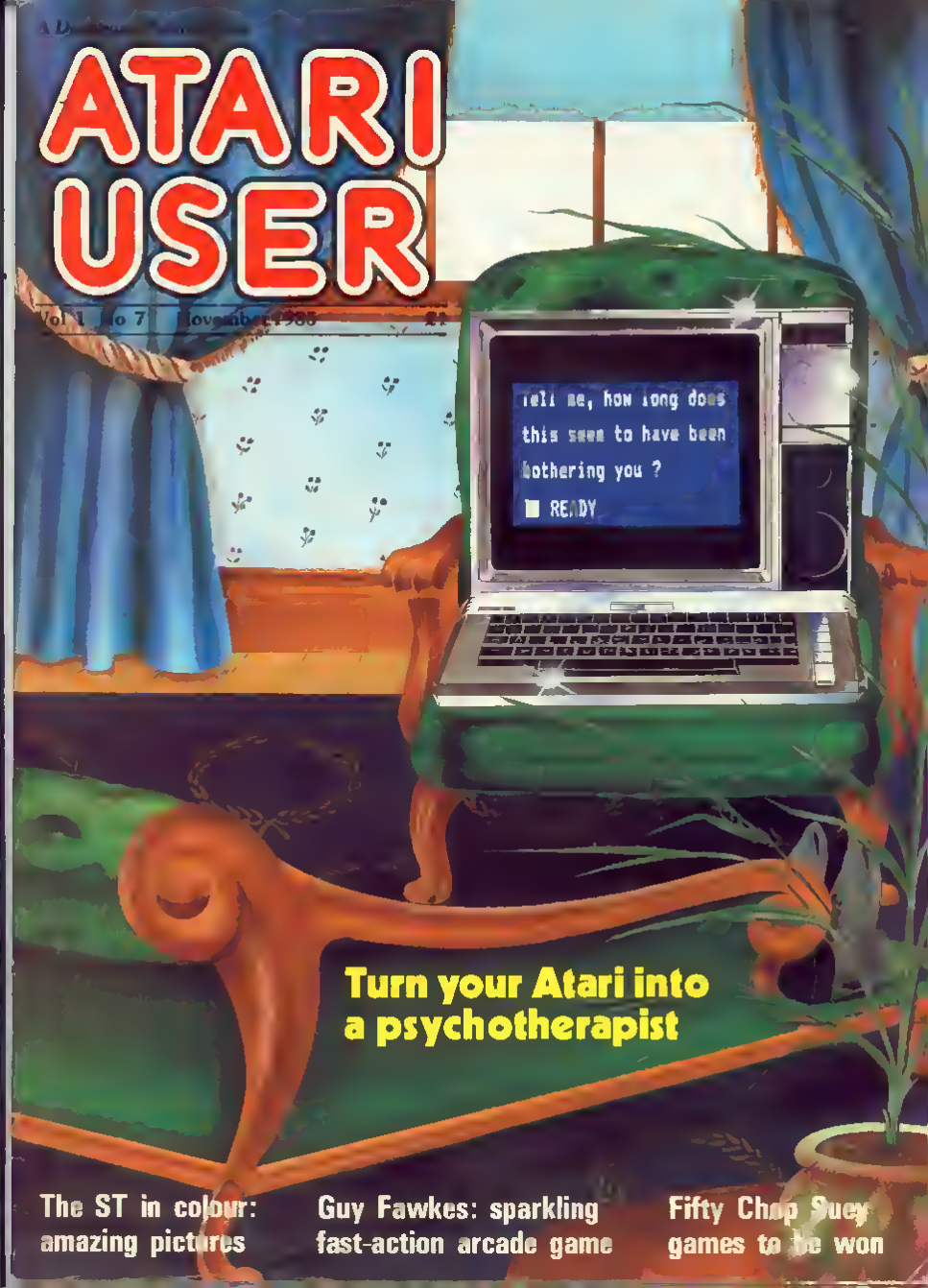
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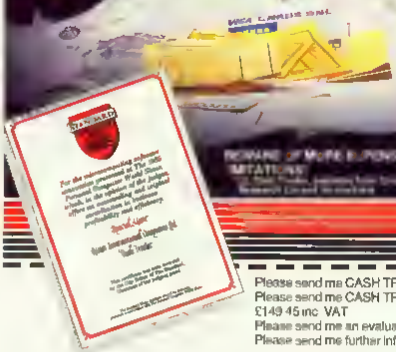
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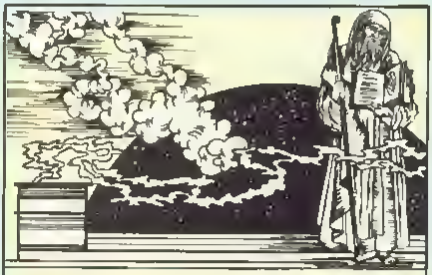
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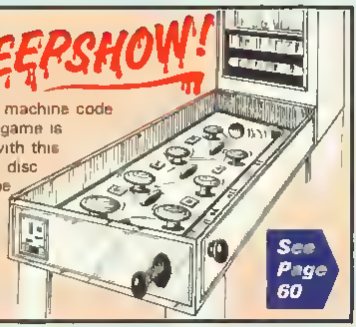


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No flood of cut-price STs, says Atari

ATARI UK has described reports of cut-price 520STs flooding into the country through the back door as suspect to say the least

The company has investigated several stories concerning possible black market machines and found them to be without foundation

