV.....              | 106        |
| K. Soft.....                       | 90     | Trybridge.....                | 90         |
| Ladbroke Computers.....            | 96, 97 | Turtlesoft.....               | 12         |
|                                    |        | Yorcom.....                   | 80         |

## NEW! PROTEXT

ARNOR's highly acclaimed Word Processor now available on the Atari ST for the first time

*Protext is quite different from all other ST word processors. It bypasses GEM and uses the ST operating system directly. The result is that Protext works much faster and you make the most efficient use of your time. Many thousands of Amstrad and PC users would never use anything else.*

### Protext is simple & easy ...

All the features you would expect from a good word processor - many text editing commands, print commands, spell checking and mail-merging. The refinement and thought that has been put into the program - logical keystrokes and commands, clear layout, speed and power ... all make Protext ideal for the novice or experienced user.

\* on-screen help \* menus \* typewriter mode \* Insert or overwrite typing mode \*  
\* word count \* undelete feature \* move/copy/delete/print blocks of text \*  
\* WYSIWYG - on screen underlining etc. \*

### Protext is also advanced ...

Protext has features enough for even the most experienced and demanding of users. Here are just some of them ...

\* Box manipulation \* Configuration \* Personal Dictionaries \* Exec files \* Two file editing \*  
\* File conversion \* Find & replace \* Foreign languages and accents \*  
\* Keyboard macros \* Program editing mode \* Proportional printing, right justified \*  
\* Conditional printing and loop constructs \* Insert current date into text \*

... all this for only £79.95

"Protext deserves to be the system by which all other word processors are judged ... a superb product" YOUR COMPUTER

For the Atari 520ST, 1040ST, Mega ST.  
See the review in April's Atari ST User.

Arnor Ltd, Protext House, Wainman Road, Peterborough. PE2 0BU.  
24 hour credit card hotline. Access/Visa. Tel: (0733) 239011.

Please mention this magazine when ordering. Export/trade welcome.



## Triangle Television

The Atari Sound/Music software specialists

Atari Hardware, Software including the new Dr. T MRS, KCS 1.5 and Level 2, both with M.P.E. C-Lab Creator, Master Tracks Pro, Master Tracks Jnr. The new Steinberg VIII Iconix, Sonus, Intelligent Music M and much more. Computer Flight Cases, Disks, Accessories, training when you buy. Demonstration Video and Audio cassette now available. Ring Colin for Details.



Mail Order  
Finance

### Triangle Television

130 Brookwood Road, Southfields,  
London SW18 5DD Ring 01-877 1726/874 3418

NEW!!

NEW!!

## ATARI ST MAGAZINE ON DISK

Pictures, programs, reviews, puzzles, competitions and prizes, recipes, Public Domain programs, communications - bulletin boards, machine code tutorial, how we wrote the magazine in 100% machine code - We tell all!! Letters and problem pages, and much, much more!!

Send only £5 for issue 1 - Ready now!! To:

**ROMULUS DATA SYSTEMS**  
44 Ayletts, Basildon, Essex SS14 1UL



# The Best from HiSoft

## The Best BASIC

## Power BASIC

£39.95

Now everyone can use the system that the professional programmers use; Power BASIC is our budget version of the HiSoft BASIC compiler. But because the price is lower doesn't mean that we've cut down on quality. Power BASIC is HiSoft BASIC without user libraries, profiling or symbolic debugging. All the speed and all the high-power BASIC features are still there and now at a price everybody can afford! Power BASIC is all you need.

*The full HiSoft BASIC costs £79.95 (send for details)*

|                    | Av. PCW     | Byte Sieve  | Byte Calc   |
|--------------------|-------------|-------------|-------------|
| <b>Power BASIC</b> | <b>0.47</b> | <b>0.88</b> | <b>1.37</b> |
| GFA Compiler       | 0.60        | 1.27        | 3.33        |
| GFA Interpreter    | 1.40        | 13.5        | 6.33        |
| FAST BASIC         | 1.8         | 15.3        | 7.14        |
| ST BASIC           | 8.73        | 81.6        | 31.3        |

**Throw away all your other BASICs and use the same system as the professionals**

POWER BASIC

- The fastest BASIC available
- The most complete BASIC available
- Easy, interactive GEM editor (lo, med & hi res)
- Modern structured language (inc. CASE...SELECT)
- Full support for GEM, BIOS, XBIOS
- Standard single + double precision (IEEE) numbers
- No limits on variable size or program size
- Compiles Microsoft QuickBASIC™ from the PC
- 400 page ring-bound quality manual with tutorial

## STOP PRESS

HiSoft BASIC Version 1.2 released. Supports the ability to create desk accessories directly from within BASIC.

DevpacST Version 2 released. Includes assemble to memory, integrated symbolic debugger, desk accessory source code, menu compiler, even view source code in debugger. *There is no competition!*

## The Best Modula-2 £69.95

FTL Modula-2

- one-pass compiler, 6000 lines per minute!
- full linker & assembler included
- multi-window GEM editor with macros
- very-fast compact code generation
- full GEM libraries supplied with source code
- create desk accessories and menus directly
- library manager and a free CLI
- completely standard Modula-2 compiler

*FTL Modula-2: the language of the future ... Now!*

## STOP PRESS

Aztec C for the ST released. Two versions (Professional £129, Developer £179). Compiler, assembler, linker, utility programs and library functions all compatible with other Aztec Cs. Fast & compact compiler producing excellent, fast code. 68881 support, ST & UNIX run-times & utilities. ANSI libraries. Fully optimised code. 400 page manual.

