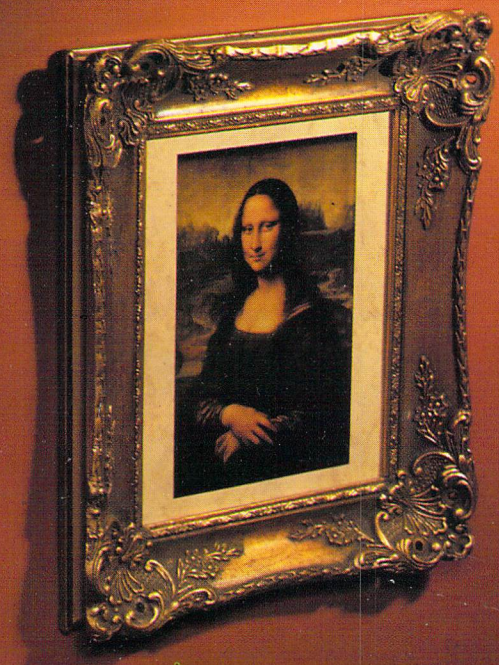
ATARI ST USER

The top-selling Atari ST magazine

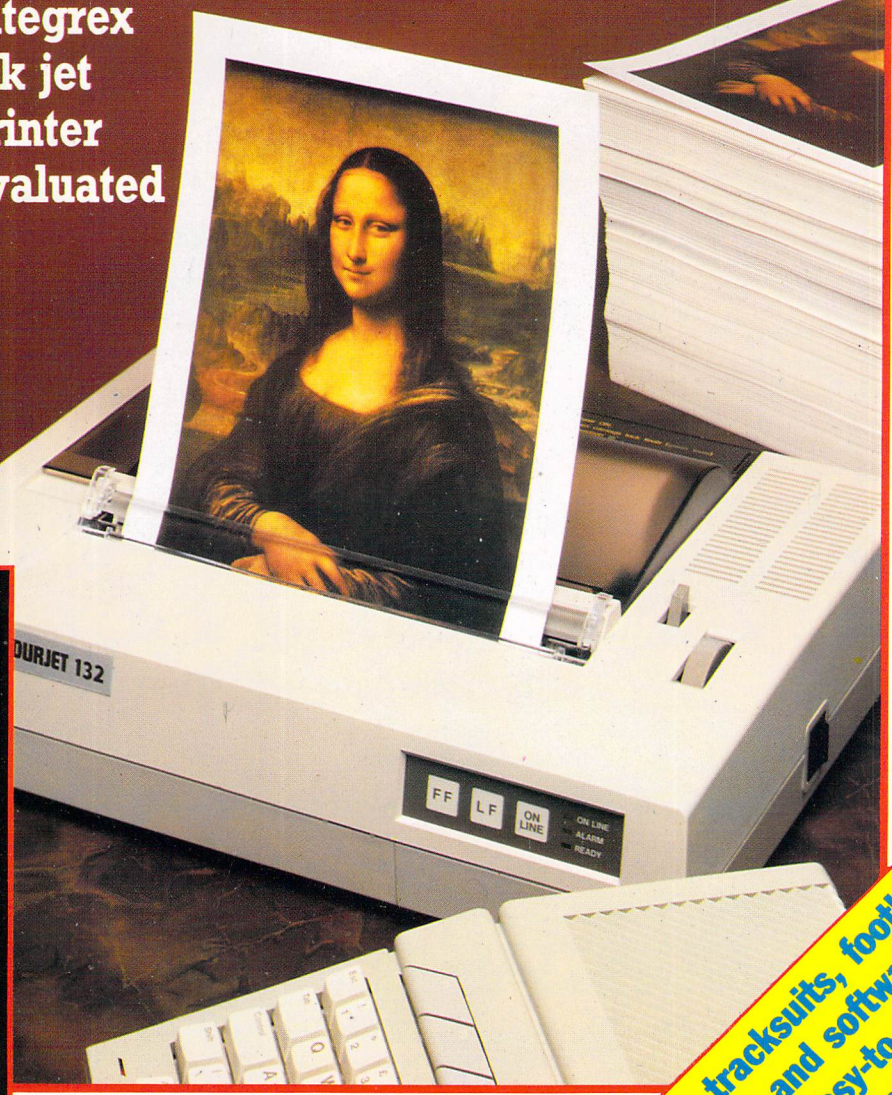
Volume 4
Number 3
May 1989
£1.95

Incorporating ST UPDATE



How to fake an old master

Integrex ink jet printer evaluated



LISTING

Convert your colour pictures to monochrome

REVIEWS

Daatascan hand scanner, K-Spread 3 spreadsheet, Clipart and Drawart, eprom programmer plus two hard discs compared

FEATURE

Capturing weather maps from space – DIY guide

GAMES

Barbarian II, Prison, Mini Golf, Zany Golf, Thunderwing, Gomoku, Operation Neptune, Bismark and many more

In this month's pullout:



Coping with spreadsheets
Floating point C routines
Reading data in Basic
Opening Gem windows

Win tracksuits, football boots and software in our easy-to-enter competition

Can $4.95 US $4.95

YOUR OBJECTIVE IS VERY SIMPLE BUT FAR FROM EASY: TO BECOME A SUCCESSFUL, AND PREFERABLY NOT DEAD, COSMIC PIRATE.



"Every detail of this package is well considered and beautifully executed ... the challenge is lasting and compulsive"
Computer and Video Games

"A thinking man's shoot em up ... an engrossing and addictive challenge that will have you coming back for more"
The One

"This one'll have you coming back so often your joystick will beg for a break"
ST Amiga Format

Available for Amiga and Atari ST Computers.
Coming Soon for Commodore 64, Spectrum and Amstrad.

OUTLAW

Outlaw Productions, The Old Forge, 7 Caledonian Road, London N1 9DX

Please check for availability of individual formats

PALACE SOFTWARE

The word is PROTEXT...

More and more people are now recognising Protext as the word processor that the ST has been waiting for. Developed over a period of 4 years, Protext has been designed to be fast, flexible and efficient. The emphasis is very much on word processing.

Unlike its competitors, Protext does not use Gem. The scrolling speed is four times faster than that of Gem based word processors. Yet Protext is still WYSIWYG and still allows access to desktop accessories.

Protext is faster all round; for example the search and replace command is six times faster than First Word+, and the spelling checker, too, is faster.

Protext has all the features you would expect from a good word processor - many text editing commands, print commands, spelling checker and mailmerge. What you might not expect though, is the refinement and thought that has been put in to make Protext ideal for the novice or the experienced user alike.

"To sum up, Protext is probably the most powerful word processor on the Atari ST and is quite likely to become the best selling too"... ST USER 4/88

..."*At last one that seems to fit most of what I call essential in a word processor*" PAGE 6 #34

..."*Extremely good for manipulating and merging large text files*". "*Wins hands down as the all round package*". ST USER 8/88

A brief summary of some of Protext's features ...

Box manipulation	move, copy, or delete any box as well as blocks
Configuration	configure most features to your own preferences
Dictionaries	add/delete words to/from supplied dictionary. Create additional specialised dictionaries.
Disc utilities	copy files, erase, rename, type, create directory, change directory, remove directory, catalogue files
Exec files	store sequences of commands in files for easy use
File conversion	flexible file conversion utility for other WP files
Find & replace	very powerful and fast with many options.
Foreign languages	10 built in keyboard languages. Easy to use accented letters: ä æ ç ö ü è é ß à ù ô ê ñ etc.
Headers & footers	up to 9 lines of text, different even/odd headers and footers possible, automatic page numbering
Help	edit and command help available on-screen
Keyboard macros	string any sequence of letters together on a single key e.g. "Yours sincerely". Load and save macros.
Line spacing	variable in half lines, including 0, ½, 1, 1½, 2, 2½, 3
Printer support	works with any parallel or serial printer. Wide range of printer drivers supplied, incl. lasers and 24-pin printers; or create your own drivers or edit ours.
Printing styles	bold, condensed, double strike, elite, italics, enlarged, pica, NLQ, subscript, superscript, microspacing, proportional spacing, any other printer fonts
Program mode	suppresses formatting; auto-indent; set tab stops
Proportional text	will print proportionally spaced, right justified text
Quick dictionary	dictionary held in memory is very fast
Ruler lines	any number of ruler lines to define document layout, left/right margins and normal/decimal tab stops
Spelling checker	check from disc or current text. Suggests alternative spellings. Works with foreign languages
Symbol	Screen character symbols may be redefined
Time and date	set time and date, use within document
Tutorial files	help you to start using Protext
Two file editing	two documents in memory, copy text between them
Typewriter mode	direct printing for envelopes etc.
Undelete	retrieve text deleted in error
Word count	quick count at any time, whole text or just a block
Word puzzles	anagram and crossword solving features
Wysiwyg	on-screen bold, underline, italics, sub/superscript

Mail merge

The most comprehensive mail merge program available. Use it for labels, personalised "standard letters", club membership lists, and much more:

* read data from files from any database or spreadsheet program
* ask for variables from keyboard
* display message while printing
* include file for printing
* reformat whilst printing
* conditional printing and repeat-until loop constructs
* numeric calculations and string expressions including substrings
* commands to record information to a separate file
* operators +,-,*,/,<,>,<=,>=,=,<>,IN,NOTIN

Protext is a professional word processor

If you want a fast efficient program for processing words, get PROTEXT

STOP PRESS. The latest version (4.0) includes footnotes, spell check whilst typing, a fast First Word file conversion program, background printing, macro record mode, automatic reformatting and a new menu-driven configuration program.

The conversion program will rapidly convert your old First Word/First Word+ files into Protext format, preserving your printer codes and layout.

The background printing feature allows you to continue your word processing while waiting for your printer to finish printing.

Please send SAE for reprint of review plus feature summary.

Prices

	IBM PC	Atari ST	Amiga
Protext v4	£99.95	£99.95	£99.95
Protext Filer	£24.95	£24.95	£24.95
Protext Office	£34.95	£34.95	£34.95
Protext v4 demo	£7.00	£7.00	£7.00

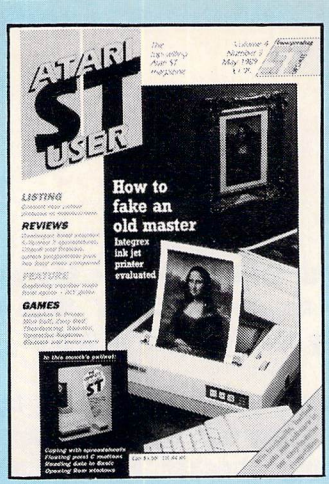
ACCESS VISA

Releasing your micro's potential...

ARNOR

Arnor Ltd (STU), 611 Lincoln Road, Peterborough, PE1 3HA. Tel: 0733 68909 (24 hour)

All prices include VAT, postage and packing. Access/Visa/cheque/postal order. *Fax: 0733 67299 Prestel: 016848009*



Vol 4 No. 3 May 1989

Managing Editor
Derek Meakin

Group Editor
Alan McLachlan

Features Editor
Roland Waddilove

Production Editor
Peter Glover

Assistant Editor
Nic Outterside

Advertisement Manager
John Snowden

Advertisement Sales
Gail Blincow
Andrea Fawkes

Reviews coordinator
Pam Turnbull

Promotions Editor
Christopher Payne

Promotions Coordinator
Robin Nixon

News Editor
Don Lewis

Tel: 0625 878888 (All depts)
051-357 2961 (Subs)
Telex: 9312188888 DB
Telecom Gold: 72:MAG001
Prestel Mailbox: 614568383.

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

ABC 33,706 July-December 1988
ISSN 0952-3006

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.

© 1989 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. Atari Corp (UK) are not responsible for any of the articles they contain or for any of the opinions expressed.

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

Database Publications is a division of Europress Ltd

FEATURES

News

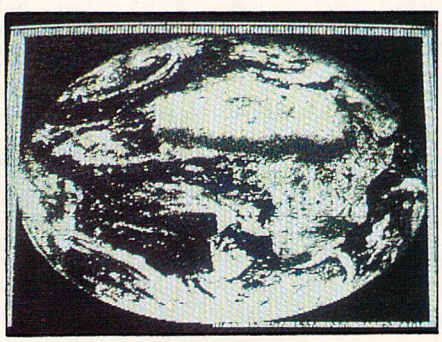
All the latest stories and events from the ever-expanding world of the Atari ST, including the latest Gallup Chart of top-selling games software.
7

Midi

Ian Waugh reviews Dr T's Keys and continues his journey through the array of public domain music software.
39

Pictures from Space

Leslie Kaye explains how to use your ST to view weather satellite pictures to predict daily weather patterns.
51



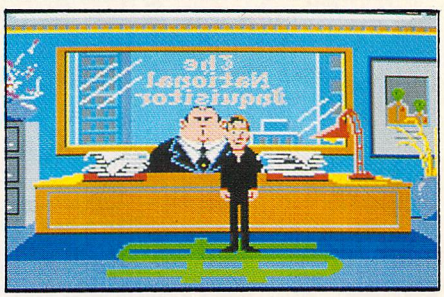
Scrapbook

More handy type-in utilities to add to your ever-growing software library.
57

Kuma

We pay a visit to the company responsible for producing more than 20 serious ST application packages.
61

Brillig



Our resident adventure wizard helps intrepid wayfarers everywhere. Also Zak McKracken and the Alien Mindbenders comes under the spotlight.
82

Arcade Corner

This month we feature useful tips for the top-selling Xenon, Better Dead than Alien and Carrier Command.
87

MORE FOR YOUR BINDER ...

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

Continuing this month with:

- **Manipulating windows and eventing in ST Gem.**
- **A guide to floating point variables in C programming.**
- **A closer look at working a business spreadsheet.**
- **An in depth appraisal of the use of arrays in Basic programming.**

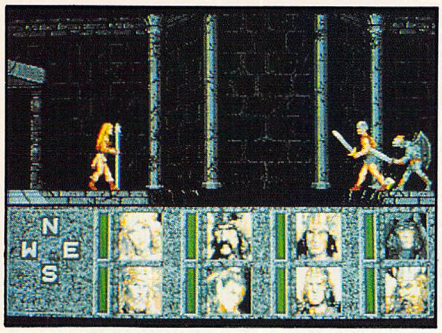


CONTENTS

Gallery

Our worldwide art stage features a selection of readers' pictures.
89

Education



Nic Outterside discusses creating your own educational software library.
91

STOS

Making the most of your games creator package: David McLachlan looks at collision detection and offers you a neat type-in shoot-'em-up.
98

Mailbag

Here's a further selection of the brightest and most informative letters from our ever-bulging ST mailbag.
128

Contest

Why not try this easy-to-enter Track-suit Manager competition? You could win a pair of top quality football boots and a superb custom made tracksuit.
97

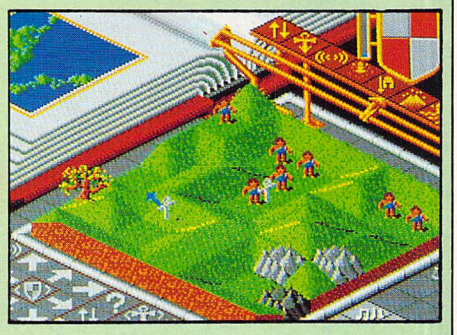
LISTING

Dither

This handy type-in utility allows you to load Neochrome pictures, convert them into mono and adjust them.
117

ATARI STAR USER GAME

Populous



Could this be game of 1989? This unique experience in ST gaming is given a very thorough play-testing.
20

REVIEWS

Games Software

Operation Neptune, Federation of Free Traders, Prison, Barbarian II, LED Storm, Thunderwing, Blackscar Mountain, Bismarck, Galdregon's Domain, Emmanuelle, Chase, Mini Golf, Zany Golf and many more.
20

K-Spread 3

The latest version of Kuma's widely heralded business spreadsheet is put under the microscope and fares well.
45

Colourjet

Integrex's colour printer is tested and a few annoying snags are found.
48



Eprom Programmer

A brand new hardware add-on designed to program your very own eproms is examined by André Willey.
54

Daatascan

Kempston's new hand-held scanner is put through its paces by our expert.
79

Hard discs

Roland Waddilove compares two hard disc drives and is impressed.
105

Easy as ABC

Two word/picture creation utilities for existing educational packages are compared by our education expert.
111

Art

Scan Art and Draw Art picture packages are examined, approved but on the whole thought to be expensive.
113

Things to do with Numbers

Softstuff's latest educational program for children is put through its paces.
127

Personal Finance Manager

£29.95

–The Worlds Most Sophisticated Personal Finance Program–

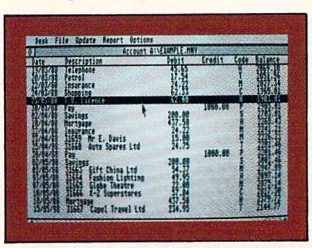
If you run a personal bank account and have an Atari ST then you need "PERSONAL FINANCE MANAGER".

AS EASY TO USE AS A CALCULATOR
PFM makes full use of the ST's Gem interface, if you need to amend or update an entry or Standing order simply click on it. Your screen looks just like a bank statement!

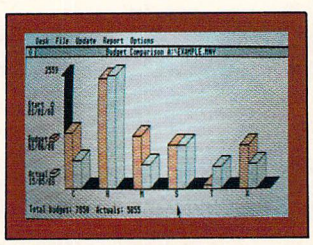
STANDING ORDERS & DIRECT DEBITS EATEN ALIVE
PFM handles Credit and Debit — Monthly, Quarterly, Yearly and even complicated regular payments like 12 payments of £52.99 followed by one of £12.50, PFM will check the date and automatically insert standing orders as they become due.

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

BALANCING WITH YOUR BANK ACCOUNT IS NO LONGER A JUGGLING ACT
When you get your bank Statement or a balance from an autobank machine you can confirm it with PFM quickly and easily. Simply select PFM's unique "Auto Balance" option and type in the balance as given by the bank and PFM will attempt to balance and highlight entries that have not yet been processed through the bank.



MAIN ACCOUNT SCREEN



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

OTHER FEATURES

* The number of entries is limited only by memory size
* You define the file size
* Old entries are automatically deleted
* Automatically places entries in date order
* European or U.S.A. date formats
* Balance of account graph
* Moveable and re-sizeable windows
* Run multiple bank accounts by simply using different file names
* Facility to check off items against statements
* Locates cheques written months ago in seconds
* Selective print features for dates/statements/standing orders and budgets

MichTron®



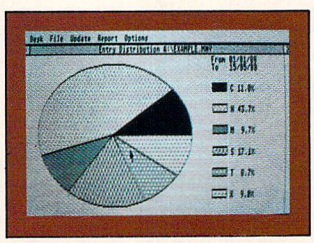
Home Finance Program By Peter Veale.

Here's what the critics say:

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

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

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



PIE CHART SHOWING SELECTED ENTRIES OVER CHOSEN DATES



BALANCE DISPLAY SHOWING HIGHS & LOWS OVER SELECTED DATES

Free 30-Day Trial
Order direct from MICHTRON and if you are not 100% satisfied, return within 30 days for a full refund.

NOT COPY PROTECTED

TO ORDER:
SEND TO: MICHTRON
PO BOX 68, St. Austell,
Cornwall. PL25 4YB.
Allow 28 Days for delivery.

BY PHONE:
WITH CREDIT CARDS.
TELE: (0726) 68020.
£30.95 (incl P&P).

Please send me **Personal Finance Manager** at £30.95 (incl P&P)

☐ Cheque enclosed made payable to MICHTRON

☐ Please debit my credit card account:

☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ Expiry date:

Name _____

Address _____

_____ Signed: _____

ST music heads for the Sky

HOME music making with the ST is taking off in a big way and has even hit the screens of satellite TV. Sky Television featured the ST and Steinberg's PRO12 software on its weekly programme Musicbox plus an interview with Daryl Stickley, the music specialist from Atari distributors Hugh Symons.

With presenter Tony Dortie, Daryl introduced viewers to making music with an Atari 1040, colour monitor and Roland synthesiser.

"The seven minute slot was aimed at newcomers to the Atari music scene", he told *Atari ST User*. "I showed how you can manipulate sounds, correct mistakes and put together a very accurate piece of music by yourself".

Increasing interest in music with the ST has also been underlined by impressive sales of the Atari Music Pack. Just two months after signing an exclusive deal to distribute the bundle, Hugh Symons had moved its entire stock of 500 packs, originally scheduled to cover a three month period.

Initially these went to music retailers, but to cover a wider spectrum of the market they are now also going to computer shops.

The 1040STFM is bundled with Steinberg's PRO 12 software, a cut down version of its top selling PRO24 package. This entry level pack costs £499 or can be bought with monochrome monitor for £599.

Drives deal

THROUGH a new deal between Frontier Software and Supra, ST users can now save £100 on the 30Mb SupraDrive.

Announcing price cuts of Frontier's most popular drive, marketing manager Martin Walsh said: "We are happy to be able to pass on the benefits of our renegotiation in pricing with Supra. I am sure that the new retail price of £499.95 will make the 30Mb drives accessible to even more Atari ST users".

Previously £599.95, the 30Mb drive features a 28ms average access time, formatted capacity of over 32Mb, full DMA pass through, an SCSI port, a clock/calendar and built-in power supply.

Supra Hard Disc Utilities can now be acquired from Frontier (0423 67140) as a separate stock item. Price £49.95.



New German imports

GERMAN software house EAS is now concentrating on arcade games for the 16 bit market. Its latest offering for the ST is role playing game Kayden Garth which is being distributed in the UK by Active Sales (01-384 2701) and sells for £19.95.

Robert Stallibrass of Active tells Atari ST User *that four more titles are on the way. Roll Over features computer men pushing stones into holes in a playing field and rolling over their enemies with stone blocks.*

Animal Games includes events such as monkey climbing, crocodile obstacle swimming and elephant coconut shooting.

The other two titles are being unveiled at the European Computer Trade Show on April 16.

Weird dreams go out on television

MILLIONS of Saturday morning TV viewers have been experiencing weird dreams thanks to the ST. The Rainbird game Weird Dreams has been featured on TVS' Motormouth programme in what is believed to be the first adaptation of its kind between a computer game and television.

In the pilot for the programme, Motormouth presenter Neil Buchanan used special effects to enter the world of Weird Dreams itself where he introduced viewers to such carnivorous creatures as the Maggot Monster and a flock of hideous vampire bats.

Each week Neil telephoned one viewer to ask 10 general knowledge questions and answers were tied into the computer game. Correct replies allowed the hero to go on to the next scene as the game was on screen but a wrong answer kept him back.

Programmer James Hutchby and graphics artist Herman Serrano had worked for nearly two months to adapt the game for the TV show.

They believe it is the first time a computer game has been tailored to such a degree for a specific television programme. Motormouth gave Weird Dreams 40 minutes prime airtime over an eight week period.

Assistant marketing manager for Rainbird, Clare Edgeley said: "With the interest generated in the game at last year's PC Show and the extensive airtime gained on Motormouth, we expect Weird Dreams to be one of the best selling games in 1989".

The TV version of Weird Dreams was run on an Atari ST Mega 2 using a Genlock board to allow it to interface with TV video equipment. Spot and atmospheric effects were generated on an Akai sound effect box, triggered by the game through the ST's Midi interface.

The ST version of Weird Dreams costs £24.99.

DATAVID-ST is one of a new range of PAL encoders designed to help video makers achieve high quality computer graphics. For use on the Atari ST, it comes from Interactive Media Resources (0902 25444). The Datavid series accepts RGB input and gives near broadcast quality PAL composite video output suitable for recording and for feeding into videomixers and monitors. The ST model costs £179.

Be part of the action

at the

ATARI

COMPUTER SHOW

Alexandra Palace, Wood Green,
London N22
Friday to Sunday,
June 23 to 25, 1989
Fri & Sat: 10am – 6pm,
Sun: 10am – 4pm

The Atari Computer Show is back – with many new products and developments. Atari has grown to be one of the major players in the computer world, supported by an incredible wealth of top quality applications, games and utilities – all on view at this show.

MIDI

All the latest hardware and software in the rapidly expanding scene of micro music will be on display, including keyboards, samplers, sequencers and professional studio software.

With an Atari/Midi setup you can produce top-quality music, quickly and simply – editing out mistakes in a way that's impossible with live recordings. So if you're in any way interested in making music with your micro this is the place to come to find out all about it.

CAD

Computer Aided Design has grown to become one of the most important uses for modern computers. With a CAD system you can design houses, cars and electronic circuits – in a fraction of the time it would take you with pen and paper.

With the high speed and powerful graphics of Atari micros it's hardly surprising that bigger and better CAD programs are pushing back the frontiers all the time.

And only at the Atari Computer Show can you see all the latest systems under one roof.

BUSINESS

Many companies will be demonstrating their latest software and hardware, specially designed to release the full business potential of Atari computers.

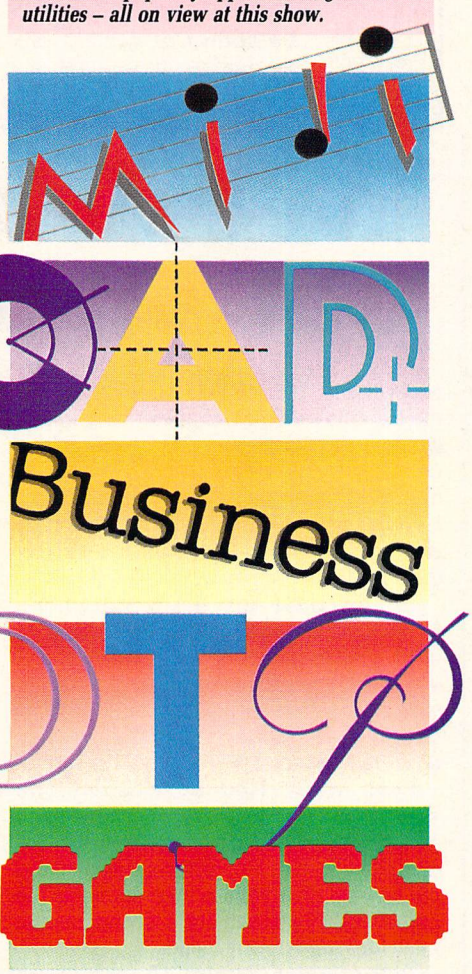
As well as products for the 8-bit and ST, you'll be able to try out applications for the powerful Atari PC compatible series.

And you'll also be able to get expert advice from professionals.

DTP

The art of combining text and pictures is big business nowadays because, with a low-cost DTP program, you can create anything from a club newsletter to a monthly magazine or book.

At the show you'll be able to try out the latest scanners, digitisers and super-fast programs, and get a first-hand glimpse at the way DTP is set to develop in the future.



GAMES

Atari computers are renowned for their ability to run fast-action arcade-quality games.

The range of new software on show will demonstrate how the power of these machines is continually being stretched, producing faster and even more addictive games with superb graphics.

The winning entry in the STOS Gameswriter of the Year Award will be revealed, and several new exciting STOS accessories will be shown for the first time.

If you're a keen game player, you'll find there's so much on offer at the show – you're guaranteed a real treat!

DON'T MISS IT

So for a great day out – whether you want to see what the future holds for Atari computer users, take advantage of the bargains on offer or get advice on specific applications – the Atari Computer Show is the place to go.

And if you send in the coupon now, you'll save £1 off the price of a single ticket!

SPECIAL OFFER

For the first time we are now offering a family ticket for just £11, allowing entry for two adults and two children. So you can save up to £6 off the usual entry price!

How To Get There

Alexandra Palace is so easy to get to by car, rail, underground or bus. It has its own British Rail station, just nine minutes away from King's Cross, and there's a free bus service shuttling between station and show every 10 minutes.

If you're travelling by road, the show is only 15 minutes away from Junction 25 on the M25. Car parking is free.

DATABASE EXHIBITIONS

ADVANCE TICKET ORDER

POST TO: ***Atari Computer Show Tickets, Database Exhibitions, PO Box 2, Ellesmere Port, South Wirral L65 3EA.***

Please supply:

- ☐ Adult tickets at £4 (save £1) ..... £_____
- ☐ Under 16s tickets at £2.50 (save £1) .. £_____
- ☐ Family ticket at £11 (save £6)..... £_____

Total £_____

☐ Cheque payable to Database Exhibitions

☐ Please debit my Access/Visa card no:

☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Expiry date: ☐☐/☐☐

Signed.....

Admission at door: £5 (adults), £3.50 (under 16s)

Advance ticket orders must be received by Wednesday, June 14

Name.....

Address.....

.....

.....Postcode.....

PHONE ORDERS: RING Show Hotline: 051-357 2961
PRESTEL ORDERS: KEY *89, THEN 614568383
MICROLINK/TELECOM GOLD ORDERS: 72:MAG001
Please quote credit card number and full address

ST5

New fonts will help ethnic minorities

THE Atari ST is of growing social significance to two million members of ethnic minorities who fear that use of their mother tongues is dying out in the UK.

It can also help many deprived of the full benefits of their citizenship because they cannot read English well.

Bengali, Gujarati, Urdu and Farsi are just four examples from a host of multilinqual fonts now available on the ST with the Signum 2 document processor.

They come from Gate Seven Computers (01-602 5186) through close cooperation with Signa Publishing Systems and are aimed at multi-cultural education and community work.

"Too much educational and community computing happens on machines that ordinary people cannot afford to own. Learning stops dead at the school gate", said Mike Dale, managing director of Signa.

"Signum 2 runs on a machine which thousands of people already have at home and in their business. It is no longer reasonable for good intentions towards people to be expressed in a second class way.

"With Signum 2 everyone is treated as first class. It has the potential to make a vast difference to the way people live and express themselves".

Other fonts available are Arabic, Greek, Hebrew, Hindi, Ladakhi, Marathi, Nepali, Punjabi, Russian, Sanskrit, Tibetan and all European languages.

Arabic (9 pin, 24 pin, Laser)

وقال القائد الاسر انيلي ن زعماع الانتفاضة السريين شكلوا «لجان صدام» لتنفيذ القرارات اتي تتخذها القيادة وحث الفلسطينيين على استمرار المظامرات .

Bengali (9-pin, 24-pin, Laser)

টাওয়ার হ্যামলেট্স কাউন্সিলের এই সিদ্ধান্তের ফলে শুধু যে. ৪৬টি পরিবারই ক্ষতিগ্রস্ত হচ্ছেন তা নয়। এই নীতি কার্যকর হলে বিলেতের অন্যান্য বর্ণবাদী কাউন্সলগুলোও এই নীতি কার্যকর করতে উদ্যোগী হতে পারে। এবং এতে করে বিলেতের বর্ণ সংখ্যালযু সম্প্রদায়ের বিপুল সংখ্যক নাগরিক ক্ষতিগ্রস্ত হতে পারেন।

Devanagari (Sanskrit, Hindi, Marathi, Nepali) (9-pin, 24-pin, Laser)

हर वर्ष नये नियम, अधिक कठिन तरीके और वह परिवर्तन जिस तरीके से कम्यूनिटी पुलिस के पास आती है कि पालिस उन के लिये वह स्तर और आवश्यक सेवा प्रदान करे, आते हैं। आज के चैलैंजों को पूरा करने के लिये कांस्टैबुलरी का ऊपर से नीचे तक का दोबारा नया प्रबन्ध किया गया है।

Some of Signum's new fonts

Sample super sounds

STOS allows you to create your own games. Now STOS Maestro will give them a new level of realism with dramatic sound effects.

Maestro, the latest STOS software from Mandarin (0625 878888) is a powerful sampling system that allows you to manipulate sound.

It includes a sophisticated drum machine with ll different samples of drum patterns, example programs to show you how to incorporate sound in your games, additional routines in C and assembly language for the more ambitious and a second disc with 30 sounds including explosions, phaser fire, sirens, helicopter rotor blades and screams.

The software costs £24.95 but for £69.95 you can have Maestro plus a precision made sampling cartridge with built-in high frequency filter to connect to a hi-fi, personal stereo, radio or compact disc player.

To speed up game creation, Mandarin has also brought out STOS Compiler which works at a rate of more than 500 instructions a second, so that even a big game can be compiled in around 30 seconds.

To bring home made games closer to the speed of commercial machine code ones, you can copy the new extenson file on to the working STOS disc then when STOS is booted, the compiler is available within two key presses.

Included with the disc are a comprehensive manual and a new single precision floating point routine which you can copy on to your working STOS disc. The compiler costs £19.95.

NEWSBEAT ROUNDUP

CLAIMED to be Europe's largest supplier of syndicated artwork, Adverkits International has developed the images for Advertisers Collection, the latest offering from Mirrorsoft (01-377 4645).

It gives over 50 different multipurpose frames, headers and logo graphics for producing advertising and sales promotional material on the ST.

Advertisers Collection costs £34.48 and can be used with Fleet Street Publisher, Calamus, Publishing Partner Professional and Timeworks Desktop Publisher.

★ ★ ★

WHEN champagne corks popped at the South Wales firm Kador (0443 740281) it didn't matter if the bubbly overflowed. Staff was celebrating the launch of the 150th model of their Seal 'n Type spillcovers for computer keyboards.

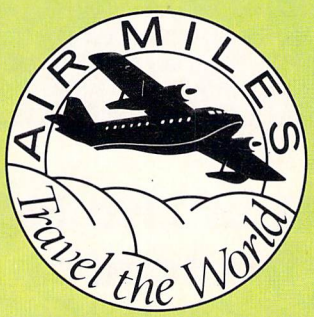
The Atari ST model sells for £10.95.

★ ★ ★

EUROPEAN pool champion Maltese Joe Barbara has endorsed 3D Pool, the latest sports simulation game from Firebird (01-631 5206).

Players can vie with each other or take part in a knockout tournament before taking on Maltese Joe in the final. Price £19.99.

★ ★ ★



THE new craze of collecting Airmiles vouchers has now hit the computer world. Loughborough based mail order firm Compumart (0509 610444) is offering the vouchers with its Atari 520STFM superpack deal.

Claiming to be the first in the business to offer Airmiles, Compumart has also been throwing in a £39.99 Fuji camera with the deal.

"Collect your Airmiles vouchers and trade them for a ticket to Basingstoke or Bermuda, Loughborough or Los Angeles", says the firm.

Basingstoke and Loughborough are the more realistic. With the £399 superpack you get just 10 free airmiles.

Focus on presentations

THE prestigious Desktop Publishing Show organised by Database Exhibitions will take on a new look this autumn with Presentations '89, a unique show within a show, highlighting the art of professional presentation.

It will be held at the London Arena in the city's fast developing Docklands area from October 4 to 6.

PIRA, the leading independent advisory service will also be providing a team of recognised authorities to run a series of seminars covering the full range of communication skills.

Database Exhibitions managing director Michael Meakin said: "The new professionals in computer graphics and the more traditionally based audio-visual specialists have much to offer individually and even more when they come together in a single forum. Converging technologies is the way forward, this is what Presentations '89 is all about".



STRATEGY is the secret of Risk, the latest offering from Mastertronic (01-727 8070). A computer implementation of the original board game it allows you to plan warfare solo against the computer or with up to five friends. Price £19.95.

Prizewinner jets out

GARETH Dew swapped the cider apples of his home in Bridgewater, Somerset for The Big Apple when he jetted over to New York courtesy of Atari ST User.

Gareth, pictured with his travelling companion at Manchester International Airport's check-in area, won the dream trip as first prize in our £4,000 competition.

Thousands of readers correctly answered the eight questions on New York in the June and July issues of Atari ST User *last year. Gareth's entry was first to be opened and he flew out of Manchester for three nights at the New York Hilton with £200 spending money thrown in.*



Out of the HAT for school

HAT Software (0743 231763) has produced three new educational programs for the Atari ST.

Jigspell combines the fun of completing a jigsaw with learning to spell. Aimed at primary school children it costs £14.95.

Stage Two is an intermediate art package designed to fill what HAT believes is a gap in the market. It has 30 art functions and is the only product that will grab pictures from the Vidi ST digitiser for inclusion in the art package. It sells for £14.95.

HAT's third product is Blow-Up, a low resolution program that will take Degas-compatible pictures and blow them up. It will store them on disc then print out, a facility long awaited by many teachers. Blow-Up costs £12.95.



SNOOKER, pool, billiards and the no-pocket cannon game Carom are all included in Steve Davis World Snooker, the latest Atari ST game from CDS Software (0302 321134).

A 16 bit follow-up to Steve Davis Snooker, it allows players to zoom in on shots add spin and vary the strength. Two players can pit their skills against each other or one can play Steve Davis whose expertise has been programmed into the software. Price £19.99.

AMS package taken over

DATABASE Software (0625 878888) has acquired sole manufacturing rights for AMS package Flair Paint. This was the only Atari ST package to have been developed by Warrington-based AMS. The product, packaging and price of £34.99 will remain the same, but will go out under the Database label.

"Flair Paint is a beautifully designed art package with many unique features", said Database Software marketing manager Chris Payne. "It has had some very flattering reviews and we will be promoting the product heavily over the next few months.

"We believe it will complement our new Mini Office Professional range for the ST and the STOS products from our sister company Mandarin".



3.5" FLOPPY DISK DRIVE

RRP £129 inc. VAT



- High Quality Japanese Disk Drive
- On/Off Switch • Track Counter!
- Full Manual • 12 Month Guarantee
- Built in 220/240v PSU unit

5.25" FLOPPY DISK DRIVE

RRP £139 inc. VAT



- High Quality Japanese Disk Drive
- 40/80 Track Switch • On/Off Switch
- Built in 220/240v PSU • Full Manual
- IBM™ Compatibility with PC Ditto

3.5"/ 5.25" MULTI DRIVE

RRP £239 inc. VAT



- Superb 3.5"/5.25" Combined unit
- All features as single drive units
- Built in 220/240v PSU • Full Manual
- IBM™ with PC Ditto • Track Counters!

ATARI TURBO 3 HARD DRIVES SCSI, ROM AUTO BOOT, +3.5"

RRP 20MB £399 inc. VAT



ATARI 40MB TURBO3 **with 3.5" Drive**

RRP 40MB £529 inc. VAT



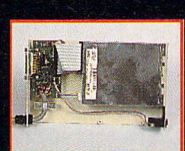
You choose from 20-100MB SCSI drives

- SCSI Drive with 20*,40,80 or 100 MB Size and Lightning fast Access (28ms/11ms)
- High Speed autoboot with internal ROM • Drive utility software held in ROM
- Very Easy Installation • 2-12 partitions • Internal clock with auto set • Full Manual
- Optional 3.5" Floppy Drive • SCSI 100% compatible (PC Ditto, Aladin etc)
- U/L approved built in PSU and Wisper Fan • SCSI & DMA ports for daisy chaining

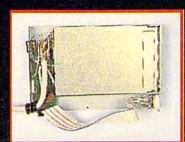
* 20MB 68ms other units 28ms or 11ms!

™ All Trade Marks Acknowledged. Triangle products are produced by POWER COMPUTING • BEDFORD • ENGLAND • 0234 273000

TOP QUALITY MADE IN UK



Superior Triangle Drive



Competitive Product!

All Triangle drives are assembled in England from the highest quality components.

Many designs feature "future proof" circuitry that allows different models of drive mechanism to be connected.

Powered models feature modular 220/240v PSU units for greater saftey and come complete with moulded mains plug. Many Triangle drives come complete with complementary software and all models have comprehensive user documentation. Triangle products are guaranteed for 12 months.

Always ask your for TRIANGLE quality products by name!

TRIANGLE
E L I T E

POWER HOUSE DIRECT 0234 273000

Available at Good Computer Dealers. Trade only call 0234 273248

• **Mail Order Hotline 800 581 742**



CDS Software (0302 321134) has acquired the licence to produce a computer version of top TV quiz show Sporting Triangles.

"We have missed a few opportunities in the past but we were determined to gain this licence. Our negotiations paid off and we are really thrilled to be the software house producing this title", said sales director Martyn Wilson.

He told Atari ST User *that development was well underway aimed for launch at the European Computer Trade Show on April 16. Price £19.99.*

Pictured (left to right) are Giles Hunter, MD CDS Software, Deborah Waight of Central TV and Martyn Wilson sales director of CDS.

ST programs at Euro Show

MORE than 30 of the latest programs for the Atari ST are having a showing at the first European Computer Trade Show.

At the Business Design Centre from April 16 to 18 are Gridrunner and Andes Attack from Llamasoft; Bio Challenge (Palace); Timescanner, Millenium 2.2 and Real Ghostbusters (Activision); Cybernoid II (Hewson); Steve Davis World Snooker and Colossus Chess X (CDS); Proflight (HiSoft); Weird Dreams and 3D Pool (Rainbird); Debut and Outland (Interceptor) together with STOS Compiler, STOS Maestro, STOS Maestro Plus and STOS Sprites from Mandarin.

On the graphics and utilities front, the show will include six packages from Electric Distribution. They are Cyber Sculpt, Cyber Texture, Cartoon Design Disc, Video Titling Design, 3D Fonts I and 3D Fonts II.

New distributor

SIGNA Publishing Systems (0252 874406) has been appointed official UK distributor for Calamus, the German DTP program for the Atari ST. Signa was aiming to launch Calamus price of £459.99.

Aim: Infinity

TEENAGERS John Thornewill and William Scales are to convert the result of two years work for use on the Atari ST.

Early in 1987, they gave themselves the target of producing a game that would stretch the capabilities of the BBC Micro. They believe they have done it with their arcade adventure Infinity and now plan to bring out an ST version.

On the Midi track with video



Technician at Goldsmith College's electronic music studio, Andy Woolford works on preparing the video

HELP is at hand for budding musicians who find it hard to struggle through complex instruction manuals in order to get to grips with computer technology.

London-based DA Associates (01-056 3787) has produced a VHS video tape designed to introduce beginners to sequencing, using the Atari 1040ST and Hybrid Arts' Midi Track system.

David Anderson of DA Associates has brought out a number of education and training programmes, but Introduction to Midi is the first for computer music. He hopes to follow it up with others in the computer field.

"Most people I speak to hate manuals. All they want to know is what buttons to press to get started, and this is what we are trying to make easier", he said.

The video, which comes with a glossary, explains the basics of working the system through to producing a simple tune.

MANNESMANN Tally (0734 788711) has developed a new printer claimed to be a breakthrough in ink jet technology the MT91. The 136 column printer uses a new ink formula and printhead mechanism for rapid drying and to stop ink clogging the head. The company is predicting the MT91 will help raise its UK share of the ink jet market to 10 per cent within 12 months. Price £795.

The I.S. DIGITISER

V3.6

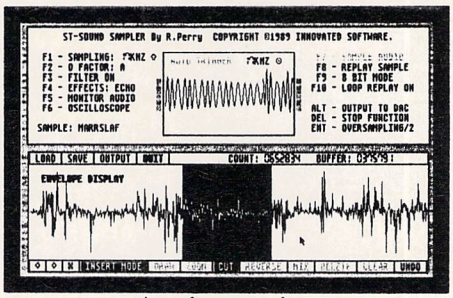
From Innovated Software

THE FIRST AND THE BEST SOUND SAMPLING SYSTEM AVAILABLE FOR THE ATARI ST.
AS USED IN MANY TOP SELLING GAMES !!!

SAMPLE TIMES 1040ST

@48KHZ 19.21secs

@8Khz 115.25secs



SAMPLE TIMES 520ST

@48KHZ 8.29secs

@8Khz 49.75secs

Actual screen shot.

NOW WITH EVEN *MORE* NEW FEATURES!

Sample speeds ranging from 1 to 48Khz
with oversampling to halve or even quarter your memory use.
Uses GEM and/or keyboard for all sample editing features.
Now with improved Gem/Keyboard features
Filtering, Echo, Reverb and Realtime mixing.
Adjustable triggering on sampling and replay.
Comprehensive routines for C, Assembler, Fast and ST Basic
now with more extended routines and documentation !
Dual format program disk allowing 410k demo sample to be
accessed by 1meg drive owners !!
Now with patch software for SOFTSYNTH*
Now with Amiga Format sound conversion facility
and Sample Lock facility
also includes realtime Digital Delay stand alone software
which samples at an amazing 65Khz ! !

I.S.DIGITISER only £69.95 inc p+p
ATTN: EXISTING OWNERS - Upgrades for Digitiser software £5.00 - contact Innovated Software

THE I.S. MIDI SAMPLE PLAYER V3.1

MIDI CONTROL OF SAMPLES CREATED WITH I.S.DIGITISER & SOFTSYNTH*

2 Note Polyphonic with 256 voices over 9 octave keyboard.
Velocity sensitivity that is switchable and adjustable.
Assignable MIDI channel and looping per note.
Pitch bend wheel opeartion available for special effects.
Forward, reverse and bounce looping assignable.
Ability to hold two banks of switchable key splits.
Crossfade looping and automatic looping facility.
Magnified display allowing fine sample editing.
Now with improved Sample Search and tuning
allowing single key re-tune. Ability to load 16 bit samples.

I.S.MIDI SAMPLE PLAYER only £24.95 inc p+p
ATTN: EXISTING OWNERS - Upgrades for MIDI software £5.00 - contact Innovated Software

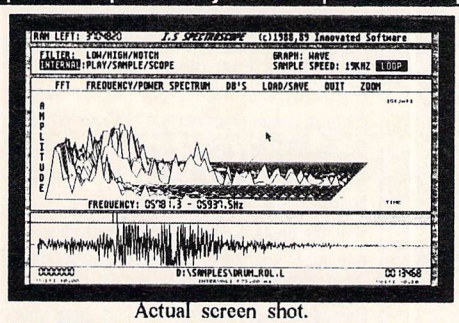
* SOFTSYNTH IS A REGISTERED TRADE MARK OF DIGIDESIGN

NOW AVAILABLE :-

The I.S. SPECTROSCOPE

The complete sample / analysis / sample creation program

OUT NOW ! only £39.95 inc vat & p+p



OUT NOW ! only £39.95 inc vat & p+p

Actual screen shot.

16 - 256 step FFT analysis and 3D plots versus time/freq.
Spectrum/Power density graphs. 1 - 31Khz Sampling
Sample creation using conventional FM Synthesis or user / custom samples. Low/High/Notch second order filters.
Perfect use for Control Engineers for analysis of low Freq.

We stock all types of hardware and software for the ATARI ST.
MAIL ORDER AND SHOP CALLERS WELCOME
OPENING HOURS : MONDAY TO FRIDAY 10AM TO 6PM
SATURDAY 9.30AM TO 5.30PM

CHIPS

DATA DIRECT LTD.
53 RUGBY ROAD,
WORTHING,
WEST SUSSEX.
BN11 5NB.
(0903) 700804.

Access VISA

TRADE ENQUIRIES WELCOME

QUANTUM PAINT v2 NOW AVAILABLE!

Yes! Version 2 "GOLD EDITION" is now available! Many new features include ANTI-ALIASING and Amiga IFF/HAM picture loading!

Quantum Paint Gold: £24.95 • Quantum Paint Gold Professional: £34.95 • LC-10/JX-80 Colour Printer Dump: £10 • Upgrade your old Quantum Paint: £10 (see other ad!)

QUANTUM PAINT



...a little Eidersoft Magic...



...and your imagination!



The amazing 4096 colour ST paint program complete with animation!

Available from WH Smiths and better dealers.

£24.95

Mail order 0234 273000

EIDERSOFT

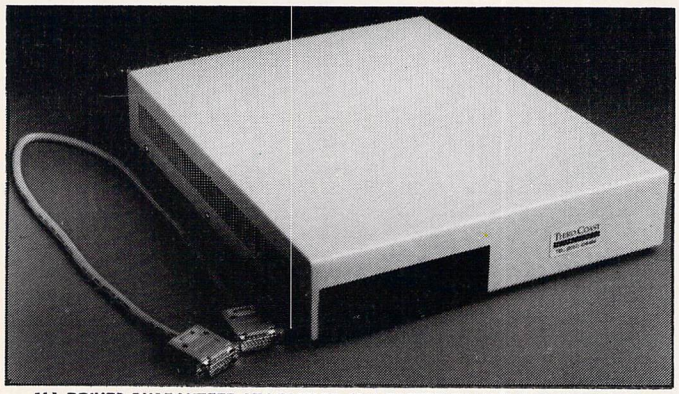
Creative Computing

Gallup Software Chart



This month	Last month	Title (Software House)	Price	Month reviewed in Atari ST User	Comments	Marks from 10
1	◁ 1	**FALCON** *Mirrorsoft*	24.95	March 1989	Still holding its own at number one. Prepare yourself for a Mach 2 flight in an F-16 and join the military simulator enthusiasts.	9
2	•	**GALDREGONS DOMAIN** *Pandora*	19.99	May 1989	Enter the world of mystery and magic with the wizard Azazael, five gems and ultimate power. Read how our adventurer fared in this issue.	6
3	•	**FOFT** *Gremlin*	29.99	May 1989	Federation of Free Traders was a long time coming and promised to beat Elite. Does it live up to expectations? Read the review in this issue.	8
4	▽ 3	**LOMBARD RAC RALLY** *Mandarin*	24.95	Jan 1989	Can you win enough legs in this competition to customise your Cosworth, appear on TV and win a prize? Keep on playing and you'll get there.	9
5	▽ 2	**OPERATION WOLF** *Ocean*	19.95	March 1989	Another success for a Taito coin-op which has made a surprisingly good transition to the ST screen. Fun and not too demanding.	7
6	•	**BARBARIAN 2** *Palace*	19.99	May 1989	Sequel time with this one from Palace. Not just additional screens, but a whole new game with a lot of nice touches and added excitement.	9
7	△ 9	**DOUBLE DRAGON** *Melbourne House*	19.99	–	Blast from the arcades again. Your mission is to rescue your girlfriend from a selection of nasties prowling New York streets.	–
8	▽ 7	**ELITE** *Firebird*	24.95	Nov 1988	This game scores most on playability and addictiveness. Now in solid 3D it is stunning – a classic in its own right.	9
9	▽ 6	**BATMAN** *Ocean*	19.95	April 1989	Fun to play and entertaining to watch, with many interesting locations to explore, puzzles to solve and old enemies to meet. Well worth a look.	9
10	△ 14	**CRAZY CARS 2** *Titus*	19.99	April 1989	A sequel, but not a simulator. A good fun race against time and your opponents. Nice graphics and value for money.	7
11	▽ 4	**THUNDERBLADE** *US Gold*	19.99	April 1989	Keyboard pilots have a wide choice here, with wartorn skyscrapers, sea battles, rocky canyons and forests as the colourful backdrops.	8
12	•	**BORODINO** *Atari*	29.99	March 1989	History has the battle as a draw, but it was also a turning point for Napoleon. Could you alter the outcome and change the face of Europe?	–
13	▽ 5	**R-TYPE** *Activision*	19.99	March 1989	High in the difficulty stakes, but falling in popularity. Enjoy the beautiful graphics as you zoom across another horizontal shoot-'em-up.	8
14	▽ 11	**HEROES OF THE LANCE** *US Gold*	24.99	March 1989	For the AD&Ders among you this is a must. SSI and TSR have linked to bring this increasingly popular game to your screens.	9
15	▽ 12	**JOAN OF ARC** *US Gold*	19.99	March 1989	With the depth of gameplay and extensive options, this is one of the better strategy games on the market. Excellent value for money.	8
16	•	**KINGS QUEST 4** *Sierra On-Line*	19.99	–	Should you have finished the third Quest your wait is over for the sequel. But you don't have to complete the others to enjoy this one.	–
17	▽ 8	**AFTERBURNER** *Activision*	19.99	March 1989	Without the moving seat and joystick to be found in the arcade version, this has little to offer which hasn't been seen often before.	7
18	•	**LED STORM** *US Gold*	19.99	May 1989	Back to the race track again with another arcade conversion. A vertically scrolling game, but has it anything new to offer? Read the test drive inside.	5
19	▽ 10	**SPEED BALL** *Mirrorsoft*	24.95	Dec 1988	Another Bitmap success. The graphic representation and animation are startling, while the backdrop is pleasant and unobtrusive.	9
20	▽ 13	**HOSTAGES** *Infogrames*	29.95	Jan 1989	Must be one of the most unique, highly developed and totally addictive games ever seen for the ST. Stunning graphics and sound.	10

THIRD COAST ATARI HARD DRIVES



ALL DRIVES GUARANTEED AT LEAST 35-40% FASTER THAN THE COMPETITION

Features:

* Faster than any competitor
* Will support second drive
* Supports full auto boot
* 65 watt PSU
* Superb software including data checker, backup utilities
* 35 inch DMA cable
* Robust design slides under monitor
* Six month free phone support
* Full one year guarantee on drive mechanism
* Battery backed clock

ATARI ST COMPATIBLE HARD DRIVES

22 M/Byte (Formatted)	£339.00
32 M/Byte (Formatted)	£439.00
65 M/Byte (Formatted)	£549.00
100 M/Byte (Formatted)	£899.00
130 M/Mbyte (Formatted)	£949.00
150 M/Byte (Formatted)	£1263.00
230 M/Byte (Formatted)	£2179.00
130 M/Byte (Formatted)	£799.00
40 M/Byte (Removable)	£749.00
80 M/Byte (Removable)	£899.00
150 M/Byte Tape Drive (SCSI) compatible with all above drives	£649.00

AMIGA DRIVES

20 M/Byte (Formatted)	£550.00
30 M/Byte (Formatted)	£599.00
60 M/Mbyte (Formatted)	£699.00
2 M/Byte RAM module A500 I/Face	£550.00

THIRD COAST DIY KITS (Everything to build your own Drive)

DMA/SCSI Host Boards	£89.00
RLL Adaptec 4070 or Omti 3527 controllers (giving 50% more out of any drive + twice the speed)	£96.00
Astec 65 watt PSU's	£39.00
Enclosures (as above - including fan, Astec - everything bar drive)	£299.00
Amiga interface boards	£199.00

THIRD COAST DRIVE UPGRADES

(Upgrade your Atari SH204/5, Megafile 20/30, Supra, Cumana or Triangle drives)
45 M/Byte (Mechanical head - auto park). Features new faster software, up to 12 partitions, backup programs. Fast installation, all data copied to new drive. Trade in on existing drive. 45% more performance, 65% more capacity. Plated media, non oxide (complete) £249.00

65 M/Byte (Mechanical head pack) complete £299.00

Full one year warranty. ALL PRICES INCLUDE VAT!
Trade and University enquiries welcome.

THIRD COAST TECHNOLOGIES
Unit 8, Bradley Hall Trading Estate
Standish, Wigan
WN6 OXQ
Tel: 0257 426464 **Fax: 0257 426577**

POWERHOUSE DIRECT

Special Offers from Power Computing

MONITORS

Phillips CM8833	£225
NEC Multisync II	£499
NEC Multisync GS	£199
ATARI SM124	£139

All Monitors Include Lead

COMPUTERS

520STFM + 3.5" Drive	£369
1040STFM + 3.5" Drive + PP	£469
MEGA 2 + 3.5" Drive + PP	£969
MEGA 4 + 3.5" Drive + PP	£1299
ATARI Folio Pocket PC	£199
20MB Hard Disk with system	£379
40MB Hard Disk with system	£499
SM124 with system	£99

SUNDRIES

Printer Lead Parallel	£12.00
LC10 Colour Ribbon	£11.50
LC10 Black Ribbon	£6.50
NEC2200 Ribbon	£7.50
3.5 DS Brand(10) Disks	£19.50
3.5 DS Bulk (50) Disks	£45.00

SOFTWARE
ART, GRAPHICS & CAD

Quantum Paint	£24.95
Quantum Paint Pro	£34.95
Quantum Paint Colour Driv.	£10.00
Flair Paint	£29.00
Spectrum 512	£45.00
CAD 3D	£21.00
Cyber Paint	£53.00
Cyber Studio	£62.00
Degas Elite	£21.00
Campus Draft	£69.95
Campus CAD	£299.00
Easy Draw 2 Superch.	£72.00
Dynacad (3D)	£399.00

SOUND & MUSIC

Pro Sound Designer Gold	£79.95
Mouse Music	£199.00
Mouse Music KB	£249.00
Yamaha PSS480 Synth	£149.00
Yamaha PSS680 Synth	£199.00
C LAB Notator	£437.00
Pro 12	£109.00
Pro 24	£199.00
Master Tracks Jnr	£89.00
K Minstrel 2	£29.00

DB, DTP & WORD PROCESSING

Pagestream	£149.00
Timeworks DTP	£72.00
Calamus DTP	£319.00
Signum 2	£184.00
Word Perfect	£129.00
Wordup	£55.00
1st Word +	£60.00
Microsoft Write	£125.00
Mini Office Doc Pro	£29.00
Superbase 2	£70.00
Superbase Pro	£175.00

Not Listed? Please call!
We stock SAGE Business Software
All prices include vat & delivery and are subject to change.

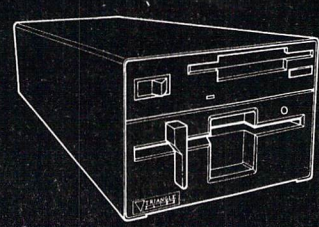
PRINTERS

Star LC10 Mono	£199
Star LC10 Colour	£249
NEC P2200 (24 Pin)	£299
Postscript Laser	£2999
HP Laser Jet + Compatible	£1299
SLM804 Laser	£1099
ROLAND PLOTTERS from	£649

DISK DRIVES

All Power drives include switch. Triangle drives include track counter, switch, PSU & "future proof" PCB.

3.5" Standard 720k	£75
3.5"Internal PSU 720k	£90
3.5" Triangle Elite 720k	£129
5.25" Triangle Elite 40/80	£139
3.5/5.25 Triangle Multi	£199
PC Ditto with above	*£49.95*



HARD DISKS

All Drives are SCSI autobooting 28ms+ unless stated otherwise.

20MB Triangle 3 (68ms)	£399
40MB Triangle 3•	£529
80MB Triangle 3	£899
100MB Triangle 3	£1099
Internal 3.5" Drive with HD	£79

•Add £69 for Quantum 11ms Drive

UTILITIES & LANGUAGES

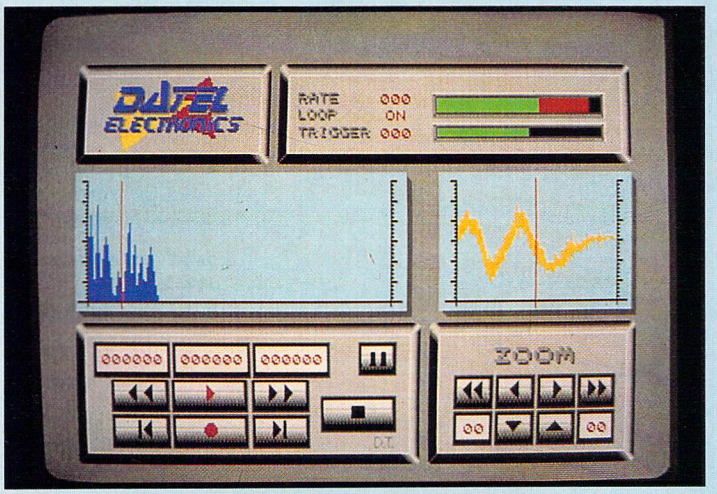
Hisoft Devpack	£45.00
Hisoft Basic	£55.00
Laser C	£149.95
Megamax DB	£39.95
Lattice C 3.4	£69.00
Aztec C Developer	£175.00
GFA Basic 3	£32.00
Personal Pascal	£55.00
Flash	£21.00
Ruby Comm	£72.00
Deskcart	£79.95
Picworks	£24.95
Aladin 3	£230.00
PC Ditto	£79.95
Fontz (for Wordup)	£21.00
Twist	£35.00

We specialise in Mail Order but we also now have **a new retail store** with demonstration studio. Opening times are from 9.30 to 5.30 Mon-Sat, although if you can call, we are often "Atari Mad" 'til late!

ORDERS ONLY 800 581 742
GENERAL ENQ. 0234-273000
Callers & Mail to:
44A STANLEY STREET
BEDFORD
MK41 7RW

POWERHOUSE DIRECT is the Retail Division of **POWER COMPUTING!**

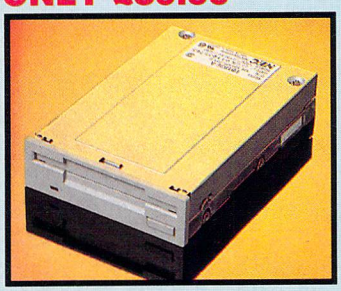
DATEL ELECTRONICS



ST PRO SAMPLER STUDIO

- A top quality sound sampling system at a realistic price.
- 100% machine code software for realtime functions.
- HiRes sample editing.
- Realtime frequency display.
- Realtime level meters.
- Microphone & line input.
- Adjustable manual/automatic record trig level.
- Variable sample rate & playback speed.
- Seperate scroll line waveform windows & zoom function with Edit windows for fine accurate editing.
- 3D shot of sound waveform. Wave editor to design your own waveforms or adjust existing ones.
- Playback samples via external MIDI keyboard.
- Software files can be used within other music utilities.

ONLY £59.99

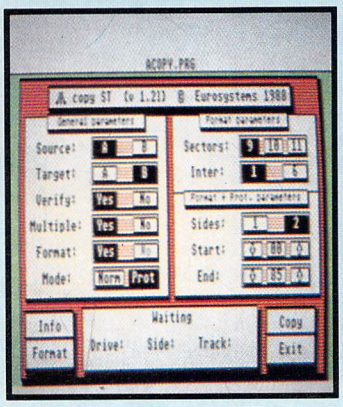


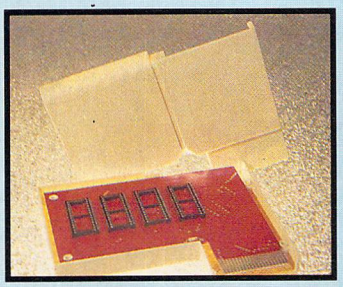
1MEG INTERNAL DRIVE UPGRADE

- Replace internal 500K drive with a full 1 meg unit.
- Top quality drive unit.
- Full fitting instructions.
- Easily fitted, no special skills required.
- Direct plug in replacement.
- Available now.
- When considering a drive replacement remember that quality is most important.

ONLY £79.99

REMEMBER ALL OUR PRICES INCLUDE VAT AND FREE CARRIAGE!





EPROM BOARD

- Complete Eprom Board & case.
- Accepts up to 4 x 27256 Eproms.
- Mapped into the cartridge area.
- Attractively styled case.
- High grade PCB.
- 64K or 128K blocks.

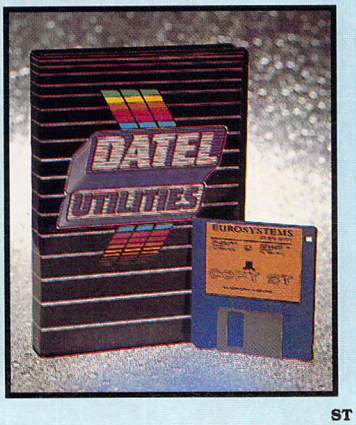
ONLY £12.99

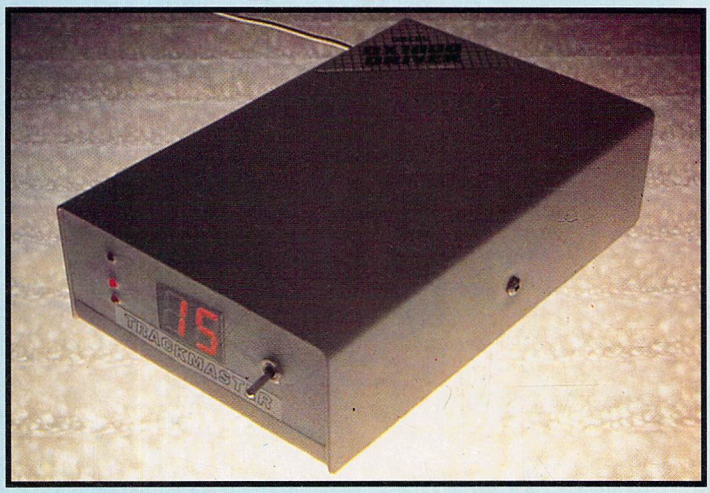


EPROMS

- 27256 - 32K Eproms.

ONLY £4.50

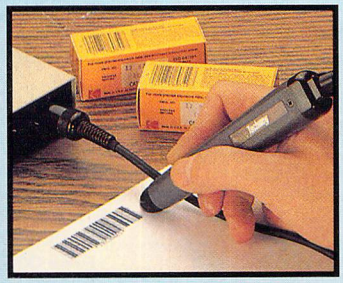




TRACKMASTER

- Trackmaster track display unit is a must for the disk hacker.
- Simply plugs into disk drive port of the ST.
- No other modifications or connections required.
- Displays track number, disk side and read/write status as the head moves along the disk.
- Has daisy-chain socket to connect external drive.
- Invaluable for identifying protection tracks etc.
- Two-digit LED display.
- Displays up to track 85.
- Works on both internal and external drive (switchable).
- Complete hardware solution - no software required.

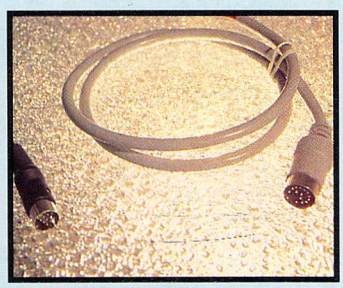
ONLY £34.99



LOW COST BAR CODE READER

- Low price Bar Code Reader.
- Model 420, high performance, low cost Bar Code Reader.
- Works with any Amiga/ST computer system (please state which) via the RS232 interface.
- Features a built-in self-testing function.
- Features a diagnostic indicator.
- Can read codes EAN, UPC, Inter leaved 2 of 5, Code 39, CODABAR.
- Comes complete with wand, ready to go.
- Easy to install.

ONLY £189.99



13 PIN VIDEO LEAD

- 1 metre long.

ONLY £9.99

14 PIN DISK DRIVE LEAD

- 1 metre long.

ONLY £12.99

14 PIN DISK DRIVE SOCKET

- PCB type.

ONLY £5.99

NOTICE 1988 COPYRIGHT ACT

DATEL ELECTRONICS Ltd. neither authorizes or condones the use of it's products to reproduce copyright material. It is illegal to make copies of such material without the expressed consent of the copyright owners or thier licencees.

DEEP SCAN BURST NIBBLER

- Copy an entire disk in under 60 seconds.
- Works with one drive or two.
- Multiple copy option allows you to make many copies from one original.
- Copy 1 or 2 disk sides - up to 85 tracks.
- Special format parameters for non-standard formats.
- Full verify option.
- Using 1040 ST, copy a whole disk in one pass with a single drive.
- Unique 'INFO' analyser - displays vital disk parameters, including sector distribution, data dispersion, interleave status, etc., etc.
- Compatible with 520 & 1040 ST.
- Easy to use Icon driven programme takes the mystery out of disk backup.

ONLY £29.99

ST SUPER TOOLKIT II

- Powerfull track/sector editor.
- Huge range of features - too many to list. HiRes display (works mono only).
- Displays up to 85 tracks/255 sectors. Fully menu driven.

ONLY £14.99

DATEL ELECTRONICS

EXTERNAL 3.5" DISC DRIVE

- Slimline extra low profile unit - only 6" long!
- Top quality drive mechanism.
- A superbly styled case finished in computer colours.
- 1 meg unformatted capacity.
- Fully compatible.
- Complete - no more to buy.
- Good length cable for positioning on your desk etc.

ONLY £89.99

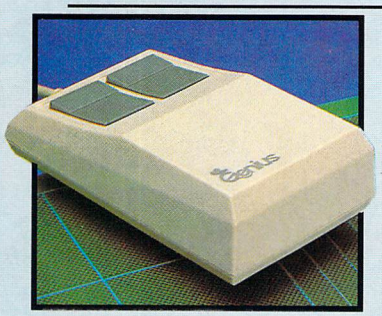
ADD £5 FOR COURIER DELIVERY IF REQUIRED

PLUS *FREE* "PAINTWORKS" SOFTWARE!! WITH EACH DRIVE
(R.R.P. £34.99)

- Top quality illustrator package by Activision.
- Too many features to list.
- Absolutely *FREE* !!

AVAILABLE SEPERATELY FOR £19.99 IF REQUIRED





REPLACEMENT MOUSE

- High quality direct replacement for the mouse on the ST.
- Teflon glides for smoother movement.
- Rubber coated ball for minimum slip.
- Optical system counting - 500/mm.

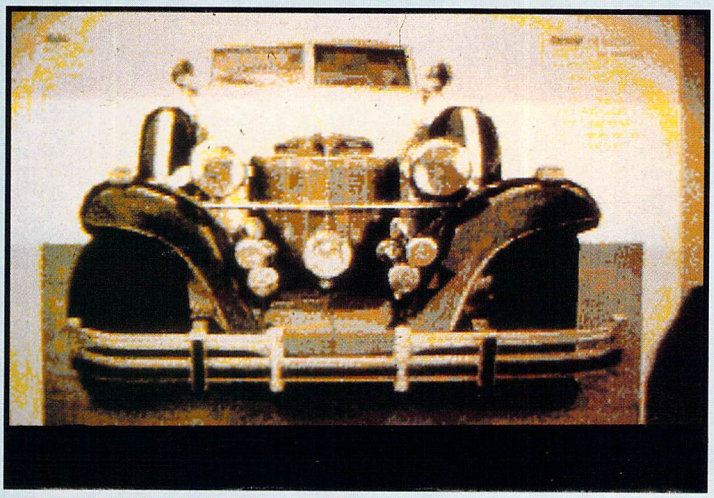
Special offer - free mouse mat + mouse house (worth £7.99).

ONLY £29.99



GENISCAN GS4000 ST

- An easy to handle Handy Scanner featuring 105 mm scanning width & 200 dpi resolution enables you to reproduce graphics & text on your computer screen.
- A powerful partner for Desk Top Publishing.
- Package includes GS4000 scanner, interface & Scan Edit software.
- With Geniscan you have the ability to easily scan images, text & graphics into the ST.
- Save images in suitable format for leading packages including DEGAS, NEOCHROME, FLEETSTREET, etc.
- Printout for Epson compatibles.
- Unmatched range of edit/capture facilities not offered by other scanners at this unbeatable price.
- Adjustable switches for brightness & contrast.
- Powerful software allows for cut & paste editing of images etc.

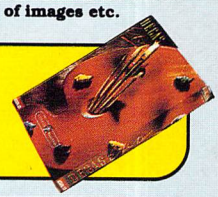


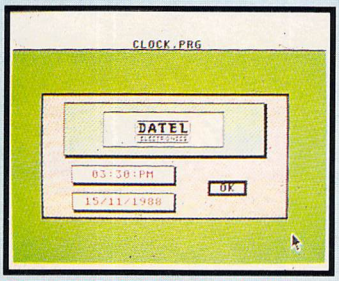
ST VIDEO DIGITISER

- A superb realtime Video Digitising System at a truly realistic price !!
- Accepts signals from any composite Video source e.g. VCR ,Video camera Etc.
- Works with Mono or Colour monitors.
- High speed Mono digitiser - No external power required.
- Plugs directly into cartridge port-No messy wires.
- Pictures saved to disk in files compatible with Desk top formats- Degas - Neochrome.
- Digitise pictures/documents can be incorporated into your own work.

ONLY £79.99

SPECIAL OFFER
COMPLETE WITH DEGAS ELITE FOR
ONLY £189.99
INCLUDING HARDWARE/SOFTWARE

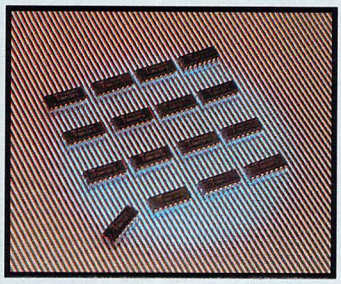




ST TIMEKEEPER

- The correct time/date every time you switch on your ST.
- Works with most GEM type applications.
- Battery backed Clock/Calender cartridge.
- On board Lithium battery for extra long life.
- Displays in 12 or 24 Hr. format.
- Comes complete with set-up disk & alarm clock utility.

ONLY £29.99



1 MEG RAM UPGRADE KIT

- 512K of FASTRAM to bring your 520 STFM up to a full 1040K!!
- Fitting is a straightforward soldering job - achieved by anyone who has a little experience.

ONLY £99.99

ALL ORDERS NORMALLY DESPATCHED WITHIN 48 HRS

HOW TO ORDER ...

BY PHONE	BY POST	FAX
0782 744707 24hr Credit Card Line	Send cheques/POs made payable to "Datel Electronics"	0782 744292 UK ORDERS POST FREE EUROPE ADD £1 OVERSEAS ADD £3

PRICES AND SPECIFICATIONS CORRECT AT TIME OF PRESS AND SUBJECT TO CHANGE WITHOUT NOTICE

CALLERS WELCOME - Please reserve goods by telephone prior to visit.

DATEL ELECTRONICS

DATEL ELECTRONICS LTD., FENTON INDUSTRIAL ESTATE
GOVAN ROAD, FENTON, STOKE-ON-TRENT, ENGLAND.

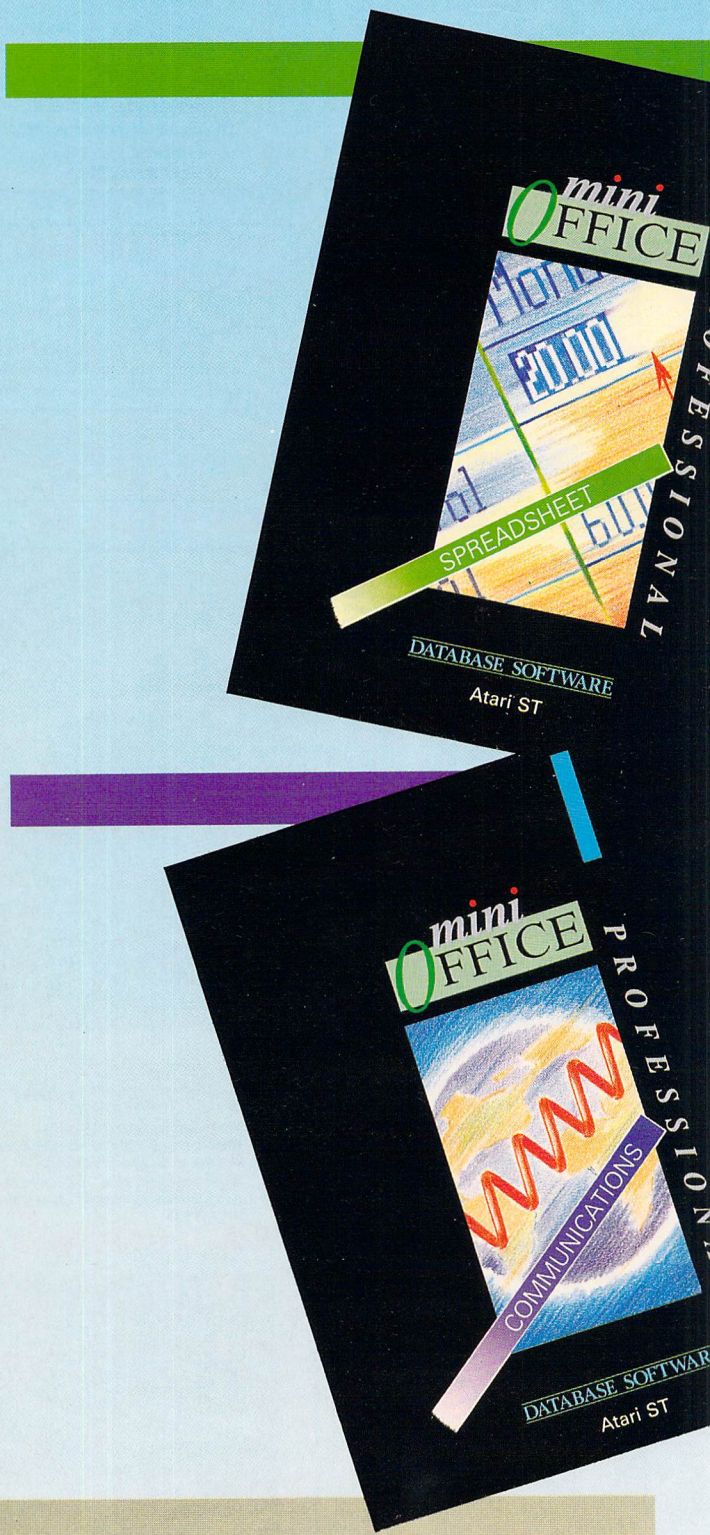
SALES ONLY	TECHNICAL ONLY
0782 744707	0782 744324

STRETCH YO

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

Each meticulously-designed module is simply bursting with features, and is both intuitive and quick to learn. It also makes the fullest use of the Gem environment with its pull-down menus, icons and dialogue boxes.

Mini Office Professional works with any Atari ST with one or more disc drives and a monochrome or colour display.



FULLY INTEGRATED

All the modules are fully integrated to maximise your efficiency – which means that you can pull graphics, spreadsheet tables and database information into the document processor – and do powerful mail merging too. You can load database files into the spreadsheet, or spreadsheet files into the database – and turn data from both into attention-grabbing charts. And any file can be sent to other micro users down your telephone line using the communications module. The opportunities are endless.

DESK ACCESSORIES

Every module comes with a set of invaluable programs which you can call up at any time. There's an all-purpose text editor, a handy memo pad, a pocket-style calculator and a set of disc utilities – enabling you to format, rename, erase, copy, show info and list directory to screen, printer or a file.

HOW MUCH?

What is even more remarkable is the PRICE – just £24.95 for each power-packed module *(Document Processor £34.95).* Start with one module – and you'll want them all. You'll be joining more than 400,000 others who have discovered that the Mini Office range has helped to revolutionise their productivity.

Coming soon:

DATABASE

Bring powerful maths functions to bear on any numeric field, perform multi-field sorts, generate customised reports, print labels...and more.

RELEASE DATE: MARCH 1989

PRESENTATION GRAPHICS

Create histograms, symbol graphs, multi-line graphs and pie charts. Use the comprehensive range of art tools for adding that final polish ... and more.

RELEASE DATE: MARCH 1989

DOCUMENT PROCESSOR

Create multiple-column documents, wrap round graphics, multi-size text, range of typefaces, spelling checker, thesaurus...and more.

RELEASE DATE: APRIL 1989

OUR ST

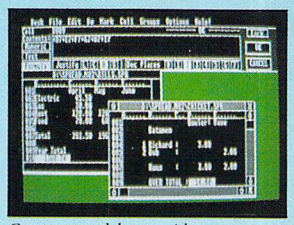
SPREADSHEET

Using your Atari ST to keep your financial affairs in order is easy with the Mini Office Professional Spreadsheet. With it you'll be able to make short work of home budgets, costings and what-if calculations. And, like all the modules, it uses the powerful Gem environment.

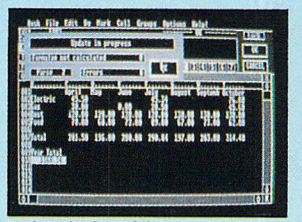
Manipulate your data – just the way you want!

Among the features at your command:

- 255 rows by 255 columns
- Columns up to 32 characters wide
- Full relative replication of formulae
- Use any currency symbol or pad character
- Align text and numbers right, left or centre
- Open up to four files at once
- Sort rows or columns and create an index for future manipulation
- Search for individual text cells
- Load Ascii, DIF files and data from the other Mini Office modules
- Create executable command files using the built-in spreadsheet programming language
- List formulae to a text file, and manipulate them in the text editor
- Print extra-large spreadsheets sideways



Create spreadsheets with ease, opening up to four files at once



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

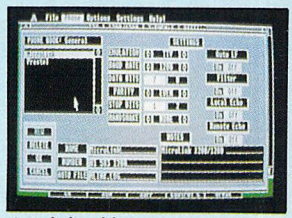
COMMUNICATIONS

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

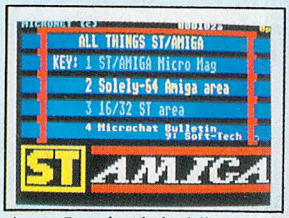
Link your Atari ST to the outside world!

Among the features at your command:

- Select your modem from the list supplied on disc – or define your own
- Supports all popular Teletype, VT52 and VT100 emulations
- Access viewdata with full-colour graphics plus mailbox editor and slideshow facility
- Create your own list of services with the autodialling phone book
- Record all your actions into a logfile while you are online
- Keep a tally of your phone calls, with all details recorded to a phone log
- Download telesoftware using Ascii, Kermit or Xmodem file transfer protocols
- Exchange any Mini Office Professional file with other users – anywhere in the world.



Autodial and log on to any service at the click of the mouse



Access Prestel with the full-colour viewdata mode

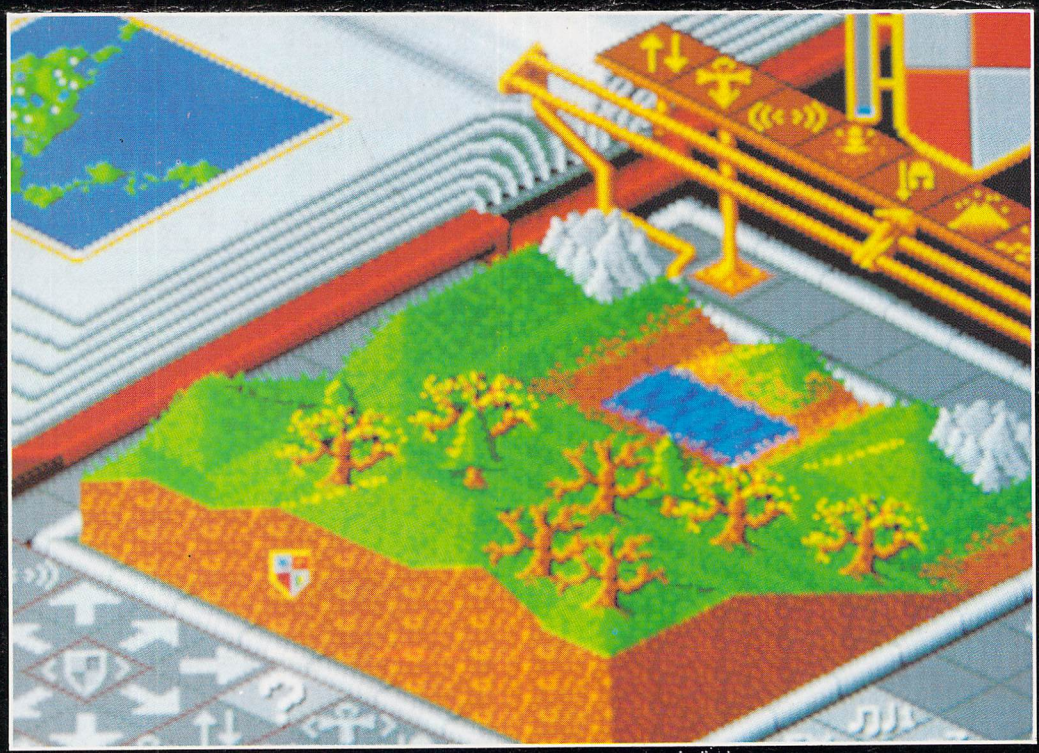
Inside every box . . . **A comprehensive wire-bound manual with tutorial section and two single-sided discs containing Mini Office module, desk accessories and example files.**

To place your order please turn to the form on Page 133

DATABASE SOFTWARE

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

Product: Populous
Price: £24.99
Supplier: Electronic Arts, 11-49 Station Road, Langley Business Centre, Langley, Berkshire SL3 8YN.
Tel: 0753 49442



Creating landscape at will . . .

Game of the

ATARI STAR USER GAME

FRUSTRATED with this dirty planet, ever wanted to play God and begin all again? Well, Electronic Arts offers you just such a chance with this outstanding new release.

Written by the Bullfrog team of Peter Molyneux, Glenn Corpes, Kevin Donkin, Andy Jones, Sean Cooper and Les Edgar, Populous stands to be undisputed game of 1989.

It is safe to say that Populous is unlike any other game you will have seen on the ST, or any other micro for that matter. It has already taken the Database offices by storm and is providing an addictive cult activity with many of our editorial staff each lunchtime.

Double disc drive owners can expect an extra surprise, as side two of the disc is filled with professionally created music to listen to at whim.

Within the game you play the role of a god in a titanic struggle between good and evil. The screen is divided into five parts and contains all the controls you'll need to impose world domination.

In the background is the Book of Worlds which shows a map of the area under conflict, while in the foreground is an elevated three dimensional plan of a chosen magnified area currently under play or scrutiny.

Command icons surround the maps and all actions are controlled by clicking with your mouse on them.

Your progress is shown by a slider on a manna bar, while specific information can be displayed on an information shield. Pictorial representation is colourful and realistic while land relief and sprite movement is fast and clean.

As a divine being you have a group of followers from whom you derive your power. The more followers you have and the greater their achievements, the more power you wield. In juxtaposition the followers of your enemy's diety are also trying to do the same.

Since there is barely enough room in the world for your own magnificence, two egocentric gods won't do. You must rid the world of the opposition and set up your kingdom here on Earth.

To do this, you will use your great power to move the earth and your devout followers to crush the misguided. However, you can act only indirectly as persuasion is the key to your people's increased faith in your deity and your consequential manna score.

As a god you are able to create and destroy land, sea and rock at will. You can coax your inhabitants to populate this landscape and build villages, towns and fortified castles. In fact at its peak the game can cater for 300 settlements on either side. The gameplay backdrops can be of a desert, grassland, tundra or mountainous type.

As your manna score increases you can call upon all kinds of natural phenomena to help your followers or thwart the machinations of your adversary. These natural occurrences can be a choice of volcanic eruptions, earthquakes, swamps, floods and even the ultimate apocalypse – Armageddon.

Your people are either walkers – who gather, settle, procreate and multiply – or a leader who acts as a high priest and is your intermediary with all others.

You can also create warrior knights who as free spirits rampage across your enemy's heartlands killing his followers and burning their buildings.

Populous gives an number of starting options, which include a superb tutorial game to allow you to get the feel of things and give you confidence by winning a few global battles.

The main conquest option consists of more than 500 fixed worlds, with each world getting progressively harder to conquer.

When you play in conquest mode, you're always the good supreme being – you can choose to be good or evil in other games. Before you enter each world, you'll get a briefing on the world's landscape, your enemy, and other helpful game information.

You'll start on Genesis, and once you have defeated the opposition you're given the name of a more challenging world.

The next world you go to depends on the final score in your previous



. . . goes with the job

gods

game. The higher it is, the more difficult a world you're given to match your skills. You must wipe out all your opponent's followers in one world before you are allowed to progress to another.

A custom option allows you to modify 60 or so of the game's parameters and, if you like, use a paint map option to design your own worlds.

Tactics and strategy are important and it will take several hours' play for you to develop your own strategy for victory. The manual gives several tips for survival and conquest and also provides more than 30 detailed answers to questions you may ask yourself as you play.

You can play the game against your ST or against a human adversary on another ST or even an Amiga. This can be achieved via a null modem cable in datalink mode or by connecting to a remote player via modems in voice mode.

These inter-micro games of Populous are very fast and exciting and add the variety that only another human can bring.

I can't think of any other game which has grabbed me as hard as Populous. It has everything and I find it very hard to think of any criticism of the product. Without hesitation I say: Go out and buy it now, you won't be disappointed.

Nic Outterside

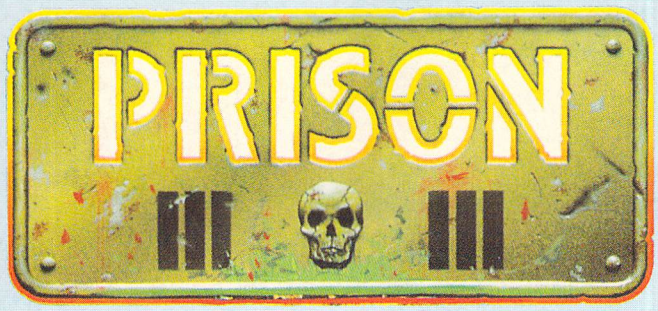
Sound	*10*
Graphics	*10*
Playability	*10*
Value for money	*10*
Overall	*10*

SECOND Sight

On the seventh day I rested... and I needed to! After six days almost constant play with Populous I was suffering from severe eyestrain and had forgotten what my bed looked like.

I have never come across a computer game with such addictive quality and such superb playability. Populous leaves all others in its wake, and I suggest you buy now before all stocks are exhausted.

Jayne West



Slow motion escape

Product: Prison
Price: £19.95
Supplier: Chrysalis, Unit 2, Willis Croft, Downs Row, Moorgate, Rotherham S6 2HD.
Tel: 0709 370102

PRISON is an arcade adventure game from a relatively new software company, Chrysalis. In it you play the part of Jag, an undercover cop who has been framed for a crime he didn't commit and sent to the prison planet Altrax from which there is no escape. Or is there?

Two years previously a pleasure craft crashed on to the planet's surface. The ship was wrecked, but no trace was found of the one-man escape pod. Your objective is to find this pod and escape from Altrax. The game loads to depict the sun rising over an alien landscape. You are transported to the planet and appear in the distance. The game then switches to the main playing screen.

A band across the top of the screen called the message tube presents information to you after executing certain actions. About half the screen is taken up by a window in which the action takes place, the bottom part being the status area showing what you are carrying, your score, escape pod status, time and so on.

The action is presented sideways. You can walk left or right and into and out of the screen providing there is a doorway. The immediate area is like a maze with one section looking pretty much like the next. As you walk off the edge of the screen or through a doorway the next screen flicks up – there's no scrolling.

Pressing the fire button and pushing forward on the joystick activates the menu system. The options available depend on the current location and what you are carrying. Your immediate requirement is to search every location for any useful object.

You'll find a plastic card pretty close to the start location, and if you travel far enough you'll come across a locked pair of doors. Insert the card to open them by choosing the appropriate option from the menu.

On the second level an alien bars the way. You have four fighting moves at your disposal and a few well timed kicks will send it packing.

I haven't progressed too far with this arcade adventure, but on later levels you'll find hidden mines and acid pools to negotiate and more alien convicts to battle with. Stooges are outcasts, and their help may be enlisted.

The graphics are superb and the animation of Jag himself is excellent. There are simple sound effects and a nice tune playing on the opening screen. The action is slow at first with little to do but wander from location to location searching for objects. As you progress things become slightly more interesting.

Prison is an interesting game with some excellent features, but I found the early game play too slow to arouse my interest in progressing further.

Roland Waddilove

Sound	*7*
Graphics	*10*
Playabiity	*7*
Value for money	*8*
Overall	*8*

SECOND Sight

Despite the colourful and well drawn graphics I found Prison rather dull – nothing to do but find one plastic card on the first level. Fighting moves are available but seemingly few opponents on which to test them. Definitely a case of try before you buy.

Janice Murray

Product: Barbarian II
Price: £19.99
Supplier: Palace, The Old Forge, 7 Caledonian Road, London N1 9DX.
Tel: 01-278 0751

BARBARIAN·II

Hack on regardless

THE original Barbarian from Palace was a smash hit in 1988 with its exciting hand-to-hand combat, superb graphics and digitised grunts, groans and clanging of sword against sword. Two features made it stand out from the crowd: The scantily clad Maria Whitaker on the box and adverts – though nothing was said of the equally scantily clad male – and the graphic depiction of the unfortunate warriors being decapitated.

In the sequel, Barbarian II, both features are retained.

Boot up the first of the three discs and you'll be presented with a picture of a dungeon with two warriors standing either side of a burning brazier. A superb digitised voice clearly says "Welcome to the dungeon of Drax. Choose your warrior".

This screen heralds the first of the changes from the original game – you can choose to be either the barbarian of the title or the Princess Mariana. I tried both, but couldn't distinguish any difference in combat ability.

After choosing your warrior, disc two is inserted to load the first level of the game. The action takes place in the middle of the screen while a large Barbarian II banner occupies the top quarter and an information strip the lower. In this a sword on top of a shield always points north and a scroll shows the current level plus your score.

Each of the first three levels consists of around 28 screens and you can walk left, right or through a cave to the next location. There's no scrolling, and each new screen flicks up fairly rapidly. The first level is the wastelands, the second is the caverns and the third the dungeon.

The object is to make your way to a certain location on one of the screens. Your first problem is to hack and slash your way through the various monsters which inhabit each screen. These include dinosaurs, furry two legged beasts, cavemen, chickens and other creatures which defy description.

Apart from the monsters, the other main obstacle is the way the screens are mapped. For instance, if you walk left off one screen you can either appear on the right of the next or at the mouth of a cave also on the right. In the heat of the battle it's very easy to become confused about which way you are facing. The sword-compass always shows which direction is north.

Objects when collected will help you seek out and destroy Drax. An axe increases your strength, a globe guards against Drax's magic, a potion increases your strength, a shield guards against the demon's fiery breath and so on.

The number of fighting moves has been reduced to four and I found that just one or two were required to kill opponents. The hard part is finding the right location to take you to the next level and the fighting takes up a smaller proportion of the action.