All the leads we have followed up in this area have proved to be fruitless says Max Bembridge Atari UK's general manager

Naturally because of the intense interest generated by the 520ST some people will have gone to considerable lengths to get their hands on them he said

But if there is such a market it is much more likely to be grey rather than black

However one major distributor still insists there is an under the counter operation involving hundreds of machines These are allegedly being offered for sale at discounts of more than £70

These claims come from Tony Deane a director of Silica Shop the Atari distributor for Greater London south of the Thames Sussex, Kent and Middlesex

We believe that these machines are coming in via the back door from sources in the Far East and Holland he told *Atari User*

'We know this to be true because dealers in our own area have bought them This is all making a mockery of the Atari distribution plan for the ST which effectively carved the company up into regions

Tony Deane added a warning for both dealers and customers that they may well get their fingers burned if they do not buy from legitimate sources

If a machine has not been purchased through normal channels the guarantee is not valid he said So if it goes wrong there is no comeback for the buyer

'Then they will realise that even if they have bought it cheaply it certainly won't be good value for money

Top selling Atari programs

TOP Ten

Compiled every month for Atari User by Terry Blood Distribution Ltd.

1	**Boulderdash**	Mirrorsoft
2	**Spot the Ball**	Thorn EMI
3	**Pole Position**	US Gold
4	**Kissin Cousins**	English
5	**Chop Suey**	English
6	**Summer Games 2**	US Gold
7	**Red Moon**	Level 9
8	**Beach-Head**	US Gold
9	**Daley Thompson's Decathlon**	Ocean
10	**Elite**	Firebird

Drive on schools

ATARI is poised to gain a foothold in the UK educational market with a discount scheme aimed at schools and colleges

The company has announced that it is offering 10 per cent off all 8 bit computer hardware, peripherals and software

In addition it is aiming to win over the colleges with 15 per cent off the ST machines and their associated peripherals and software

The Mac basher

A BENCHMARK test of computer speed has proved conclusively that the 520ST can show a clean pair of heels to the Apple Macintosh

Set up by Antic an American computer magazine it saw the Atari flagship machine execute a program in 3 8 seconds which took the Mac from 7 to 13 seconds

Using the most widely accepted standard in the computer industry the procedure involved turning the micros loose to find all prime numbers between 3 and 13 681

By turning in a time of 3 8 seconds the 520ST revealed itself to be as fast as minicomputers running on the Unix system

Target is 20 million

ATARI has targetted a potential worldwide market of up to 20 million customers for the ST range

This was revealed by the corporation's chairman Jack Tramiel during a recent visit to London

Discussing the long term strategy behind the global marketing of the ST he told *Atari User* 'What we have out there are 20 million people who have already bought 8 bit machines

Now these people are looking to upgrade them They want something that's faster and easier and at the right price Well that is just what Atari is offering them

Jack Tramiel believes that his team will set the pace because its members have a better understanding of what the end user really wants

'The majority of manufacturers do not understand the customer' he insists 'All of them believe that with advertising they can reach the position that General Motors once held That being they were able to persuade people that all they wanted out of life was a yellow car

'Well that was okay until the Japanese arrived and offered blue cars of better quality at a lower price Suddenly nobody wanted the yellow cars any more

'That's what is now happening in the computer industry

The outspoken entrepreneur is unflinching in his belief that it will be the informed computer user who will make Atari number one

'When I left Commodore I knew that the only way to bring this business back alive was to continue my philosophy of giving the end user – the most intelligent person in our society – the best technology available at the time says Jack Tramiel

'As far as I am concerned he has had enough of 8 bit products even with all the advertising that's been done

'The launch of the ST was the best I have been involved in since the beginning It proved to me once again that the end user knows best what he wants

Atari 'seal of approval' for top software

THE creme de la creme of Atari XL and XE software is now instantly recognisable says Atari having just initiated its own software awards

It is giving Atari Approved Software labels to what it believes are the best titles available in five categories – small businesses education recreation utility and creativity They are to be presented on a regular basis

Software houses and distributors have already been invited to submit titles for evaluation by Atari and an outside examiner Criteria for approval include quality value for money and suitability to the machine A licence fee is not being charged for the labels

Atari has already decided on its first winners and one company which has fared extremely well in the listings is distributor Software Express

The distributor's approved titles are Earthviews The Factory Paperclip Syncalc B Graph Action! Basic XE Bank Street Music Writer Font Shop Hitch Hiker's Guide Kennedy Approach and Space Base a number of which are American imports

Andromeda was next in line with Seven Cities of Gold a 130XE version of Paperclip and B Graph

Also included were Rescue from Fractalus and Ballblazer from Activision Zorro and Kennedy Approach from US Gold Microbase+ from Silicon and P Forth from Bignose Software

Atari have been commended on the approval scheme by Mike Rowlands Jones of Software Express It is not only a good incentive for the software houses but a great help to customers he said

Customers usually have several titles of a similar nature to choose from If they see a label of approval from the machine's manufacturer they at least know it must have something going for it

In the charts approval is given to a title because it is in the ten that week In three months it could be gone I believe the titles which should be rewarded – and there are some out there are the classics

The approval scheme has already taken off in America and is working well said Rowland Jones And it will work here as long as it is not a five minute publicity gimmick It needs publicising and for all software houses to become involved

Computer links for churches

THE recently formed Christian Micro Users Association has begun its work of linking together computer users of various denominations and promoting the use of micros in church activities

Association secretary Philip Clark told *Atari User* There is a great need to discover and make contact with the individuals and companies producing Christian software