## Personal Pascal ver. 2

£79.95

Personal Pascal Version 1 was very well received in the States and in Germany and now we offering Version 2 at a very good price. Personal Pascal provides you with everything you need to produce commercial programs or to enjoy programming as a hobby. Personal Pascal comes complete with editor, compiler, linker and libraries together with extensive facilities to take advantage of the ST.

| Benchmark                 | Sieve (8190 primes, 10 iterations) |
|---------------------------|------------------------------------|
| FTL Modula-2              | 4.5 secs                           |
| Personal Pascal Version 2 | 5.4 secs                           |

## The Best Pascal

Personal Pascal

- Fast, multi-window GEM editor
- Full, standard Pascal implementation
- Completely integrated edit/compile/link cycle
- Complete GEM support with windows, menus, alert boxes, dialog boxes etc. BIOS, XBIOS calls
- String management plus STRING type
- All standard types plus LONG\_INTEGER & BYTE
- Random access and sequential file handling
- Fast, compact code plus link with assembler

## The Best Assembler

## The Best Accessory

## DevpacST

## Version 2

£49.95

The best just got better! DevpacST version 2 is the most powerful, easy-to-use and complete assembler development system on the ST, and at the same price as version 1! Features include: multi-section code, DRI & GST linker format, raw assembly speed of 75000 lpm, multi-window debugger, conditional breakpoints, go ... until and much, much more.

## Saved!

£29.95

An invaluable desk accessory that allows you to do all the things you do normally from the desktop within the program you are using, be it word processor, spreadsheet, compiler etc. Saved! is there on the menu. You can copy discs, format discs, copy files, rename files, set the path, get info etc. Also supplied is a reset-survivable RAMdisc, a print spooler, an UNDELeTe program and much more. A must at a snip of a price.

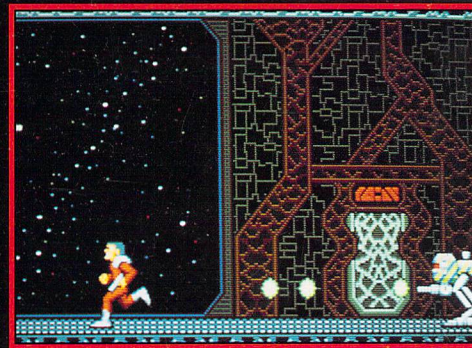
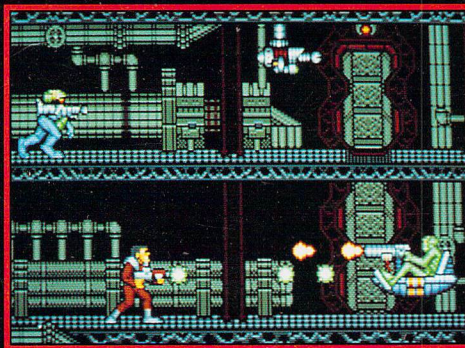
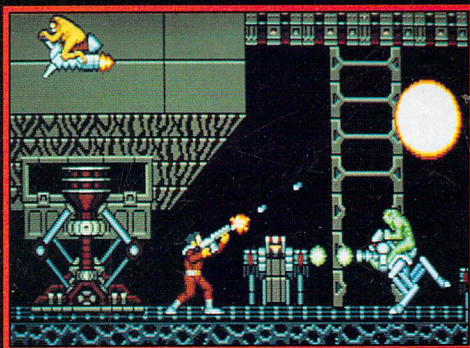
*All prices include VAT and UK postage and packing. You can order by post with a cheque/postal order or by phone using Access/Visa. We always despatch by first class post, usually within 3 days of order.*

**HiSoft**  
High Quality Software

The Old School, Greenfield, Bedford MK45 5DE ☎ (0525) 718181



# OBLITERATOR



## OBLITERATOR

You are Drak the Last of the Obliterators, a genetically enhanced and awesome fighting machine, bio-engineered for the execution of incredible tasks, the ultimate solution to the most cataclysmic of predicaments.

In the voids of Federation space an alien cruiser has materialised. It is a ship of sinister and foreboding power. Federation defences have been smashed. Earth lies exposed, there is only one hope and you are it!

Summoned by the Federation council, your assignment is to use a prototype matter transporter to infiltrate the alien cruiser. Armed with a particle beam disrupter, lasers and whatever the alien habitat can provide, you must cripple the alien vessel thus enabling its destruction.

## OBLITERATOR — £24.95

### Other Psygnosis Titles

|                 |          |
|-----------------|----------|
| Terrorpods      | — £24.95 |
| Barbarian       | — £24.95 |
| Deep Space      | — £24.95 |
| Arena           | — £24.95 |
| Brataccas       | — £24.95 |
| Arena/Brataccas | — £29.95 |

All available for 512K  
Colour, Atari ST,  
Commodore Amiga.

## PSYGNOSIS

FREEPOST  
LIVERPOOL L3 3AB  
UNITED KINGDOM  
Telephone: 051-236 8818