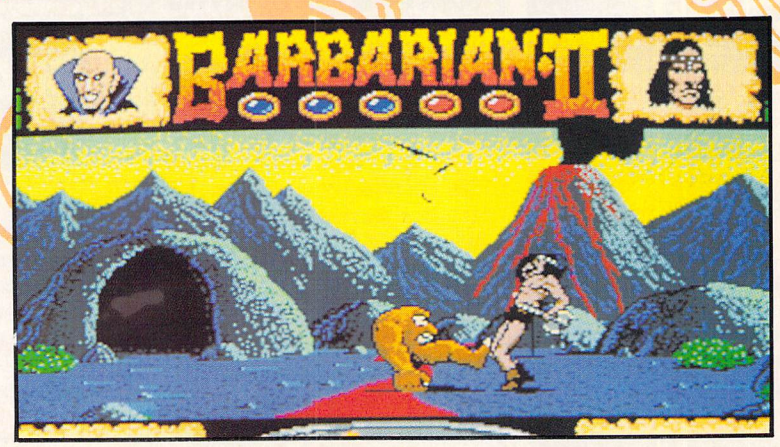
The graphics and animation are excellent – and the gory decapitation scene is still here. The digitised sound effects add to the atmosphere and the whole game is professionally produced.

Barbarian II is an excellent sequel to the original hack and slash cut-'em-up combat game as this version has more depth, better graphics and improved sound. If you liked Barbarian you'll like this too.

Roland Waddilove



Hack and slash your way to success



A bit below the belt!

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

SECOND Sight

I was disappointed by Barbarian II's lack of fighting manoeuvres – that's what made the original so good. However, I welcome the new exploring and mapping aspect, plus the collectable objects, and these features add more depth to gameplay.

If you're on the lookout for a new combat challenge Barbarian II should fit the bill quite nicely.

Janice Murray

Compumart

A Great Deal More For a Good Deal Less!

Free FAST DELIVERY

AIR MILES Travel the World



- Complete with Film, Strap and Batteries
- High quality 35mm Fujinon glass lens
- Built in flash
- Low light warning
- ISO Film speed setting
- Drop in loading

FREE
Only From Compumart...
A FUJI DL 10 CAMERA KIT
WORTH £39.99
AND
10 FREE AIR MILES
when you purchase the Atari 520 STFM Superpack
ONLY from Compumart

CREDIT TERMS AVAILABLE

Phone for other great ST deals!!

ATARI 520 STFM SUPERPACK

Buy this terrific Atari pack now and you get a 520 STFM with built-in Modulator, **1 meg. drive,** ½ meg. memory, instruction manual and a mouse with . . . .

Free 21 exciting action games WORTH £400
Free 'Organiser' integrated business software WORTH £49.99
Free Atari joystick WORTH £9.95

Only **£399**

PRINTERS

From as little as £159.85 and...

FREE
A FREE STARTER PACK with EVERY PRINTER
Only from Compumart
- 1000 sheets listing paper
- 1 EXTRA printer ribbon
- PC printer interface cable

WORTH OVER £30

CREDIT TERMS AVAILABLE

		CITIZEN 120D	PANASONIC KX-P1081	CITIZEN LSP 100	PANASONIC KX-P1082	STAR LC 10 (MONO)	STAR LC 10 (COLOUR)
PRINT	9 Pin	●	●	●	●	●	●
HEAD	24 Pin						
COLUMN	80 Col	●	●	●	●	●	●
WIDTH	132 Col						
PAPER	Friction	●	●	●	●	●	●
FEED	Tractor	●	●	●	●	●	●
PRINTER SPEED	Draft cps	120	120	175	160	144	144
	NLQ cps	25	28	30	35	36	36
INTERNAL BUFFER		4K	1K	4K	1K	4K	4K
OUR PRICE £		159.85	175.95	182.85	263.35	224.25	263.35

*NB STAR LC 10 COLOUR HAS 4 COLOUR RIBBONS WHICH PRODUCE UP TO 7 COLOURS

QUALITY BLANK DISKS

Why buy unlabelled disks when you can have branded quality at prices like these ! !

CHOOSE EITHER...

TDK. "The Specialists in Data Storage"

BASF "A Reputation Built on Reliability"

Both are certified 100% error free and offer a lifetime warranty

Prices are per box of 10 disks

	1-4 Boxes	5-9 Boxes	10 + Boxes
3.5" SS	14.84	13.69	12.54
3.5" DS	18.29	16.56	15.41

Please state type (TDK or BASF) when ordering

SUNDRIES

LISTING PAPER
2000 sheets 11" x 9½", 60gsm. £14.95

JOYSTICKS
The new 'Microblaster' joystick from REPLAY, *order today and Take Control* £12.95

MOUSE MATS
High quality Mouse Mats £5.95

DISK STORAGE
MD 70L Lockable 3½" disk storage box, holds up to 70 disks. £12.95

WITH 2 FREE 3½" DISKS

MONITORS
Philips CM8833, 14" colour £274.85
Atari SM124, 12" mono £128.80

WITH A FREE ST CABLE WORTH £12

DISK DRIVES
All 1 meg. with internal power supplies

TRIANGLE	£99
CUMANA	£99
POWER	£109

24HR ORDER HOTLINE (0509) 610444

Access VISA

Superb Service

- Usually same day despatch on most items
- FREE, next working day delivery on all hardware, allow 2-5 days for other items
- Large stocks for immediate despatch
- FAST, efficient service

Great Guarantees

- If any item proves to have a manufacturing fault within 30 days we will replace free of charge or refund in full
- After 30 days and within the warranty period, we will repair at our expense

Better Back-up

- Friendly advice and after sales support
- Any problems quickly resolved to your complete satisfaction
- Special offers to existing customers We aim to please . . . and usually do!

All prices inclusive of VAT

Prices/delivery subject to availability and only applicable to UK mainland, N. Ireland and BFPO's. E&OE
Compumart are licensed credit brokers. Simply ask for written details.

Compumart
A Great Deal More, For a Good Deal Less

COMPUMART LTD
FREEPOST (STU)
LOUGHBOROUGH
LEICS LE11 0BR
TEL: 0509 610444
FAX: 0509 610235

Elite still reigns

Product: Federation of Free Traders
Price: £29.99
Supplier: Gremlin Graphics, Alpha House, 10 Carver Street, Sheffield S1 4FS.
Tel: 0742 753423

THE scene was set five light years ago with the release of the pioneer space trading game Elite with an impressive standard for all imitators to attain.

Variations on the theme followed in the form of the excellent Starglider and Starglider 2, the superb Captain Blood and now the much vaunted Federation of Free Traders.

The sales pitch has been that FOFT would take Elite into the next generation and its release I have awaited with baited breath.

The program comes on two single sided discs with accompanying audio soundtrack cassette. It is packaged in a sturdy and colourful box with 74 page instruction manual, Quick Start reference card and a colourful poster sized guide to the space craft you are likely to meet.

The first thing that will strike you is the complex and non-sequential instruction manual which gives you no immediate indication as to how to start playing FOFT. So an in-depth perusal of the manual and Quick Start card is an essential prerequisite to play. Even then, smooth entry into the game cannot be guaranteed.

As with Elite, you adopt the role of a cadet pilot manning your father's trusty old space cruiser – in this case a Hartley MkII – as you trade your way across the galaxies seeking interstellar wealth and glory.

The game boots up with a bright and stunning loading screen which gives way after some two minutes to a scrolling credit and introductory screen, backed with haunting music by Benn Daglish.

In fact the second disc is cram packed with 20 pieces of musical accompaniment from which you can choose by pressing the Help button. They range from Vivaldi's Rites of Spring to Khatchaturian's Sabre Dance. Relax as you are flying through the galaxy to the refrains of Tchaikovsky's Dying Swan.

You are now presented with the control screen of the game, from where all actions eminate.

Your key to communication and knowledge is through the Galnet system – a sort of space age emulation of MicroLink – which provides you with valuable data and enables you to transmit and receive messages.

The Galnet will also give you information concerning your first and subsequent missions, your first being a simple escort job between two solar systems.

Trading takes on a similar role to that in Elite, but market prices fluctuate more quickly and selection of buying and selling of items is more laborious with fiddly and fancy trappings to overcome.

I suggest that when you first log into Galnet you select E for commodities and then select I for metals. If the price of silver is less than 45 buy as much as you can and begin trading on the same planet, as prices fluctuate. This is a piece of cake and should enable you to build up some capital before starting the game in earnest.

Also in Elite style, your weapons and hardware system can be upgraded as you amount more credits, with such things as plasma lasers, missiles, photon and star drives.

Navigation, flight and battle in general are very awkward and slow compared to Elite, with poor, sluggish animation – this despite overall better solid vector graphics in FOFT.

Navigation planning is made via a navigation computer which allows you to magnify a planetary system by up to seven times then select and hyperspace to the chosen system.

Two interesting and novel implementations are the damage to ship control and the in-flight computer. You can specify areas of damage to be repaired by your on-board droids and can have fun playing with your in-built computer.

However, despite these additions, Federation of Free Traders owes too much to its Elite mentor, is difficult to get into, unfriendly, slow and in the final analysis rather tedious.

I'll give it good marks for programming and implementation, but I am disappointed.

Nic Outterside

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

SECOND Sight

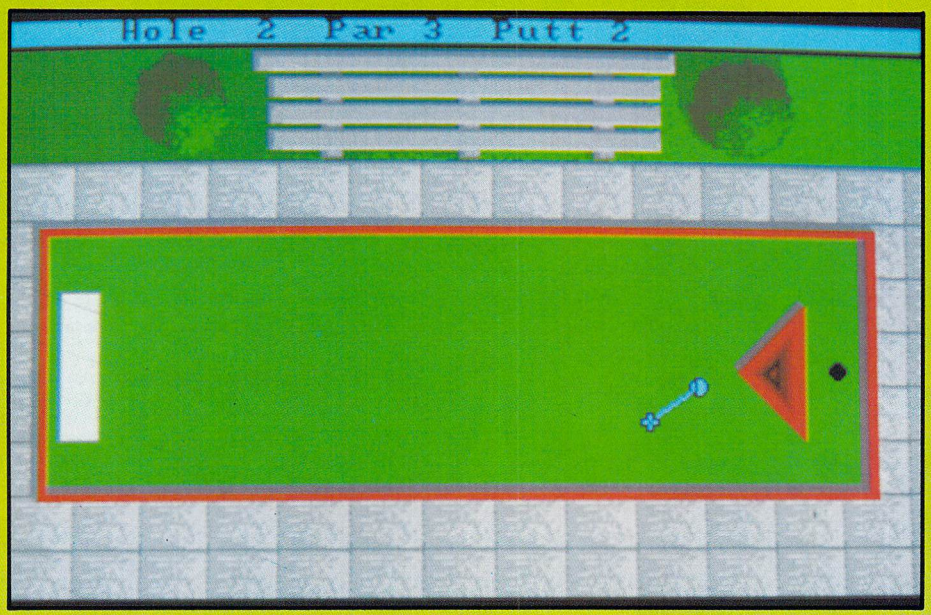
After all the pre-release advertising hype that FOFT would take Elite into the next generation, my impressions of this game can be summed up in one word: Disappointment.

Federation of Free Traders is interesting and novel in many ways, but is clumsy in operation, painfully slow and at the end of the day is nothing more than a poor cousin to the Firebird classic.

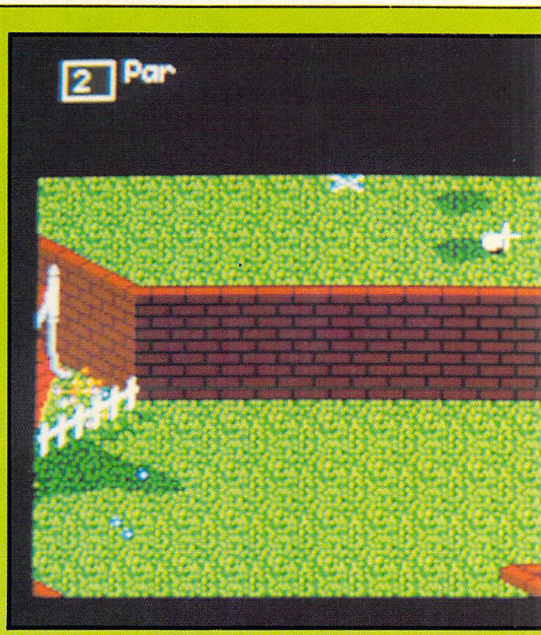
Jayne West




AGAIN AGAIN
OPERATION
HORMUZ
. . . As a result of a sneak attack, Aliens have taken the straits of Hormuz and captured essential military bases and naval shipping. You must now take part in "Operation Hormuz" to show the determination of US carrier forces to respond to land launched rocket attacks.
Available on ATARI ST, IBM PC, AMSTRAD, C64, SPECTRUM, SPECTRUM DISC, AMSTRAD DISC and C64 DISC.
AGAIN AGAIN AGAIN AGAIN AGAIN AGAIN
THE MUNSTERS
TM
The Game, based on the Television Series with Herman, Eddie, Grandpa and Lily. This is a multi-role all action arcade game with superb graphics and game play.
ENJOY IT NOW!
Available on ATARI ST, AMIGA, SPECTRUM, C64, AMSTRAD, MSX, AMSTRAD DISC and C64 DISC.
The Munsters™*
© 1964 Universal City Studios, Inc.
All rights reserved.
*A trade mark of and licensed by Universal City Studios, Inc.
AGAIN AGAIN AGAIN AGAIN AGAIN AGAIN
TRACK SUIT MANAGER
Live the match thrills with GENUINE goalkicks, corners, throwins, crunching tackles, fouls, penalties, bookings and sending offs.
You compete to qualify for the NATIONS and WORLD Cups.
Available on ATARI ST, AMIGA, SPECTRUM and C64.
AGAIN AGAIN AGAIN
Units 3-7 Baileygate
Industrial Estate
Pontefract
West Yorkshire WF8 2LN
Telex: 557994 RR DIST G
Fax: (0977) 790243
AGAIN AGAIN
C+VG HIT!
SINCLAIR CLASSIC USER



Mini Golf: Tests your ability to judge distance, speed and angles



Zany Golf: What a set of crazy, colourful obstacles

Time for a quick round

Product: Mini Golf
Price: £19.99
Supplier: Magic Bytes, Gremlin Graphics, Alpha House, 10 Carver Street, Sheffield S1 4FS.
Tel: 0742 753423

Product: Zany Golf
Price: £24.95
Supplier: Electronic Arts, 11-49 Station Road, Langley, Berkshire SL3 8YN.
Tel: 0753 49442

MINI Golf from Magic Bytes and Zany Golf from Electronic Arts are simulations for up to four players that bring that much-loved summer pastime, Crazy Golf, into your living room.

The object of Mini Golf is to tackle a series of 36 wacky holes designed to test your ability to judge distance, speed and angles. It comes on two discs, the first a beginner's course to prepare you for the more difficult holes on disc two.

To add interest and difficulty, some holes have slopes and contours. The ball acts realistically by slowing down, speeding up or being diverted from its natural path. There are also tunnels, hollow logs, sand pits and teleports to add an unpredictable element.

Each hole is displayed as a plan view. You place the ball anywhere on the tee then stretch an elastic line in the chosen direction – the longer the line the harder your stroke. Whack the ball and it will hopefully bounce its merry way into the cup.

At the top of the screen is an information bar which displays the hole, par and your number of putts. You're only allowed a certain number of putts per hole – too many and the hole's over. Options include retry your last shot, replay last shot – like a video recording – show the score card and display contours side on.

The well drawn graphics add to the atmosphere – dotted outside the playing area are bushes, benches, hotdog stands, flowing streams, rippling ponds and so on.

The courses are cleverly planned and thought out. The beginner's course is fairly easy and after one round you will probably know how to reduce your score next time. You can't use disc two until you complete the beginner's course below par.

Zany Golf presents a different interpretation of the game providing only nine holes on two discs – but what a set of crazy, colourful obstacles. Here your aim is to complete each hole in par or under.

Your score carries over to the next hole, so any shots saved can be used. But go over par in total and that's the end of the game. There's a special reward if you can finish all nine holes, but I haven't managed it yet.

Each hole loads in from disc and you get a beautifully drawn loading screen and a preview of the next hole. Sometimes there's a helpful hint on how to succeed.

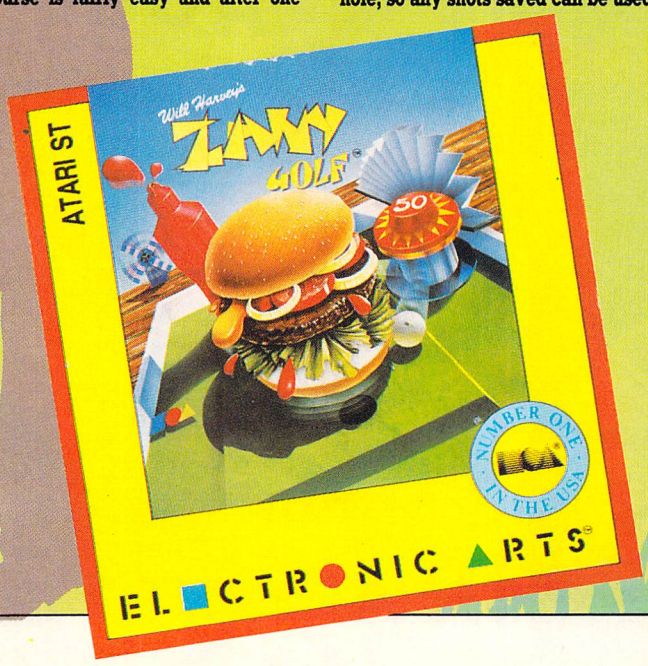
The holes are so large that you only see a small part of the playing area. To view more you have to scroll the screen by moving the mouse. To tee off you position your ball on one of three spots then stretch a line of dots behind the ball pointing in the direction you wish to go. The longer the line, the further the ball will travel.

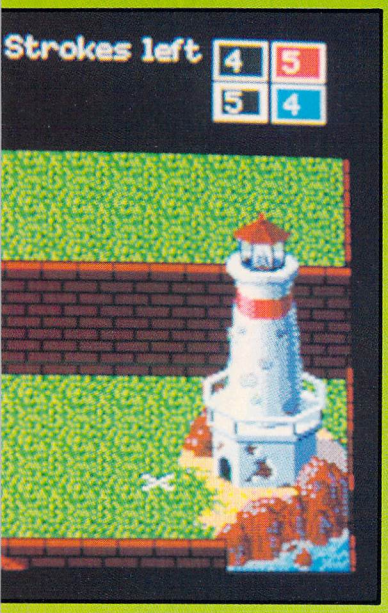
At random you are given the opportunity to gain extra strokes. You can do this by hitting a fairy sat on the course or by finishing the hole within a time limit. There are four bonus strokes to be gained using the latter, but the longer you take to finish the less you'll get.

Each hole is based on its name. For instance, Hamburger has a bouncing McDonalds' Quarter Pounder sitting on top of the hole and a ketchup bottle on your line to it. Some of the holes are arcade games in their own right – there's even one that's a pin ball table.

The graphics are outstanding, especially the small title screens preceding each hole. The animation is superb and the 3D slopes give a realistic appearance of gravity.

Both Zany and Mini golf are fun, especially when two or more people are playing. The main problem is that I soon mastered and completed all Mini Golf's holes because they are always the same. Once the angles are worked out there is little





challenge left.

Zany Golf's holes are a lot more difficult to complete. Even so, I feel the novelty would soon wear off due to continuous repetition. There should have been more holes to provide variety.

There's a case for having both games because they are so different, but if I was forced to choose I would have to go for Zany Golf. Nine screens isn't an awful lot for your money, but the graphics make up for that.

David McLachlan

Mini Golf

Sound	6
Graphics	7
Playability	9
Value for money	8
Overall	7

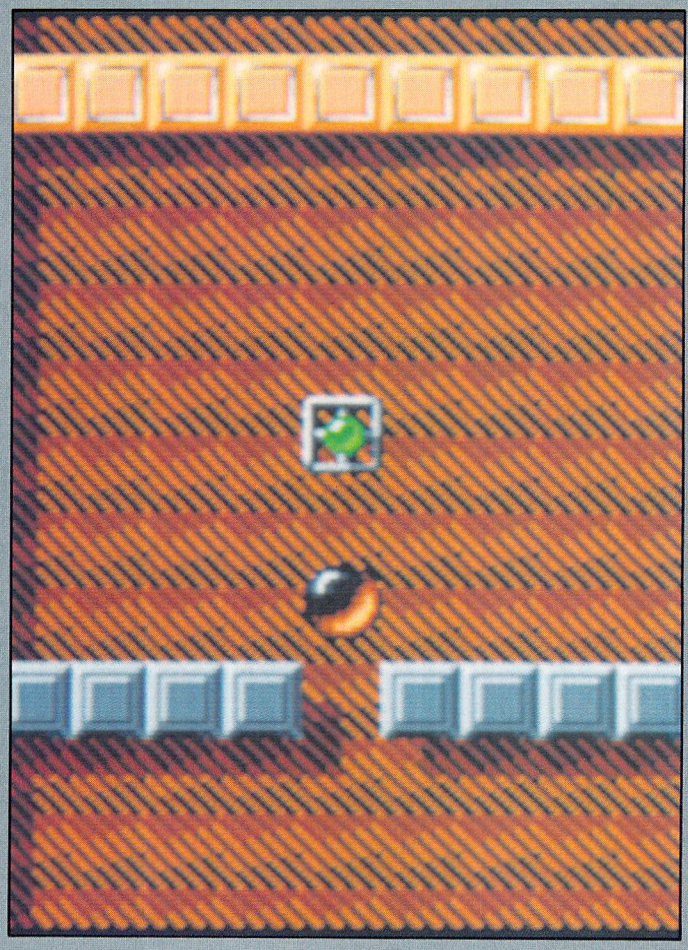
Zany Golf

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

SECOND Sight

These two golf games had everyone crowding round the ST when they were first booted up. Initially they are fun, challenging and addictive. However, because they lack variety interest soon wanes, so don't expect to be playing them a month later.

Roland Waddilove



the monitor screen, but a radar shows the full picture. It doesn't indicate the position of the bricks, unfortunately.

There doesn't appear to be a pause facility, although as there is no time limit this is not too critical and you can pause the game by capturing the ball. The action can be fast and furious, but you can plan your course of action at your leisure.

When you're dead you can start again from the last level, but alas, when you boot the game you start again at level one – there's no password.

Titan is easy to play, but difficult to master. Unless you're a real bat and ball fanatic I reckon 80 screens of this will drive you bananas.

Ian Waugh

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

Going batty

Program: Titan
Price: £19.95
Supplier: Entertainment International Ltd., Unit 4, Stannets, Laindon North Trade Centre, Basildon, Essex SS15 6DJ.
Tel: 0268 541126

THE year is 2114 and the place is Vegapolis. The game, Titan from Entertainment International. Devised by leisure genius Professor Hybris, Titan has attracted, and beaten, adventurers from all over the globe. Now it's your turn. Your joystick moves a magnetic racket which you use to control a ball bouncing round a maze shown in plan view. 80 screens each contain a variety of bricks and your mission is to complete all 80 levels by either eliminating the bricks or by hitting the exit brick with the ball.

Of course it's not quite as easy as it sounds. There are deadly skulls scattered about which can cost you lives – you start with nine, and you'll need every one. There are also coloured passages which the racket can traverse, but which the ball cannot and vice versa.

Some bricks are solid and indestructible and you can move them around the screen with your racket to block entrances to skull land. Oil slick bricks make your racket uncontrollable while other bricks allow you to pass through them a certain number of times and then they solidify.

If you move on to the Energiser brick, the positions of the racket and ball are swapped – useful for getting out from behind wrong-coloured bricks.

The first few screens are easy enough and obstacles are gradually introduced as the game progresses. Things really start to get tricky on level 11. Getting the ball to go where you want it takes a little practise, especially moving it just half a square. You can capture it if you're quick by moving on to it and pressing the fire button.

The action takes place in an area larger than



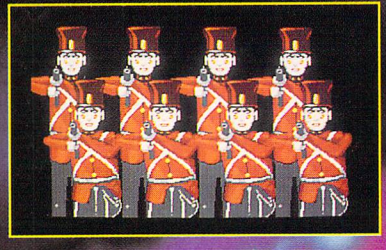
SECOND Sight

Titan's fast four-way scrolling and hectic game play made me dizzy at first. Controlling the ball is difficult and the screens are quite challenging – easy at first, but they soon become difficult. I would have liked to be able to start on any screen though.

Roland Waddilove

PERSONAL NIGHTMARE





There's something very strange going on. It's as if you are living through your worst nightmare and unable to wake up. Won't anyone let you in on the terrible secret that haunts your waking moments.

Personal Nightmare is the new brain child of HORROR SOFT. A new kind of icon-driven, animated game that has been written using the new especially developed Agos language.

Personal Nightmare is highly original using all the features of the 16-bit micro. The superb, fully animated graphics, backed by incredible sound effects come together with a highly sophisticated user interface to give total involvement of a new dimension.

Personal Nightmare will introduce you to numerous characters including:

The Landlord of the Dog and Duck
Jimmy Blandford and his attractive wife Susan
Alice Greenwoood
The local village policeman
and a host of other inhabitants who will share in your *Personal Nightmare.*

Available on AMIGA, ST & PC



Unit 3, Addison Industrial Estate, Blaydon,
Tyne & Wear NE21 4TE. Tel (091) 414 4611

Bismarck

sails again

Product: Bismark
Price: £24.95
Supplier: Mirrorsoft, 118 Southwark Street, London SE1 0SW.
Tel: 01-928 1454

ARE you gripped by the urge to take to the briny, clench your teeth around a smoking pipe and stare resolutely through the lashing rain every time you watch The Cruel Sea? Me neither, but I am tempted to indulge in a little seafaring adventure from the comfort of my own ST.

Bismarck is the latest in a long line of not so serious simulations from PSS. It recreates those fateful days which saw the destruction of HMS Hood with the loss of 1,412 lives, and the eventual sinking of the Bismark with the loss of around 2,190 men.

You can take on the role of commander of the British forces and order the hunting ships around, or take the part of Admiral Lutjens and try to take the Bismark to the safety of the South Atlantic or the port of Brest.

You can also play out a number of specific conflict scenarios, but I would only recommend them if you need the gunnery practice or you've completed the main game. Other options allow for three game speeds and three difficulty levels, all of which are difficult until you've had some practice.

It's at this point that you notice the strange control system used by the game. You can use either mouse or joystick control. The latter is by far the more responsive, but on occasions you need to use the left mouse button – the joystick fire button simulates the right button – to exit from certain functions.

The action takes place over a map of Europe and the North Atlantic. Various icons represent convoy ships and warships. An aeroplane search from the UK can be called up and will reveal the German battleship.

A weather icon produces clouds that drift across the screen as the met office tries to predict the weather. Over at the Admiralty the odd message lights up the screen.

Movement is very easy, consisting of clicking on a ship and then clicking again at the point to which you want it to sail, but as you can't see the Bismark to start with it's a problem knowing where to head for. When two ships do get close then it's battle stations and your chance to become a gunnery officer.

Finding the other ship is difficult, as it is often just a hazy blob on the murky horizon. On one occasion I rejoiced in the fact that I'd cornered the Bismark and sank five shells into her. Then I realised I'd been hammering one of my own ships. Oops, sorry boys.

While popping off shells from the one deck gun under your command you also have to man the damage control team. This consists of a deck plan and a flashing cursor. Point at a location and watch the cursor race towards it extinguishing any fires along the way.

The only other arcade section of Bismark is where you launch planes from a carrier and fly them on a rather dangerous torpedo mission. The action is 3D, but it's hard to judge when to drop the fish. As long as you keep dodging you are unlikely to be shot down – unless playing the hardest level – but ditching in the sea is an ever-present hazard.

And so the hunt continues, with the British trying to find and nail the Bismark and the Germans knocking off any innocent shipping on its way to the South Atlantic.

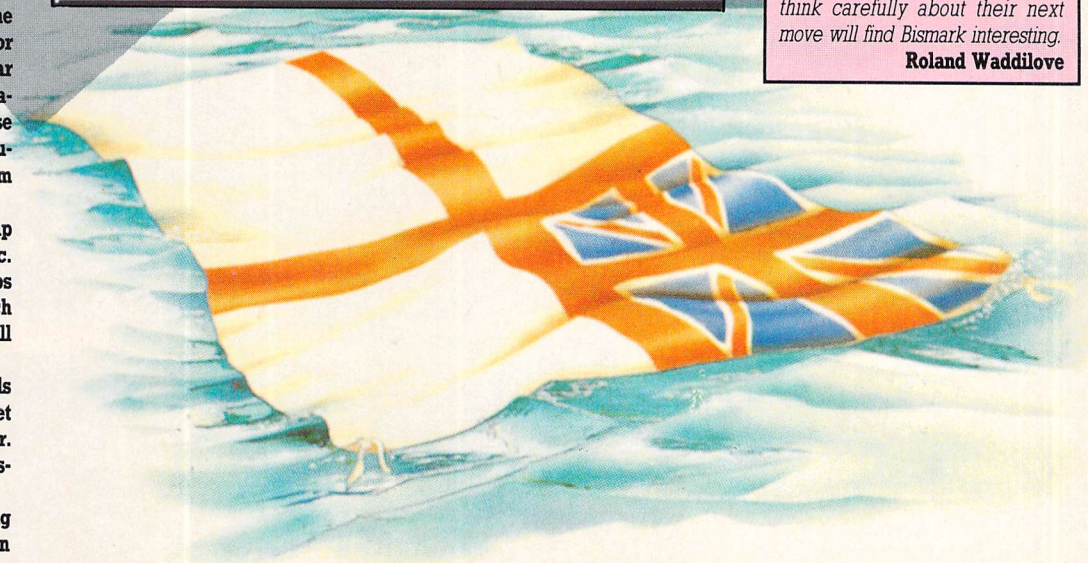
While this is not a particularly serious simulation it is rather complex. My only reservations are whether it has long term playability. This should be helped by the many game options and practice scenarios available, but I think interest will only last until you have successfully completed the mission on both sides.

Bismarck is reasonably well done, but isn't anything special. The sound effects are a little disappointing as I was hoping for sampled engine noises as well as other special effects.

With an interesting mixture of strategy and fun filled arcade sequences Bismarck is a lightweight, but nevertheless entertaining way of recreating those old John Mills war films without ever suffering all that heaving around.

Duncan Evans





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

SECOND Sight

I quite enjoyed this seafaring strategy game interspersed with arcade sequences. It won't appeal to the fast-action arcade fanatic, but those who prefer to sit back and think carefully about their next move will find Bismark interesting.

Roland Waddilove

Fun down below

Product: Operation Neptune
Price: £24.95
Supplier: Infogrames, Mitre House, Abbey Road, Enfield, Middlesex EN1 2RQ.
Tel: 01-364 0123

THE French always seem to come up with something new and original with each release. Operation Neptune from Infogrames continues the tradition with an underwater escapade that's like a breath of fresh air among some of the stale Engish titles.

You take the part of Bob Morane – a sort of Rambo, or perhaps, James Bond type of trouble shooter. Your old enemy, the Yellow Shadow, has been up to his dirty tricks again.

The underwater bases he is rapidly constructing are designed to build a series of killer robots which will be unleashed on the world to wreak havoc. When the people have been crushed and demoralised they will be unable to resist their new dictator, Mr Ming, the Yellow Shadow himself.

The world's secret services enlist your help to overcome this threat and the game starts with you being parachuted into the sea near Ming's underwater sea bases.

The game features several different arcade sections and there's also a certain amount of strategy involved to keep the old grey matter in trim. The first of these sections involves racing over the waves on a jet bike. An enemy agent soon makes an appearance and you must ram him and kick him off. The action is seen from the front and your controls are left, right and kick.

After sending Ming's agent to a watery grave you enter your mini attack submarine. The display changes to a 3D view out of the front observation port with various controls surrounding the window.

You can accelerate, brake and steer to starboard or port with the mouse or joystick. First, however, it's best to consult the map which is brought up by pointing and clicking on the appropriate control on the panel below the window.

A full screen map is drawn showing your position, Ming's bases, the energy supply lines connecting them and his undersea guard patrols. Pointing and clicking at an object brings up an information box showing what it is, its strength and so on.

Friendly bases will tell you what supplies are available should you need them, and you'll need to dock there several times during the course of the game in order to stock up with mines, fuel and oxygen.

To destroy an enemy base you must locate the repeaters in the energy supply lines connecting it to the other bases and mine them. Using the map you can pinpoint an energy repeater and either navigate to it manually by flicking back to the 3D submarine mode or by setting the automatic pilot.

The disadvantage of manual operation is that you must steer round or blast the rocks and mines. The automatic pilot will navigate round these, but won't take the most direct route wasting time and fuel.

When you get to the repeater you can point and click at the control to drop a time bomb and set the timer. Unfortunately, this method isn't too accurate, as water currents may move it. The best way is to don your wetsuit and take it by hand.

Clicking on the frogman control shows you walking towards the airlock complete with wetsuit on, stepping in then dropping out of the bottom of the sub. The screen changes to an exterior view of the sub just above the sea bed. Swimming right you soon come across the repeater. After dropping a mine you head back to the sub.

Naturally, it's not that simple, and guard patrols soon track you down and attempt to impale you on the end of spears. Watch out for Jaws as he makes his hungry appearance.

When a base is destroyed a shadowy Ming's face appears on the screen. The more bases you destroy the clearer his face becomes.

While you're busy disrupting energy lines Ming is constructing new bases and establishing more lines. The harder the difficulty level selected at the start of the game, the faster he builds them.

As you approach each base its guards will launch an attack. You can drop electronic decoys to put them off your scent, or you can choose to battle it out by donning your wetsuit and jumping aboard your undersea scooter. Scooter battles are in 3D with the viewpoint just behind yourself swimming into the screen.

The quality of the graphics is excellent, the sound is good and the gameplay is quite varied. After a few confusing moments getting to grips with the game I found it quite addictive – a sort of underwater Elite or Starglider.

The only criticism I can make is that there aren't any points to be won. You either succeed or fail in your mission to destroy Ming. That aside, it is a superb game.

Roland Waddilove

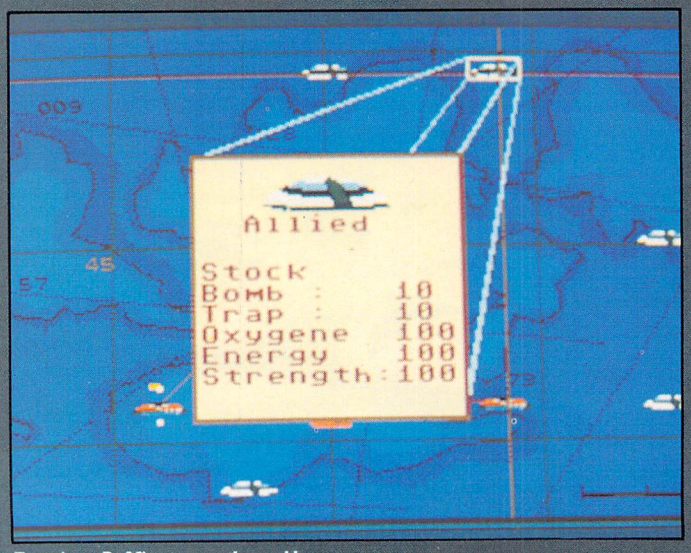
Sound	*9*
Graphics	*10*
Playability	*10*
Value for money	*9*
Overall	*9*

SECOND Sight

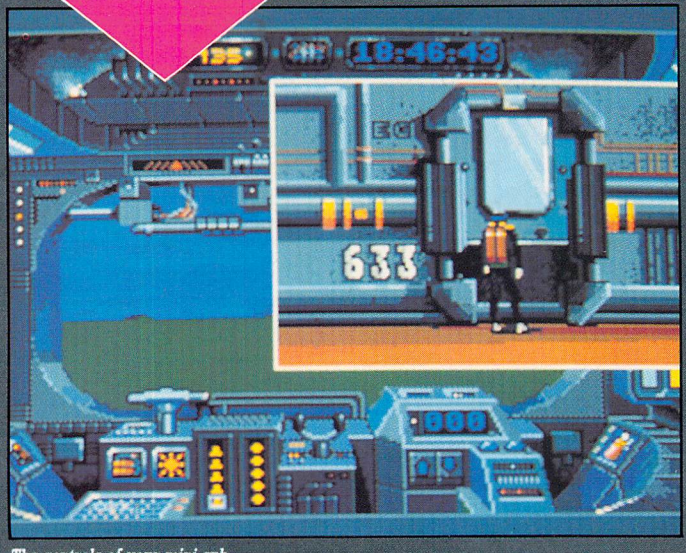
Operation Neptune is another winner from across the Channel. Several different sub-games come together to make a highly entertaining piece of software.

Each game can last anything from 15 minutes to an hour or more depending on the difficulty level so I would have liked to see a save game facility. However, I can still thoroughly recommend it.

Janice Murray



Home in on Dr Ming to save the world



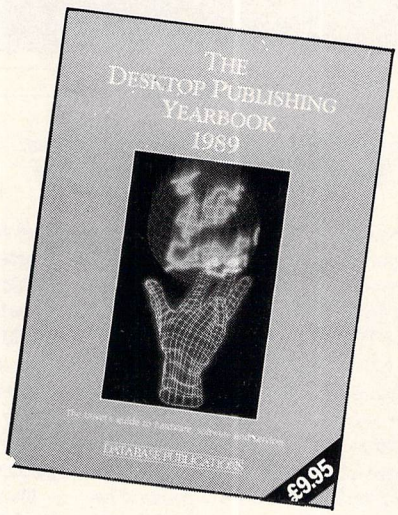
The controls of your mini sub

EVERYTHING YOU NEED TO KNOW ABOUT DESKTOP PUBLISHING

ONLY £9.95

The Desktop Publishing Yearbook 1989 is an invaluable buyer's guide containing the most detailed survey available of hardware, software and services in the electronic publishing field.

And there are clearly-written "how-to" articles for both the newcomer to Desktop Publishing and the experienced user.



Articles cover single-user and multi-user publishing systems, publishing software, laser and other electronic printers, matrix printers, digitisers and scanners, computer typesetting, magazine and newspaper composition, documents and forms creation, bureau services, word processors, and many other key topics.

Whether you're a beginner or professional and would like to find out more about the exciting possibilities of DTP, then this book has all the information you need. Send for your copy today!

TO ORDER YOUR COPY, PLEASE USE THE FORM ON PAGE 133

LASER C

Zero to Sieve in 5 Seconds! Laser C is fast, really fast!

Whether you're an ameteur or professional, Laser C is the right C language development system for you. Laser C has everything you need to develop commercial grade applications or desk accessories for the ST. Quantum Paint Gold, Mouse Music & Dungeon Master from FTL games are just a few of the large number of commercial programs written with Laser C development system.

	Laser C			Mark Williams C v3.0		
	Compile/ Link	Run	Error	Compile/ Link	Run	Error
Hello.c	2.43	—	—	15.98	—	—
Apskel.c	8.88	—	—	26.5	—	—
Sieve.c	4.59	2.45	—	23.9	2.77	—
AES	35.6	—	—	103	—	—
Savage	6.31	36.4	1.73×10^{-10}	30.82	83.0	1.18×10^{-7}

The all new Laser C version 2 is available from **Power Computing** for just £149.95 inc.

LASER DB

Laser DB - Just in! Now you can view your source code while it runs with the powerful new source level debugger from Megamax. Only £39.95 inc. from **Power Computing**!

To find out more about Megamax Laser products for the ST or to order, contact the big new name in ST software distribution.

POWER HOUSE DIRECT 0234 273000

ORDERS ONLY 800 581 742
GENERAL ENQ. 0234-273000
Callers & Mail to:
44A STANLEY STREET
BEDFORD
MK41 7RW

EXISTING Megamax C owners please contact us for upgrade path.

Scroll on as before

Product: Thunderwing
Price: £19.95
Supplier: Artronic, 1-3 Haywra Crescent, Harrogate HG1 5BG.
Tel: 0423 525325

JUST when you thought it was safe to go for a scroll, Thunderwing from Artronic is here. The question is, just how many vertically scrolling shoot-'em-ups does the world need? Fine, if each new one is an advance on the previous standard. Pity that Thunderwing is something of a step sideways, if not backwards.

You are the rebel leader charged with stealing the Thunderwing, the latest urban fighter. Your mission is to escape from the city and free your people.

The game features an infinite number of levels, some of them quite different. The difficulty increases as you play, so it looks like an impossible mission – you are never going to get out of that city.

Various attack waves stream in from all sides on a reduced width vertically scrolling screen. There are moving ground-based tanks, large armoured cars and fixed defence emplacements that require a number of hits to destroy.

If you shoot down a red attack wave an F icon floats across the screen. Collect this and your firepower is tripled. Destroying other waves bring extra life and Disruptor icons. You get three Disruptors and when you activate one a stream of blobs circle around your fighter at high speed destroying anything they touch.

I like shoot-'em-ups and I don't need much of an excuse to down tools and start blasting, but Thunderwing lacks that spark of originality that makes a game interesting.

The graphics are reasonable but not impressive, and the sound effects are OK but not spectacular. It is reasonably challenging on the later levels, but I was disappointed to find it much the same as any other vertical scroller.

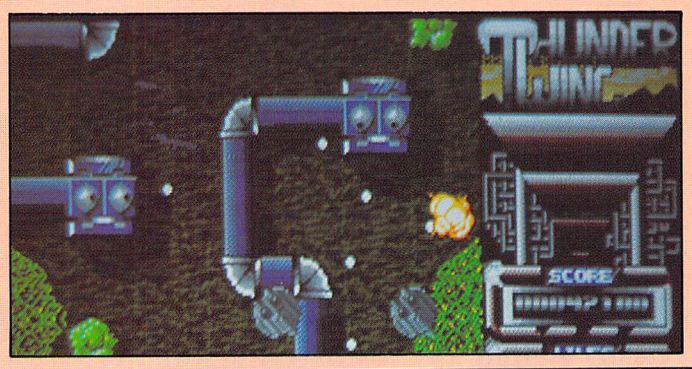
Duncan Evans

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

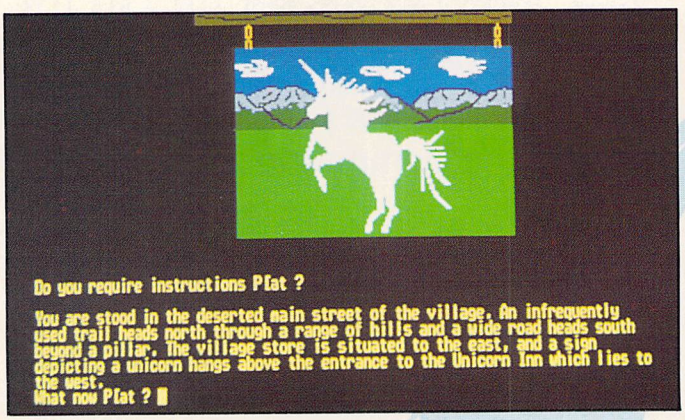
SECOND Sight

In this vertically scrolling shoot-'em-up you control a fighter plane flying over a city blasting the local inhabitants to smithereens. Sounds familiar? You bet. I've played half a dozen similar games in as many months. Software houses: Can we have something a bit different please?

Roland Waddilove



Adventure survives its plot



Program: Blackscar Mountain
Price: £14.95
Supplier: Titan Games, 45 Windmill Lane, Worksop, Nottinghamshire S80 2SQ.
Tel: 0909 483017

WE are now beginning to see some of the first fruits of Incentive's excellent adventure generation program, STAC, a package being increasingly used by authors to produce commercially marketable home-grown adventures. One such game is Blackscar Mountain from Titan Games.

The rather jaded plot is yet another of those wicked wizard and malign minions versus bold adventurer stories. To compensate, the author has a good eye for detail and manages to whip up an atmospheric tale.

Blackscar Mountain broods over the kingdom of Zamara and was so named because it was rent in two by a huge chasm.

This phenomenon had been brought about by an insane wizard meddling with forbidden forces. The results left him a mindless zombie and the mountain badly scarred. Evil forces now inhabit the mountain and are forever visiting their malevolence on the surrounding area. It is believed that the finding and destruction of a lost crystal skull would free the world once and for all.

All the instructions and background are built into this text and graphics adventure. The game accepts the usual verb-noun form of input, but more complex commands are possible and multiple orders can be given by the use of And, Then, All and It.

An invaluable ram save and load feature is included, the graphics can be toggled on and off, an Oops command lets you backstep and there is a choice of 40 or 80 column text mode. There are 412 points to be scored in Blackscar Mountain, many of which can be earned by solving puzzles.

You begin in the main street with 45 crowns. Check out the pillar to the south. A nearby shop has a number of items for sale, including an axe, mallet, nails, lantern, book and shield, but your initial cash isn't enough to buy them all.

The landlord of the tavern across the street doesn't object when you make off with some of his furnishings. A weary warrior supping ale has something to sell, but you're unlikely to be able to meet the price. The landlord has something cheaper on offer.

A search of a graveyard pays dividends, though you might wonder what you can do with what you find there. Not far away, you'll meet with the first challenges – how to open a coffin without getting your neck chewed up and how to find a password that will allow you past a pair of orcs.

There are about 87 locations, some of which are illustrated. The graphics are smallish and simple and some are used more than once but the text is well-written and fairly meaty. I haven't made much progress, mainly due to the difficult puzzles.

Blackscar Mountain looks to be good fare despite the familiar plot, and although the asking price seems a shade high, it is worth trying.

Bob Chappell

Presentation	*8*
Atmosphere	*7*
Puzzlement	*6*
Value for money	*6*
Overall	*7*

SECOND Sight

Blackscar Mountain isn't quite budget priced, but is still fairly cheap. It's a fair attempt at the traditional adventure scenario using the STAC adventure creator. The text is atmospheric and the puzzles are sometimes tough.

Roland Waddilove

COMPUTER CROSSWORDS

EXCLUSIVE FROM AKOM LIMITED

Featuring

THE TIMES Volumes 1, 2, 3 & Jubilee Puzzles 1932-87

and

The Sun Volumes 1, 2, 3 & 4

Prices of software are as follows:-
For Amstrad 5¼", IBM 5¼", IBM 3½", Archimedes, Atari ST
Times discs are £19.95, Sun discs are £18.95
For Amstrad 3", RM Nimbus 3½", BBC 3½", Electron +3, Master 128 ADFS
Times discs are £18.95, Sun discs are £17.95
For Spectrum +3, BBC DFS 40, DFS 80
Times discs are £16.95, Sun discs are £15.95
For all Acorn, Spectrum, Amstrad cassette systems
Times cassettes are £9.95, Sun cassettes are £7.95
Prices include postage, packing and VAT (£1 surcharge ex UK)

Please send me:
The Times Computer Crosswords Volume(s).....
The Times Jubilee Puzzles 1932-1987.....
The Sun Computer Crosswords Volume(s) .....
my system is: (delete as appropriate) IBM/Amstrad/BBC/Spectrum/Atari ST/Nimbus/disc/cassette/3"/3½"/5¼"
Computer model (details) .....
Name:_____
(BLOCK CAPITALS)
Address:_____
_____Postcode_____Tel_____
I enclose cheque/postal order for £_____(payable to):

AKOM LIMITED 51 MANOR LANE, LONDON SE13 5QW TEL: 01-852 4575

TWO WAYS TO ENSURE YOU GET

ATARI ST USER

EVERY MONTH

1. Complete and mail subscription form on Page 133
2. Hand this form to your newsagent.

Please reserve me a copy of Atari ST User magazine every month until further notice.

☐ I will collect
☐ I would like it delivered to my home.

Name _____

Address _____

_____

_____

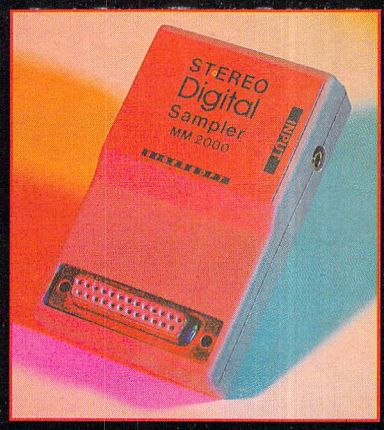
Note to newsagent: Atari ST User should be obtainable from your local wholesaler, or contact Circulation Manager on 0424 430422

PRO SOUND DESIGNER

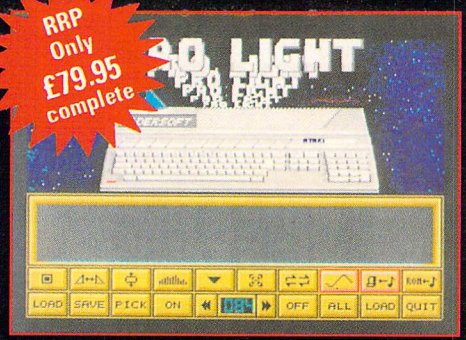
GOLD

The All New Hi-Tech Sampling System

Pro Sound Designer Gold is one of the most Advanced ST Sound Sampling System's available*. The PSD Gold system consists of three separate modules for sampling, midi replay and sound to light effects! Pro Sound Gold also comes complete with all leads (no batteries required.) and all the software you will need to start Sampling!!



RRP Only £79.95 complete



Pro Sound Designer
- 1-30Khz • Filtering
- 1 Channel Playback
- 8 Sample Buffers
- Atari Speaker Play
- Auto Play/Record
- Full Editing Effects
- File Compression
- Real time monitor
- MM1000 Hi-Fi Digital Sampler Unit +++

Pro Midi
- 10 Instrument banks
- Midi Channel & Frequency switches
- Mouse or Midi Keyboard

Pro Light
- Superb Sound to Light effects!
- Great for parties & Special occasions



Available by mail order or from your dealer



A Complete Pack

The PSD system also includes full programmer's utilities, a sound chip editor and virtually everything you will need to experiment with sound on your ST. The new pack also includes a **"How to Sample Cassette"!**

POWER HOUSE DIRECT 0234 273000

• Other than Mouse Music the revolutionary 4 channel sampling and midi system! See our other advertisements for full details or call for a full information pack on all our music products.

MAIL ORDER HOTLINE 800 581 742
(Existing PSD owners Upgrade to Gold £25)

EIDERSOFT

EIDERSOFT products are produced by POWER COMPUTING 0234 273000

Go better on a budget

Product: Go-Moku/Renju
Price: £24.95
Supplier: Atari, Unit 3-7, Baileygate Industrial Estate, Pontefract, West Yorkshire.
Tel 0977 797777

GO was invented in China more than 3,000 years ago and taken to Japan in the seventh century AD. Samurai warriors played it to while away the time between battles. Go-Moku from Atari is a variation on the original game and is much simpler to play. The basic idea is to place five stones in a row without being blocked by the other player. Due to the inherent advantage of playing black and therefore making the first move, Go-Renju provides a further variation which restricts some moves for black.

You can play either version head to head with another player, the computer against itself or one player against the computer. The program also has a library of opening moves which it can invoke at will depending upon the skill level in operation.

Several options are available such as Advise Move which asks the computer to act accordingly. Also available is an option to step backwards through previous moves enabling you to check and record various plays.

Both game variations have 10 different levels of play from rank beginner to expert. The board size can also be selected for Go-Moku.

An option is also available which shows the various moves considered by the ST before it plays a stone. This is of limited value as its speed of thought often causes rapid flashing on the screen which is too fast to follow. However, you can interrupt the ST during thinking and force the best move found so far.

The book openings available to the computer can be viewed and any particularly uncomfortable offerings disabled. However, this feature is not available in the easier game of Go-Moku.

All options are available from the menu and pressing the Help key shows alternative keyboard commands. I was extremely disappointed with the graphic presentation, consisting of a simple black and white display which, although functional, is unattractive and reminiscent of PD offerings.

Why on earth couldn't a little splash of colour have been included? Even giving the board a traditional wooden appearance would enhance the product considerably.

Go-Moku/Renju is a prime example of a game which translates well on to the computer. What a pity Atari couldn't be bothered spending some time thinking about visual attraction. I was also disappointed to find that the traditional game of Go was not included although that together with Backgammon and Bridge are available separately.

While the game is fun to play, easy to learn, but frustratingly difficult to win, it is not worth a £25 price tag, I'd like to see it on a budget label.

Pat Winstanley

SECOND Sight

Go-Moku/Renju is a well written conversion of an ancient board game. The wide variety of skill levels makes it challenging to all abilities. My only criticisms are that it is overpriced and little effort has been put into the graphics. Apart from that, it's fine.

Roland Waddilove

Sound	*n/a*
Graphics	*4*
Playability	*7*
Value for money	*4*
Overall	*5*

Not so hot rod

Product: LED Storm
Price: £19.99
Supplier: US Gold, Units 2/3, Holford Way, Holford, Birmingham B6 7AX.
Tel: 021-356 3388

LED STORM from US Gold is a highly competitive race game featuring non-stop high speed action from beginning to end – or so the publicity handout I received with the game proclaimed. Unfortunately, as is so often the case, the product didn't quite live up to the hype.

LED Storm is a conversion of yet another arcade car chase game, but one which seems to have very little of the appeal or sophistication of the current trend for real-time 3D graphics.

Instead the left hand portion of the screen shows a simple overhead view of the car's progress on a vertically scrolling background, while the right hand portion is taken up with a couple of speed and energy gauges – the latter seems to deplete alarmingly quickly.

Your car's speed and direction are controlled by moving the joystick left, right, forward or backward, and fire operates a kind of turbo boost which enables the car to fly over small obstacles or gaps in the road. You can also use this facility to jump up and grab floating energy tablets without which you will very soon run out of power.

The aim of the game is to get from the start to the finish on each of nine progressively harder stages through various terrains and with assorted obstacles and dangers in your path. Obstacles vary from level to level, but apart from the vehicles, grease and oil spillage on the roads you'll find some more unusual types such as dinosaur bones and frogs which attach to the rear of your car and prevent you from jumping.

You must also watch out for signposts indicating the correct route, and be ready to jump into the air to clear breaks in the road. You have no weaponry at all which makes something of a change and also makes the game rather tricky on some of the later levels.

The game lacks any real degree of addictiveness. You move your car about, you avoid the things you should avoid – and very often you also end up avoiding the things you should be collecting – but that's about it. There's no real thrill or enticement to play again, and I found I quickly tired of the regularity of my own destruction. Even the sound effects were dull.

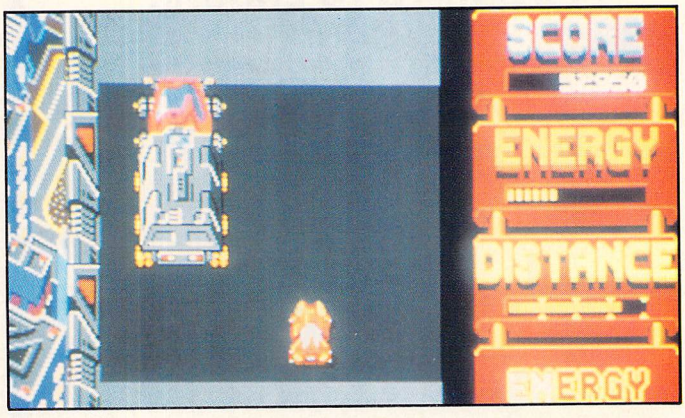
On the whole not overly recommended unless you want a fairly tame car race game to while away a few quiet minutes one evening. Perhaps a good contender for a budget title, but a little too expensive for my taste at £19.99.

André Willey

SECOND Sight

Another vertical scroller – yawn. I do enjoy a good car racing game, but this didn't really fire my imagination or grab my attention. It's an OK sort of game, but nothing special. I'd suggest trying it before buying.

Janice Murray



Sound	*4*
Graphics	*6*
Playability	*5*
Value for money	*4*
Overall	*5*

INVEST WITH PRO-PUNTER

Pro-Punter

* NOW, you can turn your Atari ST into an expert racing adviser.
* PRO-PUNTER is a sophisticated, disc-based expert computer system for home micros which ACCURATELY interprets horse racing form.
* In extensive trials over both FLAT AND NATIONAL HUNT seasons:
  57% of horses top-rated by PRO-PUNTER won, representing an average post-tax PROFIT per race of 80% of capital invested.
  85% of winners came from within the top three rated, representing an average post-tax PROFIT per race of 18%, all three backed.
* Researched and developed over three years, PRO-PUNTER uses information from the racing press and analyses ALL major aspects of racing form.
* Produces a RACE FORECAST, generates a COMPUTER S.P., highlights good and poor VALUE BETS and OFFERS INVESTMENT ADVICE.
* PRO-PUNTER adjusts automatically to the race under analysis. You don't need to be an expert yourself.
* Since its launch in May 1987, proofing to the racing press has resulted in a profit in excess of 90 level-stake points over 100 races and a strike-rate in excess of 50%.
* Available now for the Atari ST and BBC, AMSTRAD PCW, CPC 6128 & IBM Compatibles.

***PRICE £57.50 including VAT, P&P (please specify machine). Orders and enquiries to:**

DGA SOFTWARE, PO BOX 36,
ASHTON-UNDER-LYNE, LANCS. OL7 9AJ
Telephone: 061-330 0184

VISA

R P M
COMPUTER SUPPLIES

Afterburner	£13.50	Mini Golf	£17.45
Arena	£10.50	Motor Massacre	£17.49
Baal	£22.45	Munsters	£17.49
Batman	£17.45	North Star	£9.50
Black Orchid	£17.49	Not a Penny More	£10.50
Bounce Out	£17.45	Paintworks	£12.50
Championship Baseball	£10.50	Plunder Hearts	£12.50
Championship Wrestling	£9.50	Purple Saturn Day	£22.45
Chuckie Egg	£17.45	Q Ball	£9.50
Colossus Chess X	£22.49	Question of Sport	£17.49
Crazy Cars II	£17.45	Rambo III	£17.45
Deflex Tor	£9.50	Rana Rama	£9.50
Double Dragon	£14.75	Real Ghost Busters	£22.45
Dragon Ninja	£17.45	Robocop	£17.45
Dragon Scape	£14.95	S.D.I.	£10.50
Driller	£22.45	Silicon Dreams	£10.50
F15 Strike Eagle	£10.50	Sorceror Lord	£22.45
Falcon	£22.49	Spiderman	£10.50
Freedom	£17.45	Spitting Image	£17.45
Fusion	£22.45	Spy v Spy I	£9.50
GBA Championship B/Ball	£10.50	Star Wars	£9.50
Hardball	£9.50	Strip Poker	£9.50
Indiana Jones	£9.50	Super Huey	£10.50
Indoor Sports	£10.50	Superman	£22.45
International karate	£10.50	Swooper	£10.50
Leisure Suite Larry II	£18.00	The Enforcer	£9.50
Little Computer People	£10.50	The Gambler	£9.50
Live and Let Die	£17.45	The Grail	£17.45
Livingstone I Presume	£9.50	Track Suit Manager	£17.45
Manhattan Dealer	£13.50	Typhoon	£9.50
Manhunter	£24.95	WEC Le mans	£17.45
Masters of the Universe	£9.50	Zany Golf	£22.45
Menace	£19.45		

Send SAE for large list of software in various formats

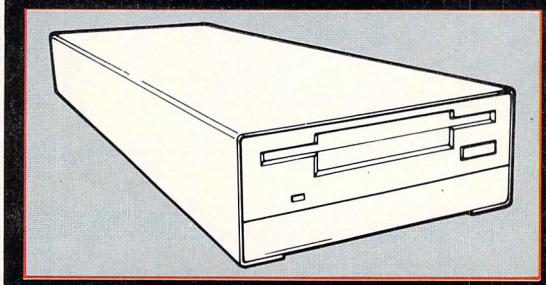
Send orders with cheque or postal order to:

R.P.M. COMPUTER SERVICES
384 Kingsland Road, London E8

OR leave your Name, address, phone No. + credit card No. & expiry date on our answering service in office hours.
Call 01-531 5190
P&P inc. UK, elsewhere in the Universe add £2.00

POWER HOUSE DIRECT 0234 273000

DISK DRIVES

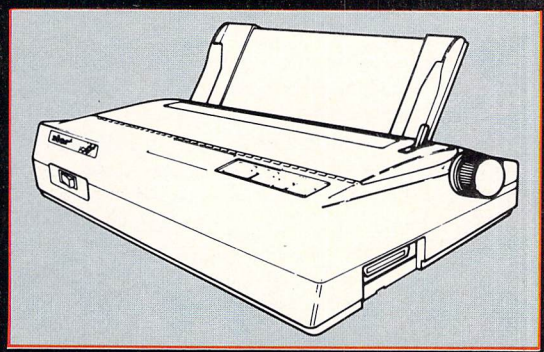


From £75.00

All Disk Drives come complete with thru' port and on/off switch

STAR LC-10 PRINTER

Other NEC and Star printers available – please call

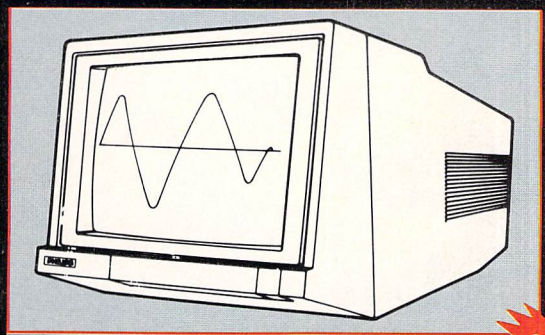


Superb quality 9-pin dot-matrix printer.
Epson & IBM Compatible

Mono Printer £199.00
Colour Printer £249.00

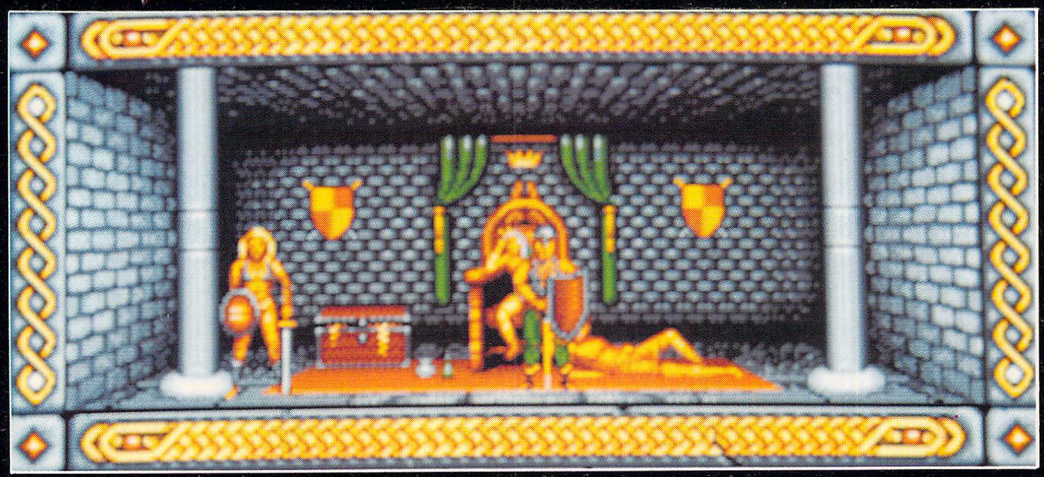
COLOUR MONITORS

All Monitors supplied with free lead to ST or Amiga. State which



Philips CM8833 Colour Monitor £225.00

GALDREGONS DOMAIN



Program: Galdregons Domain
Price: £19.95
Supplier: Pandora, Mercury House, Calleva House, Aldermaston, Berkshire RG7 4QW.
Tel: 07356 77421

CAST as a barbarian, you have been asked to recover the five gems of Zator and return them to King Rohan before the evil wizard Azazael can get his malign mitts on them. That's the basic plot of Galdregon's Domain, a mouse-driven graphic adventure from Pandora.

The main part of the screen shows

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

In the best possible taste..

HOW's your erotic potential these days? Had any sweet languishings travelling up your spine? Possibly your brain has been boiling with all that ambient eroticism that surrounds us? Surely you've been applying the three laws of eroticism as part of your daily routine?

In case you think I'm several bricks short of a load, let me explain. I've just been reading the manual that comes with Emmanuelle, a new graphic adventure originating in France.

The game is all about enhancing your amorous abilities and such terms as those I've used above are liberally sprinkled around the play guide. Now you might think that this is a game aimed strictly at adults, but let me tell you that despite its dubious morality and attempts to titillate, Emmanuelle is not so much soft porn as a rather schoolboyish effort at combining sex and adventure.

Beginning in Rio, you have to track down Emmanuelle and get on the plane with her when she flies back to Europe.

In order to succeed with this femme fatale, you have to spend a fair bit of time building up your erotic potential by chatting up women and generally endeavouring to seduce anything that moves. A man named Mario can assist by letting you into the secrets of the three laws of eroticism.

Much of the game is spent travelling to and from airports, visiting Salvador de Bahia, Iguacu, Rio de Janeiro and Manaus. Virtually the whole adventure involves dialogues with various people you'll meet, aimed at obtaining information or showing how virile you are.

In hotels, you can talk to the doorman, bartender, or any females having a drink, or nip up in the lift and play at being a Peeping Tom by spying though the keyholes of the hotel bedrooms. A casino gives you the chance to earn some cash.

Down on the beach you may well have an opportunity of seeing Emmanuelle in her birthday suit while elsewhere two silhouettes on a blind provide futher titillation. Board a yacht and you might just cop a bottle of artificial aphrodisiac for your trouble; while diving into the sea from a cliff may earn you a small statue, all necessary for completing the game.

The game is played with the mouse, pointing and clicking on places and people on the screen. Clicking on a certain location usually takes you straight there. Multi-optioned speech and thought bubbles allow you to determine your approach to a situation.

Graphically the game is quite impressive and there are some good atmospheric picures, but quality of plot, sound, puzzlement and interaction don't always match up.

Bob Chappell





a three dimensional picture of your current location. Immediately below is a one-line horizontally scrolling message window. The lower part of the screen contains direction and game icons. Clicking on the East or West compass icons executes a 90 degree turn, whereas clicking on the North or South icons lets you walk forwards or backwards.

The game icon brings up a display in the centre panel. This includes status, combat, potions, scrolls and the commands open, close, lock, unlock, talk, buy ale, run, teleport, buy healing, load and save a game.

A separate screen called up by the right mouse button provides an impressive large-scale inventory display. Using the mouse, you can swap items between the current location and your backpack. You can also feed, dress and arm your character.

Galdregons Domain bears some similarities to Dungeon Master, particularly in the early stages where you trudge through what appears to be an endless dungeon maze. Characters pop up at random and sometimes a room can be crowded with them. They don't have much to say and their responses are terse and repetitive.

Object finding and collecting is not handled very well. When you enter a room containing an item the object indicator on the status display is highlighted, but only if you have already called up that display using the game icon. You then have to call up the inventory screen in order to collect the item.

Combat is initiated by selecting a weapon from a list and clicking on the character you wish to fight. No signs of battle are seen, but a single repeated grunt is heard. When a character is killed you have to access the inventory screen to see if he was carrying anything.

There are hundreds of locations, although many are the same. Once outside the dungeons a map is available and you'll get to visit such places as the labyrinth of the Medusa, the Caves of Doom, the Forset of Elves and the Assassins Guild.

Strongest point is the graphics which are colourful, detailed and eye-catchingly drawn. Gameplay is a bit of a letdown – you spend a great deal of time tramping around a large landscape with not much in the way of incident except randomly generated creatures to fight.

There are very few sound effects – gulp of food, grunt of combat – but no animation. Although the game is attractively presented, there didn't seem an awful lot in it.

Bob Chappell

Sound	3
Graphics	7
Playability	5
Value for money	6
Overall	6

SECOND Sight

Galdregon's Domain strikes me as a cousin of Dungeon Master. It's interesting and graphically quite attractive, but for me doesn't quite have its relative's addictiveness. However, I'll just have one more go...

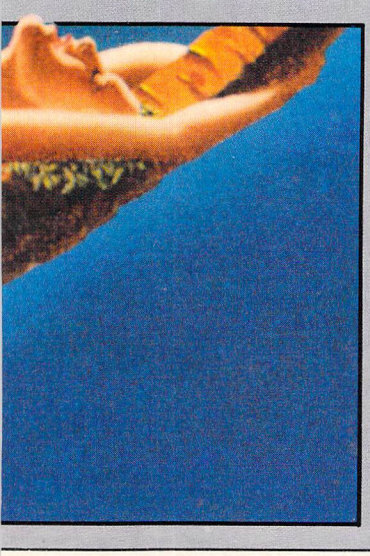
Janice Murray

Presentation	8
Atmosphere	6
Puzzlement	5
Value for money	5
Overall	6

SECOND Sight

Don't worry about the title, Emmanuelle, it's all done in the best possible taste. I found it an interesting mouse-driven graphic adventure. The interaction between the other characters is important, though the response you get isn't always what you want. Try before you buy.

Janice Murray



Budget space epic

Program: Chase
Price: £9.99
Supplier: Mastertronic, 8-10 Paul Street, London EC2A 4JH.
Tel: 01-377 8411

THE story behind Mastertronic's 3D wire frame Chase reveals that you are a brave space pilot who has been selected to save the Princess of Chardonnay from the clutches of the evil Disgusmatrons. To achieve this goal you must fight your way through several game stages, the first involving manoeuvring your ship through an asteroid belt, destroying five Disgusmatrons on the way.

You have a cockpit view of the action, though the reasonably good graphics at the bottom of the screen which show the front of the craft don't extend to the rest of the play area because wire frame graphics are in operation here.

You control the movement of your ship with the mouse – the left button fires a laser while your right button controls your speed in a similar manner to Starglider. Your craft is equipped with 10 shields which are depleted every time you are in collision with another object.

The second stage involves flying your craft between twin monoliths. The Disgusmatrons don't make an appearance on this level, which makes it slightly easier to complete. You then have to fly your ship through a quadrilateral vortex – looks like a series of expanding squares to me.

Still no Disgusmatrons, but just when I was beginning to think that I would never see one of those wire frame blue things again they turned up on stage four. This involves flying through a tunnel while avoiding pillars positioned in awkward places.

The Disgusmatrons managed to make an appearance on the last stage and you have to dispatch them in order to complete it. If you manage to get through all the stages the game goes back to the beginning, but with the difficulty level increased.

Even though this is a budget offering a few things were annoying. The game didn't auto-boot, you have to click on it from the desktop and the instructions begin on the right hand side of the page and continue on the left. Also it only takes up 100k of a single sided disc.

Budget priced doesn't always mean budget quality, but in this case it probably does.

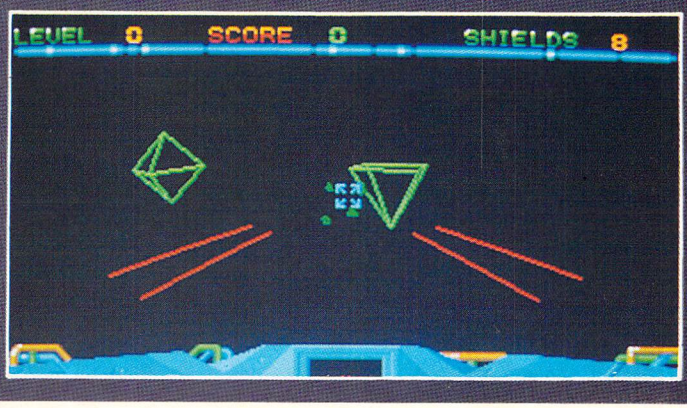
Stephen Cogan

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

SECOND Sight

This is definitely in the budget category. Nevertheless I found it quite enjoyable – and budget software is always welcome. The 3D wire frame graphics aren't up to Starglider standard, but are reasonably good. The different stages add a little variety and the difficulty level is about right. Disgusmatrons aside this is a reasonable game but I recommend that you try before you buy.

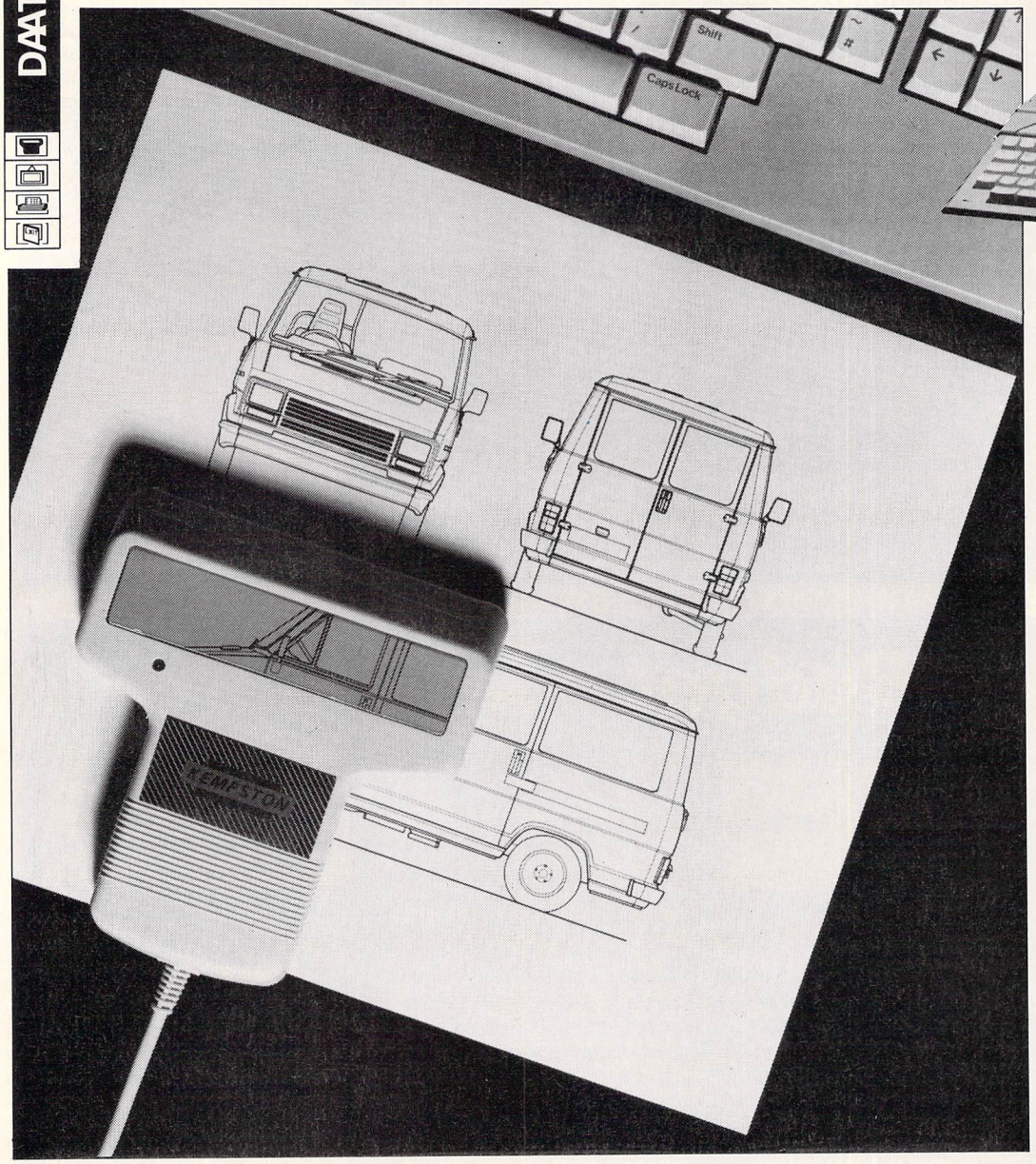
Roland Waddilove

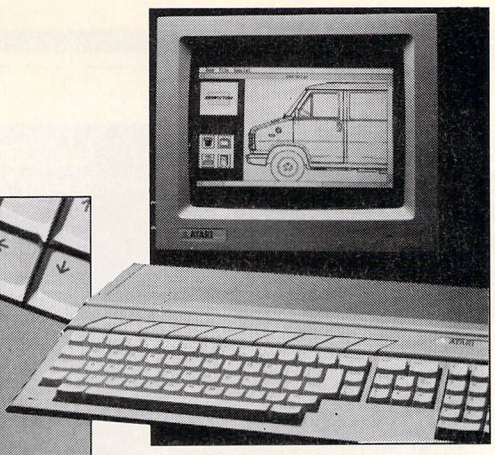


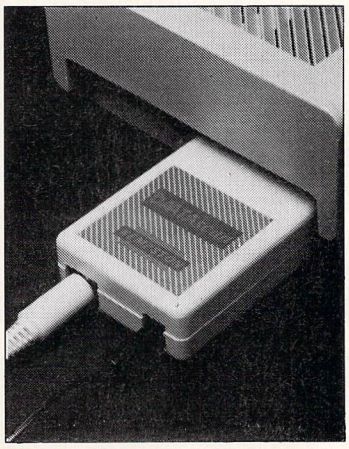
DAATAscan

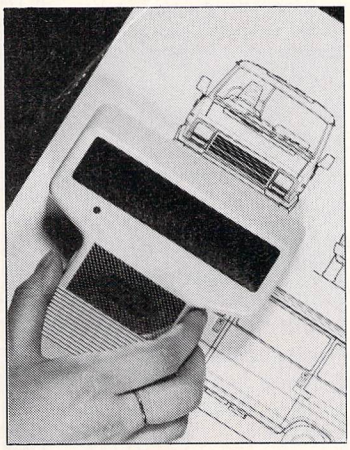
KEMPSTON DAATAscan

For the Atari ST.









New from Kempston is DAATAscan, a hand-held scanner for the transfer of graphic images to an Atari ST.

Complete with easy to use GEM based software, DAATAscan allows images to be scanned from newspapers, photographs, books etc. then saved in the most popular and widely supported graphics file formats.

Images produced by DAATAscan can be imported into leading DTP packages such as Fleet Street Editor (Mirrorsoft) and Desktop Publisher (Timeworks). They can also be incorporated into the pages of DAATAfax, a computer-based personal organiser.

The DAATAscan software, which is ICON driven, enables an image to be scanned, cropped, reduced and then saved as a bit image file in IMG format.

Conversion routines are also provided to convert to DEGAS, Neochrome, TIFF and MSP formats.

The scanner is connected to the ATARI ST through an interface module which fits into the ROM cartridge port and has two sockets to accept the scanner and PSU. The scanner controls include start-of-scan, contrast and choice of scan mode.

The scanner has a scan width of 105mm, a resolution of 200 DPI and a scan speed of 2cm/sec. It can operate in black and white and 16 Quasi-tones (half tones using dither patterns).

HYPERPAINT

Also included with DAATAscan is HYPERPAINT, the official Atari ST Graphics package, which includes features such as variable zoom (up to x 16) and rescale.

DAATAscan is available for £275 inc. complete with software, manual and interface module.

For orders and further details, please contact

KEMPSTON

KEMPSTON DATA LIMITED
21 Linford Forum
Rockingham Drive
Linford Wood
Milton Keynes MK14 6LY
Tel: 0908 677886
Fax: 0908 676066
Telex: 82304 FORUM G

ATARI ST is a registered trademark of Atari Corporation

Keys!, a new sequencer from Dr T, is given a thorough play-testing

Tadpoles and telegraph wires

MUSIC ON THE ST

By IAN WAUGH

MOST sequencers are heavily biased towards real-time recording, and although a few make a token effort to support step-time input, most do not use music notation.

Keys! v2.1 is a new program from Dr T. It uses stave notation, and in fact music can only be entered in step time. Notes can be entered with the mouse or from a Midi keyboard.

According to its author, Jeffrey Baker, it was written primarily to create step time files for Dr T's KCS (Keyboard Controlled Sequencer) and MRS (Midi Recording Studio) although it works as a stand-alone program, too.

There is only one screen but a couple of different windows pop up in the lower half when certain options are selected. Notes are entered on a grandstave which comprises a treble and bass clef.

The program supports eight note polyphony and all the notes are shown on screen at once. Although this is preferable to having a separate display for each voice, some chords may cause the notes to overlap.

The music can be transmitted via Midi or sent to the ST's internal sound chip – which obviously restricts you to three note polyphony. You can call up a simple waveform utility to change the envelopes used by the sound channel.

To enter a note on the stave you click on a duration in the Note Box (upper left) then click on the piano keyboard running across the middle of the screen. The durations range from a 64th note triplet to a dotted semibreve and you can define your own note lengths, too.

If you click and hold you can adjust the velocity of the note by moving the pointer up and down the screen. You can set the upper and lower velocity range which is useful and the velocity values also affect the sound chip. Chords can be entered by clicking and holding the right button as you enter notes.

You can enter pitches and velocities from a Midi keyboard simply by playing it, but the durations, must be selected from the Note Box first. There is a Rhythm Mask, however, which allows note sequences to be imposed on a fixed range of durations and this can save time. You can change Midi channels by clicking on the Midi Strip above the keyboard.

Although the operations described so far are reasonably simple and fairly musical, the program thinks in terms of events rather than music. To edit a note, for example, you must enter its event number then type in a new Midi note number. To delete or move events you must enter the range in event numbers.

Even the time signature must be entered by specifying the steps per measure. For example, 96 is 4/4 time. Key signatures, ties and several other items of musical miscellanea are not supported. If you enter a note which should be tied over a bar line, the program defers the bar line until after the note.

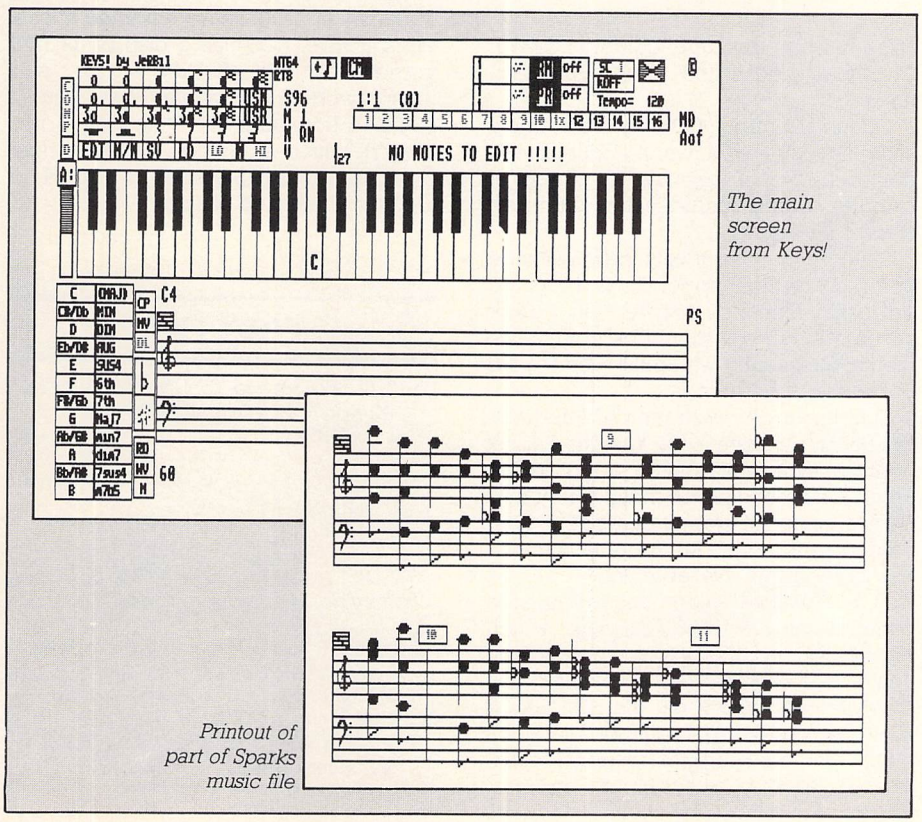
Many pro sequencers use numeric event editing, too, but these tend to be real-time programs. It's a shame the highly graphic notation environment doesn't allow you to select notes and ranges by clicking, dragging and rubberbanding. This dependence upon numeric input takes the edge off the attraction of graphic notation. But then Keys! is written in GFA Basic.

You can enter 9,999 events on a 1040 ST and 2,888 on a 520. This is not a lot by current sequencer standards but you'll probably rarely want to enter a single piece as long as that in step-time.

There are several playback options including playback via Midi, the sound chip and both. Although the stave doesn't scroll as the music plays a special playback mode can show the notes currently playing on the on-screen keyboard and the current event number. The manual admits, however, that this can cause erratic playback, although as it is intended mainly to supply information it shouldn't cause any problems.

To play a piece you must toggle from Record to Play mode. It would be helpful if the program returned automatically to Record mode after playing as you usually

Turn to Page 40 ▶



The main screen from Keys!

Printout of part of Sparks music file

◀ *From Page 39*

want to edit a piece after playing it. It may seem trite but I found this a bit of a nuisance.

A rather novel feature of Keys! is the inclusion of a simple algorithmic composition routine called Auto Composer. The next cheapest algorithmic composition program available for the ST is Dr T's Fingers at £79.95 – reviewed in our February 1989 issue.

Auto Composer is far simpler than Fingers but it makes an attempt at melodic compositions with parameters such as melodic and harmonic tension, scale type, key change frequency and chord change frequency. You're unlikely to create a magnum opus, but it's fun and the compositions can be displayed on the stave for further analysis or editing.

You can obtain a printout of a piece – this is simply a screen dump – although note stems aren't joined and bars may be split at the end of a line.

In conclusion, considering Keys! was written in Basic it's something of an achievement. It has several interesting, novel and just plain useful features but I can't help feeling the programmer has spent too much time at Dr T's "school of numbers". The parameter boxes are rather small and the names of the functions are abbreviated to one or two letters.

Conversion programs are supplied on disc to allow you to swap files between Keys! and Dr T's MRS and Copyist programs.

Priced as it is, Keys! sits rather uncomfortably between the cheaper stave notation programs which mainly use the ST's sound chip and the more expensive but sophisticated scorewriters such as Hybrid Arts' EZ-Score Plus.

Price apart – and operational idiosyncrasies aside – if you want a stave-based step-time sequencer and one that uses the ST's sound chip, Keys! offers far more facilities than the cheaper competition. But be prepared to spend a little time getting to know it.

FACT FILE

Product: Keys!
Price: £49.95
Supplier: MCMXCIX, 9 Hatton Street, London NW8.
Tel: 01-724 4104/01

POINTS FOR:
Eight voice polyphony. Auto Composer. File compatibility with other Dr T programs. Can use sound chip.

AGAINST:
Highly numeric. Some operations rather fiddly. Many notation conventions not supported. Limited printout facilities.

Never ending journey

Our in depth survey of PD music continues with a look at some of the demonstrations on offer

HAVE you heard of PopMinis? They play music in the background while you ostensibly get on with some other task, although many other programs will interfere with the interrupts. Still, they're fun while they last.

ST UK's Music 1 disc contains 15 PopMinis – Popcorn is particularly interesting. It also contains another background music demonstration which plays via Midi. This really is a resiliant little devil and continued to play even after I loaded Activision's Music Studio.

Also on the disc is Intersect's Deluxe Piano and Orchestrator demonstrations which let you make music by playing the ST's keyboard. It also features Sound Mouse, which alters the pitch of two sound channels in response to mouse movements, and Sound Demo, which lets you trigger bombs, lasers and sirens. These are fairly common PD programs and can be found on many other discs.

Softville's Music 1 is virtually identical but without the Sound Demo. Music 2 contains Orch-Play, a jukebox demonstration program plus another nine PopMinis hiding in a folder called Desksongs.

A couple of popular music demonstrations reside under the generic title of Alite. They were put together by Audio Light, the people who designed and developed the Activision Music Studio.

The ST Club's Alite demonstration, Midi 3, plays 10 tunes and loads colourful pictures as it does so. The tunes use the ST's sound chip but also play over Midi. SWSL's Disc 25 is also an Alite demonstration, but this one contains seven Christmas pieces and some super pictures.

On the Midi front, SOS has a slideshow of Steinberg's new Kawai K1 Editor plus a demonstration of the new ST Replay 4 sampler which includes an extensive manual on disc.

Pandora is a relatively new software company which specialises in voice editors. They operate as desk accessories so you should be able to use them concurrently with most Gem-based programs. A great idea.

SOS has a demonstration of Pandora's DXessory program – for Yamaha DX six operator synths. It requires a high resolution monitor and rather meanly only runs for five minutes before it bombs out. Pandora's new Korg M1 editor demonstration has just become available, too.

SOS also has a demonstration of a commercial TX81Z/DX11 Editor which allows some editing before it times out. If you have a Yamaha TX81Z, however, you may prefer to check out the SOS TX81Z Editor which runs in colour and mono. It's a fully working program, entirely mouse-driven – except for text input – and parameters are altered by clicking on them. It consists of two screens – one for Voice Edit and one for Performance Edit – and it holds three banks of sounds in memory. A complete bank or a single voice can be loaded and saved to and from disc.

Casio CZ-101 and CZ-1000 synths and Yamaha DX synths have attracted a lot of PD software. SOS has a disc of 32 DX7 voices by Ian Boddy – he was interviewed in our January 1989 issue – selected from Ian's The Voice Bank disc. They're saved as System Exclusive files for loading into Steinberg's Pro-24 or C-Lab's Creator or Notator.

FACT FILE

Softville PD Service, 55 Highfield Avenue, Waterlooville, Hampshire PO7 7PY.
Tel: 0705 266509

SOS Software, PO Box 30, St. Ives, Cambridgeshire PE17 4XQ.
Tel: 0480 61244

ST UK, 1 Bartholomew Road, Bishops Stortford, Hertfordshire CM23 3TP.

ST Club, 9 Sutton Place, 49 Stoney Street, Nottingham NG1 1LX.
Tel: 0602 410241

The South West Software Library, PO Box 562, Wimborne, Dorset BH21 2YD.

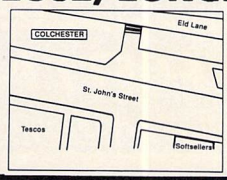
Hell Fire Attack £4.99

SOFTSELLERS

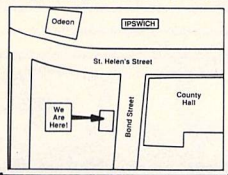
Armagedon Man £4.99

12 SANDPIPER CLOSE, LONGRIDGE PARK, COLCHESTER, ESSEX CO4 3GE

36a Osborne Street
Colchester
Essex
(RETAIL)



VISA ACCESS



5a Dogs Head Street
Ipswich
Suffolk
(RETAIL)

24hr MAIL ORDER PURCHASE LINE (0206) 869668 (0206) 863193

SOFTWARE

Afterburner	13.99
A Question of Sport	12.99
Alien Syndrome	12.99
Armalyte	12.99
Baal	12.99
Ballistiks	12.99
Batman	12.99
Bards Tale I or II	16.99
B.A.T.	16.99
Barbarian II	12.99
Battlechess	16.99
Better Dead Than Alien	12.99
Bionic Commando	13.99
Black Lamp	12.99
Blasteroids	12.99
Bombuzal	15.99
Bomb Jack	12.99
Butcher Hill	16.99
Buggy Boy	12.99
Bubble Bobble	12.99
Carrier Command	15.99
Captain Blood	15.99
Chrono Quest	19.99
Combat School	12.99
Corruption	15.99
Custodian	12.99
Crazy Cars II	15.99
Daley Thompsons O. C.	12.99
Degas Elite	16.99
Dragon Ninja	12.99
Double Dragon	12.99
Dungeon Master	15.99
Driller	15.99
Elite	15.99
Eliminator	13.99
Falcon	15.99
F16 Combat Pilot	15.99
Fernandez Must Die	15.99
Fed. of Free Traders	19.99
Fish	15.99
Fire and Forget	15.99
Fusion	16.99
Football Manager II	12.99
Football Director II	12.99
Gauntlet II	13.99
Garfield	12.99
Guerilla War	12.99
Gunship	15.99
Goldregons Domain	12.99
Goldrunner I or II	12.99
Gryzor	12.99
Ghosts & Goblins	12.99
Heroes of the Lance	16.99
Hostages	15.99
International Karate+	13.99
International Soccer	12.99
Incredible Shrinking Sphere	13.99
Iron Lord	16.99
Instant Music	16.99
Jet	29.99
Joan of Arc	13.99
Kristal	19.99
Leaderboard Birdie	16.99
Legend of the Sword	15.99
L.E.D. Storm	13.99
Lombard R.A.C. Rally	15.99
Leathernecks	12.99
Lancelot	12.99
Manhattan Dealers	12.99

HARDWARE

ALL OUR HARDWARE INCLUDES VAT AND FREE NEXT DAY DELIVERY ON EARLY ORDERS. UK ONLY

Atari 520 STFM with 1 Meg internal Drive	**269.95**
Atari 520 STFM Super Pack with 21 Games + Business Organiser	**349.95**
Atari 1040 STFM with modulator	**399.95**
Atari 1040 STFM Business pack with database, spreadsheet and wordprocessor	**449.95**
Atari 1040 STFM Super Pack 21 Games + joystick	**449.95**
Atari SC1224 Colour Monitor	**299.95**
Atari SM124 Monochrome monitor	**99.95**
Citizen 120D Printer	**149.95**
External Drive Cumana 1 Meg	**109.95**

10 3.5" Blank Discs	9.95
Joystick Extenders	4.95
4 Player Adaptors	4.95
Mouse Mats	4.95
Cheetah 125 Joystick	6.95
QS Turbo Joystick	11.95
Pro 5000 Joystick	11.95
Konix Navigator Joystick	11.95
Pro 5000 Extra	12.95
Pro 5000 Clear	12.95
Disc Storage Box 40	7.95
Disc Storage Box 80	9.95

SOFTWARE

Menace	12.99
Microprose Soccer	15.99
1943	13.99
Netherworld	13.99
Nightraider	13.99
Nebulus	13.99
Operation Wolf	12.99
Out Run	13.99
Overlander	12.99
Paperboy	12.99
Pacmania	12.99
Pacland	12.99
Peter Beardsley	12.99
Powerplay	12.99
Platoon	12.99
Populous	16.99
Powerdrome	16.99
Pools of Radiance	16.99
Purple Saturn Day	15.99
Puffy's Saga	16.99
Premier Collection	19.99
Precious Metal	15.99
Prison	12.99
Quadralien	12.99
Red Heat	12.99
Realm of the Trolls	13.99
Renegade	12.99
Roadblasters	13.99
Robocop	12.99
R Type	13.99
Rocket Ranger	15.99
Return of the Jedi	13.99
Rambo III	12.99
Running Man	15.99
Run the Gauntlet	12.99
Scrabble	12.99
Shadowgate	15.99
Shoot 'em up Construction	15.99
Space Harrier I or II	12.99
Starglider II	15.99
Skateball	16.99
Skychase	12.99
ST Five Star	15.99
Star Ray	12.99
Stargoose	12.99
STOS	19.99
Streetfighter	13.99
Speedball	15.99
S.D.I.	13.99
Skate or Die	16.99
Super Hang-On	13.99
Techno Cop	16.99
Tiger Road	13.99
Test Drive	16.99
Tracksuit Manager	12.99
Trivial Pursuits	13.99
Triad	19.99
Thunderblade	13.99
Thundercats	12.99
Time & Magik	12.99
Times of Lore	15.99
Turbo Cup	12.99
UMS	15.99
Victory Road	12.99
Virus	12.99
Voyager	12.99
War in Middle Earth	15.99
Where Time Stood Still	12.99
WEC Le Mans	12.99
Wizzball	12.99
Xenon	12.99
Zany Golf	16.99
Zak McKracken	16.99

Title	Comp	Price
	Total Cost £:	

Name: .....