We also need to share the expertise and ideas of the many who have sought to use micros in their church related activities

The aim of CMUA is to concentrate on the popular computers like the Atari and it has already unearthed a significant number of programs based on Bible studies

The Association intends to produce a quarterly magazine called Christian Micro and from next January launch a series of tape magazines for specific micros

Its other activities will include the formation of local groups



Double challenge on the ST

TALENT Computer Systems is providing users of the 520ST with a double challenge in its latest release

The single 3.5in disc includes two fast paced adventures West and The Lost Kingdom of Zkul

West acts as an introduction to the more demanding dungeons and dragons scenario of Zkul The aim is to track down a notorious gang of bank robbers who have gone to ground in an abandoned mine in Indian territory

There is gold to be collected clues to be solved and Indians rattlesnakes and robbers bullets to dodge in more than 130 locations

Zkul is a classic and complex adventure within excess of 200 locations and a huge vocabulary

Users must find the last refuge of the dwarves the Domed City and the precious secret of the old civilisation

It is a real time adventure with tasks to complete puzzles to solve and mazes to negotiate

The two in one disc costs £24.95

Video digitiser launch

A VIDEO digitiser for the Atari 800, 800XL and 130XE has been produced by Stem Computing

Called Computereyes, it has been adapted for the British and European PAL video standard from the original NTSC model designed and manufactured by Digital Vision in the USA

Computereyes will digitise from any standard video source including video recorder and video disc

Images are placed in the hi-res graphics area and can be saved to disc if desired Special high contrast and grey-scale capture routines are included The system costs £139

Pascal for ST

FORTRAN 77 and Pascal are to be developed for the Atari ST by Prospero Software which hopes to have the two language programs available at the end of this year

PROTEUS ON ITS WAY

A SECRET software product with the code name Proteus is currently being developed at the London headquarters of Softek.

It is an integrated suite of programs which has been designed says the company to sit on top of GEM.

There has been nothing like it seen on the market before says Tim Langdell of Softek. We are convinced it will rival both Jazz and Symphony in its impact.



Dutch schools go for the 800XL

DUTCH children have begun to learn about computing and the Atari 800XL is the machine chosen by the education authorities to do for Holland what the BBC Micro did for Britain.

A series of radio and television programs featuring the 800XL is being broadcast to Dutch elementary schools.

Its aim is to introduce youngsters to information technology and smooth the process of learning to use micros.

The project is being supervised by the Dutch school radio foundation SNS a combination of the school radio services of AVRO and VARA founded in 1951.

Other participants involved apart from SNS and Atari are the department of education at Amsterdam University and Wolters Software.

Atari Benelux sales and marketing manager Wilfred de Graaf says the project could lead to sales of more than 100 000 800XLs in Holland.

Pupils will learn the history of communication how to use the 800XL solving problems by computer programming and other skills.

The SNS is encouraging pupils and teachers to develop their own software to add to the library of programs broadcast on the schools radio network for downloading on to cassette.

Two 15 minute television programs featuring the 800XL will be broadcast each week in the afternoon so that they can be watched during school lessons.

Mohawks take the Atari trail

BIG [illegible] and Tramiel has come to the aid of the Mohawk Indians in Canada, the country where he had some of his earliest business successes.

The Atari boss presented the first of 10 520STs received councillor Murray Maracle at the 1985 trade fair in Toronto.

The machine will be used in training at the Ecole Hagersville Technical Institute. But does donation is of much greater value than that to the Indians.

For Atari has commissioned the Mohawks educational arm to develop a syllabic fount for use in developing software in the many North American Indian languages.

The syllabic fount will be based on an alphabetical pictogram-like marks or picture symbols developed to represent words and phrases in the Indian tongues.

When the development work is done the Mohawks will become value added resellers for Atari marketing the 520ST to native groups all over the North American continent.

The idea of developing a syllabic fount for use with the 520ST was discussed during meetings between the Mohawks and Atari Canada.

Being good Canadians and the Indians have been here long before us we thought why don't we try to do something for them says Atari Canada general manager Ian Kennedy.

Then we spoke to Jack Tramiel about it and he thought it was a great idea and sanctioned the donation of the 10 machines for training and software development.

Enhanced Gem is forecast

A MAJOR row between the Apple Corporation and Digital Research has been settled in such a way that Atari may emerge as the eventual winner.

Digital Research has agreed to pay Apple an undisclosed sum and amend its Gem programs to avoid any possible infringement of copyright.

It is these programs that are being offered with the new ST range of micros.

One result of the compromise settlement is that new versions of Gem are to be produced designed to be substantially different to Apple's Macintosh personal computer in both screen appearance and operation.

This is viewed by the industry as a move by Apple to counteract Gem providing the ST with a Macintosh type environment. For this had already earned the Atari machine – some half the price of the Mac – its nickname of the Jackintosh.

However Max Bembridge Atari UK's boss seemed unperturbed by the news when it was broken to him by *Atari User*.

As this involves an agreement with which we are not directly involved it is really nothing to do with us he said.

But it would seem safe to say that if the Gem packages available for the ST have to be changed they will naturally be improved.

And this may well mean that the ST will be able to score even more heavily against the Macintosh.

Meanwhile Apple has disclosed that it has pressurised Digital Research to take immediate action in the modification of three specific programs – Gem Desktop Gem Paint and Gem Draw.

However until the new versions of these become available the current ones – available for the ST – will still be marketed.

Digital Research has given the assurance that all its present range of programs for the ST will operate in any future Gem environment.

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No. 3 November 1985

NEWSLETTER

MESSAGES THAT ARRIVE BEFORE THEY ARE SENT...

BELIEVE it or not – but MicroLink's subscribers in Australia can have a Telemessage delivered in England before they actually send it!

This feat of telecomputing wizardry is made possible by the speed of MicroLink's electronic mail service and the ten hour time difference between the UK and Australia's east coast.

Say, for instance, MicroLink subscriber Ned Kelly is waiting for his morning billy to boil in Sydney when he remembers with horror that it's the birthday of Liza Doolittle, the sheila he met on holiday in Earls Court, and he hasn't sent a card.

It's 5.30am Tuesday – which is 7.30 Monday even ing at MicroLink's nerve centre, and half an hour before the deadline for guaranteed next day delivery of Telemessages.

Ned hastily scribbles out a few affectionate words and soon has the greeting safely transmitted to MicroLink, from where it is passed on to Liza's local delivery office.

In common with her fellow market flower sellers Liza gets her mail very early – so Ned's birthday greeting arrives on a colourful Telemessage card at 5.15 Tuesday morning – half an hour before he transmitted it to MicroLink.

Even better news for Ned – because Australia is on the International PacketSwitch Stream network he is able to shoot his message across 10,500 miles for the equivalent of about 15p. The MicroLink Telemessage itself costs him £1.95, plus 65p for the fancy greeting card.

So Ned's long distance romance with Liza is saved for less than £2.

Church keeps in touch by telex

A MICROLINK member with a mission is Colonel K.A. Christian who until his retirement was head of telegraph and data systems at British Telecom head quarters.

As secretary to the Deanery of Clare in the Diocese of Bury St Edmunds and Ipswich he uses his Tandy Model I and Miracle Modem as often as possible to communicate by electronic mail and telex with other church officials.

And he is also a member of the Church Computer User Group whose patron is the Archbishop of York and whose aim is to spread the gospel of high tech among church administrators.

A prime target for a telecomputing baptism is his Rural Dean, the Rev Andrew Haig, who has a Commodore 64 but hasn't yet got a modem.

"I'm hoping he'll obtain one very soon" says Col Christian. "I can contact our Deanery Treasurer's Apple II via Prestel and I can use MicroLink's telex facility to communicate with the Diocesan Registrar.

"What would really please me is for them all to be linked by the electronic mail service so we could show how telecomputing can help church administrators function more efficiently."

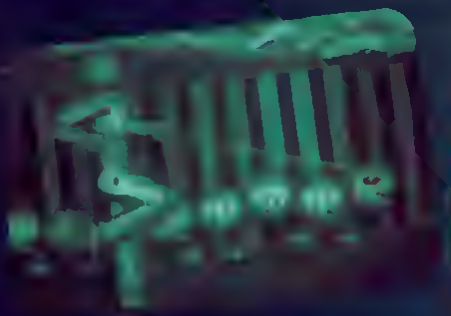
System speeds up

SENDING a telex message overseas via MicroLink is now easier and faster.

Previously, when a system user was asked 'Tlx Key plus or Code?' he had to access an alphabetical list of countries and read through it to get the appropriate code number of the country he was sending to.

Now he can just type in the name of the country, telex number and the answer back code where appropriate and press Return before typing in the text of the message he wants to send.

YOUR chance to join MicroLink – turn to Page 31







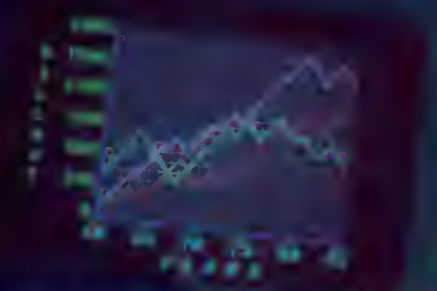
ST colour magic

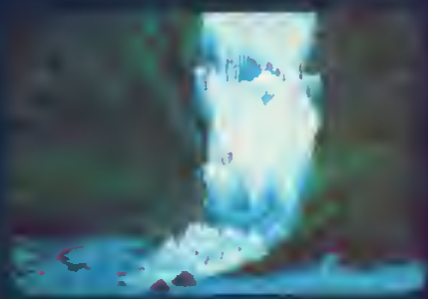
THE 520ST sitting in the Atari User office has obviously been the centre of attention recently. However, it was almost the scene of tears a few days ago when three demonstration discs for the 520ST arrived from America.

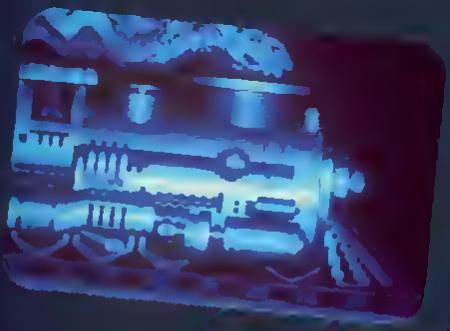
Tears of elation, that is! Not as for the packages had been damaged in the post. Fortunately, the story has a happy ending. Despite the ramblings of the Director of Mail Processing in San Francisco on how "inadequately developed" mail needs colour stats, machinery to join the three discs had survived intact.

The collective editorial sigh of relief was heard several offices away.

The monochrome pictures in the "slide show" demos were pretty impressive, but when we hooked up a colour monitor – kindly rushed to us by Silica Shop – everybody gaped in amazement. The quality is so good that we've reprinted them here. If you think they look good, you should see them in real life.