Address: .....

.....

..... Postcode: .....

Tel No: .....

ASUMAY

Nigel Mansells Grand Prix £4.99

Cheques & Postal Orders payable to SOFTSELLERS. Post & Packing Free in U.K. Overseas £1.50 per item. Shop prices may vary, but personal callers can claim approx 10% discount off R.R.P. on most listed items on production of this advert.

Vixen £4.99

Evesham Micros

All prices include VAT and Delivery

DOUBLE TAKE! PYE 15" FST TV/MONITOR (MODEL 1185)

Superb quality, stylish medium resolution FST colour TV/monitor to suit the ST or Amiga. Features teletext, full infra-red remote control, Euroconnector, Video/Audio input and headphone output connectors, 40 tuner presets, external aerial connector and loop aerial. Supplied with cable (please state computer type when ordering).

SPECIAL OFFER ! £269.00 includes VAT and computer connection lead

ATARI® Hardware Offers

520 STFM *SUPER* PACK

The pack to get, includes 520STFM with 1MEG drive, **over £450 worth of software**, joystick, mouse, User Guide and 5 disks of Public Domain Software. Software included is:

Marble Madness, Beyond Ice Palace, Thundercats, Summer Olympiad, Arkanoid II, Eddie Edwards Ski, Ikari Warriors, Test Drive, Buggy Boy, Quadralien, Xenon, Wizball, Seconds Out, Zynaps, Chopper X, Ranarama, Starquake, Genesis, Black Lamp, Thrust, Organiser Business S/ware

All this For Only **£329.00** Inc VAT & delivery

520 STFM	1040 STFM	1040 STFM *SUPER PACK*
Latest version, with 512K RAM, built-in TV modulator and 1 MEG drive internally fitted.	With 1 Mb drive, 1 Mb RAM and built-in TV modulator.	Includes 21 games, business software & joystick as supplied with above '520 super pack' !
£269.00	**£399.00** With SM 124 mono monitor **£509.00**	**£419.00** With SM 124 mono monitor **£529.00**

520 STFM 1MEG internal drive upgrade kit with full instructions £74.95
1040 STFM including 'Microsoft Write' and 'VIP Professional' £419.00
1040 STFM including extras supplied with '520STFM super pack' plus 'Microsoft Write' and 'VIP Professional' £459.00

Buy a monochrome monitor with any 1040 from above for £110.00 extra

'Super pack software' as supplied with above 520STFM offer £60.00
Mega ST1 with mono monitor, 'MS-Write' & 'VIP Pro.' £599.00
Mega ST2 with mono monitor, 'MS-Write' & 'VIP Pro.' £849.00
Mega ST4 with mono monitor, 'MS-Write' & 'VIP Pro.' £1099.00
SM124 monochrome monitor £119.00
SC1224 colour monitor £279.00
SLM804 laser printer £1099.00
Mega-file 30Mb hard disk £539.00
System AT40 40Mb hard disk, super low price at £469.00
Triangle Turbo hard disk 20MB £479.00
Triangle Turbo hard disk 40MB £669.00
Mega ST2 special offer package - includes: Mega ST2 with mono monitor, SLM804 laser printer, external 1Mb 3.5" 2nd drive, 'Microsoft Write', 'VIP Professional', 'Fleet Street Publisher' and 90 days on site maintenance for only £1795.00
Atari DTP Pack (Mega4/SLM804/30MB hard disk/s'ware) £2795.00

EXTERNAL FLOPPY DRIVES

3.5" External drive with Citizen mechanism, seperate P.S.U. £82.95
Cumana CSA354 1 meg external floppy drive £109.95
Cumana CDA358 2 meg (dual) external drives £229.00
External 5.25" 40/80 track switchable (360/720K) with integral power supply. IBM compatible, includes s/ware £159.95

IMAGE SCANNERS & VIDEO DIGITISERS

Cameron Handy Scanners - good value 64mm wide image scanners complete with interface and 'OCR' & high-res. graphics software:
Type 2 handy scanner; scans two-tone at up to 200 dpi £219.00
Type 4 handy scanner; scans at 200/300/400 dpi with 16-tone halftoning options £329.00
Kempston DATAscan high quality 105mm wide handy scanner digitising at 200dpi two-tone or with 2/4/8/16 greyscales £269.00
Vidi-ST 16-tone video frame grabber inc. digitising software £95.00

PHILIPS MONITORS & ACCESSORIES

Philips CM8833 colour monitor with ST cable £229.00
Philips CM8852 as above, higher resolution £299.00
Philips TV Tuner AV7300, for monitors with composite input £74.95

OTHER ACCESSORIES

Pace Linnet Modem Pack (inc. cable & software) £179.00
Amstrad SM2400 stand-alone modem unit £249.00
Multiface ST backup/utility interface £47.95
Cameron Handy Mouse, hi-quality replacement ST mouse £39.95
STF/STFM Joystick & Mouse accessibility extension adapter ..... £ 4.95

All ST prices include mouse, user guide etc.. PLUS 5 disks of public domain software including 'Neochrome' graphics utility, 'First Word' wordprocessor, games, demos & utilities.

PRINTERS

All prices include VAT/delivery & cable

star

We use and recommend Star printers since they offer an unbeatable combination of features, print quality, reliability and value. Make the sensible decision - get it right with a Star printer at our special, all in, prices.

LC10



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

Still the market leader in this price category, the LC10 incorporates many superior and advanced features at an ultra low price. **Colour** LC10 also available at an affordable price - it also accepts standard LC10 black ribbons. As a bonus we supply 2 extra black ribbons.

Only £199.00
Colour version also available,
Only £249.00
Prices include 2 extra black ribbons free of charge.

Star NB24-10 good value 24pin printer 216/72 cps, including cut sheet feeder and 2 extra ribbons £499.00
Star LC24-10 feature-packed 24pin multifont 10" printer, 170/57 cps, 7K buffer and paper parking facility £339.00
Star NX-15 budget wide carriage printer £329.00
Star ND-10 180/45cps high quality 10" £349.00
Star ND-15 wide carriage version of ND-10 ..... £419.00
Star NR-10 240/60cps professional 10" £429.00
Star NR-15 wide carriage version of NR-10 ..... £499.00
Star NB24-15 wide version NB24-10 inc.cut sheet feeder . £649.00
Star Laserprinter 8 high spec. laser 8ppm/300dpi (price inc.1 year on-site maintenance service) £1599.00
Star SF-10DJ cut sheet feeder for LC-10 ..... £64.95
Star SF-10DK cut sheet feeder for LC24-10 ..... £64.95
Star SF-10D cut sheet feeder, other 10" models £59.00
Star SF-15D cut sheet fdr. for wide carriage 9pin models . £159.00
Star SF-15B cut sheet fdr., wide carriage 24 pin models £199.00
Hewlett-Packard 'Deskjet' inkjet printer 240/120cps £749.00
NEC P2200 budget 24 pin 168/56cps + many features £319.00
NEC cut sheet feeder for P2200 ..... £69.00
Epson LX800 popular budget 10" 180/25cps £199.00
Epson LQ500 good 24pin printer 150/50cps £319.00
Epson EPX-200 cut sheet feeder for LX800 / LQ500 ..... £74.95
Panasonic KXP1081 reliable 120/24cps printer £169.00
Panasonic KXP1180 super new 192/38 cps 9pin, many advanced facilities with over 3400 type combinations £199.00
Panasonic cut sheet feeder for KXP1180 ..... £95.00
Panasonic KXP1124 superb new 24pin multifont printer £319.00
Panasonic P36 cut sheet feeder for KXP1124 ..... £109.00
Panasonic KXP4450 11ppm/300dpi good value laser £1795.00
Amstrad DMP3160/3250DI 9pin, 10" carriage £189.00
Amstrad LQ3500DI inc. both serial/parallel interface £329.00
Amstrad LQ5000DI 24pin wide carr., dual interface £449.00
Citizen 120D budget 10" carriage 120cps £139.00
Citizen HQP-45 wide carriage 24 pin printer £399.00

Books

Atari ST Gem Programmer's Reference £14.95
Atari ST Machine Language £14.95
Atari ST Tricks and Tips £14.95
Atari ST Basic Training Guide £12.95
Atari ST Introduction to Midi Programming £14.95
Atari ST 3D Graphics £16.95
Atari ST Disk Drives - Inside and Out £16.95
Atari ST Internals £14.95
Atari Basic Source Book £9.95
Concise ST 68000 Reference Guide (Version 2) £17.50
First Steps in 68000 Assembly Language £9.95
GFA BASIC Advanced Programming £11.95
Using ST BASIC on the Atari ST £5.95

3.5" Disks and Boxes

10 double sided, double density 3.5" bulk packed disks, fully ST compatible, fully guaranteed £11.95
25 DS/DD 3.5" disks, larger quantity of above offer £27.95
10 DS/DD 3.5" disks with plastic library case £13.95
25 DS/DD 3.5" disks as above, but with 40 capacity lockable disk storage unit £34.95
Kodak DS/DD 3.5" disks, top quality storage media fully guaranteed. Box of 10 for only £17.95

ST Software

Timeworks

Data Manager	£29.95
Data Manager Professional	£52.00
Desktop Publisher	£74.95
Desktop Publisher Clip-art pack	£19.95
Partner ST	£37.95
Swift Calc	£29.95
Word Writer	£37.50

Antic

CAD 3D 1.0	£18.95
Cyber Control (animator)	£44.95
Cyber Paint 2.0	£54.95
Cyber Sculpt	£59.95
Cyber Studio (CAD 2.0)	£67.95
Cyber Texture	£37.95
Architectural/Human/Future design disks	£22.95
COLR (sprite editor)	£18.95
Genesis molecular modeller	£22.95
GIST (sound editor)	£26.25
Migraph Draw Art Professional	£29.95
Migraph Scan Art	£37.95
Video Titler	£22.50

Sage

Book Keeper	£84.95
Accountant	£129.95
Accountant Plus	£209.50
Financial Controller	£334.00

GFA

GFA Basic Version 2 (includes compiler)	£34.95
GFA Basic Compiler	£20.95
GFA Basic Version 3	£49.00
GFA Draft	£69.95
GFA Draft Plus	£97.95
GFA Vector	£24.95

GST

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

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

Music

Mastertracks Junior	£89.95
Mastertracks Pro	£219.95
Pro Sound Designer Mk.II	£58.95
Steinberg Pro 24	£250.00
Super Conductor	£37.50

Games and Simulations

Carrier Command	£18.95
Elite	£18.95
F-16 Fighting Falcon	£18.95
Flight Simulator II	£37.45
Gunship	£16.95
Silent Service	£16.95
STAC Adventure Creator	£29.95
STOS Game creator	£22.50
U.M.S.	£18.95

Miscellaneous

Autoroute	£127.00
Degas Elite	£19.95
Easy Draw 2	£44.95
Easy Draw + Supercharger	£74.95
Easy Tools (requires 1Mb RAM)	£29.95
Fast Basic Disk	£37.95
Fast Basic ROM	£69.95
Fleet Street Publisher	£86.25
Fontz!	£21.95
FTL Modula-2	£55.95
Hisoft Devpac	£44.95
Hisoft Power Basic	£29.95
Home Accounts (Digita)	£18.95
Logistix	£79.95
Microsoft Write	£19.95
Mark Williams C	£99.95
PC Ditto	£67.50
Prospero C	£103.95
Prospero Fortran	£103.95
Prospero Pascal	£79.95
Protext	£79.95
Quantum Paint	£15.95
Spectrum 512	£44.95
Superbase Personal version 1	£41.95
Superbase Personal version 2	£69.00
Superbase Professional	£179.95
Word Perfect V4.1	£149.95
Word Up	£49.95
VIP Professional (1Mb RAM required)	£39.95

DISECTOR ST

ULTIMATE ATARI ST DISK UTILITIES

VERSION 5 NOW AVAILABLE!

- ***SOFTWARE BACKUP*** **incorporating turbo nibbler**
  Version 5 backup incorporates a very fast and powerful menu-driven backup utility. Makes use of all available drives and memory.
- ***80 SOFTWARE BACKUP PARAMETERS***
  Now with 80 individual parameters to backup and de-protect even the toughest of protection schemes!
- ***FAST BACKUP VERSION 2***
  Will backup a non-protected disk very speedily, using 'File Allocation Copy' techniques.
- ***EXTERNAL DRIVE BOOT***
  Allows many programs to startup from drive B.
- ***ORGANISER ACCESSORY***
  Providing extremely useful disk management commands under one desktop-based accessory, including FORMAT, RENAME, DELETE etc.
- ***SPECIAL FORMATTERS***
  Increase your 3.5" disk user storage capacity by up to 25% and improve access speed by up to 30% with these two new disk formatters provided !
- ***RAMDISK*** and ***SET DATE/TIME*** accessories.
- ***plus*** **UNDELETE, DISK ANALYSIS, UNFORMAT DISK SPEED CHECK** and much more !

Only £28.95 — **Existing users - upgrade your Disector ST disk for only £7.95**

A Top Quality 2nd Drive for the ST ..... at a price that makes sense!

Fully featured, fully compatible ST drive available NOW at an ultra low price



An external 2nd drive for the Atari ST at an ultra low price - complete with its own plug-in external power supply! Based around a top quality Citizen drive mechanism, this drive gives the full 720K formatted capacity. Quiet in operation, neat slimline design, colour matched to the ST, with a long connection cable for location left or right of the computer.

EVEN LOWER PRICE!

£82.95

including VAT and delivery - ***Why pay more?***

Atari 520 STFM Internal 3.5" drive upgrade kit Only £74.95

An ideal, simple way to upgrade your 520 STFM using a high quality double sided drive. Internally replaces the original single sided unit. One megabyte unformatted capacity and fully compatible. Detailed fitting instructions given. Requires very slight case modification. Fitted to your ST - add £10.00 extra.

Evesham Micros

How to order from Evesham Micros

VISA

Phone us with your ACCESS or VISA card details on : ☎ 0386-765500

All prices include VAT and delivery. Next day delivery £5.00 extra.

Send cheque, Postal Order or ACCESS/VISA card details

Govt., educ. & PLC orders welcome
Same day despatch whenever possible
All goods subject to availability, E.&O.E.
Open to callers 6 days, 9.30-5.30

Evesham Micros Ltd
63 BRIDGE STREET
EVESHAM
WORCS WR11 4SF
✆ 0386-765500
fax 0386-765354
telex 333294

Also at: **1762 Pershore Rd., Cotteridge, Birmingham B30 3BH Tel: 021 458 4564**

DEAL DIRECT

ALL PRICES INCLUDE VAT & SAME DAY DESPATCH

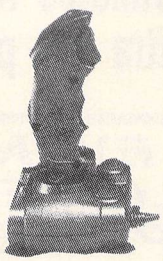
	DISKS	TOTAL PRICE Qty 10	Qty 20	Qty 50	Qty 100
3.5" Bulk	DS DD 135 TPI 65% CLIP	£7.50	£14.80	£36.50	£72.00
3.5" Bulk	As above with storage box	£8.40	£16.50	£40.00	£79.00
3.5" Bulk	High density 2 Meg includes plastic storage box	£25.00	£45.00	£100.00	£185.00
3.5" Branded	SS DD 135 TPI	PHONE FOR PRICES			
3.5" Branded	DS DD 135 TPI. SONY	£12.00	£22.00	£50.00	£99.00
3.5" Branded	High density 2 Meg. SONY	£31.00	£60.00	£145.00	£280.00

		Qty 10	Qty 25	Qty 50	Qty 100
5.25" Bulk	DS DD 48 TPI	£3.50	£8.00	£15.50	£30.00
5.25" Bulk	As above with storage box	£4.50	£9.90	£19.90	£38.00

		Qty 10	Qty 20	Qty 50	Qty 100
5.25" Branded	DS DD 48 TPI. 3M	£8.00	£15.00	£35.00	£65.00

	STORAGE BOXES	Qty 1	Qty 5	Qty 10	Qty 20
3.5"	12 holder solid plastic	£1.00	£4.50	£8.00	£15.00
5.25"	10 holder solid plastic	£1.00	£4.80	£9.00	£17.00

		Qty 1	Qty 2	Qty 5	Qty 10
3.5"	40 holder lockable 2 keys & dividers	£4.99	£8.50	£17.50	£33.00
3.5"	80 holder lockable 2 keys & dividers	£6.00	£11.00	£22.00	£43.00
3.5"	100 holder lockable 2 keys & dividers	£7.00	£13.00	£27.50	£50.00
3.5"	150 holder stackable POSSO	£15.00	£29.00	£70.00	£130.00
5.25"	70 holder lockable 2 keys & dividers	£5.50	£10.00	£22.50	£41.00
5.25"	120 holder lockable 2 keys & dividers	£6.50	£10.50	£24.00	£45.00



JOYSTICKS — ONE YEAR GUARANTEE

	Qty 1	Qty 2	Qty 3	Qty 4
Cheetah Challenger	£5.00	£9.50	£13.50	£17.00
Cheetah 125+	£6.50	£12.60	£18.50	£24.00
Cheetah Mach 1	£9.00	£17.50	£25.00	£33.00
Cheetah Star Probe	£11.00	£21.00	£31.50	£40.00
Turbo Junior	£5.00	£9.50	£13.50	£17.00
Turbo Super	£7.00	£13.50	£20.00	£25.00
Quickshot II + Turbo	£9.00	£17.50	£25.50	£33.00
Ram Delta	£9.00	£17.50	£25.00	£32.00

	Atari ST Twin Joystick Extension	£4.00	£7.80	£11.00	£14.50
	ST Centronics parallel printer cable	£4.50	£8.50	£12.50	£16.00
	Mouse Mat	£3.50	£6.50	£9.00	£10.50
	Mouse House	£4.50	£8.50	£12.00	£15.00
With fluid	3.5" & 5.25" disk cleaning kits	£3.00	£5.50	£7.50	£9.00

RIBBONS	1	2	6	12	RIBBONS	1	2	6	12
Amstrad 8256	£4.00	£7.50	£18.00	£30.00	Epson LX80/86	£3.50	£6.50	£17.00	£29.00
Amstrad DMP 2000, 3000	£3.50	£6.50	£16.00	£27.00	Epson LQ 1000	£4.50	£8.50	£24.00	£44.00
Canon PW 1080	£3.50	£6.50	£15.00	£27.00	Panasonic 1080/1090	£4.00	£7.50	£21.00	£39.00
Citizen 120 D	£4.00	£7.50	£21.00	£39.00	Star LC 10	£3.00	£5.50	£15.00	£29.00
Epson FX/MX100	£3.50	£6.00	£14.00	£22.00	Star NL 10	£4.50	£8.50	£24.00	£46.00

ALL DISKS ARE SUPPLIED WITH LABELS, ENVELOPES AND WRITE PROTECTS AND ALSO CARRY A LIFETIME GUARANTEE

Tel: 0533 471485

Please post order with cheque

Payable to:
Midland Microsoft, Mail Order Div. Ground Floor, Unit 22A, Sykefield, Leicester LE3 OLB

A Kuma cracker

Nic Outterside looks at the latest version of K-Spread 3 spreadsheet

SPREADSHEET packages for the ST are many and various in their design, price and function. From the simple but graphically orientated Graphic Sheet by Glentop to the complex and mathematical Masterplan and Lotus 1-2-3 clones the marketplace is indeed crowded. This makes choice very difficult, but among all these packages a few lights shine brightly.

One of these beacons, K-Spread 3, is the latest full functioning and comprehensive 8,192 rows by 256 column spreadsheet from business software specialist Kuma.

Kuma has built on the success of K-Spread 1 and 2. And version 3 includes all the advanced features you would expect in a top of the range spreadsheet with the exception of a built-in graphic extension. However, even this is catered for with an interlinking K-Graph 3 program costing £49.95.

K-Spread 3 comes on one single-sided disc – only just, as it is 370k in size – packaged with a hefty and informative 220 page manual which includes a handy 150 page reference section, and useful working example tutorials. In fact, the manual even outshines the proclaimed Timeworks tomes which accompany that company's products.

A closer look

As a spreadsheet it combines Lotus style commands with Gem operations – drop-down menus allow fast access to most features – in addition to function key commands giving you maximum flexibility when entering data and using the program.

An excellent and powerful extension allows loading and working on multiple worksheets, the number only limited by the memory capacity of your ST.

The screen display is clear and precise, and though full of powerful command icons it is not cluttered. The sheet window – shown in Figure I – is extremely flexible, surrounded by Gem icons and a function key legend.

Setting of column and row headings is simplicity itself and resizing of cell width and height is quick and easy using the familiar mouse dragging technique. K-Spread 3 also allows for full left/right/top/bottom justification and selectable word wrap. The columns are headed alphabetically and the rows numerically, making for ease of coordinate referencing.

At the top of the screen is a drop-down menu bar which features many manipulative menus – including a relative/absolute value reference toggle – which are fully explained in the manual's reference section.

At the bottom of the screen the function key legend/icon bar gives you maximum flexibility and offers short cuts, accessing commonly used functions. You also have the choice of selecting these options with the mouse by clicking on the respective box in addition to pressing the appropriate function key.

K-Spread 3 is always in data entry mode, either the default Entry mode, Edit mode or C.Edit mode. In Entry mode cells containing already existing data are overwritten, avoiding the tiresome need for deleting the existing entry.

In Edit mode existing data can be entered, permitting minor modifications to be made. C.Edit (or Cursor Edit) mode enables movement around the sheet while editing.

K-Spread 3 will load Lotus, DIF and standard Ascii files with ease, for editing, calculation and general usage. Ascii files can also be loaded from word processors as either text or values, and in addition the spreadsheet is compatible with many other Kuma products such as K-Data, K-Word 3 and K-Graph 3. Merging data to and from them will let you produce

Turn to Page 46 ▶

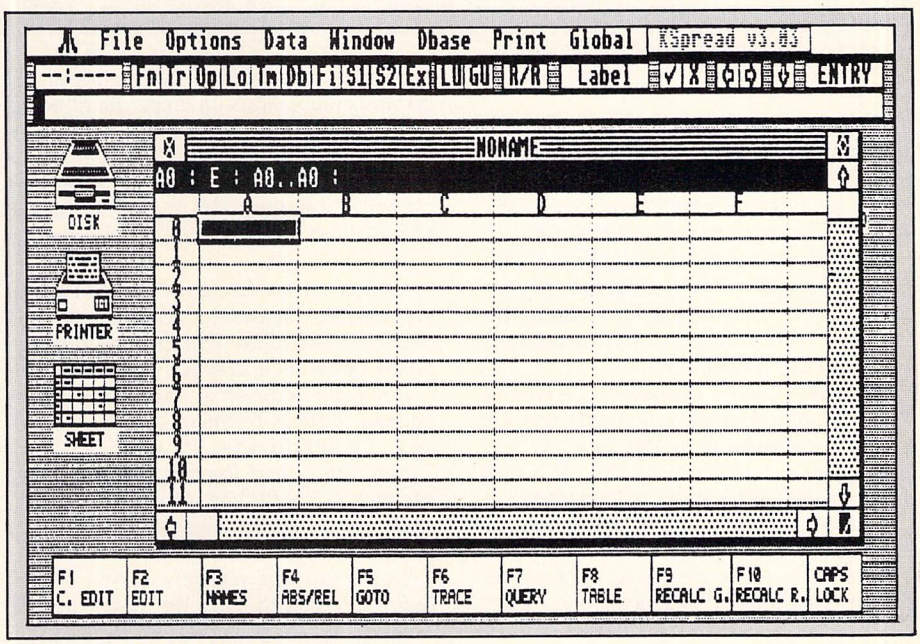


Figure I: A clean uncluttered spreadsheet

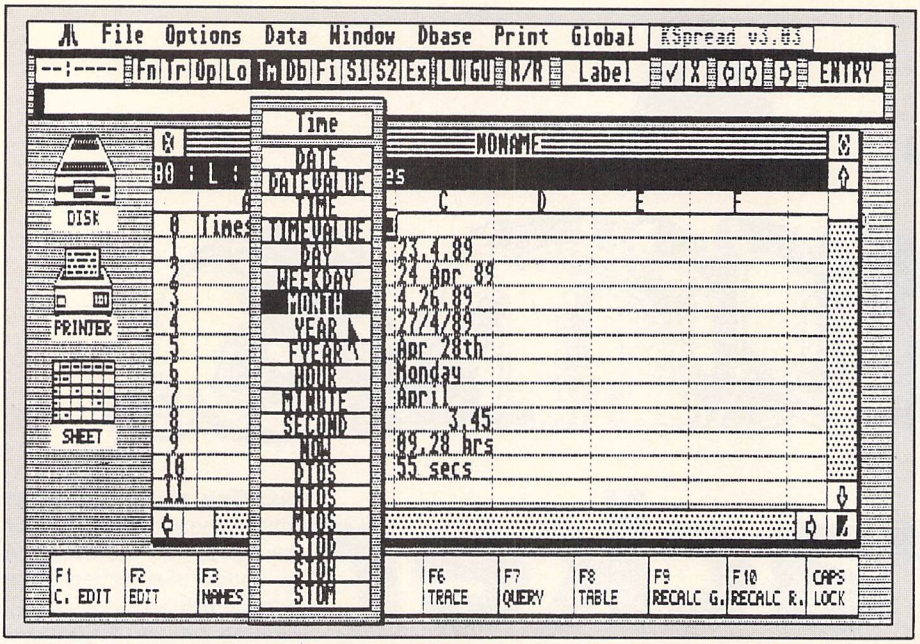


Figure II: Time/date values can be preformatted

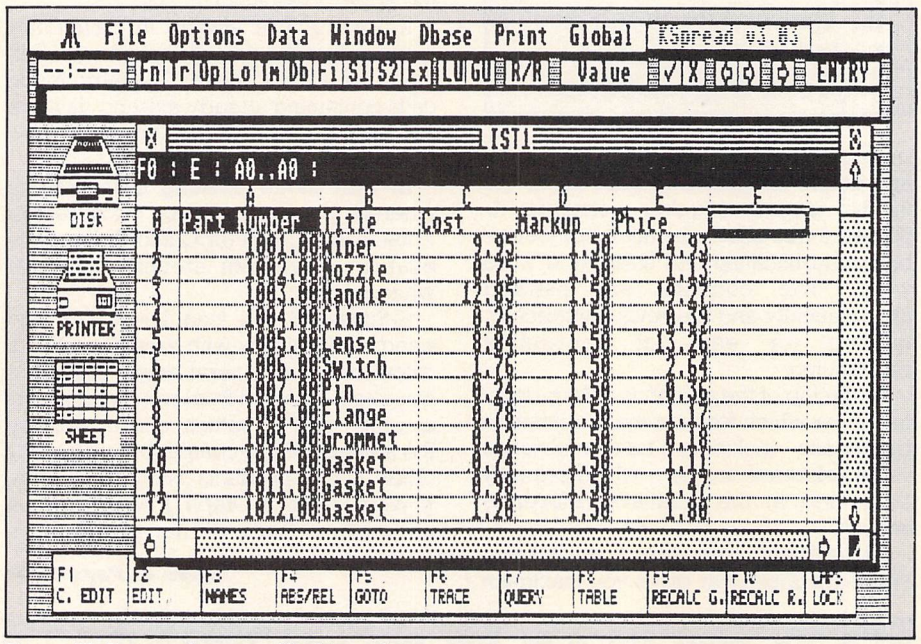


Figure III: Part numbers are filled by column

◀ **From Page 45**

impressive looking reports and documents. K-Spread 3 allows database storage of up to 8,192 records and, like Lotus, includes powerful operations such as Find, Delete, Extract and Unique.

Internal file merge is sanctioned with overwrite, addition and subtraction from existing files. This means that files can be merged with running totals produced automatically if required.

The sheet can be prepared in advance with text and formulae in readiness for data to be added at a later date. Whole zones can be primed as text or value areas for fast, easy entry of such data.

Entries can be made as either labels, values or formulae and preformatting can be set-up to allow for dates, times – as shown in Figure II – prices and other independent value settings. You can fill by row or column giving a start value, increment and finish value, ideal for costing calculations on large quantities of individual parts – as can be seen in Figure III.

In fact dates and times can be displayed in a variety of formats and used in calculations of things such as loan repayment schedules.

Values can be displayed in eight different formats, including normalised, percentage, date, time, Roman numerals and bases between 1 and 16.

Powerful mathematical and computational logical formulae are also licensed, including the Lotus style Goto, Trace, Query and Recalc. Such formulae can involve constants, global or specific cell referencing and all arithmetic operators.

The program permits user-defined functions which can be constructed, saved and used when required. They can be loaded alongside over 100 preprogrammed built-in functions which include a powerful convert function to cross-calculate inches to centimetres, gallons to litres and so on. Also available are statistical functions, 11 financial functions and more than 25 string functions.

When it comes to the crunch spreadsheets are normally used for tabulating and calculating monetary data and for making financial forecasting easier. It is in this major area where K-Spread 3 outscores most of its rivals, with a plethora of easily accessible monetary analysis functions. The manual includes full referencing of all these routines.

As if to add icing to the cake, your completed or updated sheets can be output on Epson FX-80 compatible printers via a default sideways driver, commands being sent directly from the spreadsheet.

A comprehensive printer configuration program is also included, enabling output to virtually any machines outside the Epson compatibility range.

In conclusion

K-Spread 3 is indeed an extremely powerful, fast and friendly spreadsheet, featuring most of the facilities you would expect to find on Lotus 1-2-3 clones, and for a fraction of the cost.

Beginners may feel a little lost for a while, but given the nature of K-Spread 3, this shouldn't last long. For all its complexities and power, it is a comfortable spreadsheet to use.

The superb manual takes you through all necessary procedures in an amiable and exhaustive manner and Kuma provides an excellent technical support service.

For my money K-Spread 3 is probably the pick of the pack of spreadsheets available for the ST.

FACT FILE

Product: K-Spread 3
Price: £89.95
Supplier: Kuma Computers, 12 Horseshoe Park, Pangbourne, Berkshire RG8 7JW.
Tel: 07357 4335

POINTS FOR:
Powerful full functioning spreadsheet. Many mathematical and calculatory functions available. Gem or keyboard driven for flexibility. Very informative and well written manual.

AGAINST:
Nothing substantial, but graphics capabilities must be bought separately.

COMPETITORS REVIEWED:
VIP Professional – October 1987
MasterPlan – May 1988
Graphic Sheet – April 1988
Digicalc – August 1988
Swiftcalc – November 1988

SK MARKETING

COMPUTER SUPPLIES

10 Fulham Broadway, London SW6 1AA
13 Money Hill Parade, Uxbridge Road, Rickmansworth Herts WD3 2BE

LONDON'S LEADING ATARI DEALER

Personal callers welcome
Opposite Fulham Broadway
Tube Station – District Line

SECOND SHOWROOM ACQUIRED!!

All Prices Inc. VAT
Carriage Free/Mail Order
Immediate Despatch

ATARI HARDWARE

SUPER PACK

- ★ Atari 520STFM + 1Mb Drive
- ★ Free 21 Top Games
- ★ Free Joystick + Manual
- ★ Free ST Organiser Software
- ★ Free Mouse + Modulator

Plus

- ★ Free Dust Cover
- ★ Free Mouse Mat

All Only £345

Atari 520STFM	£278
Atari 1040STFM with 1Mb Drive & Modulator	£415
Atari 1040 STFM with SM124 Monitor	£520

1040STFM Professional Pack

- ★ 1040 STFM + Modulator
- ★ VIP Professional
- ★ Microsoft Write
- ★ Superbase Personal
- ★ Basic Disk + Manual

SKM SPECIAL £445

Atari Mega ST2 with SM124	£840
Atari Mega ST4 with SM 124	£1090

MONITORS

Atari SM124 (Mono Monitor)	£110.00
Atari SC1224 (Colour Monitor)	£310.00
Commodore 1084S Stereo	£259.95
Philips CM-8833 High Res Colour	£259.95

DISK DRIVES

Cumana CSA354 1Mb 3.5" Drive	£119.95
Cumana 5.25" ST Drive	£149.95
Cumana Dual 3.5" Drive	£229.95

PRINTERS

Micro Peripherals 135+	£149
Star LC10 Multifont	£207
Star LC10 Colour	£248
Star LC24 10	£332
Star NB24-10	£539
Star NB24 15	£626
Epson LX800	£212
Epson LQ500	£340
Epson LQ850	£510
Epson LQ1050	£650
Epson FX850 (New in)	£379
Epson FX1050 (New in)	£478
Citizen 120D	£156
Panasonic 1081	£167
Panasonic P1180 (New	£190
NEC P2200	£340
NEC P6 Plus	£546
NEC P7 Plus	£679
Juki 6100	£296
Amstrad DMP 4000	£305
Epson Laser GQ3500	£1426
Panasonic Laser	£1840
Hewlett Packard Jet II	£1815
Panasonic P1124 (NEW)	£332

BOOKS ST

1001 Things to do with Atari ST	£10.00
1st Book of Atari ST	£16.95
Atari ST Tricks + Trips	£14.95
Mastering the Atari St	£10.95
Kids & the Atari ST	£14.95
ST Programmers Guide	£16.95
Atari ST Explored	£8.95
ST Basic Training Guide	£12.95
Atari ST for Beginners	£12.95
Atari ST Users Guide	£15.95
Atari ST Prog. Advanced Guide	£10.95
ST Disks Drives: Inside & Out	£16.95
Presenting the Atari ST Rev. Ed.	£12.95
Technical Reference Guide ST Vol. 1	£18.95

PROFESSIONAL ATARI SOFTWARE

Advanced Art Studio	£16.95
Aegis Animator	£60.00
Art Director	£34.00
Back Pack	£34.00
Base 2	£45.00
Cad 3D V.1	£20.00
Copy ST (new 1.21)	£27.00
Cyber 3D Developers	£22.00
Cyber Architecture	£20.00
Cyber Cartoon Designs	£20.00
Cyber Control	£41.00
Cyber Future Designs	£16.95
Cyber G.I.S.T. (Sound Ed.)	£23.00
Cyber Human Designs	£20.00
Cyber Paint	£54.00
Cyber Studio	£56.00
Data Fax by Kempston	£42.00
Data Manager	£32.00
Data Manager Pro	£50.00
Data Retrieve	£32.00
Data Scan by Kempston	£245.00
Dbase 2	£69.00
Degas Elite	£19.95
Devpac 2.0	£41.00
Digi Drum	£16.95
Easy Draw 2	£42.00
Easy Draw 2 Supercharged	£69.00
Easy Tools	£27.00
Fast Basic (Disk)	£32.00
Fast Assembler	£16.95
Film Director	£40.00
First Word Plus V.3 (new)	£59.00
Fleet St. Publisher	£87.00
GFA Basic Interpreter	£32.00
GFA Compiler	£32.00
GFA Draft Plus	£98.00
GFA Vector	£23.00
GSTC Compiler	£19.00
GST C Macro Assembler	£19.00
Hisoft Power Basic	£35.00
Hisoft Basic	£55.00
Home Acccounts	£23.00
K-Data	£36.00
K-Graph 3 (new)	£35.00
K-Minstrel 2 (new)	£21.00
K-Spread 2	£59.00
K-Spread 3 (new)	£65.00
K-Word 2	£40.00
Lattice C V3.04	£69.00
Mailshot	£21.00
Mark Williams C V.3	£115.00
MCC Macro Assembler	£35.00
MCC Pascal 2	£62.00
Mini Office Professional	£16.95
Modula 2 Standard	£73.00
Modula 2 Developers	£113.00
Music Construction Kit	£16.95
Paint Pro	£39.00
Paintworks	£23.00
Protext V.4	£69.00
Publishing Partner Pro	£113.00
Publishing Partner	£78.00
Quantum Paint	£13.95
Sage Accountant	£119.00
Sage Accountant Plus	£159.00
Sage Bookkeeper	£84.00
Sage Financial Controller	£238.00
Saved (Hisoft)	£21.00
Spectrum 512	£42.00
ST Doctor	£16.95
Superbase Personal	£45.00
Superbase Personal 2	£69.00
Superbase Professional	£173.00
Super Conductor	£36.00
Swiftcalc	£29.00
Timeworks DTP	£75.00
Timeworks Partner	£35.00
VIP Professional	£115.00
Word Perfect	£170.00
Word Up	£45.00
Word Writer	£50.00

LEISURE SOFTWARE

Advanced Rugby Simulator	£13.95
Albedo	£13.95
Arcade Force 4	£16.95
Arkanoid Revenge	£13.95
Arkanoid	£13.95
After Burner	£15.95
Ballistix	£17.95
Batman	£13.95
Blazing Barrels	£13.95
Bomb Disposal	£19.95
Bombuzal	£16.95
Better Dead Than Alien	£13.95
Bermuda Project	£15.95
Beyond Zork	£16.95
Beyond Ice Palace	£13.95
Barbarian Psygnosis	£16.95
Barbarian Pal.	£14.95
Barbarian Pal 2	£14.95
Battleships	£13.95
Balance of Power	£19.95
Black Tiger	£14.95
Blasteroids	£14.95
Bobby Yazz Show	£14.95
Borodino	£19.95
Creatures	£21.95
California Games	£17.95
Capone	£21.95
Captain Fizz	£12.95
Crazy Cars 2	£15.95
Chrono Quest	£21.00
Corruption	£16.95
Captain Blood	£16.95
Charlie Chaplin	£13.95
Circus Games	£17.95
Carrier Command	£16.95
Combat School	£13.95
Crash Garrett	£13.95
Crazy Cars	£13.95
Dream Zone	£17.95
Driller	£16.95
Dranon Ninja	£13.95
Double Dragon	£13.95
Daley Thompson 88	£13.95
Dark Castle	£14.95
Defender of Crown	£18.95
Dungeon Master	£16.95
Elite	£15.95
Empire Strikes Back	£13.95
Espionage	£15.95
ECO	£13.95
Epyx Collection	£20.95
5 Star ST	£16.95
Fed. Free Traders	£24.95
F-16 Combat Pilot	£16.95
F-16 Vulcan	£16.95
Flight Sim 2	£29.95
Football Director 2	£13.95
4x4 Off Road Racer	£14.95
Flintstones	£13.95
Football Manager 2	£13.95
Fire and Forget	£15.95
Fish	£16.95
F15 Strike Eagle	£15.95
Fernandez Must Die	£16.95
Galactic Conqueror	£15.95
Game Over 2	£15.95
Grail	£19.95
Green Beret	£13.95
Galdragons Domains	£13.95
Gunship	£16.95
G. Linekers Skills	£13.95
Guild of Thieves	£16.95
Helter Skelter	£12.95
Heroes of Lance	£17.95
Hostages	£15.95
Hotball	£16.95
Hotshot	£13.95
Hunt for Red October	£16.95
Impossible Mission 2	£13.95
Insanity Flight	£14.95
International Soccer	£13.95
Joan of Arc	£15.95
Jinxter	£14.95
Jewels of Darkness	£16.95
Kennedy Approach	£15.95
Kenny Daglish Soccer Manager	£19.95
Karate Kid 2	£17.00
Kings Quest 3 Pack	£17.50
Knightorc	£12.95
Kristal	£19.95
Lancelot	£14.95
Live and Let Die	£14.95
Leaderboard Birdie	£16.95
LED Storm	£13.95
Leisure Suit Larry 2	£16.95
Lounge Lizards	£13.95
Living Daylights	£13.95
Leather Goddess	£18.95
Leathernecks	£13.95
Lombard RAC Rally	£16.50
Lurking Horror	£20.95
Maupiti Island	£16.95
Maria Whitakers	£12.95
Manhattan Dealers	£16.95
Manhunter New York	£17.95
Micropose Soccer	£17.95
Munsters	£14.95
Menace	£13.95
Masters of the Universe	£13.95
Mercenery Comp	£17.45
Mickey Mouse	£15.95
Mindfighter	£17.45
Motor Massacre	£13.95
1943	£13.95
Nigel Mansell	£16.95
Nightraider	£13.95
Navcom 6	£17.95
Operation Wolf	£13.95
Obliterator	£16.95
Outrun	£13.95
Overlander	£13.95
Pacmania	£14.95
Peter Beardsley Soccer	£13.95
Phantasm	£14.95
Platoon	£12.95
Pink Panther	£13.95
Prison	£14.95
Psion Chess	£16.95
Police Quest	£14.95
Pawn	£16.95
Purple Saturn Day	£15.95
President is Missing	£17.95
Question of Sport	£13.95
Quadralien	£14.95
R-Type	£13.95
Rambo 3	£13.95
Roger Rabbit	£19.95
Robocop	£13.95
Return of Jedi	£14.95
Rocket Ranger	£17.45
Road Runner	£14.95
Rolling Thunder	£17.95
Rockford	£13.95
Roadwars	£13.95
Sargon 3 Chess	£17.95
Shards of Time	£12.95
Shoot-em-up Con. Set	£16.95
Speedball	£15.99
Stargoose	£14.95
Scenery Disc Europe	£15.95
Scenery Disc Japan	£15.95
Skate or Die	£16.95
Skateball	£16.95
Spitting Image	£13.95
STOS	£24.00
Sargon III Chess	£14.95
Skychase	£13.95
Stealth Fighter	£13.95
Strip Poker 2	£12.95
Summer Olympiad	£13.95
Starquake	£13.95
Shadowgate	£16.95
ST Adv. Creator	£26.50
Scrabble Deluxe	£13.95
Scruples	£13.95
Silent Service	£19.95
Star Glider 2	£16.95
SDI	£18.95
Star Wars	£14.95
Space Quest II	£15.95
S.F. Harrier	£14.95
Superman	£16.95
Sword of Soden	£23.95
Technocop	£18.95
The Deep	£14.95
Times of Lore	£16.95
Tracksuit Manager	£13.95
Turbo Cup	£15.95
TV Sport Football	£13.95
Thunder Blade	£16.95
Tiger Road	£15.95
Techno Cop	£14.95
TRIAD	£19.95
Thundercats	£13.95
Terrorpods	£16.95
Tracker	£14.95
Three Stooges	£17.45
Trivial Pursuit	£13.95
Time & Magik	£13.95
Ultimate Golf	£15.95
Univ. Military Sim.	£14.95
Ultima 4	£16.95
Veteran	£16.95
Victory Road	£15.95
VMS Scenario 1	£12.95
VMS Scenario 2	£12.95
Virus	£13.95
Verminator	£14.95
Wanted	£19.95
War in Middle Earth	£16.95
Wanderer	£16.95
Weird Dreams	£16.95
Wec Le Mans	£13.95
Warlocks Quest	£13.95
Where Time Stood Still	£13.95
Wizard Warz	£13.95
Winter Olympiad	£13.95
Wizball	£13.95
Zany Golf	£16.95

01-381 6618
0923 896969
(24 hours)

Callers welcome at both showrooms

Goods subject to Availability

ALL PRICES INCLUDE VAT/CARRIAGE FREE

Prices subject to change without notice

VISA

A blaze of colour jets in



Nic Outterside tests a superb inkjet colour printer but discovers some annoying snags

A WIDE range of colour printers is available for your ST, from the budget Okimate 20 thermal transfer to the much more expensive Canon PJ80. One of the latest to hit the market is the Integrex Colourjet 132.

Most colour printers use multi-colour ribbons to produce the palette range. These are still dot matrix machines and so make a lot of noise and produce a grainy output.

However, the Colourjet 132 fires little spots of ink at the paper from its four reservoirs of blue, red, yellow and black giving a much smoother dot matrix effect – and without the noise too.

Impact printers use eight or 24 pins so only one pass across the paper is needed to display a line of text. But a jet printer can only print one line of dots at a time, in this case in colour, so it is much slower than its impact contemporaries – around eight times slower.

The standard Epson parallel connector is used to link the Colourjet to the ST, and once plugged in you can treat it exactly as you would any other printer. The printer is housed in a smart beige casing with a coffee colour plastic hood to protect the paper supply – it makes my Epson FX-80 look positively ancient.

One of the most noticeable things about the Colourjet 132 when you set it up, is that the paper, on a roll which fits under the hood, has no sprocket holes and is friction fed through the machine.

The set-up instructions are fairly complex and require you to depress a lever while pressing a button – a similar procedure is used when packing – to prevent the openings through which the ink is fired becoming clogged when the ink dries.

You are warned not to leave the printer off without protecting it against clogging, however during the time I tested it – often leaving it switched off for days, or on for hours without being used – I never had any trouble with clogged jets.

The manual is perhaps one of the most unhelpful and poorly printed I have recently seen. Although it contains many pages of technical appendices, some important character control codes are so badly duplicated that they are almost unreadable.

Also the manual does not explain clearly how to control the printer to produce full colour solid dumps like the ones shown here – not even an Epson manual-style list of what each control code does. So the main problem lay in

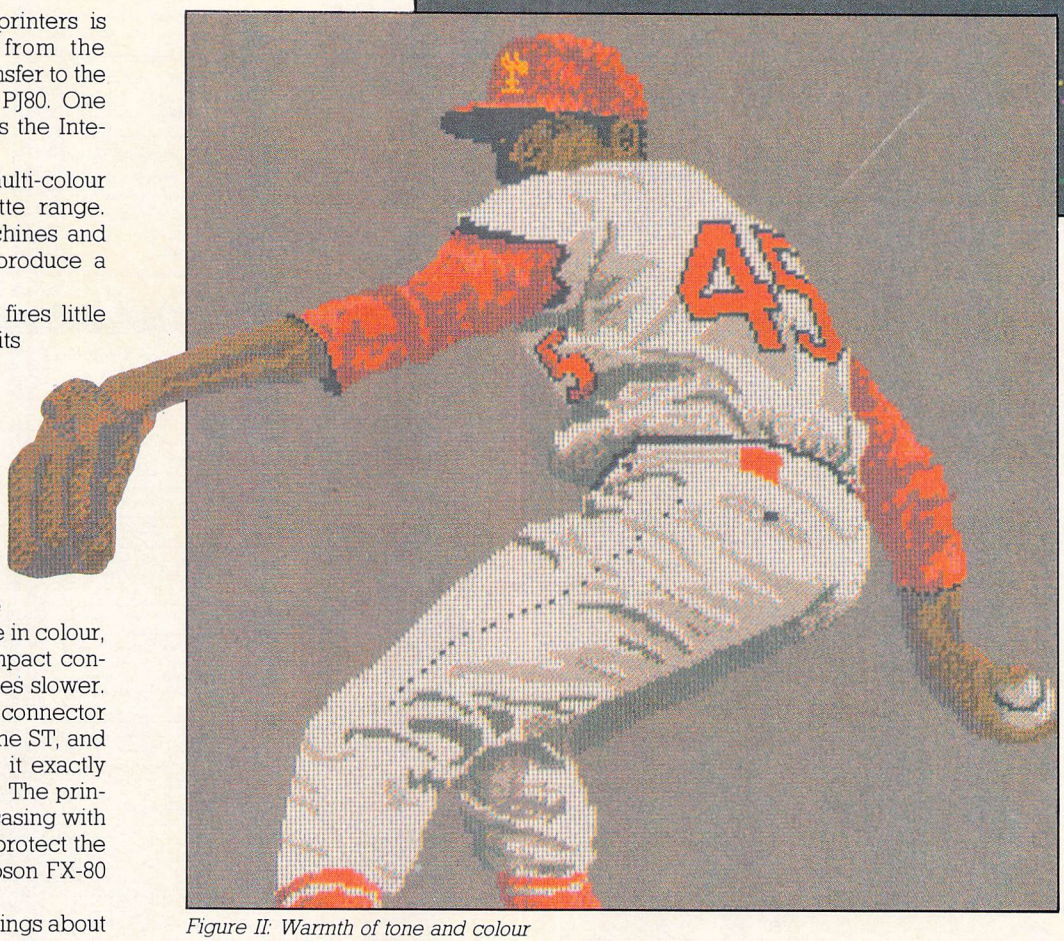


Figure II: Warmth of tone and colour are beautifully reproduced



Figure I: A colour dump of a picture produced by Art Director

getting any sort of dump at all. In the office we use Electronic Arts' Degas Elite as our standard art package for producing screen dumps. It contains 12 customised printer drivers, but unfortunately not one to support the Colourjet 132.

I next turned to Eidersoft's Quantum Paint which advertises a colour driver for this machine. A quick phone call to Eidersoft brought the reponse that due to lack of demand the driver had not been produced.

In desperation I rang Integrex, supplier of the Colourjet, to be told that a company called Gossamer Graphics (Tel: 0932 781152).could provide the necessary driver.

A phone call to Gossamer brought further disappointment – a driver was available, but only for use with Mirrorsoft's cultish Art Director program.

However, Gossamer Graphics kindly sent me the correct driver by the next post and I was at last able to test the printer. Next came disappointment number three – due to memory constraints the driver would not install alongside Art Director on my 520STFM.

However, I managed to install the driver and art package side by side on my Mega 2 ST without any problems – I imagine they would also work together on a 1040ST.

Now all frustrations disappeared as I loaded pictures into Art Director and examined in amazement the high quality printouts I could obtain.

Figure I shows a dump of an Art Director picture. The clarity and depth of colour are absolutely amazing – the best I have seen on any printer for the ST. Figure II gives an example of the warmth of tone and colour which can be obtained using Art Director and the Colourjet 132 in tandem.

Quality was excellent with every dump made because the ink runs slightly, merging with the next dot just enough to add to the effect without detriment to the image.

Hopefully if it proves popular with ST owners, producers of other art packages – Electronic Arts included – will produce drivers to support the excellent Integrex Colourjet 132.

FACT FILE

Product: Colourjet 132
Price: £677.35
Supplier: Integrex, Church Gresley, Burton on Trent, Staffordshire DE11 9PT.
Tel: 0283 215432

POINTS FOR:

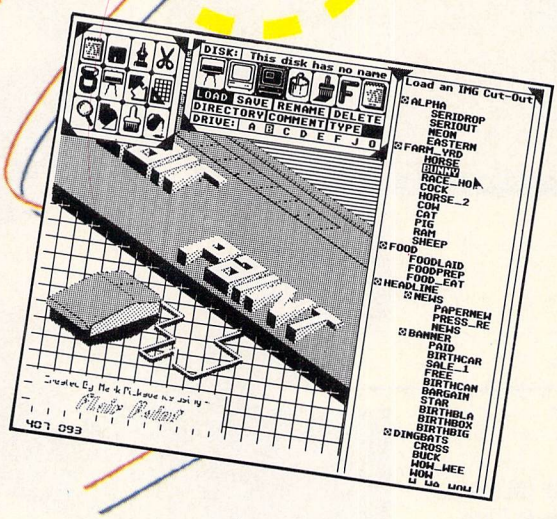
Very smartly housed. Beautiful dumps can be obtained, rich in tone and true in colour.

AGAINST:

Lack of printer driver support. Does not work with Art Director on a 520STFM. Poorly written and badly duplicated manual.







FLAIR paint

© Eigen Software

Create stunning graphics . . . like you've never seen before!

Flair Paint is a state-of-the-art, affordable graphics program that's perfect for creating attention-grabbing illustrations. Two and a half years in development, Flair Paint is written entirely in machine code to make it the fastest ST art package available – and if you have a blitter chip fitted it's blindingly fast.

Flair Paint's powerful features include:

- Scroll around a canvas up to A4 size or bigger – with up to 300 dots per inch resolution
- 12-level zoom for fine editing of individual pixels
- Sophisticated shape and line drawing facilities including Bezier curves, arcs and polygons
- Use as a standalone program or install as a Gem accessory for use with desktop publishing packages or word processors
- Supports Flair, IMG, Degas, Neochrome and Art Director file formats
- Load and use Gdos fonts at any time to include super-smooth text in your artwork
- Edit cutouts before they are pasted back to the canvas
- Brush and pattern editing, and painting over or protecting selected colours
- Generate a range of tones between two selected colours – ideal for intricate shading
- Works in both low and high resolution modes for added flexibility

Flair Paint comes on two single-sided discs containing program, Gdos drivers, Gdos fonts and sample art, and a 76-page manual.

*"What a package! ... Spectacular ... the speed at which some functions work is exhilarating. It's a winner". – **ST/Amiga Format***

*"All the functions you expect – only faster – and many many more besides ... The best art package I know". – **Popular Computing Weekly***

*"Powerful and flexible ... worth checking out". – **Atari ST User***

Flair Paint is everything you need to create fantastic artwork – and it comes to you for only £34.95

Please send me Flair Paint for the Atari ST for £34.95
(Add £2 for Europe & Eire, £5 Overseas)

☐ I enclose cheque payable to Database Software

☐ Please debit my Access/Visa Card no. ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ Expiry Date ☐☐/☐☐

Signed

Name

Address

Postcode

Send to: Database Direct, FREEPOST, Ellesmere Port, South Wirral L65 3EB. Telephone orders: 051-357 2961

9190

STroll into space

Leslie Kaye explains the fundamentals of receiving and then interpreting images from high orbiting weather satellites

SO you've brushed the last space invader bits from inside your monitor, written to everyone with your word processor, and have planned to be out when the phone bill arrives after many happy hours with your communications package. Now for something completely different.

Scientists may spend lifetimes analysing data collected about our planet. However, you don't need to be a boffin to enjoy the ever-changing cloud patterns and the shapes of the continents, but there is much room for research if you are interested. So shall we talk about the weather?

I will show how with a little knowledge, some fairly inexpensive reception equipment and your ST, you can view and predict global weather patterns.

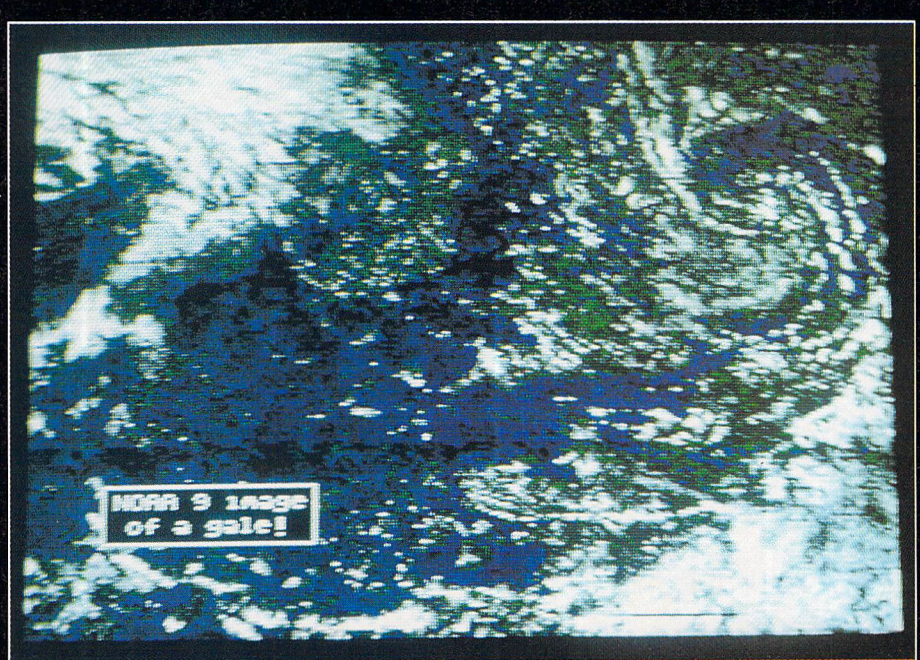
A number of low orbiting weather satellites pass near to overhead every day at heights of 800 or 900 kilometres. These are usually in close to polar orbits, travelling from the North Pole, over the South Pole, then back northwards again. During an orbit of about 100 minutes, the Earth rotates about 25 degrees, so that on each pass they seem to move to the west.

The satellites scan a line 1,500 kilometres or more at right angles to the direction of flight every half second. This may be at optical or infra-red wavelengths. The scan is converted into a radio signal and beamed to Earth. You can receive this signal with fairly simple equipment.

By feeding the scanned lines – received via a hardware add-on – into your ST, and displaying them one above another, a picture is formed. (You can, in fact, bypass the receiving stage by downloading the ready-made images from WeatherLink, via your modem and MicroLink).

With a resolution of two or three kilometres, cloud systems can be seen in quite good detail. Surface features such as lakes and coastlines are also visible in suitable lighting conditions. The times of satellite passes can be predicted for months ahead in seconds by your ST and suitable dedicated software.

With the correct reception equipment two American Tiros series satellites currently available to the amateur meteorologist or weather map voyeur. NOAA 10 can be received in the morning and mid evening on 137.5 MHz. NOAA 11 passes very early in the morning then again in mid afternoon, transmitting on 137.62 MHz. They fly sun synchronous orbits, so show up at about the same time of day.



The British Isles seen from NOAA9

Roving Reds

Very similar is China's Feng Yun satellite which appears at the same time and same place each day. Unfortunately the images transmitted are chaotic because it is tumbling in space out of control.

The more numerous Russian satellites can be a little more difficult to track down because their orbits generally shift a couple of degrees each day. Of the Meteor series, 1/30, 2.15, 16 and 17 may be heard. They give detailed, but lower contrast optical images while in sunlight.

Meteor 3.02 also gives a reverse infra-red image at night. Most interesting perhaps is the oceanographic satellite Okean. This sometimes transmits a radar image of the surface excluding clouds.

While low orbit pictures are impressive, any particular satellite may only be in range three or four times a day.

Much further into the cold depths of space, at about 36,000 kilometres above the equator, lie the geostationary satellites. These orbit the Earth once every 24 hours, and thereby keep up with the Earth's rotation, seeming stationary above us. Meteosat 3 is parked over the Greenwich meridian, from which lofty spot it can see the entire disc of the Earth at once.

It transmits optical, thermal and water vapour absorption images. Ground-based

Turn to Page 52 ▶

◀ From Page 51

computers cut the images into areas, add coastlines, and return the data to the satellite for retransmission for general reception.

Pictures are receivable almost continuously. Weather charts and retransmissions from the American geostationary satellites are also included. One of the American GOES satellites can also be received directly.

The hardware set-up

Satisfactory equipment for receiving low orbiting satellite transmissions can be bought for under £200. It consists of a simple X shaped crossed dipole aerial, a radio receiver and an analogue to digital decoder which also adds line synchronisation.

You will also need your ST and a colour monitor or TV. About 400k of ram is required and at least a single sided disc drive, so almost any ST will do.

A radio can be bought ready made, or as a kit. It should receive the 137 to 138 MHz wave band with good resolution. A dial is much preferable to digital tuning as it allows small adjustments to be made for the doppler effect resulting from the satellite's movement.

If you buy a kit, remember that if the printed circuit board is not already built, aligned and tested, expensive test equipment may be needed to get it working. However, constructing the electronics from a kit not only gives a cost saving, but also is more interesting – if it works – than having everything done for you.

Some decoders on the market are in kit form. Although construction takes several evenings, they are fairly easy to build once some practise with a soldering iron has been had.

This can now be interfaced with your ST. However, computer interface cable may need to be redesigned by your nearest micro electrician, as most decoders refer to the BBC Micro or Amstrad CPC. The easiest access to your ST is via the printer port as simple ribbon cable can be used without further hardware.

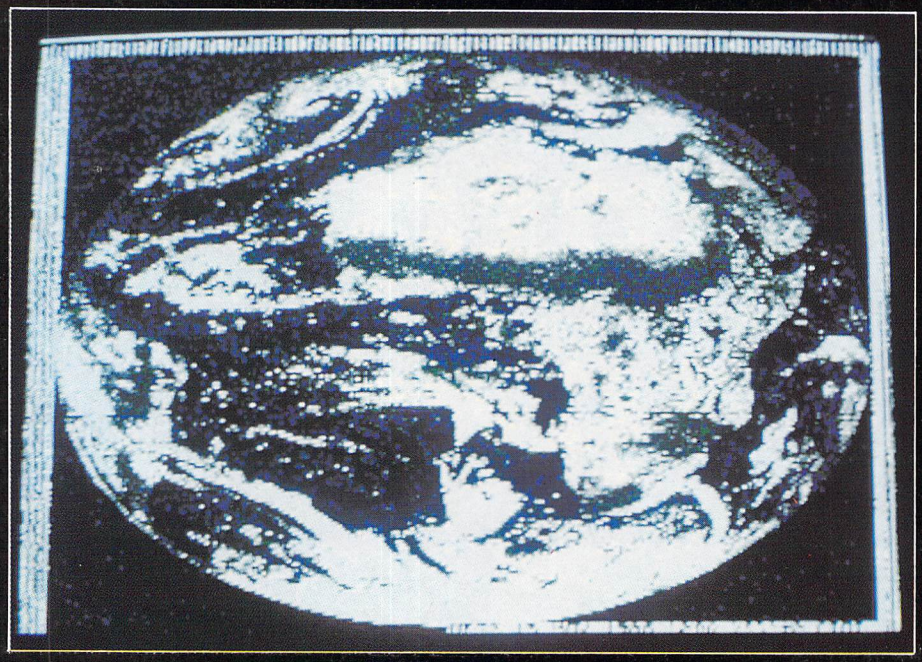
For a further couple of hundred pounds equipment can be upgraded to receive Meteosat. The extra components are a directional aerial – either a Yagi or a small dish – an amplifier, and a device to convert the 1694.5 MHz and 1691 MHz channel one and two – frequencies received down to the 137 MHz required by the receiver. Alternatively a separate 1600 MHz band receiver may be bought.

My equipment was bought from Maplin Electronic Supplies – catalogue available from any branch of W.H. Smiths – and Garex Electronics who advertise with the Remote Imaging Group.

Leslie Kaye is willing to help anyone with advice regarding reception equipment, interfacing and decoding. You may also like to contact the Remote Imaging Group which was formed in 1985 to promote and further interest in weather satellite watching.

It now has more than 1,000 members. The 1989 UK membership fee is £5. Benefits include a quarterly newsletter and blanket permission from the Department of Trade and Industry to receive satellite transmissions. The membership secretary is Des Watson, Norton, Gote Lane, Ringmer, East Sussex BN8 5HX.

Weather forecasting information can also be obtained from Weatherwatch UK on 025-683 448, after 5.15pm weekdays and all day weekends.



A panoramic view of the whole globe

The software

These satellite pictures can be brought into your home on your ST with the addition of a simple piece of commercial software, the Pictures from Space package, which incorporates a single sided disc and full documentation in a sturdy plastic wallet.

The software PFS.PRG orbit prediction option allows information about a satellite pass to be entered, and it will then show or print a three month weather forecast.

After selecting Orbit Forecast from an on-screen menu you can enter data from other satellites. This will obviously give a wider, comprehensive and hopefully more accurate picture of prediction. The forecast if desired can be printed out for hardcopy reference.

The package also allows you to decode, scan and view these satellite images. If required you can change each picture's colour, resolution and shading, polar reversal and zoom to requirement.

The processed image – in low, medium or high resolution – is saved as a Degas PI1 file for use with that art package and other compatible software.

Any previously saved Degas PI1 file may be printed on an Epson-compatible printer. For best results it is wise to process the image on the eight grey luminance palette to give the full palette range of contrast.

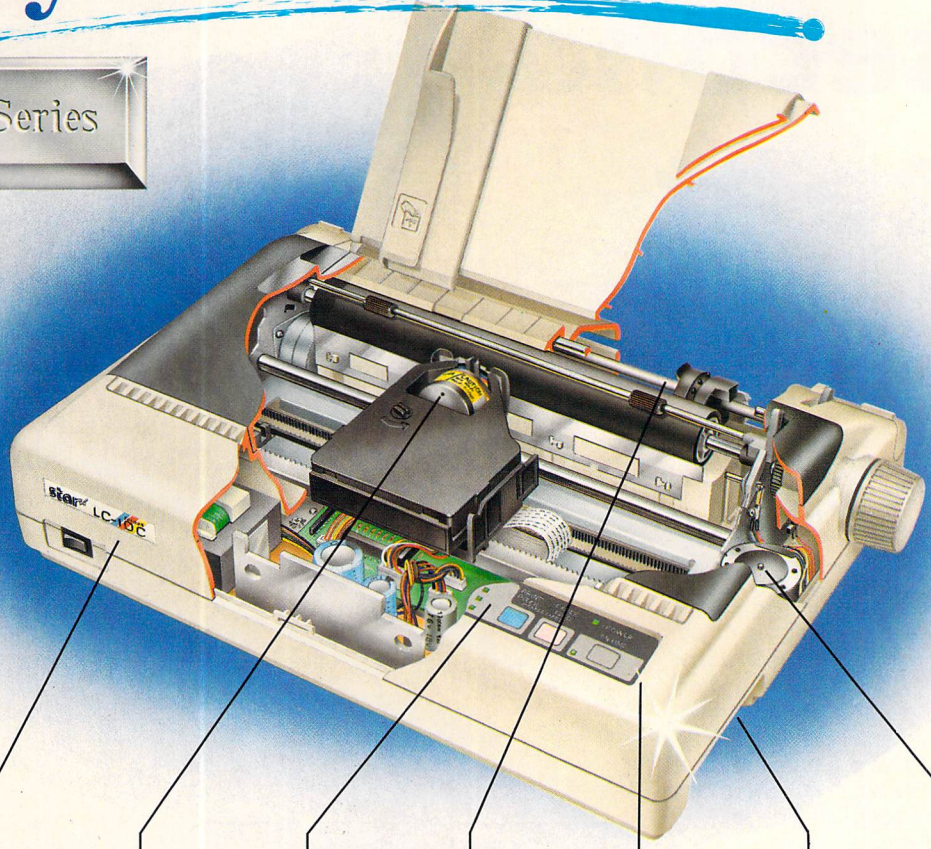
If you are already a part-time meteorologist or simply interested in turning your ST into a weather station further details can be obtained from the addresses below.

FACT FILE

Product: Pictures from Space
Price: £24.95
Supplier: Leslie Kaye, Fieldvale, Park lane, Snitterfield, Warwickshire CV37 OLS.

Quality from the inside out.

The Business Series

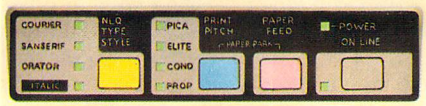


Value | Colour Version | 9 Pin | Fonts | Paper Parking | Simplicity | Compatibility | Speed | Support

The multi-font LC-10 is simple to operate, easy on the eye and comes complete with some features you won't find on many more expensive models.

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

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



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

£ No other 9-pin printer in this price range can match it. Features like its generous buffer, built-in push tractor and revolutionary paper parking facility are included as standard. While the colour versions will give you impressive full colour graphics at very low cost. You could hardly ask for more from a printer.

Behind every Star printer there's a guarantee of superb reliability together with a comprehensive back-up service. Should you need any help at any time you can rely on our national three-level support system which operates throughout the dealer network and is backed by the finest distributors in the country.



THE Star COMPUTER PRINTERS

Star Micronics U.K. Ltd.,
Craven House, 40 Uxbridge Road, Ealing,
London W5 2BS. Telephone: 01-840 1800.

A Division of Star Micronics Co., Ltd., Japan.

Please send me all the information I'll need. (Alternatively, just call Belinda on 01-840 1829).

Name _____ *Company* _____

Address _____

_____ *Postcode* _____ *Telephone* _____

L10ASU5

All trade marks acknowledged. HMSO *Public sector customers may purchase at preferential terms from HMSO. Contact 0603 695256.*

A second byte at your chips



André Willey looks at a new hardware add-on which allows you to program your own 16k-64k eproms

EPROM – that's Erasable, Programmable Read Only Memory – chips are used in many different sections of the electronics industry, including computer design. So the availability of cheap and convenient programming units is very important. Most eprom programmers are separate, stand alone units, with their own keyboards and memory, but they tend to be rather expensive.

A far better solution is to connect the fundamental electronics of such a programmer to a micro and let it do all the hard work – which is just what J.E. Sinclare & Co has done.

Its Lakmeyer eprom programmer is a compact unit – just 8cm by 16cm, and only 5cm deep. A short length of ribbon cable and a rather flimsy plug connect it to the ST's cartridge port – a more flexible and safer arrangement than having the unit plug directly into the ST.

At the front of the light beige box is the eprom socket itself – a standard zero insertion force 28 pin type featuring a small lever to lock the chip into place. In fact, this lever is the only control on the whole unit – all other operations are carried out via the supplied software.

Standard desktop

On loading the software you are confronted with a standard desktop layout, with one open window to log the operations you have performed, and four menu titles – File, Edit, Chip and Type. There was one extra debugging option on my disc, but it's not certain if this will be on the final release.

The File menu permits loading and saving of the buffer, either in whole or in part. There is no facility to handle segmented files so you must make sure to convert any .PRG files you wish to use. You can read files from disc into the buffer with the option of adding the new data at a particular address – useful for building up machine code and data segments from different sources.

Similarly you can save either the whole buffer or specified portions. You can also save odd and even bytes separately – very useful when working with 16 or 32 bit processors which tend to store the low parts of each 16 bit word in one chip and the high parts in another. This method is used for the rom in your own ST.

The Edit menu is by far the weakest portion of the software, I've seen far better on a Spectrum. You are allowed to list 512 bytes to the screen, starting at any address within the buffer. This is painfully slow – taking more than 12 seconds to complete. It is then possible to scroll up and down within that window, which defaults to four lines deep, incidentally.

You may select either hexadecimal or Ascii mode, and then enter a start address. Each byte is individually displayed and you are prompted to enter the new contents, or press Return to skip to the next byte. Entering a full stop quits the Edit mode.

This seems woefully inadequate, compared with even the simplest sector or file editor programs. At the very least I would have expected a full-screen hex and Ascii view, with four-directional mouse cursor control and some form of search mode.

I felt so concerned at the lack of such features that I spoke to the supplier, who felt that editing would be so rarely used that it wouldn't justify the work. So why put anything there in the first place? If a job's worth doing...

The Chip and Type menus were much more useful, providing full control of data flow between eprom and buffer, and also the type of eprom in use. The Type menu is used first to select the chip version and the buffer size – though why the buffer doesn't just define itself to fit in available memory I don't know. One minor niggle here is that after selecting my choice from the four chip types I would have preferred to have seen this ticked as a reminder.

Data transfer

The final menu is entitled Chip, and allows you to transfer data between the eprom and the buffer. The first option allows you to copy from the eprom – or similar configuration rom chip – into the buffer. This data may then be saved or edited like any other buffer contents, and then re-written to another eprom. The size of the source and destination eproms need not be the same.

Before programming the chip the software will verify that it is blank, and prompt you if it already contains data. Similarly the chip is verified against the buffer after programming is complete – a nice touch. Both verify and blank checking are also available from the menu if you require them separately.

You can list the chip contents to the screen without disturbing the buffer, but

this is once again handled in 512 byte blocks via a four line Gem window – surely all of this could be presented via a fast, full screen editor-type environment?

Programming is both fast and efficient, taking just six seconds to check, program and verify a full 8k eprom and twice that for 16k. On the very odd occasions where a verify failed, another pass invariably corrected the situation.

Although the manual states that most Cmos and Nmos chips should work, I found that only the lower power Cmos variety would program successfully – due solely to supply current restrictions affecting the Nmos type.

I understand that later versions of the unit will feature an extra socket to which you can connect a more powerful supply – such as a small transformer. This should alleviate any further power drain problems when using Nmos chips.

Path problems

The software is fairly self-explanatory, but the version I received still requires a lot of work to clean up the Gem interface. For example, the file selector system failed to take account of path details other than drive A:, top level – any other selections were garbled almost beyond recognition.

After I sent the supplier some C source code which correctly handles the file selector box this problem was rectified, but surely it should have been detected earlier? Similarly the old mouse drop-through effect reared its ugly head on more than one occasion, and the Log window seemed rather messy.

On the whole this is a useful accessory for keen electronics engineer or computer hardware hacker, although of little use to casual programmers. Also, at £140 I feel that it is rather overpriced. Maplin, for example, does a fully self-contained unit which may be programmed via an RS232 link for £99.99, and it is far more complex internally. OK, so you need the software to drive it but anyone with even a little programming experience could design something to do the fundamentals, which is really all you get with the Lakmeyer utility anyway.

FACT FILE

Product: Lakmeyer ST Eprom Programmer
Price: £140
Supplier: J.E. Sinclare & Co., 82 Plumstead Common Road, London SE18 3RE.
Tel: 01-316 1779

POINTS FOR:
Easy to read and program chips. Simple connection. Very fast.

AGAINST:
Very poor supplied software – especially the editor. Currently unable to handle Nmos chips. Overpriced.

What is an eprom?

MOST people tend to think of computer memory solely in terms of the quantity of ram quoted in the brochures. In fact your ST can draw on a number of distinct and quite different forms of memory. Ram, otherwise known as random access memory, is a very temporary form of storage which will hold any data you require, but only for so long as power is supplied to the chip.

This means that any information stored in ram chips is lost when you turn the computer off. However ram storage does have the great advantage that all data is immediately accessible to the central processor, giving rise to the great speeds for which computers are famed.

The second form of memory is rom, or read only memory. This is like ram in that it comes in the form of chips which can be accessed very quickly, but unlike ram it contains pre-defined information which is built into the individual chip at the time of manufacture.

There is no way for a computer to alter or erase these contents, and so rom is an ideal way to provide the fundamental operating system. On the ST this includes Tos and Gem itself – so any upgrades or changes to either of these must be made by replacing the rom chips inside the machine.

Finally there a number of external storage devices, such as floppy discs and even remote memory accessed by telephone such as bulletin boards and other telecommunications systems.

There is no practical limit to the amount of storage available via such systems – other than perhaps a financial one – but they can't be accessed anywhere near as fast as the processor could handle the information, a fact of which most modem users will be only too aware.

An eprom is a compromise which exists half-way between ram and rom. It stands for erasable, programmable read only memory, and normally behaves as if it were a rom chip containing permanent data. However, unlike normal rom, its contents can be altered, though not in quite the same way as a ram chip would allow.

Put simply, an eprom chip may be completely erased only by exposing it to a strong ultra-violet lamp for about 20 minutes. This will change every bit of data in its memory to a value of one – or, if you like, all the bytes will be altered to 255.

To re-program it with new data you must switch some of those bits back to zero, while leaving the others set to one – thus forming the correct pattern of ones and zeros for each byte of data. This operation is done one byte at a time by supplying the correct pattern of bits to various pins on the chip.

The data byte itself is provided on eight pins of the eprom, while the address you wish to store it at – coded in binary – is provided at another set of pins. Finally the chip is fed with a power supply of 12.5 volts – which is more than twice its normal read-only voltage – and any zero valued bits are re-set.

It is theoretically possible to re-program an entire eprom by hand – using a set of switches to configure each pin with the correct values before burning them in – but even for a relatively small 8k chip the task would take forever.

As the program or data which you want to place in the chip is probably already stored in electronic form on floppy disc, or perhaps as another eprom or rom, it makes more sense to use an automated programmer to simplify the task, and that is what the Lakmeyer unit does.

It accepts instructions from the host computer and controls the eprom accordingly – setting up the address and data lines and the supply voltage according to the software's instructions to read or write to the chip.

Eproms come in a variety of standard sizes, and the Lakmeyer unit will handle most of the common 28-pin varieties, ranging from the 8k 27 x 64 chips up to the 64k 27 x 512's. Their size is often quoted in kilobits rather than kilobytes, and a 16 kilobyte chip is said to contain eight times as many kilobits – hence the 128 in the chip product number 27 x 128.

Eproms tend to be used for custom applications in electronic design to allow special control software to be stored permanently in firmware rather than having to load it in from disc before use.

There is no rule that says the pin layout of a rom chip must be the same as that of an eprom – roms are custom designed, and may be any layout the manufacturer requires – but in many cases the fact that board design and testing was carried out using eproms means that the layout will be compatible, simply to save on design costs.

This applies to all of the Atari XL/XE 8 bit range, and most older ST's – the ones which use six rom chips rather than the two now employed. In such cases you could program your own variations of the operating system using an eprom programmer.

S.C.C. MAIL ORDER

ATARI HARDWARE

520ST-M	£179.99	1040ST-FM Super Pack	£449.99
520ST-FM Explorer Pack	£269.99	1040ST-FM Prof. Pack	£449.99
520ST-FM Super Pack	£359.99	2Mb Mega ST	£POA
520ST-FM Prof. Pack	£359.99	4Mb Mega ST	£POA

SF354 3.5" 500K Disk Drive (when purchased with any ST) £60.00
SF314 3.5" 1000K Disk Drive (when purchased with any ST) £90.00
SM124 12" Hi Res Mono Monitor (when purchased with any ST) £90.00
SC1224 12" Med Res Col Monitor (when purchased with any ST) £270.00

SF354 3.5" 500K Disk Drive	£69.99	SM124 12" HI Res Mono Monitor	£119.99
SF314 3.5" 1000K Disk Drive	£143.99	SC1224 12" Col Monitor	£270.00
STM1 Mouse Controller	£24.99	60Mb Megafile	£539.99

CUMANA DRIVES

CSA354 1Mb 3.5" Floppy Disk Drive	£96.99	1Mb 5.25" Floppy Disk Drive	£125.99
CSA354E 2nd/3rd Drive for use with CSA354	£96.99	OS-9/68000 Operating System	£449.99

SUPRA DRIVES

20Mb Hard Disk Drive	£494.99	60Mb Hard Disk Drive	£899.99
30Mb Hard Disk Drive	£539.99	120Mb Hard Disk Drive	£1529.99

PHILIPS MONITORS

CM8833 14" RGB/CVBS Med Res Colour	£259.99	8CM852 14" RGB/CVBS Hi-Med Res Colour	£294.99

MATRIX PRINTERS

Amstrad DMP2160	£142.99	NEC P2200	£389.99
Amstrad LQ3500	£349.99	NEC P6	£542.99
Canon PW1080A	£309.99	Panasonic P1081	£199.99
Canon A-60 F	£423.99	Panasonic P1082	£252.99
Epson LX800	£275.99	Seikosha SP-180A1	£169.99
Epson LQ500	£394.99	Seikosha SP-1200A1	£189.99
Micro P MP135+	£149.99	Star LC10	£219.99
Micro P MP165+	£199.99	Star LC10 Colour	£249.99

LASER PRINTERS

Canon LBP-8 A2	£1790.00	HP Laserjet II	£2199.00
Epson GQ3500	£1795.00	Panasonic P4450	£2030.00

GRAPHIC TABLES

CRP A4 Tablet	£372.99	Cherry A3 Tablet	£569.99

VIDEO DIGITISERS/ENHANCERS

A-Magic Turbo Dizer	£131.99	Sam Digitiser	£229.99
Rombo Vidi-ST	£89.99	Rendale Genlock	£RING

SOUND DIGITISERS/SAMPLERS

Pro Sound Designer	£49.99	ST Replay	£65.99
Pro Midi Software	£13.95	ST Sound Sampler	£59.99

MODEMS

Demon II	£82.99	Pace Linnet	£148.99
Designer	£102.99	Pace Series Four 1200S	£389.99
Miracom WS2000	£109.99	Pace Series Four 2123S	£259.99
Miracom WS4000	£169.99	Pace Series Four 2400S	£487.99

CABLES

ST to Scart Monitor Cable	£11.99	Twin Mouse/Joystick Extension Cable	£4.99
ST to Comp. Video Cable	£9.99	4-Way Adaptor	£4.99
Standard Centronics Printer Cable	£7.99	Midi Cable	£2.99
Deluxe Centronics Printer CAble	£9.99	Modem Cable	£12.99

DISK STORAGE/HEAD CLEANERS

Disk Box for 40 x 3.5" disks	£7.99	Disk Box for 50 x 5.25" disks	£8.99
Disk Box for 80 x 3.5" disks	£9.99	Disk Box for 100 x 5.25" disks	£10.99
Disk Box for 120 x 3.5" disks	£11.99	Disk Box for 150 x 5.25" disks	£12.99
3.5" Disk Head Cleaner	£4.99	5.25" Disk Head Cleaner	£4.99

BLANK DISKS

3.5" DS/DD Sony Unbranded Disks x 10	£13.50	3.5" DS/DD Sony Unbranded Disks x 50	£64.00
3.5" DS/DD Sony Unbranded Disks x 25	£32.75	3.5" DS/DD Sony Unbranded Disks x 100	£123.00

ENTERTAINMENT SOFTWARE

Most old and new titles available from stock.
Our prices may not be the cheapest, but our service is first class, as is our recorded delivery postal service!

SOFTWARE

WORD PROCESSING

1st Word Plus	£60	Protext Filer	£17	Word Perfect	£175
K Word 2	£28	Protext Office	£24	Word Up	£47
Protext	£56	TextPro	£30	Word Writer	£38

DATABASES

Base II	£45	Data Retrieve	£30	Superbase Personal	£42
Data Manager	£30	Dbase II	£90	Superbase Personal 2	£69
Data Manager Prof	£53	K Data	£35	Superbase Professional	£173

SPREADSHEETS

VIP Professional	£113	K Spread 2	£55	SwiftCalc	£30
K Spread	£18	Logistix	£87		

DESK TOP PUBLISHING

Calamus	£Ring	Publishing Partner Pro	£Ring	Publishing Partner	£76
Calamus Professional	£Ring	Fleet St Publisher	£87	Timeworks DTP	£75

LANGUAGES/ASSEMBLERS/COMPILERS

GST Macro Assembler	£15	Forth M/T	£38	K Seka	£35
AssemPro	£38	FTL Modula 2	£49	K Occam	£42
Aztec C Professional	£89	FTL Modula 2 Developer	£69	Lattice C V3.4	£69
Aztec C Developer	£124	FTL Editor Toolkit	£35	Make	£35
Source Code Debugger	£69	FTL Tools	£28	Mark Williams C V3.0	£99
BCPL	£69	GFA Basic Companion	£23	MCC Assembler	£35
Cambridge Lisp	£62	GFA Basic Compiler	£45	MCC Pascal 2	£62
csd C Source Debugger	£53	GFA Basic Interpreter	£45	Menu +	£15
Devpac V2.0	£42	GSTC	£15	Modula 2 Standard	£76
Fast ASM Assembler	£15	HiSoft Basic	£55	Modual 2 Developer	£113
Fast Basic (Disk)	£31	HiSoft Power Basic	£35	Nevada Cobol	£39
Fast Basic (Rom)	£62	Pro-Pascal V.21	£76	Personal Pascal 2	£55

UTILITIES

Back Pack	£34	K Index	£14	PIE	£23
C Breeze Editor	£17	K Ram	£21	Pro Sprite Designer	RING
Colour or Mono Emulator	£35	K Resource	£28	Quicktran	£26
COLR Object Editor	£19	K Roget	£35	Saved 2	£21
Crystal	£19	K Rhymes	£21	ST Doctor	£15
Expert Opinion	£68	K Spell	£14	Tempus	£24
Fontz	£19	K Switch 2	£21	Twist	£28
Jack Font	£38	Mailshot	£17	Utilities Plus	£21
K Expert	£55	Mailshot Plus	£35	WERCS	£21
K Graph 2	£35	Partner	£38	WERCS Plus	£35

ARTS/GRAPHICS/ANIMATION

Advanced Art Studio	£17	E/Draw 2 Supercharged	£76	Paint Pro	£38
Aegis Animator	£45	Easy Tools	£30	Paint Pro Library	£19
Art Director	£35	Film Director	£42	Paintworks	£24
Degas Elite	£19	GFA Artist	£38	Quantum Paint	£14
Easy Draw 2	£45	K Rikki	£14	Spectrum 512	£45

CYBER SERIES

Cyber Studio	£60	Future Designs	£19	Stereotek Glasses	£119
Cyber Paint	£53	Human Forms	£23	Cyber Sculp	£60
Cyber Control	£45	3D Developers Disk	£23	Cyber Texture	£38
Architectural Designs	£23	GIST	£26	Video Titling Design	£23

COMPUTER AIDED DESIGN

CAD 3D V1.0	£19	GFA Vector	£26	PC Board Designer	£148
GFA Draft	£76	MasterCAD	£104	GFA Draft Plus	£106

MUSIC/SOUND

Digi Drum	£17	Music Construction Set	£19	Super Conductor	£35
K Minstrel	£21	K-Minstrel 2	£Ring	The Music Studio	£24

COMMUNICATIONS

220-ST	£21	Flash	£19	K Comm 2	£35
BBS V2.0	£35	Kermit & Remote	£15	Ruby Term	£Ring

ACCOUNTS

Accountant	£119	Bookkeeper	£79	Home Accounts	£17
Accountant Plus	£159	Financial Controller	£319	Payroll	£69

EDUCATIONAL

AB Zoo	£11	Maps & Legends	£23	Spell Book Data Disks	£14
Algebra	£11	Perfect Match	£8	Things to do with Words	£19
Fractal Generator	£15	Pre School Kids	£11	Things to do with Numbers	£19
Genesis	£60	Star Struck	£19	Spell with Oscar	£12
Intro to ST Logo	£14	Spell Book (4-6yrs)	£19	Add with Oscar	£12
Invasion	£11	Spell Book (7yrs)	£19	Oscar Data Disks	£6

WHAT YOU CAN'T SEE – ASK FOR

Please make cheques/postal orders payable to SCC MAIL ORDER. All prices are inclusive of V.A.T.
All software orders over £30 delivered free (UK only) – orders under £30 add £1.00 P&P. Courier/Overseas rates on request. ALL PRICES CORRECT AT TIME OF GOING TO PRESS
Please ring to confirm before ordering.

VISA

S.C.C. MAIL ORDER

Access

29 Crowtree Road, Sunderland SR1 3JU. Telephone: 091 565 5756

SCRAP BOOK

MATHEMATICS is a fascinating subject full of beauty, although memories of your maths teacher may cloud your view. We saw one example of this in *Atari ST User*, in January – the Mandelbrot set. Calculated using a mathematical formula, it can produce amazing graphic images when a computer is used to plot the points on the screen.

A completely different type of beauty can be seen in numbers themselves, as shown by **Julie Boswell** of Warrington, Cheshire. You have probably seen palindromes – words or phrases that read the same when read backwards, like MUM and MADAM. You can also have palindromic numbers as well, like 121 and 10201.

These two numbers are in fact special palindromic numbers, as their squares are also palindromes. The square of 121 is 14641, and 10201 squared is 104060401. Most interesting of all is the square of 11111 which is the number 123454321.

These special numbers are rare, and tracking them down is quite a challenge to the mathematician. Many hours of computer processing time has gone into calculating and printing them out. One of the largest special palindromic numbers we have seen is 101010101, but there are even bigger ones than this waiting to be discovered. All you need is an ST and a short Basic program.

The technique is quite simple: Take any number and test it to see if it is a palindrome, if it is then square it and test this too. If they are both palindromes then print them.

Program I, written in HiSoft/Power Basic, shows how this translates into a Basic listing. All you need to do is type it in, run it, then sit back and watch it calculate the palindromes.

If you leave the program running for a few minutes it will stop with an error report. There's nothing wrong with the listing, the problem is that HiSoft Basic puts a limit on the size of numbers you can manipulate. The biggest one you can have is &7FFFFFFF (written in hexadecimal).

However, as we are squaring numbers in the program, the biggest number we can test must be less than the square root of &7FFFFFFF. This is 46,340. When the program tests 46,341 it stops with an *Arithmetic overflow* error message.

To find even bigger special palindromic numbers we must resort to a different technique, as clearly HiSoft Basic can't handle the maths. Program II solves this problem by including its own maths routines. Two sections of memory are reserved as workspace – *n$* holds the number and *s$* holds its square.

Each digit is stored in a separate byte and there is enough space for a number 100 digits long. Basic doesn't recognise these numbers so a specialised print subroutine is required to display them on the screen. A long multiplication subroutine squares the number. (it's not the subroutine that is long, remember doing long multiplication on paper in your early school years?). All this makes the program slightly slower, but the advantage is that you can handle numbers of any size.

A word of warning: Large palindromes are few and far between, so go and have a cup of tea while your micro works them out. Better still, leave it running overnight. Rarer still are palindromic numbers whose square and cube are also palindromic. Program II can be adapted quite easily to calculate these, but we'll leave that brain teaser to you.

SCRAPBOOK is a regular feature consisting of short, simple programs sent in by our readers. It's a place where we can publish all of the interesting little routines that don't end up in our regular features but are too good for us not to share with other readers.

If you have a short program which you think other readers would find useful, send it to:

Scrapbook,
Atari ST User,
Europa House,
Adlington Park,
Adlington,
Macclesfield SK10 4NP.

```
REM Palindromic numbers
REM By Julie Boswell
REM (c) Atari ST User
REM HiSoft/Power Basic

DEFLNG a-z
PRINT "*** Palindromic Numbers ***"
number=10
DO
    IF FNtest(number) THEN
        square=number*number
        IF FNtest(square) THEN
            PRINT number;" : ";square
        END IF
    END IF
    INCR number
    dummy$=INKEY$
LOOP
END

DEF FNtest(n)
n$=MID$(STR$(n),2)
i=1
DO
f=MID$(n$,i,1)=MID$(n$,LEN(n$)+1-i,1)
INCR i
LOOP UNTIL i>LEN(n$)\2 OR f=0
FNtest=f
END DEF
```


```
REM Palindromic numbers
REM By Julie Boswell
REM (c) Atari ST User
REM HiSoft/Power Basic
```


Turn to Page 59 ▶

COMPUTER EXPRESS

ATARI 520ST-FM 1Mb £299 plus V.A.T.