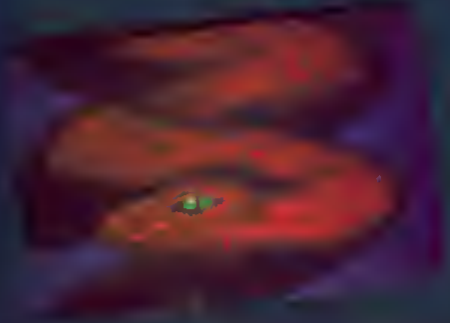








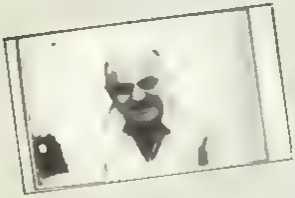




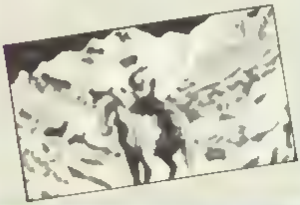
The 520 ST's black and white performance is superb, too











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Company	Product	Expected availability date
COMMUNICATIONS SOFTWARE		
Haba Systems	Habacom	Now
Kuma Computers	K Comm	Now
Mark of the Unicorn	PC/Intercomm	Now
Michtron	MI Term	Nov 85
Miracle Technology	Ascii/Prestel Comms	Dec 85
Softwerks	Ascii/Prestel Comms	Jan 86
Software Punch	Local Area Network	Now
SST Systems	Chat	Now
PERSONAL AND HOME FINANCE		
Haba Systems	Checkminder	Now
Micro End Inc	Home Accountant	Now
CREATIVE SOFTWARE		
Island Logic	The Music System	Jan 86
Mirrorsoft	Fleet Street Editor	Feb 86
ENTERTAINMENT SOFTWARE		
Bluechip Software	Seven	Dec 85
Bluechip Software	Tycoon	Dec 85
Bluechip Software	Millionaire	Dec 85
English Saloh Software	Hyperdrive	Nov 85
Firebird Software	Starglider	Dec 85
FTL/Oasis	Sundog the Frozen Legacy	Now
Infocom	A Mind Forever Voyaging	Now
Infocom	Deadline	Now
Infocom	Suspect	Now
Infocom	Wishbringer	Now
Infocom	Hitch Hikers Guide to the Galaxy	Now
Infocom	Zork I	Now
Infocom	Zork II	Now
Infocom	Starcross	Now
Infocom	Cut Throats	Now
Infocom	Sorcerer	Now
Infocom	Enchanter	Now
Infocom	Infidel	Now
Infocom	Planetfall	Now
Infocom	Sweetalker	Now
Infocom	Witness	Now
Infocom	Suspended	Now
Infocom	Zork III	Now
Intelligent Software	Three Dimensional Chess	Dec 85
Island Logic	Pulsoan	Jan 86
Llamasoft	Caleuspace	Nov 85
Mark of the Unicorn	Hex	Now
Michtron	Flip Side	Now
Michtron	Gelerunner	Nov 85
Michtron	Mud Pies	Now
Michtron	Flight Simulator	Now
Micrinsel	Lands of Havac	Now
Paradox Software	Caverns	Now
Penguin	Panasia	Now
Penguin	Transylvania	Now
Penguin	Xyphus	Now
Penguin	Crimson Crown	Now
Sierra On Line	Ultima II	Now
Sierra On Line	Kings Quest	Now
Sublogic	Flight Simulator II	Now
Sublogic	Jet	Now
Talent	The Last Land of Zkul & West	Now

The complete list of pioneering programs

ST software

- What's being written
- Who's producing it
- When it's available

Company	Product	Expected availability date
WORD PROCESSING		
8OS	Bedwriter	Now
Digital Research	Gemwrite	Now
Fydlar	Mellmate	Now
Fydlar	Spellmate	Nov 85
Fydlar	Wordmate	Nov 85
Haba Systems	Haba Letters	Now
Haba Systems	Habaword	TBA
Kuma Computers	K Word	Now
Mark of the Unicorn	Mince Editor	Now
Metacomco	ED	Now
Mirage	Espress Letter Processor	Now
Precision Software	Superscript	Jan 86
SM Software	Word Processor	TBA
SM Software	Spelling Checker	TBA
DATABASE		
8OS	Autoclerk	Now
8OS	Autoindex	Now
Datebench	Dalamum	TBA
Fydlar	Datastate	Nov 85
Kuma Computers	K Data	Now
Laserseft	Laserbase	TBA
Precision Software	Superbase	Jan 86
SM Software	Filemanagar	TBA
Stamsware	DB Master	Now
Talent	FlexFile	Jan 86
SPREADSHEET		
8OS	Basplanner	Now
Haba Sy[illegible]	Habacalc	TBA