With **SUPER PACK** of over £450 worth of FREE software

plus FREE STARTER KIT

Exclusive **Computer Express** Atari starter kit.
* ST OWNER'S SECOND MANUAL
* PUBLIC DOMAIN SOFTWARE * MOUSE MAT

ATARI HARDWARE

Atari 520STFM, 512K RAM, 1Mb Disk Drive, Mouse.	£235.99
Atari 520STFM 512K RAM, 1Mb Drive, Super Pack S/Ware.	£299.00
Atari 1040STFM, 1Mb RAM, Disk Drive, Mouse.	£399.00
Atari 1040STFM with SM124 Mono Monitor.	£499.00
Atari 1040STFM with Philips 8833 Colour Monitor.	£639.00
Atari Mega ST2, 2Mb RAM, Mouse, Mono Monitor.	£799.00
Atari SM124 12" High Res Mono Monitor.	£119.00
Atari SC1224 12" Med Res Colour Monitor.	£339.00
Cumana 1Mb Double sided 3.5" Disk Drive.	£99.00
Philips 8833 Med Res Colour Monitor – Excellent Buy.	£249.00
Super Drive 20Mb Hard Disk – Auto Boot!	£455.00

PROFESSIONAL ATARI SOFTWARE

DX Heaven Editor – Midi Synth Editor.	£88.00
Steinburg Pro 24 software – from as little as	£150.00
Film Director – Animation Package for Art Director.	£44.00
PC Ditto – At Last a Full IBM Emulator.	£66.00
Timeworks DTP – Xerox Ventura Clone.	£89.99
Easy Draw II – Great with Timeworks DTP.	£39.00
Spectrum 512 – The Ultimate Paint Programme.	£35.00
First Word Plus.	£56.00
WordPerfect.	£169.00
Superbase Personal – Powerful Relational Database.	£73.00
Timeworks Desk Top Publisher – The Ventura DTP Clone.	£34.00
Fastcom – Popular ST Communications Package.	£36.00
Mark Williams 'C' Compiler – 'C' How You Like This.	£90.00
Fast ST Basic (ROM) – It's really fast!	£66.00
Fast ST Basic (Disk) – Disk Version of Above.	£33.00
CAD 3D 2.0 Cyberstudio – The Best 3D Drawing Kit.	£66.00

ATARI TOP SELLING LEISURE SOFTWARE

Advanced OCP Art Studio – Low Cost Art Package.	£18.45
Chessmaster 2000 – 3D Graphics With Speech.	£18.45
Flight Simulator III – Very Realistic Best Seller.	£36.00
Flight Simulator Scenery Disks – For Use with Above.	£18.45
International Soccer – Kick 'em to death.	£17.95
Obliterator – Through the plasma in Cinemascope graphics.	£21.95
Terrorpads – Watch Out They're Here!	£18.45

MANY OTHER TOP RELEASES AVAILABLE

ATARI MEGA ST2

Serious computing with unlimited expandability. 68000 processor running at 8MHz, built–in 720K floppy drive, Midi ports with 3 3 programmable sound channels, Mouse, GEM. Choice of Monitors. High resolution Mono Monitor. £799
Medium resolution Colour Monitor. £934
20Mb Supra Hard Disk ex stock £455

ATARI MEGA WP LASER PACK

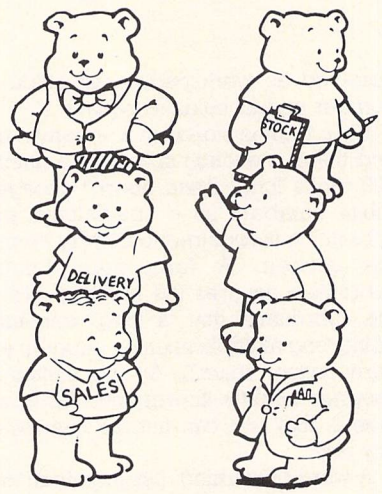
A bargain if ever there was one! 2Mb Atari Mega with Mono Monitor, Atari SLM804 Laser Printer, Lotus 1–2–3 compatible spreadsheet and Microsoft Write WP pack. Our Special Price £1479

ATARI LASER PRINTER

8 pages per minute in 300 dots per inch resolution at a price not be missed. £1085

ATARI 1040ST–FM

All the brilliance of the Atari with 1Mb of RAM and 1Mb double sided disk drive. £399



GAMES SOFTWARE

Afterburner	Call
Carrier Command	Atari Amiga £21
Corruption	Atari Amiga £23
Dagas Elite	Atari Amiga £23
Daley Thompson	Amiga £19
Dragon Ninja	Call
Dungeon Master	Atari £19
F16 Falcon	Call
Flight Simulator 3 IBM	Atari Amiga £39
Garfield	Amiga £16
Interceptor	Amiga £23
Manace	Amiga £17
Operation Wolf	Atari Amiga £18
Starglider 2	Atari Amiga £19
Star Ray	Atari £16
Star Ray	Amiga £23
STOS Game Creator	Atari £26
Super Hang–on	Atari £19
Thunderblade	Call
U.M.S	Atari £23
Virus	Atari Amiga £19
Where Time Stood Still	Atari £16

Plus a full range of all popular software at low prices.

COMMODORE AMIGA 500 £319 plus V.A.T.

AMIGA

Amiga 500 with free TV Modulator.	£319
Amiga 500 with modulator and 10 Games.	£355
Amiga Colour Monitor	£249
Amiga Mini Genlock	£99
Amiga External Drive 3.5".	£79
Amiga 500 External 20Mb Hard Disk with SCSI	£499
Amiga 2000(B) CPU and Keyboard	£979

AMIGA PRODUCTIVITY SOFTWARE

Page Flipper with FX animated graphics and sound.	£99.00
Descartes? Educational Graphing Tool.	£21.99
Silver Ray Tracing and Animation.	£99.00
IntroCAD – Amiga aided design	£44.99
Director – Thames TV on your Amiga.	£42.99
Professional Pagesetting – under	£100.00
Educational Software – from	£32.50
Deluxe Photo Lab – omnicolour paint system.	£56
Photon Paint – the latest word in paint packages.	£49

MIDI for the AMIGA

Call for details of our range of Midi equipment and software.

STAR LC–10

For the money no other printer offers so much. 80 column multifont printer with 8 resident fonts and paper parking. 144cps draft and 36cps in NLQ quality. Parallel or Commodore interface versions available. £209
Colour version printing 7 colours £239

EPSON LX800

This latest offering from Epson zips along at 150cps in draft and 25cps in NLQ. Comes complete with Parallel Esc–P or IBM Parallel interface as standard, plus top mounted tractor feed. Good clear typeface, and 80 column wide. £159

PANASONIC 1081

At this price who can ignore this little winner. 120cps draft and 30cps in NLQ makes it everybody's favourite. £143

NEC P2200

At last a 24 pin printer you can afford, and with NEC's renowned reliability. This little baby cruises along at 168cps in high speed, 140cps in standard and a really nippy 56cps in Letter Quality mode. This printer should be on every decerning buyers list. NEC P2200 £289
Cut Sheet Feed £65

TIMEWORKS

The latest in low–cost DTP. An excellent package for anyone wanting to make a start in DTP for a very modest sum. Timeworks is very popular, and has good telephone support from the manufacturer. IBM £89
Atari £89

All goods guaranteed. Official Purchase orders accepted from Government, Local Authorities, Universities and PLC's. All prices exclusive of VAT and subject to change without notice. Delivery charges extra. No returns or repairs accepted without Returns Authorisation Number (obtainable from our Technical Support Department). Defective dead-on-arrival 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 15% restocking fee. Technical support available Monday to Friday. Export and trade enquiries welcome.

FOR FULL PRICE LIST PLEASE CALL
EXPORT & TRADE ENQUIRIES WELCOME
TELEPHONE & MAIL ORDERS WELCOME

Access CALL 0727 37451 VISA

MICRO-COMPUTERS, PERIPHERALS
SOFTWARE, SALES & SUPPORT
CREDIT CARDS NOT DEBITED UNTIL DESPATCH

a showroom near you

HEAD OFFICE • CAXTON CENTRE • PORTERS WOOD • ST. ALBANS • HERTS • AL3 6XT • (0727) 37451
NORTH LONDON • 99 PARK STREET LANE • BRICKET WOOD • ST. ALBANS • HERTS AL2 2JA • (0727) 72790
MANCHESTER • 85 WASHWAY ROAD (A56) • SALE • MANCHESTER M33 1TQ • 061 962 0780
WEST LONDON • 304 KINGSHILL AVE • HAYES • MIDDLESEX • 01-841 8744.
BIRMINGHAM • 1046-1048 COVENTRY ROAD (A45) • HAYMILLS • BIRMINGHAM B25 8DP • 021-772 5212

SHOWROOM OPENING HOURS: Monday-Friday 9am-6pm Saturday 10am-5pm

◀ *From Page 57*

```
DEFLNG a-z
n$=STRING$(101,CHR$(0))
s$=STRING$(101,CHR$(0))
num=SADD(n$)
sqre=SADD(s$)
POKEB num+99,9:POKEB num+100,13
POKEB sqre+100,13
PRINT "*** Palindromic Numbers ***"
DO
   IF FNtest(num) THEN
      CALL square
      IF FNtest(sqre) THEN CALL pal
   END IF
  increment
  dummy$=INKEY$
LOOP
END

SUB pal
shared num,sqre
PRINT "Number = ";
prnt(num)
PRINT " : ";
prnt(sqre)
PRINT " = Square"
END SUB

SUB increment
shared p,num
p=num+99
c=0
DO
   POKEB p,PEEKB(p)+1
   IF PEEKB(p)>9 THEN
      POKEB p,0
      c=1
   ELSE
      c=0
   END IF
   DECR p
LOOP UNTIL c=0
END SUB

SUB prnt(n)
p=n
WHILE PEEKB(p)=0
   INCR p
WEND
DO
   PRINT CHR$(48+PEEKB(p));
   INCR p
LOOP UNTIL PEEKB(p)=13
END SUB

SUB square
shared num,sqre
FOR p=sqre TO sqre+99
   POKEB p,0
NEXT
p=num
WHILE PEEKB(p)=0
   INCR p
WEND
s=p
FOR p=s TO num+99
n=sqre+(p-num)
q=num+99
c=0
DO
POKEB n,(PEEKB(n)+PEEKB(p)*PEEKB(q)+c)
c=PEEKB(n)\10
IF c THEN POKEB n,(PEEKB(n) MOD 10)
DECR q
DECR n
LOOP UNTIL q<s AND c=0
NEXT
END SUB

DEF FNtest(workspace)
ptr=workspace
WHILE PEEKB(ptr)=0
   INCR ptr
WEND
q=workspace+99
DO
  flag=PEEKB(ptr)=PEEKB(q)
  INCR ptr
  DECR q
LOOP UNTIL ptr>q OR flag=0
FNtest=flag
END DEF
```


Mail Order
For all your Atari Software

Cottage Software

All prices include VAT and delivery within UK (Add £2 per item outside UK)

GAMES

Afterburner	£19.19
Albedo	£15.30
Arctic Fox	£15.24
Better Dead than Alien	£14.62
Bombuzal	£15.81
Corruption	£18.25
Dragonninja	£15.75
Espionage	£15.81
F-16 Falcon	£18.25
Fish	£19.08
Flight Simulator 2	£29.24
Flying Shark	£18.61
Football Manager 2	£14.47
Garfield	£15.80
Gary Linekars Hot Shots	£15.95
Gauntlet 2	£15.50
Goldrunner 2	£15.50
Hellfire Attack	£15.50
Home Accounts	£19.91
Hostages	£19.75
Lancelot	£14.78
LED Storm	£15.95
Lombard RAC Rally	£19.70
Motor Massacre	£15.95
Pacmania	£15.04
Powerplay	£15.50
Puffy's Saga	£19.81
R-Type	£15.20
Robocop	£15.50
Speedball	£19.81
Starglider 2	£18.25
Strike Force Harrier	£18.61
Superman (Man of Steel)	£19.81
Technocop	£15.95
Thunder Blade	£17.11
Ultimate Golf	£15.95
Verminator	£18.25
WEC Le Mans	£15.20

BUSINESS & UTILITIES

1st Word Plus (English)	£72.59
Accountant	£133.72
Advanced Art Studio	£18.61
Aegis Animator	£44.54
Art Director	£36.24
Aztec C 68000 Professional	£109.92
Bookkeeper	£89.13
Business Graphics	£30.38
C-Lab Creator	£236.44
CAD 3-D 1.0	£20.69
CAD 3D Fonts, Drivers, Primitives	£19.65
Cambridge Lisp	£67.41
Campus Draft	£63.26
Chartpak ST	£37.91
Chessmaster 2000	£17.58
COLR Object Editor	£19.65
CSD-C Source Debugger	£55.48
Cyber Control	£47.65
Cyber Paint V2.0	£55.95
Cyber Studio	£70.45
Cyber Studio 3-D Developers Disk	£23.83
Cyber Studio Architectural Design	£23.83
Cyber Studio CAD 3-D V2.0	£71.50
Cyber Studio Future Designs	£19.65
Cyber Studio Human Forms	£23.83
Cyber Studio Stereotek	£116.65
Cyber Texture	£39.50
Data Manager Professional	£55.95
Degas	£16.54
Desktop Publisher (UK)	£70.45
Digicalc	£29.24
Digidrum	£18.15
Draw Art	£39.50
Easy Calc	£36.81
Easy Draw 2	£43.50
Easy Draw 2 Supercharged (D/S DD)	£75.65
Expert Opinion	£38.32
Ez Score Plus	£67.41
Ez Track ST	£51.80
Fast ASM Assembler	£16.54
Fast ST Basic (Disc)	£38.32
Fast ST Basic ROM	£71.55
Final Word	£109.92
Fleet Street Publisher 1.2 (1.1)	£92.24
Font Editor	£64.24
Fonts 1 for Publishing Partner	£10.89
Fontz	£18.61
GFA Artist	£36.61
GFA Basic Compiler	£33.13
GFA Basic Interpreter 3	£49.41
GFA Companion	£23.80
GFA Draft	£71.50
GFA Draft Plus	£102.39
GST. ASM	£16.54
GST C Compiler	£16.54
GST. Edit	£7.78
Hisoft Basic	£62.17
Hisoft Devpac V2. 0	£45.58
Hisoft FTL Modula 2	£53.41
Hisoft FTL Modula 2 Dev	£76.22
Hisoft Power Basic	£30.02
Hisoft Twist	£31.63
Integrated Accounts	£108.89
Invasion (Typing Tutor)	£12.39
K-Comm 2	£37.32
K-Data	£36.24
K-Expert	£60.08
K-Graph 3	£38.11
K-Index	£15.52
K-Minstrel 2	£21.73
K-Occam	£44.54
K-Ram	£22.36
K-Resource 2	£30.59
K-Rhymes	£20.69
K-Roget	£36.81
K-Seka	£37.28
K-Spell	£15.04
K-Spread 3	£68.44
K-Switch 2	£22.36
K-Word 2	£31.06
Lattice C 3.4	£71.50
Logistix V1.15	£88.09
Mailshot	£18.61
Mailshot Plus	£38.32
Maps & Legends	£23.83
Mark Williams C	£98.45
Master CAD	£114.07
MCC Macro Assembler	£37.28
MCC Pascal 2	£65.85
Modula 2 ST Vers 3	£73.58
Music Construction Set	£19.03
Nominal Ledger	£37.28
Paintworks	£26.96
PCB Designer	£146.17
Pro Sound Designer	£45.58
Pro Sprite Designer	£17.58
Prospero C	£95.00
Publishing Partner	£73.11
Purchase Ledger	£36.28
Quantum Paintbox 2	£19.00
Real Colour Option	£44.07
Signum! 2 (TOS Version)	£184.00
Spectrum 512	£47.65
ST Replay	£63.30
ST Toolbox	£25.87
Stock Control	£36.28
STOS Games Programmer	£21.73
Superbase Personal	£77.72
Superconductor	£39.35
Wercs	£29.24
Word Perfect	£176.24
Word Up	£44.54
Zoomracks 1	£31.63
Zoomracks 2	£51.80

TURBODIZER £135 : HANDY SCANNER £269 : LINNET MODEM £139 : PANASONIC CAMERA £265 : CUMANA 1MB DRIVE £105

Just because you don't see it – doesn't mean we haven't got it
For full details, send a **large** stamped, addressed envelope
Please make cheques and postal orders payable to:

'COTTAGE SOFTWARE'

Dept. STU, P.O. Box No. 8, Shaw, Oldham, OL2 8QN. Telephone: 0706 845365

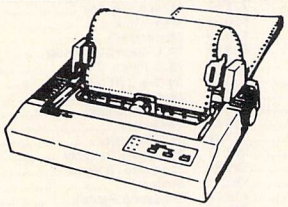
ATARI ATARI

FIDGET LTD., 150 DESBOROUGH ROAD, HIGH WYCOMBE, BUCKS. HP11 2QA
TEL: (0494) 33144/32018

FIDGET

Title	RRP	Fidget
1943	19.95	12.95
5 Star	24.95	15.95
Action Service	19.95	12.95
Action ST	19.95	12.95
Afterburner	19.95	12.95
Airball	24.95	15.95
Altair	19.95	12.95
Alternate Reality	24.95	15.95
Arkanoid II	19.95	12.95
Army Moves	19.95	12.95
Bad Cats	19.95	15.95
Balance of Power	29.95	19.95
Barbarian 2	19.95	12.95
Barbarians (Palace)	14.99	10.50
Barbarians (Psygnosis)	24.95	15.95
Bermuda Project	19.95	12.95
Batman	19.95	12.95
Better Dead Than Alien	19.95	12.95
Beyond Zork	24.95	15.95
Bionic Commandos	19.95	15.95
Black Lamp	19.95	12.95
Blue War	19.95	15.95
Bombfusion	19.95	12.95
Bubble Bobble	19.95	12.95
Bubble Ghost	19.95	12.95
Buggy Boy	19.95	12.95
Captain Blood	24.95	15.95
Carrier Command	24.95	15.95
Championship Baseball	24.95	15.95
Chopper X	9.95	6.95
Chuckie Egg	19.95	12.95
Circus Games	19.95	12.95
Clasiques One	19.95	12.95
Colossus Chess X (10)	24.95	15.95
Computer Hits	24.95	15.95
Corruption	24.95	15.95
Crazy Cars II	24.95	15.95
Cybernoid	19.95	12.95
Dark Castle	24.99	15.95
Defender of the Crown	29.95	19.95
Deja Vu	24.95	15.95
Diablo	14.95	10.50
Driller	25.95	15.95
Dungeon Master	24.95	15.95
Eagles Nest	19.95	12.95
Eddie Edwards Super Ski	19.95	12.95
Eliminator	19.95	12.95
Elite	24.95	15.95
Emanuelle	19.95	12.95
Empire Strikes Back	19.95	12.95
Enduro Racer	14.99	10.50
Exalon	19.95	12.95
Eye	14.95	10.50
F-15 Strike Eagle	24.95	15.95
F-16 Combat Pilot	24.95	15.95
Falcon	24.95	15.95
Fire & Forget	24.95	15.95
Five Star	24.95	15.95
Flight Simulator Scenery	24.95	15.95
Flight Simulator	45.95	35.95
Flying Shark	19.95	12.95
Football Director 2	19.95	12.95
Football Manager II	19.95	12.95
Fun School (Over 8)	19.95	12.95
Fun School (Under 8)	19.95	12.95
Gauntlet II	19.95	16.94
Get Dexter II	19.95	12.95
Goldregons Domain	19.95	12.95
Goldrunner I	24.95	15.95
Goldrunner II	19.95	12.95
Guild of Thieves	24.95	15.95
Gunship	24.95	15.95
Hell Bent	19.95	12.95
Hollywood Poker	14.95	10.50
Hotball	24.95	15.95
Human Killing Machine	19.95	12.95
Hyper Drome	19.95	12.95
Ikari Warriors	14.99	10.50
Impact	14.95	10.50
Incredible Shrinking Sphere	19.95	12.95
International Karate +	19.95	12.95
Jewels of Darkness	19.95	12.95
Jinxter	24.95	15.95
Joan of Arc	19.95	16.95
Kenny Daglish Soccer Manager	19.95	12.95
Killdozers	19.95	12.95
King's Quest	29.95	19.95
Knight Orc	19.95	12.95
Lancelot	19.95	12.95
L.E.D. Storm	24.95	15.95
Legend of the Sword	24.95	15.95
Leisure Suit Larry etc.	19.95	12.95
Leviathan	14.95	10.50
Live and Let Die	19.95	12.95
Lombard RAC Rally	24.95	15.95
L.S.L. Goes Looking for Love	29.95	19.95
Mafdet	19.95	12.95
Maga Pack	24.95	15.95
Manhattan Dealers	19.95	12.95
Manhunter in New York	24.95	15.95
Maria's Christmas Box	14.95	10.50
Menace	19.95	12.95
Mercenary	24.99	15.95
Mickey Mouse	19.95	15.95
Mindfighter	24.95	15.95
Mini Golf	19.95	16.95
Mission Genicide	9.95	6.95
Moebious	24.95	15.95
Moon Patrol	14.95	13.95
Mud Pies	19.95	9.95
Nebulas	19.95	12.95
Netherworld	19.95	12.95
Ninja	9.99	6.95
Obliterator	24.95	15.95
Off Shore Warrior	19.95	12.95
Ogre	24.95	15.95
Oids	19.95	12.95
Operation Wolf	19.95	12.95
Overlander	19.95	12.95
Outcast	9.95	6.95
Out Run	19.95	15.95
Pandora	19.95	12.95
Peter Beardsley	19.95	12.95
Phantasie II	24.95	20.95
Platoon	19.95	12.95
Plundered Hearts	24.99	15.95
Police Quest	19.95	12.95
Predictor	19.95	12.95
Prison	19.95	12.95
Psion Chess	24.95	15.95
Purple Saturn Day	24.95	15.95
Quadrallen	19.95	12.95
Question of Sport	19.95	12.95
Rambo 3	24.95	12.95
Return to Genesis	19.95	12.95
Revenge II	9.95	6.95
Roadwars	19.95	12.95
R-Type	19.95	12.95
S.D.I.	19.95	12.95
Shadowgate	24.95	15.95
Side Arms	19.95	12.95
Silent Service	24.95	15.95
Silicon Dreams	19.95	12.95
Sky Rider	14.95	10.50
Sorcery Plus	19.95	12.95
Space Harrier	19.95	12.95
Space Quest	24.95	15.95
Speed Ball	24.95	15.95
Spider Tronic	19.95	12.95
Spy v Spy	24.95	15.95
Stac	39.95	25.95
Star Glider	24.95	15.95
Star Glider II	24.95	15.95
Stargon 3	24.95	15.95
Star Trek	19.95	12.95
Star Wars	19.95	12.95
Stir Crazy	19.95	12.95
Strike Force Harrier	24.95	15.95
Street Gang	14.95	10.50
Sub-Battle Simulator	24.95	15.95
Summer Olympiad	19.95	12.95
Superconductor	49.95	39.95
Super Hang-On	19.95	12.95
Supersprint	14.95	10.50
Techno Cop	19.95	16.95
Terror Pods	24.95	15.95
Tetris	19.95	12.95
The Gambler	14.95	10.50
The Grail	19.95	12.95
The Munsters	19.95	12.95
Thunder Blade	19.95	12.95
Thundercats	19.95	12.95
Thunder (Spelling Checker)	69.95	19.95
Thunder Wing	19.95	12.95
Time and Magic	19.95	12.95
Times of Lore	19.95	12.95
T.P. New Beginning	24.95	15.95
Track Suit Manager	19.95	12.95
Trivial Pursuit	19.95	12.95
U.M.S.	24.95	15.95
Ultima 3	24.95	15.95
Ultima 4	24.95	15.95
Uninvited	24.95	15.95
Vegas Gambler	24.95	15.95
Veteran	19.95	12.95
Victory Road	19.95	12.95
Virus	19.95	12.95
War Games Construction Set	24.95	15.95
Winter Games	24.95	15.95
Wizball	19.95	12.95
World Darts	14.95	10.50
Wrath of Nikademus	24.95	20.95
Xenon	19.99	12.95
Zac Macracken and the Alien Mind Benders	24.95	15.95

******* PLEASE PHONE TO GET LATEST RELEASES *******



CITIZEN 120D PRINTER

£149
Inc. VAT
FREE CARRIAGE
(UK mainland)

* **TWO YEAR WARRANTY**
* IBM and Epson Compatibility
* 120 CPS Draft
* 25 CPS NLQ Print
* Tractor and Friction Feed
* Graphics Printing
* 4K Buffer
* Includes: Mains Plug, Printer Ribbon, Manual
* Printer cable to connect the 120D to Atari ST computers only £7.95

Access, Barclaycard welcome,
24 hour answering phone,
trade and official order enquiries
welcome.

VISA

TO ORDER:
Simply phone or send in your order, stating full name, address, Visa or Access numbers, cheque or money order payable to:

FIDGET

FIDGET LTD., 150 DESBOROUGH ROAD, HIGH WYCOMBE, BUCKS. HP11 2QA
TEL: (0494) 33144/32018

A serious word

Nic Outterside visits Kuma and meets the men responsible for more than twenty serious application packages for the Atari ST

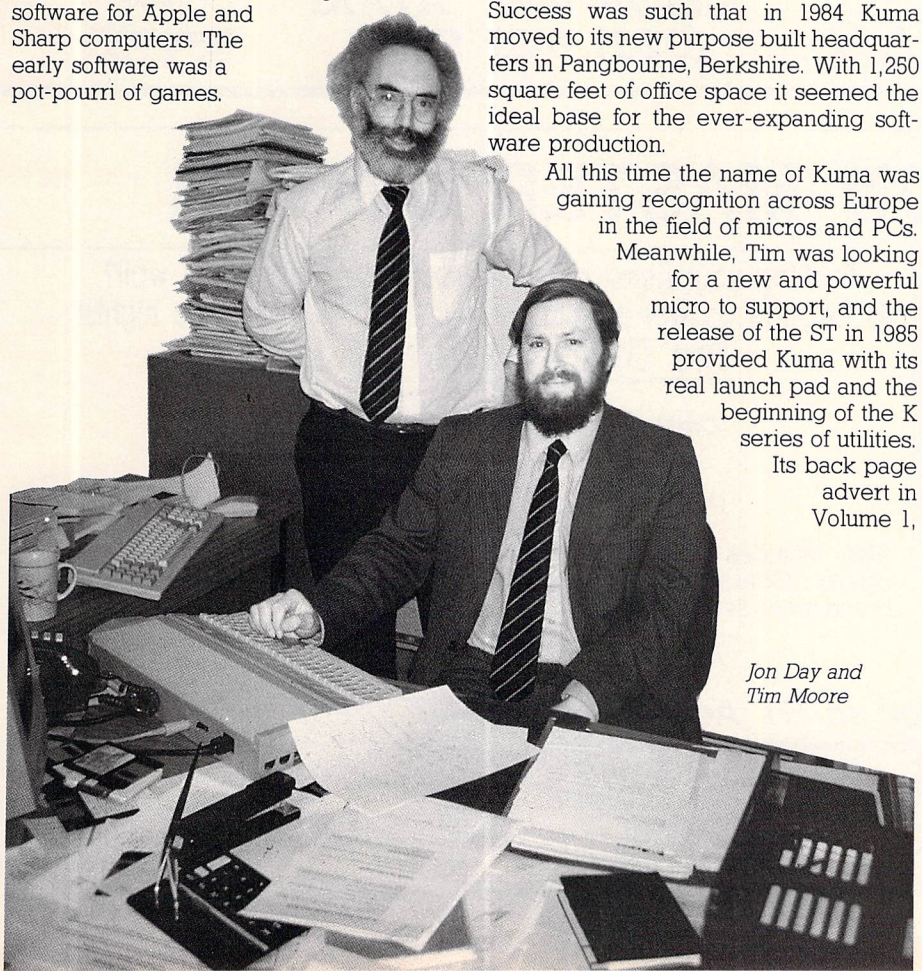
A NAME long synonymous with high quality serious software for the ST is Kuma, a company which shunned the spotlight as it built on many successes to earn a reputation second to none.

The company was formed early in the 1977, when MD Tim Moore and marketing director Jon Day first joined forces. Together they opened New Bear Computer Store – so called because of Tim's nickname, The Bear – in Newbury, with soon to be opened branches in Manchester and Birmingham.

The store retailed electronic components, computer kits, computer books and their own Bear magazines. In addition Jon and Tim began publishing their own commercial software and at one point had more than 15 titles available for the Apple II.

This venture continued successfully until 1982 when both men realised that they could offer more to software development and publishing than to selling peripherals from a few High Street stores.

The shops were sold and Kuma Computers came into existence in a small terraced house in Maidenhead. Stuck between a solicitor's office and an Indian take-away, it began producing software for Apple and Sharp computers. The early software was a pot-pourri of games.



Jon Day and Tim Moore

word processors, spreadsheets and other utilities.

Very soon Kuma was revamping its software for the ever-expanding Sharp MZ700 and writing languages and entertainment packages for the Apricot, MSX and Sirius ranges. Jon and Tim were also responsible at this time for writing the popular arcade game Alien Destroyer for the Sinclair Spectrum.

Book publishing was also proving a profitable sideline, with Mike Shaw's original Psion Organiser becoming an immediate bestseller – it has to date sold more than 50,000 copies. Kuma's second Psion publication went out of print only four days after release.

ST support

Success was such that in 1984 Kuma moved to its new purpose built headquarters in Pangbourne, Berkshire. With 1,250 square feet of office space it seemed the ideal base for the ever-expanding software production.

All this time the name of Kuma was gaining recognition across Europe in the field of micros and PCs. Meanwhile, Tim was looking for a new and powerful micro to support, and the release of the ST in 1985 provided Kuma with its real launch pad and the beginning of the K series of utilities. Its back page advert in Volume 1, Number 1 of *Atari ST User* bears testimony to the fact that Kuma became one of the first companies to produce serious software for the ST. The K-Seka 68000 assembler was a fast and easy to use utility which immediately endeared itself to ST programmers.

K-Ram, written by Rod Pratt, was an immediate best seller. This fast and flexible ram disc utility is still installed on my work disc and is used almost every day of the working week.

As 1986 arrived, Kuma – now employing a staff of six – released the definitive spreadsheet for the ST, K-Spread 1. This still sells in large numbers despite the fact that two more powerful updates – K-Spread 2 and K-Spread 3 – have succeeded it.

K-Word, K-Graph and K-Comm followed and also went through improvements and updates. Kuma prides itself on its no quibbles upgrade service which has kept it at the forefront of the ST market. Jon emphasised that there is always an upgrade either available or in development for nearly all Kuma products.

He further explained that the initial idea behind the exclusive ST K series was to provide a set of business products which would intercommunicate. As such, it would provide the ST businessman with a computerised office framework for a realistic price – well below the Lotus 1-2-3 PC series of business applications.

Since then the series has expanded, with titles such as K-Index and K-Spell and also taken on board other important utilities such as the poets' companion K-Rhyme and the musical composition program K-Minstrel.

1987 brought update versions of the earlier programs and the release of the excellent database manager K-Data, the thesaurus K-Roget and the ram switch program K-Switch. Meanwhile Kuma was expanding its market base into Germany and France and other smaller European countries where the ST was gaining strength.

1987 also saw Kuma making its first conversions of the successful ST K programs for the still plodding Commodore Amiga.

Its work was also becoming more involved in translations of its packages into other languages as their market place spread to encompass Spain, Greece, Denmark, Sweden, Australia, the Middle East and the USA.

Tim had taken the judicious and

Turn to Page 62 ▶

◀ *From Page 61*

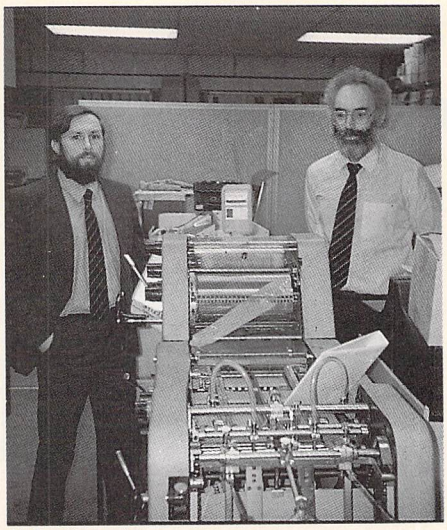
independent step of bringing all parts of the software production process in-house. This included development, writing, duplication of discs, documentation, printing on the company's own K-9 printer and distribution.

At this time the offices were becoming overcrowded – despite an increase in floor space to 2,500 square feet – and Kuma's programmers were becoming increasingly frustrated by continual interruptions caused by the bustling activity around them.

New premises at a secret location in the North of England were acquired and the team of five programmers was secreted away to work on more upgrades and new products. This left Tim and Jon, a team of five packers, various ancillery workers and Karen Carter to deal with despatch and printer June Weller at the Pangbourne offices.

The past year has seen the release of K-Spread 3 – reviewed on Page 45 – and more conversions of the K series for the Commodore Amiga and IBM PC compatibles.

Jon and Tim have just celebrated their 11th birthday in partnership, and Kuma itself has now been in existence nearly seven years. Time perhaps to reflect on the current state of play and to look towards the future. They have ridden the recession of the early 1980s and survived the piracy endemic in the software business.



K-9 – the printer

They recognise the necessity for the serious user to make security back-ups of his master discs. So their answer to the pirates has been to ignore program protection and to concentrate on card registration of product supported by hefty and informative manuals which would cost a pirate a fortune to photocopy.

Currently sitting high in the ST marketplace, Kuma could be excused for bowing out or relaxing, but the opposite is true. While Tim devises the Kuma masterplan for the next two years Jon watches the marketplace and states that Kuma will continue producing top quality serious utilities for the ST. "I like the ST, and we intend to stay with it", he says.

He sees the market as particularly healthy for business and serious utilities, despite Atari's recent policy to bundle the 520STFM as a games machine.

"Many ST users are second generation micro owners and are developing beyond using their machines for games purposes". More and more users are upgrading their STs and increasingly, Kuma is supplying new customers who own 1040 or Mega STs.

Tim Moore views continued growth as important and sees the US market as the next area to crack.

Kuma is developing a new application product for the ST due for release this summer. No details are available, but it promises to shake the market.

This is a company with a close association with the ST and ST users and a company that promises to be with us for many years to come.

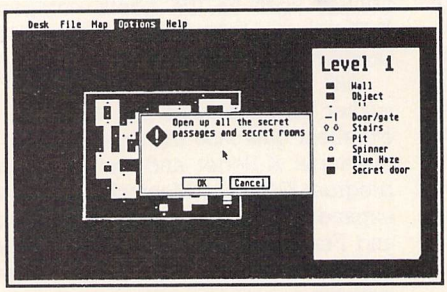
SOFTWARE EXPRESS

For AMIGA and ATARI (021) 643 9100

ATARI

Access VISA

DUNGEON MASTER EDITOR



Bashing your ~~head~~ characters against a dungeon wall?
At last, the answer is here to all those frustrating late nights!

The Dungeon Master Editor

from *Softex*

Create shortcuts, new passages etc.
Open doors without keys!
Remove secret doors!
Print out maps of all fourteen levels!

Also includes the revised "Way of the Firestaff" with the "List of Spells", Character Attribute Chart, even more hints and tips and a brand new set of maps.

Available for the Atari ST and Amiga

£9.95

(Disk & Book P&P £1.00)

As reviewed in ST Action (December 1988)

MIDLANDS
212-213 Broad Street,
BIRMINGHAM, B15 2JP
Tel: (021) 643 9100

For the best in Service & Support, visit our Regional Branches

SOUTH
9 Exeter Street,(The Viaduct),
PLYMOUTH, Devon, PL4 9AQ
Tel: (0752) 265276

GULTRONICS

COMPUTER CENTRE – 01-436 3131 (5 lines)
LONDONS LARGEST LEADING ATARI CENTRES

MAIL ORDER HOTLINE 01-436 3131 (5 lines)

SHOWROOMS

Open Monday to Saturday 9 a.m. to 6 p.m.
223 TOTTENHAM COURT ROAD, LONDON W1
15 TOTTENHAM COURT ROAD, LONDON W1
43 CHURCH STREET, CROYDON, SURREY
Mail Order Hot Line (01-436 3131)

RING NOW FOR ATARI DTP PACKAGES

ATARI – COMPUTERS

Atari PC1	£299
Atari PC2	£POA
Atari PC3 DD + Mono Monitor	£POA
Atari PC3 HD + Mono Monitor	£POA
Atari PC4	£POA
Atari 520STFM 1 Meg Explorer Pack	£259
Atari 520STFM Super Pack	£349
Atari 1040STFM	£399
Atari 1040 STFM (Business Pack)	£449
Atari Mega 2	£699
Atari Mega 4	£899

ATARI – SYSTEMS

Atari 520STFM + SM124 1 Meg	£379
Atari 520STFM + SC1224	£549
Atari 520STFM + Philips 8833	£498
Atari 1040STFM + SM124	£499
Atari 1040STFM + Philips 8833	£618
Atari 1040STFM + SC1224	£670
Atari Mega 2 + SM124	£799
Atari Mega 2 + SC1224	£970
Atari Mega 2 + Philips 8833	£920
Atari Mega 4 + SM124	£999
Atari Mega 4 + SC1224	£1178
Atari Mega 4 + Philips 8833	£1118

MONITORS FOR ATARI

Atari SM124	£110
Atari SC1224	£259
Philips 8833	£229
Philips 8852	£259
Philips 8853	£POA
Philips 8873	£490

ATARI DRIVES

Atari SF354	£99
Atari SF314	£149
1Mb 3.5" Atari	£POA
1Mb 5.25" Atari	£POA
Atari SH 205 Hard Disc (20Mb)	£399
Atari Megafile 30 Hard Disc	£499

PRINTERS FOR ATARI

Epson LX800	£229
Epson FX800	£395
Epson FX1000	£499
Epson FX800	£519
Epson LQ500	£299
Epson LQ850	£559
Epson EX1000	£699
Epson LQ1050	£725
Epson LQ2500+	£895
Panasonic 1081	£159
NEC P2200	£299
NEC P6+	£POA
NEC P7+	£POA
Star LC10	£195
Star LC10 Colour	£240
Star LC24-10	£POA
Toshiba P321SL	£POA
Toshiba P341SL	£POA
Toshiba P3518L	£POA
Juki 6200	£POA

LASER PRINTERS

Atari SLM804	£1090
Epson LQ3500	£POA
Toshiba Laser 2	£2399
Star Laser	£1839
Panasonic Laser Printer	£POA
HP Laser Printer	£POA

We will try to match or beat any price at your time of purchase

UTILITIES

1st Word Plus	£59
ST Write (Elite)	£69
Word Perfect	£199
Word Writer (Timeworks)	£79
Fleet St Publisher	£95
Data Manager	£39.95
Swiftcal	£65
Atari DTP (Timeworks)	£79.00
Easidraw Supercharge 2	£89.00
Protext	£69.00

All prices inc. VAT & UK mainland delivery

THIS MONTHS SPECIAL OFFERS

Brother M1109 Printer	£149.00
Brother M1209 Printer	£199.00
Star LC10 Mono	£195.00
Star LC10 Colour	£240.00
Atari PC3 30Mb plus Mono Monitor	£799.00
Atari Mega ST 2	£699.00
Atari Mega ST 4	£899.00
Mega File (30 Mb Hard Disk)	£449.00

Mail Order Hotline 01-436 3131 (5 lines)

GULTRONICS

All prices correct at time of going to press, and are subject to change without prior notice. All prices available only on Mail Order. All goods subject to availability. All prices include VAT & UK mainland delivery

All Mail Orders, Corporate & Educational enquiries welcome

Enquiries to:

217-218 Tottenham Court Road, W1P 9AF
Tel: 01-436 3131. Fax: 01-636 1075

WORLDWIDE SOFTWARE
1 Bridge Street
Galashiels TD1 1SW

WORLDWIDE SOFTWARE

WORLDWIDE SOFTWARE
106A Chilwell Road, Beeston
Nottingham NG9 1ES

ATARI ST SOFTWARE

3D Pool	14.35
1943 Battle of Midway	14.35
Afterburner	16.45
Airborne Ranger	16.45
Andes Attack	7.25
Artura	14.35
Baal	14.95
Ballistix	14.95
Barbarian II	13.25
Batman	13.25
Battlehawks 1942	19.95
Bismark	16.45
Blasteroids	14.95
Blazing Barrels	13.25
Buggy Boy	13.25
Butcher Hill	14.35
California Games	14.35
Captain Blood	16.45
Captain Fizz	11.20
Carrier Command	16.45
Colossus Chess X	16.45
Cosmic Pirate	13.25
Crazy Cars II	16.45
Custodian	14.95
Cybernoid II	14.95
Double Dragon	14.95
Dragon Scape	14.95
Dream Zone	16.45
Dragon Ninja	13.25
Dungeon Master	16.45
Eliminator	14.35
Elite	16.45
Exolon	14.35
4x4 Off Road Racing	14.35

ATARI ST SOFTWARE

F.O.F.T.	23.95
F16 Combat Pilot	15.95
Fish	16.45
Flight Sim II	28.95
F16 Falcon	15.50
Football Director II	13.25
Football Manager II	13.25
Flying Shark	13.50
Galactic Conqueror	14.95
Galdregons Domain	13.25
Games Winter Edition	17.95
Guardian Moons	14.35
Guerilla War	13.25
The Deep	14.35
Gary Lineker Hot Shot	14.35
Gunship	16.45
Lombard RAC Rally Sim	16.45
Helter Skelter	11.20
Heroes of the Lance	17.95
HKM	14.95
Hostages	16.45
Incredible Shrinking Sphere	13.25
Ingrids Back	14.95
International Karate +	14.35
Jet	28.95
Joan of Arc	14.35
Kennedy Approach	16.45
Kenny Dalglelsh Manager	14.35

ATARI ST SOFTWARE

Lancelot	13.25
Last Duel	14.95
Leaderboard Collection	
Birdie	14.35
LED Storm	14.95
Leisure Suit Larry II	21.95
Times of Lore	16.45
Leisuresuit Larry	
(adults Only)	13.25
Manhunter New York	22.95
Menace	13.25
Motor Massacre	14.35

ATARI ST SOFTWARE

Microprose Soccer	17.95
Milenium 2.2	17.95
Mini Golf	13.25
Night Raider	14.35
Operation Neptune	17.95
Operation Wolf	13.25
Outrun	14.35
Outrun Europa	14.95
Overlord	14.35
Pacmania	13.25
Purple Satin Day	17.95
Puffys Saga	17.95

ATARI ST SOFTWARE

Strike Force Harrier/	
Spitfire 40	16.45
Strip Poker II Plus	9.95
Superman	16.45
Techno Cop	14.35
The Kristal	21.95
Thunder Blade	14.35
Thunderwing	14.35

★★★★★★★★★★★★★★★

SUPER HANG ON 12.50

★★★★★★★★★★★★★★★

Tiger Road	14.35
Time & Magik	13.25
Time Scanner	14.95
Times of Lore	16.45
Titan	16.45
Track Suit Manager	14.35
Triv Pursuits New Beginning	16.45
Ultima V	16.45
Ultimate Golf	14.35
Universal Military Sim	16.45
Victory Road	13.25
Vindicator	14.35
Virus	13.25
Warlocks Quest	13.25
War In Middle Earth	21.95
WEC Le Mans	13.25
Weird Dreams	16.45
West Eur Scenery (Flt Sim II)	15.99
Where Time Stood Still	13.25
Zak McKracken	17.95

FAST DELIVERY ON ALL STOCK ITEMS BY 1ST CLASS MAIL SPECIAL OVERSEAS SERVICE BY AIR MAIL WORLDWIDE
CREDIT CARD ORDERS ACCEPTED BY PHONE OR MAIL CREDIT CARD ORDER TELEPHONE LINES

NORTH, SCOTLAND, N. IRELAND, 0896 57004 — OVERSEAS ONLY NOTTINGHAM 225368 — SOUTH, MIDLANDS, WALES. 0602 252113

JOYSTICKS/PERIPHERALS

Cheetah 125 Plus	6.95
Cheetah Mach 1	10.95
Speedking	10.99
Speedking with Autofire	11.99
Comp Pro 5000	12.95
Comp Pro 5000 Clear	13.95
Comp Pro 5000 Extra	14.95
Cruiser	8.99
Ram Delta	7.99
Mouse Mat	4.99
ST Dust Cover	6.99
3.5" disk drive Head Cleaner	6.99
Lockable Disk Box 100 x 3.5"	10.95
10 x 3.5" DS/DD disk	9.95

Powerdrome	18.95
Prison	14.35
No Excuses	13.25
R-Type	16.45
Rambo III	13.25
Robocop	13.25
Rocket Ranger	17.95
Savage	13.25
Scrabble Deluxe	13.25
Skateball	17.95
Sinbad & Throne of Falcons	16.45
Space Harrier	13.25
Speedball	16.45
ST Five Star	16.45
Star Ray	13.25
STOS	22.95

Please make cheques or postal orders payable to WORLDWIDE SOFTWARE.
All prices include postages & packing in UK. Overseas add £1.50 per cass/disk for AIR MAIL delivery. Credit Card orders accepted by phone or mail.
Advertised prices are for mail and telephone orders.

ATARI ST SUPERDEALS

520 STFM SUPER PACK

£349.00

Inc VAT and Next Day Delivery

Super Pack Includes:

- ★ 520STFM 512K Keyboard with Built-in 1 Megabyte disk drive and TV Modulator
- ★ £450 of games software including BUGGY BOY, TEST DRIVE, MARBLE MADNESS, WIZBALL and 17 more.
- ★ Organiser Business Software including WORDPROCESSOR, SPREADSHEET and DATABASE.
- ★ FREE JOYSTICK!
- ★ All leads, manuals PLUS MOUSE and free mains plug!

REMEMBER! Many ST's do not come with BASIC, ours come with ST BASIC REV D by Metacomco.

520 STFM EXPLORER PACK

As 520STFM Superpack but with only one free game and no joystick or Organiser –

£269.00 inc

PRINTERS

Citizen 1200 inc lead	£159.00
Star LC10 inc lead	£239.00
Star LC10 colour inc lead	£269.00

1040 STFM SUPER PACK

£439.00

As 520STFM Superpack but with 1 meg memory 1040STFM

1040 STFM BUSINESS PACK

£439.00

Business Pack Includes:

- ★ Atari 1040STFM Keyboard with 1 meg memory and 1 meg built-in disk drive plus TV modulator.
- ★ £385 worth of Business Software including MICROSOFT WRITE word processor (£150), SUPERBASE PERSONAL Database (£60), VIP PROFESSIONAL Lotus 123 Spreadsheet clone (£150) and Metacomco Basic (£25).
- ★ All leads, manuals and mouse.

MONITORS

Philips 8833 Colour monitor inc lead	£259.00
Atari SC1224 Colour Monitor inc lead	£269.00
Atari SM124 Mono Monitor inc lead	£104.00

DISK DRIVES

Atari: SF314 1 meg inc lead	£139.00
Cumana C5A354 1 meg inc lead	£99.00

CREDIT CARD ORDERLINE 0908 78008 ☎

To order: either call the credit card order line above with your Access/Visa credit card details or make a cheque/PO payable to: Digicom Computer Services Ltd and send it with your order to the address below. We've moved to larger premises – Callers most welcome!

DIGICOM

Unit 36, Wharfside, Fenny Stratford, MILTON KEYNES MK2 2AZ

All prices include VAT and delivery

COLOURJET 132

HIGH PERFORMANCE COLOUR INK JET PRINTER
(compatible with IBM pc, BBC micro, Nimbus etc.)

- ★ PRINTS ALL 64 SCREEN COLOURS FROM CGA AND EGA USING OPTIONAL INTEGREX SOFTWARE
- ★ EMULATES OTHER PRINTERS (A1210, PJ1080A and QUADJET)
- ★ OVERHEAD TRANSPARENCY PRINTING
- ★ 80 + 132 COLUMN OPERATION, A4 WIDTH
- ★ UP TO 1280 DOTS/LINE ADDRESSABLE
- ★ FULL VIDEOTEX CAPABILITY
- ★ OPTIONAL BUFFERED RS232 (INTERNAL)
- ★ HIGHLY VERSATILE

ULTRA LOW NOISE

LIST PRICE £589 + VAT

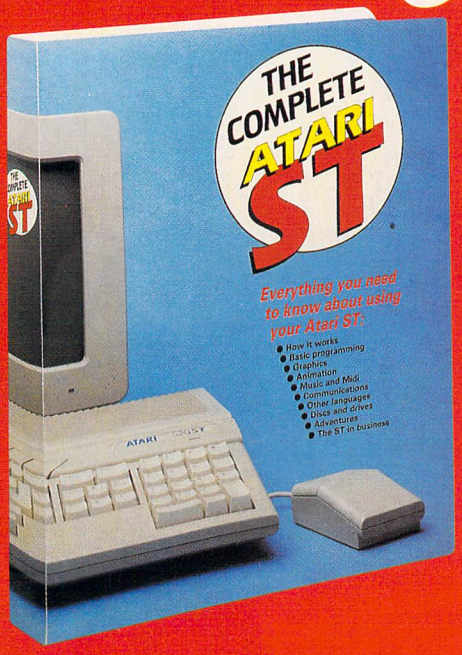


EDUCATIONAL DISCOUNTS AVAILABLE

INTEGREX LTD CHURCH GRESLEY, BURTON ON TRENT
STAFFS DE11 9PT
Tel (0283) 215432
Telex 341727 INTEGX

HMSO PUBLIC SECTOR CUSTOMERS: FOR SPECIAL PRICING CALL 0603 695051

Get right to the heart of your ST



Month by month The Complete Atari ST has been building up into the most comprehensive reference work for the top selling Atari ST range.

By bringing together some of the most talented ST enthusiasts in Britain, we have produced a clear, precise and colourful guide covering every major aspect of this exciting 16 bit computer.

All the colour-coded sections come with punched holes for easy assembly into your special binder.

SPECIAL OFFER

Bring yourself up to date

If you have missed out on any of the previous issues, now is your chance to fill the gaps in your collection by taking advantage of our superb bumper bundle offer.

It consists ALL the issues of *Atari ST User* since August 1988 containing everything so far published for The Complete Atari ST – together with the special sturdy binder.

What The Complete Atari ST has covered...

ST Business

How to set up your ST to run a small business, the peripherals you may need, using word processors and spreadsheets

ST Programming

An introduction to the structure of C, defining C functions, coping with variables and input routines

ST Languages

First steps in ST Basic, common key words using strings and variables, loop structures and logical operators

ST Gem

A short history of Gem graphics, creating fill patterns, setting up windows, AES functions explored

ST Hardware

The ST's internal structure examined, tracing and curing faults, exploring floppy and hard disc drives

ST Graphics

Learning to draw what you see, using the palette, mixing colour, creating interest, pictorial composition

ST Adventures

Variations in plots, collecting treasure, coping with parsers, creating atmosphere and solving riddles

Single back issues are still available at a cost of £2

Please turn to the order form on Page 133

This month

More pages to add to your collection on:

ST Programming

Building a library of useful C functions

ST Business

A closer look at how to use an ST spreadsheet

ST Gem

Continuing examination of AES functions in Gem

ST Languages

Building arrays in simple Basic programming

COMING NEXT MONTH

- Looking at databases for business purposes
- A new section on music and Midi on the ST
- Start of a tutorial on using machine code
- We dig deeper into the AES functions in Gem

Conversion factors

THERE are times when a program needs to access a lot of pre-defined information. Consider a utility which converts values expressed in one notation to values expressed in another, for instance, converting metric weights and measures into imperial ones. The conversion in itself is quite straightforward – you simply multiply the figure you wish to alter by a conversion factor.

For instance, one inch is approximately 2.5 centimetres, so the conversion factor you would use to change inches to centimetres would be 2.5. A program to convert inches to centimetres would look something like this:

```
10 INPUT "Inches";i
20 PRINT i;"inches = ";i*2.5;"cm"
30 END
```

However, the conversion factor for each pair of units like metres-miles, pounds-kilograms and so on is different and there are an awful lot of them, so this program is not a very satisfactory solution. A much better way would be to store all the conversion factors in an array.

But the problem remains: How do you get all the numbers into the array in the first place? The obvious solution is to simply set up the array as a series of assignments:

```
10 DIM fac(5)
20 fac(1)=2.5
30 fac(2)=0.3
40 fac(3)=1.2
50 fac(4)=0.2
```

This works OK, but it causes two problems: First, the program is not very clear, which could give rise to errors, and second it is very long winded to write and debug.

Reading data

WHAT is required then, is some simple way of tying all the data together in a simple and organised fashion – a way you, and anyone else, can understand. Basic fortunately, provides a rather elegant solution to this problem, in the form of the related READ, DATA and RESTORE statements.

The syntax of READ and DATA look like this:

```
READ variable [,variable,...]
DATA item1, item2 ...
```

The READ statement is followed by a list of variables and DATA is followed by a list of data items. At first sight this may look very strange, so let's apply it to a program:

```
10 READ count
20 FOR n=1 to count
30 READ name$(n),title$(n)
40 NEXT
.
.
.
1200 DATA 2
1210 DATA "Mark","Mr"
1220 DATA "Jane","Miss"
```

At line 10 READ attempts to assign the first item of data to *count*. The first data item is the number two, so this is the same as saying:

```
count=2
```

The variable *count* is then used to determine the number of loops to be performed by the FOR ... NEXT structure. READ assigns the following items of data to the arrays *name$* and *title$*. The loop continues until exhausted. At first sight this may still seem a little strange. For instance, how does Basic know where the data is? Or, how does it know what values to put in which variables?

The solution to the first problem is very simple. When Basic comes across a READ statement it searches the program from the start until it comes to a DATA statement. This position is then stored internally in a variable called the data pointer. Every time an element of data is read the pointer is incremented by one. So the data pointer always points to the next item of data to be read – not necessarily on the next line.

The second problem is left entirely to the programmer. When Basic tries to assign data to a variable it assumes the variable and data are compatible, and if not this gives rise to a very confusing error.

Consider the following:

```
10 READ name$,age
20 DATA "Freddy",29
```

This is directly equivalent to:

```
10 name$="Freddy"
20 age=29
```

Basically...

WHILE READ and DATA must exist in the same program, there is nothing to tie them together. They are not a looping structure like FOR ... NEXT or a conditional structure like IF ... THEN ... ELSE. In other words, the DATA keyword can exist anywhere in the program as long as it is the first statement on a line.

Basically...

THERE are several schools of thought regarding where data should be placed in a program. Some say at the start, others at the end, others say as close as possible to the lines where it is used. I prefer to organise data at the end of the program – out of harm's way – where it can be added to or amended easily.

```
  10 REM Metric converter
  20 ready=1:count=0:con$=""
  30 WHILE temp$<>"END"
  40 READ temp$,temp
  50 count=count +1
  60 WEND
  70 RESTORE
  80 DIM con$(count),fac(c
ount)
  90 FULLW 2
 100 FOR n=1 TO count
 110 READ con$(n),fac(n)
 120 NEXT
 130 WHILE ready
 140 GOSUB 170
 150 WEND
 160 REM Print list
 170 CLEARW 2
 180 GOTOXY 0,0
 190 RESTORE
 200 FOR n=1 to count
 210 PRINT "(";n;") ";con$
(n)
 220 NEXT
 230 PRINT:INPUT "Selectio
n";choice
 240 IF choice=count THEN
PRINT "Bye":END
 250 IF choice THEN GOSUB
280
 260 RETURN
 270 REM Subroutine to cal
culate conversion
 280 t%=INSTR(0,con$(choic
e),"|")
 290 from$=LEFT$(con$(choi
ce),t%-1)
 300 t%=INSTR(t%+1,con$(ch
oice),">")
 310 result$=RIGHT$(con$(c
hoice),LEN(con$(choice))-t
%-1)
 320 PRINT:PRINT "Convert:
";con$(choice):PRINT
 330 PRINT "Enter number o
f ";from$;
 340 INPUT from
 350 PRINT from;from$;"=";
from * fac(choice);result$
 360 PRINT:INPUT "Press Re
turn to continue...";a$
 370 RETURN
 380 END
 390 DATA "Cms --> Inches"
,0.394
 400 DATA "Metres --> Feet
",3.281
 410 DATA "Kilometres -->
Miles",0.621
 420 DATA "Inches --> Cms"
,2.54
 430 DATA "Feet --> Metres
",0.305
 440 DATA "Miles --> Kilom
etres",1.61
 450 DATA "END",0
```

Read all about it

which is correct. Now consider this:

```
10 READ name$,age
20 DATA 29,"Freddy"
```

This does not work. See if you can work out why for yourself.

Structuring data

THIS brings us to the third point – organisation. A lot can be said about being neat and structured in programming, but there are few cases when this rule applies so strongly as it does in data. The rules are:

- Keep it simple
- Group related elements together whenever possible

If you follow these guidelines you will find programs are more likely to work first time and are easier to debug if they do go wrong.

Data organisation can be seen in the example listing. This is a program to convert metric measurements to imperial and back again. Don't enter it just yet, but consider the way the data has been arranged:

```
400 DATA "Metres --> Feet",3.281
410 DATA "Kilometres --> Miles",0.621
420 DATA "Inches --> Cms",2.54
```

Each DATA line consists of two items. First there is a text string which is used to form part of an options menu. Alongside it is the conversion factor itself. In this way you can see which conversion applies to which factor. Likewise you can add more conversions very simply. Now let's assume the data had been set out like this:

```
400 DATA "Metres --> Feet"
410 DATA "Kilometres --> Miles"
420 DATA "Inches --> Cms"
430 DATA 3.281,0.621,2.54
```

In this case the program would have to be amended to account for the different layout. All the same, the data does not mean an awful lot – it is just strings of text and meaningless numbers.

Before leaving the subject of data there is one other command, without which most programs would be very hard, if not impossible, to write. As has already been said, the data pointer is incremented by one every time an item of data is read. When Basic runs out of data – the pointer runs past the end of the program – it prints the message *Out Of Data*.

If you want to read the same data more than once you must reset the pointer back to the beginning. This is done with the RESTORE instruction. There are two ways of using it – to start reading the data from the beginning simply use RESTORE, but to start reading at a particular line number use something like RESTORE 2000 where 2000 is the line number.

It is important to remember that you can only restore to the start of a line, but Basic's data pointer can be anywhere along a line.

New sets of data must therefore always start at a new line.

Let's now consider the metric conversion utility. There are two ways of looking at this: Experts would call it contrived, beginners complex and know-it-alls elegant. In fact it has elements of all three. As a program it illustrates many of the points already discussed and brings in a few new ones. Most interestingly though, it is expandable.

It makes use of a simple set of data and a few rules to ensure the data can be expanded easily. When run, it presents a menu of seven items, six of which are the conversions and the seventh a neat exit to Basic. New conversions can be added between lines 440 and 450, and these will be included automatically. You should always aim to make your programs expandable like this if possible.

Here is how it works: Lines 10-60 set up the program and count the number of data elements. Lines 70-80 reset the data pointer and dimension the arrays. Lines 90-150 read the data in to the arrays. Lines 160-260 print the menu of options. Lines 270-370 calculate the conversion. Lines 390-450 contain the data.

The conversion routine makes use of some string slicing to make the program's output more interesting. As an exercise see if you can work it out for yourself.

Handling data

TO further illustrate the use of READ and DATA here is a short program that prints anagrams on the screen. It prompts you to solve it and enter the correct word:

The bulk of the listing is fairly simple, but there are a few lines that may require a bit of thought to work out what is going on. The words are stored in data statements at the end of the listing and they are preceded by a single data item indicating the number of words present.

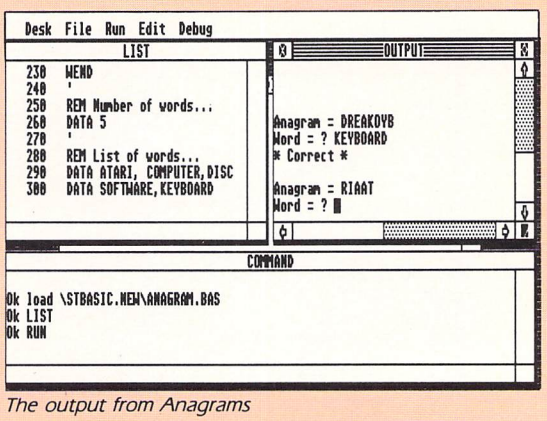
The first task the program performs is to read the number of words into the variable *n%*. Two arrays are then dimensioned – one for the word (*word$*) and one for its anagram (*w$*). A FOR ... NEXT loop reads each word into *word$* and another FOR ... NEXT loop scrambles a copy of it in *w$*.

Lines 100 and 110 are quite complex. The first picks a letter in the word at random and the second puts it at the front of the word. This process is carried out 10 times and the result is that the letters become scrambled.

The WHILE ... WEND loop towards the end of the listing picks a word at random and prints its anagram.

Your guess is compared to the word and the appropriate message is printed via an IF ... THEN ... ELSE statement.

```
  10 REM Anagrams
  20 '
  30 REM Initialise
  40 READ n%
  50 DIM word$(n%),w$(n%)
  60 FOR i%=1 TO n%
  70 READ word$(i%)
  80 w$(i%)=word$(i%)
  90 FOR j%=1 TO 10
 100 p%=1+INT(RND*LEN(w$(i
%)))
 110 w$(i%)=MID$(w$(i%),p%
,1)+LEFT$(w$(i%),p%-1)+MID
$(w$(i%),p%+1)
 120 NEXT
 130 NEXT
 140 '
 150 REM Print anagrams
 160 CLEARW 2
 170 WHILE NOT bored
 180 PRINT
 190 p%=1+INT(RND*n%)
 200 PRINT "Anagram = ";w$
(p%)
 210 INPUT "Word = ";guess
$
 220 IF guess$=word$(p%) T
HEN PRINT "* Correct *" EL
SE PRINT "* Wrong *"
 230 WEND
 240 '
 250 REM Number of words..
 260 DATA 5
 270 '
 280 REM List of words...
 290 DATA ATARI, COMPUTER
 300 DATA SOFTWARE,DISC
 310 DATA KEYBOARD
```



The output from Anagrams

Getting into spreadsheets

A simple price list

SO far we have looked at the basic principles of spreadsheets and how they can prove invaluable for small business purposes. Now we will take the next important step and observe in more depth how you can make these electronic accounts sheets work for you in given situations.

Most spreadsheets for the ST work in similar ways, but they all have their own quirks and exclusive peculiarities. To explain some simple operations and calculatory functions we will use Glentop's Graphic Sheet and Kuma's K-Spread 3 as our working examples of spreadsheets in action.

To give you an idea of the saving in time – time is money in business – and effort that a spreadsheet and ST can bring, we'll work through a couple of simple examples.

Any ST spreadsheet will allow you to construct a price list like that shown in Figure I, instantly to calculate VAT and mark-up which can be constantly updated. Bear in mind however, that the actual mechanics for doing so will vary slightly depending on which sheet you use. For simplicity we will temporarily ignore VAT and look at how, using K-Spread 3, the price list was made up.

The first stage is to boot up the spreadsheet which should load with the edit cursor – the small oblong box – located in the top left hand corner of the sheet (cell A:0). Now your first tasks are fairly simple as you enter the column headings along row number one, pressing the right arrow after each heading has been entered.

However, you will notice that the heading Part Number partly disappears as you enter the next heading Title. This is because the first label was too long for the default width of the cell, so you will need to widen cell A:0.

This is a simple procedure: Locate the mouse arrow on the bottom right hand corner of A:0 and press the Alt and left mouse keys simultaneously. Now drag the arrow towards the right, release the key and the cell will have been widened to accommodate the words Part Number.

Now you are ready to enter the part numbers. To save typing time, sequential part numbers can be generated automatically using a FILL command in K-Spread 3's Options Menu.

To do this, select Fill Range from the Options menu. Choose the range of cells that you wish to fill by entering the parameters A1:A10 into the Range Dialogue box – shown in Figure II.

Now click on OK and Select Fill by Column by clicking on the downwards facing arrows. Choose the starting and finishing points of the part numbers, in this case 1001 and 1010, then select an increment of one. This procedure can be clearly seen in Figure II. The incremental part numbers will now be displayed in column A, rows 1-10.

The next important step is to set up a template for generating the price list. You will see at first hand the calculatory speed and power of an ST spreadsheet as it automatically works out selling prices as cost prices are entered.

The percentage mark-up should be entered into cell D1. For this example we assume the mark-up to be 50 per cent, so 1.50 – one whole plus 50 per cent – is entered into cell D1. The mark-up is standard across the product range, so this figure can be copied down the mark-up column.

To do this, select cell D1 by clicking on it and then drag it to the column header. Enter into the Range Dialogue the parameters 1:10 and press Return. The markup 1.50 will now be copied to the relevant range.

Now you must set up the formula to perform the calculations, the object being that the spreadsheet automatically works out the selling price in column E by multiplying the cost by the mark-up.

Next enter some sample prices into column C1 and enter the calculatory formula C1*D1 (cost times mark-up) into cell E1.

The formula can be copied down the sheet by selecting and dragging the cell onto the column header, entering

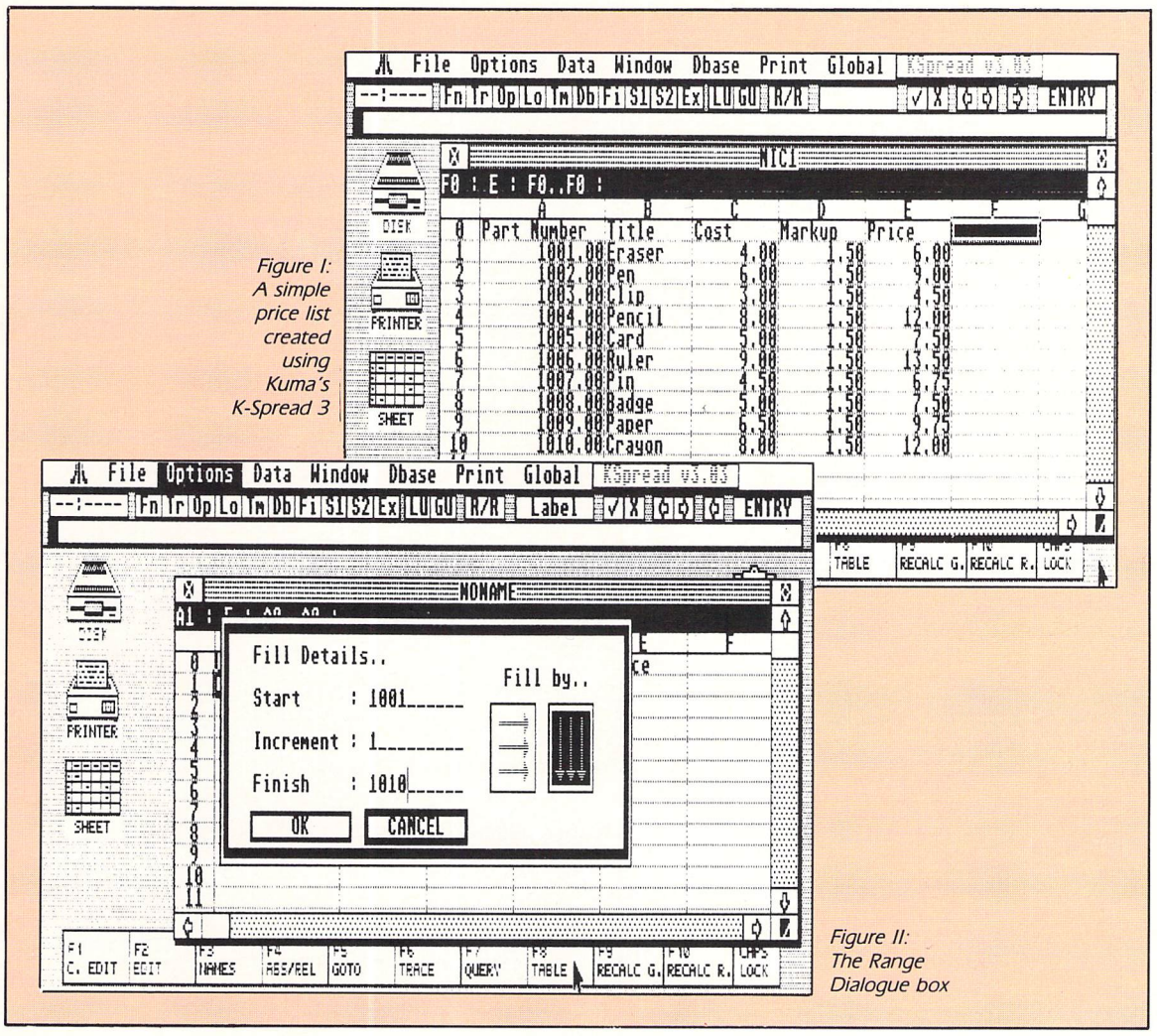


Figure I: A simple price list created using Kuma's K-Spread 3

Figure II: The Range Dialogue box

Getting into spreadsheets

the range as before and pressing Return. The formula will automatically alter to multiply correctly across each row, giving you a sale price from the cost entered in column C.

This is a fairly simple example of the calculatory powers of an ST spreadsheet. To include VAT mark-up as well, you only need to add an extra column – say in column E, forcing Price into column F – of VAT mark-up of 1.15. Then a formula of C1*D1*E1 would give the extended calculation to give a new sale price in column F.

An expenses ledger

A SIMPLE expenses ledger like the one shown in Figure III can be set up by using some of the principles already discussed. Using Graphic Sheet you can construct a ledger template. The column and row headings can be entered in a similar fashion to the way we entered them for the price list. The only difference being with Graphic Sheet you must press Return after each entry.

Then the relevant expense figures for each category in each month can be entered as and when desired. Referencing a range of cells, your sheet can calculate total monthly expenses at the end of each column and total category expenses at the end of each row.

This is done by setting a formula for a range of cells. For instance, the sum of all cells included in January is delimited by the range R3C3 (row 3, column 3) to R9C3 (row 9, column 3). With Graphic Sheet it can be written like this =SUM(R3C3:R9C3), the character : indicating a range. The formula will successfully be applied to January and will give a total for monthly expenses in the desired cell, in this case cell R11,R3.

This same formula can be dragged with your mouse on to the other 11 months and copied to calculate the totals for those months. A similar formula can be constructed for the rows to show category totals at the end of each row.

Keeping track of your bank account

IT is also possible quickly to produce a sheet to keep an eye on your current or business bank account. The spread in Figure IV gives an indication of the type of simple check that can be made. Enter the heading details as before, in the same manner as they are produced on your bank statement.

Now you must predefine the date display in column A. Like most other ST spreadsheets, K-Spread 3 allows you to set up the sheet in advance in readiness for data to be added later. The date may be primed as a label by selecting Preformat from the Data menu and by clicking on the create button. Follow a simple on-screen procedure and any data entered into column A will be converted automatically into date format.

Column B can be preformatted in much the same way – this time as labels. Columns C and D – the credit and debit columns – will be numbers, therefore no previous formatting is necessary as spreadsheets automatically recognise numbers.

In column E, row 1 will be the balance brought forward. From Row 2 onwards we can set up a formula to automatically calculate the balance when a new credit or debit is entered.

In this case the formula would be IF(C2-D2<>0 THEN E1+(C2-D2)ELSE'' ''). To avoid entering the formula many times, it can be copied down column E by dragging cell E2 to the column header and setting the range as before. Now you have a powerful bank statement manager which can be updated automatically at any time as credits and debits arise.

The above examples are just the tip of the iceberg, but will give you the inside knowledge to begin making practical use of your spreadsheet for important business purposes.

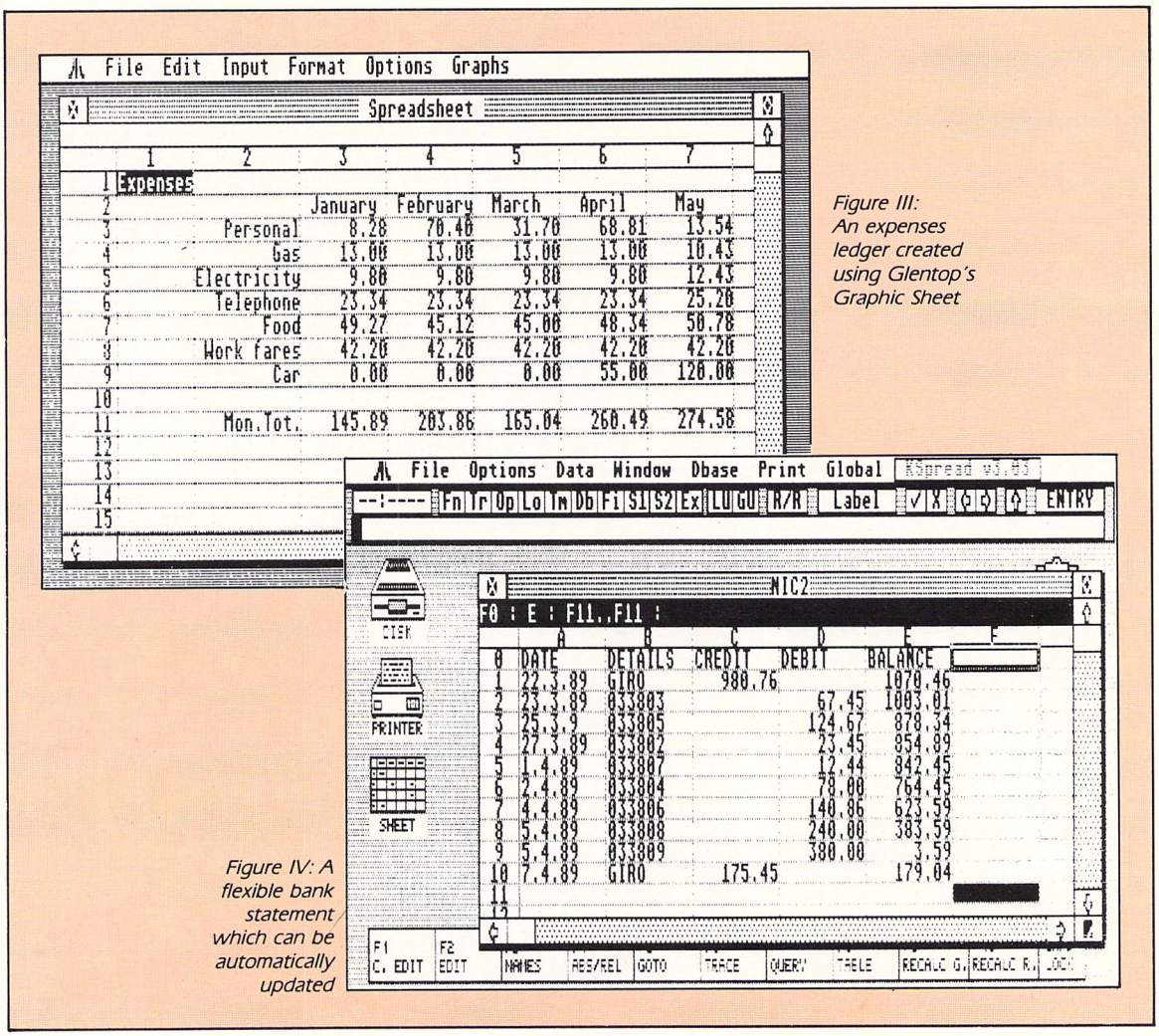


Figure III: An expenses ledger created using Glentop's Graphic Sheet

Figure IV: A flexible bank statement which can be automatically updated

Floating point variables

Printing numbers

WE have looked at several different variable types commonly used in C programming, but two we haven't really explored in any depth are floating point variables and numbers. High level languages like Basic handle them just like ordinary integers and you can usually manipulate floating point variables and numbers without changing your program significantly.

Many Basics like ST Basic distinguish integers from floats – sometimes called real numbers – by appending a per cent sign to the variable name. So *num%* would be an integer or whole number but *num* would be a float or real number. STOS Basic is unusual in that it assumes you are using integers and you must append a hash sign to indicate a real number.

Unlike Basic, in C programming we don't use a per cent or hash sign, but we do have to tell the compiler which variables in our program are integer and which are floating point. This is done by defining the variables at the start of *main()* or in whatever function they are used like:

```
float height;
double length, width;
```

The first example defines the variable *height* as being a floating point number. The second example defines *length* and *width* as being double precision floats – meaning you can have more digits after the decimal point, hence a greater degree of accuracy.

To demonstrate the use of this new type of variable here is a short program which prints out the numbers up to 10 along with their square roots:

```
/* Floating point output */
/*    Mark Williams C    */

#include <stdio.h>
#include <math.h>

main()
{
  float n,r;

  printf("Number.....Root\n");
  for ( n=1; n<11; n+=1 ) {
    r = sqrt(n);
    printf("%f = %f\n",n,r);
  }
}
```

This is written using Mark Williams C, an expensive but comprehensive C development system. In past example listings the budget-priced GST C was used, and while this is excellent for most tasks its one main drawback is that it can't handle floating point arithmetic. Decimal numbers are out and you are restricted to whole numbers – which, in practice, is rarely a handicap.

Some compilers, Mark Williams for instance, require that you specifically tell it to include its floating point routines into the final code. If you forget to do so when compiling the source code confusing error messages may be displayed, as it assumes you are using integer maths throughout.

The compiler command line for Mark Williams is:

```
cc -f program1.c -lm
```

The –f tells the compiler to include the floating point *printf()* function instead of the standard one. The reason it is not normally included is that it requires extra code, thus making the program slightly bigger. The –lm at the end tells the linker to link in the maths library as we call a built-in function called *sqrt()* to calculate the square root.

In addition to this, the maths library must be included in the compilation process with an *include* command at the start of the listing.

A further point worth noting is that some C compilers insist that you include a decimal point when assigning a value to a floating point variable like:

```
n = 5.0 * 6.0
```

and not:

```
n = 5 * 6
```

You'll notice from the listing (and the output if you enter and run this program) that the variable *n* runs from 1 to 10 in steps of one, and only whole numbers are used. You might think that *n* could therefore be defined as being an integer, but if you try it all the square roots come out as being zero. What has happened is that the function *sqrt()* expects a float to be passed to it as a parameter and you provide it with an integer. It gets confused and assumes it's a float with a value of zero.

Finally, take a look at the *printf()* function. You'll see that it includes the %f conversion specification. This instructs the print routine to place a floating point number at this point in the string being output.

We can add a couple of parameters to this – placed between the per cent and the f – to tell it how many decimal places to print and how much space it has got. For instance,

Numeric output

SO far we have looked at ways of inputting numbers into our C programs, and this has involved entering a string and then converting the Ascii characters into a number. Although we have also seen how to output numbers using the *printf()* function, it is good practise to have a go at writing your own output routine.

One method involves the reverse process – converting the number into a string and then printing this character by character:

```
printd(n)
int n;
{
  char string[10];
  int i;
  i = 0;
  while ( n > 0 ) {
    string[i++] = (n % 10) + '0';
    n /= 10;
  }
  while ( i >= 0 )
    putchar( string[i--] );
}
```

This function can be called with something like *printd(12345)* and it will print the number on the screen. It works by successively dividing the number by 10 and storing the digits in a character array. When the number reaches zero the string is complete, but unfortunately the digits are in reverse order. A *while* loop is used to output the characters and *putchar()* directs them to the screen.

You might think that this is a fairly compact and efficient routine, but in fact, it can be made much simpler and shorter by implementing it as a recursive function:

```
printd(n)
int n;
{
  if ( n > 9 )
    printd( n/10 );
  putchar( (n % 10) +'0' );
}
```

This new version of *printd()* is only possible because of the way C implements local variables each time a function is called. If the number passed to *printd()* is greater than nine it repeatedly calls itself and divides the number by 10 until it gets a number small enough to print.

Floating point variables

%5.2f would mean print the floating point number in a space five characters wide – padding out with spaces if it's smaller – with just two digits after the decimal point.

For a much neater output alter the *printf()* function so that it reads:

```
printf("  %2.0f   =   %4.2f\n",n,r);
```

The maths library header MATH.H is a simple C listing that defines a few constants and informs the compiler that certain maths functions will be used. The only task it performs in our program is to tell the compiler that the function *sqrt* returns a double precision floating point number.

By default, all functions return integer results so a *double sqrt ()* at the start of the listing must be entered.

Inputting floats

WE have examined several input routines for entering strings and integer values, and now it is time we saw how to enter decimal numbers into floating point variables. What we'll do is to input the number as a simple string, and once it is safely stored in memory we'll convert it into a number. We've seen the string input routine before, so let's not dwell on that. Here is the function which converts that string into a real number:

```
double getfloat(s)
char s[];
{
  int i;
  double n,fact;
  n = 0.0;
  for ( i=0; s[i]!='.'; ++i )
    n = n*10.0 + (s[i]-'0');
  fact=0.1;
  ++i;
  while ( s[i]!='\0' ) {
    n = n + fact*(s[i++]-'0');
    fact = fact/10.0;
  }
  return(n);
}
```

The function is called *getfloat()* and the string is passed as a parameter. The function returns a floating point number so it must be defined as being either a float or – as in this case – a double (float). If you don't do this the compiler will assume the result returned by the function is an integer and you'll end up with a nonsense value for the input.

The function is in two parts. The first half works out the value of the whole number part of the input and the second half calculates and adds the decimal digits. Here is the routine incorporated into a simple program:

```
/*    Floating point input    */
/* Written in Mark Williams C */

#include <stdio.h>

main()
{
  char string[20];
  double number , getfloat();
  input(string);
  number = getfloat(string);
  printf("Number = %f\n",number);
}

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

double getfloat(s)
char s[];
{
  int i;
  double n,fact;
  n = 0.0;
  for ( i=0; s[i]!='.'; ++i )
    n = n*10.0 + (s[i]-'0');
  fact=0.1;
  ++i;
  while ( s[i]!='\0' ) {
    n = n + fact*(s[i++]-'0');
    fact = fact/10.0;
  }
  return(n);
}
```

What this doesn't allow for is negative numbers, so you might like to modify the function to cope with this situation. All you need to do is examine the first character and set a flag if it is a minus sign. If one is found return *–n* instead of *n*.

Register variables

THERE is a special type of variable available to C programmers called a register variable. Normally variables are allocated space in memory to hold their name and value, the amount of space depending of the length of name and type of variable, such as integer, float or string.

However, register types are completely different in that they make use of the 68000 processor's internal registers to hold the variable's value. This imposes certain restrictions on its type, but the advantage is that they can be accessed at lightning speed.

The only data type available in register form is integer, as the 68000 chip's registers can't manipulate floating point numbers. Also only a limited number of registers is available so this too, places a limit on the number you can define in your program. It is best to reserve them for speed sensitive parts of your code and to restrict them to very heavily used integer variables.

To convert an ordinary integer to the register type simply precede its definition with *register*. To demonstrate their use the following short program takes 20.93 seconds to execute:

```
/* Speed test */

#include <stdio.h>

main()
{
  int i , j;
  for ( i=0; i<20; ++i )
    for ( j=0; j<30000; ++j ) ;
}
```

If, however, we insert the *register* command before the *int* like:

```
register int i , j;
```

execution time is reduced to 13.23 seconds – around two thirds of the original time and quite a significant saving.

Putting theory into practice

Multiple windows

WE have learnt a fair bit of theory about Gem windows, so now let's put that theory into practice with an example listing. What we'll do is to define and open five overlapping windows on the ST's screen. A filled circle is then drawn inside each one and is clipped using the *wclip* function. You can then successively remove each window from the screen by clicking on the left mouse button.

The program below has been designed to run in monochrome, and if run in other resolutions some of the windows may be off the screen. Also the GEM.H include file from page 10 in this section is required in order to define some functions used by the program.

Changing a window's size

ONCE a window has been successfully installed into the ST's memory its size and position can easily be changed using an option from the *wind_set* function. We first encountered this function during the window initialisation process, when it was used to set the title and information line of a window. As before, the format of the *wind_set* function is:

```
r=wind_set(whandle,option,I1,I2,I3,I4)
```

where *r* is a number returned by *wind_set*. A value of zero indicates that an error of some sort has occurred.

The *whandle* parameter is the handle of the window we want to change and *option* is the number of the function we wish to call. In this case, we will be using option number five.

The variables *I1* and *I2* hold the new screen coordinates of the window and *I3* and *I4* contain its new size. The call to change a window's size can be performed with:

```
r=wind_set(whandle,5,x,y,w,h);
```

Note that *x, y, w* and *h* refer to the total coordinates of the new window. If the working coordinates are required, they will need to be calculated in the normal way using the *wind_calc* function.

Window manipulation

THE AES automatically takes care of many of the more arduous aspects of window management. Whenever you click on the size box of a window a resizable outline is displayed on the ST's screen. Similarly, clicking on the move bar generates a hollow box which can be dragged around to change the window's position. These movements are controlled directly from the AES.

It is important to realise, however, that the results of these actions need to be dealt with explicitly by your own program.

The AES only informs you that the user has requested an action – it does not perform that action itself. So if a window is moved or resized its dimensions will need to be changed using an immediate call to the *wind_set* function in your program.

Events

A SPECIAL mechanism is provided by the AES to allow you to control the various parts of the Gem system. It takes the form of a series of commands which wait for a specific event to occur. Most of these events are generated

```
/* Multiple Windows  */

/* Include Files */

#include <stdio.h>
#include <gem.h>

/* Global Arrays */

/* Storage for window coordinates */
int windo[8],wx[8],wy[8],ww[8],wh[8];
/* Storage for window titles */
char wtitle[8][12];

/* Variables */
int x,y,h,w,i,j,s;

main()
{
/* Initialize GEM */
  gem_on();

/* Open 5 windows */
for (i=0;i<5;i++)
{
 /* Set position of window */
 wx[i]=10+i*20;    wy[i]=40+i*40;
 ww[i]=200;        wh[i]=150;
 /* Initialize window title */
 sprintf(wtitle[i]," Window %d",i);
 /* Open a window */
 windo[i]=windopen(i,wtitle[i]);
 /* Draw filled clipped circle */
 redraw(i);
}

/* Close 5 windows */
for (i=0; i<5; i++)
{
/* Read Mouse buttons */
s=click();
windclose(windo[i]);
}
/* Kill GEM */
   gem_off();
}


/* Function to open a window */
int windopen(n,title)
int n;
char *title;
{
 int wr,whandle;
 int xs,ys,ws,hs;
/* Calculate exterior size of the
   window specified by x,y,w,h */
 wr=wind_calc(0,NAME,wx[n],wy[n],
ww[n],wh[n],&xs,&ys,&ws,&hs);
/* Create a window with a title */
whandle=wind_create(NAME,xs,ys,ws,hs);
 if (whandle<0) return(0);
/* Set window name to title */
 wr=wind_set(whandle,2,title,0,0);
/* Open window */
 wr=wind_open(whandle,xs,ys,ws,hs);
return(whandle);
}

/* Function to close a window */
windclose(w)
int w;
{
 int wr;
 if (w>0)
 {
 wr=wind_close(w);
 wr=wind_delete(w);
 }
}

/* Function to clear a window */
clearw(n)
int n;
{
int coord[4];
coord[0]=wx[n];
coord[1]=wy[n];
coord[2]=wx[n]+ww[n]-1;
coord[3]=wy[n]+wh[n]-1;
vsf_color(handle,0);
vr_recfl(handle,coord);
}

/* Function to clip a window */
wclip(w)
int w;
{
int coord[4];
coord[0]=wx[w];
coord[1]=wy[w];
coord[2]=wx[w]+ww[w]-1;
coord[3]=wy[w]+wh[w]-1;
vs_clip(handle,1,coord);
}

/* Redraw a window's contents */
redraw(w)
int w;
{
wclip(w);  /* Clip window */
clearw(w); /* Clear window */
/* Draw circle */
vsf_color(handle,1);
v_circle(handle,wx[w]+ww[w]/2,
wy[w]+wh[w]/2,100);
}
```

Putting theory into practice

by an input of some sort.

Typical events include:

- *Keyboard event* – a character has been typed in at the keyboard.
- *Time event* – the AES waits until a certain amount of time has elapsed.
- *Mouse event* – the mouse has been moved into or out of a rectangular area. This feature is occasionally used to construct customised dialogue boxes, such as HiSoft's file selector.
- *Mouse button event* – one or both of the ST's mouse buttons has been clicked.
- *Message event* – the user has manipulated a window or accessed one of the Gem menus.
- *Multiple event* – checks for a whole list of events. This can comprise of any of those above.

The AES incorporates separate functions for each of the possible events. So if you wanted to ask the AES to wait for a keyboard event, you could call the *evnt_keybd* function like this:

```
key=evnt_keybd();
```

where *key* is just the Ascii code of the key which has been pressed.

We'll now look at the *evnt_mesag* routine which waits for the manipulation of a Gem window. The format is:

```
evnt_mesag(message);
```

Here *message* is an array of eight integers which will contain the results of the function. This array must have been previously defined in your program with a line like:

```
int message[8];
```

The *evnt_mesag* function returns one of a number of messages which indicate the specific event which has been detected. The nature of the message can be found in *message[0]*.

Here is a list of some of the events which can be generated by a Gem window, along with the expected results:

Message number 21: WM_TOPPED

A topped message is produced when a new window is selected with the mouse and *message[3]* contains the handle of the new window to be activated. The *wind_set* command provides a special function to activate this:

```
wind_set(whandle,10,0,0,0,0)
```

where whandle is the handle of the window which has been chosen.

Message number 22: WM_CLOSED

This code is returned whenever the mouse is clicked on the Close box of a window and *message[3]* holds the handle of the window to be closed. Your program should handle this event by closing the window using *wind_close* and possibly deleting it from memory with *wind_delete*.

Message number 23: WM_FULLED

This message is generated when the mouse is clicked on the Full box of the window and *message[3]* contains the handle of the window to be fulled. This event can be performed by changing the size of the window to the maximum possible dimensions using the *wind_set* command.

Message number 27: WM_SIZED

The size box has been used to request a new size for the current window. This must be accomplished directly from your program with a call to *wind_set*.

Return values: *message[3]* contains the handle of the window to be resized, *message[4]* is the current X coordinate of the window, *message[5]* is the current Y coordinate, *message[6]* is the new width of the window and *message[7]* is the new height of the window.

Message number 28: WM_MOVED

The move bar has been dragged to reposition one of the windows. This needs to be implemented using an explicit call to *wind_set* in your program.

Return values: *message[3]* contains the handle of the window to be moved, *message[4]* is the new X coordinate of the window, *message[5]* is the new Y coordinate, *message[6]* is the current width of the window and *message[7]* is the current height.

The standard way of dealing with these messages is to place all the code into a simple loop. This can be summarised by the following steps:

- Wait for a message event (call *evnt_mesag*)
- Check for each of the possible window events. The precise events which need to be tested will vary depending on your current window definition. These tests are normally implemented using the *switch* statement.
- If all the windows have been closed jump back to your main program, otherwise the first two steps should be repeated.

Window Control

THE basic principles of controlling a Gem window are best demonstrated with an example. Look at the following *window_control()* routine:

```
window_control()
{
/* Assumes that:
 full = global integer variable.
 message = global array of 8 integers.
 Calls the functions redraw,
 window_move, and window_full.
 These need to be defined separately.
*/

/* Define Storage */
int open,whandle,option;
/* Continue until window closed */
open=1;
/* Set flag denoting the status
   of current Window */
full=0;
/* Wait until something interesting
   happens */
 do
 {
 evnt_mesag(message);
 option=message[0];
 whandle=message[1];
 switch(option)
 {
 case WM_TOPPED:
 wind_set(whandle,10,0,0,0,0);
 break;

 case WM_FULLED:
 window_full(whandle);
 redraw(whandle);
 break;

 case WM_SIZED:
 case WM_MOVED:
 window_move(whandle);
 redraw(whandle);
 break;

 case WM_CLOSED:
 open=0;
 break;
 }
 }
 while (open);
}
```

Note that this function is only intended as an illustration, and should not be run in isolation. It includes calls to a number of window management functions which we will be looking at next.