Company	Product	Expected availability date
Kuma Computers	K-Spread	Now
Mosaic	Twin	Now
SM Software	Spreadsheet	TBA
VIP	The Professional	Now
BUSINESS GRAPHICS		
Digital Research	Gemdraw	Now
Digital Research	Gempaint	Now
Fyeller	Mastergraph	Nov 85
Rising Star	Cadcam	Dec 85
OFFICE MANAGEMENT		
Fyeller	Appointmaster	Now
Haba Systems	Haba Diary	Now
Haba Systems	Haba Window Diary	Now
Haba Systems	Haba Dam	Now
Haba Systems	Haba Window Calculator	Now
MISCELLANEOUS MANAGEMENT		
Batteries Included	Degas	Now
Datacode Systems	Project Leader	TBA
Mosaic	Integrated 7	Jan 86
Paradox Software	Desk Diary	Now
Pionner	Project Manager	TBA
Rising Star	Valdocs II	Nov 85
Softechnics	Timelink	Now
VERTICAL APPLICATION		
Execon Software	Taurus Printers Package	Nov 85
Fydler	Administrator	Now
Whitendale	Wasp Insurance Brokers	Now
Whitendale	Wasp Printers Estimating	Now
Whitendale	Wasp Accountants Diary System	Now
Whitendale	Wasp Membership Accounting	Now
Whitendale	Wasp Incomplete Records	Now
Whitendale	Wasp Accountants Time Recording	Now
Whitendale	Wasp Legal Accounting	Now
Whitendale	Wasp Legal Diary System	Now
Whitendale	Wasp Time Recording	Now
ACCOUNTING		
BOS	Fixed Assets	Now
BOS	Inventory Control	Now
BOS	Invoicing	Now
BOS	Negotiator	Now
BOS	Nominal Ledger	Now
BOS	Payroll	Now
BOS	Purchase Ledger	Now
BOS	Sales Ledger	Now
BOS	Sales Order Processing	Now
BOS	Small Business Accounts	TBA
Chalfont Systems	Sales Purchase Nominal Ledgers	Nov 85
Chilsoft	Taurus Stock Control	Nov 85
Execon Software	Taurus Invoicing	Nov 85
Execon Software	Taurus Accounts	Nov 85
Execon Software	Cash Trader	Dec 85
Quest International	Sales Debtors Ledger	TBA
Quest International	Stock Control System	TBA

Company	Product	Expected availability date
Quest International	Purchase Creditors Ledger	TBA
Quest International	Nominal General Ledger	TBA
Quest International	Sales Invoicing	TBA
Supplemental	2-Key Accounting	Now
Towngate Software	Cash Manager	Now
EDUCATION		
Academy	Typing Tutor	Now
Deltron	Home Planetarium	Nov 85
Scarborough	Master Type	TBA
OPERATING SYSTEM		
BDS	BDS/S Operating System	Now
GST Systems	CP/M 2.2 Emulator	TBA
UTILITY SOFTWARE		
Michtron	IBM Asch File Transfer	Now
Michtron	M/Disk	Now
Michtron	Soft Spool	Now
DESKTOP ACCESSORIES		
Atarisoft	Breakout	Now
Digital Research	Calculator	Now
Softechnics	Rhythm	Now
PROGRAMMING LANGUAGE		
Atarisoft	Basic Compiler	TBA
BDS	Microcobol Compiler	Now
BTMSoft	Basic Interpreter	Dec 85
Computer One	Assembler/Monitor	Now
Computer One	C Compiler	Nov 85
Computer One	Pascal	Dec 85
Computer One	Forth	TBA
Digital Research	ST Basic	Now
Digital Research	ST Logo	Now
Dragon Group	Forth Accelerator	TBA
Dragon Group	4 x Forth Level 1	Now
Dragon Group	4 x Forth Level 2	Now
GST Systems	C Compiler	Now
GST Systems	Macro Assembler/Monitor	Now
Haba Systems	Hippo C Compiler	Now
Hisoft	Pascal Compiler	TBA
Hisoft	C Compiler	TBA
Hisoft	Devpac	Now
Kuma Computers	K-Seka	Now
Metacomco	Assembler/Monitor	Now
Metacomco	Lisp	Now
Metacomco	C Compiler	Now
Metacomco	Pascal Compiler	Now
Philon	Basic Interpreter	Now
Philon	Basic Compiler	Now
Philon	Pascal Compiler	Now
Philon	Cobol	Now
Philon	C Compiler	Now
Prospero Software	Fortran 77	Dec 85
Prospero Software	ISO Pascal	Nov 85
TDI	Modula-2	Now
TDI	P System	Now

Maybe it's fun to you –
but it's £6 an hour to your wife!

The Computer that's been giving you such a fine time with computer games is now ready to earn you some real money. Helping you to run your own business or giving your wife the chance to earn £6 or more an hour for word processing/secretarial work.

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SuperScript **writes letters, invoices, reports, tables, documents, it stores, edits and even checks spelling.**

Versatile SuperScript SuperScript combines word processor, spelling checker, dictionary and mail merge facility all in one package. So SuperScript gives you all the tools you need to produce high quality reports tables, personalised letters and printed labels quickly and efficiently.

Simple for the beginner If you are a newcomer to word processing SuperScript puts you in immediate control. Full command is single word and for each command you simply move the cursor. You don't even have to type the command.

Good with numbers SuperScript allows you to extend your editing capabilities to columns for wide documents like financial statements, and with automatic tabs it's easy to create properly justified tables of numbers. SuperScript's complete set of calculator functions can be used interactively or you can operate on numbers from the text in your document. Apart from the usual mathematical functions like add, subtract, multiply, divide and percentages you have the ability to add rows, columns or even whole tables.

Good with spelling, too The build-in spelling checker goes right through your text checking it for you. You have the option to correct any error ignore it or add it to the 39 000 word dictionary.

Editing options SuperScript gives you all the editing options of a business word processor, with full block manipulation for cut-and-paste, search for text insertion or deletion, search and replace, with pattern matching and optional case, plus automatic backward search, case shifts for single words or larger blocks of text. And much more.

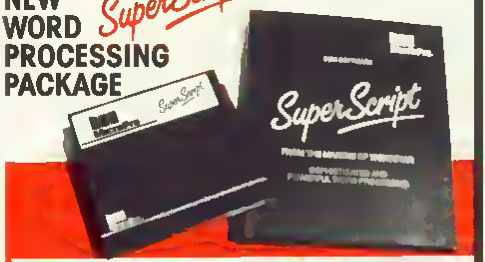
Powerful for the experienced user SuperScript also gives you the ability to cut with design to a minimum by storing your own command sequences or text on single keys. This means that with a single keystroke you can reproduce commonly used phrases or multi line addresses from a glossary, load in document formats or execute a pre-programmed sequence of operations.

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Postcode _____

If you are intending to use SuperScript for a specific purpose, we should be interested to have details. Thank you.

Gunpowder, Treason and Plot!



IT'S November 5th and the plot to blow up the Houses of Parliament has been foiled. Guy Fawkes has been discovered in the basement with a barrel of gunpowder, just about to light the fuse.

He's on the run now and the guards are hot on his tail. Every way he turns there seem to be more and more guards. Can you help him escape?

All he's got is the spade he used to dig his way into the basement. He can use this to dig holes in the floors.

With a bit of luck the guards won't see these and will fall into them. But be careful though. If you fall down one of the holes yourself you've had it.

Guy Fawkes is a fast ladders and levels game with 15 screens. There's a catchy tune to accompany the title page and instructions.

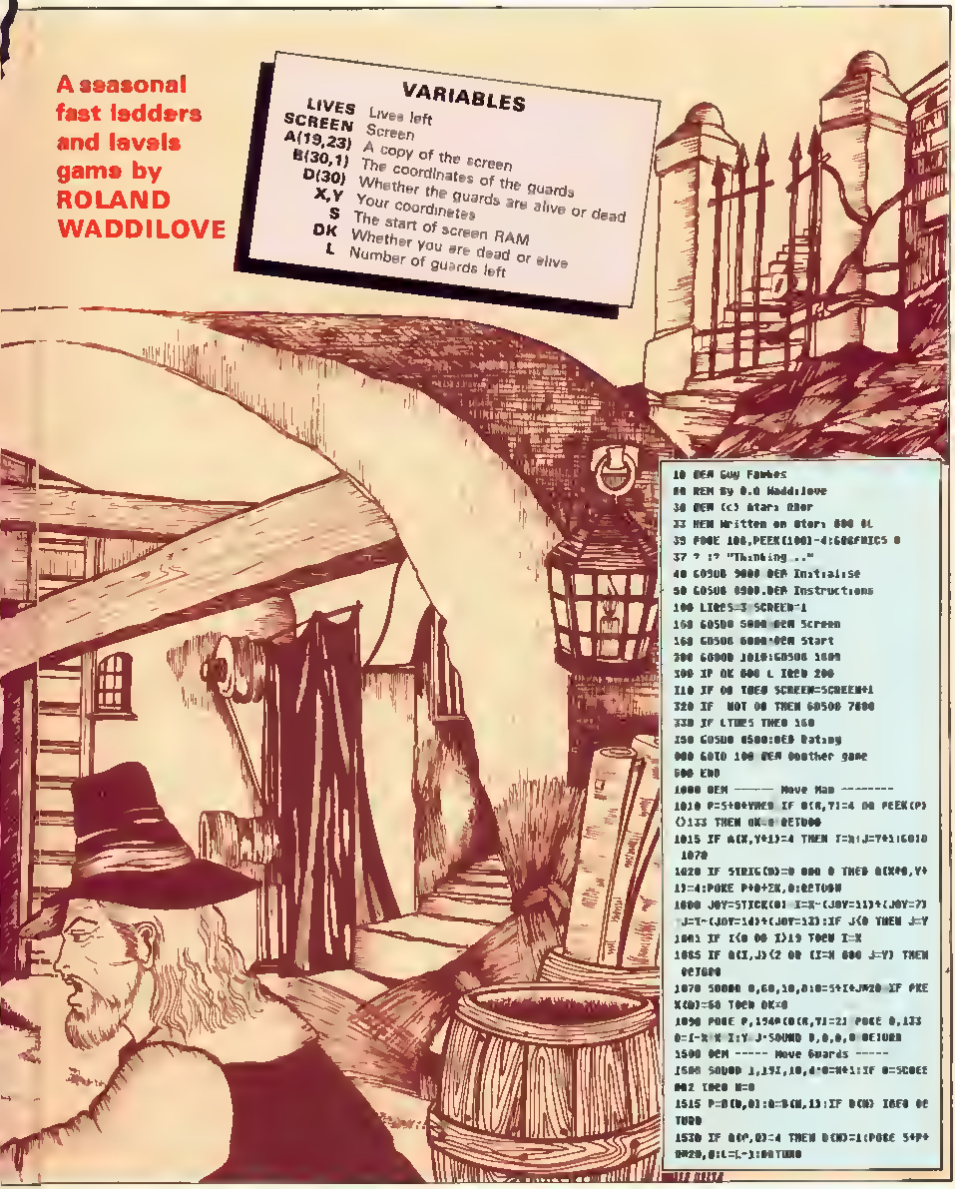
The screen is stored as data statements starting at line 5163 and the layout can be changed by changing the data.

You could also add another set and randomly select one or the other for variety if you're feeling adventurous.