MICROSNIPS

Dept. ATARI ST. USER

37 SEAVIEW ROAD, WALLASEY MERSEYSIDE L45 4QN

COMPUTERS

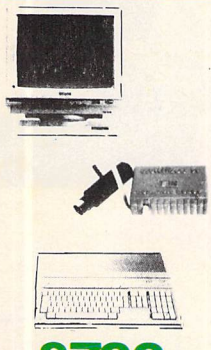


- 520 STFM COMPUTER
- 1 mg INTEGRAL DRIVE
- PHILIPS CM 8833 14" CVBS/RGB MONITOR
- HIGH QUALITY SCART LEAD
- CX-40 JOYSTICK
- HIGH QUALITY MOUSE
- FLAME RETARDANT, WATER RESISTANT DUST COVER
- £450 WORTH SOFTWARE
- 2-YEAR EXCLUSIVE GUARANTEE

£599

£25 month MRP £773.79

APR 32.9% on Budget A/C



- 1040 STFM COMPUTER AND BUSINESS SOFTWARE PACK
- INTEGRAL 1 mg DRIVE
- ATARI HIGH RESOLUTION MONITOR
- QUALITY MOUSE CONTROLLER
- MOUSE-MAT
- MOUSE EXTENSION LEAD
- ROMANTIC ROBOT FREEZE-FRAME ULTIMATE BACK UP DEVICE
- FLAME RETARDANT, WATER RESISTANT DUST COVER
- CITIZEN 120D CENTRONICS PRINTER
- CENTRONICS PRINTER LEAD
- MICRO-PERFORATED FANFOLD PAPER
- 2-YEAR EXCLUSIVE GUARANTEE

£799

£34 month MRP £950.00

APR 32.9% on Budget A/C

DRIVES

- ALL OUR DRIVES COME WITH 5 HIGH QUALITY VERBATIM 3½" DISKS
- £5 FREE DISK LABELS
- FREE DISK BOX

CUMANA 1 mg 3½" DRIVE WITH PSU	£99.95
MICROSNIPS 1 mg 3½" DRIVE INC. PSU	£89.95
ATARI SF 354 ½ mg DRIVE INC. PSU	£109.95
ATARI 20 mg HARD DISK	£499.95
CUMANA 3½"/5¼" DUAL DRIVE INC. PSU	£199.95

MONITORS

- INCLUDING SCART LEAD (where applicable)
- MONITOR STAND

PHILIPS 8833 MED. RES. COLOUR MONITOR	£239.95
VISION 4200 COLOUR MED. RES.	£219.95
FERGUSON MC09 TV/MONITOR	£219.95
PHILIPS STANDARD RES. COLOUR	£229.95
PHILIPS PROFESSIONAL COLOUR	£289.95
ATARI HIGH RES. MONO	£119.95

★ Credit Terms Available ★

ACCESSORIES AND CONSUMABLES

- 10 FREE 3½" DISK LABELS WITH TOTAL PURCHASE
- ANY 6 RIBBONS LESS 15%

25 BULK CERTIFIED ERROR FREE 3½" DSDD DISKS	£23.50
SONY 3½" DSDD (BOXED IN 10s)	£16.99
LOCKABLE MULTIPURPOSE DISK BOX (HOLDS 120 3½" DISKS)	£8.95
LOCKABLE ANTI-STATIC DISK BOX (HOLDS 40 3½" DISKS)	£6.95
50 3½" DISK LABELS AND DISK BOX	£2.99
ATARI ST. MOUSE CONTROLLER	£24.95
SPONGY MOUSE MAT	£5.95
LUXURY DUST COVER suitable for 1040/520 ST	£6.95
MICROSNIPS 520/1040 DUST COVER	£5.95
PHILIPS 8833 DUST COVER	£7.95
BOWTHORPE SURGE PROTECTOR PLUG	£11.95
APOLLO 4-WAY ANTI-SURGE TRAILING SOCKET	£14.95
ROMANTIC ROBOT FREEZE FRAME BACK-UP DEVICE	£47.95
PANASONIC 1081 RIBBON	£4.95
STAR NL-10 RIBBON	2 for £9.95
STAR LC-10 MONO RIBBON	2 for £9.95
STAR LC10 COLOUR RIBBON	£7.95
2,000 SHEETS 60 gm MICROPERF FANFOLD	£15.95
2,000 SHEETS 60 gm PLAIN FANFOLD	£13.95
1,000 SHEETS 80 gm MICROPERF	£10.95

PRINTERS



THE HIGHLY RELIABLE 24 PIN KX-P1124 Panasonic

- Epson-IBM Compatible
- Memo Load * Micro Line Feed
- Draft Elite Pitch 192 CPS
- Wide Variety of Printing Styles
- Tractor and Friction Feed
- Expandable Buffer * Parallel

MRP £458.85 **£299.99**

PANASONIC KX-P1081	£179.95
CITIZEN 120D INC. PARALLEL INTERFACE	£149.95
STAR LC-10 MONO	£199.95
STAR LC-10 COLOUR	£249.95
SIEMENS PT88E INK JET PRINTER – UP TO 343 CPS	£449.95

CABLES

- FREE MOUSE-MAT WITH ALL ORDERS OVER £50
- FREE MOUSE-MAT AND MICROSNIPS 3½" DSDD DISK WITH ORDERS OVER £75

ST.-MONITOR (520 STFM 1 mg DRIVE VERSION)	£10.95
520 STFM-PHILIPS 8833/8852 SCART	£10.95
520/1040-FERGUSON MC05/MC09	£10.95
13-PIN DIN TO OPEN END LEAD	£5.95
ST./CENTRONICS PRINTER LEAD	£8.95
13-PIN DIN PLUG TO 2× PHONO PLUGS (2 m)	£ 5.95
ST. TO BOTH COLOUR AND MONO MONITORS – allows simultaneous connection	£21.95
ST. TO NEC MULTISYNC/TAXAN 770 + MONITOR, 9-WAY D PLUG to 13-PIN DIN PLUG VIA SWITCH BOX (3 DISPLAY MODES)	£23.95
ST. TO PHILIPS 8873 MONITOR (3 DISPLAY MODES)	£23.95
ST. TO MODEM/RS232C 25W D/PLUG TO 25W D/SOCKET	£14.95
4 PLAYER JOYSTICK ADAPTOR	£4.95
JOYSTICK/MOUSE EXTENSION LEAD	£5.95
MIDI CABLES (PAIR COILED)	£14.95
FLOPPY DISK DRIVE CABLE	£13.95
DISK DRIVE EXTENSION CABLE	£13.95
DISK DRIVE – SHUGART INTERFACE	£28.95

BOOKS

ST. DISK DRIVES INSIDE & OUT (ABACUS)	£18.95
ST. FOR BEGINNERS (ABACUS)	£12.95
ST. BASIC TRAINING GUIDE	£12.95
ST. INTERNALS	£16.95
ST. MACHINE LANGUAGE	£16.95
ST. INTRODUCTION TO MIDI PROGRAMMING	£14.95
ST. LOGO USERS' GUIDE	£16.95
ST. TRICKS AND TIPS	£16.95
ST. GEM PROGRAMMERS' GUIDE	£14.95
MASTERING SOUND AND MUSIC ON THE ATARI ST	£15.95
USING ST. BASIC ON THE ATARI ST. GLENTOP	£7.95

LEISURE SOFTWARE

STOCK CLEARANCE SALE!

LIMITED QUANTITIES – PLEASE SELECT 2 CHOICES OR PHONE

UP TO £15.00 OFF

9 PRINCES IN AMBER	£9	PSION CHESS	£14
FAHRENHEIT 451	£9	HADES NEBULA	£12
PERRY MASON	£9	DEATH STRIKER	£8
AMAZON	£9	MICRO LEAGUE WRESTLING	£13
BRIMSTONE	£18	BRIDGE PLAYER 2000	£12
BREAKERS	£18	STAR FLEET 1	£16
THE ELECTION PROGRAMME	£18	PASSENGERS ON THE WIND	£12
WHIRLI GIG	£11	UNINVITED	£13
BATTLESHIPS	£9	ESSEX	£17
STAR TREK	£12	MINDWHEEL	£18
SKULL DIGGERY	£12	NOT A PENNY MORE, NOT A PENNY LESS	£12
MUD PIES	£15	FOUNDATIONS WASTE	£15
MOE BIUS	£14	TASTIMES IN TONETOWN	£15
LITTLE COMPUTER PEOPLE	£25	DEEP SPACE	£17
NORD AND BERT	£15	GOLD RUNNER II	£12
BEYOND ZORK	£14	AIRBALL CONSTRUCTION SET	£12
HOLLYWOOD HI JINX	£18	SOLOMON'S KEY	£12
LURKING HORROR	£18	KINGS QUEST III	£15
TRANTOR	£11	SUPER TENNIS	£15
TEMPLE OF APSHAI TRILOGY	£12	VEGAS GAMBLER	£15
ROADWARS	£11	221B BAKER STREET	£15
ROGUE	£15	POWERPLAY	£12
KILL DOZERS	£12	SUPER SPRINT	£9
SHANGHAI	£6	PANDORA	£12
ROCKFORD	£12	ECO	£11
GBA CHAMPIONSHIP BASKETBALL	£6	BARD'S TALE I	£12
ZYNAPS	£14		

SALE SOFTWARE – Just £1.00 Postage

UTILITY SOFTWARE

BACKPACK	£39.95	HISOFT BASIC V2	£79.95
CYBER STUDIO	£64.95	QUANTUM PAINT	£19.95
DEGAS ELITE	£24.95	STOS	£24.95
DEVPAK ST. V2	£59.95	SPECTRUM 512	£54.95
FAST BASIC (DISC)	£44.95	ST. REPLAY	£79.95
FAST BASIC (ROM)	£89.95	START MAGAZINE inc Disk (USA)	£8.95
FIRST WORD PLUS	£79.95	SWIFTCALC & DATAMANAGER	£75.00

Immediate clearance of cheques with Guarantee Card No. on reverse.

MAIL ORDER PRICES ALSO OFFERED FOR PERSONAL CALLERS PRODUCING THIS ADVERTISEMENT

FREE CATALOGUE SENT WITH THIS ORDER

I've Access here · BARCLAYCARD VISA · AMERICAN EXPRESS · LOMBARD CREDIT · LICENCED CREDIT BROKER

OPTIMA

IMPORTANT NOTE FOR OVERSEAS CUSTOMERS! Postgiro international accepted. NOT Postbank Postcheque. Books have no tax – Europe add £5. Non Europe add £10. We reserve the right to charge carriage at cost. We apologise for any alterations or omissions since going to press.

UK Postage and Packaging. Items under £50 add £2. Items uner £100 add £5. Items over £100 add £10 for Group 4 Courier ensuring delivery to you the day after despatch. Overseas customers (Europe): Full price shown will cover carriage and free tax. Non European add 5% to total.

051

24 HOUR CUSTOMER ENQUIRIES 630 3013

37 Seaview Road, Wallasey, Merseyside L45 4QN. 051-691 2008, 051-630 5396. Fax: 051-639 2714

fun school 2



Fun School 2 for Over-8s contains:

- **Build a Bridge:** Shape-fitting challenge
- **Passage of Guardians:** Enjoy anagrams
- **Unicorn:** First steps in problem solving
- **Logic Doors:** Mapping made easy
- **Souvenirs:** An introduction to travel
- **Code Boxes:** Discover binary arithmetic
- **Mystery machine:** Have fun breaking codes
- **Escape:** A final check on progress

Fun School 2 for 6 to 8 year olds contains:

- **Number train:** Calculations made enjoyable
- **Shopping:** Which shops for which products?
- **Maths Maze:** Fun improving arithmetical skills
- **Treasure Hunt:** Introduction to coordinates
- **Bounce:** Get to grips with angles
- **Packing:** Discover tesselating shapes
- **Caterpillar:** Word building challenge
- **Number jump:** Have fun practising tables

Fun School 2 for Under-6s contains:

- **Shape Snap:** Colourful shape recognition
- **Find the Mole:** Experiment with number sizes
- **Teddy Count:** Ideal introduction to numbers
- **Write a Letter:** Creative fun at the keyboard
- **Colour Train:** Play at spotting colours
- **Pick a Letter:** Word building made easy
- **Spell a Word:** Enjoy naming the pictures
- **Teddy Bears Picnic:** Move around a maze

Now children can really have fun while learning. Fun School 2, designed by a team of educationalists, is available for three age groups: Under-6s, 6-8 year olds and Over-8s. Each pack comes with eight colourful and exciting programs, a colourful button badge and detailed instructions giving educational help.

The computer itself monitors the child's progress. The skill level – initially set by parents – is automatically adjusted to suit the child's ability.

Now children can enjoy using their parents' computer while they learn at their own pace.

Available for:
Spectrum, Commodore 64, Amstrad CPC, BBC Micro/Electron £9.95 (tape) £12.95 (disc).

Also: Atari ST, Amiga, PC £19.95 (PC version released in May)

DATABASE EDUCATIONAL SOFTWARE

Format	Under-6s		6-8 years		Over-8s	
	Tape	Disc	Tape	Disc	Tape	Disc
Spectrum	9094	9095	9096	9097	9098	9099
Commodore 64	9064	9065	9066	9067	9068	9069
Amstrad CPC	6179	6180	6181	6182	6183	6184
BBC Micro/Electron	2239		2242		2245	
BBC B+/Master 40T		2240		2243		2249
BBC B+/Master 80T		2241		2244		2250
Atari ST		9192		9193		9194
Amiga		9842		9843		9844
PC 5.25"		5764		5765		5766
PC 3.5"		5767		5768		5769

Please circle the code number of the format you require

Send to: Database Direct, FREEPOST, Ellesmere Port, South Wirral L65 3EB.
Access/Visa orders: Tel: 051-357 2961

Please supply Fun School 2 for the code number(s) circled

☐ Cheque payable to Database Software

☐ Please debit my Access/Visa card no.

☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Expiry date ☐☐/☐☐

Signed _____

Add £2 per program Europe & Eire/£5 Overseas

Name _____

Address _____

_____

_____

_____

Postcode _____

ST5

— SPECIAL OFFER — SPECIAL OFFER — SPECIAL OFFER — SPECIAL OFFER —

PUBLIC APOLOGY

We at M.D. Office Supplies would like to take this opportunity to apologise to all its competitors. We shall with immediate effect supply, COMPUTER DISCS AND STORAGE BOXES ETC., AT BELOW WHOLESALE PRICES

JUST LOOK AT THESE AMAZING OFFERS

5.25" DISCS & BOXES

25 5.25" DS-DD 96 TPI with 50 Capacity Lockable Storage Box £12.49
50 5.25" DS-DD 96 TPI with 100 Capacity Lockable Storage Box £18.49
75 5.25" DS-DD 96 TPI with 100 Capacity Lockable Storage Box £23.49
100 5.25" DS-DD 96 TPI with 100 Capacity Lockable Storage Box £29.49
ALL DISCS ARE CERTIFIED 100% ERROR FREE, AND ARE SUPPLIED WITH FULL USER SETS

3.5" DISCS & BOXES

25 3.5" DS-DD 135 TPI with 40 Capacity Lockable Storage Box £22.95
35 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £31.95
45 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £37.95
55 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £44.95
65 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £49.95
75 3.5" DS-DD 135 TPI with 80 Capacity Lockable Storage Box £59.95
ALL DISCS ARE CERTIFIED 100% ERROR FREE, AND ARE SUPPLIED WITH LABELS

HIGH DENSITY 5.25" DISCS

25 5.25 DS HD 1.6Mb plus 50 Box £23.99
50 5.25 DS HD 1.6Mb plus 100 Box £44.99
100 5.25 DS HD 1.6Mb plus 100 Box ... £74.99

(High Density Discs are for IBM PC AT etc)

First Come – First Served

When you take advantage of our incredible Disc and Box offers, why not treat yourself to one of our superb accessories. We have:

Deluxe Mouse Mats £2.49
3.5" Head Cleaners £1.99
5.25" Head Cleaners £1.99

Only while stocks last

BULK BUYERS

5.25" DS DD 96tpi

150 DS DD 96tpi £44.99
250 DS DD 96tpi £69.99
500 DS DD 96tpi £119.99
1000 DS DD 96tpi £224.99

3.25" DS DD 135tpi

150 DS DD 135tpi £110.00
250 DS DD 135tpi £169.99
350 DS DD 135tpi £229.99
500 DS DD 135tpi £316.99

ALL DISCS ARE CERTIFIED 100% ERROR FREE, AND ARE SUPPLIED WITH FULL USER SETS

PRICE AND QUALITY GUARANTEE

All our Discs are top quality products and are certified 100% error free. In the unlikely event you should ever see a comparable product advertised in this magazine at a lower price we will not match it we will BEAT IT GUARANTEED

M.D. OFFICE SUPPLIES

18 CRESCENT WAY, FARNBOROUGH, KENT BR6 9LS
TELESALES HOTLINES: 0689-61400

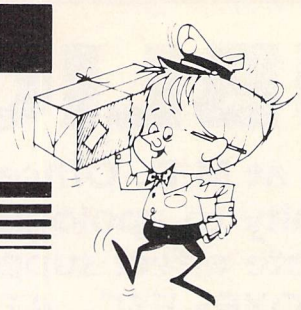
All prices include VAT and Delivery UK only . E/OE

VISA

ACCESS

— SPECIAL OFFER — SPECIAL OFFER — SPECIAL OFFER — SPECIAL OFFER —

BYTEBACK



FAST DELIVERY SERVICE
. . . and the keenest prices

Ring us now! **0636-79097** we're programmed to help

NUMBER ONE FOR ATARI ST USERS – FIRST CLASS SERVICE BY FIRST CLASS POST

GAMES ONLY!

Crazy Cars II	15.90
JUG	12.90
Police Quest II	15.90
Cosmic Pirate	12.90
Football Manager Expansion	9.90
Operation Neptune	15.90
Realm of the Trolls	15.90
Human Killing Machine	11.90
Blasteroids	12.90
Willow	15.90
Prison	12.90
Borodino	24.90
The Deep	15.90
Custodian	12.90
Ballistix	12.90
Kenny Dalglish	12.90
Zak McKracken & Invaders	19.90
Chaos Strikes Back	Phone
Roy of the Rovers	15.90
Raffles	12.90
Airborne Ranger	19.90
BAAL	12.90
Barbarian II	12.90
BATMAN (The Caped crusader)	12.90
Billiards	12.90
Captain Fizz	9.90
Weird Dreams	15.90
Chessmaster 2000	15.90
Colossus Chess X	15.90
ELITE	15.90
Falcon	15.90
Fusion	15.90
F16 Combat Pilot	15.90
Federation of Free Traders	19.90
F19 Stealth Fighter	19.90
The Kristal	19.90
Galdregons Domain	12.90
Gunship	15.90
Heroes of The Lance	19.90
Hostages	15.90
Incredible Shrinking Sphere	12.90
International Karate Plus	12.90
Iron Lord	15.90
Joan of Arc	15.90
War in Middle Earth	12.90
Lombard RAC Rally	15.90
Manhunter New York	19.90
Night Hunter	12.90
Powerdrome	16.90
Scrabble Deluxe	12.90
Speedball	15.90
Teenage Queen	12.90
Track Suit Manager	12.90
Jet	29.90
Flight Simulator II	29.90
* Western Europe scenery	12.90
* Japan scenery	12.90
* Scenery 7 or 11	15.90
WEC Le Mans	12.90
Zany Golf	15.90
Dungeon Master	15.90
Orbiter	15.90
Wanted	12.90
Chuckie Egg	12.90
Ferrari Formula One	15.90
Rocket ranger	19..90

ADVENTURE ONLY!

Alternate Reality	12.90
Bards Tale	15.90
Chrono Quest	19.90
Dungeon Master	15.90
Empire	15.90
Fish	15.90
Lancelot	12.90
Legend of the Sword	15.90
Leisure Suit Larry	15.90
Leisure Suit Larry 2	19.90
ST Adventure Creator	27.50
Times of Lore	19.90
Time and Magic	12.90
Universal Military Simulator	15.90
* scenario 1: US Civil War	9.50
* scenario 2: Vietnam	9.50
Wargame Construction Set	19.90

LANGUAGES ONLY!

Craft (2)	74.90
Power Basic	39.90
Hisoft Basic	63.90
Devpac ST (2)	44.90
Hisoft WERCS	22.50
Hisoft WERCS Plus	37.90
Saved	15.90
Twist	29.90
Personal Pascal	58.90
FTL Modula 2	59.90
FTL Modula 2 Developer	79.90
Nevada Cobol	39.90
GFA Basic (3)	49.90
Fast Basic (ROM)	65.90
Fast Basic (Disk)	33.90
Fast ASM	13.90
GST Macro Assembler	15.90
GST C Compiler	15.90
Atari Logo	16.90
Atari Basic (NEW)	9.90

EDUCATIONAL ONLY!

AB Zoo (3-6)	11.90
Algebra 1 (11+)	11.90
Fun School (up to 6, 6-8 or 8 plus)	12.90
Invasion (5+)	11.90
Preschool Kidprogs	11.90
Spellbook (4-6) or (7+)	15.90
Spellbook Data disks	11.90

ART & MUSIC ONLY!

Easy Draw 2 (Supercharged)	69.90
Easy Tools	29.90
Scan Art	37.50
Draw Art Professional	29.90
Scan Art/Draw Art Pack	52.50
Degas Elite	16.90
Trip a Tron	24.90
CAD 3D (1)	16.90
Flair Paint	24.50
Hyper Paint	19.90
GST Fractal Generator	15.90
Quantum Paint (2)	19.90
Quantum Paint Professional	29.90
Music Construction Set	16.90
ST Replay (4)	59.90

HARDWARE ONLY

ATARI 520 ST EXPLORER PACK	269
ATARI 520 ST SUPER PACK	359
ATARI 1040 ST BUSINESS PACK	449
Atari SM124 Mono Monitor	125.00
Atari SC 1224 Colour Monitor	339.00
Atari ST Mouse	24.90
Cumana 1MB D/S Disk Drive	99.00
Atari S/S Disk Drive	69.00
Star LC10 Printer (Mono)	229.00
Star LC10 Printer (Colour)	259.00
Star LC10 Black Ribbon	3.95
Pro Music System Keyboard	99.90

ANTIC CYBER SERIES ONLY

Cyber Studio	59.90
Supplementary packages	
Cyber Paint (2)	52.50
Genesis	59.90
Cyber Control	44.90
Architectural Designs	22.50
Cartoon Designs	22.50
Future Designs	18.90
Human Forms	22.50
3D Developers	22.50
G.I.S.T.	25.90
Cyber Sculpt	59.90
Cyber Texture	39.90
Video Titling Designs	22.50
3D Fonts 2	22.50

UTILITIES ONLY!

Data Manager	29.90
Data Manager Professional	52.50
SwiftCalc	29.90
Word Writer (NEW Low Price)	39.90
Home Accounts	18.90
DigiCalc	29.90
First Word Plus (3.1)	59.90
Multiface ST (1.2) (includes: Disk Organizer!)	54.90
Back Pack	36.90
Ruby View (Terminal)	44.90
Copy ST (NEW version 1.2m)	29.90
ST Doctor	12.90
Superbase Personal 2	69.90
Superbase Professional	175.90
Turbo ST (Software Blitter)	29.90
Utilities Plus	22.50

JOYSTICKS ONLY!

Joystick Mouse extension	4.90
Wiz Card Controller	2.90
Challenger	6.90
Cheetah 125	7.90
Quickshot II	7.90
Navigator	12.90
Competition Pro 5000	14.90
Comp. Pro Extra (Clear)	15.90
Arcade	16.90

ACCESSORIES ONLY!

Locking Disk Box (Holds 50)	7.90
Locking Disk Box (Holds 100)	9.90
Media Box (Holds 150)	19.90
Furry Mouse Cover (Your MOUSE is NAKED without One!)	6.90
Mouse Bracket	3.90
Mouse Mat (BEST Quality)	5.90
ST Dust Cover	5.90
Mono/Colour Monitor switch	21.90
Disk Cleaner	5.90

BLANK DISKS ONLY

Box of 10 DS/DD Sony Disks	15.90
Box of 10 DS/DD KAO Disks	15.90
DS/DD Disks (x 10)	11.90
DS/DD Disks (x 50)	54.90
DS/DD Disks (x 100)	94.90

GAMES PACKS ONLY

HIT DISKS (Vol. 1) Goldrunner, Karate Kid II Jupiter Probe, Slaygon	15.90
HIT DISKS (Vol. 2) Time Bandit, Major Motion Leathernecks, Tanglewood	16.90
ACTION ST Deflector, Trailblazer, Northstar 3D Galax, Masters of the Universe	15.90
MEGAPACK Frostbyte, Mouse Trap, Seconds Out Winter Olympiad, Suicide Mission	15.90
TRIAD Starglider, Barbarian and Defender of the Crown	19.90
5 STAR Barbarian, Crazy Cars, Wizball Enduro Racer and Rampage	15.90
FLIGHT PACK Spitfire 40, Strike Force Harrier	16.90

SALE * SALE * SALE ONLY!

Action Service	19.95	11.90
Army Moves	19.95	7.90
Better Dead Alien	19.95	11.90
Beyond the Ice Palace	19.95	7.90
Crazy Cars	19.90	7.90
Bounce Out	9.95	4.90
Clever and Smart	19.95	7.90
Captain America	19.95	7.90
Checkmate	14.95	5.90
Elf	19.95	7.90
Eye	14.95	5.90
Football Manager	14.95	7.90
GFL Football	19.95	9.90
Get Dexter	14.95	7.90
Hacker 2	24.95	9.90
Hyperbowl	9.95	4.90
Joe Blade	19.95	7.90
Karting Grand Prix	14.95	7.90
Livingstone	14.95	5.90
Mafdet	14.95	5.90
MGT	24.95	9.90
Not a penny more	19.95	7.90
Catch 23	19.90	9.90
Passengers on wind	24.95	9.90
Plundered Hearts	29.95	9.90
Phoenix	19.95	12.90
Revenge 2	9.95	4.90
Road Runner	19.95	7.90
Rolling Thunder	19.95	11.90
Super Cycle	19.95	7.90
Skulldiggery	19.95	12.90

The above is just a small selection of our VAST range of 16 Bit software . . . Catalogue available!
All prices include VAT and FIRST CLASS POST! All stock items sent by return of post!

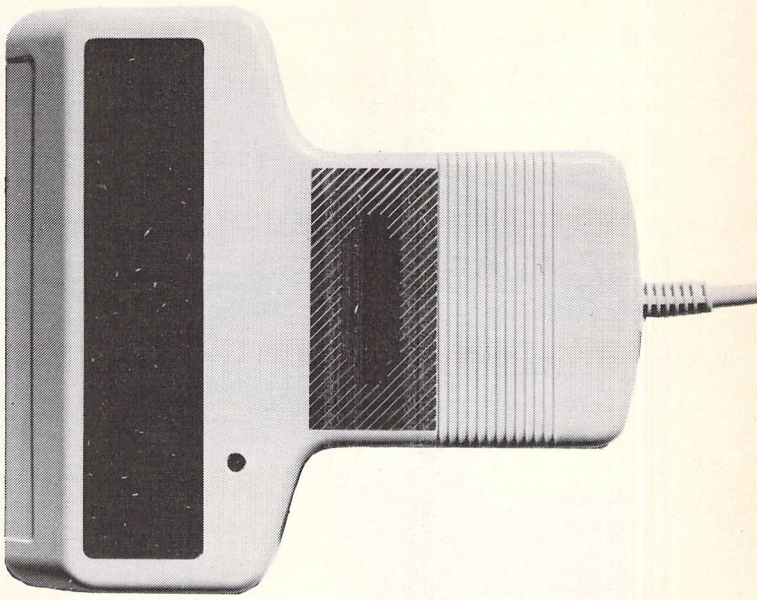
BYTEBACK

DEPT STU, 6 MUMBY CLOSE, NEWARK, NOTTS NG24 1JE

Cheque, postal orders or credit card facilities are available

Access VISA

Pick up a picture



Roland Waddilove tries a flexible new hand held scanner and comes up with some impressive results

A SCANNER is a hardware add-on which, when combined with the right software, will enable you to pick up pictures from photographs, newspapers, magazines and so on, and display them on the ST's monitor screen. Once the image is in the micro it can be manipulated like any other picture using an art package.

We looked at the budget-priced IMG scanner in the June 1987 issue of *Atari ST User*. That cost just under £100 and the only criticism was that it was very fiddly to use and set up.

Daatascan from Kempston costs two and a half times as much, and also has the distinction of being hand held. At £247 it isn't cheap by any means, but compared to some other scanners on the market it is still at the budget end of the scale.

The package consists of the scanner itself, a cartridge and power supply, a disc of software and Atari's new Hyperpaint art package. The cartridge is pretty standard except for two sockets – one for the power supply and the other for the scanner. The scanner is T-shaped and measures about 6in by 6in.

After plugging in the hardware and booting up the software you are presented with a blank Gem window with a group of four icons in the bottom left corner of the screen. A menu bar sits at the top.

Clicking on the top left icon or Scan on the file menu activates the scanner. You place it on the picture to be scanned and drag it slowly toward you while holding down a button on the left hand side of the case.

The picture is immediately transferred to the screen and you can see it building up in real-time. The screen dumps show the sort of results you can expect. The quality is excellent and the whole package is very easy to use. You can alter the intensity of the image by rotating a small wheel on the right hand side of the scanner and four sets of patterns used to build up the picture can be selected using a four-position switch on the scanner's side.

Having got the image into the micro, the screen then acts as a window on to it, which can be scrolled using the slider bars to reveal the rest of the picture. The whole image can be saved to disc in IMG format, or you can cut a section from it using a rubber banded box and save this instead.

You can load images as well as saving them. The Special menu options enable you to convert the top left corner of the image into a Degas or Neochrome picture. Unfortunately, it's not possible to save the whole image this way as it is many times larger than the screen. What you must do is cut a screen-sized chunk from the image, save it, reload it, then convert it to Degas or Neochrome.

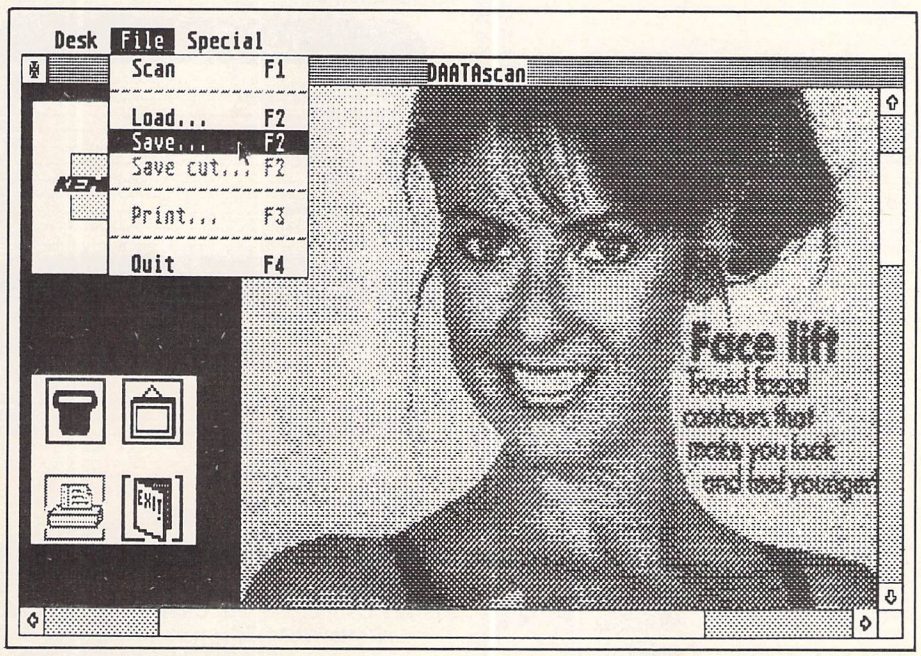
There's also a built in print facility – available by clicking on the printer icon – but I found the output to be rather poor. However, you can use Hyperpaint, which produces excellent results instead.

The image in memory can be reduced by either 50 or 75 per cent by pressing F5 to F10. You can press a key again to reduce it further. The results of this operation are variable – sometimes the image is preserved, sometimes it fades to either white or black.

Hyperpaint is the perfect companion to Daatascan as it is one of the few art packages that can load IMG files. The only problem is that you can't load a full size image into a 520ST due to lack of memory. You must cut it using Daatascan then load the cut section. No such problems occurred using a Mega 2 ST.

Having to cut the images isn't a prob-

Turn to Page 80 ▶



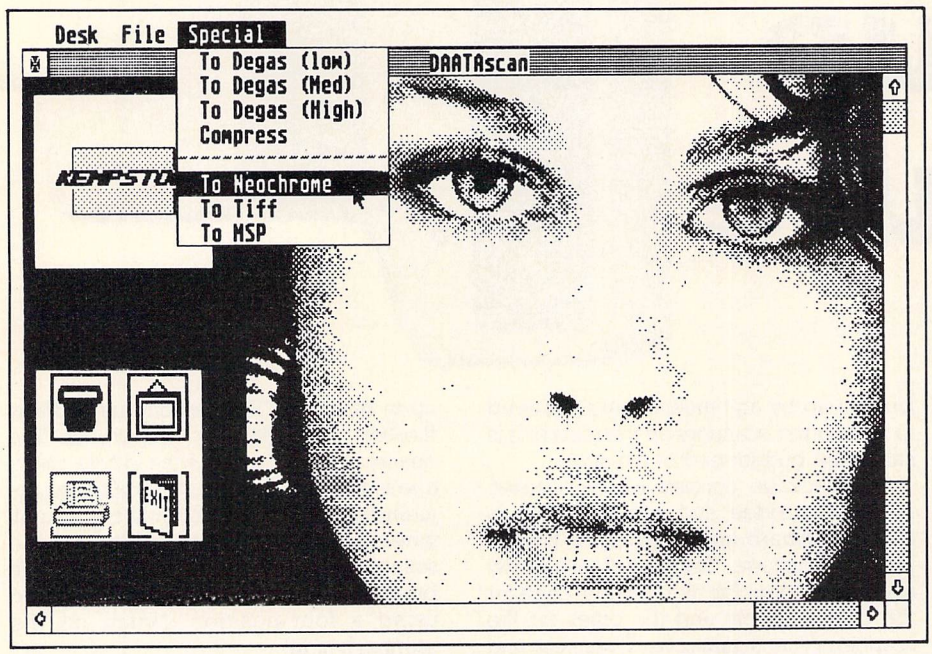
The options available on the File menu

◀ *From Page 79*

lem as it is quite likely that only small sections of the original scan will be required anyway. I won't say any more about Hyperpaint as it was reviewed in last month's *Atari ST User*.

Also provided on the Daatascan disc is a utility for manipulating low resolution scanned images saved in IMG form. It allows you to load IMG picture files, save them in Neochrome or Degas form, resize and recolour them, change selected pixels' colours and so on. The software isn't Gem-based, though it is mouse controlled for ease of use.

Daatascan is a quick and easy way of building up clip art for DTP packages, drawings for artwork, sprites and backgrounds and so on. The software works in all screen resolutions and the scanner is a doddle to use. After just two or three minutes' practice you'll be scanning everything in sight. I can thoroughly recommend Daatascan.



Scanned images can be converted to a variety of picture formats by pulling down the Special menu

FACT FILE

Product: Daatascan
Price: £247
Supplier: Kempston Data, 21 Linford Forum, Linford Wood, Milton Keynes MK14 6LY.
Tel: 0908 677886

POINTS FOR:
Very easy to use. Produces good quality images. Hyperpaint thrown in too.

AGAINST:
Intensity wheel is easy to knock when scanning a picture.

COMPETITORS REVIEWED:
IMG Scan, June 1988.

A COMPLETE SERVICE IN COMPUTERS & SOFTWARE

GAMES

Galdregons Domain	15.95
Advanced Rugby Simulator	14.95
Skrull	18.95
Batman	15.95
Elite	18.95
Starglider II	18.95
Speed Ball	18.95
Triad	22.95
Super Hang On	15.95
Daley Thompson	15.95
Leaderboard Birdie	17.95
Flight Sim. 2	32.95
The Jet	32.95
Carrier Command	16.95
Power Drome	18.95
Puffys Saga	18.95
Lombard RAC Rally	18.95
Pacmania	14.95
Return of the Jedi	14.95
Menace	14.95
1943	16.95
Trivial Pursuits New Beginnings	14.95
Skateball	15.95
Hostages	18.95
After Burner	18.95
Operation Wolf	15.95
Double Dragon	15.95
S.D.I.	15.95
I.K.+	14.95
Thunder Blade	15.95
Nigel Mansells Grand Prix	18.95
Falcon	18.95
Victory Road	14.95
Question of Sport	14.95
Kennedy Approach	18.95
Baal	14.95
Rambo III	14.95
Zak McKracken	18.95
ISS	15.95
Ballistix	14.95
Custodian	14.95
Prison	14.95
I Ludicrus	14.95
Kenny Dalglish Soccer	14.95

ADVENTURE/STRATEGY

Manhunter	22.95
Leisure Suit Larry 2	22.95
Joan of Arc	16.95
Bismark	18.95
STAC	29.95
Sinbad	19.95
Corruption	19.95
Steller Crusade	27.95
War Construction Kit	14.95
Fish	19.95
Colossus Chess X	18.95
Sargon III Chess	18.95
Questron II	19.95
Hero's of the Lance	19.95
Borodino	24.95
Federation of Free Traders	22.95

UTILITIES/BUSINESS

Wordup	59.00
Prospero Pascal	85.00
GFA Basic Version 3	45.00
Superbase Personal 2	79.00
Superbase Professional	149.00
Lattice C V3.04	69.95
Mark Williams C	95.00
First Word Plus V.3	59.95
Word Perfect 4.0	185.00
Signum II	184.00
Pascal v2	79.00
Swift Calc	39.00
Datamanager Professional	55.95
Power Basic	32.95
DevpacST v2	49.00
Logistix	90.00
STOS	23.95

GRAPHIC DESIGN/CAD

Cyber Texture	42.95
Cyber Sculpt	59.95
Cartoon Disk	22.95
Video Titling Disk	22.95
Quantum Paint Pro	21.95
Spectrum 512	45.00
Supercharged Easy Draw	79.95
GFA Draft Plus	99.95
Degas Elite	16.95
Cyber Studio	59.00
Cyber Paint	55.00
Cyber Controller	45.00

ACCESSORIES

ST to Scart	11.99
ST to Composite (2 phono)	6.45
ST to Centronics	10.99
Mouse Mat (hard)	5.95
Joystick/Mouse extension	5.95
ST to Midi (2 leads)	7.95
Mouse Bracket	2.75
Trackball	21.95
ST-Open ended lead	5.95
3M Mouse Extension	3.99
Mouse Lead	2.99

HARDWARE

Philips 8833 Monitor	260.00
Philips 8852 Monitor	299.00
Star LC10 Printer inc. lead	215.00
Star LC24-10 Printer	339.00
NEC P2200 Printer	325.00
NEC 1Meg Internal Drive	79.95
Epson LX800 Printer	219.00
Star LC10 Colour Printer	259.00

WHY NOT CALL IN AND SEE ALL THATS NEW IN COMPUTERS

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

VISA Access

Miles Better Compuware

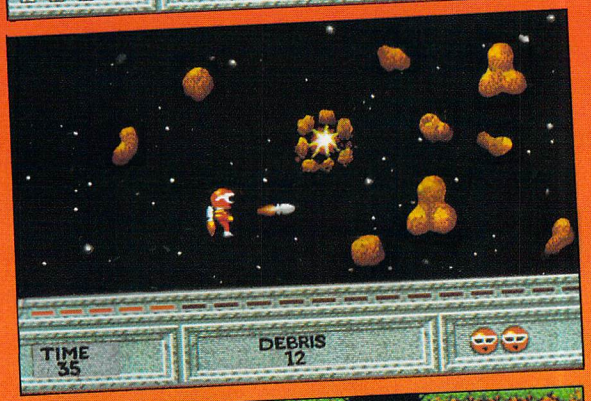
219/221 Cannock Road, Chadsmoor, Cannock, Staffs WS11 2DD. Tel: (0543) 466577/8/9
Add 50p to orders less than £5.00

"CAPTAIN CRUMBLE IS THE MOST INSTANTLY APPEALING CHARACTER TO HIT THE ATARI..." PAGE 6 / ATARI USER

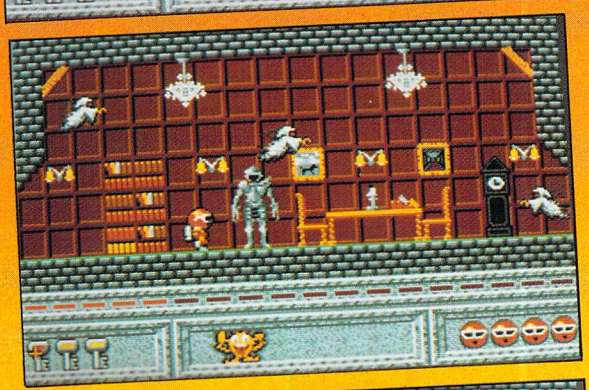
NOW HE'S BACK – IN THE ACTION PACKED ARCADE ADVENTURE...

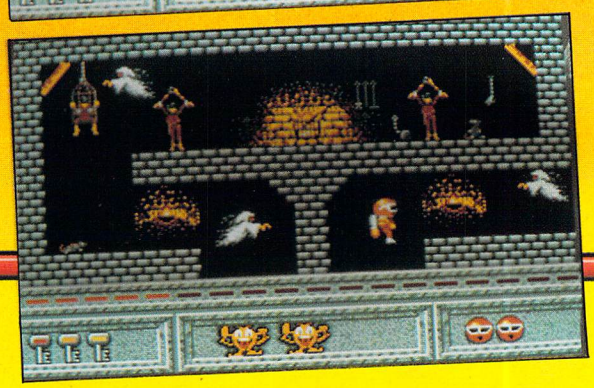
ST SCREEN SHOTS











Time Runner



ZOOM THROUGH THE TIME GATES!
BLAST YOUR WAY INTO FOUR FANTASTIC WORLDS!

ATARI ST £19·99
SOON ON AMIGA

Red Rat

15 FENNEL STREET, MANCHESTER M4 3DU.

ADVENTURES

Brillig lends a hand in solving problems for fantasy fans

Marshall is quick on the draw

THE power of the written word! Last month I bemoaned the fact that nobody had written in with a complete solution to Mirrorsoft's Shadowgate. No sooner had this forlorn cry appeared in print on the shelves of newsagents across the land than through my letterbox popped a full map and solution to said adventure.

Of course I might have guessed the answer to my plea would come from that dynamic duo in Newton Hall, Durham – Allen and Mark Errington. Thanks, thou good and faithful adventurers. With your assistance, I can shortly pass on some much sought after wisdom to those of our readers who are still wracking their brains over some of the tougher parts of Shadowgate.

Still marching onward and upward, and continuing to leave we lesser lights struggling along in his wake, is one of the fastest adventure solvers in the business, R.G.B. Marshall of Congleton in Cheshire. Regular readers of this column need no reminder that this prodigy cracks adventures quicker than most of us can rip the cellophane wrapping off the package.

You shouldn't be surprised to hear that his latest two conquests are Sierra On-Line's Gold Rush and Police Quest II – and I haven't even seen them yet, let alone started to solve them. As RGB finishes adventures so quickly, he is forced to import new ones in order to slake his thirst for fresh challenges.

He tells me that Police Quest II does not involve the hassle of negotiating the streets of Lyttleton from an aerial point of view – one of the few things I disliked about Police Quest I. Instead you have a pretty picture of Sonny and Keith's heads as they drive toward the selected location.

RGB says the graphics in Police Quest II are twice as good as its predecessor and the game builds towards an excellent climax.

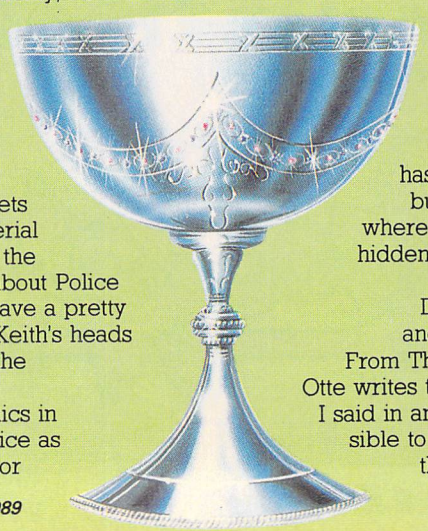
As I write this, I understand that RGB is one of the few people to have reached the final stages of the hunt for the Holy Grail replica offered as a prize in a competition that required solving Mandarin/Level 9's Lancelot adventure.

Just shows that solving adventures can sometimes be financially, as well as intellectually, satisfying (though if RGB wins, he'll probably have to sell the prize to pay for all those imported adventures of his).

Richard Linsey of Newark is having a spot of bother with Infocom's Leather Goddesses of Phobos. It seems he doesn't know how to get past chief assassin Thorbast. This particular puzzle has a lovely and unexpected solution, Richard – for you and other readers stuck on the same problem, see this month's Hints and Tips.

Two young readers, Daniel Gilkes and Noah Bunn from Northampton, are having a little difficulty with Space Quest III. They don't know how to get on the pirates' ship so for their benefit and for others, the answer appears below.

Legend of the Sword is causing Leif Einar Claus from Tromso in Norway a lot of headaches. Thanks to Alan Millar and James Pearson, I am able to help you and many of our readers with some timely advice.



Rainbird's Guild of Thieves is still giving heartburn to several adventurers, not least J. Creighton from Newcastle. He has earned a lot of points, but is desperate to know where the platinum brooch is hidden and how to find a way down the thin shaft. Despair no more – Hints and Tips has the answers. From The Netherlands, Arnoud Otte writes to say that despite what I said in an earlier issue, it is possible to stop the bell ringing in the post office in Jinxter. Here's how to do it:

Repair the canoe with the mouse, post the saddle to the station (two fergs), put the sock in the bell when the postmistress is under the counter, leave then re-enter the post office and crack the safe. Well done, Arnoud.

A number of readers, foremost among whom is Liz Ahmedzci of Chatham, have sent in solutions to Fish! Glad to hear you're another after my own heart who prefers text to graphic adventures, Liz, and sorry there's no BMW for sending in the solution. Next month I'll give you the benefit of some of their discoveries.

Last but not least, my thanks to Kjetil Valstadsve and Kenneth Holan over in Norway for their solution to Rainbird's Corruption and to Neil Hickman of Hales-owen for his tips for The Bard's Tale.

Here's one of the useful coordinates Neil supplied. Visit the Key Master on level three by going from the entry stairs at level one North (+12), East (+19), Up (+2). You'll then be able to buy a master key, but only if you can afford the asking price of 50,000 gold pieces.

Until next month, stay away from snoozing dragons.

LEGEND OF THE SWORD

How do I get the bottle from the leprechaun?

● Ask Borgalius for the ring. Wear it. Go to the leprechaun and shout at him. Give him the coin and the pipe.

What do you say to the bird?

● When Shukka asks the question say NO and eat the fruit. Go West then North and wait for the humanoids.

Can't find a light?

● There's a torch in the keep. Go inside, then south-west, open the trapdoor and go down the stairs. The torch is on the



SLOW MOTION TAKEOVER

Program: Zak McKracken and the Alien Mindbenders
Price: £24.95
Supplier: Lucasfilm/US Gold, Units 2/3, Holford Way, Holford, Birmingham B6 7AX.
Tel: 021-356 3388

ZAK McCracken is your everday tabloid journalist, always looking for a sensational story with which to amaze readers of his sleazy paper, the National Inquisitor. Now Zak thinks he's stumbled on a scoop that should make reports about World War II bomber planes being discovered on the moon or Elvis Presley being found alive and well and living in Stockport look mundane by comparison.

Zak believes that aliens have built a huge stupidity machine, and having taken over the Telephone Company are using the lines to transmit waves that will eventually reduce everyone's IQ to the level of an ill-educated marmoset.

In this three-disc adventure, where the graphics predominate heavily over the text, your job is to help Zak save the world from turning into the thickest planet in the universe. No typing is required as all the words you'll need to solve the adventure are supplied.

The largest portion of the screen is taken up with a picture of the current location across which Zak, almost a Leisure Suit Larry clone, strides. Some of the locations occupy more than one screen

Turn to Page 84 ▶

HINTS AND TIPS

wall – light it with the tinderbox you should by now have captured from the humanoids.

LEATHER GODDESSES OF PHOBOS

Can't triumph over Thorbast in a fair fight?

● Start to fight him and when he drops his sword, pick it up and give it back to him. He'll be so overcome he'll do the job for you. Once Thorbast is out of the way, you can have a set to with the monster, who will then flee leaving you free to untie the woman and collect another vital object.

Don't know how to restore the King's daughter to normality?

● Lose the letter T from the untangling cream using the Tee removing device, thereby giving you some unangling cream. Apply this to the 45 degree angle with the blonde hair.

GUILD OF THIEVES

Want to go down the shaft?

● Dig in the sandy bank and wear the boots that you'll find there. The platinum brooch is also to be found there.

KING'S QUEST III

Pirates won't let you on their ship?

● Make sure you have some money to give them. You'll find some coins on the table in the robbers' treetop hideout. Try putting your hand in the hole at the bottom of the oak tree in the forest – you might just find a rope ladder that you can put to good use.

What do I do on the pirate's ship?

● Listen to the mice in the hold. Recapture your stolen possessions by using the small crate. Wait until land is sighted and then go to work with the sleeping powder.



Zak gets the low-down from his Group Editor

◀ **From Page 83**

and when Zak reaches the edge such pictures scroll – very slowly and very jerkily – to reveal another part of the scenery.

At the bottom of the screen is a list of all the verbs – there are minor changes to the list from time to time, depending on the location. Below the verbs, Zak's inventory is shown as a two row, two column list of nouns which can be scrolled up and down for access.

Terse, one-line messages output by the program appear at the top of the screen while your constructed commands are shown just above the verb list. The whole game can be played with the mouse. All you have to do is click on a verb and click on a noun or on an object in the picture. A final click and the command is executed. Connecting words like to, and, and with are automatically inserted for you.

The verbs can also be selected by using single key presses – the keys are mapped to correspond with the positions of the on-screen verbs – but since you've invariably got to use the mouse to get at an object, little is gained. I found the mouse much quicker.

There are less than 20 verbs, consisting of the usual stock (take off, turn on, open, read and so on), but rather more nouns. The command "What is...?" comes in very handy. Clicking on this and then moving the cursor around the screen lets you see the names of any objects that can be accessed in that scene.

Game positions can be saved to any blank formatted disc. Sound effects vary from the fairly boring and monotonous to those that play non-stop during a scene and quickly get on your nerves. All can be toggled on and off with a function key.

The game opens with an introductory scene in the offices of the National Inquisitor. This and certain other incidents are interesting on a first encounter but become tedious in future plays and slow things down. For example, during the game, and regardless of what Zak is doing, the scene may suddenly move to the invaders' HQ.

These interludes are perhaps the best part of the game and involve two aliens, one of whom is rather deficient in grey matter. The conversations between these two odd-looking characters are quite funny. However, such scenes generally require no reaction from you. The designers have therefore thoughtfully allowed you to pass quickly over them by pressing Escape.

The action starts in Zak's apartment which contains a number of items there for the taking. But what use you'll make of a goldfish in a bowl, a butter knife, kazoo and remote control I'll leave you to discover for yourself. Out on the street a bakery beckons, and further along a loan company, where you can also buy and sell objects, repays a visit.

Hopping on a bus, providing Zak can wake the snoozing driver, lands you at the aiport. From here you can visit Mexico, Lima, Miami (which was always closed when I called), London (with Stonehenge immediately outside Heathrow), and other places. The game's protection mechanism requires you to enter four codes from a supplied sheet before you can take international flights.

The first flight is unusual in that you have to do something to upset and distract the air hostess, allowing yow to grab a vital object. I was less impressed with Mexico where a maze inside a temple had me going round in circles. Must we still have mazes in adventures? A puzzle concerning a two-headed squirrel may have you scratching around for firewood – kindness repays dividends, cruelty doesn't.

Graphically, Zak McCracken is colourful and sharp, using a Sierra On-Line (Kings Quest, Space Quest and so on) style of picture. Zak and other characters are of generous size but the animation is simple and slow.

Along with frequent disc accessing, the pace is sluggish. Control can be switched from Zak to one of three other characters – Annie, Melissa and Leslie – giving an unusual slant.

The game comes complete with a copy of the National Inquisitor which repays careful reading as it contains a number of clues. The plot is a fairly fresh one – aliens wearing Groucho Marx glasses and moustache sets has got to be a first – but somehow the game failed to catch alight for me.

Perhaps the slowish pace, the simplicity of many of the puzzles and the limited number of verbs spoiled it for me. Overall, Lucasfilm's Zak McCracken is worth playing but falls well short of the content and humour of Sierra On-Line's adventures.



Searching the flat is an initial task which requires some head scratching

Presentation	***8***
Atmosphere	***7***
Puzzlement	***6***
Value for money	***7***
Overall	***7***

CAVENDISH DISTRIBUTORS Ltd.

01-636 8372

ACCESS VISA

Computers: Sales, Services and Training

THE HARDWARE Phone now!

Atari 520STFM 1MB	£269
Atari 1040STFM	£399
Atari Mega 2	POA
Atari Mega 4	POA
Atari 520 Super Pack	£345
Atari 1040 STFM Business Pack	POA
Atari 1040 STFM Super Pack	POA

Buy with monitors for best deal

MONITORS While stocks last!

Atari SM124	£119
Atari SC1224	£259
Atari Computer + Monitor	POA
Philips 8833	£219
Philips 8852 with tilt and swivel stand	£259

Amiga A500 £300 + VAT scoop purchase

DRIVES You must ring!

1Mb Drive 3.5" (with power supply)	£89
1Mb Drive 5.25"	£119
Atari Megafile 20	£459
Supra 20Mb	£459
Supra 30Mb	£499
Supra 60/120Mb	POA
Megafile 30	£459

PRINTERS Lowest prices!

Olivetti DM105 colour printer. Cheaper than Star	POA
Olivetti DM100 200 cps	£199
Amstrad DMP3250	£179
Amstrad DMP4000	£299
Epson LX800	£209
Epson EX800	£429
Epson EX1000	£575
Epson FX800	£339
Epson LQ500	£329
Epson LQ850	£460
Epson LQ1050	£739
Star LC10	£189
Star LC10 Colour	£239
Star LC24-10	£319
Star NX15	£309
Panasonic 1081	£155
Panasonic 1082	£189
Panasonic 1592	£439
NEC P6+	POA
NEC P7+	POA
NEC P2200	£319
Juki 6100	£319
Citizen 120D	£129
Citizen 180E	£155
KX Panasonic 1124 24 pin	£320
Citizen HQP45 Wide Carriage 24 pin	£389

BLANK DISKS New prices!

Sony, 3M, Philips, Maxell, TDK and JVC Box of 10 ..... Only £12.95

MODEMS

Demon II	£89
Miracle WS2000	£109
Miracle WS4000	£179

ACCESSORIES

Twin Joystick Extension Cable	£5.95
Mouse Mat	£5.99
Toner for SLM804 Lazer	£39.00
Ribbons for most printers	Enquire

LASER PRINTERS

Olivetti PC208	£1790
Atari SLM804	£1050
Canon LBP-8A2	£1599
Epson GQ3500	£1599
HP Laserjet II	£1799
Panasonic P4450	POA
Brother HL8	£1999
Olympia Laser 6	POA

(1.5 Mb memory, 60 resident fonts)
New Hewlett-Packard Laser Jet IID (24 resident fonts, prints both sides of sheet) ..... POA

DTP systems – phone for best prices

DUST COVERS

520	£4.95
520 STFM	£5.95
1040 STFM	£5.95
Monitors	£6.95

CLOCKS

Internal	£26.95
External	£26.95
Real Time	£48.00

Atari 1040 Music Pack inc Steinburg Pro IZ ..... POA

THE SOFTWARE

1st Word +	£59
Word Perfect	£175
Timeworks DTP	POA
Fast Basic	£69
Spectrum 512	POA
CAD 3D 1.0	POA
Fonts, Drivers & Primitives	POA
Plotter and Printer Drivers	POA
Cyber Studio	POA
3D Developer's Disk	POA
Architectural Designs	POA
Future Designs	POA
Human Forms	POA
Sterotek	POA
Cyber Control	POA
Cyber Paint	POA
Genesis	POA
GIST	POA
Base II	POA
COLR Object Editor	POA
Crystal	POA
Maps & Legends	POA
Datamap Collection 1	POA
Expert Opinion	POA
Flash	POA
Kermit & Remote	POA
Navigator	POA
PIE	POA
Quicktran	POA
Red Alert	POA
Star Struck	POA
START	POA
1st Mail	POA

NEW ST Laptop. OUT SOON Phone for details

ALL PRICES ARE INCLUSIVE OF VAT

THE SOFTWARE

1st Word Plus (English)	POA
1st Word Plus (French)	POA
1st Word Plus (USA)	POA
68000 Macro Assembler	POA
Fractal Generator	POA
GSTC	POA
Mark Williams C Version 3.0	POA
csd for the Atari ST	POA
Easy Draw 2	POA
Supercharged Easy Draw 2	POA
Easy Tools	POA
Prospero Fortran for GEM	POA
Prospero Pascal for GEM	POA
Data Manager Professional	POA
Data Manager	POA
SwiftCalc	POA
Word Writer	POA
Timeworks Desktop Publisher (UK)	POA
Other languages also available	POA
Partner ST	POA
Trimbase ST	POA
Let's Make Calendars & Stationery	POA
Let's Make Greeting Cards	POA
Let's Make Signs & Banners	POA
Art Library 1	POA
Art Library 2	POA
Display rack	POA

MUSIC SOFTWARE

C-Lab Creator (C-Lab)	POA
C-Lab Notator (C-Lab)	POA
CZ Android (Hybrid Arts)	POA
Digidrum (Microdeal)	POA
Digidrum Sample Disk (Microdeal)	POA
DX Android (Hybrid Arts)	POA
DX/TX Synthworks (Evenlode)	POA
EZ Score Plus (Hybrid Arts)	POA
EZ Track ST Plus (Hybrid Arts)	POA
FB-01 Synthworks (Steinberg)	POA
G.I. Sound Tool (Antic)	POA
Iconix (System Exclusive)	POA
IS Midi Sampler (Chips)	POA
K-Minstrel (Kuma)	POA
Master Score (Steinberg)	POA
Music Const. Set (Electronic Arts)	POA
Musigraph (Saro)	POA
Pro 24 V3.0 (Steinberg)	POA
Pro Midi (Eidersoft)	POA
Super Conductor (Microdeal)	POA

DIGITIZERS AND SCANNERS

VIDI ST 16 tone video grabber	£95.00
Kempston Datascan with HyperPaint	POA
A-Magic Turbo Digitizer	£129
Handy Scanner 16 grade scales	POA

UP TO 30% DISCOUNT OFF SOFTWARE! PHONE FOR BEST DEAL

We have all the new releases and give all the good prices

Ring – 01-323 4761 NOW!

EDUCATION CORPORATE & GOVERNMENT SALES WELCOME

CAVENDISH DISTRIBUTORS LTD

209-212 TOTTENHAM COURT ROAD, LONDON W1 9AF

Telephone: 01-323 4761 Fax: 01-255 1591

MAIL ORDER WELCOME

DISCOUNT SOFTWARE

For the Atari ST

GAMES

Baal	£13.95
Barbarian 2	£13.95
Bards Tale	£17.95
Batman	£14.95
Borodion	£22.95
Colossus Chess X	£16.95
Double Dragon	£14.95
F16 Falcon	£16.95
Fish	£16.95
Fusion	£16.95
Game Over II	£14.95
Goldragons Domain	£12.95
Heroes of the Lance	£18.95
Ingrid's Back	£14.95
Joan of Arc	£16.95
Kennedy Approach	£16.95
Kenny Dalglish Soccer	£13.95
Lancelot	£11.95
Lombard RAC Rally	£15.95
Pacmania	£14.95
Powerdrome	£17.95
Speedball	£16.95
Super Hang-On	£20.95
Thunderblade	£14.95
Time & Magik	£11.95
Trivial Pursuit–New Beginning	£14.95
U.M.S.	£14.95
Victory Road	£13.95
Zany Golf	£17.95

LANGUAGES

Hisoft Basic	£58.95
Fast ST Basic (Disc)	£31.50
GST C	£15.95
Hisoft Devpac ST V2	£41.95
Hisoft Power Basic	£28.95
K Seka	£32.95
HiSoft Wercs	£21.95
Wercs Plus inc. GDos	£33.95
Metacomco Pascal	£59.50
Nevada Cobol	£33.95
Prospero Pascal	£74.95
Prospero Fortran	£95.95
Metacomco Lattice C	£74.95
STOS – The Game Creator	£19.95

WORD PROCESSING

K Word II	£38.95
K Spell	£13.95
K Roget	£32.95
First Word Plus	£58.95
Protext (V.4)	£64.95
Protext Filer	£17.95
Protext Office	£24.95

SPREADSHEETS

Digicalc	£28.95
K Spread II	£49.95
K Spread III	£59.95
Swift Calc	£29.95
Mini Office Spreadsheet	£15.95

DATABASES

K Data	£31.95
Superbase Personal	£68.95
Data Manager	£29.95

COMMS

K Comm II	£32.95
Mini Office Communications	£15.95
Pace Linnet Modem	£149.95

BOOKS

Atari ST for Beginners	£12.95
Programmers Guide ST	£16.95
Atari ST Internals	£14.95
Intro Sound and Graphics	£14.95

DISCS

3.5" Unbranded Bulk 10	**£9.95**
3.5" Unbranded Bulk 20	**£18.95**
Sony DS/DD Branded Discs 10	**£15.95**

GRAPHICS

Degas Elite	£18.95
Quantum Paint (V.2)	£16.95
K Graph II	£32.95
Timeworks DTP	£68.95
Spectrum 512	£44.95

MISCELLANEOUS

Utilities Plus	£23.95
3.5" Head Cleaner	£5.95
Printer Lead (cent)	£6.95
Quickshot Turbo Joystick	£10.95
ST/FM Keyboard Cover	£3.95
Mouse Mat	£3.95

EDUCATIONAL

FUN SCHOOL 2

Under 6's	£11.95
6-8 years	£11.95
8-12 years	£11.95

PRINTERS

All printers listed have a ten inch (A4) carriage, are Epson compatible, and feature friction and tractor feed mechanisms for continuous or single sheet paper. All prices include the necessary cable

PANASONIC KXP-1081

Offers all the draft mode text sizes of the Epson FX compatibles and offers N.L.Q. in all sizes and effects. Well built, very reliable, high recommended

£169.95

STAR LC-10

As well built and reliable as the Panasonic. Has four N.L.Q. fonts (typefaces), in combination with all sizes and effects. New low prices makes it well worth considering

£195.95

STAR LC-10 COLOUR

All the features of the LC-10, but with a seven colour option for colourful text. Colour graphics from Degas Elite + others.

£245.95

STAR LC 24-10

24 pin version of the LC-10. Has 5 excellent letter quality fonts available with all sizes and effects. Two extra effect, outline and shadow are also featured. Good value.

£319.95

Please Note All prices include VAT and postage in the UK

ALL GOODS OFFERED SUBJECT TO AVAILABILITY.

Overseas orders welcome – Please write for prices

CALLERS WELCOME! MON-FRI 9.30am TO 5pm SAT 10am TO 4pm

PLEASE SEND CHEQUES/POs TO:

M.J.C. SUPPLIES, (STU)

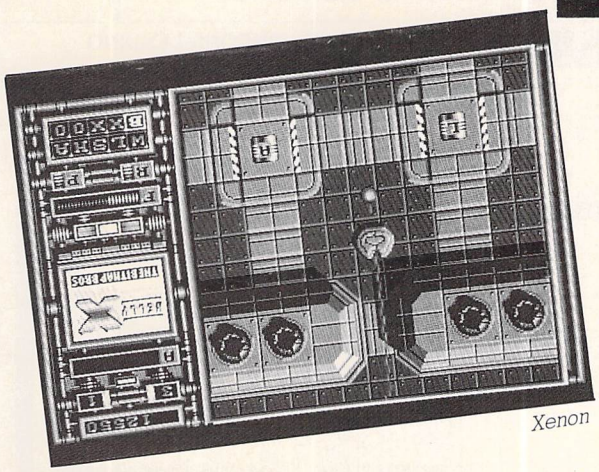
40a Queen Street, Hitchin, Herts. SG4 9TS.

Tel: (0462) 32897/420847 421415 for enquiries/Credit Card orders

VISA

Access

ARCADE CORNER

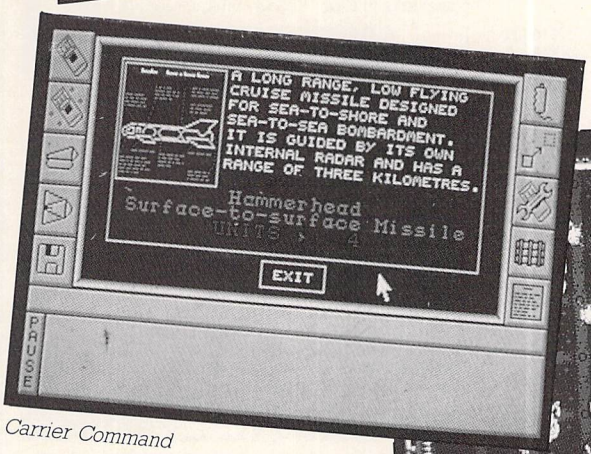


Xenon

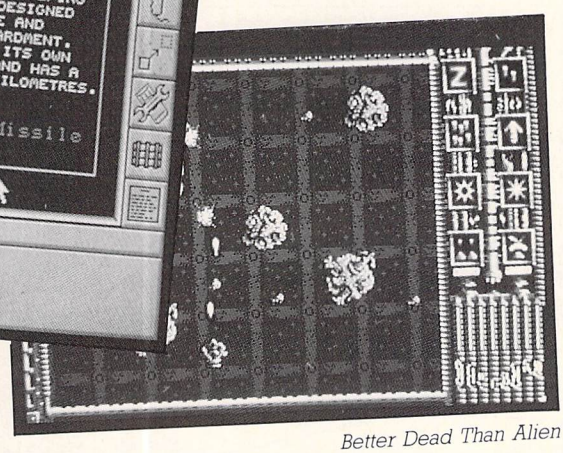
ARCADE CORNER is an occasional feature where avid games players can help their fellow readers. It's a place where we publish maps, complete solutions, cheat pokes and hints and tips.

If you have anything about your favourite arcade game that you feel would be of interest send it to:

Arcade Corner, Atari ST User, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.



Carrier Command



Better Dead Than Alien

THIS month we feature hints and tips for **Xenon**, list the passwords to **Better Dead Than Alien** and reveal a cheat mode left in by the programmer of **Carrier Command**.

Xenon

MARK Perry of Pangbourne, Berkshire, provides the help for Xenon: On the first part of sector one watch the demonstration to see how to complete this. Copy the technique making sure you don't walk into the sentinel at the end. For the second part stay as far back as possible. Try to gain two orbiting balls as these have good destructive power, avoiding wingtip lasers if possible.

Kill all the squadrons of aliens that come down the screen – they supply armour and homing missiles. When you get to the sentinel dodge him and splatter him with shots until the red bulbous part appears and starts to glow. Line up underneath and blast your way into sector two.

Knock out any wall opponents as soon as they come into view. They smother you in gunfire as you approach them. It is important to gain as much power for your shots as possible. This enables you to shoot the opposition before they become too much of a problem. Shoot the sentinel as he moves back up the screen or just as he begins to come down – make sure you don't get trapped underneath.

Now you can cheat by crashing into the left side wall. When your next ship arrives all the aliens will have disappeared and all you have to do is kill the next sentinel.

Better Dead...

DAVE Ramsey of Hornchurch, Essex has provided all the passwords for Better Dead Than Alien – the shoot-'em-up based on the classic Space Invaders arcade game:

1 Elektra
2 Syzygy
3 Drambuie
4 Plug
5 Soprano
6 Mayonnaise
7 Faucet
8 Woomera
9 Narcissus
10 Debutante
11 Firkin
12 Acoustic
13 Triptych
14 Jabberwocky
15 Whimsical
16 Cornucopia
17 Punjabi
18 Tiddly Pom
19 Kewpie Doll
20 Grammarian
21 Crossword
22 Quarantine

Carrier Command

HERE is a cheat mode for Rainbird's superb 3D arcade-action strategy wargame from Christian Simpson of Richmond, Surrey: After starting the game as normal go into pause mode and type in *grow old along with me*. The message *Cheat mode active* will be displayed on the screen.

Use the numeric keypad to select the following options:

6 Shows the colour palette used.

7 Advances the carrier when held down and freezes the display.

8 Numbers are printed at the top of the screen. What are they?

+ Protects the manta and walrus from missiles and collisions.

– Deactivates manta and walrus protection.

If you quit the game you can flick through your armoury by pressing the plus and minus keys.

KAVIN

for all your

COMPUTER SUPPLIES

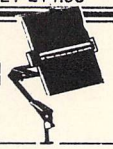
TEL: 01-567 7313

Your One-Stop Shopping Centre

Order by 3pm – we despatch by 4pm
(subject to availability)

13% OFF ALL PRICES SHOWN FOR OVERSEAS BUYERS!

COPY HOLDER
Adjustable
Desk Clamping
ONLY £14.95



ATARI HARDWARE

520 STFM SUPER PACK
Includes 520STFM with 1 Meg drive
Over £450 worth of software, Joystick, Mouse
All this for ONLY £348.00 inc VAT

1040 STFM
1 MEG Drive Inc. TV Modulator **£415.50**
with SM124 Mono Monitor **£525.00**
+ Free Software – VIP Professional Microsoft Write

520 STFM
with 1 Meg drive & TV Modulator **£278.00**

1040STFM (includes TV Mod)	£415.50
1040STFM with Mono Monitor	£525.00
Mega ST2 with Mono Monitor	£840.00
Mega ST4 with Mono Monitor	£1090.00
SM124 Mono Monitor	£115.00
Philips CM8833 Col. Monitor (Higher resolution)	£299.00
SM1224 Colour Monitor	£310.00
Cumana 1 Meg External Drive	£125.00
Cumana 2 Meg Dual External Drive	£225.00
20MB Hard Disk	£445.00

ST SOFTWARE

TIMEWORKS

Data Manager	£29.95
Data Manager Professional	£52.00
Desk Top Publisher	£74.95
Partner ST	£37.95
Swift Calc	£29.95
Word Writer	£37.50

Antic

Base Two	£44.95
CAD 3D 1.0	£18.95
Cyber Control (Animator)	£44.95
Cyber Paint 2.0	£54.95
Cyber Sculpt	£59.95
Cyber Studio (CAD 2.0)	£67.95
Cyber Texture	£37.95
Architectural/Human/Future design disks	£22.95
COLR (Sprite Editor)	£18.95
Genesis Molecular Modeller	£22.95
GIST (Sound Editor)	£26.25
Migraph Draw Art Professional	£29.95
Migraph Scan Art	£37.95

SAGE

Book Keeper	£84.95
Accountant	£129.95
Accountant Plus	£209.50
Financial Controller	£334.00

GFA

GFA Basic Version 2 (Includes Compiler)	£34.95
GFA Basic Compiler	£20.95
GFA Basic Version 3	£49.00
GFA Draft	£69.95
GFA Draft Plus	£97.95
GFA Vector	£24.95

GST

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

MUSIC

Mastertracks Junior	£89.95
Mastertracks Pro	£219.95
Pro Sound Designer Mk II	£58.95
Steinberg Pro 24	£250.00
Super Conductor	£37.50

GAMES AND SIMULATIONS

Carrier Command	£18.95
Elite	£18.95
F-16 Fighting Falcon	£18.95
Flight Simulator II	£37.45
Gunship	£16.95
Silent Service	£16.95
STAC Adventure Creator	£29.95
STOS Game Creator	£22.50
U.M.S.	£18.95

Subject to stock availability

PRINTERS

ANOTHER SCOOP PURCHASE!

CITIZEN DOT MATRIX PRINTER

High Quality – 120CPS – 80 Col
Citizen 120D £138

Star DOT MATRIX

LC24-10	£339.00
NX15 120cps/30nlq/135col	£329.00
NB24-10 24pin/216cps/72nlq/80col	£458.00
NB24-15 24pin/216cps/72nlq136col	£575.00
LC10 Multifont	£205.00
LC10 Multifont 4 Colour	£253.00

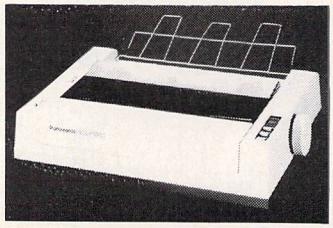
Star buys from KAVIN

Panasonic

DOT MATRIX

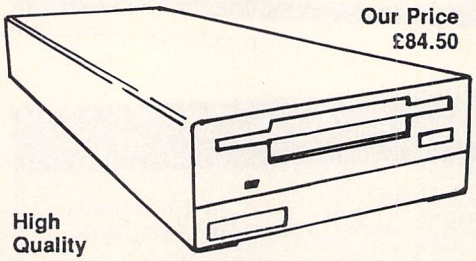
KXP 1081 80col 120cp + 24cps NLQ	£166.75
KXP 1592 132col 120 cp 180+ 38cps NLQ	£449.75
KXP 1595 136col 120cp + 240 51cps NLQ	£511.75
KXP 1540 24pin	£550.00

One more KSC Scoop purchase!
Panasonic KXP1081 NLQ
120CPS ONLY **£166.75 inc.**



MOUSE MAT £5.95

SECOND DRIVE for 520ST and 1040 ST
Good quality 1Meg capacity – complete with cable



Our Price £84.50

High Quality

DATAfax COMPUTER BASED Personal Organiser
• DIARY • PHONEBOOK • NOTEPAD • CALENDAR etc
All this for £42.50 inc

DATAscan Hand Held Scanner
for the Atari ST. Easy to use software provided. Images can be scanned from newspapers, photos, books etc. **£250**

UTILITY SOFTWARE

Easydraw	£44.99
Easydraw Supercharged	£74.99
Easy Tools	£29.00
Mark Williams C	£99.00

WE ARE LONDONS LEADING COMPUTER CENTRE –
All products carry our guarantee –
Open 9.30-5.30 Monday – Saturday

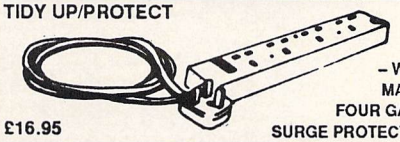
LISING PAPER & LABELS

2000 sheets 11" x 14.5" 1pt 60gsm	£16.27
1000 sheets 11" x 9" 2pt OTC	£17.79
2000 sheets 11" x 9" 1pt 60gsm	£14.16
1000 sheets 11" x 9" 2pt NCR	£23.26
2000 sheets A4 Size 1pt 70gsm Micro Perf	£17.79
1000 sheets A4 Size 1pt 85gsm Micro Perf	£11.49

LABELS	1 across	2 across
2000 3½" x 1 7/16"	£8.87	£9.66
2000 3½" x 1 15/16"	£11.90	£12.43
2000 4" x 1 7/16"	£10.00	£10.13
2000 4" x 1 15/16"	£13.65	£13.35

available in Blue, Yellow, Pink, Green, (£1 extra)
OTHER SIZES ARE AVAILABLE

TIDY UP/PROTECT



– WITH MAINS FOUR GANG SURGE PROTECTOR
£16.95

BOOKS

ATARI ST for beginners	£12.95
1st book of Atari ST	£14.95
ST Programmers Guide	£14.95
Atari ST Internals	£14.95
Technical Reference Guide Vol 1+2	£16.95
Atari ST Machine Language	£14.95

DUST COVERS

PROTECT YOUR VALUABLE EQUIPMENT FROM DUST, ACCIDENTAL SPILLAGE ETC.

CITIZEN 120D PRINTER	£4.50
PANASONIC KXP1081 PRINTER	£4.50
STAR NL10 PRINTER	£4.50
EPSON LX800 PRINTER	£5.50
JUKI 6100/6200	£5.95
ATARI ST COVER	£6.50
DISK DRIVE COVER	£4.50
MONITOR COVER	£7.95

PRINTER RIBBONS

	QTY 2	4	8+
Canon PW1080	3.68	3.45	2.53
Citizen 120D	4.03	3.92	3.63
Panasonic KXP1081	4.14	4.00	3.45
Star NL10	5.00	4.80	4.70
Star LC10	4.50	4.25	4.00

3.5" DISKS & BOXES

SONY/3M High quality DS/DD

1 box	2+ boxes
£16.50	£15.75

price per box

ANS 20L DISK STORAGE



Box Clever – protect your disks with high quality perspex, lockable storage boxes. Holds 30 3.5" disks
ONLY £7.50

Bulk Packed DS/DD discs £12.50 per 10

You order by 3 pm. We despatch by 4pm

Overseas customers are supplied Tax Free

ALL PRICES INCLUDE VAT
(Overseas orders deduct 13%)

MAIL ORDER + EXPORT HOTLINE 01-567 7313

Official orders welcome from PLC, Government & Educational establishments.
ALL PRODUCTS CARRY KCS GUARANTEE

Post & Packing (UK Only):
Ribbons 25p each
Computer Paper £3 per Box
All other itmes 50p each
Computer/Printer £7.50 (by courier)

Kavin Computer Supplies
106 South Ealing Road
Ealing, London W5 4QL
Tel: 01-567 7313
Fax: 01-578 2352
Telex: 947838 GEEWS Dept KCS
Callers welcome 9.30 – 5.30

KAVIN

(PRICES SUBJECT TO CHANGE WITHOUT NOTICE)



Outback in winter **Allan Robinson**



The Arch **Alan Runcie**

Please enclose an sae for the return of your discs. The address to send your masterpiece to is:
Gallery, Atari ST User,
Europa House,
Adlington Park, Adlington,
Macclesfield SK10 4NP

GALLERY

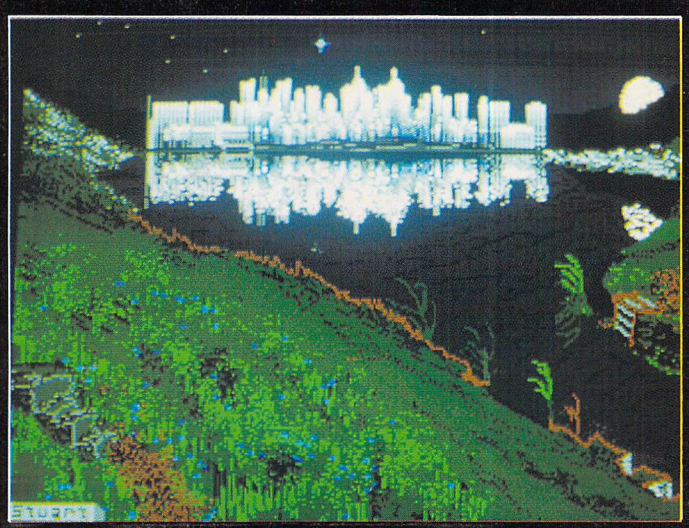
GALLERY takes landscape as its theme this month. We feature four reflections from ST artists who have used very different techniques to produce their pictures.

S. Bassett's American skyline was created with Neochrome and finished on Degas Elite. It provides a warm night image of a highrise scenario.

Garry Benson's Greek Island was drawn using Art Director and movingly captures the continental feel of a Greek holiday. Meanwhile Alan Runcie's Degas Elite Arch peeps into a swathe of English green and brings back happy memories of a day in the country.

Finally, Allan Robinson shows an unusual aspect of the Australian landscape with his winter picture of a snow covered outback. Not quite skiing weather, but it does show that our cousins in the antipodes do occasionally experience a flurry of snow. If you have a work of art you would like to see exhibited on our worldwide stage send it on disc to Gallery.

Remember though, anything you submit must be all your own work. You must own the sole copyright and provide us, in writing, with confirmation of this fact, as well as your express permission to let us publish your work. Please note that if you want your submissions returned you must supply us with an sae.



Skyline **Stephen Bassett**

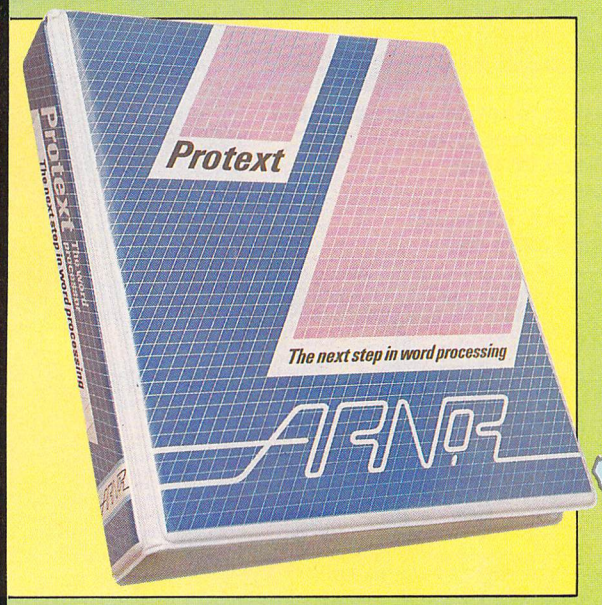


Greek Island **Garry Benson**

Just how good is Protext?

EXCLUSIVE! SAVE £20

RRP £99.95
Our price £79.95



Protext is acknowledged by many as THE word processor for most home micros, and the Atari ST version is no exception.

With over four years of development by one of Britain's top software houses, Protext has evolved as more powerful micros came along – each version being extensively tailored to fit in its new environment.

So what you get with ST Protext is a powerful workhorse with a proven track record and tens of thousands of customers who wouldn't consider using any other word processor.

And now we are knocking a hefty £20 off the retail price of the new version 4. So send your order today. You'll have a pleasant surprise, and will wonder how you ever managed without it.



Press comments

"For power and value for money, I don't think that Protext can be beaten. It can be used as simply as you choose, or can handle the most complex mailmerge routines... in short, it can be what you want it to be". – **Micronet**

"Anyone with a professional interest in words is likely to find it pays dividends". – **PC Business World**

"It is a refreshing change to review an inexpensive WP package which lives up to every expectation". – **Which PC**

"Protext deserves to be the system by which all other word processors are judged... Arnor have given the market a superb product". – **Your Computer**

"The great strength of the package is its ease of use". – **CPC Computing**

"Deserves very serious consideration". – **Amstrad Professional Computing**

"Protext is probably the most powerful word processor available on the ST and is quite likely to become the best selling too". – **Atari ST User**

Some of Protext's features

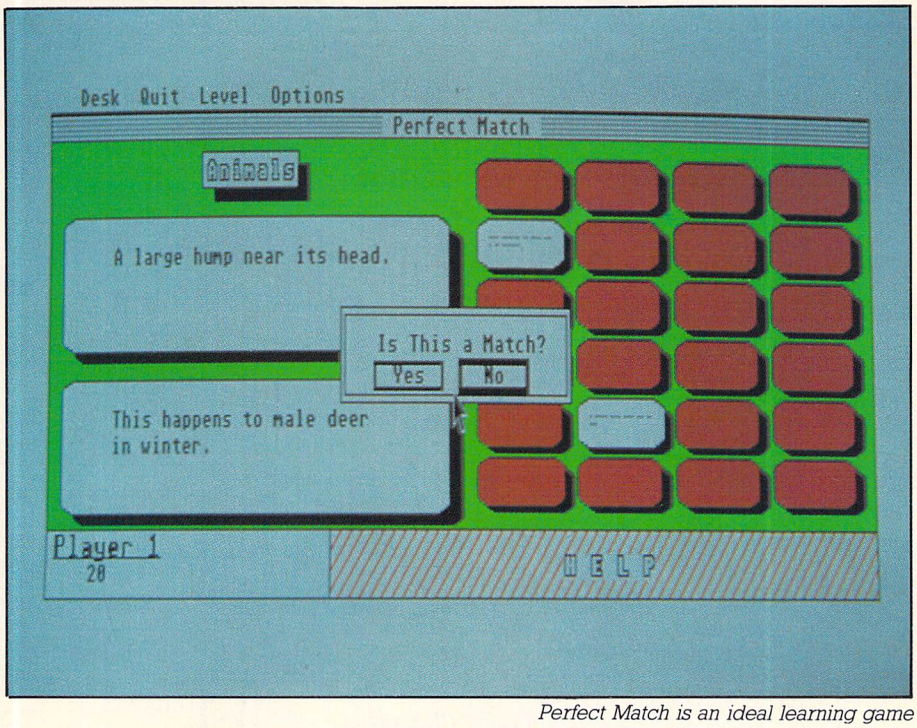
- Automatic reformatting of text
- Page breaks shown during editing
- Can spell check as you type
- Over 70,000 word English dictionary
- Macro record mode
- Footnotes
- Menu driven configuration program
- Auto indent for program editing
- Line drawing
- Fast and flexible find and replace
- Powerful mailmerge facility
- Box mode for creating columns
- Edit two files at a time
- Keyboard or mouse operation

'...probably the most powerful word processor for the ST'

David Davenport
Atari ST User
August 1988

ORDER YOUR COPY TODAY, USING THE FORM ON PAGE 133





Perfect Match is an ideal learning game

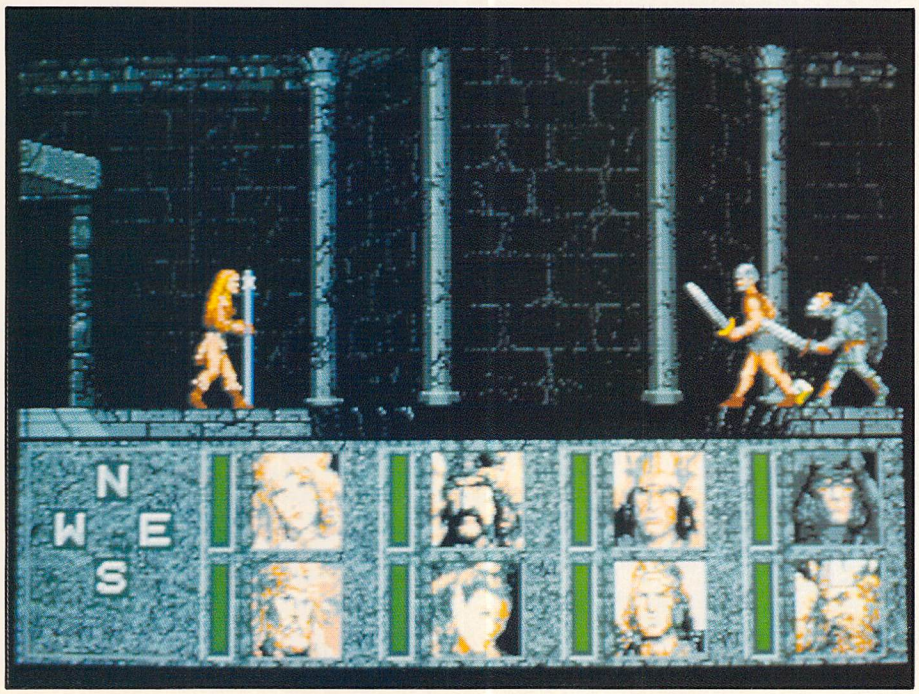
Nic Outterside offers advice on building an educational software library for your child

Catch 'em young!

MOST people have a concept of educational software covering programs which teach or provide rote practice in specific academic skills. Such programs include Softstuff's Spellbook, Ladbroke Computing's Add with Oscar and Microdeal's Algebra 1.

These programs, and others like them, can be effective in providing motivation and in helping children practise important skills, but they play only a limited role in the general scheme of things.

Virtually any category of software can have educational value. But if your child is to realise the full potential of what micro technology has to offer he – or she – should learn to use the ST as computers are used in the real world – which is becoming more technical with each passing year. In the real world, computers are used as tools, not learning aids.



Heroes of the Lance, a thinking game for the older child

Building a library

To broaden educational possibilities you can provide your child with a wide selection of programs that serve different purposes as he grows. But, he must also learn how and when to use them. To facilitate this you can help him get to grips with the programs and play games with him. A philosophy which I, a former headteacher, hold firm is the earlier in life a child comes into contact with a micro the easier will be his growth with it.

My five-year-old son first learned how to switch on and load games into my old BBC Micro when he was two. Now, with constant availability of a micro and parental encouragement, he often toddles off to play games on my 520ST. Occasionally he will call me through to play a game with him.

This may involve simply making up a duo to play Better Dead than Alien, helping him to draw pictures on First Paint or even writing a few words on First Type. I like to believe this is the reality of constructive self-perpetuating learning in progress.

On a wider front you can observe your child's needs and point out how different programs can serve these needs and develop interest.

Primary selection

Certain vocational software packages I would deem almost essential to have at hand for the young primary school child,

Turn to Page 93 ►

The ST Club

Caters for all - Beginner to Professional

49 Stoney Street • Nottingham • NG1 1LX
(0602) 410241 • Callers welcome Mon-Fri 9.30-5.00

The ST Club Newsletter: Simply the best ST newsletter available.
The ST Club Disk Magazine: A compilation of the best and latest Public Domain Software. Subscriptions and Membership: 12 Newsletters = £8.00 or 6 Disk Mags plus 12 Newsletters = £22.50 Members qualify for discounts on PD disks, commercial software, books, accessories etc.
Laser Printing Service from 15p per page!
Sample Newsletter (80p) Sample Disk_Mag (£2.00)

Public Domain Software

☆ Over 800 Disks !!! ☆

Free comprehensive PD catalogue - write for your copy now

FontKit Plus

A sophisticated GEM based font editor for: GDOS fonts, ST Screen fonts, Degas fonts, RSC images, and downloadable printer fonts. Includes lots of fonts and a 80 page manual.
Cost: 2xSS disks-£9.99 or 1xDS disk-£8.49

Your Second Manual to the ST

At last - the manual that Atari should have given you when you bought your ST. Includes: introduction to computers, the keyboard, the mouse, disk copying and formatting, recovering lost files, RAM disks, customising your desktop, accessories, word-processing, printing, magazines for the ST, making the best of public domain software, using a BBS, glossary of ST terminology - and much much more. Essential reading for ALL ST users.

£3.95 - Order your copy from The ST Club today.

STOP PRESS: 2nd Manual due to be bundled with all STs sold by Atari Scandinavia - it's that good!

Trade enquiries welcome STU19

No surcharges on European orders • Other countries add 5% for Air Mail despatch

BEST BYTE

ST	RRP	Our	ST	RRP	Our	ST	RRP	Our
Adv. Rugby Sim.	19.99	12.90	Galdregon – Domain	19.95	12.90	Roy of the Rovers	19.95	13.95
Afterburner	19.99	12.90	G. Lineker Hot Shots	19.99	13.95	R-Type	19.99	12.90
Baal	19.99	12.90	Heroes of the Lance	24.99	17.50	Return of the Jedi	19.95	12.90
Ballistix	19.99	12.90	Hostages	24.95	16.15	STOS	29.95	20.95
Barbarian II	19.99	12.90	IK+	19.99	12.90	STOS Compiler	19.95	13.90
Batman	19.95	12.90	Inc Shrinking Sphere	19.95	12.90	STOS Maestro	24.95	19.50
Blasteroids	24.99	16.15	Joan of Arc	19.99	13.95	STOS Maestro Plus	69.95	55.95
Chrono Quest	29.95	19.50	K D Soccer Manager	19.99	12.90	STOS Sprite 600	14.95	10.90
Cosmic Pirate	19.99	12.90	Kennedy Approach	24.95	16.15	Speedball	24.95	16.15
Crazy Cars 2	19.95	12.90	Leaderboard Birdie	19.99	13.95	Teenage Queen	19.95	12.90
Custodian	19.99	13.95	Lombard RAC Rally	24.95	16.15	Thunderblade	19.99	13.95
Double Dragon	19.99	12.90	Manhattan Dealers	19.99	12.90	Times of Lore	24.95	16.15
Dragon Ninja	19.95	12.90	Manhunter	29.99	19.90	Tracksuit Manager	19.95	12.90
Dragonscape	19.95	12.90	Menace	19.95	12.90	Triad Vol 1	29.99	19.50
Dungeon Master	24.99	16.15	M. Office Pro Comms	24.95	17.50	Turbo Cup	19.99	12.90
Elite	24.95	15.50	M. Office Pro Spread	24.95	17.50	War in Middle Earth	24.99	16.15
Emmanuelle	19.99	12.90	Orbiter	24.95	16.15	WEC le Mans	19.95	12.90
F16 Combat Pilot	24.95	16.15	Operation Neptune	24.95	16.15	Zak Mackaron	24.99	17.50
Falcon	24.99	16.15	Operation Wolf	19.95	12.90			
Fed. FreeTraders	29.99	20.95	Pac Mania	19.95	12.90			
Five Star	24.95	16.15	Purple Saturn Day	24.95	16.15			
Football Director 2	19.95	12.90	Question of Sport	19.95	12.90			
Football Manager 2	19.95	12.90	Raffles	19.95	12.90			
Fusion	24.95	17.90	Robocop	19.95	12.90			

3.5" DS/DD disks
Unbranded 135tpi
£9.95
Box of 10

Customer Number (if known): .....

Name: .....

Address: .....

.....

.....

Item	Amount
Total	£

All orders sent by 1st Class Post within 24hrs (subject to availability). Mail order only.
Overseas orders add £3.50 per item. Send form with cheque/PO payable to Best Byte to:

Best Byte (AST15), 2 Quarry Gardens, Tonbridge, Kent TN9 2SG

LAN COMPUTER SYSTEMS

Atari's 1040 STFM
1040 including mouse, basic, cables
£359.00 + VAT

Atari's New Super Pack:
520STFM Computer with 1Mb integral drive + all this software:
Arkanoid 2 – Wizball – Black Lamp – Quadralien – Eddie Edwards – Super Ski – Starquake – Xenon – Return to Genesis – Zynaps – Test Drive – Explorer – Buggy Boy – Ikari Warriors – Beyond the Ice Palace – Thundercats – Chopper X – Thrust – Roadwars – Marble Madness – Summer Olympiad – Seconds Out All this for the incredible price of just
£289.00 + VAT

Atari's 520 STFM
520STFM Explorer pack including mouse, basic, cables
£235.00 + VAT

Atari's 1040 STFM + SM124
1040 including mouse, basic, cables and SM124 high res monochrome monitor
£439.00 + VAT

Other Atari products available, please phone for details

Cumana 3.5" Disk Drive with PSU £85.00
30Mb Hard Disk £469.00

Supra 20Mb Hard Disk £419.00
Supra FD10 Removable Hard Disk Phone

PRINTERS

Panasonic KXP 1081	£145.00
Star LC10	£169.00
Star LC10 Colour	£215.00
Star LC10 Sheet Feeder	£55.00
NEC P2200	£279.00
Epson LX800	£169.00
Star LC 24/10	£279.00
Star LC 24/10 Sheet Feeder	£55.00
Okimate 20 Colour Printer	£120.00
NEC P6+	£469.00
NEC P7+	Phone
Citizen 120D	£129.00

Large range of alternative printers available. Please phone for quotation. All printers exclusive of VAT

MONITORS

Special Offer Colour Monitor	£189.00
Philips 8833	£219.00
Philips 8852	£259.00
Philips 9073	£369.00
Philips Monitor Green	£69.00
Philips Monitor Amber	£79.00
NEC Multisync II	£469.00
Commodore 1084S	£239.00
SM124	£90.00

Ferguson TV/Monitor 14" £189.00
Philips 14" R/C Tele-Text £217.00
Philips 15" FST £189.00

All TV monitors complete with computer leads

ACCESSORIES

Mouse Mat	£4.95
Dust Cover – Computer	£7.95
Dust Cover – Monitor	£9.95
Dust Cover – Disk Drive	£5.95
3.5" Disks (box 10)	£14.95
5.25" Disks (box 10)	£9.95
Disk Boxes from	£2.00
Copy Stand A4	£19.95
Data Switch 2way	£29.95
Data Switch 4way	£39.95
Joysticks from	£7.00
Monitor Stands	£7.00
Printer Paper from	£9.95
Printer Ribbons from	£3.00

All accessories inclusive of VAT

LANSOFT CLUB

LANSOFT CLUB

The computer club for ST and Amiga users everywhere, all prices include VAT.

Membership £20 per year

So what do you get?	RRP	Lansoft
Tau Ceti	£24.95	£5.00
Hacker II	£24.95	£5.00
Ogre	£24.95	£5.00

So you can save up to 80% off your software on our special club promotion

HOW TO ORDER

Enclose letter with cheque, postal order or credit card number for amount including VAT and delivery charge. Credit card holders may order by telephone contact sales desk. Despatch normally within 24hrs.

Official orders from Educational Establishments, Local Authorities and Government Departments welcome. Contact Education Dept.. Prices subject to change without notice.

E&OE.
EXPORT HOTLINE 01-597 8854 TELEX: 995548 Fax: 01-590 6057
Dealer and export enquiries: Contact Trade Dept.
All Software and Books include VAT and Delivery
All Hardware Systems £10.00 Courier Service
Prices exclusive of VAT Unless otherwise stated and Correct at time of going to press.
Educational callers ask for Tony Judge or Mark Butler

Come in and see us at **1063 High Road, Chadwell Heath, Romford Essex.**

Just around the corner to Chadwell Heath station or easy parking in Manstead Gardens, just opposite, or PHONE 01-597 8851 show room open Mon to Sat 10.30am to 5.30 pm

◀ *From Page 91*

would include:

● A good art package such as First Paint or the PD Neochrome. Most children love drawing and painting and the freedom of design and correction which these packages have to offer opens up a whole new colourful world to the young child.

● An easy to use word processor such as ST Writer. This is essential to give equal freedom to your child's writing. After five years of writing via a word processor – with the inherent editing facilities it provides – I find cold-typing on a manual or electronic typewriter laborious and neanderthal.

● A simple music program such as Music Construction Set. This will give new breadth to your child's musical inclinations and may even act as a catalist for latent talent in that field.

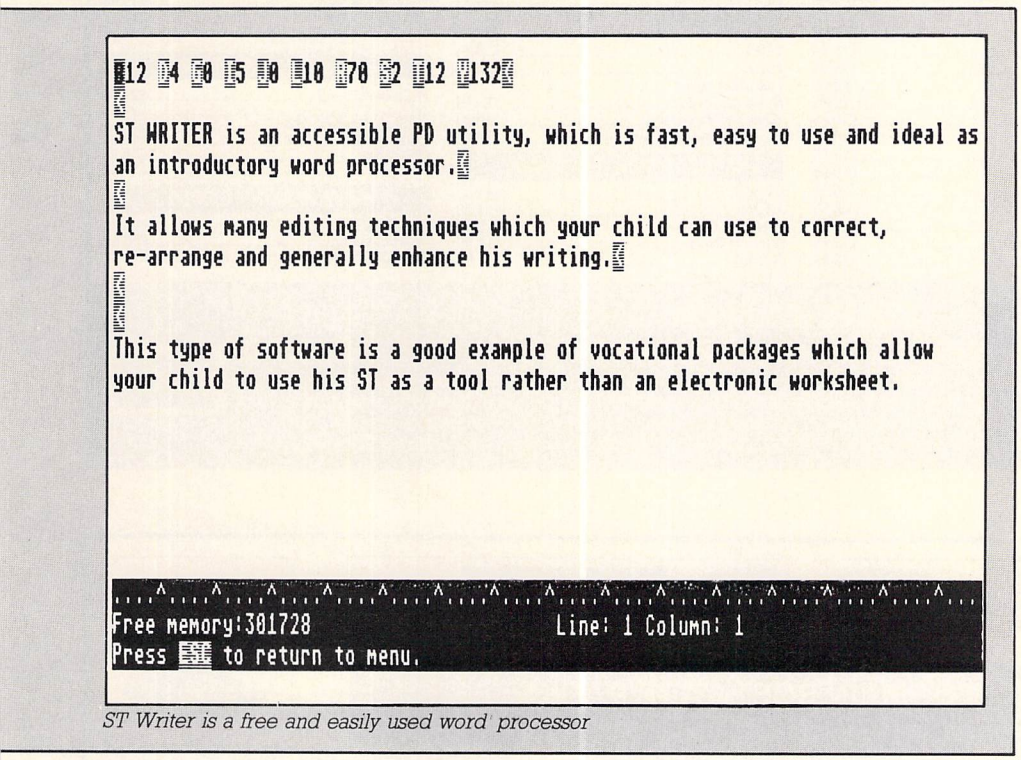
● A few essential desk accessories, especially an on-screen calculator, a notepad and a clock and calendar. Also recommended are games that will challenge thinking skills. Garfield, Batman or Microdeal's Perfect Match are excellent examples of what I mean.

For very young children I tend to look for certain features in software to ease use. Such features include auto-booting, minimal reading of text and clear icons. If a program is easy to use it will boost your child's confidence and speed up the rate of learning.

To promote early reading skills I try to choose programs in which objects on the screen move from left to right. Also because young children often confuse left and right, programs which permit your child to use either or both mouse buttons are also recommended.

If your child is of infant school age he will need large targets for the mouse with selections clearly indicated. In addition screens should not have an overwhelming number of selections.

It is also a good idea to make back-ups wherever possible of every program you buy. Use the back-up and put the original disc safely away from prying young hands. You never know when your child may take it into his head to move the write protect tab and corrupt or erase an expensive commercial disc.



ST Writer is a free and easily used word processor

While your child should become familiar with programs in each of the categories listed above, most programs in his software library are likely to be games.

Most adults have dim and distant memories of playing games and may not appreciate the subversive educational value and challenge of those currently available for the ST. Games software has come a long way since the days of Space Invaders and Pac Man.

Text and text/graphics adventures such as Infocom's Wishbringer or the graphically illustrated Sierra On-Line series provide an excellent opportunity for your child to develop creative thinking skills. These games require logic, decision-making and lateral thinking while supporting spelling, reading and vocabulary extension.

All the Infocom games are excellent text adventure mindbenders, however younger children will almost certainly need on-screen graphics to hold interest. You could even tackle one of these adventures with your child and make solving it a family affair – you never know you may even enjoy it!

Even some games which at first glance seem to provide nothing more than a mindless zap-'em-up can also require careful planning and problem-solving strategies.

The range is typified by recent releases such as the Western shoot-out Wanted, the scrolling shoot-'em-up Fusion, the revamped platform and ladders game Chuckie Egg or even the Breakout adaptation Arkanoid. All require logical planning if you are to be successful.

If your child is slightly older, more testing games such as Heroes of the Lance, Elite or Captain Blood will extend powers of reasoning and planning while feeding creativity.

However, selecting the best software in each category is an individual matter as all children are different and develop at different rates and directions on the learning curve. Many of the packages mentioned were chosen primarily because they are inexpensive or free and secondly because they are fairly simple to use.

New software is being introduced all the time, so it is wise to constantly check advertisements and to read reviews to keep abreast of new releases and help you make your choices.

Further extension

Some software packages may prove invaluable in specific individual cases. For instance, if your child has a large record or butterfly collection, he may want to catalogue it with a database. Or equally he may wish to store names and addresses of his friends, fellow collectors and relations.

If he is interested in electronics or is technically minded he may want to tackle a building project. Perhaps software or hardware to control his Technic Lego models will prove useful. Personal Robot's Robokit – reviewed in the December 1988 issue of *Atari ST User* – may be just the package he needs.

If he is a budding writer he can use a word processor, but a desktop publishing program will allow more flexibility to perhaps publish his own weekly family newsheet – Dorothy Brumleve's PD Kid-Publisher is a good starter here.

Equally, if he enjoys photography he may want to digitise his photos. Or if he is into designing he may benefit from an inexpensive package such as Cyber Studio.

Most children need considerable parental assistance to fully exploit packages such as these, but the rewards are enormous. It is time, perhaps, for all of us involved in the education processes to realise that the micro is an important tool and not just a glorified electronic worksheet.

COMPUTERS

ATARI 520 STFM
PACK A
Atari 520 STFM with 1Mb Disc Drive, Mouse, 21 Game Software Pack, Business Organiser Software, UK Basic, Sourcebook & Tutorial, Owners Handbook, Atari Joystick

ONLY £359.95

PACK B
Contains all items in Pack A
PLUS!!
Mouse Mat, Computer Cover, Lockable Disc Box (holds 100 disks), Twin Joystick Extension Lead, Ten Blank Double Sided Disks

ONLY £389.95

PACK C
Contains all items in Pack A
PLUS!!
A Philips CM8833 Colour Monitor with Connecting Lead

ONLY £569.95

Plus Free!! With any of the above Atari Packs – A superb software pack including Wordprocessor, Spreadsheet, Word Count, Spellchecker, Neochrome, Mono Monitor Emulator, Database, Towers of Hanoi, Pacman, Sensori, Fruit Machine simulation

ATARI 520STFM EXPLORER PACK

ATARI 520STFM
With1 Mb Drive, Mouse, Owners Manual, Sourcebook and Tutorial, UK Basic, Ranarama Game, Tutorial Disk

ONLY £279.95
Plus pay in cash or by cheque on the above pack and we will give you 10 blank double sided disks FREE!!

ACCESSORIES

PRINTERS

Panasonic KXP1081	£169.95
Panasonic KXP1082	£219.95
Star LC10 (UK)	£199.95
Star LC10 Colour	£269.95
Amstrad DMP2160	£159.95

All Printer prices include a cable to connect to ST

MONITORS

PHILIPS CM8833
Colour Monitor
ONLY £219.95 inlcluding lead

Atari SM 124 Mono	£109.95

DISC DRIVES

MICRO PERIPHERALS 1Mb ST DISC DRIVE
£79.95
Top quality NEC Drive Mechanism

Cumana CSA354 1Mb	£99.95
Triangle 1Mb	£109.95
Atari SF314 1Mb	£109.95
Atari SF354 0.5Mb	£39.95

JOYSTICKS

Professional Plus	£15.95
Professional	£13.95
Professional Pistol	£11.95
Arcade	£15.95
Ram Delta	£8.95
Elite	£9.95
Elite Pistol Grip	£10.95
Konix Speedking	£10.95
Konix Navigator	£11.95
Cruiser Clear	£10.95
Cheetah 125+	£6.95
Cheetah Mach 1	£8.95
Cheetah Starprobe	£10.95
Comp Pro 5000 Black	£12.95
Comp Pro 5000 Extra	£13.95

ATARI 1040

PROFESSIONAL PACK
Atari 1040 STFM with built in 1Mb Disc Drive and TV Modulator, Mouse, Owners Manual, Sourcebook and Tutorial, UK Basic, VIP Professional RRP £149.95, Microsoft Write RRP £149.95, Superbase Personal RRP £69.95

ONLY £449.95
Plus pay in cash or by cheque on the above pack and we will give you 10 blank double sided disks FREE!!

SERIOUS SOFTWARE

Easy Draw Supercharged	£72.95
Spectrum 512	£44.95
Wordwriter	£36.95
First Word Plus	£58.95
Data Manager	£27.95
Data Manager Professional	£51.95
Timeworks D.T.P.	£72.95
Scan Art	£32.95
Draw Art	£39.95
Superbase Personal	£44.95
Utilities	£32.95
Mighty Mail	£20.95
Cornerman	£17.95
Home Accounts	£18.95
Hisoft Basic	£59.95
Power Basic	£32.95
Fast Basic (Rom)	£69.95
Fast Basic (Disc)	£34.95
Degas Elite	£17.95
STOS	£20.95
Logo	£15.95
Lets Make Series	
Greetings Cards	£8.95
Signs and Banners	£8.95
Calendars and Stationery	£8.95

EDUCATIONAL SOFTWARE

Invasion	£11.95
AB Zoo	£11.95
Spell with Oscar	£10.95
Add with Oscar	£10.95
Algebra 1	£11.95

COVERS

Atari 520STFM	£5.95
Atari 1040STFM	£5.95
Philips CM8833	£6.95
Panasonic KXP1081	£4.95
Star LC10	£4.95
Citizen 120D	£4.95

ACCESSORIES

ST Mouse	£24.95
Twin Joystick Lead	£5.95
Mouse Mat	£4.95
Disk Head Cleaner	£4.95
ST Replay	£69.95
Pro Sound Designer	£44.95

BOOKS

ABACUS BOOKS – Presenting the Atari ST	£12.95
Atari ST for Beginners	£12.95
Atari ST Internals	£14.95
GEM Programmers Guide	£14.95
ST Machine Language	£14.95
ST Tricks and Tips	£14.95
Introduction to Midi	£14.95
ST Basic to C	£14.95
ST 3D Graphics	£16.95
Disk Drives Ins and Out	£16.95
Basic Training Guide	£12.95
COMPUTE BOOKS – Kids and the Atari	£14.95
ST Programmers Guide	£16.95
Sound and Graphics	£14.95
ST Applications	£15.95
1st Book of Atari ST	£16.95
GENERAL– Sourcebook and Tutorial	£8.95

FLIGHT SIMULATORS

Flight Simulator 2	£27.95
Jet	£27.95
European Scenery Disk	£13.95
Japanese Scenery Disk	£13.95
F16 Falcon	£16.95
Gunship	£16.95

ROLE PLAYING GAMES

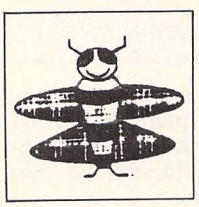
Bards Tale	£16.95
Times of Lore	£16.95
Galdragons Domain	£13.95

MAIL-CENTA

17 Campbell Street, Belper, Derby DE5 1AP. Tel: 0773 826830

All prices include VAT and Delivery. However, for orders under £5.00 please add a 50p handling charge.
Personal callers welcome at our retail shop but please bring this advert as prices may vary. Closed Wednesdays.
All items despatched same day whenever possible. Cheques may require a seven day clearance period.
Monthly terms available on all purchases above £150.00. Please ring for details. Proprietor: Martin Bridges

VISA



B-SOFT

PUBLIC DOMAIN SOFTWARE PACKS FOR THE ATARI ST SERIES

HOME OFFICE PACK: Superb 3 disk pack consists of FIRST WORD word processor, WORD COUNT, SPELL CHECK, MAIL MERGE, all fully integrated. Also 350K DATABASE and SPREADSHEET, many others, full documentation supplied on disc. If you specify OPTION 2 for this pack I will supply the pack as above but with ST WRITER ELITE word processor, has Mail Merge option built in. Either option £7.50. Available separate. Phone for details

ACCESSORY PACK: Another superb three disc pack, too many programmes to mention all, but includes: A BACKPACK style programme with programmable calculator, notebook, phone book, calendar, file copier etc. A BOOT from DRIVE B and accessory loader programme. A utility that, amongst other things, will allow you to repair and reformat disks without losing your data. Also a VIRUS checker and killer, a text reader:- reads word processed files out loud. Others. Superb pack £7.50

ART PACK: Excellent two disk pack, includes three excellent drawing packages including NEOCHROME, pictures. Many other Art Utilities £5.00

ARCADE PACK: Another three disk pack includes space shoot-em-ups, a superbly implemented MAZE game, a very playable version of JOUST, an excellent vertical scrolling space shoot-em-up, and others. £7.50

BOARD GAMES PACK: A two disk compilation of board game favourites. Includes CHESS, MONOPOLY, BACKGAMMON, OTHELLO etc. £5.00

GENERAL GAMES PACK: Three disk pack includes FIRSTRM, rescue people from a planet surface. BRIDGET, two player board game very well implemented. PAC-MAN, need I say more. A SLOT MACHINE type programme. An ARCANOID/ BREAKOUT clone, has screen designer capability. MASTERMIND, classic implementation of popular game. And a superb one or two player shapes dominoes type game £7.50

MUSIC AND GRAPHICS DEMO: EXCEPTIONS superb sound demo and BALLITT, a lovely demo of a translucent ball bouncing on a mirror surface. £2.00 special offer.

SOUND AND MUSIC PACK, SPECIAL OFFER: (Mono only but emulator supplied). Two disk pack includes a programme to generate a variety of sounds, helicopter etc and MUSIK programme:- a MUSIC STUDIO type programme, write your own music on screen and play it back. Lots of tunes included. Instructions in German. Only £4.00

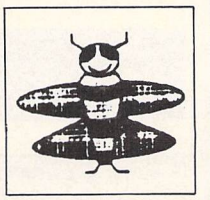
STRATEGY DISK SPECIAL OFFER: A single disk includes CELEST, a one or two player space strategy game. OGRE, tank warfare in the 21st century. STARTREK, not the recent release but the old classic. TWIXT, one or two player. BATTLESHIPS and a CONNECT 4 type game. £2.50

ADVENTURE PACK: Another three disk pack of my favourites. Includes HACK, a simple graphics but massive adventure. COLLOSAL CAVE adventure, the classic. COLUMBUS, adventure aboard a space ship, and WIZARDS LAIR, a graphics and text adventure £7.50

KIDS DISK PACK: One for the younger members of the family. Simple but excellent art programmes, music, piano, and games such as a PACMAN type, SLOT MACHINE type game. Two disks. £5.00

BEST OF BASIC: One disk of the best of the BASIC games around. Includes arcade type games, board games, strategy, adventures, and many others. Includes BASIC language. New TOS compatible. £3.00

AUTOROUTE P.D.: Only £3.00



Price includes P&P. Overseas orders add £1.50
SEND PAYMENT, MADE PAYABLE TO B-SOFT, TO
33 CORSHAM ROAD, CALCOT, READING, BERKS RG3 5ZH.
TEL. READING (0734) 416492

ATARI®

IT'S BACK! IT'S BIGGER! IT'S BETTER!
The EVESHAM MICROS MEGA-PACK



PACKAGE INCLUDES:

	Normal RRP Inc.VAT:
Atari Mega ST2 with monochrome monitor	£1034.99
Atari SLM804 laserprinter	£1379.99
External second floppy drive	£89.95
Microsoft 'Write'	£149.99
'VIP Professional'	£149.95
'Fleet Street Publisher'	£115.00
TOTAL RETAIL VALUE INC VAT	**£2919.87**

Optional Mega-File 30Mb Hard Disk (shown) only £539.00

Our Price only...

£1795.00

includes VAT, delivery and 90 days on-site maintenance

The same price as a Panasonic KXP4450!

VIDI-ST

GREAT VALUE REAL-TIME VIDEO DIGITISER FOR THE ST

Check the features on this new product from Rombo:

- ❑ Grabs from moving video in 1/50th second in full 16 shades!
- ❑ Stores sequences of captive images in memory faster than 12 per second
- ❑ Animates frames at up to 25 per second
- ❑ Can 'carousel' frames (up to 24 on 1Mb ST)
- ❑ LOAD and SAVE in DEGAS, NEOCHROME or IMG formats
- ❑ Cut and Paste pixel-accurate blocks between frames
- ❑ Manual control of contrast and brightness, with an additional 8 levels of software brightness control
- ❑ Full palette control of individual frames
- ❑ 'Grab window' feature allows partial frame capture, for overlay with existing frames
- ❑ User interface makes software extremely easy to use
- ❑ Full documentation of machine code interface, for inclusion in the user's own programs.
- ❑ Runs on any ST in low-resolution mode, with video recorder or video camera.

£95.00 **Price includes VAT, delivery, interface unit, software, video connection cable and manual.**

KEMPSTON DATAscan

Highly rated, superb quality 200dpi handy scanner 105mm wide. Includes scanning and image processing software, operating in low, medium or high resolution. Stores images in IMG, Degas, NEO, TIFF and MSP formats. Scanner digitises black & white or in up to 16 grey levels, at a speed of 2cm/sec. Incorporates scanning window and scanning control button for great ease of use. Comes with Atari's HYPER PAINT package for even more power over image processing.

ONLY £269.00
including software, manual, interface, VAT and delivery

SYSTEM at00 HARD DISKS

Now available - *fantastic value* hard disk substations by Systems 2000 computers. Housed in strong and rigid steel cases colour matched to the ST (ideal for a monitor base), each unit features quality components including hard drives by Miniscribe and power supplies by Astec. Comes complete with cables and installation / utilities software.

SYSTEM at40 HARD DISK (40MB) £469.00

CAMERON SCANNERS

HANDY SCANNERS

- 64mm width good value image scanners
- Scanning resolution of up to 400 dpi at a speed of 3ms per line, with START / STOP control button and manual contrast adjustment
- *Type 2* digitises 2-tone (black & white) images at up to 200 dpi
- *Type 4* gives halftoning options (2,4,8 or 16 shades of grey), digitises at up to 400 dpi, and incorporates scanning window for even greater ease of use
- Complete with 'Handy Reader' OCR software as above, 'Handy Painter' powerful paint software, interface cartridge and external PSU.

HANDY SCANNER TYPE 2 ONLY £219.00
HANDY SCANNER TYPE 4 ONLY £329.00

Evesham Micros

How to order from Evesham Micros

VISA

Phone us with your ACCESS or VISA card details on : ☎ 0386-765500

All prices include VAT and delivery. Next day delivery £5.00 extra.

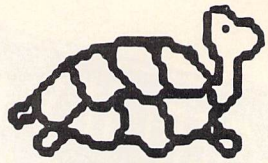
Send cheque, Postal Order or ACCESS/VISA card details

Govt., educ. & PLC orders welcome
Same day despatch whenever possible
All goods subject to availability, E.&O.E.
Open to callers 6 days, 9.30-5.30

Evesham Micros Ltd
63 BRIDGE STREET
EVESHAM
WORCS WR11 4SF
✆ 0386-765500
fax 0386-765354
telex 333294

Also at: 1762 Pershore Rd., Cotteridge, Birmingham B30 3BH Tel: 021 458 4564

TURTLESOFT



!!!!! 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 !!!!!

TURTLESOFT ATARI Pack One
Super Pack Atari 520STFM + 1MBDrive

Free Joystick Free Basic & Manual
Free Software worth over £450 RRP Arkanoid II
Black Lamp – Buggy Boy – Chopper X
Ikari Warriors – Ranarama – Marble Madness
Quadralien – Roadwars – Return to Genesis
Starquake – Xenon – Wizball – Thrust – Zynaps
Thundercats – Second Out – Eddie Edwards Super Ski
Beyond Ice Palace – Summer Olympiad
Test Drive – Organiser WP/DB/SP/DY

£359.95 inc VAT Free Delivery!!!

NEW PRINTER
Bargains
MP/ACL 135+ NLQ EPSON/IBM
Only £139.95!

Citizen 180E NLQ Epson/IBM
Only £169.95!

TURTLESOFT ATARI Pack Two
Explorer Pack Atari 520STFM + 1MBDrive

Free Mouse Free Basic & Manual
Free User Manual and Tutorial Disc
Free Game Ranarama on Disc

EXPLORER PACK PRICE JUST
£279.95

TURTLESOFT DISCS AND THINGS

Mouse Mat	£4.95	Mouse Bracket	£2.95
Joystick Extension Lead (Two)			£5.95
4-way Joystick Adapter			£5.95
Lockable disc boxes from			£6.95
Colour/Mono Switch			£23.99
External Modulator ST & Mega			£55.00
Dust Covers Comps/Perpl:s from			£7.95
Disc Cleaning Kits 3.5 & 5.25			£4.95

Special Offer!
1040STF
Limited Stock
£349.95

TURTLESOFT Printers

Citizen 120D NLQ	£149.95
Panasonic KXP-1081 NLQ	£179.95
Star LC-10	£219.95
Star LC-10 Colour	£259.95
Seikosha SP-180AI	£169.95
Seikosha SP-1200AI	£189.95
Seikosha SL-80AI 24 Pin	£339.95
Panasonic 1124	Phone

TURTLESOFT Disc Drives

Cumana CSA354 1Mb 3.5" Drive	£99.95
Cumana 5.25" ST Drive	£149.95
Cumana Dual 3.5" Drive	£229.95
Atari One Meg Drive 3.5"	£139.95
Atari 20mb Hard Disc SH205	£459.95
Supra 20Mb Hard Disc	£499.95
Triangle 20mb Hard Drive	£449.95

TURTLESOFT Atari Monitors

NEW A1084S Hi Res Col Mon	£259.95
Philips CM8832 Colour Mon	£219.95
Philips CM8833 Colour Mon	£259.95
Philips CM8852 Colour Mon	£289.95
Atari SC1224 Colour Mon	£359.95
Atari SM124 Mono Monitor	£129.95
Vision 4200 colour	£218.99

TURTLESOFT 3.5" Disc Bonanza

10 SSDD + Library Case	£11.95
10 DSDD + Library Case	£12.95
10 DSDD Quality Branded	£16.95
20 DSDD + Lockable Disc Box	£22.95
40 DSDD + Lockable Disc Box	£39.95
50 DSDD + Lockable Disc Box	£47.95
80 DSDD + Lockable Disc Box	£69.95

Atari Games Software	Our Price	Atari Games Software	Our Price	Atari Games Software	Our Price	Atari Games Software	Our Price	Atari Games Software	Our Price
1943 (N/R)	15.95	Dungeonmaster	16.95	Joan of Arc (N/R)	15.95	Pool of Radiance (N/R)	19.95	Spitfire Ace (N/R)	13.95
5 Star Compendium	16.95	Elite	16.95	Kennedy Approach	13.95	Power Drome	16.95	Star Fleet	16.95
After Burner (N/R)	15.95	Emanuelle	13.95	Kenny Dalglish Soccer	13.95	Puffy's Saga (N/R)	16.95	Star Glider 2	16.95
Albedo (N/R)	13.95	Empire	13.95	Kristal	20.95	Purple Saturn Day	16.95	Street Sports (N/R)	13.95
Alien Syndrome	15.95	Espionage	13.95	Lancelot	16.95	R-Type (N/R)	19.95	Strip Poker 2	10.49
Alpine Games	6.95	F-16 Combat Pilot (N/R)	16.95	Leaderboard Collection	13.95	Rambo III	13.95	Strip Poker Data Disc	6.99
Asteroid Deluxe	8.99	F-16 Falcon (N/R)	16.95	Legend of the Sword	16.95	Red Sun Rising (N/R)	16.95	Sundog	16.95
Baal	15.95	Federation Free Traders (N/R)	24.95	Leisure Suit Larry	13.95	Return of the Jedi	13.95	Super Breakout	8.99
Ballistix	13.95	Ferrari Formula One	16.95	Leisure Suit Larry II	16.95	Roadblaster (N/R)	Phone	Superman	13.95
Batman	13.95	Final Command	16.95	Lombard RAC Rally	16.95	Robocop (N/R)	13.95	Technocop	13.95
B.A.T. (N/R)	16.95	Fire Zone	16.95	Luxor	10.49	Rocket Ranger (N/R)	16.95	Teenage Queen	13.95
Barbarian II (N/R)	16.95	Fish (N/R)	16.95	Mafdet	10.49	S/Force Harrier/Spitfire 40	16.95	The Deep	13.95
Bards Tale 2	16.95	Flight Simulator II	27.95	Maniax	13.95	Scenery Disc 11	16.95	The Munsters	13.95
Bismark	16.95	Football Manager II	13.95	Maria Whittakers Xmas Box	10.49	Scenery Disc 7	16.95	The President is Missing	16.95
Blazing Barrels (N/R)	13.95	Fusion (N/R)	16.95	Megapack (Tynesoft)	16.95	Scenery Disc Japan	13.95	Thunder Blade (N/R)	15.95
Bomb Disposal (N/R)	Phone	Game Over II (N/R)	13.95	Missile Command	8.99	Scenery Disc W/European	13.95	Tiger Road (N/R)	15.95
Bombuzal (N/R)	13.95	Guild of Thieves	16.95	Monsters of the Night	13.95	Scrabble Deluxe	13.95	Ultimate Golf (N/R)	15.95
Borodino	16.95	Gunship	16.95	Moonbase	8.99	SDI	13.95	Verminator	16.95
Breakers (N/R)	Phone	Hellfire Attack (N/R)	13.95	Nebulus	15.95	Shadow Gate	16.95	Veteran	13.95
Bridge Player 2000	13.95	Helter Skelter	10.49	Netherworlds	15.95	Silent Service	16.95	Virus	13.95
Chessmaster 2000	16.95	Heroes of the Lance (N/R)	19.95	Night Hunter	16.95	Silicon Dreams	13.95	Wanderer (N/R)	16.95
Chuckie Egg	13.95	Hostages	16.95	Nightraider	13.95	Skate or Die (N/R)	16.95	Wanted	13.95
Crazy Cars II	13.95	Inc Shrinking Sphere	13.95	Operation Wolf (N/R)	13.95	Skateball (N/R)	16.95	Warships (N/R)	16.95
Custodian	15.95	Ingrids Back	13.95	Pacmania	13.95	Skyfox 2	16.95	Weird Dreams (N/R)	16.95
Cybernoid I	13.95	International Karate Plus	16.95	Peter Beardsley	13.95	Soccer Supremo	10.49	Where Time Stood Still	13.95
Double Dragon	13.95	Iron Lord (N/R)	16.95	Phantasie III	16.95	Space Racer (N/R)	13.95	Wizards Crown	16.95
Driller (N/R)	16.95	Jet (SC/Disc Compatible)	27.95	Platoon	13.95	Spidertronics	13.95	Zany Golf (N/R)	16.95

Atari Software Business/ Utility/Graphic/Sound	Our Price	Atari Software Business/ Utility/Graphic/Sound	Our Price	Atari Software Business/ Utility/Graphic/Sound	Our Price	Atari Software Business/ Utility/Graphic/Sound	Our Price	Atari Software Business/ Utility/Graphic/Sound	Our Price
Advanced Art Studio	16.95	Dev-Pack	36.95	GFA Graphic Sheet	32.95	Microtime Clock Card (Ext)	23.95	ST Data Manager Prof	49.95
Aegis Animator	62.99	Devpack 2	41.95	GFA Vector	23.95	Microtime Clock Card (Int)	23.95	ST Data Manager	29.99
Aegis Animator + Images	82.95	Digi Drum	16.95	GST C Compiler	16.95	Modula 2 (Developers)	114.95	ST Doctor	13.95
Art Director	34.95	Easy Draw 2	42.95	GSM Macro Assembler	16.95	Modula 2 (Standard)	73.95	ST Swift Calc	29.99
Back Pack	36.95	Easy Draw 2 Supercharged	69.95	K Word 2	41.95	Music Constuction Set	16.95	STAC	27.95
Cyber 3D Architectural Disc	20.95	Easy Tools	27.95	K-Comm 2	36.95	Music Studio	23.95	Start Magazine (Disc 6 x Year)	11.95
Cyber 3D Fonts I	20.95	Easydraw Personal Graphics	22.99	K-Data	36.95	Power Basic (By Hisoft)	29.95	STOS	20.95
Cyber 3D Fonts II	20.95	Easydraw Technical Graphics	23.95	K-Graph 3 New	36.95	Professional Icon Editor (Pie)	20.95	ST Word Writer UK Version	36.95
Cyber 3D Plot/Print Drivers	20.95	Fast Assembler	13.95	K-Minstrel 2 New	20.95	Publishing Partner Prof	114.95	Super Conductor	36.95
Cyber Cartoon Design Disc	20.95	Fast Basic Disc	32.95	K-Spread 2	41.95	Publishing Partner	79.95	Superbase Personal 2	69.95
Cyber Control	41.95	Fast Basic Rom	64.95	K-Spread 3 New	64.95	Quantum Paint II	22.95	Superbase Personal	45.95
Cyber Future Design Disc	16.95	Film Director	41.95	Kroget	36.95	Replay 4 (Sound Editor H/W & S/W)	69.95	Superbase Professional	189.95
Cyber G.I.S.T. (Sound Ed.)	23.95	First Word Plus	56.95	Lattice C V3.04	69.95	Sage Accountant Plus	179.95	Timeworks DTP	69.95
Cyber Human Design Disc	20.95	Fleet Street Publisher	89.95	Lisp (Metacomco)	59.95	Sage Accountant	129.95	Timeworks Partner	34.95
Cyber Paint	56.95	Fontz!	19.95	Maps and Legends	20.95	Sage Bookkeeper	89.95	VIP professional (GEM)	114.95
Cyber Studio Cad-3D Stereo	56.95	GFA Basic Interpreter	32.95	MCC Macro Assembler	36.95	Saved (Hisoft)	22.99	Word Perfect	179.95
Cyber Video Titling Disc	20.95	GFA Compiler (Needs Interp)	32.95	MCC Pascal V2	69.95	Spectrum 512 Paint program	42.95	Word Up	45.95
Degas Elite	16.95	GFA Draft Plus	99.95	Microbat	20.95				

Atari Software Specials. Please ring for list and availability of our range of Atari games software at bargain prices. Most of this software is under **£10**. Hurry limited stocks!

Call us now for all your requirements on 0476 591040. 24 Hour Service with your Access/Visa Details

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
Please make cheques payable to Turtlesoft

FOOTBALL CHALLENGE '89

£500 IN PRIZES TO BE WON



THE PRIZES

1st PRIZE WORTH £100

A superb tracksuit with matching top quality football boots could be yours. You choose the colour and style, whether it be those of your favourite team or the latest in sport/leisure fashion.

Now you can look the part as well as lead your football team to success. A superb tracksuit made to your specifications as well as a pair of quality football boots. PLUS a chance of adding an excellent football simulation to your game collection.

20 RUNNERS UP PRIZES

Tracksuit Manager from Again, Again (worth £19.99) gives you the opportunity to experience the joys and triumphs, stresses and strains of life as manager of your country's national football team. Just the game for the aficionado looking for a whiff of authenticity.

WHAT YOU HAVE TO DO

Simply test your knowledge by answering five questions concerning professional football, or delve into the reference books for the solutions. Then complete the entry form and ensure that your reply is with us by April 28.



QUESTIONS

1. How many teams are there in the four divisions of the English Football League?
2. When is a team eligible for promotion to the Fourth Division?
3. How many people are allowed on a pitch during play?
4. Which card is shown when a player is sent off?
5. How many substitutions can be made during a cup match?

ENTRY FORM

Name_____

Address_____

_____

Tel:_____ Shoe size_____

Tracksuit size_____ Age_____

1_____ 2_____

3_____ 4_____ 5_____

Now send this to: **Tracksuit Manager Competition, Atari ST User, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.**

Bombs away!





In Part 2 of his STOS series David McLachlan shows you how to swap screens and detect those sprite collisions

I HAVE written a small demonstration program this month which contains some common techniques used to write games. They aren't just restricted to STOS though. Once you have an understanding of how they work you should be able to adapt them to any programming language, although it won't be as easy a task as with STOS.

The commands covered in this article include SCREEN SWAP – vital for smooth graphics and animation – and a full explanation of the tricky COLLIDE function.

As we will be using sprites you will need to design some yourself, as they aren't included in the listing. Consult the table opposite which describes the various sprites used in the game and their positions.

The program repeatedly moves a laser base and spaceship from left to right then back again, each at a different speed. To spice the action up a little, asteroids at the top of the screen start to move at random. The idea of this game is to fire missiles from the laser base to hit either a moving asteroid or the spaceship.

At first you might think the program looks rather complicated, but once broken down into its various routines it's quite simple. Its structure is as follows:

- Set up variables and arrays.
- Start of loop.
- Print stars, asteroids and sprites.
- Screen swap.
- Check for collisions.
- Goto loop start.

The first thing the program does is to call a subroutine that sets up screen five along with various variables and zones. The powerful command SCREEN$ acts like a software blitter and with it you can copy sections of the screen into a string, or vice versa. The syntax is:

```
a$=SCREEN$(screen,x1,y1 to x2,y2)
SCREEN$(screen,x1,y1)=a$
```

The first line shows how a rectangular area of the screen can be stored in the string *a$*. The parameter *screen* is either a screen or a bank number and *x1,y1,x2,y2* are the coordinates of the screen rectangle to store.

In the second example the syntax alters slighty, and it now allows you to copy an area of the screen stored in the string *a$* to the screen or bank number *screen* at the coordinates *x1,y1*.

In the game the asteroid sprite is copied using SCREEN$ into the string *azteroid$*. "You've spelt asteroid wrong", you're probably thinking. Well you can't use it as a variable because the word contains the letters AS – a STOS command. STOS will separate AS from *asteroid* thinking it's a command followed by the variable *teroid*. Try it and see. That's also why the variable for the laser is spelt *lazer*.

Once we have a copy of the asteroid in *azteroid$* the screen is cleared and the stars are printed. In order to demonstrate screen swapping the game doesn't use sprites for the asteroids. A screen full of stars is plotted and copied into bank five. We will have to reprint them later in the program, otherwise the asteroids will rub them out when they move.

We now print the rest of the asteroids – seven in all – across the top of the screen at random heights. As this is done, zones are set up around the asteroids so later we can check for collisions. Also we place small invisible sprites where the asteroids are, assign a movement pattern to them and switch the movement on. I'll explain the reason and how to do this a little later.

We now print the rest of the sprites, then it's head first into the main loop, where all the action takes place.

Screen swapping

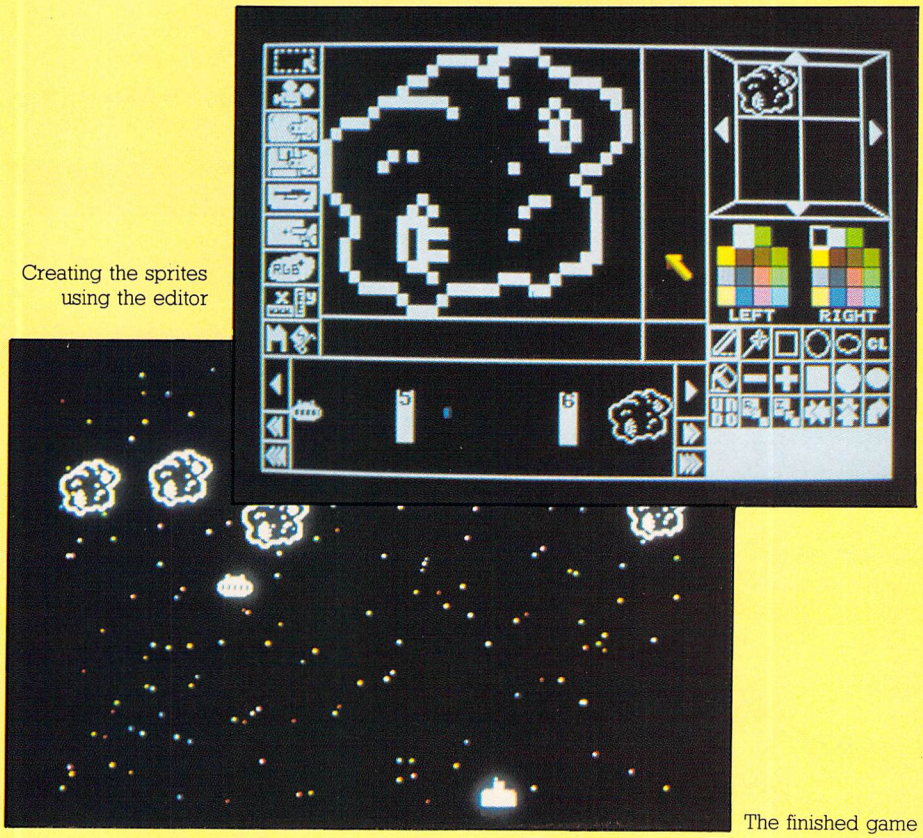
First of all let me explain about screen swapping. The idea is to print all the updated graphics on a screen stored in memory – not the one displayed on the monitor – then swap this with the screen you can see. STOS Basic has a clever screen variable called LOGIC which allows you to swap the physical screen – controlled by the screen variable PHYSIC, with the logical screen – con-

trolled by the screen variable LOGIC. You can see a full explanation of these screen variables in last month's article.

At first LOGIC is set to the same address as PHYSIC so screen swapping won't make any difference, however it will if LOGIC points to a different screen. In our program we point LOGIC at the background screen, the address of which is held by BACK.

When we want to print anything on the screen we must print it to the LOGIC screen, which now can't be seen because it is in the background. Then we use SCREEN SWAP to exchange the LOGIC screen with the PHYSIC screen.

The graphics which you have printed are now displayed and you can print updated graphics, like a sprite, in a different position on the now vacant LOGIC screen. This technique is used in practically all commercial games to produce flicker-free sprites.



Creating the sprites using the editor

The finished game

Printing graphics

The first task performed in the main loop is to call another subroutine to handle the printing of all graphics. It is carried out in the following order: First the star background is copied from bank five on to the logical screen, deleting anything that used to be there, then the asteroids are printed and finally the sprites are displayed.

The asteroids are controlled in a similar way to the bouncing Orbit logo in one of the three free games provided with STOS. This is a very useful way of controlling the path of large sprites without having lots of IF statements to change their direction. I'll explain this shortly, but first, an explanation of the sprite command is in order. It is really quite simple to use. The syntax looks like this:

```
SPRITE s,x,y,i
```

It displays sprite *s* at the coordinate *x,y* using the image *i*. You are allowed up to 15 sprites so *s* can be any number between one and 15. The images are stored in sprite bank one and you can have any number of images, memory permitting of course. They can be created easily using the sprite editor.

When you define the sprites required for this game use the Quit & Grab option in the file section of the sprite editor. This grabs the sprites from the editor and places them into bank one.

Typing LISTBANK will list the banks that are defined. You should find sprite bank one will be listed. The X coordinate of a sprite can range from –640 to +1280, which means it can come and go off the side of the screen. The same can be done with the Y coordinate, but the range is only –400 to +800.

Moving sprites

The MOVE command allows you to define paths for sprites to follow. There are two such commands, both performing the same function except on different axes:

```
MOVE X s,"start(speed,step,count)l end"
MOVE Y s,"start(speed,step,count)l end"
```

Both commands are more or less the same, so I will only explain the MOVE Y command. The variable *s* is the sprite you wish to move. The next parameters allow you precise control over the sprite. The number *start* is the Y location you wish the sprite to start from – an optional parameter. If you omit it the sprite starts from where you placed it on the screen.

Next *speed* defines the delay in fiftieths of a second between each movement of the sprite. The *step* is how many pixels you wish the sprite to move with each time, and *count* is how many times you would like it to perform this function. This is also optional, and setting it to zero will have the effect of *count* being infinite.

The last parameter, *end*, is also optional and will specify an end coordinate of the sprite's movement provided that it can be at that coordinate.

If the step takes you past the end coordinate you will find that the sprite won't stop until *count* has finished. You can also have an optional *l* just before the *end* and this will make the movement loop back to the start. The options in brackets can be repeated to string together several movements.

The program's movement command looks like:

```
MOVE Y sp,"(3,1,10)(3,-1,10)l"
```

In conjunction with the other MOVE command the sprite can be made to whizz around the screen along a complicated path. To set it going you use the

Turn to Page 100 ▶

Image number	*Description*	*Size*	*Hot spot coordinate*
1	Laser base	16 x 11	0,0
2	Spaceship 1st frame	16 x 9	7,4
3	Spaceship 2nd frame	16 x 9	7,4
4	Spaceship 3rd frame	16 x 9	7,4
5	Bullet	16 x 4	0,0
6	Asteroid	32 x 25	0,0

Use the editor provided with STOS to create six sprites

◀ *From Page 99*

command MOVE ON *s*, where *s* is the sprite you wish to start moving. Issuing this without specifying a sprite number will result in all the sprites you have defined with movement to start moving.

The position of the asteroids are now printed where their respective invisible sprites are. The sprites' Y position is found by using the command Y SPRITE:

```
y=Y SPRITE(s)
```

The variable *s* is the number of the sprite whose Y coordinate you want to find and *y* is the value returned. You can ask the X position of a sprite with the similar command:

```
x=X SPRITE(s)
```

So when one of the little invisible sprites moves up and down we can find its Y position and then use SCREEN$ to put an image of the asteroid at the sprite's Y location.

Now we print the spaceship and laser base then swap screens. We don't define movement of the laser base and spaceship because this is on interrupt. Unfortunately the interrupt isn't in synchronisation with our screen swapping, so if we were to use the movement command the sprites would appear to be flickering.

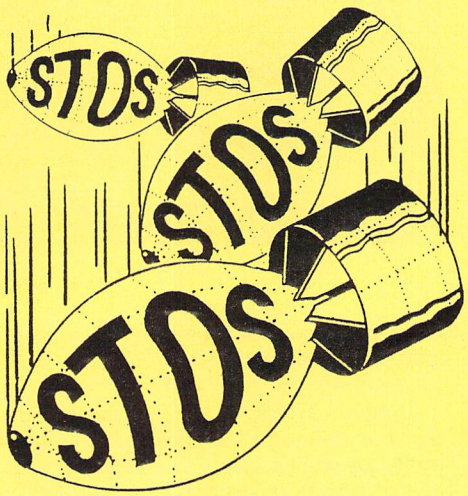
The spaceship's direction is controlled by the variable *sd*, which is set to -2. In line 920 we subtract -2 from the X position of the spaceship. The result of this is to add two because two minuses make a plus. When the spaceship reaches the side of the screen its direction is reversed. We make *sd* equal to *-SD*.

Crash course

Now for collision detection. If you have played around with the COLLIDE function you might have found it a bit confusing. I'll explain exactly how it works. The syntax of the command looks like this:

```
n=COLLIDE(s,w,h)
```

The variable *s* denotes which sprite you want to check and *w* and *h* are the variables to set the width and height of an



imaginary box around the sprite. Contrary to what the manual tells you, the hot spot is, in fact, in the centre of this box.

Whenever STOS draws a sprite you specify its coordinates in terms of this point on the screen. As a default the hot spot is always at the top left of a sprite but you can change this using the sprite editor. When you define the spaceship you will have to set its hot spot in the centre.

The value that the collide command returns is a bit mapped number indicating which sprites, sprite *s* has collided with. Each bit of the two byte number represents a sprite. Bit zero is the mouse pointer, as this is sprite zero, bit one represents sprite one, bit two is sprite two and so on up to 15. If, for example, the collide command returned the number six the bit map would look like this:

```
0000000000000110
```

which means that sprite *s* would have collided with sprites one and two.

All that remains is to use INKEY$ to check the spacebar for firing the bullet. When you press a key it is inserted into a buffer and INKEY$ gets the next character out of it. We make *k$* equal to INKEY$ and check if it is a space. If it is, we set a flag denoting that firing is in progress and we make a shooting sound. We now can check for the fire flag and move the bullet if and when the check proves positive.

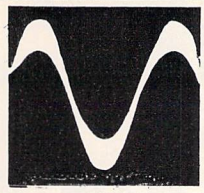
When a collision is detected between the spaceship and the bullet, we set the fire flag back to its original state, and to add a bit of atmosphere use a BOOM to add sound. We also do the same when we detect the bullet sprite entering the zone of a moving asteroid.

● *Next month I'll create a simple bat and ball game to demonstrate the Play command and changing the mouse pointer.*

```
  1 REM Zap 'ep By D. McLachlan
  2 REM (c) Atari ST User
 10 KEY OFF : MODE 0 : CURS OFF : HI
DE ON : CLICK OFF
 20 GOSUB 2000
 30 LOGIC=BACK : MOVE ON sp
 40 REM******** MAIN LOOP **********
 50 WHILE-1
 60 GOSUB 1000
 70 IF Y SPRITE(3)<0 THEN fyre=0
 80 k$=INKEY$
 90 IF k$=" " AND fyre=0 THEN SPRITE
 3,X SPRITE(1)+8,Y SPRITE(1),bullet :
 fyre=1 : SHOOT
 100 IF COLLIDE(3,8,4)=4 THEN SPRITE
OFF 3 : fyre=0 : BOOM
 110 n=RND(50) : IF n=1 THEN MOVE OFF
 sp : sp=RND(6)+4 : MOVE Y sp,"(3,1,1
0)(3,-1,10)l" : MOVE ON sp
 120 IF sd=-2 THEN DEC spaceship : IF
 spaceship<2 THEN spaceship=4
 130 IF sd=2 THEN INC spaceship : IF
spaceship>4 THEN spaceship=2
 140 IF X SPRITE(1)<2 OR X SPRITE(1)>
302 THEN d=-d
 150 IF X SPRITE(2)<-64 OR X SPRITE(2
)>332 THEN sd=-sd
 160 z=ZONE(3) : IF z=sp-3 THEN SPRIT
E OFF 3 : fyre=0 : BOOM
 170 WEND
 999 REM******* Print Graphics ******
 1000 SCREEN COPY 5 TO LOGIC
 1010 FOR x=0 TO 6
 1020 SCREEN$(LOGIC,x*48,Y SPRITE(x+4
))=azteroid$
 1030 NEXT x
 1040 IF fyre=1 THEN SPRITE 3,X SPRIT
E(3),Y SPRITE(3)-8,bullet
 1050 SPRITE 2,X SPRITE(2)-sd,100,spa
ceship
 1060 SPRITE 1,X SPRITE(1)-d,188,laze
r
 1070 UPDATE : SCREEN SWAP : WAIT VBL
 1080 RETURN
 1999 REM ********* Set up **********
 2000 RESERVE AS SCREEN 5
 2010 DIM y(7) : sd=-2 : d=-4 : sp=7
: spaceship=2 : bullet=5 : lazer=1 :
sc=0
 2020 SPRITE 1,1,y(1),6 : UPDATE : PU
T SPRITE 1 : SPRITE OFF : WAIT VBL
 2030 SET ZONE 1,0,y(1) TO 32,y(1)+25
 2040 azteroid$=SCREEN$(PHYSIC,1,y(1)
 TO 32,y(1)+25) : CLS
 2050 FOR x=1 TO 7 : y(x)=RND(5)*10 :
 NEXT
 2060 FOR s=1 TO 200 : INK RND(15) :
PLOT RND(319),RND(199) : NEXT
 2070 SCREEN COPY PHYSIC TO 5
 2080 FOR x=0 TO 6
 2090 SCREEN$(PHYSIC,x*48,y(x+1))=azt
eroid$
 2100 SET ZONE x+1,x*48,y(x+1) TO (x*
48)+31,y(x+1)+25
 2110 SPRITE 4+x,x*48,y(x+1),7 : MOVE
 Y 4+x,"(3,1,10)(3,-1,10)l"
 2120 NEXT
 2130 ANIM 2,"(2,5)(3,5)(4,5)l" : MOV
E X 2,"-166(1,1,502)(1,-1,502)l"
 2140 MOVE X 1,"0(1,2,152)(1,-2,152)l
"
 2150 SPRITE 2,-16,100,2 : SPRITE 1,0
,188,1
 2160 RETURN
```



0753 35557



dataplex

10 Petersfield Avenue, Slough, Berkshire SL2 5DN
Tel: 0753 35557 Fax: 0753 511122

Conditions of sale

- All prices exclude VAT and delivery charges
- E&OE all prices subject to change without notice
- All collections made by prior arrangement from our warehouse
- Please add £1+VAT for consumables and £6+VAT for all other items for 3 working day delivery

COMPUTERS	
520ST-M/SF354	209.00
520ST-M/SF314	233.90
520ST-M/SF354/SM124	289.00
520ST-M/SF314/SM124	313.00
520ST-M/SF354/SC1224	446.00
520ST-M/SF314/SC1224	469.50
520ST-FM Explorer Pack	234.50
520ST-FM Super Pack	299.00
SF354 3.5" 500K Drive	60.00
SF314 3.5" 1000K Drive	125.00
Mega File 30Mb Drive	469.00
1040ST-FM	359.00
1040ST-FM/SM124	469.00
1040ST-FM/SC1224	626.00
2Mb Mega ST	732.00
2Mb Mega ST/SM124	810.00
2Mb Mega ST/SC1224	966.50
4Mb Mega ST	1001.00
4Mb Mega ST/SM124	1079.00
4Mb Mega ST/SC1224	1236.00
PC2 SD Mono	590.00
PC2 DD Mono	645.00
PC2 HD Mono	945.00
SM124 12" Mono Monitor	117.00
CM8833 Philips C. Monitor	209.00
CM8852 Philips Col Monitor	249.00
SC1224 12" Col Monitor	260.00
NEC Multi Sync Monitor	430.00
SLM804 Laser Printer	1017.00
DATAPLEX DRIVES	
1Mb 3.5" Disk Drive	69.00
1Mb 5.25" Drive	115.00
20Mb Hard Disk Drive	399.00
30Mb Hard Disk Drive	449.00
40Mb Hard Disk Drive	499.00
60Mb Hard Disk Drive	559.00
SOFTWARE	
Accounting	
Accountant	133.00
Accountant Plus	178.00
Bookkeeper	88.49
Financial Controller	268.69
Home Accounts	19.52
DATABASE	
Superbase Personal	78.21
Superbase Professional	195.00
DTP	
Timeworks	78.21
Signum II	160.00
WORDPROCESSING	
1st Word Plus	62.56
Microsoft Write	117.35
Templus Text Editor	30.43
Word Up	46.90
LANGUAGES	
Devpac ST	46.90
Fast Basic (Disk)	35.00
GFA Basic Interpreter	35.95
Hisoft Basic	62.56
Laser C	117.39
MODEMS	
Amstrad Internal V21/23	79.00
Amstrad MC2400 Internal	158.00
V21/V22/V22BIS/V23+Soft	158.00
Amstrad 2400 External	228.00
Miracle WS4000 V21/V23	94.00
Miracle WS4000 V21/22/23	298.00
Miracle WS3000 V21/23	199.00
Miracle WS3000 21/22/23	208.00
Miracle WS3000 V21/V22/V22BIS/V23	298.00
Keycard 3000 V21/V23	189.00
V21/V22/V23	269.00
V21/V22/V22BIS/V23	298.00
Pace Linnet V21/V23 Ext	98.00
Pace Linnet V21/V23 Int	98.00
Pace Series 4 V21/23	209.00
Pace Series 4 V21/22/23	319.00
Pace Series 4 V21/22/22BIS/V23	385.00
Sage Chitchat Software	59.00
PRINTERS	
Amstrad LQ3500 DI	253.00
Amstrad DMP4000	190.00
Amstrad LQ3500 DI	334.00
Amstrad LQ5000 DI	365.00
Citizen 120D	105.00
Citizen 180E	152.00
Citizen LSP 100P	138.00
Citizen MSP 15E	190.00
Citizen MSP 40	273.00
Citizen MSP 45	339.00
Citizen MSP 40	317.00
Citizen MSP 55	455.00
Citizen Premier 35	369.00
Citizen HQP 40	335.00
Citizen HQP 45	320.00
Citizen Overture 110	1190.00
Epson LX800	164.00
Epson FX850	291.00
Epson FX1050	387.00
Epson FX800	420.00
Epson EX800	445.00
Epson EX1000	487.00
Epson LQ500	259.00
Epson LQ850	413.00
Epson LQ1050	550.00
Star LC10	169.00
Star LC10 Colour	205.00
Star NX15	262.00
Star NB24-10	275.00
Star NB24-15	512.00
Star LC24-10	262.00
Star NB15	567.00
MP135	119.00
NEC P2200 Pinwriter	257.00
Cut Sheet Feeder	55.00
Serial Interface Kit	53.00
Font Cartridge	20.00
NEC P565XL	740.00
NEC P6+80 Character	422.00
NEC P7+136 Character	536.00
Panasonic KXP1081	128.00
Panasonic KXP1124	319.00
Panasonic KXP1592	279.00
Panasonic KXP1595	369.00
Panasonic KXP1540	418.00
Panasonic KXP3151	341.00
PRINTER CABLES	
Amstrad CPC Parallel	8.90
BBC Parallel	6.50
IBM/Amstrad Parallel	8.90
RIBBONS	
KXP 1081/1090/1/2	4.00
DMP 2000/3000/3160	2.80
DMP 4000	5.75
PCW 8256/LQ3500	4.50
Panasonic 3131/MP26	2.30
LX800/RX/MX/FX80	3.15
FX1000/FX/RX100	4.40
NL 10	4.40
LQ500/800/850	4.40
LC10	4.40
NEC	5.00
LASER PRINTERS	
AST Turbo Postscript	2499.00
Brother HL8	1479.00
Brother HL8 QS Postscript	3789.00
Citizen Overture 110+	1149.00
Epson GQ-3500	1099.00
Hewlett Pack Laser II	1338.00
Hewlett Pack laser IID	2399.00
Panasonic KXP 4450	4699.00
Qume Script Ten Postscript	2989.00
Star LP8	1349.00
All laser printers include on site maintenance	
FAX	
Canonfax	
Fax110	1044.00
Fax230	1199.00
Fax350	1449.00
Fax410	1649.00
Fax730	2359.00
C-Fax Card SRI	499.00
Nefax N2	1084.00
Nefax N18	1669.00
Nefax N25	3099.00
Panfax UF150	1149.00
Panfax UF250	1494.00
Ricoh 7	789.00
Ricoh 10	1099.00
Ricoh 20	1469.00
Ricoh 60	1829.00
Ricoh 70	2439.00
Sanyofax 100	989.00
Sharp FO-80	849.00
Sharp FO-150	959.00
Sharp FO-210	1269.00

REPAIRS – As one of the largest repair centres in the country and with an investment of over £60K in our latest test equipment. We are providing our services to other dealers. So ask your local dealer to send us your faulty equipment, or send it direct to us for fast, reliable and professional repairs.

EDUCATIONAL SOFTWARE

SPELLBOOK

Simple to use. Mouse controlled spelling game. Forget the keyboard. Improves hand/eye co-ord. Extremely effective and entertaining educational program. Two age ranges – 4-6 and 7+ **£19.95**

THINGS TO DO WITH WORDS

3 programs to consolidate spelling word and sentence structure. Anagrams:- rearrange the words. Word Hunt:-discover words within words. Jumbled Sentences:- make sense from sentences. Mouse controlled with no keyboard distraction **£19.95**

THINGS TO DO WITH NUMBERS

Maths from a different angle!
Time Teller:- Tell the time using the mouse 12 hour and 24 hour clock.
All Aboard:- multiplication and division needed to answer these.
Book Search:- subtraction and addition - handling small numbers. **£19.95**

SOFT STUFF

SPELLING PACKS

4-6 or 7+. Two complete alphabets of words and pictures on 2 disks. Expand the words on offer through 'Spellbook! Gain inspiration to design your own pictures with Alphabet Creator **£14.95**

SPELLBOOK ALPHABET CREATOR

compatible with Degas & Neochrome – allows the creation of unlimited words and pictures – comes with P.D. Neo on disk **£9.95**

Softstuff, 193 Sketchley Road Burbage Leicestershire LE10 2DY

Please send me:

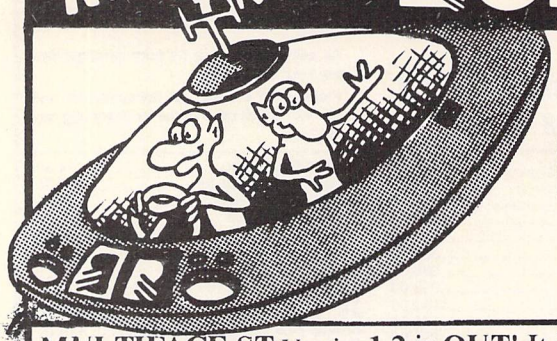
SPELLBOOK	(4-6) ☐	7+ ☐
THINGS TO DO WITH WORDS		☐
THINGS TO DO WITH NUMBERS		☐
SPELLBOOK ALPHABET CREATOR		☐
SPELLING PACKS (4-6) ☐		7+ ☐

NAME _____

ADDRESS _____

Please make cheques and PO's payable to Softstuff and send to **Softstuff, 193 Sketchley Road Burbage Leicestershire LE10 2DY Tel: 0455 617426**

NEW FROM **ROMANTIC ROBOT**



multiface st HAS ARRIVED

MULTIFACE ST Version **1.2** is **OUT!** It is a true **MULTI**purpose inter**FACE** comprising of **3** *major parts:*

BACK-UP Facilities	MULTI - TOOLKIT	DISK ORGANIZER (Optional)
1) **FREEZE** action by **MAGIC** button 2) **SAVE** to drives **A/B** or to **RAM** 3) Save **PROGRAM** or **SCREEN** 4) Saving is **FULLY AUTOMATIC** 5) **MULTIPLE SAVING** possible 6) **FORMAT** disks up to **410/820K** 7) Powerful, fast **COMPRESSING**	1) *INSPECT/ALTER* memory (*POKE* infinite lives, etc.) 2) *INSPECT/ALTER* registers 3) *HEX/DEC/ASCII* display 4) *FIND/REPLACE* a string 5) *FILL/SAVE/LOAD/PRINT* a block of memory	1) Non-GEM, fast, easy, user-friendly *file/folder* **copying/deleting/renaming** - all **using RAM** 2) Far **LESS** (if any) **DISK SWAPPING** on single drives during copying - all copied via RAM 3) **TAGGING** (grouping) of files/folders for *mass copying* or *mass deleting* 4) **COMPACTING** of disks for faster loading

All this, and much more!, at a TOUCH of a BUTTON for £59.95 (or £49.95 without Disk Organizer).

MULTIFACE ST is the ultimate **PERSONAL COPIER**. It copies programs, screens, files, disks - all at a touch of a button.
MULTIFACE has ALL its tricks in a *64K ROM* - no need to load any other software: **MULTIFACE** is always there and ready.
MULTIFACE is *menu-driven* with *one-touch commands* and *on-screen instructions*, fully **AUTOMATIC** - so **EASY to USE!**
Pressing the **MAGIC BUTTON** will **FREEZE** a program enabling you to **SAVE** or to use the **MULTI-TOOLKIT** to study/modify it.
The *frozen* (or *saved & re-loaded*) *program* continues from where *stopped* - *save as you progress* to avoid playing from the start.
MULTIFACE **a)** *compresses* **b)** *formats* more *effectively* **c)** can save onto *several disks* to back-up programs of **ANY** length!
MULTI-TOOLKIT lets you *inspect* and *change* (in *hex/dec/ASCII*) simply everything - **POKE** infinite lives, *customize* programs, etc.
MULTIFACE may not be *100%* successful in copying *ALL* commercial software, but it is *EASILY* the **BEST ST COPYING UTILITY**.
However, to prevent any piracy, the **MULTIFACE ST MUST** be attached to the cartridge port to run the programs it saved.
All in all, the **MULTIFACE** can be used - and is **SO USEFUL** - in *so many ways*, that it is the **ESSENTIAL ST COMPANION**.



"..the device is an incredible piece of wizardry."

For purely backup purposes the MULTIFACE is in a league of its own. While it doesn't offer (or even claim) a 100% success rate, you won't find a software package or hardware device that copes with half as much as Romantic Robot's gadget. ST/AMIGA FORMAT

multiface st THE ULTIMATE PERSONAL COPIER

I order a **MULTIFACE ST** at £49.95 or **£59.95** (incl. **DISK ORGANIZER**) plus **p&p**: **UK** £1, **Europe** £2, **Overseas** £3

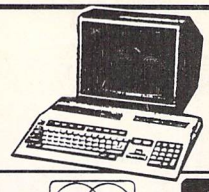
I enclose a cheque PO for £..... or debit my [Access] [VISA] No [ ] Card exp.....

Name & address

ROMANTIC ROBOT UK LTD 54 Deanscroft Ave, London NW9 8EN ☎ 24 hrs [Access] [VISA] 01-200 8870

DATAWORLD

13 Trinity Street, Gainsborough DN21 2AL. Tel: Gainsborough (0427) 810151



VISA

CALLERS WELCOME AT OUR SHOP

MasterCard

Afterburner	16.99	Off-Shore Warrior	13.99	Barbarian 2	13.99
Wec Le mans	13.99	Joe Blade II	13.99	Cosmic Pirate	13.99
Elite	16.99	Alien Legion	16.99	Dragon Ninja	13.99
Crazy Cars II	13.99	Football Director II	13.99	K D Soccer Manager	13.99
Starglider II	16.99	Spitting Image	13.99	Thunderwind	13.99
Operation Wolf	13.99	Garfield	13.99	Roy of the Rovers	13.99
Robocop	13.99	Hits Disc Vol 1	16.99	King Quest IV	19.99
Speed Ball	16.99	Sargon 3	16.99	F6 Combat Pilot	16.99
Outrun	13.99	Federation of Free Traders	19.99	Blasteroids	16.99
Captain Blood	16.99	Triad	19.99	Operation Neptune	16.99
Platoon	13.99	Hot Balls	16.99	Gary L Hot Shots	13.99
				Dugger	13.99

Please Telephone for titles not listed. Many Business/Utility titles held in stock.

QUICKSHOT II TURBO £8.50 **COMPETITION PRO EXTRA £12.99**

3.5" DISKS
Lifetime Guarantee
3M Unbranded DS/QD
10 Disks with Plastic Case
£12.50

DISK BOXES
3.5" x 80
Lockable
£6.50

MOUSE MATS
£2.50

PRINTER STANDS
80cm **£9.99**

MONITOR STAND
12"
£9.99
14"
£10.50

VISA

Order by Phone (0427) 810151 Goods normally despatched within 24 Hours
All prices include VAT and FREE Delivery in UK. Overseas order Please add £2.00 Per item.
Customers paying by Cheque, goods will be despatched when cheque is cleared.

*** CALLERS WELCOME AT OUR SHOP ***

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 speed 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?

For details:
Tel: 0625 878888

Castle Software

COME TO THE PROFESSIONALS!!!!

2 Williams Clowes Street
Burslem
Stoke on Trent
ST6 3AP
Tel: 0782 575043

NOW TAKEN VISA

SALE SALE SALE SALE SALE SALE SALE SALE SALE

ATARI ST SOFTWARE

GATO
RRP £34.95
Save Loads £11.99

Zynaps	6.95
Eliminator	6.95
Spitfire 40	7.95
Strike Force Harrier	7.95
Superman	8.95
St Wars	5.95
Balance of Power	11.95
221B Baker Street	9.95
Mean 18	7.95
Nigel M Grand Prix	7.95
Shackled	8.95
Rolling Thunder	8.95
Bombuzal	9.95
Maniacs	7.95
Killdozers	2.99
Ferendez Must Die	8.95
Armagedon Man	7.95
Vixen	6.95
Spy vs Spy	6.95
Karting Grand Prix	7.95
I Ludricus	7.95
Cybernoid	9.95
Hellfire Attack	7.95
Silent Service	14.95
Orbiter	14.95
Shadowgate	11.95
Populus	15.95
Custodian	13.95
Starglider II	14.99
Gunship	14.99
Super Hang On	12.99
Trivial Pursuits (New)	12.95
Operation Wolf	12.99
Cybernoid	13.99
Pac Mania	12.99
Pac Land	12.99
Hardball	6.95
Manhattan Dealers	12.95
Garfield	13.99
Helter Skelter	9.99
Shanghai	3.95
Joan of Arc	13.99
Hostages	14.99
Skate or Die	15.95

ATARI ST SPECIALS

Music Studio	9.95
Crazy Cars 2	13.95
Kenny D Soccer Manager	12.95
Ballistix	12.95
Leisure Suit Larry	14.95
Leisure Suit Larry 2	14.95
Prison	12.95
Face Off	9.95
Fed of Free Traders	21.95
WEC le Mans	12.95
Robocop	12.95
Chronoquest	18.95
Menace	12.95
Football Manager 2	12.95
Borge Tail	15.95
Rampage	5.95
Army Moves	6.95
Morteville Manor	14.95
Ikari Warriors	9.95
Skyrider	2.99
Gauntlet	6.95
Degas Elite	14.95
Powerdrome	15.95
Alimentle	2.99
Int. Karate	6.95
Empire	15.95
Super Sprint	5.95
Tetris	5.95
Trantor	5.95
Leaderboard Birdie	13.95
1943	13.99
Enduro Racer	5.95
Indoor Sports	9.95
Sundog	8.99
Skychase	9.95
STOS	18.95
STAC	23.95
IK+	12.95
Nebulus	13.95
Bermuda Project	8.95
Dragon Ninja	12.95
F15 Strike Eagle	10.00
Kennedy Approach	14.99
Manhunter	18.95
GFL Football	8.95
Flying Shark	12.95
Thunder Blade	14.50
After Burner	13.95
R-Type	13.95
Double Dragon	12.95

ATARI ST SPECIAL OFFERS

War in Middle Earth	15.95
Hardball	6.95
Hacker	2.99

F16 Falcon
Our Price £15.95

Realm of the Trolls	14.99
Frostbyte	5.95
Knightmere	6.95
Predator	6.95
Dungeon Master	15.95
Willow	19.95
Stargoose	8.95
Leaderboard	7.95
Zak Macraken	15.95
Thunder Blade	13.95
Batman 2	12.95
Army Moves	6.95
Vietnam Sinerva (UMS)	4.95
Paper Boy	12.99
Deja Vu	10.00
Barbarian 2	12.99
Driller	14.99
Karate Kid II	7.95
Thunderwing	12.95
Gauntlet 2	13.99
Out Run	13.99
Dungeon Master	14.99
Degas Elite	14.99
Winter Olympiad 88	7.95
Leather Goddess	9.95
Marble Madness	10.00
Planetfall	6.95
Stationfall	7.95
Spellbreaker	6.95
Suspect	6.95
Starcross	6.95
Sorceror	6.95

Galdragons Domain
£12.95

Infidel	6.95
Hollywood Hijinx	7.95
Baal	12.95

ATARI ST SPECIAL OFFERS

ST FIVE STAR GAMES

Crazycars
Barbarian
Enduro Racer
Rampage
Whizzball

All five for only
£15.50

Krystal	19.95
Catch 23	2.99
Jug	12.95
Police Quest	15.95
F16 Combat Pilot	14.95
Blasteroids	12.95
Black Cauldron	9.99
Trinity	6.95
Nord & Bert	6.95
Ballyhoo	7.95
Plundered Hearts	7.95
Hacker II	4.95
Test Drive	15.95
Ferrari Formula I	15.95
Game Over II	15.95
Times of Lore	14.95
Incredible Shrinking Spear	12.95
Rambo III	12.95
1943	12.95
Victory Road	12.95
Trash Heap	3.95
Carrier Command	14.95
Street Fighter	11.99
Strike Force Harrier	9.95
Lombard RAC Rally	14.99
Bismark	14.95
Stock Market	7.95
Tanglewood	8.95
Night Hunter	12.95
Sky Raider	4.95

We offer a fast reliable service

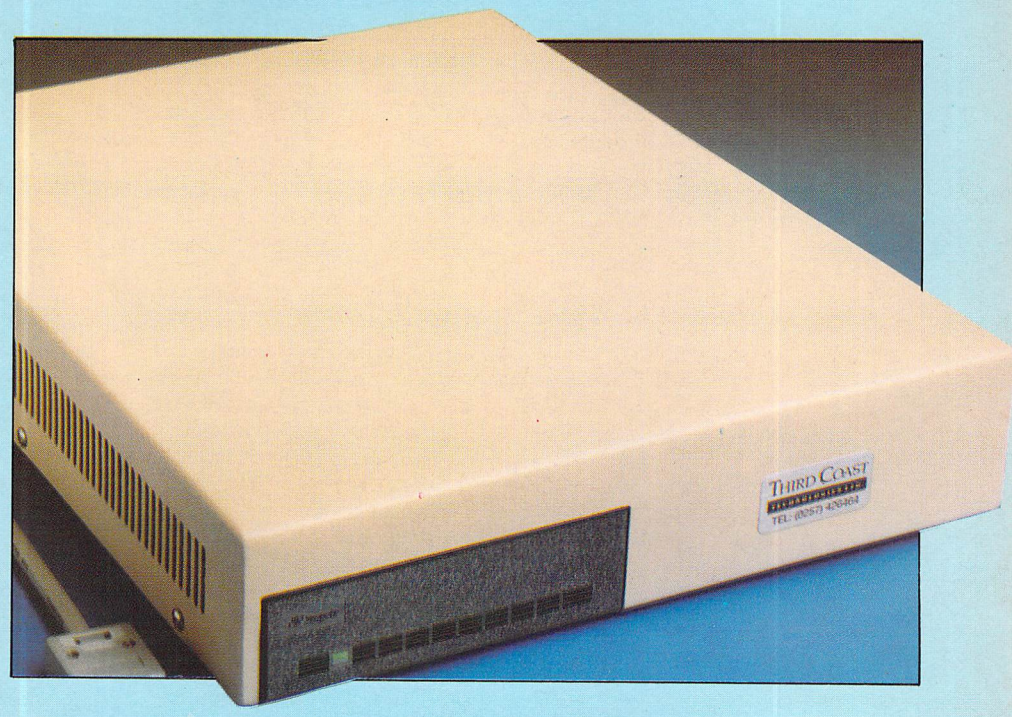
Cheque's P.O's to:

CASTLE SOFTWARE

Any games not listed phone our Hotline now on 0782 575043

Proprietors FA and RA Beech

Roland Waddilove goes for a hard drive with his ST and finds a couple of winners



The hard facts

THE popularity of hard disc drives is rapidly increasing as their prices tumble. Third Coast Technologies and Systems 2000 each have a range on offer with prices starting at under £400 for 20Mb models and up to almost £1,000 for the largest drives.

Rather than testing two equivalent drives for a comparative review I picked a rock bottom 20Mb Systems 2000 drive and a near top of the range 85Mb Quantum ProDrive 80S from Third Coast Technologies (TCT), the reason being that one hard drive is pretty much like any other and the differences are minimal.

Both drives are contained in fairly large sturdy metal boxes which take up a fair amount of desk space, so the best spot for them is under the monitor. An 18 inch cable connects the drive to the ST and a power cable plugs in the back of the unit.

Both were ready for use and all that was required was to put the boot disc provided into the ST's floppy disc drive and switch on. Once done all my most frequently used software packages and desk accessories were copied to the hard drive and the floppies consigned to the back of the desk drawer to gather dust.

Four from one

A hard drive involves no different technique to using a floppy, although it has a far greater storage capacity and is a lot faster.

One minor problem is that the ST can only access 16Mb so a utility program is provided to partition the drive into sections smaller than 16Mb. This had already been done, the Systems 2000's 20Mb being split into four equal partitions while the 85Mb ProDrive had nine.

Each partition acts like a separate hard drive and each has its own hard drive icon on the desktop. You can open each one, copy information from one to another or to floppies and so on. It's just like having several very fast large capacity disc drives plugged in.

The big ProDrive comes with a couple of extra features making it more attractive than the base models of either company. The hard drive unit is simply a cartridge that plugs into the front of the casing. A key locks it in place.

Automatic head parking whenever the power is cut off means that head crashes are almost eliminated. You can even pull the drive unit out when it's switched on, though of course, if you're accessing the disc at the time you'll lose the data you were reading or writing.

This feature could be useful for swapping drive units for different applications, or perhaps for security, as you could unplug a drive containing sensitive data and pop it in a safe overnight.

Both drives come with a utilities disc enabling you to boot from drive C – the hard disc – format and partition it. There is also a patch which gets you round the ST's 40 folder bug which rears its head when you open and close more than 40 folders. It crashes the ST because it runs out of memory to store the folder information.

TCT's utilities also allow you to set the drive's internal clock and copy files without updating their time and date stamp.

It is well known that hard disc drives are faster than the floppy variety, in fact, that's one of the main reasons for using them. But just how fast are they? I tried a simple performance test involving seeing how long it took to boot up four common software applications, K-Spread 3 (a 233k spreadsheet), ST Basic (a 124k language), 1st Word Plus (a 153k word processor) and Devpac (a 51k assembler).

The results in Table I show the Quantum ProDrive to be consistently and significantly faster than the Systems 2000, sometimes by a factor of two. Averaging out the figures, ProDrive can transfer data at 24k per second (peaking at 43.3k) and Systems 2000 at 12.2k a second (16.6k peak), while floppy discs are rated at a mere 5.7k a second (7k peak).

The tests were carried out using a 520ST, and it is worth noting that the Mega ST is faster still, shaving a second or two off each of the times.

ProDrive incorporates DisCashe, a 64k bank of high speed ram which is used to increase performance on read operations.

When you ask for an item of data from the disc it is taken from the ram buffer and not the disc, so the seek time and rotational latency – the time taken to move the read/write head to the correct track and wait for the right sector to come round – is eliminated. When requesting 1k of data this delay typically makes up 80 per cent of the time taken.

The Systems 2000 70Mb hard drive is also a special fast access one giving significant speed improvements over the base model tested here.

Conclusions

Both hard disc drives offer substantial advantages over the ST's built-in floppy but not everyone will gain the full benefits. If you constantly switch from package to package like spreadsheet to word processor to database, or use one particular piece of software that spends a lot of time accessing the disc, like a C compiler, the saving in time due to the hard disc's speed is quite significant.

If you have large amounts of data to manipulate as in database, spreadsheet or word processor files the vast memory capacity of even the smallest hard disc will cut out disc swaps and avoid storage

Turn to Page 106 ▶

◀ From Page 105

problems. A hard disc also goes some way towards solving a 520ST's memory restrictions. The hard disc can be used as a form of memory expansion, so program modules and word processor spill files can be stored on disc rather than in memory.

Hard discs have several disadvantages the first being the initial cost – they start at around £400 for the smallest. This must, of course, be offset against all the floppy discs you'll save. The massive Quantum ProDrive 85Mb hard disc has the storage capacity of 236 single sided or 118 double sided floppies.

The second problem is that you have all your eggs in one basket – one head crash and you've lost the lot, so it is essential to make backups of your data regularly. This can be either to floppy discs or to another hard drive, and clearly the hard drive option would speed and smooth the process – which can be rather long and fiddly with floppies. This adds to the cost and time involved in using hard discs.

Finally, all hard drives contain noisy fans which hum away keeping them cool. In a busy office they aren't too distracting, but at home I found they could be heard even in the next room if the doors were open. Systems 2000 is very slightly noisier than ProDrive.

Both drives offer large storage capacity, speedy access and ease of use. I have no complaints about either. There are smaller and cheaper models in the TCT range, and larger and faster ones in the Systems 2000 range.

Which is right for you depends on how much storage space you need and how frequently and for how long your software packages access the disc drive. If a removable drive cartridge is a priority then the ProDrive is the one to go for. However, if speed is of the essence then any TCT drive or the Systems 2000 70Mb high speed drive is best.

Boot test	Floppy disc	Systems 2000 20Mb	TCT 85Mb
K-Spread 3	33.24 sec	14.02 sec	5.38 sec
ST Basic	17.21 sec	10.44 sec	6.25 sec
1st Word Plus	30.94 sec	12.76 sec	6.82 sec
Devpac 2	13.80 sec	6.20 sec	4.91 sec

Table I: The time taken to boot up four common software packages

FACT FILE

Third Coast Technologies
Product: 22Mb drive
Price: £339
Product: 32Mb drive
Price: £439
Product: 85Mb drive with removable cartridge
Price: £899
Supplier: Third Coast Technologies, Unit 8, Bradley Hall Trading Estate, Standish WN6 0XQ.
Tel: 0257 426464

FACT FILE

Systems 2000
Product: 20Mb drive
Price: £399
Product: 40Mb drive
Price: £499
Product: 70Mb high speed drive
Price: £899
Supplier: Systems 2000, The Shaftsbury Centre, Percy Street, Swindon SN2 2AZ.
Tel: 0793 514055

Prospero C – The Verdict

We are very proud of our new C compiler, but what about some less biased opinions?

Stephen Hill reviewed Prospero C for Atari ST User magazine (Feb 89). How did you find it?
"Prospero's Workbench sets a standard of user friendliness yet to be surpassed ... I am forced to resort to sheer nit picking to find fault."

A nice working environment is all very well, but can you use the compiler?
"I encountered no trouble whatsoever in compiling any of my own programs... Prospero has obviously taken a great deal of trouble to simplify the process of linking your C programs."

But what about debugging? Even reviewers write programs with bugs in occasionally!
"Probe remains the best debugging aid I've so far seen... It allows you to debug your program in its original form, rather than having to tediously muck about in assembly language."

What about the manuals – do they tell you all you need to know?
"Prospero has really excelled itself with the documentation... These form some of the best information available on the subject of GEM programming."

So can you recommend it?
"Prospero has produced one of the few packages I would recommend to the complete beginner. At the same time the promise of a complete implementation of ANSI C will undoubtedly extend its attraction to more advanced programmers."

Matthew Jones, in Page 6 Atari User (Feb 89) was also excited by Probe:-
"Probe ... is something I dreamed of years ago... If you don't have source level debugging you should buy this now... Being able to watch your code execute will at least double your productivity."

And your conclusion?
"Prospero C will in future be my language of choice for the Atari ST. It supplies what I need in a compiler – ANSI standard, an integrated environment and source level debugging."

If you think you might come to the same conclusion as Matthew, write to us for further information and a free demo disk. Prospero C costs just £129.95 including VAT and shipping in the UK.

Prospero Software
LANGUAGES FOR MICROCOMPUTER PROFESSIONALS
190 CASTELNAU, LONDON SW13 9DH, ENGLAND TEL: 01-741 8531 FAX: 01-748 9344

BRK Computer Services Ltd.

Tel: 01 572 5457
216 Great West Road, Hounslow, Middlesex
TW5 9AW
(Near Hounslow West Tube)

520 STFM £297 + VAT (Super Pack)

520 STFM £235 + VAT (Explorer Pack)

(FREE DELIVERY)

1040 STFM + Mono £434 + VAT

While Stocks last

DISCS 3.5" DSDD (20) – £19.99

Atari 1040 STFM £379
Atari SM124 ..... £119

Please telephone for Hardware and software prices not listed
DISCOUNT GAMES AND BUSINESS SOFTWARE

LOWEST PRINTER PRICES

Micro P MP135 ..... £139
Star LC10 ..... £189
Star LC10 Colour £215
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.

V.P. ST.

PUBLIC DOMAIN FROM AROUND THE WORLD

ONLY £2.75 PER DISK WITH A LIFETIME GUARANTEE
5 BLANK 3.5" D/S 135 T.P.I. DISKS WITH LIFETIME GUARANTEE AND LABELS ONLY £6.90. GET ONLY THE BEST FOR YOUR ATARI ST

V.P. ST. 1 – STOS GAMES CREATOR – A chance to sample the Basic Games Language an impressive demo. You could spend £30.

V.P. ST. 2 – SMOOTH TALKER DEMO *Colour only* – A package of educational programs, heard your ST talk yet? Well just type in sentences, and you will have a friend for LIFE.

V.P. ST. 3 – MUSIC 1 – Music on your ST. This super demo will give you that, and it will work with a synthesiser, great tunes and pictures.

V.P. ST. 4 – MUSIC 2 *Colour only* – You will fall for this, loads of music. The sound chip will hold its own, can hook a synthesiser to your ST as well.

V.P. ST. 5 – MUSIC 3 – Over 30 tunes on this one and can be hooked up to your T.V. or synthesiser.

V.P. ST. 6 – KIDS FUN – An educational program, a nice collection for families. For young children around 3/7 years with little software about, this one should keep them happy. A good educational program.

V.P. ST. 7 – NEOCHROME SAMPLER – The final version 0.9 with a host of new features, almost as good as the commercial one which retails at £20.

V.P. ST. 8 – THE PLANETS – An educational program, a guided tour around the solar system.

V.P. ST. 9 – FOOTBALL MANAGER – You can use your skills in team selection, transfer, and Battle your way up the league.

V.P. ST. 10 – DIGIPICS 1 – Digitised pictures from GHOSTBUSTERS and RAIDERS OF THE LOST ARK. Good pictures you won't see better.

V.P. ST. 11 – DIGIPICS 2 *Colour only* – Digitised pictures, the pictures are from STAR WARS and real life shots of the space shuttle.

V.P. ST. 12 – CHANGING IMAGES – An excellent picture show from France which builds up in layers.

V.P. ST. 13 – P.D. GALLERY 1 *Colour only* – A great collection of art for your ST. There are 25 great pictures on this disk, and you can convert to and from NEO, DEGAS or TINY FORMAT.

V.P. ST. 14 – RECORD KEEPING UTILITIES – Lots of ways to keep track of things, addresses, disks, appointments, works in MONO but is really great.

V.P. ST. 15 – GRAPHIC ARTIST DEMO – Some demos require 1 MEG. D/S DRIVE REQUIRED. The GRAPHIC ARTIST if you thought the others are good then you will think this one is good near to the true disk as you can get 1 MEG but most run 512K.

V.P. ST. 16 – KIDS FUN 2 – A new educational Program a must for young children.

V.P. ST. 17 – LABEL EXPERT – From Germany a Program to Produce almost any label you wish.

V.P. ST. 18 – MONOWARE – Want to run MONOCHROME SOFTWARE? You can do just that as long as they adhere to the CONSTRAINT OF GEM and FLEET STREET PUBLISHER.

V.P. ST. 19 – SPOOKS & MEGAROIDS – Remember the excitement in the Arcades? This disk will bring the excitement back.

V.P. ST. 20 – EXTERNAL RAMDISK – External is a fine example of a recoverable RAM drive.

Price includes P&P. Overseas orders add £1.50
Send payment, made payable to
V.P. ST. 18 SHERWOOD ROAD, DRONFIELD WOODHOUSE, NR, SHEFFIELD S18 5QF

Always Reasonable Reliable And No Fuss

COMPUTERS

Atari 520 STFM Explorer Pack
RRP £299 Now £275
Atari 1040 Professional Pack – inc.
* VIP Professional (Spreadsheet) Value £149.95
* Microsoft Write (Word Processor) Value £149.95
* Superbase Personal (Database) Value £59.95
* Basic Disc & Manual (Language) Value £24.95
RRP £499 Our Price £450 – What Value
Mega ST 2Mb Inc. Professional Pack
Software as listed with 1040
RRP £899 Our Price £810
Mega ST 4Mb Inc. Professional Pack
Software as listed with 1040
RRP £1199 Our Price £1080
Atari Mono Monitor
RRP £149.99 Our Price £100
(if purchased with 1040)
Atari Colour Monitor
RRP £399.99 Our Price £300
(if purchased with 1040)
Atari PCs POA

PERIPHERALS

	RRP	OUR
MODEMS		
Demon II	91.94	82.75
Designer Modem	113.85	102.45
Linnet	163.30	138.95
Miracle WS 2000	125.00	106.95
Miracle WS 4000	194.35	165.00
MONITORS		
Atari SC1224 Medres col	399.99	360.00
Atari SM124 Hi res mono	149.99	135.00
Philips CM8833 Med res col	314.95	285.00
DISK DRIVES		
Atari 0.5 Meg 3.5" Single	149.99	135.00
Atari 1 Meg 3.5" SIngle	159.99	145.00
Cumana 1 Meg 3.5" Single	109.00	100.00
Cumana 1 Meg 5.25" Single IBM Format	139.00	125.00
Triangle 1 Meg 3.5" Single (ST)	119.00	110.00
Triangle 1 Meg 5.25" Single	149.95	135.00

Please ring for hard drives prices

	RRP	OUR
DOT MATRIX PRINTERS		
Atari SMM 804	199.99	180.00
Citizen 120D	251.85	165.00
Epsom LX 800	316.25	265.00
Seikosha SP - 180A1	194.35	165.00
Seikosha SP - 1200A1	217.35	185.00
Seikosha SL - 80A1 24 pin	401.35	325.00
MUSIC		
Future Sound	175.00	157.50
Sound Sampler	49.95	43.50
ST Replay V4.0	79.95	63.95
ST Sound Sampler (I.S. Digitixer	69.95	59.95
ATARI ST BOOKS		
1001 Things to do with Your ST	11.60	9.50
ST 3D Graphics Programming	16.95	13.50
ST Basic Training Guide	12.95	10.50
The ST Explored	8.95	7.50
ST Graphic & Sound Programming	13.45	10.75
ST Internals	14.95	11.95
ST Intro to Midi	14.95	11.95
ST Logo Users Guide	14.95	11.95
ST Machine Language	14.95	11.95
ST Advanced Programming Guide	10.95	8.75
Concise 68000 Prog Ref Guide	17.50	14.00
Intro to Sound N Graphics	14.95	11.95
Mastering Sound & Music	15.95	12.75
Understanding & Using c/B II & III	17.35	13.95
68000 Assembly Language Prog	19.95	15.95
68000 Micro Processor Handbook	15.95	12.75
Advanced C Programming	19.10	15.00
Hidden Power of Lotus 1-2-3	17.35	13.95
Progs Guide to Gem	19.95	15.95
Programming the 68000	21.95	13.95

Items offered subject to availability and price change.

New products despatched on day of release

GAMES

720 Degrees	£14.99
Army Moves	£13.95
Alternative Games	£13.95
Arkanoid Rev of Doh	£13.35
Black Lamp	£13.35
Blue War	£13.35
Backlash	£13.35
Barbarians II (Pal)	£10.45
California Games	£16.95
Colonial Quest	£20.95
Carrier Command	£16.50
Desolator	£14.95
Defender of Crown	£19.50
Elite	£16.50
Dreadnought	£13.95
Epyx Epics	£20.95
E.C.O.	£13.35
Flight Simulator II	£27.95
Fright Night	£13.95
F-15 Eagle Strike	£16.50
Grand Slam	£16.95
Gunship	£16.50
Gauntlet II	£13.95
Hotball	£16.95
International Soccer	£13.35
Kings Quest-3 Pack	£16.50
Mars Cops	£13.95
Motor Bike Madness	£10.45
Metro Cross	£17.50
Outrun	£14.95
Planet Fall	£19.50
Protector	£13.95
Police Quest	£13.95
Pacland	£13.95
Rim Runner	£13.95
Ringwars	£16.95
Ranarama	£13.95
Space Harrier	£13.95
Star Wars	£13.95
Star Trek	£13.95
Star Glider II	£16.50
Storm Trooper	£13.95
Supercycle	£17.40
Thunderblade	£18.50
Solomons Key	£13.95
Space Ace	£13.95
Strip Poker	£13.95
Speed Run	£13.95
Street Gang	£10.45
Tetra Quest	£13.95
Terramex	£13.95
Trivial Pursuit	£13.95
Typhoon	£13.95
The Wrath of Nikademus	£16.50
Ultima 4	£16.50
U.M. Simulator	£16.50
Verminator	£16.95
Vegas Gambler	£16.50
Whirligig	£13.35
Warzone	£13.35

BUSINESS SOFTWARE

✱ ACCOUNTING ✱

	RRP	OUR
Your Financial Future	£24.95	£16.95
Bookkeeper	£113.85	£79.75
Home Accounts	£24.95	£16.95
Accountant	£171.35	£155.00

✱ DBASES/SPREADSHEETS ✱

Data Manager Prof/Nal	£69.95	£48.95
Digi Calc	£39.95	£27.95
Superbase Professional	£249.95	£175.00
Trimbase	£89.95	£62.95

✱ LANGUAGES/UTILS ✱

GFA Basic Ad/Ced Prog	£19.50	£13.75
GFA Basic Interpreter	£45.95	£32.00
GFA Compiler	£45.95	£32.00
Fast Basic (Disk)	£44.85	£31.40
Fast Basic (Rom)	£89.50	£62.95
Fast ASM	£19.95	£13.95
Run Time Disk	£11.50	£8.00
ST Doctor	£19.95	£13.95
Lattice C	£99.95	£69.95
Macro Assembler	£49.95	£34.95
Lisp	£99.95	£69.95
Pascal	£89.95	£62.95

✱ MISCELLANEOUS ✱

	RRP	OUR
GFA Artist	£49.95	£34.95
Fleet Street Publisher	£115.00	£80.50
GFA Draft Plus	£139.95	£98.00
K. Comm II	£49.95	£34.95
K. Graph II	£49.95	£34.95
K. Ram ST	£29.95	£20.95
K. Roget	£49.95	£34.95
K. Seka	£49.95	£34.95
Mailshot Plus	£49.95	£34.95
Neochrome	£39.95	£27.95
Paintworks	£34.99	£24.50
Paint Pad	£49.95	£34.95
Paint Pad Library 1	£24.95	£16.95
Programmers Ref. Book	£17.50	£12.25
Quantum Paint V2	£24.95	£18.50
STOS (The Game Creator)	£29.95	£20.95

✱ WORD PROCESSING ✱

K. Word II	£59.95	£41.50
K. Spell	£19.95	£13.95
Protext	£79.95	£55.95
First Word Plus	£79.95	£63.95
Word Perfect	£228.85	£170.00

Please make Cheques/P.O. payable to:

ARRAN COMPUTERS

Dept. ST, 17A Lower Hillgate, Stockport SK1 1JQ
Tel: 061-480 3975
Price inc. VAT & P&P.
Overseas orders add £1. Airmail £2. Recorded Delivery £2.50

SHOP NOW OPEN

ARRAN ARRAN ARRAN ARRAN ARRAN ARRAN ARRAN ARRAN ARRAN ARRAN ARRAN



☛ Your Second Atari ST Manual

At last the manual that Atari should have given you when you bought your ST, Essential reading for ALL ST users.

£3.95, or only £2.95 if purchased with Mega Pack 1.

☛ Virus Destruction Utility from Excel Software £6.95

Excellent Virus destroyer.

ST UK P.D. Mega Packs

Mega Packs consist of 3 single sided disks for only £5! fully inclusive!

- MEGA 1: Starter pack for the new STer. Disk 1 has a 250k text file of version 4 of the book 'Your 2nd Atari ST manual'. Disk 2 has ST Tour a tutorial. Disk 3 has RAM disks, spooler, picture converters, desktop accessories, monochrome emulator, Auto loader GEM, extended disks formatters and loads of other utilities.
- MEGA 2: Clip Art Pack 1. full of clip art suitable for most DTP packages.
- MEGA 3: Clip Art Pack 2. full of clip art suitable for most DTP packages.
- MEGA 4: Graphics Pack. Graphic packages and utilities. Disk 1 contains Neochrome a colour only paint package and Master Painter a fabulous all features monochrome and colour art package. Disk 2 is full of picture converters. Disk 3 has Public painter a brilliant monochrome package.
- MEGA 5a: Bible Pack 1. King James version of the Holy Bible Old Testament.
- MEGA 5b: Bible Pack 1. King James version of the Holy Bible Old Testament.
- MEGA 6: Bible Pack 2. As MEGA 5a and 5b but on 3 DOUBLE SIDED disks.
- MEGA 7: Games Pack 1. Diamond, Football and Blitz III.
- MEGA 8: Games Pack 2. Othello, Darts and Doctor Boris.
- MEGA 9: Games Pack 3 Tycoon, Money Spinner and Ace Invaders.
- MEGA 10: Games Pack 4. Zenith, Speculator and MaelStrom.

Atari ST Hardware

- ❒ Super Pack: Atari 520STFM 1Mb internal disk, 21 games, joystick and business software. £350.00
- ❒ Atari 520STM and 1Mb external disk, mouse etc. £260.00
- ❒ Atari520STM and 1Mb external disk, mouse, monochrome monitor etc. £350.00
- ❒ Atari 1040STFM including 1Mb internal disk and T.V. modulator £435.00
- ❒ Atari 1040STFM including 1Mb internal disk, T.V. modulator and monochrome monitor £520.00
- ❒ Atari 1040STFM including 1Mb internal disk, T.V. modulator and colour monitor £700.00
- ❒ Atari Mega ST2 2Mb RAM, 1Mb internal disk, £815.00
- ❒ Atari Mega ST2 with monochrome monitor, £905.00
- ❒ Atari Mega ST2 with colour monitor, £1075.00
- ❒ Atari Mega ST4 4Mb RAM, 1Mb internal disk, mouse and software £1120.00
- ❒ Atari Mega ST4 4Mb RAM, monochrome monitor, £1210.00
- ❒ Atari Mega ST4 4Mb RAM, colour monitor, £1380.00
- ❒ Atari Mega ST2, monochrome monitor and Atari Laser and software £1600.00

VISA Telephone now for latest prices on ANY Atari ST hardware.

For full details of the thousands of Public Domain software titles that we have for the Atari ST send for our latest catalogue.
A free lockable disk box with every 50 P.D. disks ordered, send Postal orders and cheques payable to ST UK, or your Access or Visa card details to
ST UK, 1 Bartholomew Road, Bishop's Stortford, Herts CM23 3TP. Tel: 279 757692.

New Atari 60Mb Hard Disk Unit Price £589.00

Educational Software

Rise Time
EDUCATIONAL SOFTWARE SPECIALISTS

HARDWARE

Educational Explorer Pack
- Atari 520 ST-FM

with mouse and 1Mb Disc Drive, TV Mod and TV Lead, 1 Softstuff Package
£299.00 (inc VAT)

ATARI 520 ST-FM PACK
- 21 Games
- Organiser Suite
- 1Mb Disk Drive
- Joystick
- ST Source book

PRICE £359.00 (inc VAT)

ATARI 1040 ST-FM PACK
- VIP Professional
- Microsoft Write
- Superbase Personal
- Internal Modulator
- ST Source Book

PRICE £449.00 (inc VAT)
With Mono Monitor Price £549.00 (inc VAT)

Hard Disk Kits – Send SAE for leaflet

Vidi-ST £95.00
Video Digitiser Package

ST-Replay V4.1 £79.00
Sound Digitiser Pack

Carriage on Computers £10.00

Mail Order
Official Softstuff and Hat Software Dealer

Pre-school Kids Progs
2-6 years £14.95
3 Progs using Mouse, Drawing, Music, Blocks

AB Zoo 3-6 years £14.95
Letter recognition
Upper or lower case
2 discs

Add with Oscar 5-13 years
Add, subtract, multiply, divide £12.99

Spell with Oscar 5-13 years
Exciting graphics teach spelling £12.99

Perfect Match 8+ years £9.95
Match the answer to the question

Invasion 7+ years £14.95
Typing, spelling and maths skills in a game

Spell Book
4-6 years £19.95
7+ years £19.95
Extras Spelling Discs
4-6 (2 disks) £14.95
7+ (2 disks) £14.95
Alphabet Creator £9.95
Make spelling disks
"Superb"–Atari ST User Sept. 1988, P77

Things to do with Words
5-11 years £19.95
(Anagrams, Word Hunt, and Jumbled Sentences).
Reviewed in Atari ST User, January 1989, Page 93

Things to do with Numbers
5-11 ..... £19.95
(Time Telling, Grid Search, Train FIII (passenger count)

Neochrome version 1.0 (Full version with manual)
Low Res only £39.99

First Paint £12.95
Reviewed in Atari ST User December 1988, page 81
"Ideal for children"

Stage Two £14.95
First paint with extra functions for older children

First Type £12.95
Type Writer program

Degas Elite £24.95
2nd generation paint program inc. animation and multiple screens

Maps and Legends 7-14
Powerful map creation with data of entire world and projections £29.95

Data Map Collection 1
Maps & graphic overlays for use with Maps and Legends £19.95

Lets make Greeting Cards
Everything that you need to create & print original greeting cards using grphics, typestyles & borders £8.95

Let's make Signs and Banners £8.95
With a few key strokes design and print exciting banners, signs and newsletters

Lets make stationery and calendars £8.95
Design, create and print stationery and calendars

Art Library 1 ..... £8.95
75 graphic elements for use with all of the above

Art Library 2 ..... £8.95
75 additional graphic elements

1st Word Plus 3.0 ..... £59.95
11+ Word Processor

Time Works DTP £74.95
11+ Desk Top Publishing

Music Construction Set
For beginner or professional musician. 16 instruments or make your own with built in wave form editor. Full midi capability for synthesized sound £24.95

Chessmaster £24.95
71,000 opening moves, 20 levels, 3-D perspective

Scrabble Deluxe £19.95
1-4 players, 23,000 word dictionary

STOS £24.95
Is a revolutionary package which has everything you need to create fast, exciting games quickly and easily

Data Manager Professional £52.95

Book
Kids and the Atari ST £14.95
For all kids aged 8 to 80 a Guide to Basic that has everything you need for the Atari ST.
It has notes for the adult before each lesson giving guidance. This gives you the chance to catch up with your children

Send S.A.E. for Full Price List

Rise Time Electronics Ltd.
22 Audley Rise,
Tonbridge, Kent TN9 1XU

Access orders
0732
359646

All prices include VAT
First Class postage
Blank disk for backup copy

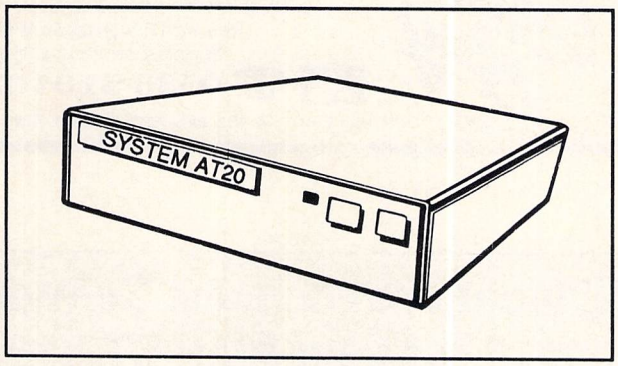
Systems 2000

Systems 2000 (Computers) Ltd.

SHAFTESBURY CENTRE, PERCY STREET, SWINDON SN2 2AZ
TEL: (0793) 513474 FAX: (0793) 513479

ATARI ST HARD DISK SUB-SYSTEM

FAST - EFFICIENT - RELIABLE



Rigid metal case incorporating
"Miniscribe" Hard Disk
Aztec Power Supply and
Utilities Software

20 MB (Formatted) £399.00 RRP Inc. VAT

40 MB (Formatted) £499.00 RRP Inc. VAT

AVAILABLE FROM:

ELTEC Computing 0274 722512

C.S.T. 0793 481333

AND LEADING ATARI DEALERS
THROUGHOUT THE UK

VISA

NORTHERN ATARI CENTRE

FULL ST & PC RANGE

Atari Music Pack
1040STFM and Steinburg Pro12 Midi

£475 inc. VAT

520 STFM inc. 1 Mb Drive

£289 inc. VAT

Tel: (0274) 662638

Monday-Friday 9.30am to 6.00pm
Saturday 1.30pm to 5.00pm

GOULD COMPUTER SERVICES

3 Gain Lane, Thornbury, Bradford 3

Just a few minutes from Leeds ring road, Pudsey

The Instant Catalog

3D Pool	12.50	Fusion	17.50	Powerdrome	17.50
5 Star Compilation	15.99	Galdregon's Domain	12.50	President is Missing	15.99
Action ST Compilation	14.99	Games : Winter Edition	14.99	Prison	12.50
After Burner	14.99	Garfield	12.50	Purple Saturn Day	15.99
Airborne Ranger	15.99	Gary Lineker's Hot Shot	14.99	R-Type	14.99
Andes Attack	6.50	Gunship	15.99	Raffles	12.50
Baal	12.50	HKM (Human Killing Machine)	10.99	Rambo III	12.50
Balance of Power 1990	15.99	Hell Bent	12.50	Road Blasters	14.99
Ballistix	12.50	Heroes of Lance	17.99	Robocop	12.50
Barbarian II	12.50	Highway Hawks	12.50	Rocket Ranger	15.99
Batman - Caped Crusader	12.50	Hit Disk Vol 1 Compilation	15.99	Rugby Simulator	12.50
Battle Hawks 1942	17.99	Hostages	15.99	Run the Gauntlet	12.50
Blasteroids	12.50	I, Ludicrus	12.50	STOS - Games Creator	19.50
Bombuzal	15.99	Incredible Shrinking Sphere	14.99	Savage	12.50
Borodino	18.99	International Karate (IK+)	14.99	Space Ball	14.99
California Games	14.99	International Soccer	12.50	Space Harrier 2	12.50
Chaos Strikes Back	9.50	Joan of Arc	14.99	Speedball	15.99
Chuckie Egg	12.50	Journey to Centre of Earth	14.99	Spitting Image	12.50
Colossus Chess X	15.99	Kenny Dalglish Soccer Manager	12.50	Stormtrooper	12.50
Computer Maniac's Diary 89	7.50	King of Chicago	15.99	Street Fighter	14.99
Cosmic Pirate	12.50	King's Quest 4	17.99	Super Hang-On	14.99
Crazy Cars 2	12.50	Kristal	18.99	Superman - Man of Steel	12.50
Custodian	14.99	LED Storm	14.99	Talespin	31.99
Cybernoid 2	14.99	Last Duel	10.99	Techno Cop	14.99
Dark Fusion	14.99	Leaderboard Birdie	14.99	Teenage Queen	12.50
Deep	14.99	Leisure Suit Larry 2	17.99	Thunder Blade	14.99
Disk 15 Compilation	12.50	Lombard RAC Rally	15.99	Thunder Wing	12.50
Double Dragon	12.50	Man Hunter	21.99	Times of Lore	15.99
Dragon Ninja	12.50	Mega Pack Tynesoft	15.99	Titan	12.50
Dragonscape	12.50	Mickey Mouse	14.99	Track Suit Manager	12.50
Dreamzone	15.99	Microprose Soccer	15.99	Triad Vol 1	18.99
Driller	15.99	Millennium 2.2	14.99	Trip A Tron	24.99
Dugger	12.50	Mini Golf	14.99	Ultimate Golf	14.99
Dungeon Master	15.99	Motor Massacre	14.99	Verminator	15.99
Elite	15.99	Nigel Mansell's Grand Prix	17.50	Victory Road	12.50
Emanuelle	12.50	Night Hunter	14.99	Vindicators	12.50
F-16 Combat Pilot	15.99	Operation Wolf	12.50	Wanted	12.50
Falcon	15.99	Orbiter	15.99	War in Middle Earth	15.99
Federation Of Free Traders	21.99	Out Run Europa	10.99	Wec Le Mans	12.50
Flying Shark	12.50	Pacmania	12.50	Weird Dreams	15.99
Football Director 2	12.50	Phantasie 3	17.99	Zak McKracken & Aliens	17.99
		Populous	15.99	Zany Golf	17.50

PLANET'S Best Buy EST. 1988

INSTANT, Boston House, Abbey Park Road, Leicester LE4 5AN
Mail Order Only. State Computer's make and model.
P&P: 50p on orders under £5. EEC 75p per title.
Whole World £1.50 per title for Air Mail.
New titles sent on the day of release.

Access **0533 510102**

FOR DISK PRICES & NEW RELEASES PLEASE RING US.

Now Available...
For Your Hard Disk System

Atari ST SCSI/DMA Interface

- Includes Supra formatting and auto booting software
- Operates with most SCSI hard disk drives up to 195MB
- DMA pass through allows connection of other DMA devices
- Built-in clock/calendar sets the ST's system clock on boot-up
- 10 day money back guarantee
- Full twelve month warranty

The Supra SCSI/DMA interface allows you to connect any standard SCSI hard disk drive to your Atari ST through the DMA port. Included are the widely acclaimed Supra hard disk utilities which allow you to auto boot from the hard disk drive and also format your hard drive into as many as twelve partitions.

Only £100 including VAT and postage

STache

Frontier Software's hard disk caching program, STache is an auto boot program which sets up a small RAM cache in the ST's memory. Subsequent hard disk directory and FAT sector reads are stored in the cache accelerating your hard disk drive by as much as 25%.

Only £19.95 including VAT and postage

"Everything You Need Know Before Buying A Hard Disk Drive For Your Atari ST System"

Frontier Software's best selling book tells you everything you need to know about Atari ST hard disks. Includes vouchers worth up to £35.

Only £9.95 including postage

Supra Hard Disk Utilities

Supra's hard disk utilities allow you to format your Atari or other hard disk drive with up to 12 partitions, auto boot off the hard drive and edit hard disk sectors. Blast! - an extremely fast slide show program is included. Will support 1 to 8 hard disks up to a total capacity of 195MB.

Only £49.95 including VAT and postage

Frontier Software

'Phone or write for our full Atari ST catalogue and price list.
We accept payment by Access and Visa
P.O. Box 113, Harrogate, North Yorkshire HG2 OBE.
(0423) 67140/530577

Educational & Home Software on your Atari ST

B. Bytes Computer Systems of Hinckley now supply:

B. Spell £14.95

A superb spelling program for your child. Suitable for ages 5-8 or children with learning difficulties. Total mouse control, high quality speech and 26 pictures. Tunes to reward your child and mistakes are corrected.
Micromart commended the programs – "Excellent graphics". Monitor Magazine rated the programs 9 out of 10 for educational value.

Construction Set £9.95 or with B-Spell for only £19.95

Now add your own pictures to B-Spell. This will give it "unlimited potential", said ST User! – and so it does!
Draw in Neochrome or Degas, 26 new pictures included for you to use or alter and no upgrade is required for B-Spell to use Construction Set.

B-Base II V.1.5a £14.95

Perfect Database for all your household or small business uses.
"Very user friendly", "well written", "very rapid", "very reliable in use and extremely good value for money" said an impressed monitor magazine.

NEW FOR 1989 – Maths £14.95

Perfect companion to B-Spell. Seven programs in one, add, subtract, multiply and count pictures and numbers, speech and abacus, as well as an animated teacher which makes learning fun. Tunes reward success and errors are corrected.

NEW FOR 1989 – Playspell £14.95

Multi-level platform game and spelling incorporated, data disks to follow at £9.95 each

Prices include VAT & P&P, cheques payable to: B. Bytes Computer Systems
Hardware and software information pack available for most makes of computer

See us at the Essex Computer Games Show, stands 26, 27, Festival Hall, Basildon, April 21st-23rd.

B. Bytes Computer Systems

Dept STMAY, 19 Southfield Road, Hinckley, Leicestershire LE10 1UA
Tel: (0455) 613377

VISA AMERICAN EXPRESS Access

Easy as



Nic Outterside compares two picture and word creation utilities for use with current ST educational programs

I SUPPOSE that in the natural course of events in the world of computer software, if you produce a good product the next stage is to provide either a sequel or an update. Two neighbouring educational software companies have gone one stage further and have each produced a similar utility designed to expand existing packages.

B.Spell Construction Set from B.Bytes is a picture and word extension program plus accompanying manual for use with its sythesised speech spelling package, B.Spell. It is compatible with both Degas and Neochrome art packages, and converts pictures in these formats to work with B.Spell.

B.Bytes says all pictures produced with the Construction Set can be freely distributed throughout the PD network, and if many people use this facility it could lead to a library of many hundreds of pictures and words which could be used within B.Spell.

The Construction disc contains a source program, an update program and four archived source files each containing Degas or Neochrome pictures or empty picture blocks.

Using the program can be quite fiddly. First you have to format two discs – one as a work disc and the other as a destination disc. The required source files are then copied to the work disc and unarchived, using the familiar PD ARCX.TTP utility.

You can now enter your chosen files into an art package like Degas Elite where existing pictures can be edited or new ones drawn. However, you must remember to disable Degas Elite's picture compression when saving any pictures.

B.Spell can only accept words of up to eight letters, so this necessarily – and quite rightly – restricts your freedom of subject matter which can be drawn.

The colour palette used with B.Spell contains a selection of primary and secondary colours plus white and black. If you change the colours in your picture the Construction Set will restore them to their originals on converting the pictures. This seems to be an unnecessary handicap.

Having completed your pictures you have to undergo a somewhat confusing transference of files from your work disc to the destination disc. This involves using a Set command to set up 26 picture data files on your destination disc. Within this command option you also need to type in the word to go with each picture.

A Single command enables you to overwrite an existing picture on the destination disc for handy updating or correction. Meanwhile the Edit command allows you to alter the spelling of a word – particularly handy if you discover that having converted all your pictures you have made a spelling mistake.

The Spellbook Alphabet Creator is a similar tool, to use with Softstuff's much vaunted Spellbook program. Like the Construction Set, it allows you to draw pictures from within your art package and transport them for use in the mother spelling program.

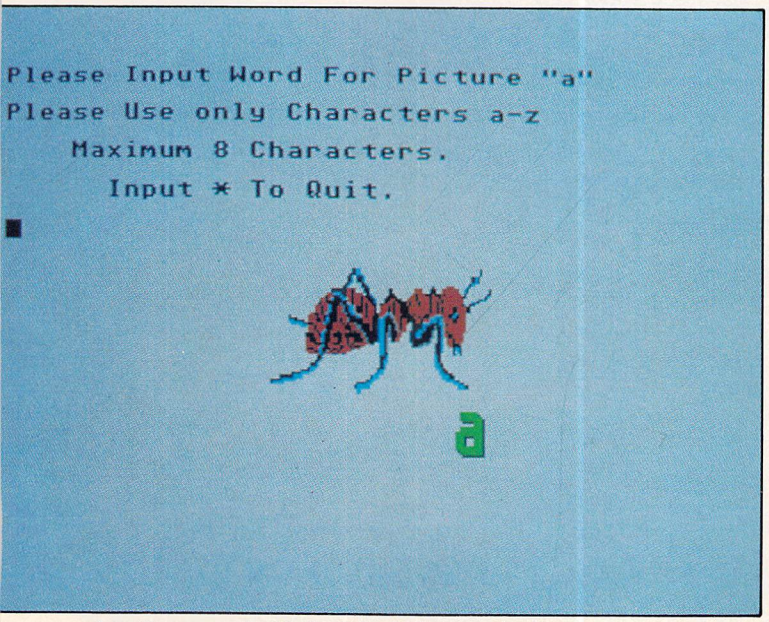
The main difference here is that any colour palette can be used. Further to this Alphabet Creator will accept converted Degas or Neochrome pictures. The disc also includes an upgrade Spellbook program which can be copied on to your original Spellbook disc.

A bonus is that Softstuff is supplying on the program disc the free PD art package Neochrome. This saves you from having to search for or pay for an art package.

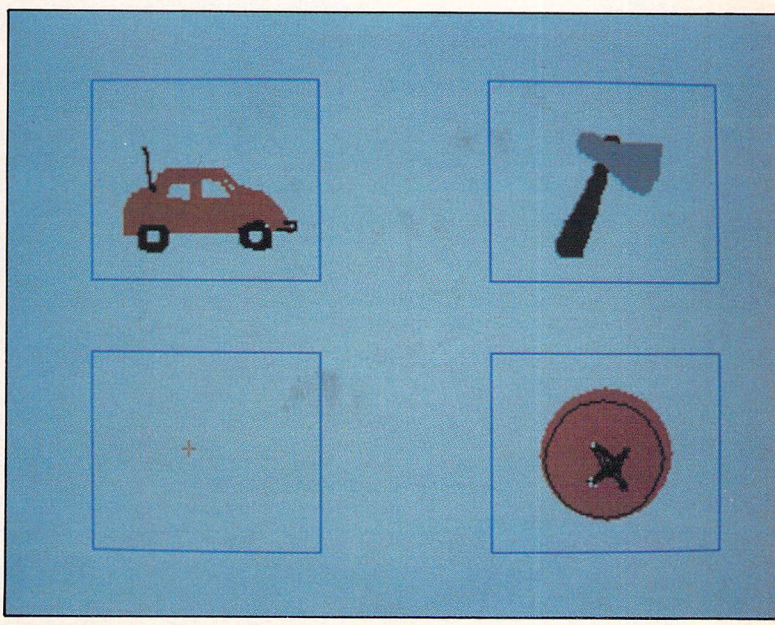
There is no need to unarchive any files with the Alphabet Creator. All you have to do is to format one blank disc and copy a chosen Template file – either Degas or Neochrome – plus a PAGES–BO.ARD program on to this disc.

Now boot up your art package disc and load the chosen Template file. Any pic-

Turn to Page 112 ▶



Inputting a word with the B.Spell Construction Set



The Spellbook Alphabet Creator

◀ From Page 111

tures you create can be saved using the filenames ABCD, EFGH and so on, on your formatted disc.

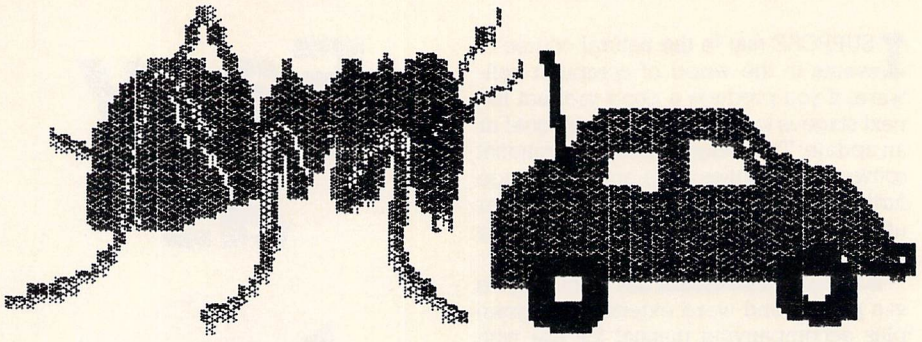
When complete, a simple three option menu allows you to convert your picture files into a format that Spellbook can read, along with the colour palette for that picture, so you can use a different colour palette for each set of four letters.

Via the menu you then create a PICTURES.SPL folder and the pictures together with the PAGES–BO.ARD program are transferred to this folder. Another option allows the creation of a Spellbook alphabet where a unit of 26 pictures can be created and saved.

Alphabet Creator allows complete control over the content of your Spellbook program in a simple and user-friendly way. The only restriction – as with Construction Set – being that of seven letters to a word.

In conclusion

Both programs do their respective jobs admirably, though I found Alphabet Creator more flexible and easier to use. As I originally found Spellbook to be the superior of the two mother programs, I would have no hesitation in recommending Alphabet Creator. However, if you are already an owner of B.Spell then the Construction Set is a handy utility to extend the range of the program.



FACT FILE

Product: Alphabet Creator
Price: £9.95
Supplier: Softstuff, 193 Sketchley Road, Burbage, Leicestershire LE10 2DY.
Tel: 0455 617426

POINTS FOR:
Simple to use. Upgrade of Spellbook available. Bundled Neochrome art package.

AGAINST:
Manual instructions could be slightly clearer.

FACT FILE

Product: B.Spell Construction Set
Price: £9.95
Supplier: B.Bytes Computer Systems, 19 Southfield Road, Hinckley, Leicestershire LE10 1UA.
Tel: 0455 613377

POINTS FOR:
Does the job well. Allows for creation of a library of many pictures to use with B.Spell.

AGAINST:
Awkward and time consuming to use. No bundled art package. Restricted palette.

ATARI ST USER

MAIL ORDER OFFERS

K-Data

This is the ideal low-cost database

The K-Data database package combines a comprehensive range of features with the user friendliness of the Gem environment, resulting in a powerful, professional and, above all, easy-to-use program.

It automatically indexes information as you go along, allows massive record sizes and can be easily configured to your particular needs.

RRP £49.95

OUR PRICE

£39.95

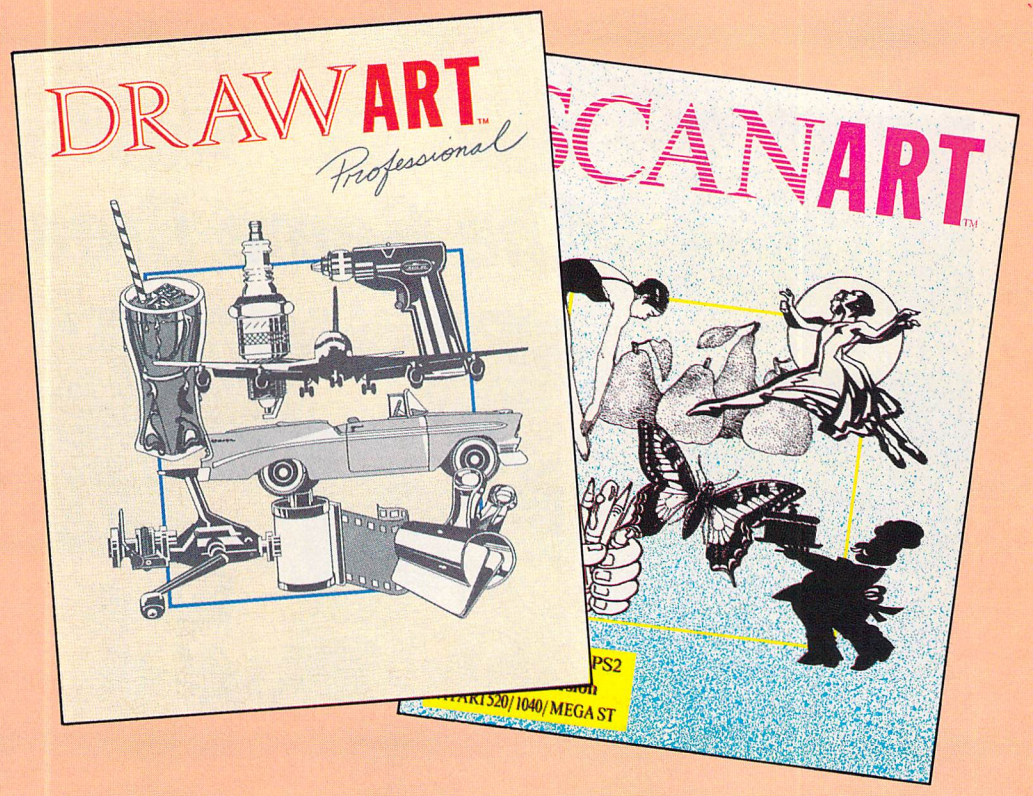
Order your copy today – and for only £39.95 you'll save £10 into the bargain!



Some of K-Data's features:
Report generator, summary facility, up to six windows open simultaneously, file length of up to 32 megabytes, record size of up to 32k, field length of up to 28k, number of records only limited by file space, variable length records, up to four data files can be open simultaneously, automatic indexing of records, comprehensive printer configuration, ideal for mailing lists.

ORDER YOUR COPY TODAY, USING THE FORM ON PAGE 133

Julie Boswell browses through more than 200 quality illustrations



Illustrator's gallery

IF, like mine, your drawing ability leaves a lot to be desired, take heart, for to the rescue comes Scan Art and Draw Art, two packages that between them contain more than 200 pictures on four discs. These are professionally drawn, high quality images created by top artists.

In the case of Scan Art the images have been taken from original line drawings then scanned at either 150 or 200 dots per inch and retouched once on screen. They have been saved as IMG files so you'll need a DTP or art package that can handle this format. Timeworks Desktop Publisher and Supercharged Easy Draw are two such packages.

Figure I shows one of the scanned drawings from the Bears folder of Scan Art. To produce this dump it has been loaded into Atari's Hyperpaint after selecting the IMG file format.

Draw Art illustrations are completely different in that they are object-oriented rather than bit mapped. This means that a circle is stored as a particular class of object – a circle – and not as a screen image. When zooming in on a screen image using the magnify function of an art package the pixels simply become larger and detail is lost.

However, when zooming in on an object-oriented drawing each item becomes bigger and fills a larger portion of the screen, the pixels staying the same size. When zooming in on a circle say, it is simply re-drawn much larger.

This type of artwork requires a special type of drawing package that can load the GEM files produced and manipulate the objects contained within them. The screen dump in Figure II was created by loading two of the illustrations into Easy Draw 2. Publisher ST can also be used.

Once the illustrations have been loaded into say, Easy Draw, they can be magnified, reduced, and stretched vertically or horizontally by simply pointing, clicking and dragging with the mouse.

The manuals show dumps of all the pictures on the discs alongside their filenames. This makes them handy for browsing through and choosing your artwork without having to laboriously load and display each one.

To sum up, the two packages provide a huge collection of images of all sizes ready to be included in your diagrams, drawings and news letters. Not only do they provide professionally drawn illustrations for amateur artists like myself, they also cut down on the amount of time spent creating your finished product by providing ready made artwork.

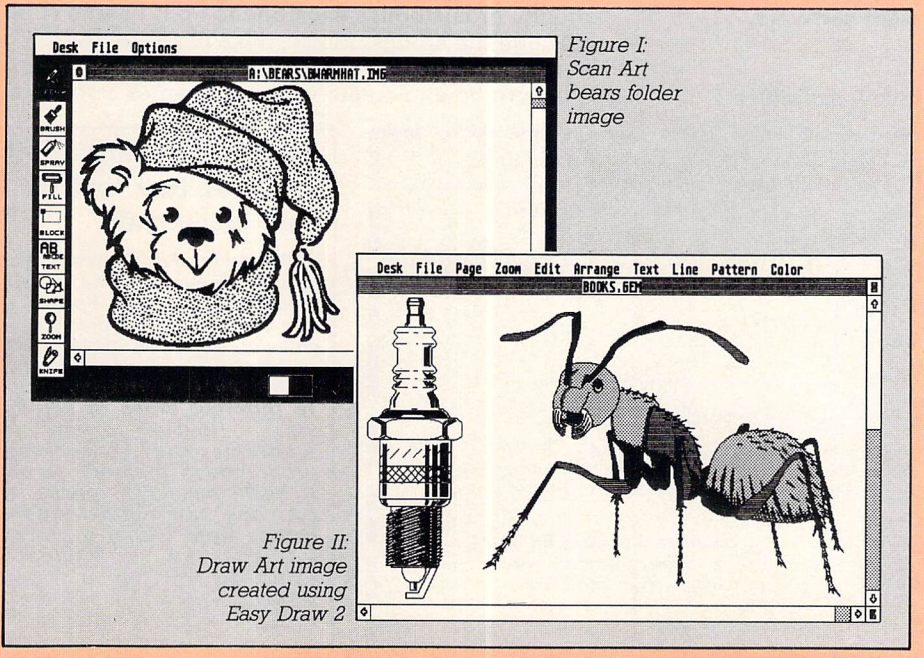


Figure I: Scan Art bears folder image

Figure II: Draw Art image created using Easy Draw 2

FACT FILE

Product: Scan Art
Price: £39.95
Product: Draw Art
Price: £49.95
Supplier: Electric Distribution, 8 Green Street, Willingham, Cambridge CB4 5JA.
Tel: 0954 61155

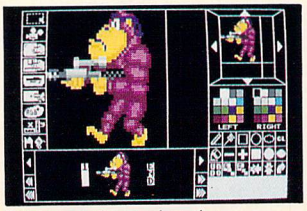
POINTS FOR:
Large selection of superbly drawn illustrations.

AGAINST:
Quite expensive.

UNLEASH YOUR IMAGINATION WITH

STOS

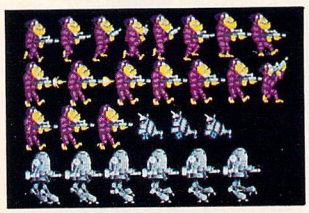
The Game Creator



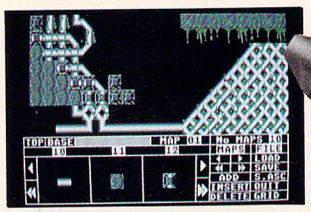
Design sprites using the powerful sprite editor



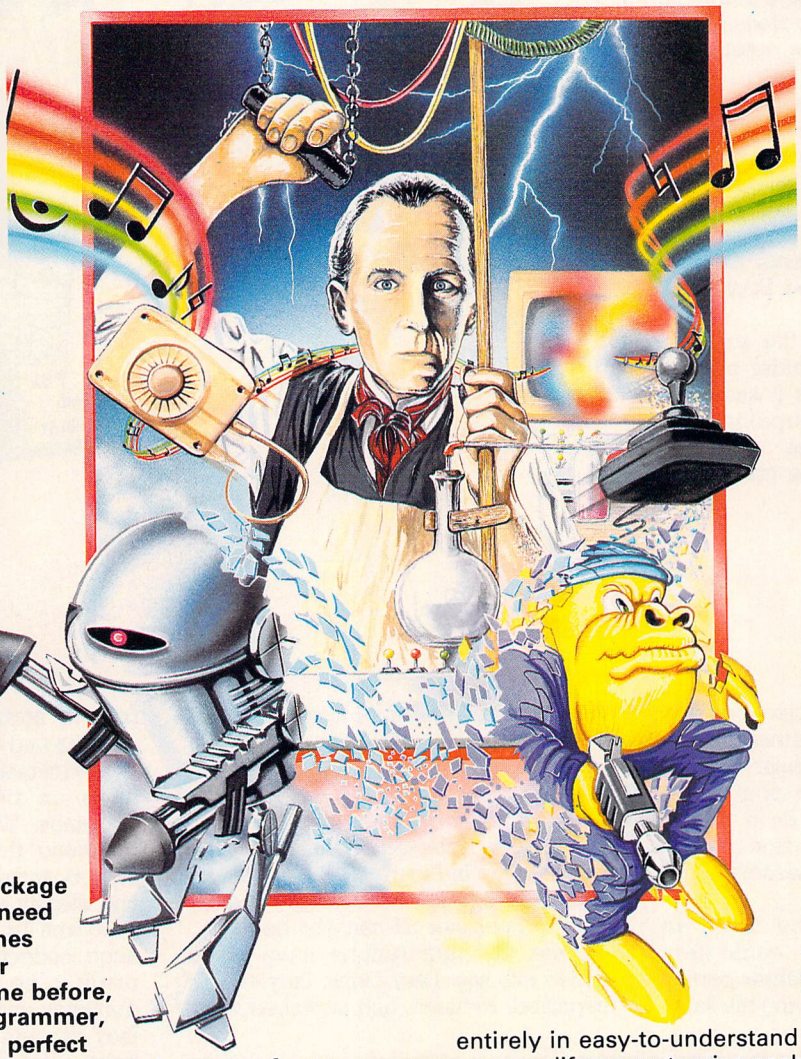
Set the sprites in motion with the animator section

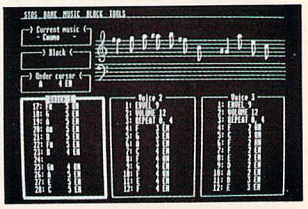


Choose from a range of example sprites included with STOS

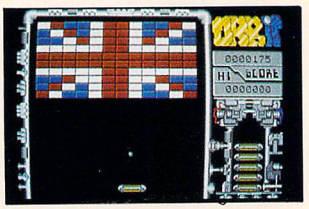


Produce a layout for each screen with the room designer





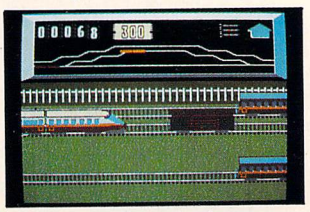
Create dynamic sound effects and compose a suitable score



Construct devious screens in the feature-packed Orbit game



Draw the flight paths of the attacking aliens in Zoltar



Blast the carriages in the horizontal-scrolling Bullet Train

STOS is a revolutionary package which has everything you need to create fast, exciting games quickly and easily. Whether you've never written a game before, or you're a competent programmer, you'll find that STOS is the perfect way for you to design your own entertainment software.

PLUS: Three *free* fast-action games which show you just what can be achieved with this unique package. There's Zoltar, Bullet Train and Orbit – and each game is written entirely in easy-to-understand Basic, which means you can modify or customise each one to your heart's content. Change the sprites, music, difficulty level, design new screens and so on. And by examining the programming you'll learn how to create your own games from scratch.

The STOS package comprises:

- A massive manual packed with easy-to-follow examples.
- At-a-glance reference card putting all the commands at your fingertips.
- Three discs containing: STOS Basic, sprite editor, room designer, character set editor, icon editor, music editor, screen compacter . . . plus many other utilities and short programs.
- An exciting opportunity to join the STOS Club for expert advice and contact names.

All this for just £29.95?

You'd better believe it!

Please send me **STOS – *The Game Creator*** at £29.95 (9153)
(incl. VAT and P&P). Add £5 for Europe inc Eire/£12 overseas

☐ I enclose a cheque payable to Mandarin Software
☐ Please debit my Access/Visa number:

Expiry date: /

Signature .....

Name .....

Address .....

.....

..... Postcode .....

MANDARIN SOFTWARE

Send to: **Database Direct, Freepost, Ellesmere Port, South Wirral L65 3EB.**

ST5

Here's just some of the facilities that will be at your command:

• 340 powerful and versatile commands • Move and animate up to 15 sprites at once • Sprites any size up to 64 x 64 pixels • Full collision detection between each sprite or zone • Grab sprites from commercial games • Define up to 16 different types of scrolling areas • Hold up to four main programs and 12 accessory programs in memory at once • Create pull-down menus with just one command • Change modes from within a program • Overlay up to 13 windows • Compact Neochrome or Degas screens – or even sections of screens • Zoom and reduce pictures to produce incredible effects.

EARN £5,000 CASH

... in the STOS Gameswriter of the Year Award



ST owners around the world are using STOS to create a galaxy of new games – and now there's a fabulous opportunity to profit from those exciting endeavours.

The writer of the most commercially viable game submitted by Tuesday, June 13, 1989 (10 days before the Atari Computer Show) will receive £5,000 in advance royalties and the title will be marketed worldwide by Mandarin Software.

We are looking for an exciting, original idea with an emphasis on gameplay. Graphics are secondary and, if necessary, a professional graphic artist will enhance the visual aspect of the winning title.

Rules of the contest

- The game must be written in STOS Basic but may include new machine-code extensions or routines occupying no more than 30k.
- The game must take up no more than three discs and run on an Atari 520ST, but may include extra parts which require one megabyte of memory.
- Copyright for the winning game will belong to Mandarin who will market the software. A royalty will be paid for every copy sold, and royalties will also be paid if the game is converted to other formats.
- An advance and royalty will be paid for any other top games received which are suitable for release.
- In the unlikely event that no commercially viable game is received the money will be added to the cash prize for the following year's award.
- The Award is not open to the staff at Mandarin, Europress or Jawx, or their families.

Please include instructions for loading and playing, and put your name and address on EACH disc as well as on all correspondence.

Your discs will be returned *free of charge* together with suggestions for further improvement so that the game can be refined and resubmitted before the closing date.

Send your discs to:

STOS Gameswriter of the Year Award,
Mandarin Software,
Europa House,
Adlington Park,
Adlington,
Macclesfield SK10 4NP.

MANDARIN SOFTWARE

Small Business Accounts

The First Accounts Package Written with Small Businesses in Mind

"I can make no criticism of **Small Business Accounts**. *It provides everything the small business could want."*

ST UPDATE

- Emulates traditional book-keeping methods
- Controls individual Debtors & Creditors
- Operates 2 Bank Accounts, Cash, Sales & Purchases
- Automatic Double Entry
- Full Nominal Journal Facility
- 150 Nominal Accounts plus Budgets
- VAT period accounting
- On-screen update of current cash position & period profitablility
- Full Audit Trail
- Reports include Trial Balance, Profit & Loss Statement, Balance Sheet outputting to screen, printer, disk file (for wordprocessing and spreadsheet users)
- Over 1000 copies already sold

only **£69.95** plus VAT

EQUINOX ORGANISER

The COMPLETE Personal Organiser

The *Equinox Organiser* consists of 5 powerful applications which will enable you to output results to screen, printer, disk file or *Planner Stationery*. *

The *Equinox Organiser* includes:

- **Personal Accounting**. Incorporating up to 12 bank accounts, 12 credit cards, cash and over 30 expenditure accounts.
- **Database** with multi level searching and sorting. Includes full report generator and mail labels.
- **Financial Diary** with report generator, calendar, conversion tables and mileage tables.
- **Phone Messaging.** Allows phone messages to be taken and logged in individual mailboxes.
- **Phonebook** with search and sort facilities.

only **£49.95** plus VAT

* includes 200 pages Planner stationery FREE

Please send me: Small Business Accounts @ £80.44 inc VAT
tick as applicable Equinox Organiser @ £57.44 inc VAT
Further Information

Charge my VISA ACCESS AMEX Expiry Date /

No |_|_|_|_| |_|_|_|_| |_|_|_|_| |_|_|_|_|

Cheque enclosed for £ _____

Name _____
Address _____
Town _____
County _____ Post Code _____

Equinox Business Systems Ltd
16 Anning Street, New Inn Yard, London EC2A 3HB
Tel: 01 739 3450 Fax: 01 739 2199
Also available from: G&B Computers,
13 Tottenham Court Road, W1. Tel: 01 255 1501

AU/05

PUBLIC DOMAIN SOFTWARE

GAME3 - HACK D&Dragons
GAME11- KIDGAMES
GAME12- ORIONS RUN
GAMES
GAME27- MONOPOLY
GAME2 - CHESS,BACKGAMMON
GAME7 - SPACEGAMES
GAME18- LASERCHESS

PIC7 - 16 NAUGHTY PICTURES
PIC9 - 17 from GhostBusters etc.
PIC18- DIGIPICS FROM SPACE
PICTURES
PIC22- SPEC'512 PICTURES
PIC28- STRIP POKER PIC'S
PIC29- SAM FOX PICTURES
PIC31- SPEC'512 PICTURES

DEM13- CLASSIC DEMOS
DEM22- FLYING BIRDS
DEM25- MURRAY AND ME
DEMONSTRATIONS
DEM31- Tour your ST (beginners)
DEM59- BIG TEX - Brilliant
DEM87- PUMP UP THE VOLUME
DEM89- LOST BOYS DEMO

MISC1- SKYMAP, 1500 stars
MISC2- ORBIT, track sattelites
MISC4- VIRUS KILLERS
RADIO-COMMS
COMS3- UNITERM V2.0C
COMS6- WORLI V2.5
COMS7- INTERCOM V3.01
COMS8 - ANET & GEMTERM

ACC1 - 50 files of Accessories
ACC26- DATABASE
ACC31- SPREADSHEET
UTILITIES
ACC34- MAC EMULATOR
ACC48- BBC EMULATOR
ACC52- COPIER, SLOMO
ACC48- APPLE EMULATOR

from BRITAINS
No.1
PD SERVICE

Access VISA

1-5 disks - £3:00 each 6-10 disks - £2:75 each
11 or more £2:50 each Inc' vat, P & P Deduct £1 per disk price if you send your own blank disks. Cheques or Postal Orders payable to SOFTVILLE
Please quote Atari ST

STUCK? ALONE? JOIN CLUBVILLE for Free updates Free Magazine, Free advice, Bargain Prices, lots more only £6:50 per year - send a stamp for details or

Send for our FREE catalogue with details of over 450 disks

SOFTVILLE PD SERVICE
55 HIGHFIELD AVENUE
WATERLOOVILLE HAMPSHIRE
PO7 7PY Tel 0705-266509

MUS2 - JUKEBOX
MUS3 - MIDI UTILITIES
MUS5 - 32 TRACK SEQUENCER
MUSIC
MUS12- MIDIDRUM, MIDIPLAY
MUS13- 30 MUS' STUDIO SONG
MUS14- EZTRACK SONGS
MUS17- SOUND DEMOS

ART1 - NEOCHROME PACKAGE
ART4 - MASTER PAINTER
ART5 - ARTIST DRAWING PACK
ART PACKAGES
ART10- PALETTE MASTER
ART7 - MANDLEBROT,Megablit
ART16- FACE ANIMATOR
ART17- PEARLE(ray tracer)

LAN4 - ADVENTURE WRITER
LAN11- SMALLTALK
LAN12- ST ICON
LANGUAGES
LAN14- FORTHMACS, complete
LAN26- 68000 ASSEMBLER
LAN27- C COMPILER
LAN28- 8-BIT EMULATOR (atari)

STARTER PACK
any 5 PD disks
5 D/S Blank disks
Library Case
only £19:50
INTRO DISK
ONLY £1:50

CAMBRIDGE BUSINESS SOFTWARE

Melbourn Science Park, Moat Lane, Melbourn, Royston, Herts SG8 6EJ
Tel: (0763) 62582 Telex: 817932 Fax: (0763) 62425

ATARI ST *PRODUCTIVITY* SOFTWARE

TIMEWORKS

Desktop Publisher v1.12*	£69.95
DTP Clip Art Pack	£19.95
Data Manager	£29.95
Data Manager Professional	£52.00
Swiftcalc v2.0	£29.95
Wordwriter	£52.95
Partner ST	£37.95

*Desktop Publisher is also available in other European languages

ANTIC

CAD 3D v1.0	£18.95
Cyber Studio (CAD v2.0)	£62.95
Cyber Control	£47.95
Cyber Paint v2.0	£52.95
Cyber Texture (NEW)	£42.00
Cyber Sculpt (NEW)	£67.00
Spectrum 512	£46.95
3D Developers Disk	£22.95
Architecture Design	£22.95
Future Design	£19.95
Video Titling Disk	£24.95
Expert Opinion	£39.95
Base 2	£49.95

MIGRAPH

Easy Draw 2	£47.95
Supercharged Easy Draw 2	£69.95
Easy Tools	£29.95
Technical Art Pack	£29.95
Personal Art Pack	£29.95
Scan Art (NEW)	£36.95
Draw Art (NEW)	£44.95

LANGUAGES AND COMPILERS

Prospero Pro Fortran v2.1	£99.00
Prospero Pro Pascal	£79.95
Prospero Pro C	Phone
Mark Williams C	£92.00
HiSoft Power Basic	£39.95
HiSoft Basic	£59.95
GST C Compiler	£14.95
MPE Forth 83 (Gem)	£39.95
Nevada Cobal	Phone

ALL PRICES LISTED INCLUDE VAT AND DELIVERY

COMPUTER AIDED DESIGN

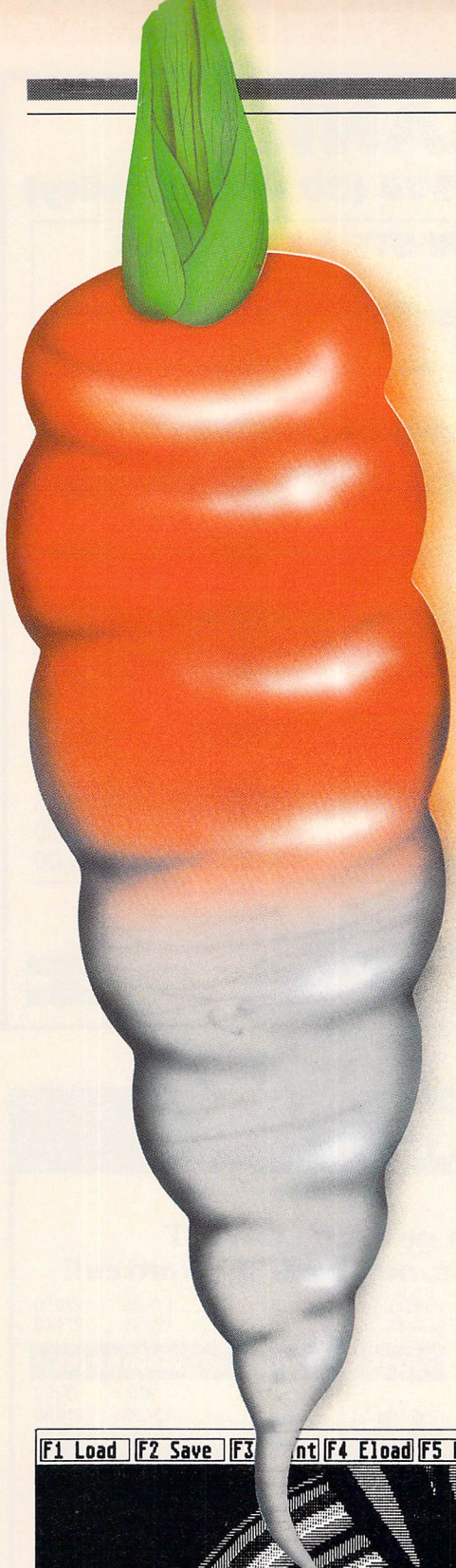
Master CAD	£109.95
PC Board Design	£135.00
Campus Draft	£69.95
Campus v1.2	£299.00
GFA Draft Plus	£109.00

OTHER TITLES

GST 1st Word Plus v3.0	£57.95
Mailshot	£19.95
Mailshot Plus	£35.95
Digicalc	£29.95
Home Accounts	£19.95
Day by Day	£29.95
E-Type	£39.95
Twist	£32.95
Saved v2.0	£29.95
K-Graph 3	£39.95
K-Data	£39.95
K-Expert	£67.95
VIP Professional	£109.00
Masterplan	£74.95
Superbase Personal	£69.95
Superbase Professional	£175.00

Access VISA

FAST FRIENDLY SERVICE AND COMPREHENSIVE AFTER SALES SERVICE COST NOTHING AND ARE AS IMPORTANT TO US AS THEY ARE TO YOU!
CALL (0763) 62582 or (0223) 316054 AFTER HOURS



Convert your 16 colour Neochrome pictures to monochrome with this flexible Basic utility from Michael Croning

Colourful conversion

DITHER is a graphics utility written in Computer Concepts' Fast Basic designed to convert 16-colour Neochrome artwork to full screen monochrome dithered pictures – like a black and white newspaper photograph, the resultant picture is made up of tiny dots. It features an add-on module system for providing additional picture processing facilities.

Degas Elite owners will already be able to convert Neochrome pictures to monochrome, but Dither provides many features not otherwise available. For instance, it incorporates a useful brightness control. Once a picture has been converted, pressing the up and down arrow keys increases and decreases brightness respectively.

The function keys – displayed at the top of the screen – are used to select the program options:

F1 Load and convert Neochrome file.
F2 Save monochrome image with extension IMG.
F3 Print picture using the OUTDUMP command of Fast Basic.
F4 Load external module.
F5 Execute external module.
F10 Leave program.

The conversion routine is extremely quick as it is written almost entirely in assembly language using Fast Basic's built-in assembler. Dither patterns are picked automatically as the program reads the colour palette intensities and makes the selections accordingly.

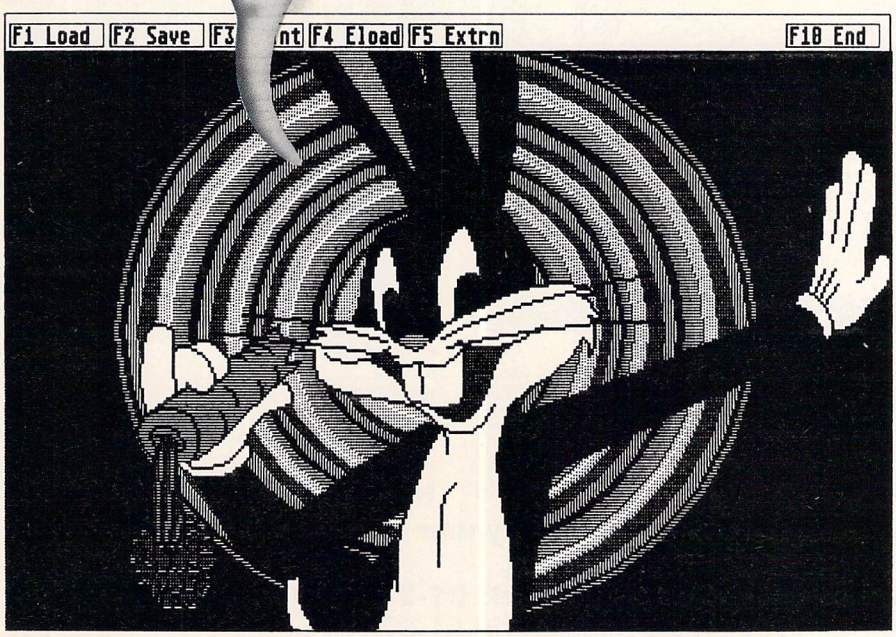
The routine is speeded up by using memory addresses instead of x,y coordinates. Rather than fetching a single pixel at a time, which would be very inefficient, the colours of the 16 monochrome pixels are calculated from four words fetched from the screen. The colours are temporarily stored in a buffer.

To maximise efficiency when drawing the dithered squares, two long words are built up, then written to memory. These represent the 16 pixels stored in the buffer. Writing long words (four bytes) is more efficient than words (two bytes).

Enter the program listing into Fast Basic, but remember not to enter the line numbers, which are there simply to make the listing easier to read. The program requires a workspace of 77k so this must be set by clicking on Show Info on the Files menu.

Modules have to be entered and saved separately – they provide the extra picture processing functions such as mirror,

Turn to Page 119 ▶



The converted picture can be manipulated in various ways using the function keys

PROCEDURES	
initscreen	Initialises the screen
drawmenu	Draws the menu
outline	Draw the outlines around the menu
initdata	Initialises variables and arrays
assemble	Machine code
getkey	Checks the keyboard
load	Loads and converts a Neochrome picture
save	Saves converted picture

16 BIT CENTRE

FREE DISC BANK

Worth £12.95 with every order over £200 (80 disc capacity)

ATARI STFM SUPERPACK
inc. 21 games, ST Organiser, Joystick, Mouse & Manuals
ONLY £343 inc Courier

ATARI STFM EXPLORER PACK
inc. Mouse, Basic and Explorer Disk
ONLY £279

20MB HARD DRIVE £379
40MB HARD DRIVE £479
By System 2000

PHILIPS 8833 STEREO
Colour Monitor inc lead
ONLY £229

ALL PRICES INC. VAT AND CARRIAGE

PERIPHERALS/ACCESSORIES

Atari SM124 Mono Monitor inc Lead	£99
Citizen 120D Printer inc lead and ribbon	£139
Star LC10 Mono Printer inc lead and ribbon	£209
Star LC10 Colour Printer inc lead and ribbon	£259
Star LC24/10 Printer inc lead and ribbon	£339
Cumana D/Drive Able/Disable switch	£99
Philips TV Tuner Adaptor	£69

SOFTWARE/UTILITIES

1st Word Plus	£69.00
Data Manager Professional	£59.00
Time Works DTP	£89.00
Hyperpaint	£19.99
Deluxe Music Construction Set	£18.95
K Minstral 2	£22.50
ST Replay 4	£69.00

16 BIT CENTRE
Unit 17, Lancashire Fittings Science Village, Claro Road,
Harrogate, North Yorkshire HG1 4AF. Telephone: 0423 526322
0423 531822

Access VISA

YOU'RE IN LUCK!!

GIBB COMPUTERS
are now selling ST software – at last you can get the LOWEST prices and the BEST service, with our no quibble money back guarantee!!

Games

	RRP	OURS
Black Lamp	£19.95	£14.00
Airball	£24.95	£16.60
Arkanoid 2	£19.95	£14.00
Backlash	£19.95	£14.00
Barbarian	£24.95	£16.60
Barbarian (Palace)	£14.95	£10.60
Bionic Commando	£19.95	£15.00
Black Lamp	£19.95	£14.00
Bubble Bobble	£19.95	£14.00
Buggy Boy	£19.95	£14.00
Enduro Racer	£14.95	£10.60
Gauntlet 2	£19.95	£14.00
Goldrunner 2	£19.95	£14.00
Ikari Warriors	£14.95	£10.60
Indiana Jones	£19.95	£15.00
Joe Blade	£9.95	£8.00
Leatherneck	£19.95	£14.00
Mach 3	£19.95	£14.00
Motorbike Madness	£14.95	£10.60
Ninja Mission	£9.95	£8.00
Obliterator	£24.95	£16.60
Outrun	£19.95	£15.00
Overlander	£19.95	£14.00
Prohibition	£19.95	£14.00
Rim Runner	£19.95	£14.00
Roadrunner	£24.95	£17.90
Rolling Thunder	£19.95	£15.00
Screaming Wings	£14.95	£10.60
Sidewinder	£9.99	£7.60
Space Harrier	£19.95	£14.00
Stormtrooper	£19.95	£14.00
Terrorpods	£24.95	£16.60
Time Bandit	£19.95	£14.00
Top Gun	£19.95	£14.00
Xenon	£19.95	£14.00
Xevious	£24.95	£17.90

Adventures

	RRP	OURS
Guild of Thieves	£24.95	£16.60
Beyond Zork	£24.95	£16.60
Sherlock Holmes	£24.95	£16.60
Time and Magic	£19.95	£14.00
Thunder Cats	£19.95	£14.00
Ultima 2, 3, 4	£19.95	£14.00
Tanglewood	£19.95	£14.00
Baker St	£24.95	£16.60
Jinxter	£24.95	£16.60

Languages

	RRP	OURS
Devpak V2	£59.95	£45.00
Fastbasic Disc	£44.85	£35.00
Fastbasic Rom	£89.90	£67.50
GFA Basic Interpreter		£32.00
GFA Basic Compiler		£32.00
Hisoft Basic	£79.95	£71.00
Hisoft Modula 2	£69.95	£55.00
Personal Pascal	£79.95	£70.00
Lattice C	£99.95	£74.00

Art/Wordprocessor/Databases

	RRP	OURS
Advanced Art	£24.95	£16.60
Aegis	£57.50	£36.50
Quantum Paintbox	£19.95	£18.00
STAC	£19.95	£25.60
Data Manager	£39.95	£29.95
K-Data	£49.95	£32.50
Zoomracks 2	£69.95	£43.60
Fleet Street Publisher	£125.00	£86.00
Home Publisher	£24.95	£20.00
K-Spread 2	£79.95	£60.00
Logistix 1.15	£114.94	£79.00
1st Word+	£79.95	£59.00
Protext	£79.95	£68.00

Simulators

	RRP	OURS
Carrier Command	£24.95	£16.60
F15 Strike Eagle	£24.95	£16.60
Gunship	£24.95	£16.60
Harrier Strike	£24.95	£16.60
Silent Service	£24.95	£16.60
Starglider 2	£24.95	£16.60
Strike Force Harrier		£16.60
Sub Battle Simulator	£24.95	£15.00
Super Huey	£19.95	£14.00

To order make cheques or POs payable to:
GIBB COMPUTERS LTD,
33 Colby Road, London SE19 1HA. Tel: 01-761 1814
VAT and P&P included. Overseas add £1.50

◀ From Page 117

reduce vertically and horizontally and so on. Enter each one and save it with the file extension EXT. You can't run them independently as they can only be called from the main program.

The modules consist of ordinary Fast Basic programs which are used to process the monochrome image on the screen. In the panel are a few short and simple modules to give an example of their use; you can add more of your own.

HALFH.EXT and HALFV.EXT require a parameter to be entered which tells Dither the colour the rest of the screen will be after reducing the picture – 0 is white, 1 black. The file extension EXT is simply to differentiate them from stand-alone programs. The module system is implemented using Fast Basic's ability to hold 10 programs in memory at once.

INVERT.EXT	*Invert the screen to give a negative.*
HALFH.EXT	*Compress the screen to half size horizontally.*
HALFV.EXT	*Compress the screen to half size vertically.*
HSWITCH.EXT	*Swaps the screen in a left <--> right fashion.*
VSWITCH.EXT	*Turns the picture upside down.*

Pressing F4 automatically picks which segment to use. It attempts to find the first free segment, and if there isn't one it uses the segment which contains the module that has been least used. F5 executes a module.

A list of the contents of the segments is displayed and a number should be pressed according to the one required. A parameter can then be entered in order to pass data to the module.

When control is returned to the main program an alert box appears asking you whether you want to keep the changes. If not, the screen is restored to its original appearance before executing the module.

```
  10 \ HALFH.EXT
  20 \ In Fast Basic
  30 \ Workspace required 1k
  40 PROChalfhorizontal
  50 END
  60 DEF PROChalfhorizontal
  70 LOCAL xoutput%,xsource%
  80 FOR xsource%=0 TO 639 STEP 2
  90 BLIT @smfdb&(0),xsource%,0,1,400
,@pmfdb&(0),xoutput%,0,3
 100 xoutput%=xoutput%+1
 110 NEXT
 120 CLG VAL(LEFT$(extparam$,1))
 130 BLIT @pmfdb&(0),0,0,320,400,@smf
db&(0),0,0,3
 140 ENDPROC
```

```
  10 \ HALFV.EXT
  20 \ In Fast Basic
  30 \ Workspace required 1k
  40 PROChalfvertical
  50 END
  60 DEF PROChalfvertical
  70 LOCAL youtput%,ysource%
  80 FOR ysource%=0 TO 399 STEP 2
  90 BLIT @smfdb&(0),0,ysource%,640,1
,@pmfdb&(0),0,youtput%,3
 100 youtput%=youtput%+1
 110 NEXT
 120 CLG VAL(LEFT$(extparam$,1))
 130 BLIT @pmfdb&(0),0,0,640,200,@smf
db&(0),0,0,3
 140 ENDPROC
```

```
  10 \ HSWITCH.EXT
  20 \ In Fast Basic
  30 \ Workspace required 1k
  40 PROCswitchhorizontal
  50 END
  60 DEF PROCswitchhorizontal
  70 LOCAL xsource%
  80 FOR xsource%=0 TO 639
  90 BLIT @smfdb&(0),xsource%,0,1,400
,@pmfdb&(0),639-xsource%,0,3
 100 NEXT
 110 BLIT @pmfdb&(0),0,0,640,400,@smf
db&(0),0,0,3
 120 ENDPROC
```

```
  10 \ VSWITCH.EXT
  20 \ In Fast Basic
  30 \ Workspace required 1k
  40 PROCswitchvertical
  50 END
  60 DEF PROCswitchvertical
  70 LOCAL ysource%
  80 FOR ysource%=0 TO 399
  90 BLIT @smfdb&(0),0,ysource%,640,1
,@pmfdb&(0),0,399-ysource%,3
 100 NEXT
 110 BLIT @pmfdb&(0),0,0,640,400,@smf
db&(0),0,0,3
 120 ENDPROC
```

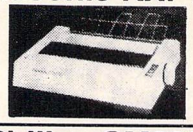
```
  10 \ INVERT.EXT
  20 \ In Fast Basic
  30 \ Workspace required 1k
  40 PROCinvert
  50 END
  60 DEF PROCinvert
  70 LOCAL ycoord%
  80 GRAFMODE 3
  90 FOR ycoord%=0 TO 399
 100 LINE 0,ycoord% TO 639,ycoord%
 110 NEXT
 120 GRAFMODE 1
 130 ENDPROC
```

```
  10 \ Dither
  20 \ by MDR Croning
  30 \ (c) Atari ST User 1989
  40 \ Written In Fast Basic
  50 \ Don't enter line numbers!
  60 \ Workspace required 77k
  80 ON ERROR GOTO errhandle
 100 ESCAPE OFF
 110 PROCinitscreen
 120 PROCinitdata
 130 PROCdrawmenu
 140 PROCassemble
 150 HIDEMOUSE
 170 main:
 180 REPEAT:PROCgetkey:UNTIL FALSE
 200 DEF PROCinitscreen
 210 CLOSEWIND OUTHANDLE:DELETEWIND O
UTHANDLE
 220 CLOSEWIND IMMHANDLE:DELETEWIND I
MMHANDLE
 230 FOR I%=1 TO 10
 240 CLOSEWIND SEGHANDLE(I%):DELETEWI
ND SEGHANDLE(I%)
 250 NEXT
 260 GRAFRECT 0,0,SCREENWIDTH,SCREENH
EIGHT:CLG 0
 270 ENDPROC
 290 DEF PROCdrawmenu
 300 FILLSTYLE 1,0:FILLCOL 0:RECT 0,0
,639,19
 310 GTXT 5,15,"F1 Load  F2 Save  F3
Print F4 Eload F5 Extrn"+STRING$(26,"
")+"F10 End"
 320 Y%=17:FOR X%=2 TO 290 STEP 72:PR
OCoutline(X%):NEXT
 330 PROCoutline(562):LINE 0,20 TO 63
9,20
 340 ENDPROC
 360 DEF PROCoutline(X%)
 370 FILLCOL 1:FILLSTYLE 0,0
 380 GRAFMODE 2
 390 BAR X%+1,Y%,X%+68,Y%-15
 400 GRAFMODE 1
 410 ENDPROC
 430 DEF PROCinitdata
 440 RESERVE neobuff%,32768
 450 neobuff%=(neobuff%+512) AND $FFF
F00
 460 P$=PATH$
 470 F$="":picture|=0:bright=0
 480 DIM int|(15),dith|(15),patt|(15)
,seguse&(10),smfdb&(9),pmfdb&(9),desk&
(11),sinit|(10)
 490 extparam$=""
 500 RESERVE processbuff%,32000
 510 RESERVE pattern%,16
 520 RESERVE buffer%,19
 530 buffer%=buffer%+18
 540 FOR I%=0 TO 15:READ patt|(I%):NE
XT
 550 FOR I%=0 TO 11:READ desk&(I%):NE
XT
 560 DATA 15,7,14,11,13,6,10,3,9,5,12
,2,8,1,4,0
 570 DATA -1,-1,-1,20,0,0,0,$11B7,0,2
1,640,379
 580 SETDESK @desk&(0),0:HIDEMOUSE
 590 DRAWOBJECT @desk&(0),0,99,0,0,64
0,400
 600 smfdb&(0)=LOGBASE>>16:smfdb&(1)=
LOGBASE AND $FFFF
 610 smfdb&(2)=640:smfdb&(3)=400:smfd
b&(4)=40:smfdb&(6)=1
```

Turn to Page 121 ▶

WeServe of Hampshire

Panasonic KXP1081



with ST cable and paper
£155 (£134.78 + VAT)
120cps Epson and IBM (multi NLQ)

	Exc VAT	Inc VAT
KXP1080 Fabric Ink Ribbon	3.74	4.30
KXP1080 Dust Cover	4.00	4.60

Philips CM8833
with ST cable
£225.00 (£195.65 + VAT)

Citizen 120D
with ST cable and paper
£135.00 (£117.39 + VAT)

Star LC10
with ST cable and paper
£189.00 (£164.35 + VAT)

Star LC10 Colour
with ST cable and paper
£239.00 (£207.83 + VAT)

LOW ST PRICES

	Inc. VAT
SM124 Mono Monitor	£110.00
520 STFM 1M Drive	£262.00
520 STFM Super Pack	£299.00
1040 STFM	£399.00
1040 STFM Super Pack	£439.00
1040 STFM Pro Pack	£419.00
1040 STFM + CM8833	£610.00

PRINTERS

Citizen 180E	£158.00
Star LC2410	£315.00
Epson LX800	£179.00
Panasonic KXT1124 (24pin)	£299.80
Canon PW1080A	£159.00
LC10 Sheet Feeder	£59.00

(Prices include cable, paper and VAT)

DISKETTES

(lifetime warranty)
(100% certified error free)

	Inc. VAT
10 3.5" 135tpi DS/DD	£8.50
50 3.5" 135tpi DS/DD	£40.00
100 3.5" 135tpi DS/DD	£78.00
40 Disk box hinge and lock	£5.95
80 Disk box hinge and lock	£8.95

Phone for our best price before placing your order
EDUCATIONAL AND GOVERNMENT ORDERS WELCOME
All products have a 12 month no quibble guarantee.
Prices subject to variation without prior notification.
We are closed Saturday afternoons.
Carriage 92p (80p + VAT) Securicor £6.90 (£6.00 + VAT)

WeServe
Larger items delivered by Securicor

ST/U Dept
128 West Street,
Portchester, Hants.
PO 16 9XE
Tel: 0705 325354

24 HOUR SHIPMENT
PROBABLY THE LOWEST PRICES IN THE UK!

IT'S A STEAL!
DISKETTES, DATA CARTRIDGES, RIBBONS, PAPER AND BOXES AT UNBEATABLE PRICES

Save £££'s on our top quality branded diskettes at 13 for less than the normal price of 10!



BUY TWO GET ONE FREE

Buy 2 boxes of diskettes from
Mydisk and we'll give you a third box ***free!***
The sky's the limit.
And if that's not enough each box contains extra disks - 13 or 27!!
Fully tested and guaranteed for life it all adds up to a package too good to miss.

*Price quoted is for 10 boxes of product No. 1001 excluding postage and packing and VAT

BRANDED:

PROD No.	DISKETTE PRICING DESCRIPTION	PER BOX OF 13 DISKS 1-4	5-9	10+
1001	5¼" 2D/48	5.99	5.79	5.49
1002	5¼" 2D96	6.99	6.49	5.99
1003	5¼" HE 1.2Mb	10.99	10.49	9.99
1004	3½" 2D135TP	14.99	14.49	13.99
		PER BOX OF 27 DISKS		
1001-1	5¼" 2D/48	11.99	11.49	10.99
1002-1	5¼" 2D96	12.99	12.49	11.99

LOOK NEW LOWER PRICES

ALL BRANDED PRODUCTS COVERED BY 2 FOR 1 REPLACEMENT GUARANTEE

WHITE BOX & BULK:

Description	Prices from WHITE BOX	BULK
5¼" DS/DD 48TPI	25p	22p
5¼" DS/QD 96TPI	28p	24p
5¼" High Energy 1.2Mb	55p	49p
3½" DS 135TPI	70p	65p
BULK DISKETTES, minimum order 1,000		

Check out our latest prices on Data Cartridges, Ribbons, Paper, and Boxes too!

All prices exclude carriage and VAT

☎0753 830466
or Fax 0753 830488
FOR INSTANT SERVICE!
Mydisk Limited FREEPOST (RG1475)
Windsor Berks SL4 1BS

Mydisk

>> MAILSOFT <<

Software Title	Atari ST	Amiga	IBM
1943	14.99	17.99	–
3D Pool	13.99	13.99	13.99
4 Soccer Sim	13.99	13.99	13.99
5 Star Hits–ST	15.99	–	–
After Burner	14.99	16.99	–
Alien Legion	15.99	15.99	–
Artura	15.99	–	–
Baal	13.99	13.99	–
Balance of Power (new)	19.99	19.99	18.75
Ballistixs	12.99	12.99	–
Barbarian II	12.99	12.99	–
Balman	12.99	15.99	–
Battle Chess	–	17.99	18.75
Battlehawks 1942	18.75	18.75	18.75
Black Tiger	14.99	17.99	–
Blasteroid	12.99	14.99	–
Bomb Jack	11.89	14.89	–
Buggy Boy	11.89	14.89	–
Butcher Hill	14.99	14.99	–
California Games	14.99	14.99	18.75
Captain Fizz	11.99	11.99	–
Carrier Command	14.89	14.89	–
Chessmaster 2000	17.50	17.50	18.75
Chuck Yeagers	–	17.50	18.75
Chuckie Egg	13.99	13.99	–
Cosmic Pirate	13.99	13.99	14.99
Crazy Cars II	13.99	15.99	16.99
Custodian	13.99	13.99	14.99
Daley Double Racing	–	19.99	–
Dandy	12.99	–	–
De Luxe Scrabble	12.99	12.99	18.75
Defender of Crown	19.99	19.99	19.99
Dinaris	14.99	–	–
Double Dragon	11.89	14.89	18.75
Dragon Ninja	13.99	13.99	–
Dragon Scape	11.99	11.99	–
Dragons Lair	–	34.99	–
Dream Zone	14.99	14.99	14.99
Dungeon Master	15.99	15.99	–
D. Thorns Olympics	11.89	14.89	–
Eliminator	11.89	11.89	–
Elite	14.89	14.89	18.75
Emanuelle	13.99	13.99	13.99
Empire	17.99	17.99	–
F16 Combat Pilot	15.99	15.99	16.99
F16 Falcon	15.99	20.99	24.99
F19 Stealth Fighter	–	–	24.99
Final Command	17.50	17.50	–
Flight Sim	26.99	26.99	39.99
Flight Sim 3	–	–	39.99
Flying Shark	12.99	–	–
Folt-Gremlin	22.90	22.90	–
Football Director II	11.89	11.89	13.99
Football Manager 2	11.89	11.89	13.99
Frontier	15.99	15.99	–
Fusion	17.50	17.50	–
Gauntlet II	14.99	17.50	–
Ghost & Goblins	11.89	14.89	–
Gretzky Hockey	–	24.99	–
Guerilla War	11.89	14.89	–
Gunship	15.99	–	26.99
Hell Bent	14.99	14.99	–
Heroes of Lance	18.99	18.99	18.75
Hostages	14.89	14.89	–
Inter Karate +	13.99	17.50	–
Interceptor	–	17.50	–
International Soccer	12.99	12.99	–
Iron Lord	16.99	16.99	–
I.S.S.	14.99	18.75	–
Jet	29.99	29.99	–
Kennedy Approach	16.99	–	–
Kenny Dalglish	12.99	12.99	–
Kristal	22.00	22.00	–
Lancelot	11.89	11.89	14.99
Last Duel	14.99	18.75	–
Leaderboard Coll	15.99	18.99	–
Live & Let Die	11.89	11.89	–
Lombard RAC Rally	14.89	14.89	18.75
Lord Rising Sun	–	19.99	–
Micropro Soccer	17.50	17.50	17.50
Mike Reads Quiz	11.89	14.89	–
Motor Massacre	15.99	15.99	–
Navcom 6	16.99	16.99	–
Night Hunter	14.99	18.75	–
Night Raider	15.99	18.99	15.99
Operation Wolf	11.89	14.89	15.99
Orbitor	15.99	–	–
Outrun	14.99	14.99	–
Outrun Europa	11.99	11.99	–
Overlord	11.89	–	–
Pacland	11.89	11.89	–
Pac-Mania	11.89	11.89	–
Paper Boy	11.89	15.99	–
Peter Beardsley	11.89	11.89	–
Pool of Radiance	16.99	18.99	–
Populous	16.99	16.99	–
Power Drome	17.50	17.50	–
Prision	12.99	12.99	–
Prospector	–	16.99	–
Puffs Saga	17.50	17.50	–
Quantium Paint	18.75	–	–
Question of Sport	12.99	12.99	–
Rambo III	12.99	15.99	15.99
Reel of Fishing	–	24.99	–
Ringside	15.99	15.99	–
Robocop	11.89	14.89	–
Rocket Ranger	14.89	19.99	–
Roger Rabbit	–	18.75	18.75
Running Man	13.99	13.99	–
R-Type	14.99	15.99	18.75
Sargon 3-Chess	16.99	16.99	–
Savage	13.99	13.99	13.99
Superman	16.99	16.99	16.99
Scenery Disk Europe	13.99	–	18.75
Scruples	12.99	–	18.75
Shoot em up Kit	15.99	15.99	–
Skate Ball	15.99	17.50	–
Space Ball	15.99	18.99	–
Speed Ball	14.89	14.89	18.75
Spitting Images	11.89	11.89	–
Starglider 1 or 2	14.89	14.89	18.75
Stargoose	12.99	–	–
STOS	23.99	–	–
Street Fighter	14.99	18.99	–
Super Hang On	13.99	18.75	–
Super Ice Hockey	15.99	15.99	18.75
Sword of Sodan	–	22.00	–
S. Harrier 1 or 2	12.99	14.89	–
Techno Cop	14.99	18.75	–
Test Drive	17.50	17.50	18.75
The Pawn	14.89	14.89	18.75
Three Stooges	15.99	19.99	24.99
Thunder Blade	14.99	18.99	–
Thunderbirds	13.99	13.99	–
Time Stood Still	12.99	–	–
Time & Magik	11.89	11.89	14.99
Tracksuit Manager	13.99	13.99	–
Triad-Compilation	19.99	19.99	–
Trivial Pursuit New	14.89	14.89	18.75
TV Sports	–	21.00	–
Ultima 3 or 4	15.99	15.99	18.75
Ultimate Golf	14.99	14.99	–
UMS	14.89	14.89	18.75
UMS – Dsk 1 or 2	8.99	8.99	9.99
Verminator	14.89	14.89	–
Vindicators	12.99	12.99	–
Virus	11.89	11.89	–
War Middle Earth	15.99	15.99	–
Weird Dreams	15.99	15.99	15.99
WEC Le Mans	11.89	14.89	–
Zac Mackaron	–	19.99	–

*Accessories/Joysticks******			
IBM J/Stick+Card	–	35.99	–
Multiface ST	–	44.99	–
Head Cleaner 3.5"	–	5.99	–
Workbench 1.3	–	14.99	–
A501 Ram Expansion	–	139.99	–
Konix Navigator	–	13.99	–
Amiga Modulator	–	24.99	–
Comp Pro–Clear	–	12.99	–
Comp Pro–Extra	–	13.99	–
4-Way Adaptor	–	5.99	–
Quickshot 2 Turbo	–	9.99	–
Konixs Joystick	–	9.99	–
Konixs Extension	–	5.99	–

SONY 3.5" DS DD
135TPI x 10
£12.99
UNBRANDED 3.5" x 10
£8.99

P&P included in the U.K. on Software, Accessories add £1 each item. EEC add £1.00 P&P. Elsewhere in World add £2.00 each. Chq P.O payable to: Mailsoft (STU) P.O. Box 589 London N15 6JJ
Please specify machine type in your order and also a second choice in case software is out of stock or not released yet. New releases will be sent out on day of release.

***** PRICE MATCHING *****

If you see a software item advertised cheaper by another company, send us the lower amount and we will match the price, this does not apply to other companies special offers, or deduct 25% off the R.R.P. and send to us. STU

ARE YOU MISSING OUT?

You've got lots of questions about your computer but don't know who to ask! We do! You're not sure which software is best for your application! We do! You'd like to keep up to date with new releases and be sure they are a good buy, but who's going to tell you? We will! You would love to get to know other Atari enthusiasts, but you don't know how! We do! You want to get some of that 'Public Domain' software you've heard about, but where from? We know! You don't want to feel like you're the only Atari owner in the world, but where can you turn too! Well, we can help! Great, but who are you??

We are the largest (and oldest) Atari Computer Owners Club in the U.K. For just £5.00 per year you get help, assistance, hints, tips, friends, pen pals, access to PD software, up to date information, games, utilities, hardware projects, software reviews, programming tutorials, and a glossy club magazine every quarter.

A club magazine as well!! One of those photocopied things that is unreadable, eh! Well no, it's professionally produced, just like this magazine you're reading. It's called MONITOR, you may have heard of it? Yes, friends of mine have read it and say it's great! How do I join the club and get my copy of MONITOR? Easy just send a cheque or postal order for £5.00 to the address below requesting a four issue subscription. Overseas membership is £8.00 (surface) or £12.00 (Airmail).

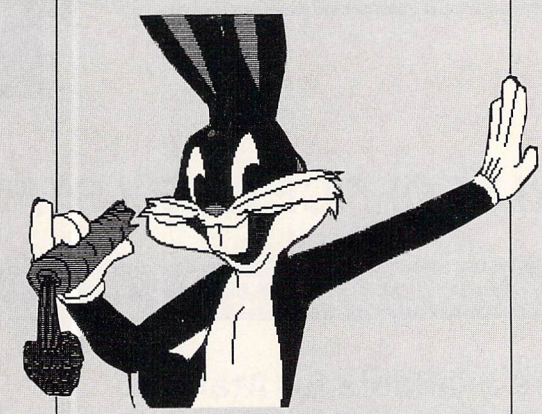
You won't be disappointed!!

The U.K. Atari Computer Owners Club
P.O. Box 3, Rayleigh, Essex, SS6 8LR

Independent User Group

◀ From Page 119

```
  620 pmfdb&(0)=processbuff%>>16:pmfdb
&(1)=processbuff% AND $FFFF
  630 pmfdb&(2)=640:pmfdb&(3)=400:pmfd
b&(4)=40:pmfdb&(6)=1
  640 ENDPROC
  660 DEF PROCassemble
  670 LOCAL pass%
  680 RESERVE code%,$500
  690 FOR pass%=1 TO 2
  700 [
  710 OPT pass%,"L-W-"
  720 ORG code%
  730 convert
  740 CLR.L D6
  750 CLR.L D7
  760 MOVE.W #199,D6
  770 MOVE.L @neobuff%,A0
  780 MOVE.L @buffer%,A6
  790 LEA PHYSBASE,A1
  800 MOVE.L A1,A2
  810 ADDA.L #80,A2
  820 MOVE.L @pattern%,A3
  830 nline
  840 MOVE.L #19,D7
  850 nrast
  860 JSR fetchnumbers
  870 JSR draw16
  880 DBF D7,nrast
  890 MOVE.L A2,A1
  900 ADDA.L #80,A2
  910 DBF D6,nline
  920 RTS
  930 fetchnumbers
  940 MOVE.W (A0)+,D0
  950 MOVE.W (A0)+,D1
  960 MOVE.W (A0)+,D2
  970 MOVE.W (A0)+,D3
  980 CLR.L D4
  990 nextpixel
 1000 CLR.B D5
 1010 BTST D4,D0
 1020 BEQ nobit1
 1030 ADDQ.B #1,D5
 1040 nobit1
 1050 BTST D4,D1
 1060 BEQ nobit2
 1070 ADDQ.B #2,D5
 1080 nobit2
 1090 BTST D4,D2
 1100 BEQ nobit3
 1110 ADDQ.B #4,D5
 1120 nobit3
 1130 BTST D4,D3
 1140 BEQ nobit4
 1150 ADDQ.B #8,D5
 1160 nobit4
 1170 MOVE.B D5,-(A6)
 1180 ADDQ.B #1,D4
 1190 CMP.B #16,D4
 1200 BMI nextpixel
 1210 RTS
 1220 draw16
 1230 CLR.L D2
 1240 CLR.L D4
 1250 CLR.L D5
 1260 MOVE.L #31,D0
 1270 MOVE.L #15,D1
 1280 nxtsqr
 1290 MOVE.B (A6)+,D2
 1300 MOVE.B 0(A3,D2.W),D3
 1310 BTST #3,D3
 1320 BEQ noul
 1330 BSET D0,D4
 1340 noul
 1350 BTST #1,D3
 1360 BEQ noll
 1370 BSET D0,D5
 1380 noll
 1390 SUBQ.B #1,D0
 1400 BTST #2,D3
 1410 BEQ nour
 1420 BSET D0,D4
 1430 nour
 1440 BTST #0,D3
 1450 BEQ nolr
 1460 BSET D0,D5
 1470 nolr
 1480 SUBQ.B #1,D0
 1490 DBF D1,nxtsqr
 1500 MOVE.L D4,(A1)+
 1510 MOVE.L D5,(A2)+
 1520 RTS
 1530 ]
 1540 NEXT pass%
 1550 ENDPROC
 1570 DEF PROCgetkey
 1580 K%=INP(2)>>8
 1590 SWITCH K%
 1600 CASE $3B:PROCload
 1610 CASE $3C:PROCsave
 1620 CASE $3D:PROCprint
 1630 CASE $3E:PROCexternalload
 1640 CASE $3F:PROCexternal
 1650 CASE $44:PROCend
 1660 CASE $48:PROCbrightness(1)
 1670 CASE $50:PROCbrightness(-1)
```



```
 1680 ENDSWITCH
 1690 ENDPROC
 1710 DEF PROCload
 1720 A%=0
 1730 LOCAL flag!,cw&,pathbuff$
 1740 IF picture!=1 THEN
 1750 SHOWMOUSE
 1760 A%=ALERT("[2][Loading another pi
c will!kill the present one, ok ?][Yes
!No]",2)
 1770 HIDEMOUSE
 1780 ENDIF
 1790 IF A%=2 THEN ENDPROC
 1800 pathbuff$=PATH$
 1810 P$=P$+"*.NEO"
 1820 SHOWMOUSE:FSELECT P$,F$,flag!:HI
DEMOUSE
 1830 WHILE RIGHT$(P$,1)<>"\":P$=LEFT$
(P$,LEN(P$)-1):WEND
 1840 IF flag!=0 OR F$="" THEN PROCfix
screen:PATH$=pathbuff$:ENDPROC
 1850 CLG 0
 1860 PATH$=P$:BLOAD F$,neobuff%-128
 1870 FOR I%=0 TO 15
 1880 cw&=(neobuff%-124+I%*2)&
 1890 int!(I%)=(cw&>>8 AND 7)+(cw&>>4
AND 7)+(cw& AND 7)
 1900 NEXT
 1910 PROCsort:CALL convert
 1920 GRAB 0,0,640,400
 1930 PROCdrawmenu
 1940 picture!=1:bright=0
 1950 K%=0:PATH$=pathbuff$
 1960 ENDPROC
 1980 DEF PROCfixscreen
 1990 IF picture!=1 THEN PUT 0,0,3 ELS
E DRAWOBJECT @desk&(0),0,99,0,0,640,40
0
 2000 PROCdrawmenu
 2010 ENDPROC
 2030 DEF PROCsave
 2040 LOCAL flag!,pathbuff$
 2050 IF picture!=0 THEN PROCnopicture
:ENDPROC
 2060 pathbuff$=PATH$
 2070 P$=P$+"*.IMG"
 2080 SHOWMOUSE:FSELECT P$,F$,flag!:HI
DEMOUSE
 2090 WHILE RIGHT$(P$,1)<>"\":P$=LEFT$
(P$,LEN(P$)-1):WEND
 2100 IF flag!=0 OR F$="" THEN PROCfix
screen:PATH$=pathbuff$:ENDPROC
 2110 PUT 0,0,3
 2120 PATH$=P$
 2130 IF DISKFREE(-1)<34000 THEN PROCd
iskfull ELSE BSAVE F$,PHYSBASE,32000
 2140 PROCdrawmenu
 2150 K%=0:PATH$=pathbuff$
 2160 ENDPROC
 2180 DEF PROCdiskfull
 2190 A%=ALERT("[3][Not enough space o
n disk][Ok]",1)
 2200 ENDPROC
 2220 DEF PROCprint
 2230 IF picture!=0 THEN PROCnopicture
:ENDPROC
 2240 PUT 0,0,3
 2250 OUTDUMP
 2260 PROCdrawmenu
 2270 ENDPROC
 2290 DEF PROCnopicture
 2300 SHOWMOUSE
 2310 A!=ALERT("[1][No picture in!memo
ry][Ok]",1)
 2320 HIDEMOUSE
 2330 ENDPROC
 2350 DEF PROCexternalload
 2360 LOCAL flag!,pathbuff$,file$
 2370 pathbuff$=PATH$
 2380 P$=P$+"*.EXT"
 2390 SHOWMOUSE:FSELECT P$,file$,flag!
 2400 HIDEMOUSE:PROCfixscreen
 2410 WHILE RIGHT$(P$,1)<>"\":P$=LEFT$
(P$,LEN(P$)-1):WEND
 2420 IF flag!=0 OR file$="" THEN PROC
fixscreen:PATH$=pathbuff$:ENDPROC
 2430 I%=FNnextseg
 2440 PATH$=P$:INSTALL file$,I%
 2450 HIDEMOUSE:K%=0:PATH$=pathbuff$
 2460 seguse&(I%)=1:sinit!(I%)=0
 2470 ENDPROC
 2490 DEF FNnextseg
 2500 LOCAL S%,val&
 2510 val&=32000
 2520 FOR I%=1 TO 10
 2530 IF (seguse&(I%)<val&) AND (I%<>S
EGMENT) THEN S%=I%:val&=seguse&(I%)
 2540 NEXT
 2550 =S%
```

Turn to Page 123 ▶

CONDOR COMPUTER LTD

31 Palace St, London SW1E 5HW. Tel: (01) 828 9755
Fax: (01) 630 7343

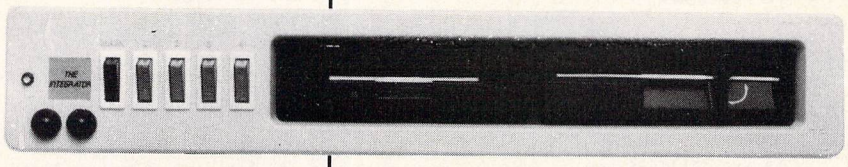
CONDOR HARD DISK SYSTEM

THE INTEGRATER

NEW

A complete hard disk system packaged in a Cabinet matching your Atari 520ST, 1040ST or Mega. The Basic 'INTEGRATER' included.

- 20 MEGA BYTE HARD DISK
- 3.5" FLOPPY DRIVE
- REAL TIME CLOCK
- MONITOR A/B SWITCH
- MULTISYNCH MONITOR CONTROLLER
- AC POWER STATION WITH 4 SWITCH SOCKETS
- SURGE PROTECTOR
- COOLING FAN
- SOFTWARE AMP CABLES INCLUDED
- FLOPPY DISK SWITCH



PRICE £649.00 + VAT

TROIKA

THE ULTIMATE ATARI ST OFFICE WORK STATION

RUN ALL SOFTWARE DIRECTLY FOR ATARI ST MS-DOS MACINTOSH+

Now run the finest software available for Atari ST, MS-DOS and Macintosh+, right out of the box on one fully integrated system.

INDIVIDUAL COMPONENTS RRP	COMPLETE SYSTEM INCLUDED
£ 500.00	•ATARI 1040 ST
£ 800.00	•XT PROCESSOR BOARD WITH 512K RAM
£1500.00	•MACINTOSH+ EMULATOR
£ 600.00	•30 MEG DISK (SCSI)
£ 100.00	•2ND 3.5" DRIVE
£ 120.00	•3RD 5.25" DRIVE
£ 500.00	•MULTISYNCH MONITOR
£ 40.00	•MONITOR A/B SWITCH
£ 50.00	•FLOPPY SWITCH
£ 100.00	•AC POWER STATION
£ 40.00	•REAL TIME CLOCK
£4350.00	



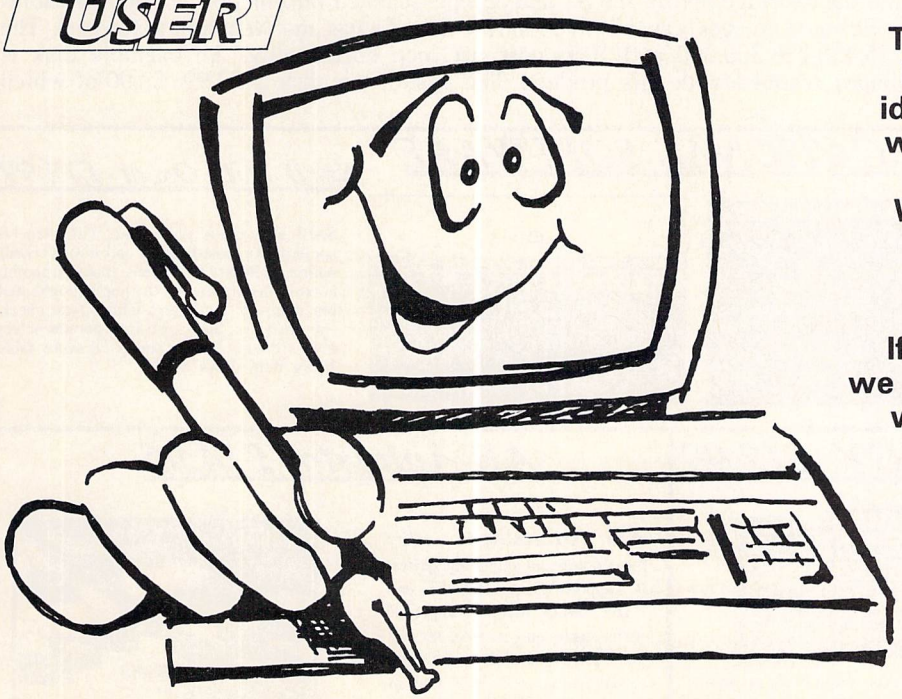
£2499.00

◀ From Page 121

```
2570 DEF PROCexternal
2580 LOCAL num$,name$
2590 IF picture!=0 THEN PROCnopicture
:ENDPROC
2600 BAR 200,100,440,274
2610 BAR 203,103,437,271
2620 TXTRECT 206,112,232,170
2630 TXTSIZE 13
2640 PRINT TAB(6,0)"External Function
s"
2650 PRINT:TXTSIZE 6
2660 FOR I%=1 TO 10
2670 IF SEGFREE(I%)=TRUE THEN name$="
Empty" ELSE name$=SEGNAME$(I%)
2680 IF I%<>SEGMENT THEN PRINT TAB(3,
I%+2);I%-1;". ";name$
2690 NEXT
2700 PRINT TAB(1,15)"Press A (abort)
or a number"
2710 getnumber:
2720 A$=GET$
2730 IF A$="A" OR A$="a" THEN PROCfix
screen:ENDPROC
2740 IF (VAL(A$)=0) OR (SEGFREE(VAL(A
$)+1)=TRUE) OR (VAL(A$)+1=SEGMENT) THE
N BEEP:GOTO getnumber
2750 TXTSIZE 4:INPUT TAB(2,23)"Param:
 "extparam$
2760 PUT 0,0,3
2770 seguse&(VAL(A$)+1)=seguse&(VAL(A
$)+1)+1
2780 PERFORM VAL(A$)+1
2790 SHOWMOUSE
2800 A%=ALERT("[2][Keep changes ?][Ye
s|No]",2)
2810 HIDEMOUSE
2820 IF A%=2 THEN PROCfixscreen:ENDPR
OC
2830 GRAB 0,0,640,400:PROCdrawmenu
2840 ENDPROC
2860 DEF PROCend
2870 SHOWMOUSE
2880 A%=ALERT("[3][Are you sure you|w
ish to leave|the program ?][Yes|No]",2
)
2890 HIDEMOUSE
2900 IF A%=2 THEN ENDPROC
2910 FOR I%=1 TO 10
2920 IF (I%<>SEGMENT) AND (SEGFREE(I%
)=FALSE) THEN TRASH I%
2930 NEXT
2940 END
2960 DEF PROCbrightness(I)
2970 IF picture!=0 THEN PROCnopicture
:ENDPROC
2980 bright=bright+I
2990 FOR I%=0 TO 15
3000 A%=FNcheckbounds(dith!(I%)+brigh
t)
3010 {pattern%+I%}!=patt!(dith!(A%))
3020 NEXT
3030 CLG 0:CALL convert
3040 GRAB 0,0,640,400:PROCdrawmenu
3050 ENDPROC
3070 DEF FNcheckbounds(chk)
3080 IF chk<0 THEN chk=0
3090 IF chk>15 THEN chk=15
3100 =chk
3120 DEF PROCsort
3130 FOR I%=0 TO 15
3140 val!=50
3150 FOR II%=0 TO 15
3160 IF int!(II%)<val! THEN number!=I
I%:val!=int!(II%)
3170 NEXT II%
3180 int!(number!)=50:dith!(number!)=
I%
3190 NEXT I%
3200 FOR I%=0 TO 15
3210 {pattern%+I%}!=patt!(dith!(I%))
3220 NEXT
3230 ENDPROC
3250 errhandle:
3260 A%=0
3270 IF ERR=93 AND K%=0 THEN PROCerri
nstall:GOTO main
3280 IF ERR>73 THEN
3290 A$="[3][BIOS/GEMDOS error "+STR$
(ERR)+" ][Ok]"
3300 A%=ALERT(A$,1)
3310 ENDIF
3320 IF ERR=54 THEN A%=ALERT("[3][Seg
ment load|error][Ok]",1)
3330 IF A%=0 THEN LASTERROR
3340 PROCfixscreen
3350 PROCerrinstall
3360 GOTO main
3380 DEF PROCerrinstall
3390 ON ERROR GOTO errhandle
3400 ENDPROC
```


ATARI ST USER

WRITERS WANTED



Atari ST User is growing in size and stature with each passing month. Consequently more freelance writers are urgently needed to review software and hardware products.

The people we are seeking must have the ability to express their ideas clearly and fluently in good written English, and have a keen interest in the Atari ST micro.

We also welcome submission of well written feature articles on various topics of interest to readers of our magazine.

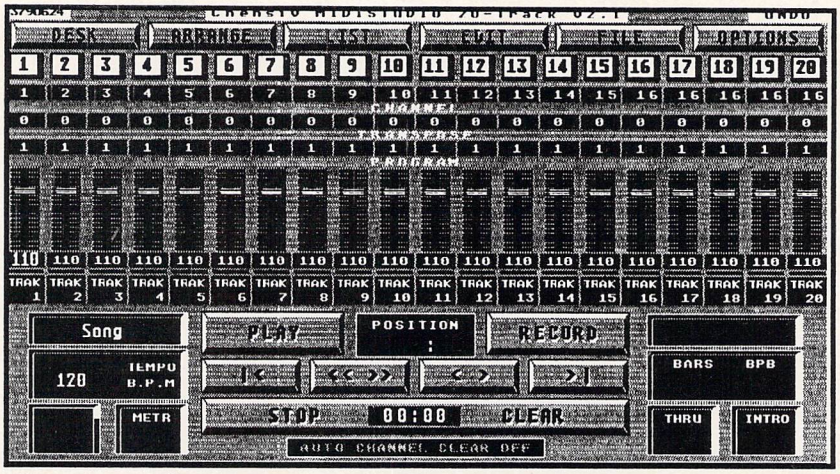
If you feel you have the qualities we require, send a full CV together with an example of your written material to:

The Editor,
Atari ST User,
Database Publications,
Europa House,
Adlington Park, Adlington,
Macclesfield, SK10 4NP.

LADBROKE COMPUTING INTERNATIONAL

Midistudio £99.99

Midistudio is a 20 track Midi Music Studio. This Midi software package is a realistically priced introduction to Midi music processing and includes the following features.
20 tracks each assignable one of 16 midi channels, each track can be transposed up or down 2 octaves, the main screen features full tape deck controls with individual volume sliders for each track, note editing facilities including editing of pitch, octave, duration and velocity, plus full midi controller editing(pitch bend, mod wheel. etc.). Full control over phrases is offered through Quantizing, transposing, and phrase arrangement software pages. The arrangement facilities allow moving and copying phrases on any of the 20 tracks. The package is easy to use and is a strong competitor with Pro 24.



"Out performs Pro-24 v2.1 in almost every way"
Atari ST User Jan 89



Image Scanner

SCAN AT UP TO 1000 DPI

ONLY £89.99

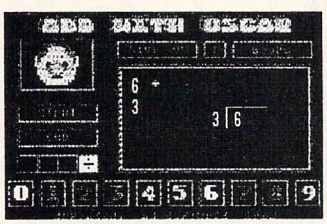


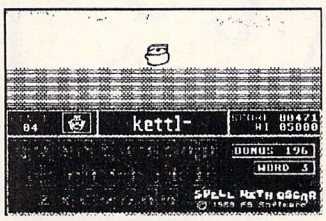
The Image Scanner is a peripheral for the ST which can provide high quality graphics digitising for a tenth of the cost of other digitisers. This simple unit plugs into the cartridge port of the ST and accepts scanned information via optical cables which fix easily to the head of any printer. Scanned images can be saved in raw data, Degas and Neochrome formats. The Software supports scanning resolutions of 75,150,216,300,360 and 1000 dots per inch horizontally. An example disk is available which contains a slide show of images scanned with this product. The cost of this disk is £3.99, £2.00 of which is redeemable on purchase of a scanner.

EDUCATIONAL SOFTWARE

Add With Oscar £12.99

Add with Oscar is a fully mouse controlled educational game with full colour screens and sound for teaching addition, subtraction, multiplication and division to children. This program has selectable difficulty levels and a Hi-Score table.





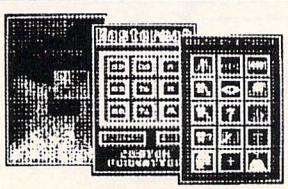
Spell With Oscar £12.99

Spell with Oscar is a game which teaches spelling, keyboard skills and motor coordination. Pictures of objects move smoothly accross the screen and the pupil should spell the name of the object while Oscar checks for mistakes. Spell also incorporates selectable dificulty levels and a Hi-score table.
Extra data disks £5.99

TRILOGY £12.99

Quick List Plus is a utility that compiles a directory of your disks. Sort on disk or name, reads any drive, including hard drive. Printer output for hard copy of databases.

Mastermat is a formatter that optimises disk space, allows non standard sector and track formats/ fast read format.



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

AB Animator £14.95

AB Animator is a utility for creating and animating sprites. It supports GFA, HISOFT and FAST basics and is compatible with degas and neochrome picture files.Use the full icon control to animate up to 20 big frames of 56 pixels wide by 33 pixels high.



LADBROKE COMPUTING INTERNATIONAL

" The Country's Leading Atari Specialist "

If you like goods to work on receipt and don't fancy having to return them in order to obtain working models then LOOK NO FURTHER

This company has given years of full support to Atari users from their retail premises at 33 Ormskirk Road Preston. Now from their Mail Order premises they can offer this " second to none " service to users countrywide. All Software/Hardware is ex-stock and fully tested prior to purchase to ensure that customers receive total satisfaction, returned goods are now a thing of the past. All hardware is supported by our on site engineers so that quick turn around on all repairs is guaranteed. There are no hidden extras WYSIWYG, ALL PRICES INCLUDE VAT AND DELIVERY (next day delivery +£3), are correct at time of going to press and are subject to change without prior notice. Contact for latest prices.
BEWARE OF CHEAP EUROPEAN IMPORTS. Some retailers are importing hardware which is designed to run on 220v. These products are not for use in the UK. All these cheap imports do not have any dealer warranty OURS DO.

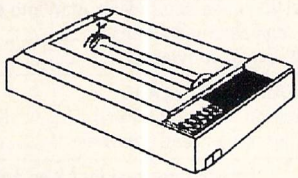
NEW LOW PRICES NEW LOW PRICES NEW LOW PRICES NEW LOW PRICES

Our prices may have dropped but our standards certainly haven't. Every customer will receive the same excellent services that have made us the country's leading retailer.

Best Sellers

Star LC10 Colour	£249.99
NEC 2200	£359.99
Star LC24/10	£339.99
Atari SLM804 Laser	£1299
Star LC10	£199.99
Citizen 120 D	£149.99
Epson LQ500	£359.99
Gachen D/w	£149.99
Others	Ring

Printers

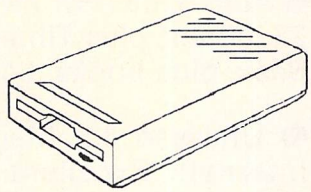


All printers come complete with para' cable.

Quality 1 Mg Drives

Why pay pennies less for a vastly inferior Second Drive when you can have a **Superior quality** 1 Mg second drive including **internal** power supply unit so these drives do not drain power from the ST.

Cumana 1 Mg Drive	£89.99
Triangle 1 Mg Drive	£104.99
Others	Ring

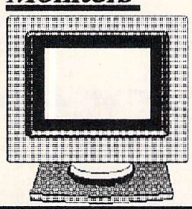


Best Sellers

SM124 Mono monitor	£139
SC1224 colour Monitor	£299
Philips 8833 colour monitor	£249
Phillips 8852 colour monitor	£275

Deduct £10 if bought with a computer.
Various TV. Example, Phillips 14" remote control teletext TV. £210

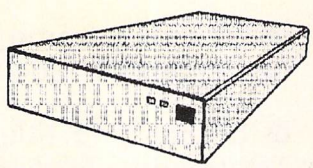
Monitors



Hard Drives

Atari	30mg	£499
Atari	60mg	£675
Supra	30mg	£499
Triangle	40mg	£599

Phone for others.



1 Mg/2.5Mg UPGRADE BOARD

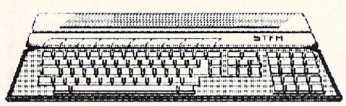
Allows 1 Megabyte or 2.5 Megabyte memory upgrade by simply fitting appropriate chips in to sockets provided. Phone now for further information.

Upgrades Ex-Stock

1 Mg STM (fitted)	£110
1 Mg STFM (kit)	£90
STFM Upgrade fitting service.	£20



Please check machine configuration before ordering. All upgrade fitting prices quoted for machines not previously tampered with.



1040 PACKS

Includes 1040 STFM, (with Modulator), Plus a choice of software packs. £449

520 STFM Explorer Pack

520 STFM £279.99
Atari PC's phone

COMPUTERS

520 STFM Super Pack

520 STFM Joystick, £450 Worth of top quality software. £369.99

Mega 2 / 4 Desktop Publishing Packs

Phone us last for best prices

Entry Level Commodore PC1 £299.99

Service centre / Repairs

Our Atari trained engineers can repair all hardware in minimum time at competetive rates.
We can arrange pickup for promt delivery to ourselves for £10. All repairs fully guaranteed.

Peripherals

Pro Draw Tablet		phone
CRP Tablets	A4	£414
	A3	£818
Hawk Scanner		£1250

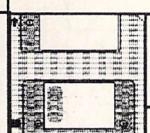
Dust Covers

Computers	£3.99
Monitors	£4.99
Disk Drives	£2.99
Hard Disks	£4.99
Printers	£7.99

Ladbroke Computing Software Club

Up to 60% discounts on software+free monthly disk. £15

With other clubs the price of the membership is only recovered if the customer purchases many items but with the Ladbroke Computing Software Club we are offering a free monthly disk based magazine which contains Reviews, hints, tips, games, utilities everything you could possibly be interested in. As a member you will be guaranteed a 15% discount on all software. The club, although primarily software, offers special reduced prices on selected hardware to club members. Phone, or Write to the address below for an application form.



Quality Disks

All our Disks are top quality, not cheap imports. They are such good value because we buy bulk and pass the saving on to the customer. We also offer an unconditional lifetime media guarantee.

Quantity	*3.5" D/S Q/D*	*5.25" D/S Q/D 96 TPI*
10	*....£12*	*....£6.50*
10+box	*....£13*	*....£8.00*
100	*....£110*	*....£60*

Ladbroke Computing International,
33 Ormskirk Road, Preston, Lancs.,
PR1 2QP. Open Monday-Saturday
10 am to 5.30 pm. Dealer enquiries welcome.

ORDER BY PHONE
Call us on numbers below and pay with your credit card.

ORDER BY POST
Make cheques PO's payable to Ladbroke Computing Internation al.. Send SAE for full catalogue.

(0772) 203166 or 21474

Ladbroke Computing International is a trading name of Walton Marketing Limited

ATARI ST USER Classifieds

Use this space to sell your unwanted Atari products to our readers. They're all looking for a bargain!

● Atari 520STFM three months old, SM1040 monitor, business software. £350 ono. Tel: Ian 0273 205362.

● Wanted! good ST Artist to draw pictures, in Kent area. Phone (0634) 362579 9am to 5pm.

● Atari 520STFM 1Mb six months old, plus 22 games, plus Timeworks 1st Word+ and Basic plus books. 0473 216723.

● Uncased 1/2 Meg ST drive (Replaced internal). Excellent condition ideal 2nd drive with some DIY! £30, Mark 0483 31543.

● ST freeze frame backup cartridge, plus discs. Tel: 041-954 2081, £25.

● Sprites and title screens created free! Telephone: Dave on 0764 4537 between 4pm and 9pm.

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.*

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.

ST5

Flexidump

now includes MULTIPLE Across The Page Labelling

Superb quality printer dumps for graphics, spreadsheets, text including Degas and NEOchrome formats. Vary dump size from 1mm square up to 10 metres in length, choose from a variety of densities and passes (up to triple pass quad density). Other features include text insertion, upright or sideways dump, invert, frame, spool, auto calculates on 1:1 aspect ratio or deselect this and stretch the dump. Any part of a screen can be selected, graphics/editing, auto greyscaling for colour, on screen help. All this plus Label making. From computer art to production labels Flexidump is an unrivalled software package.

MONO VERSION for use with Epson compatible dot matrix printers	£21.00	£24.15c
COLOUR VERSION for use with Star LC10 colour printer or Epson FX compatibles	£31.00	£35.65c
UPGRADE MONO TO COLOUR VERSION	£10.00	£11.50c
Atari Rom Cartridge takes two 27258 (32k) or Two 27512 (64k) eproms with case	£9.00	£10.35c
Single 3.5" 1Mb Disc Drive + PSU	£90.00	£103.50a
Single 5.25" 1Mb Disc Drive + PSU	£100.00	£115.00a
Special offer PC Ditto + 5.25" Disc Drive with PSU. All you need to turn your Atari into a PC clone, complete with leads.	£150.00	£172.50a
PC DITTO software	£56.00	£64.40c
READY MADE LEADS		
Atari to Scart (not Sony)	£12.00	£13.60c
Atari printer lead centronic	£12.00	£13.60c

For your convenience first price EX VAT second price INC VAT.
How to Order. Enclose your cheques/PO made payable to Care Electronics or use ACCESS/VISA
Please add carriage a = £10.35, b = £3.45, c = £1.15, d = £2.30

CARE ELECTRONICS, 800 ST ALBANS RD, GARSTON, WATFORD, HERTS. WD2 6NL. TEL 0923 672102
We will be closed for the month of August, 1989

EALING COMPUTER CENTRE

No.1 Place for ATARI ST Computers in West London

This Months Special Promotions

20MB Hard Drive
£340

System 2000**
HD for Atari ST, also 40MB £449, 70MB £799, only limited quantities at this price

Hardware

All ST with Starter Pack worth up to £200: 1st Word, Spell-it, ST Basic sourcebook (rev. B), mouse mat and 30% discount voucher for 'Star' printers (off R.R.P. Price).

New Atari 520 STFM Super Pack (£450 of software)	£359
Atari 1040 STFM (mod. TV)	£399
Atari 1040 STFM + Business pack (VIP, Microsoft Write, Superbase Personal)	£449
New Atari 520 STFM (1Mb Drive)	£279
Atari SM124 Monitor	£100
Star LC10 colour (UK ver.)	£245
Star LC10 Printer (UK ver.)	£199
Star NB24-10 Printer (UK ver.)	£459
Star LC24 10 Printer (UK ver.)	£339
Philips 8833 colour monitor inc. cable	£249
Panasonic 1081 Printer	£159
Panasonic KXB11 24pin	£339
Atari SC1224 colour monitor	£279
Atari Mouse ST/PC	£25
Cumana 1MB external	£89

Software and Disks

TIMEWORKS (30% off RRP)	
Data Manager	£29
Swift Calc	£29
Data Manager Prof.	£49
Desktop Publisher	£69
Word Writer	£35
Partner ST	£35
ANTIC (up to 30% off RRP)	
Spectrum 512	£42
Cyber Studio	£56
Cyber Control	£42
Cyber Paint	£49
Cyber Sculpt	£56
Cartoon Designs	£25
Video Titling Designs	£25
3D Developers disk	£25
GST	
1st Word Plus vers. 3 (new)	£59
All above software in stock	
DISKS	
3.5" DS DD 10pcs KODAK	£16
3.5" DSDD BULK 25pcs	£24

19 Queens Parade, Ealing, London W5 3HU. Tel 01-991 0928
All prices include VAT and delivery UK • For next day courier add £7 • Above prices for mail order, shop prices may vary • All offers subject to availability. E&OE • We are the corner of Hanger Lane (North Circular) & Queens Drive • Easy Parking • Most models in stock • VISA and ACCESS

THE star PRINTERS FOR BUSINESS ATARI *Power Without the Price™* Antic

Top marks...

Nic Outterside reviews a primary education package designed to teach early mathematics

DURING the past nine months Softstuff has deservedly established itself at the top of the ST educational software tree. Each release offers something new and exciting to anyone involved in education, so I was eager to see the company tackle the often perplexing topic of primary school mathematics.

Things to do with Numbers comes on a single sided disc packaged in the now familiar exercise book-type folder, with accompanying full documentation. It is a suite of three programs, each tackling a different aspect of primary school maths.

Click on the THINGS_N.PRG and the program boots up quickly with a colourful loading screen. This is replaced by a picture of Buddy and Betty book bugs who welcome you to the exercises ahead.

Now installed, the software is extremely easy to use. The screen displays four small pictures – a watch, a train, a search panel and The End – in turn. To select a program, wait for your chosen picture to appear and hold down the left mouse button. The game associated with that picture can then be played. As each is chosen it is preceded with a page of on-screen instructions on how to operate the exercise.

Click on the Search box to select Book Search. This is a colourful 10 by 10 grid in which is hidden Betty book bug. Your job is to find her while learning about coordinates. You do this by clicking on sliding bars which determine lateral and vertical movement. Then begin the search by clicking on the Search box. Buddy will chew through the squares to find his love.

A thermometer at the side of the grid lets you know how close you are to finding Betty. It measures hot if you are only one square away, warm if you are two or three squares away or cold if you are more distant. You can have as many turns as you like.

When you find the correct square the red alcohol bursts through the top of the thermometer with a startling sound of shattering glass, and Buddy utters the immortal words "Found you".

Click on the watch to choose Time Teller. This simple but effective game aims to teach and consolidate telling the time using the 24 hour clock juxtaposed to the rotary 12 hour clock.

On the left of the screen is a large clock whose minute and hour hands move to randomly programmed times. A shiny modern digital watch occupies the space to the right of it. The LED display flashes either AM or PM and you must click on the correct numbers in a small grid to represent the time shown on the rotary clock.

If it is too difficult you can pass on to another question, or if incorrect you are also offered an alternative time. However, if correct you are applauded by Buddy and Betty who sit at the top of the screen.

Click on the train and you enter the world of steam with All Aboard. The object here is to construct a train with a given number of passengers on board using a number grid at the foot of the screen. If the answer is correct the train issues a realistic whistle.

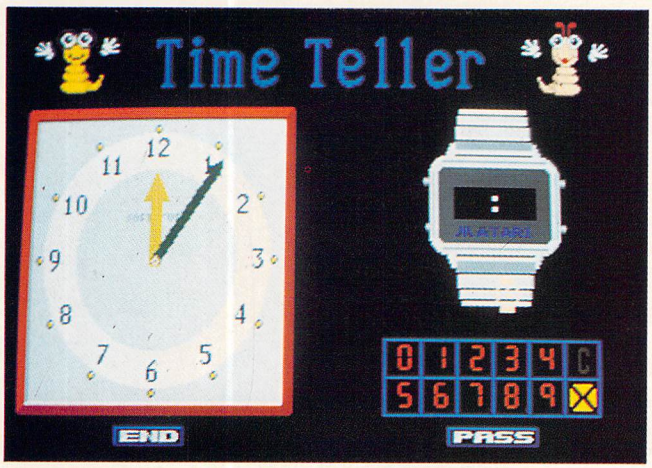
A restriction is placed by Buddy on the numbers you can use to encourage you to use addition and multiplication to arrive at the correct answer. The pass option is useful here for younger children who are not yet able to manage breakdown of larger numbers.

Finally by clicking on The End you exit via a lovely picture of Buddy and Betty who wish you "Bye Bye".

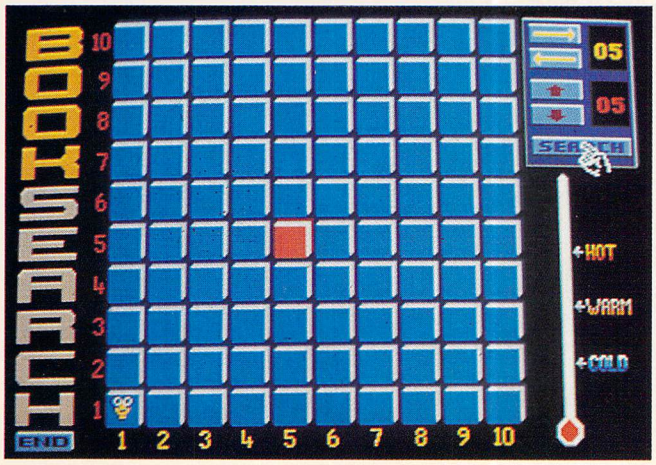
The graphics throughout are not quite in the Psygnosis league but are simple and stunning. Furthermore they do their job admirably – that is make the exercises enjoyable. However, it would have been nice to have seen a bit of animation, particularly with the train.

The sound effects and synthetic speech are superb and highlight various points in the programs.

Once again Softstuff has filled a need in the educational market with an excellent product. Moreover the teaching content and purpose is sound and will be beneficial in the home and classroom alike.



Time Teller teaches understanding of the 24 hour clock



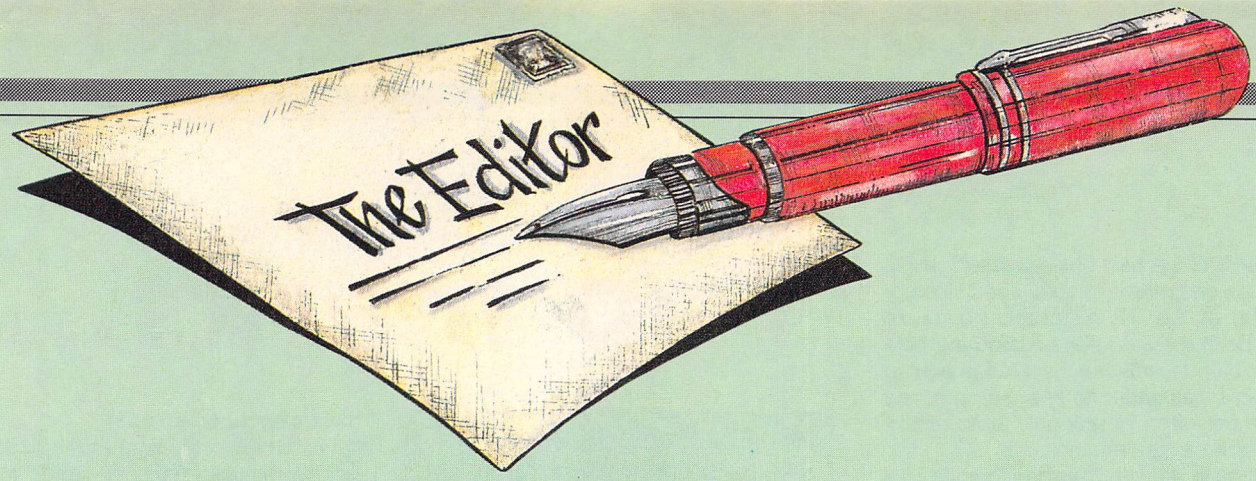
Booksearch consolidates coordinates

FACT FILE

Product: Things to do with Numbers
Price: £19.95
Supplier: Softstuff, 193 Sketchley Road, Burbage, Leicestershire LE10 2DY.
Tel: 0455 617426

POINTS FOR:
User friendly and colourful learning program. Educationally sound and fun.

AGAINST:
Nothing substantial except that development of graphic animation and musical sound would have added enjoyment



Basic drawback with 520STFM

WITH regard to the letter from Serge Flamat in the February issue of Atari ST User, *I would like to draw your attention to a statement made by Atari (UK):*

"One of the first things you may have noticed about your new Atari 520STFM is that it does not come with a version of Basic. Far from being a drawback this is actually a positive advantage as you are now free to choose any version from those available for the ST".

This quotation appears in Atari Explorer as supplied with all new ST Super Packs. So as you can see new users don't even get ST Basic with their machine.

What is going on? – **M.D.Cox, Upper Norwood, London.**

● At first glance the statement by Atari in the Explorer Pack does seem to leave a lot to be desired. It is like saying: "We decided not to include a disc drive with your ST so you would have the freedom to choose from one of the many better drives available"!

ST owners had the freedom to choose another Basic before Atari decided not to include ST Basic with their 520STFM micros.

We rang Atari and asked for an explanation of this strange stance. The reply goes some way to putting a few minds at rest. The company decided to withdraw ST Basic because it recognised it was a very poor cousin in comparison with other third party versions.

Atari then searched for a better replacement to bundle with future machines and in the interim launched the Explorer Pack to compensate for the lack of a Basic. From this month a new 520STFM bundle will be launched by Atari. It will be called The Power Pack and will include 20 games, The ST Organiser and HiSoft First Basic.

This is infinitely superior to ST Basic and fully compatible in that it will compile ST Basic. This new move by Atari still doesn't help recent buyers of 520STs who are in need of a Basic, but it does show that Atari is willing to be introspective and admit that other companies can produce a better Basic for the ST.

To recent buyers who still feel the need for ST Basic, we can only suggest that you write directly to Atari enclosing a stamped addressed envelope and ask for a copy.

Drive queries

I HAVE recently been contemplating buying a 1Mb second disc drive for my 520STFM, but before I do could you answer a few questions?

When I buy a piece of software I usually make a backup copy for safety. Can I store two games – or other programs – on one double-sided disc?

Can I boot a program straight from disc B? And will single sided discs work on the new drive? – **Chris Ralphs, Barnsley, South Yorkshire.**

● There is no obvious reason why programs on two single sided discs should not be stored on one double sided disc, providing they are not copy protected.

Booting directly from drive B can be a little tricky, but we have published simple routines for doing so in recent issues of *Atari ST User*. Such a procedure appeared on the Letters page in the February issue.

Finally, single sided discs will work perfectly well in a double sided drive.

Reviewing criticism

I HAVE now owned my 520STFM since January 1988, and have read Atari ST User *since October 1987. It is an excellent magazine covering every aspect of the ST, but I have one complaint.*

I think you should be a little more critical about the games you review. Just look at Hostages, the Star game in your January issue. I really do not think it earns those marks.

The first part of the game is dreadful. The controls are crude and response is slow. It even uses flip-screen scrolling, something which should not appear in quality ST games nowadays. – **Leif Einar Claus, Tromsø, Norway.**

● Thank you for your letter but three points need to be made, Leif. First of all any review is one person's opinion of a piece of software. This opinion will always be subjective, no matter how objective the reviewer may try to be.

Secondly, due to incredible pressure on space, we only publish reviews of the better games available for the ST. So scathing reviews of poor games rarely appear.

Thirdly, everyone in the office agreed that Hostages was an excellent and original game, and highly addictive to boot. At least two other ST magazines agreed with us and made Hostages their top game.

It is not a smooth scrolling shoot-'em-up and does not purport to be. It fits into a recent mould of excellent off-the-wall games for the ST which must also include Speedball, The President is Missing and Freedom.

Speling mishtakes

I BECAME involved with computers for the first time about 18 months ago and have happily occupied much of my spare time since then trying to catch up with the rest of the computer-literate population.

I am intrigued by the dreadful spelling mistakes in ReadMe and other document files which appear on many discs. PD Software seems to be the worst offender, although I have seen quite a few nasty examples in commercial games and utilities.

Quite apart from spoiling the presentation of an otherwise good piece of software, why is it that someone can be intelligent enough to write a complex piece of programming yet be unable to spell the words required to describe it properly?

I recently bought two expensive commercial utilities and both produced spelling errors on-screen, let alone on the ReadMe documentation. – **D.K. Powell, Tupsley, Hereford.**

● We agree with your observation. Have you also seen some of the spelling mistakes in procedures and REM statements in program listings? Most programmers come from a science background. The sciences and arts can often require completely different skills.

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 L.L.E. Bovingdon will receive Populous, which is reviewed on Page 20. 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.

Transferring files from ST to PC

I HAVE read recently of ST users wanting to transfer text files from their ST to a PC. My method works using 1st Word Plus on the ST and Memomaker on a Hewlett Packard Vectra (3.5in drive model), but I have no reason to suspect that it would not work just as well with any combination of PC/word processor capable of reading and writing text files in Ascii and which uses 3.5in disc drives.

The procedure is first format a blank disc on the PC. As this will be used solely for the transfer of text files it does not need any operating system or other files on it.

Compose your document with 1st Word Plus as normal, but before saving to disc disable the WP mode. This is one of the options on the Edit menu and saves the file in Ascii form. Save the Ascii file on to the prepared PC disc. Your ST will be unaware that this is any different from a normal ST formatted disc.

The text file can now be loaded into the PC word processor from the PC disc and will appear exactly as you composed it, except that any print features such as italic script or underlining will have been lost.

The process also works the other way round. As long as you save the file as Ascii on to the PC disc you can compose the document on Memomaker and read/edit it on the ST, as the micro will read the non-standard format disc without difficulty.

I have used this process on numerous occasions without any difficulty. – **L.E. Bovingdon, New Southgate, London.**

● Thank you very much for those timely tips. We are sure they will help many ST users who use a PC at work. We've used this technique with an Amstrad PPC portable too.

Revolutionary joysticks

ON reading your February issue I came across an article by Nic Outterside in which he mentioned a range of revolutionary joysticks being produced by Microprose.

I would like to know if the company has produced catalogues or leaflets on its full range of joysticks. If so, could you please tell me how to acquire a copy? – **Adrian Dainty, Codsall, Wolverhampton.**

● The producer of these joysticks is Suncom, a subsidary of Microprose. You should contact Suncom's product manager John Sage on 0666 54326.

One-way Degas problem

I RECENTLY used Degas before switching to the more powerful Degas Elite. I have found that although Degas Elite will load Degas pictures it will not work the other way around.

Is there some sort of converter to transform PC1 files into PI1 files? This would be of great use, as some of the software I own was written before Degas Elite and thus only accepts PI1 files. – **James Bloodworth, West Bridgford, Nottingham.**

● No need for a converter James, the answer lies within the Degas Elite program itself. Click on Compression on the File menu and choose normal mode. Load your Degas PI1 file into Degas Elite, then click on the Compression icon again. Now choose compressed mode and resave your file as a PC1 file. Problem solved!

Good service recognised

A FEW months back I bought an Atari STFM from Silica Shop. Recently the disc drive began to play up so I rang Silica to ask about return arrangements and I was very impressed with its organisation.

It had all the information to hand concerning the purchase of my ST within a few seconds and was able to provide a speedy and efficient service.

I rang on the Thursday afternoon, the ST was picked up on Friday lunchtime, and was returned to me fully repaired within a few days.

I am one of the first to complain about bad service, so I felt I had to praise what I consider to be exceptionally good service from a very big company. – **John Sullivan, Cockermouth, Cumbria.**

★ ★ ★

I AM a fairly new reader of your magazine and would not consider myself to have any great experience of computers or their many uses, though your excellent monthly pull-outs are helping me enormously.

I was distressed to read on the letters page of some readers' problems with mail order companies. I feel that I must put the other side of the argument and compliment a firm for its excellent service and hope that all mail order companies are not tarred with the same brush.

I am writing this letter on my new Protext word processor which I ordered yesterday from K.L.R. Computer Supplies in Rickmansworth. I know that they use a special overnight postal service and in this day and age that in itself is nothing special. But I still feel that receiving goods within 24 hours of order deserves both my praise and my thanks to the company concerned.

The price, advice and delivery service were excellent and I shall no doubt be using the company again and again for future requirements. – **Philip Leck, Burnley, Lanacashire.**

● After the recent flak it is certainly pleasing to hear positive reports and praise of mail order companies.

Switching snag solved

I HAVE some valuable information for ST owners concerning TV/monitor switching. If you are afraid that you might wear out the pins when constantly pulling out the monitor plug when transferring to a TV for output then I have a simple remedy.

If you feel technically confident you can provide a switching mechanism for under 50p rather than going to the expense of buying a commercial unit.

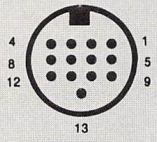
Ensure that your ST is disconnected from the mains. Open up its casing by

Turn to Page 130 ▶

◀ From Page 129

loosening the screws underneath the body. On the monitor pinout, pin 4 is the mono detect. Find this pin – see below – and cut it so there is a gap in the wire. Fix a single pole single throw switch – available from any reputable electrical shop – to the back casing of your ST. Take a wire

Monitor



1	Audio out
2	Composite sync
3	General purpose output
4	Monochrome detect
5	Audio in
6	Green
7	Red
8	Plus 12-volt pullup
9	Horizontal sync
10	Blue
11	Monochrome
12	Vertical sync
13	Ground

from each side of the cut pin 4 and carefully solder them to the two poles on the switch.

When the switch is open (off) you will be able to use your TV. Close the switch for using the monitor.

I have installed such a switch on my ST for some time now, and it works perfectly and saves much wear and tear on my monitor lead. – **Gavin Cameron, Gullane, East Lothian.**

● Thank you Gavin, we are sure this tip will prove useful to many ST owners.

Games on permanent hold

IS it just me I wonder, or are there dozens of other ST users out there who buy software and are fed up with advertisements for games that are not available.

Would you expect to read an advert for a book, send off your money and then be told that it had yet to be published? I think not, so why are we forced to endure the same situation regarding software?

How many months is it since Verminator, Bards Tale II, Iron Lord, Federation of Free Traders and Pools of Radiance were first splashed across the pages of this and other magazines?

Not one has yet surfaced as I write, although mail order companies as well as the publishers have offered them for sale. Not once but repeatedly I might add. How many more people have been duped into sending off money only to be put on permanent hold?

I think it is high time this type of conning was made illegal. Publishers and mail order companies should get their act together and put an end to this highly dubious practice. – **Steve Ogilvie, Ashington, Northumberland.**

● We wholeheartedly agree with your sentiments but must also draw your attention to our reply to Mark Clavering's letter in the March Letters page, which explains some of the reasons for this practice.

However, we can only act if you draw our attention to specific instances of advertisers in our magazine who offer products that are not available. We will add our weight and ensure that your complaint is passed on to the respective company, and that something is done about it.

Elite techniques

I HAD not played Elite before I bought the ST version of the game, but had heard so much about it from friends with BBC Micros that I must have been one of the first in line to buy when I heard that the ST version had been released. I enjoy it immensely and have played it at every opportunity, including one 12 hour non-stop stint.

What intrigues me most is that the saved game files are only 256 bytes long, yet they seem to hold so much information. Also there is an interesting rationale behind the score value listed in the Catalogue of Commanders, relating to when you acquire each of the skill rating levels.

It took me considerable time to find this information, but knowing it has enabled me to earn the Dangerous rating, fly two special missions and improved my playing ability.

The saved game files seem to be a special form of dump of the 256 byte status area which the Hacker v1.0 option on the ST version gives access to. Type SARA when the mode asks for a word from the manual, answer the next word request correctly and use the star on the numeric keypad to enter the routine from the Status screen, then press Escape to exit.

I find cheating unsatisfactory, but the option helped me to learn a lot more about the saved game file, which for those interested, is written to the file after XORing each byte with the NEGation of its address. By this I mean that the contents of byte one of the status area is XORed with FF, the second byte with FE, the third with FD and so on, down to the 256th byte being XORed with zero.

The scores are much more interesting. The game awards a certain number of skill points for each registered kill. The amount depends on the type of ship destroyed. While the amount of credits awarded for kills on the same type of ship may vary, the skill points don't.

In the adjoining chart I have listed the ships, along with the amount added to your skill points for killing one, the ship's speed and its manoeuvrability. I use these factors to decide whether it is worth pursuing a prey or running from it, and which ships to wipe out first.

Ship type	Skill	Speed gain	Turn factor
Thargoid	150	0.45	6
Wolf II	150	0.40	5
Asp Mark II	110	0.40	4
Adder	100	0.24	4
Krait	90	0.30	8
Gecko	90	0.30	7
Sidewinder	80	0.37	9
Mamba	60	0.32	9
Boa Class cruiser	60	0.24	4
Moray Star boat	50	0.25	4
Cobra III		0.30	8

Skill rating increases as follows:

0-2040	Harmless
2050-4090	Mostly Harmless
4100-8190	Poor
8200-16380	Average
16390-32760	Above Average
32770-131070	Competent
131080-1048580	Dangerous
1048590-16777220	Deadly
Over 16777230	Elite

One final point is in disagreement with Mr MacDonald (Star Letter – February): I prefer a rear-mounted military laser, as it seems most effective in combat. – **Andrew Bain, Welwyn Garden City, Hertfordshire.**

Software for seeking roots

I AM particularly intertested in genealogy (family history) and have been searching in vain for a suitable software package to support this hobby. The software would have to suit my Atari 520STFM with an Epson LX800 printer.

Does anyone know whether any British software company produces such a product or will I have to import it from the States? – **W.M. Bray, Wantage, Oxfordshire.**

● Can any readers help?

Lombard RAC rally



Atari ST, Amiga and PC £24.95



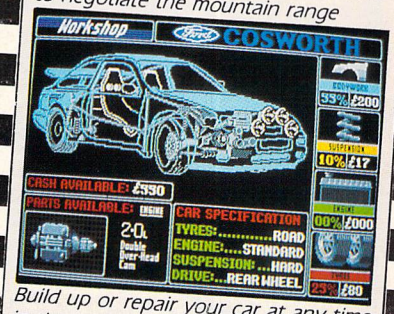
See the driver steer and change smoothly through each of the gears



Drive down twisty lanes at night with an incredible 3D view of the road



Use all your powers of concentration to negotiate the mountain range



Build up or repair your car at any time in the well-equipped workshop

Screenshots from Atari ST version

Five . . . four . . . three . . . two . . . one . . . GO!

Your 300bhp Ford Group A Sierra Cosworth roars away from the starting line, skidding round hairpin bends, as you speed through unfamiliar, ever-changing terrain . . . in a race where every fraction of a second counts!

Lombard RAC Rally recreates all the excitement of the world-famous rally – with the help of RAC drivers who guarantee its authenticity.

Complete the five stages – down winding tracks, through verdant forests and over precarious mountain ranges – with the additional hazards of night driving and fog.

Repair damage and add new features to your car in the workshop, and earn money for spares by taking part in a TV interview.

This is the official simulation of a lifetime . . . will your skills measure up to the challenge?

● ***Inside every box: A detailed 16-page booklet containing a history of the rally and technical specification of the Cosworth, 15 maps to help you plot out your course, and a colourful sticker to commemorate your participation in the rally.***

'Totally addictive . . . a breath of fresh air' – **Atari ST User, January '89**

'Thoroughly engrossing . . . highly recommended . . . the best controls I've encountered in any computer race game' – **Computer and Video Games, January '89**

'The definitive racing game . . . Overall 95%' – **Computer Gamesweek, November 5-15, 1988**

'An absolute must?' – **ST Action, January '89**

Please send me Lombard/RAC Rally for:

☐ Atari ST (9157) ☐ Amiga (9829)

PC version ready soon

☐ I enclose a cheque for £24.95 made payable to Mandarin Software

Expiry date / /

☐ Please debit my Access/Visa number:

Name_____

Address_____

_____

_____ Postcode_____

Database Direct, FREEPOST, Ellesmere Port, South Wirral, L65 3EB
Tel: 051-357 2961
Postage: Add £2 Europe/Overseas £5

ST5

MANDARIN SOFTWARE

in association with Red Rat

ATARI ST USER MAIL ORDER OFFERS

ANOTHER INCREDIBLE OFFER FROM ATARI ST USER

When you subscribe to *Atari ST User* we'll send you the ultimate in joystick design, the Konix Navigator – FREE!

Worth £14.95, its ergonomic design ensures a perfect fit for every hand, with minimum fatigue and maximum efficiency. It features:

- Fire button positioned directly beneath your trigger finger for super-fast reactions
- Unique microswitch modules giving precision control that lets you feel and hear every move
- Unbreakable solid steel shaft, giving complete control plus rugged reliability
- Switch to toggle between standard and auto-fire mode.

SAVE OVER £28!
with the new 24 month subscription



Worth £14.95 – can be yours FREE!

FREE PROGRAMS!

But that's just for starters. We'll also send you a copy of the brand new ST Compendium II. Worth £9.95 it is packed with useful assembly language listings, C programs, Fast, GFA and ST Basic programs, several demos and some superb public domain graphics demonstrations.



FREE MAGAZINES!

If you take out an 18 month subscription we'll charge you for just 17 issues, or for the new 24 month subscription you only pay for 22 issues! And that lot adds up to a tidy saving of £28.80 with the 24 month subscription.

Remember, this offer will only be available for a limited period, so send for your subscription today!



TO ORDER YOUR SUBSCRIPTION USE THE FORM OPPOSITE

ORDER FORM

Subscribe to ATARI ST USER

Overseas orders despatched by Airmail.
All prices include postage, packing and VAT
Please allow up to 28 days for delivery

Valid to May 31, 1989

(✔) £ p

Subscriptions *(see opposite)*

Includes FREE Konix Navigator and ST Compendium II *(UK only)* NEW

12 months

	NEW*		RENEWAL	
UK £24.95	9310	☐	9313	☐
Europe & Eire £27.95	9311	☐	9314	☐
Overseas (Airmail) £42.95	9312	☐	9315	☐

18 months (for the price of 17)

	NEW*		RENEWAL	
UK £32.45	9316	☐	9319	☐
Europe & Eire £39.45	9317	☐	9320	☐
Overseas (Airmail) £59.95	9318	☐	9321	☐

24 months (for the price of 22)

	NEW*		RENEWAL	
UK £45.95	9322	☐	9325	☐
Europe & Eire £50.95	9323	☐	9326	☐
Overseas (Airmail) £78.45	9324	☐	9327	☐

*All new subscriptions commence with the next available issue

Back issues

(see page 66)

August 1988 to April 1989 bundle PLUS Binder	£15.00	9191	☐
Add £4.50 Europe & Eire/£18 Overseas			
August 1988 issue PLUS binder	£3.50	9216	☐
Add £3 Europe & Eire/£7 Overseas			
September 1988	£2.00	9217	☐
October 1988	£2.00	9218	☐
November 1988	£2.00	9219	☐
December 1988	£2.00	9220	☐
January 1988	£2.00	9221	☐
February 1989	£2.00	9222	☐
March 1989	£2.00	9223	☐
April 1988	£2.00	9224	☐
Add 50p per issue Europe & Eire/£2 Overseas			

Fun School 2

(see page 76)

Under 6 years	£19.95	9192	☐
6-8 years	£19.95	9193	☐
Over 8 years	£19.95	9194	☐
Add £2 per module for Europe & Eire/£5 Overseas			

Time & Magik

£19.95 9137 ☐

Add £2 for Europe & Eire/£5 Overseas

(✔) £ p

DTP Yearbook NEW

(see Page 31)

£9.95 0505 ☐

Add £4 for Europe & Eire/£9 Overseas

Flair Paint NEW

(see Page 50)

£34.95 9190 ☐

Add £2 for Europe & Eire/£5 Overseas

Games selection NEW

(see Pages 65)

Freedom	£15.95	9180	☐
20,000 Leagues Under the Sea	£15.95	9181	☐
Killdozers	£15.95	9182	☐
Elemental	£15.95	9183	☐
Buy 2 games and **SAVE £10**	**£29.90**	9186	☐
Buy 3 games and **SAVE £21**	**£38.85**	9187	☐
Buy 4 games and **SAVE £40**	**£39.80**	9189	☐

Special offer. If you are buying more than one game, please tick the box next to each game, then tick the box for the number you are buying to qualify for extra discounts

Mini Office Professional

(see Pages 18/19)

Spreadsheet	£24.95	9163	☐
Communications	£24.95	9164	☐
Add £5 per module for Europe & Eire/£12 Overseas			

K-Data

(see page 112)

£39.95 9158 ☐

Add £2 for Europe & Eire/£5 Overseas

Lombard/RAC Rally

(see page 131)

£24.95 9157 ☐

Add £2 for Europe & Eire/£5 Overseas

STOS

(see Pages 114/115)

£29.95 9153 ☐

Add £5 for Europe & Eire/£12 Overseas

Protext Version 4

(see Page 90)

£79.95 9185 ☐

Add £4 for Europe & Eire/£10 Overseas

TOTAL

Send to:
Database Direct, FREEPOST,
Ellesmere Port, South Wirral L65 3EB

No stamp needed if posted in UK *Please allow up to 28 days for delivery*

Order at any time of the day or night

Telephone orders: **051-357 2961**

Fax Orders:	*Orders by Prestel:*	*MicroLink/Telecom Gold*
051-357 2813	**Key *89, then 614568383**	**72:MAG001**

Don't forget to give your name, address and credit card number

ST5

Payment: please indicate method (✔)

☐ Cheque/Eurocheque made payable to Database Publications Ltd.

☐ Access/Mastercard/Eurocard/Barclaycard/Visa

No. ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Expiry Date ☐☐/☐☐

Name _____ Signed _____

Address _____

_____ Post Code _____

Daytime phone number in case of queries _____

Please print your name and address clearly

Forest Computer Services

P.O. Box 20, Loughton, Essex. IG10 4AS

Public Domain Library for the Atari ST

PUBLIC DOMAIN WITH A DIFFERENCE

(The difference is we care)

Now there are two ways to keep up to date on what's happening in the world of Public Domain Software...

1/ Be like everyone else and send a SAE for a printed list. *or.....*
2/ Send £1-50 for all the listings in a disk magazine along with the latest articles, chat and special offer sections AND receive as many sample programs as I can squeeze onto a single sided disk.
All this for little more than the price of a blank disk. (and remember, I'm paying all the postage and packaging costs if you send for the disk)
If you want a printed list, you can get one from the magazine or alternativly by sending me a large SAE in the normal way.

The Music Tutor

- ★ Can't sight-read music? The Music Tutor can help.
- ★ Generates musical exercises then tests you.
- ★ Suitable for beginners.
- ★ Demo available on Sound On Sound software page
- ★ High or Medium resolution.
- ★ Requires Atari ST 520/1040 or Mega plus 4-octave MIDI keyboard.
- ★ Price £24.95 including VAT or £17.95 if Sound On Sound demo disk sent with order.

Send cheque or postal order to:-
Symphonic Software, 37 Bishop Ken Road, Harrow, Middx. HA3 7HU. Tel: 01-427-5513.

Miditech

Midi Software for Atari and Amiga's?

We deal only in Computer Music so we can offer you the biggest choice plus the Specialist Knowledge to help you get the most from your Midi Setup.

Write or phone for our Price Lists containing over 100 Programmes, Accessories and Demo Discs.

Free Steinberg Software!
If you buy an Atari 1040 from us we will include Steinbergs Pro 12 Sequencer worth £129 totally FREE!
Only £499.00

Amiga Owners
At last . . . A Pro Featured Sequencer at a budget price
Track 24 is a New Release from Comus featuring Real and Steptime Recording plus Notation Editing.
All this and more for only £75.00 or £100.00 with Interface

MIDITECH
The Colosseum, Portland Gate, Leeds LS2 3AW
Tel: 0532 446520
Mail order and training packages available

PREMIER MAIL ORDER

8 Buckwins Square, Burnt Mills, Basildon, Essex SS13 1BJ
Telephone order: 0268 590766

Please send Cheque/PO/Access, Visa No. and Expiry date

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 airmail

ADV. RUGBY SIM. 11.99

Adv. Ski Sim.	11.99
Afterburner	13.99
Airborne Ranger	14.99
Arkanoid Rev of Doh	11.99
Baal	11.99
Ballyhoo	7.99
Bal of Power 1990	14.99
Barbarian Pal	11.99

BLASTEROIDS 11.99

Barbarian 2 Pal	11.99
Batman Caped Crusader	11.99
Battlezone	7.99
Bermuda Project	9.99
Bombuzal	11.99
Borrowed Time	7.99
Bratacus	9.99
Chaos Street Back	14.99
Colossus Chess 7	16.99

BORODINO 21.99

Crazy Cars 2	11.99
Damocles	11.99
Darius 89	11.99
Deflektor	9.99
Double Dragon	11.99
Dragon Ninja	11.99
Dungeon Master	14.99
Emmanuelle	11.99
Empire Strikes Back	11.99

COSMIC PIRATE 11.99

F 16 COMBAT PILOT 16.99

Fast Basic Disc	31.99
Fast Basic Rom	62.99
Fed of Free Trade	19.99
Flight Sim.2	26.99
FLT Disc 7 or 11	13.99
FLT Disc European	13.99
FLT Disc Japan	13.99
Football Director 2	11.99

FALCON F16 14.99

Football Manager 2	11.99
Foot Man 2 Exp. Kit	8.99
Fun School 2 (Under 6)	15.99
FunSchool 2 (6 to 8)	15.99
FunSchool 2 (Over 8)	15.99
Fusion	17.99
Garfield	11.99
Garfield Winter	11.99
Grand Prix Sim. 2	11.99

FLYING SHARK 14.99

Guild of Thieves	14.99
Gunship	14.99
H. K. Machine	9.99
Hollywood Hijinx	7.99
Hostages	14.99
Inc. Shrink Sphere	13.99
Int. Karate +	13.99
Joust	7.99
Kennedy Approach	14.99

GALDREGONS DOMAIN 11.99

HELLFIRE ATTACK 11.99

Manhatten Dealer	11.99
Maria Whittaker	9.99
Masters of Universe	9.99
Microprose Soccer	14.99
Mindshadow	7.99
Mini Office Comms	16.99
Mini Office Spread	16.99
Missile Command	7.99

KRISTAL 17.99

Moon Patrol	7.99
Nigel Mansell	11.99
Night Hunter	13.99
Northstar	9.99
Operation Hormuz	11.99
Operation Wolf	11.99
Pacmania	11.99
Populous	16.99
Pro Soccer Sim.	11.99

LOMBARD RAC RALLY 14.99

Raffles	11.99
Rambo3	11.99
Renegade 3	11.99
Return of Jedi	11.99
Return to Genesis	11.99
R Type	13.99
Run The Gauntlet	11.99
S Davis World Snooker	11.99
Skychase	9.99

OUTRUN EUROPA 9.99

PACLAND 11.99

Space Harrier 2	13.99
Speedball	14.99
Storm Trooper	11.99
S.T.O.S.	19.99
STOS Compiler	13.99
STOS Maestro	16.99
STOS Maestro Plus	49.99
STOS Sprites 600	11.99

ROBOCOP 11.99

Strip Poker 2	9.99
Data Discs:-	
Bev & Dawn	7.99
Lee & Roy	7.99
Rachel & Kim	7.99
Suzanne & Bianca	7.99
Super Breakout	7.99
Super Hangon	13.99
Tass Times	7.99

RUNNING MAN 14.99

Testdrive	17.99
Times of Lore	14.99
Titan	14.99
Tracksuit Manager	11.99
Trantor	9.99
Typhoon	9.99
Vindicators (Domark)	11.99
War in Middle Earth	14.99
Wec Le Mans	11.99

TRIAD 17.99

Bargain Sale

PRINTERS

Star LC10 – B&W £180.00
Star LC10 – Colour £230.00
Star LC24 – 10/24 Pins £299.00
Sheikosha SP180 ..... £99.00

MONITORS

Philips 8833 Stereo ..... £173.00 + VAT = £198.95

COMPUTERS

Atari 520STFM Explorer Pack Plus (Mouse Mat, Joystick, 4 Games, 4 Starter Disks) £260.00
As above + Pools System £275.00
All offers subject to stock availability

SOFTWARE

STOS the Games Creator £19.00
Wordup + Fontz! A wordprocessor with a difference. It's a Document Processor as well, with multiple fonts sizes & styles, Mail Merge, Glossary, Import Graphics, Variable Sub/Superscript (to 99 points) and lots, lots more. With Fontz you have access to an unlimited variety of fonts including Apple Mac and Amiga. Comprehensive printer support including Laser Printer. All these and much more for only £69.00
HURRY ORDER ONE TODAY

ST Writer £50.00
Data Manager £30.00
Timeworks DTP £59.00
Wercs £21.00
Data Manager Prof £49.00
Turbost £19.00

Bargain Special Offers

HARDWARE

Triangle 3.5" Drive £95.00
Atari Mouse £23.00
Triangle 5.25" Drive – 40/80 Track £119.00
Triangle 20Mb Hard Drive £399.00
Triangle 40Mb Hard Drive £499.00
Monitor Master (the best colour/mono switch box) £31.00
Mouse Master (unique Mouse & Joystick switch) £22.00

ACCESSORIES, JOYSTICKS, PERIPHERALS

Power Play Cruiser Clear Joystick with instant Autofire £10.00
Power Play Cruiser All Black £8.00
Crystal Clear Joystick £9.00
Zip Super Prof. Joystick All Black with Autofire £10.00
Without Autofire £7.00
Disk Boxes with Lock – 40 Disks £8.95
80 Disks £10.95
120 Disks £12.95
Commodore or Kodak 3.5" Disks ..... £12.50 per box of 10
Monitor Station (tilt & swivel) £19.00
Monitor Stand £24.00
Mouse Mat £5.50

NEW!! Mini Office Professional

Communications module supports MicroLink, Telecom Gold, Prestel & Specialist Bulletin Boards all over the world. Use Teletype, VT52 or VT100 Emulation, as well as Viewdata with full colour graphics + Mailbox Editor & Carousel facility. Autodialling phone book plus lots of other features. ..... Our Price Only £19.55
Spreadsheet module makes full use of Gem & has many features. ..... Our Price £19.55
Both Modules bought together £37.90

POOLS – SYSTEM
(incorporating Poolsbuster & Poolsplanner)

It's quite simply the most advanced pools program available today. Contains a massive data bank of soccer statistics with details of over 10,000 past matches. It's fully mouse driven – there's no need to use the keyboard at all. It comes with all the UK soccer leagues you're likely to need, including the non league ones. And you can add any overseas leagues as you wish.

Already the Pools–System has won for our customers hundreds & hundreds of dividends. So don't let your chance go by. Hurry order one today & win the pools tomorrow. ..... Pools–System costs only £40.00

All offers are subject to stock availability and all prices are subject to change without any prior notification. Apolonia Software reserves the right to substitute products or offers where would seem applicable.

We accept Visa or Access cards

APOLONIA SOFTWARE – THE COMPANY THAT CARES

Please fill in the coupon and send it with your cheque or P.O. to: Apolonia Software, DPT STU, Southbank Business Centre, Unit 37, Alexandra House, 140 Battersea Park Road, London, SW11 4NB. 24 Hours Order Line: 01-738 8400. Tel: 01-978 2200. Fax: 01-622 1063

Name: ..... Address: .....

.....

Postode ..... Telephone: .....

Quantity: Star LC10:..... Star LC24-10:..... Pools–System:..... Stos: .....

Mini Office Prof./Communications:...../Spreadsheet:.....Timeworks DTP:..... Wordup + Fontz: .....

Joystick type:..... Other:.....

Signature: ..... (I am over 18)

PRINTER RIBBONS for: (each)
Buy 5 and get one **FREE**
if you enclose this advertisement

T-systems ltd
COMPUTER SYSTEMS AND COMPONENTS

Citizen 120D	£4.05	**Star** NL10	£4.80
Epson		**Amstrad**	
Ex800/1000	£5.30	DMP 2000/3000	£2.60
LQ500/850	£3.70	DMP 4000	£4.80
LQ1500	£3.20	**Amstrad/PCW**	
LX80/86	£2.90	8256/8512	£4.70
MX/RX/FX80	£3.40	9512	£3.30
MX/FX100	£4.10	**Commodore**	
Seikosha		MPS801	£3.00
GP100	£2.50	MPS803	£3.20

and many more

T-Systems Ltd, The Signal Cabin,
61 High Street, Orpington, Kent BR6 0JF
Access Card accepted. Tel: 0689 22196
All prices include VAT and P&P

GOODMAN P.D.L.

Established as one of Britain's leading suppliers of Public Domain Software for the Atari ST.

The latest Catalogue gives details of the 100's of programmes that are now available including games/utilities/Demo's etc.

Prices from only £2 fully inclusive
or from 75p if you supply your own discs.
STOP PRESS! – NEW DOUBLE-SIDED DISC SELECTION NOW AVAILABLE
Send a 19p stamp for further details to:

GOODMAN P.D.L.
16 Conrad Close, Meir Hay Estate
Longton, Stoke-on-Trent ST3 1SW
☎ 0782-335650

» NEW « V2.0 TRACK-IT V2.0 » NEW «

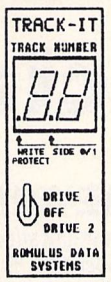
'TRACK-IT' is a hardware device (no software needed) for displaying the track number of drive 1 or drive 2 (selectable) using a 2-digit LCD display. Easily connected using standard ATARI disk drive plug and socket (enables daisy chaining of disk drives). No other connections or modifications neccessary.

Select drive 1 or drive 2 using front panel switch. Load up ANY software and 'TRACK-IT' will display the track numbers that the software accesses as it reads or writes to the disk drive. Will also indicate if the disk is 'WRITE PROTECTED' and which 'SIDE' is being accessed.

'TRACK-IT' is ideal for Hackers or as an indication as to what the software is actually doing with the disk drive.

Measures only 28 x 65 x 120mm

Works with ANY disk drive (internal or external) and ANY ATARI ST. (Amiga version also available SAE for info)
Only £24.95 each £44.95 for two inc P&P



Send cheque/postal order to:
ROMULUS DATA SYSTEMS
44 Ayletts, Basildon, Essex SS14 1UL

PROBLEMS WITH YOUR ATARI?

For fast, reliable and professional repairs at competitive prices
ST Repairs **£28.00** inc VAT, free P&P
Disk Drive faults **P.O.A.**
Disk & Memory Upgrades also available

P M ENGINEERING

UNIT 260, MILTON SCIENCE PARK
CAMBRIDGE. CB4 4BH
Tel: 0223 420007

VISA

We can also supply Hardware, Software, Discs and Spare parts

ONCE BYTTEN – THE P/X PEOPLE

PHONE 01-304 2631 TELEX 94070538-ONCE G

HARDWARE AT SOFT PRICES
520ST-FM (1Meg drive) including Ranarama and tutorial ..... Only £279.00
520ST-FM Super Pack (1Meg drive) Includes Joystick, 22 games & simulations, and organiser suite of business programs.
Total value £753.00 ..... Our price only £379.00
1040STFM Super Pack (Software as in 520STFM Superpack) ..... Only £479.00
1040ST-FM Business Pack – 1040ST-FM, Microsoft Word WP, VIP Professional, Superbase Personal, ... Only £479.00
2Mb Mega ST CPU + Keyboard (supplied with Blitter Chip Fitted) £839. 00
4Mb Mega ST CPU + Keyboard (supplied with Blitter Chip Fitted) £1109.00
★ SM124 Mono Monitor £95.00
★ SC1224 Colour Monitor £289.00
★ When bought with a Mega ST or 1040
WP Pack – 2Mb Mega ST + Mono Monitor + Laser Printer + Write + VIP Pro ..... £1439+VAT
DTP Pack – 2Mb + Mono Monitor + Laser + Fleet St Pub + 1st Word ..... £1799+VAT
WP Pack 2 – as above but with 4Mb Mega and 30Mb Hard disc ..... Only £2299+VAT

Cumana 1 Meg 3.5" Drive ..... Only £109.00
Supra 30Mb Hard Disc ..... Only £539.00
Atari MegaFile 30 (30Mb hard disk) £479.00
Microtime ST Clock Card £27.50
Citizen 120D 9-Pin Printer ..... Only £137.50
Colour Kit for HQP-40 ..... £39.95
Cumana 1Meg 5.25" Drive ..... Only £133.00
Cherry A3 Graphics Tablet £599.00
Philips 8833 Colour Monitor with ST Cable ..... Only £259.00
Citizen HQP-40 24 Pin Printer (takes font cards) ..... Only £399.00

FLOPPIES AT FLIPPED PRICES
3.5" DS DD unbranded Maxell discs made in Japan – Lifetime warranty with labels

10 Boxed	10	25	50	100	250	500	1000
£11.50	£10.50	£24.50	£47.00	£89.00	£220.00	£425.00	£825.00

SOFTWARE AT SOPPY PRICES

Spectrum 512	£47.50	CAD 3D	£19.50	Cyber Studio	£62.50
Timeworks DTP	£77.50	1st Word Plus	£62.50	Cyber Paint	£54.50
Flight Sim II	£29.95	Scene Discs	£18.50	Pro Sound Designer	£47.95
Data Manager Pro.	£69.95	Falcon	£19.95		

IF YOU CAN'T SEE IT HERE. PLEASE ASK!

NB The above prices include VAT unless otherwise stated. Carriage is Free on Discs and Software. £3.50 on computers and printers, £5.00 on monitors
We especially welcome part-Exchange and also buy hardware for cash. Ring or write for a quote

59 SWANLEY ROAD, WELLING, KENT DA16 1LL
or phone 01-304 2631
CHEQUES TO AMTEN LIMITED
CALLERS WELCOME BUT PLEASE PHONE FIRST
WE ARE OPEN MON-SUN 9am-10pm

VISA

MICRO-CHECK

No1 IMPROVEMENT PLACE, WELLINGTON, SOMERSET, TA21 8BT

SOMERSET ATARI SPECIALIST
Mail order (Callers by appointment only)

520 STFM EXPLORER PACK	£257.95	INCLUDES BASIC, MANUAL AND 3 GAMES
520 STFM SUPER II PACK	£335.95	INCLUDES FREE SOFTWARE WORTH OVER £450
1040 STFM PROFESSIONAL PACK	£425.95	WITH OVER £380 PROFESSIONAL SOFTWARE FREE

BEST SOFTWARE PRICES TOO
Ram Upgrades (512K) ..... £79.95 10 x 3.5" DD/DS Boxed £10.95

All Prices Include VAT and P & P Carrier Delivery +£7.00
CHEQUE OR CASH SALES ONLY ACCEPTED

TEL. (0823) 47-3570 TIL 8pm

ADVENT SOFTWARE

PO Box 414, Norwich NR1 4NX
or 16 Knox Close, Thorpe NR1 4LN

EXCITING *NEW* PUBLIC DOMAIN PROGRAMS

"WORD UP" Over 30 Brain Teasing Levels in this target word game. An excellent value PD Disk.

"ORBIT" The most challenging breakout game to appear on P.D. includes a special construction set.

Only £2.50 Each

"FLEET STREET MADNESS" A two player newspaper reporter game. This has got to be the fun program of '89.

PLUS

"THE BUSINESS PACK" Spreadsheet, Database, Home Accounts etc. on Two Disks for only £5.00

BARGAIN SOFTWARE

60 Boston Road, London W7 3TR

Other branches at: 309 Goldhawk Road, London W12 8EZ & 18 Market Square, Leighton Buzzard, Beds.

★ Unit 33-34 Rumford Shopping Hall, Market Place, Romford Essex

OPEN TO THE PUBLIC 10am-8pm 6 DAYS

BUY BY PHONE
RING 01-741 1222
01-995 3652
0525 371884

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".

ENQUIRIES RING
01-567 7621

NEW RELEASES + SPECIAL OFFERS 0898 674397
(38p per min peak rate, 25p all other times)

ATARI ST	R.R.P.	OUR PRICE
2000 Leagues Under the Sea	19.95	12.95
Afterburner	24.95	14.99
Alien Legion	24.99	15.99
American Civil War	12.95	8.99
Baal	24.95	15.99
Barbarian II	19.95	12.99
Bat	19.95	12.99
Battlechess	24.95	14.99
Black Orchid	19.95	12.99
FALCON – ONLY £14.99		
Blasteroids	19.99	12.99
Born in the USA	24.99	14.99
Borodino	24.95	14.99
Butcher Hill	19.95	14.99
Captain Fizz	14.95	9.99
Chaos Strikes Back. Dungeon Master Add on	14.95	9.99
Colossus Chess X	24.95	14.99
Cosmic Pirates	19.99	12.99
Custodian	19.99	12.99
Daley's Olympic Challenge	19.99	10.99
Dark Fusion	19.99	15.99
Double Dragon	19.99	11.99
PAPERBOY – ONLY £12.99		
Dragon Ninja	19.95	10.99
Dragon Scape	19.99	12.99
Dugger	19.99	12.99
Dungeon Master	24.99	14.99
Elite	24.95	15.99
F16 Combat Pilot	24.95	15.99
Federation of Free Traders	29.99	22.99
Final Command	19.99	12.99
Fish	24.95	14.99
Flight Simulator II	39.99	24.95
Flight Simulator III	39.95	24.95
CRAZY CARS II – ONLY £9.99		
Football Director II	19.99	12.99
Galactic Conqueror	19.95	12.99
Gary Linekers Hotshots	19.99	15.99
Ghost N Goblins	19.99	12.99
Gorilla Wars	19.99	9.99
Hellbent	19.99	12.99
Heroes of the Lance	19.95	13.99
Highway Hawks	19.99	12.99
Hybris	24.99	14.99
Joan of Arc	19.95	13.99
Kings Quest IV	29.99	20.99
OPERATION WOLF – ONLY £10.99		
L.E.D. Storm	19.95	13.99
Last Duel	19.95	12.99
Looking for Love	24.99	14.99
Manhunter-New York	29.99	20.99
Menace	19.99	12.99
Millennium 2.2	19.99	12.99
No Excuses	19.99	12.99
Operation Neptune	24.95	14.99
Orbiter	24.99	15.99
Pacmania	19.95	12.99
Pools of Radiance	24.95	16.99
ROBO COP – ONLY £10.95		
Powerdrome	24.99	19.99
President is Missing	24.95	14.99
Prison	19.99	12.99
Puffy's Saga	19.99	13.99
Relm of the Trolls	19.99	13.99
Rocket Ranger	24.95	14.99
Roy of the Rovers	19.99	15.99
S.T.O.S.	29.95	21.99
Scenery Disk 7 or 11	19.99	12.99

TRIAD
ONLY £19.99
Defender of the Crown +
Barbarian (Psygnosis) +
Starglider

SILICON DREAMS
ONLY £9.99
Snowball +
Return to Eden +
Worm in Paradise

5 STAR GAMES
ONLY £16.95
Enduro Racer + Wizball +
Barbarian (Palace) +
Crazy Cars + Rampage

ACTION ST
ONLY £14.99
Deflector + North Star +
Trail Blazer + 3D Galaxy
Masters of the Universe

EPYX EPIC
ONLY £18.99
Championship Wrestling +
Super Cycle +
World Games

COMPUTER HITS
ONLY £14.99
Deep Space + Brataccas +
Hacker II +
Little Computer People

ARCADE FORCE FOUR–ONLY £17.99
Road Runner + Gauntlet +
Metro Cross +
Indiana Jones

COMPUTER HITS TWO–ONLY £9.99
Tetris + Tracker +
Joe Blade +
Tau Ceti

BARGAIN BUYS
ONLY £7.99
Borrowed Time +
Tass Times +
Hacker II

LEADERBOARD BIRDIE
ONLY £14.99
Leaderboard +
Leaderboard Tournament

HIT DISKS 1
ONLY £16.99
Goldrunner + Slaygon +
Jupiter Probe +
Karate Kid II

SUPER BUYS
ONLY £17.99
Music Studio + Hacker +
Leather Goddess of Phobos

ATARI ST	R.R.P.	OUR PRICE
Scenery Disk Japan	19.99	12.99
Skrull	24.95	14.99
Soccer Manager	19.99	12.99
Speedball	24.95	14.99
Super Hang On	19.99	12.99
Sword of Soden	29.95	22.99
Tech	19.99	12.99
The Games: Winter Edition	19.99	13.99
The Grail	19.99	12.99
DRILLER – ONLY £10.99		
The Krystal	29.95	21.99
Thunderwing	19.99	12.99
Tiger Road	19.99	13.99
Times of Lore	24.99	14.99
Titan	19.99	12.99
Ultima V	24.95	15.99
Verminator	24.95	14.99
Wanted	19.95	12.99
War in Middle Earth	19.95	12.99
WEC Le Mans	19.95	12.99
Weird Dreams	24.99	14.99
Western European Scenery Disk	19.99	12.99
Wrath of Nikademus	24.95	15.99
CRAZY CARS – ONLY £5.99		
Zak McKracken	24.99	19.99

SPECIAL OFFERS

Borrowed Time	24.99	3.99
Boulderdash Construction Set	19.99	5.99
B. Clough's Football Fortunes	24.99	5.99
Circus	24.95	7.99
Dizzy Wizard	19.99	3.99
Eliminator	19.95	5.99
Empire Strikes Back	19.99	8.99
RETURN OF JEDI – ONLY £8.99		
F15 Strike Eagle	24.95	8.99
Hacker	24.99	3.99
Hard Ball	24.99	6.99
Infidel	29.99	7.99
Leaderboard	24.99	6.99
Leather Goddess of Phobos	29.99	7.99
Mindshadow	24.99	5.99
Moonmist	29.99	7.99
Music Studio	24.99	7.99
Not a Penny More Not a Penny Less	24.99	4.99
Planetfall	29.99	7.99
HACKER II – ONLY £3.99		
Plutos	19.99	4.99
Pro Pascal	99.99	19.99
Spitfire 40	24.99	8.99
Spy vs Spy	19.99	4.99
Strike Force Harrier	24.99	8.99
Summer Olympiad	19.99	7.99
Super Cycle	24.99	5.99
Superman	24.95	7.99
Suspect	29.99	7.99
Swooper	19.99	3.99
TNT	19.99	5.99
CAPTAIN BLOOD – ONLY £9.99		
Tass Times	24.99	3.99
Trinity	34.99	7.99
Ultima II	29.99	7.99
Victory Road	19.95	9.99
Wanderer	19.99	4.99
Warlocks Quest	19.99	5.99
Winter Olympiad	19.99	4.99
Witness	29.99	7.99
Zynaps	19.95	5.99

BARGAIN SOFTWARE ORDER FORM

Please send me the following titles. BLOCK capitals please!

ATARI ST USER, MAY

Type of computer _____

Title:	Amount

★ Personal Callers Only

Total Enclosed £

Name .....

Address .....

.....

.....

Postcode .....

Tel. No. .....

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 disk

NEW

TABLES TEST

- ✔ No confusing keyboard input makes tables fun
- ✔ Checks progress by multiplication and division

ADD & SUBTRACT

- ✔ Teach and test "Add" and "Take-Away"

BOTH PROGRAMS

- ✔ Totally mouse controlled
- ✔ Full Colour backgrounds
- ✔ Score at end of each test
- ✔ Extensively tested by children of primary age

Send cheque or P/O for ONLY £9.95 EACH inclusive of 1st Class post & packing to:-

MIKED
6 Devonshire House, Stonehouse, Plymouth
PL1 3HE. Tel: 0752 671464

IMPORTANT NOTICE

THERE ARE THOUGHT TO BE APPROXIMATELY 20 VIRUS PROGRAMS CIRCULATING IN THE ATARI ST COMMUNITY WORLDWIDE

PROTECT YOUR ST WITH

THE VIRUS DESTRUCTION UTILITY 3.2
ONLY £6.95 INC P&P

EXCEL SOFTWARE ARE THE SOLE U.K. AGENTS FOR THE ABOVE PRODUCT (DEALER ENQUIRIES WELCOME)

EXCEL SOFTWARE ALSO OPERATE A LARGE PUBLIC DOMAIN SOFTWARE LIBRARY WITH GUARANTEED VIRUS FREE SOFTWARE! SEND A 19P STAMP OR CALL US TODAY FOR OUR LATEST CATALOGUE

EXCEL SOFTWARE, PO BOX 159, STOCKPORT SK2 6HN
TELEPHONE: 061-456 9587 (After 6pm)

OPPORTUNITIES AT POWER

POWER COMPUTING

Power Computing the leading publisher and peripheral manufacturer has vacancies for Atari ST/Amiga literate personnel to assist with our retail store and mail order division. Applicants should initially write to:

The Personnel Officer
Power Computing
Garfield House, 44A Stanley Street,
Bedford MK4 7RW

ADVERTISERS' INDEX

16 Bit Centre....118
Advent Software....136
Again & Again....25
Akom....33
Apolonia Software....135
Arnor....3
Arran....107
Atari Computer Show....8
Bargain Software....137
B Bytes Computer Stores....110
Best Byte Software....92
BRK....107
B Soft....94
Byteback....78
Cambridge Business Software....116
Care Electronics....126
Castle Software....104
Cavendish Distribution....85
Chips - Data Direct....13
Compumart....23
Computer Express....58
Condor International....122
Cottage Software....59
Database Educational Software....76
Database Software....18,19
Dataplex....101
Dataworld....103
Datel Electronics....16,17
DGA Software....35
Digicom....64
Ealing Computer Centre....126
Equinox....115
Evesham....42,43,95
Excell Software....138
Fidget Computerware....60
Forest Computer Services....134
Frontier Software....110
Gibb Computers....118
Goodman PDL....136
Gould Computer Services....110
Gultronics....63
Instant Catalog....110
Integrex....65
KCS....88
Kempston Micros....38
Kuma....140
Ladbroke Computers....124,125
Lan Computers....92
Logic 2000....109
Mail Centa....94
Mailsoft....120
Mandarin Software....114,131
Mcsoft....138
M D Office Supplies....77
Microcheck....136
Microdeal....5
Microsnips....75
Miditech....134
Midland Microsoft Supplies....44
Miked....138
Miles Better Software....80
MJC Supplies....86
Monitor Magazines....120
Mydisk....120
Once Bytten....136
Palace Software....2
PM Engineering....136
Power Computing .11,13,15,31,33,35,138
Premier Mail Order....134
Prospero....106
Red Rat....81
Rise Time Electronics....108
Romantic Robot....102
Romulus Data Systems....136
RPM Computer Services....35
SCC....56
Silica Shop....139
SK Marketing....47
Soft Sellers....41
Softville....116
Softstuff....101
Software Express....62
Star Micronics....53
ST Amiga Club....138
ST Club....92
ST UK....108
Symphonic Software....134
Third Coast Technologies....15
T Systems....136
Turtlesoft....96
Tynesoft....28
VPST....107
Weserve....120
Worldwide Software....64

ST SOFTWARE

BUY YOUR SOFTWARE FROM US
AND WHEN YOU'RE FED UP WITH IT,
WE'LL ACCEPT IT AS

50% PART EXCHANGE

AGAINST A NEW TITLE. (Subject to conditions)
SOFTWARE SOLD AT RRP INC. P&P
SECONDHAND SOFTWARE FOR SALE 60% OFF RRP INC. P&P – GUARANTEED TO RUN

ST & AMIGA COMPUTER WORLD
37 Bamford Street, Clayton, Manchester
M11 4FE
Tel: 061-231 6608 (24 hours)
G.B. & B.F.P.O. only. Mail order only. No callers

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

520ST-FM SUPER PACK



1Mb DISK DRIVE £450 OF SOFTWARE

ARCADE GAMES

Arkanoid II	Imagine	£19.95
Beyond The Ice Palace	Elite	£19.95
Black Lamp	Firebird	£19.95
Buggy Boy	Elite	£19.95
Chopper X	Mastertronic	£9.99
Ikari Warriors	Elite	£14.95
Marble Madness	Electronic Arts	£24.95
Quadralien	Logotron	£19.95
Ranarama	Hewson Consultants	£19.95
Return To Genesis	Firebird	£19.95
Roadwars	Melbourne House	£19.95
Starquake	Mandarin	£19.95
Test Drive	Electronic Arts	£24.95
Thrust	Firebird	£9.95
Thundercats	Elite	£19.95
Wizball	Ocean	£19.95
Xenon	Melbourne House	£19.95
Zynaps	Hewson Consultants	£19.99

SPORTS SIMULATIONS

Eddie Edwards Super Ski	Elite	£19.95
Seconds Out	Tynesoft	£19.95
Summer Olympiad '88	Tynesoft	£19.95

PRODUCTIVITY SOFTWARE

Organiser	Triangle Publishing	£49.95

JOYSTICK

Atari CX40 Joystick	Atari Corp	£4.99

FREE ATARI BUNDLE VALUE: £458.97

The Atari Super Pack is ideal for you if you want to get off to a flying start with the best in entertainment software. The Pack includes a 520ST-FM with ½Mb RAM, a built-in 1Mb disk drive, over £450 of top games and a joystick. If you buy the Super Pack at Silica Shop, we will add our own ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for details.

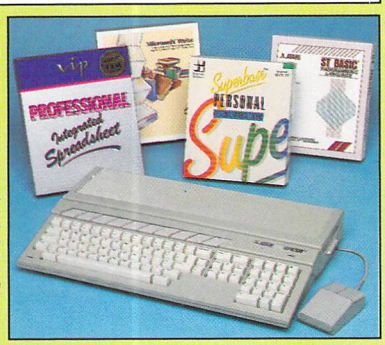
£399 INCLUDING VAT

With SM124 mono monitor: £498 INC VAT With SC1224 colour monitor: £698 INC VAT

1040ST-FM PROFESSIONAL PACK

NOW WITH TV MODULATOR

For the serious home user and the small business, we are pleased to announce a new package based around the 1040ST-FM. The 1040ST-FM has 1Mbyte RAM and a 1Mbyte built-in disk drive. In addition, the 1040ST-FM now comes with a TV modulator built-in. (The previously available 1040ST-F was designed for use with a monitor only and did not come with a modulator.) This modulator allows the 1040ST-F to be plugged directly into any domestic TV set, and comes complete with a lead to allow you to do so. The new 'Professional Pack' from Silica includes the new 1040ST-FM with modulator plus four high quality software packages including a spreadsheet, database, word processor and programming language. This 'Professional Pack' software will enable you to get straight down to business with your new computer. In addition to this software (worth £384.84), if you buy the Professional Pack from Silica Shop, you will also receive the Silica ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for further information.



£499 INCLUDING VAT

With SM124 mono monitor: ..... £598 INC VAT

With SC1224 colour monitor: ... £798 INC VAT

ATARI 1040ST-FM	(Computer)	£499.99
VIP PROFESSIONAL	(Spreadsheet)	£149.95
MICROSOFT WRITE	(Word Processor)	£149.95
SUPERBASE PERSONAL	(Database)	£59.95
BASIC DISK & MANUAL	(Language)	£24.98

NORMAL RRP: £884.82

LESS DISCOUNT: -£385.82

PROFESSIONAL PACK PRICE: £499.00

2Mb & 4Mb MEGA ST

The MEGA ST computers are styled as as lightweight keyboard with a separate CPU, connected by a coiled telephone style cable. There are two versions of the MEGA ST, one with 2Mbytes of RAM and the other with 4Mbytes. Each version has a 1Mbyte double sided disk drive built-in to the CPU unit. The MEGA ST's do not come with modulator built-in and must therefore be used with a monitor. With every MEGA ST purchased, we will add the 'Professional Pack' software (worth £384.83) detailed above, plus the Silica ST Starter Kit (worth over £200) both Free Of Charge. Return the coupon for further details.



2Mb MEGA ST
£899 INC VAT
+ mono monitor = £998
+ colour monitor = £1198

4Mb MEGA ST
£1199 INC VAT
+ mono monitor = £1298
+ colour monitor = £1498

DTP PageStream £149 +VAT =£171.35

Desktop Publishing (DTP) is one of the fastest growing applications for personal computers. We are pleased to announce a powerful low cost package for the Atari ST called PageStream. PageStream costs only £149 (+VAT=£171.35) and, because it works with an Atari 1040ST and a Seikosha SP-180AI printer, you can be up and running with a complete system for less than £1000. Some of the features of PageStream are listed to the right. If you would like further information on this program, complete and return the coupon below, ticking the 'DTP' box in the corner.

* TEXT-FLOW AROUND GRAPHICS
* ROTATION OF TEXT & GRAPHICS
* SLANT OR TWIST ANY OBJECT
* POSTSCRIPT COMPATIBLE
* TAG FUNCTION
* AUTO/MANUAL KERNING & HYPHENATION
* GROUPING OF OBJECTS

DO YOU OWN AN ATARI ST?

If you already own an Atari ST computer and would like to be registered on our mailing list as an ST user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist ST service that is second to none.

SILICA SHOP:

SIDCUP (& Mail Order) **01-309 1111**
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX
OPEN: MON-SAT 9am - 5.30pm **LATE NIGHT:** FRIDAY 9am - 7pm

LONDON **01-580 4000**
52 Tottenham Court Road, London, W1P 0BA
OPEN: MON-SAT 9.30am - 6.00pm **LATE NIGHT:** NONE

LONDON ..... **01-629 1234 ext 3914**
Selfridges (1st floor), Oxford Street, London, W1A 1AB
OPEN: MON-SAT 9am - 6.00pm **LATE NIGHT:** THURSDAY 9am - 8pm

ATARI ST

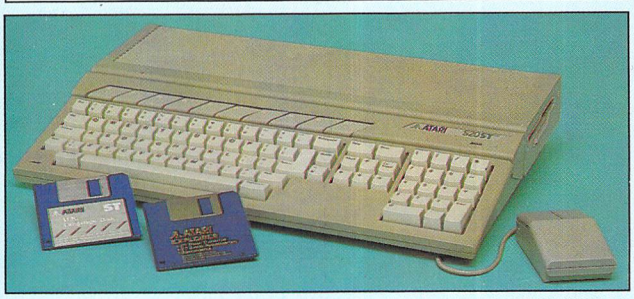
ST COMPUTERS

The range of Atari ST computers offers something for everyone. From the games enthusiast who wants the challenge of the very best in arcade action, to the businessman who wants to make financial forecasts or faultless presentations. The ST offers high quality graphics, sound and speed for the gamer, whilst providing a fast, user friendly and affordable solution to business. The ST is now firmly established in the home environment and boasts a wealth of users in education, local government, television, and a variety of different businesses. Software for the range stretches to cover applications as diverse as ENTERTAINMENT, ACCOUNTS, ART, COMMUNICATIONS, COMPUTER AIDED DESIGN, DATABASES, DESKTOP PUBLISHING, EDUCATION, MUSIC, PROGRAMMING, SPREADSHEETS, WORD PROCESSING and more. For a full list of the software available, as well as details of the ST range, complete and return the coupon below.

All prices correct at the time of going to press. E&OE.

520ST-FM EXPLORER PACK

WITH BUILT-IN 1Mb DISK DRIVE



The value for money offered by the Atari ST range is reflected in the Explorer Pack featuring the 520ST-FM computer with 512K RAM. The 520ST-FM computer now comes with a built-in 1 Mb double sided disk drive as well as a free mouse controller and a built-in TV modulator. The new 520ST-FM Explorer Pack includes the 520ST-FM computer, the arcade game Ranarama, a tutorial program and some useful desktop accessories. In addition, if you buy the Explorer Pack from Silica, we will give you the Silica ST Starter Kit worth over £200, FREE OF CHARGE. Return the coupon for details of our Starter Kit and of the full ST range.

£260

ONLY **£2.51** PER WEEK
RETURN COUPON FOR DETAILS

+VAT= **£299**

+ SM124 mono monitor: £398 INC VAT + SC1224 colour monitor: £598 INC VAT

WHY SILICA SHOP?

Before you decide when to buy your new Atari ST computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer and expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Atari ST related products in the UK, a full time Atari ST specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years with an annual turnover in excess of £8 million and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. But don't just take our word for it. Complete and return the coupon below for our latest literature and begin to experience the Silica Shop specialist Atari service.

SILICA STARTER KIT: Worth over £200, FREE with every Atari ST computer bought from Silica.

PROFESSIONAL PACK: Free business software with 1040ST-FM and MEGA ST's bought from Silica.

DEDICATED SERVICING: 7 full-time Atari trained staff with years of experience on Atari servicing.

THE FULL STOCK RANGE: All of your Atari requirements from one place.

AFTER SALES SUPPORT: The staff at Silica are dedicated to help you get the best from your ST.

FREE CATALOGUES: Mailed direct to your home as soon as we print them, featuring offers as well as all of the new releases.

FREE OVERNIGHT DELIVERY: On all hardware orders shipped within the UK mainland.

PRICE MATCH PROMISE: We will match competitors on a 'same product same price' basis.

FREE TECHNICAL HELPLINE: Full time team of Atari technical experts always at your service.

FREE SILICA STARTER KIT WORTH OVER £200

WITH EVERY ST - RETURN COUPON FOR DETAILS

ALL PRICES QUOTED INCLUDE FREE UK DELIVERY

To: Silica Shop Ltd, Dept ATSTU 0589, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

PLEASE SEND FREE LITERATURE ON THE ATARI ST

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

Address: .....

.....

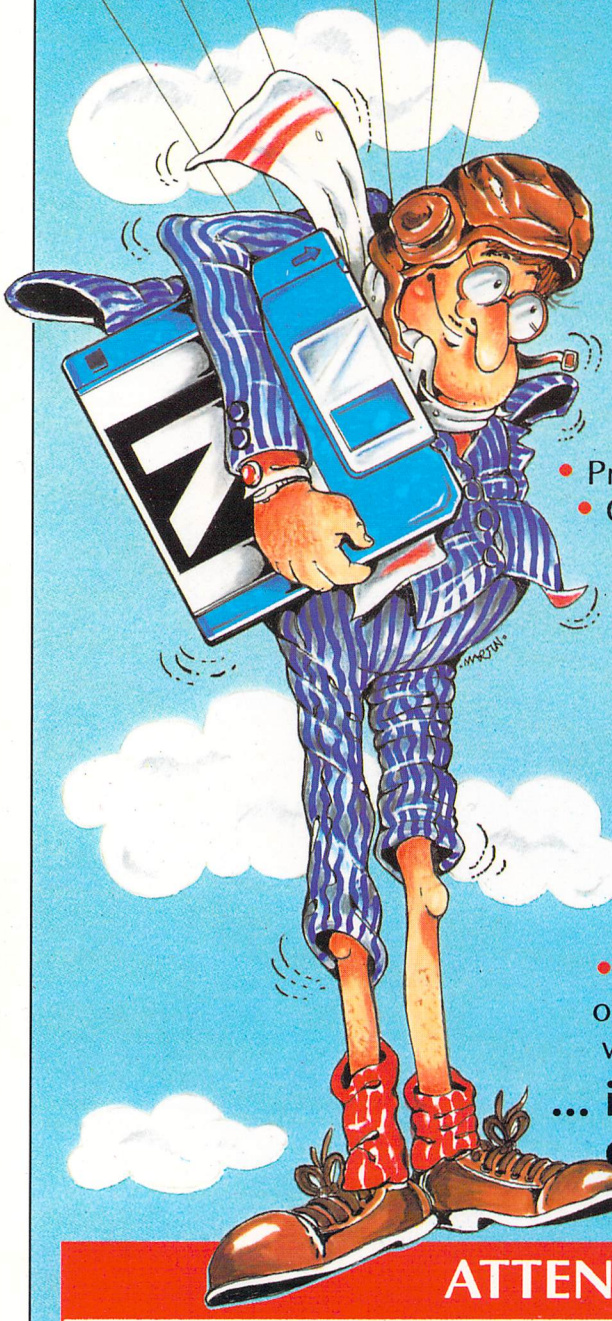
.....

..... Postcode: .....

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

IT'S AMAZING!

.... what lengths people will go to, to get their hands on our Software...



K SPREAD 3

Professional Spreadsheet £89.95

- Keyboard and Mouse control options.
- Auto Sensing Data Entry giving fast, easy editing.
- Multiple Worksheets giving much of the functionality of 3D Spreadsheets.
- User defined functions.
- File Combine.
- Password File Security.
- Predefine Cells & Blocks.
- Comprehensive Printer Controls.
- Over 100 Functions: Database, Conditionals, Trig, Time/Date, Financial Calculations, String & Logic Functions.
- Text formatting in deeper and wider cells.
- Lotus, ASCII and DIF File loading and saving.
- Sort, Find, Search and Replace.

K GRAPH 3

Business Graphics £49.95

- Scatter Graphs, XY Graphs, 3D, Vertical, Horizontal and Stacked Bar Charts, Pie Charts.
- ASCII & DIF file input - handles files from a wide range of programs
- .IMG and Metafile output - ideal for use with DTP packages.

... it's not surprising when you compare our impressive features with other, more expensive alternatives!



ATTENTION VIP OWNERS

• Much Faster Operations • Multiple Spreadsheets in Memory • Direct Access to Spreadsheet Cells on Disc • Far Better Graphics • User Defined Functions • 9 Distinct Error Messages • More Memory for Data • Text Formatting in Deeper & Wider Cells • GEM and Lotus style Commands • WKS and WKIfile Loading • Bold, Italics and Colour on Screen • Real Intuitive Software

• All this and more can be yours by upgrading to K-SPREAD3 plus K-GRAPH3 for just £50.00 incl VAT by sending your VIP Master Disc to Kuma!

Kuma Computers Ltd

Kuma

12, Horseshoe Park, Pangbourne, Berkshire RG8 7JW
Tel: 07357 - 4335 Fax: 07357 - 4339

K-COMM2	£49.95	K-RIKKI	£19.95
K-DATA	£49.95	K-ROGET	£49.95
K-EXPERT	£79.95	K-SEKA	£49.95
K-GRAPH2	£39.95	K-SPREAD1	£24.95
K-INDEX	£19.95	K-SPREAD2	£59.95
K-MINSTREL2	£29.95	K-SCOPE *inc interface*	£228.85
K-OCCAM	£59.95	K-SPECT *software only*	£89.95
K-RAM	£29.95	K-SPECT *inc. interface*	£228.85
K-RESOURCE2	£39.95	K-SWITCH2	£29.95
K-RHYMES	£19.95	K-WORD2	£39.95
Book: THE ATARI ST EXPLORED			£ 8.95