A seasonal fast ladders and levels game by ROLAND WADDILOVE

VARIABLES

LIVES	Lives left
SCREEN	Screen
A(19,23)	A copy of the screen
B(30,1)	The coordinates of the guards
D(30)	Whether the guards are alive or dead
X,Y	Your coordinates
S	The start of screen RAM
DK	Whether you are dead or alive
L	Number of guards left



```
10 REM Guy Fawkes
20 REM By D.G Waddilove
30 REM (c) Atari User
33 REM Written on Atari 800 XL
35 POKE 106,PEEK(106)-4:GOSUB915 0
37 ? :? "Thinking ..."
40 GOSUB 9000 REM Initialise
50 GOSUB 8500:REM Instructions
100 LIVES=5:SCREEN=1
150 GOSUB 5000 REM Screen
160 GOSUB 6000:REM Start
200 GOSUB 1010:GOSUB 1800
300 IF DK=0 L IRET0 200
310 IF D0 THEN SCREEN=SCREEN+1
320 IF  NOT D0 THEN GOSUB 7000
330 IF LIVES THEN 150
350 GOSUB 8500:REM Dating
900 GOTO 100 REM Another game
999 END
1000 REM ------- Move Man --------
1010 P=5+D4*VMS:D IF A(X,Y)=4 OR PEEK(P)
<>133 THEN DK=1:RETURN
1015 IF A(X,Y+1)=4 THEN Y=Y+1:GOTO
 1070
1020 IF STRIG(0)=0 AND A THEN A(X+D,Y+
1)=4:POKE P+D+ZX,0:RETURN
1030 JOY=STICK(0):X=X-(JOY=11)+(JOY=7)
-(JOY=13)+(JOY=5):IF J<0 THEN J=Y
1041 IF X<0 OR X>19 THEN X=X
1065 IF A(X,J)<2 OR (X=X AND J=Y) THEN
 RETURN
1070 SOUND 0,60,10,8:S=S+40:IF PEE
K(0)=60 THEN DK=1
1090 POKE P,154+D*(X,Y)=2:POKE 0,133
0=X:Y=J:SOUND 0,0,0,0:RETURN
1500 REM ----- Move Guards -----
1505 SOUND 1,19,10,4+D*8+1:IF D=SCREE
N/2 THEN N=0
1515 P=B(N,0):O=B(N,1):IF D(N) THEN O=
TURN
1530 IF A(P,O)=4 THEN D(N)=1:POKE S+P+
O*20,0:L=L-1:D=TURN
```



```
1640 IF A$P,D#11=4 THEN DX=P:DY=D#1:GO
TO 1610
1650 DX=P+(X)D#1-LX(P):IF A(DD,G)(2 THE
N DX=P
1660 DY=D+(Y)D#2-CY(D1:IF A(DX,DY)(2 TH
EN G1=E
1610 POKE 5+P+8#30,1540+CA(P,0)*2):POKE
 5+D#+DYW20,60:E(N,D1)=60:B(N,1)=D3
1700 SOUND 1,D,D,D:GETURN
4500 REM ----- Rating ----------
4505 FOR I=0 TO 3:SOUND I,0,0,0:NEXT I
4610 GRAPHICS 0:SETCOLOR 2,0,0:POKE 70
5,0
4000 RESTORE 4700:FOR I=1 TO SCREEN:RE
AD M$:NEXT I
4610 ? :? :? :? "          R A T I N G
"
4620 ? :? :? :? "     ";M$
4640 ? :? :? :? "  Press Fire for ano
ther game..."
4650 GOSUB 4000
4700 DATA ###### Dog's soul ######,#### V
ery poor ####,### Not very good ##,### 
Satisfactory ###
4710 DATA ######## Of ########,######
### Bad #####,#### Quite good ####,###
# Very Good #####
4720 DATA ###### Fantastic ####,##### D
O N'T F AMBN,##### Amazing!! #####, ##
#### A C E ######
4600 RETURN
5000 REM ----- Screen ---------
5005 FOR I=0 TO 3:SOUND I,0,0,0:NEXT I
5010 GOSUB 6000:GRAPHICS 17+PEEK(106)
5020 SETCOLOR 0,3,8:SETCOLOR 1,7,8 SET
COLOR 2,12,0:SETCOLOR 3,13,12
5040 POKE 755,0:RESTORE 5163:PRINT #7,D
5045 S=PEEK(88)+256*PEEK(89):X=5
5050 FOR J=0 TO 21
5060 READ D$
5070 FOR I=0 TO 19
5075 I$=D$(I*1)
5080 IF I$="W" THEN A(I,J)=3
5090 IF I$=" " THEN A(I,J)=0
5100 IF I$="H" THEN A(I,J)=1:POKE X,19
4
5110 IF I$="C" THEN A(I,J)=1:POKE X,1
5120 X=X+1
5150 NEXT I
5160 NEXT J
5161 GETURN
5163 DATA WWWWWWWWWWWWWWWWWWWW
5164 DATA W======W=======W.
5100 DATA W.  .  .W  .  .W .
5166 DATA .W  .  .W  .  .W .
5170 DATA WWWWWWWWWWWWWWWWWWWW
5180 DATA =====W==  =W=======W
5190 DATA  .  .W....W.  .  .W
0300 DATA .  .  W  .  W  .  W
6210 DATA .WWWWWWWWWWWWWWWWWW
5220 DATA  =W=      =====W===
5230 DATA  .W.  .  .  .  .W.
5240 DATA  .W.  .  .  .  .W.
5250 DATA WWWWWWWWWWWWWWWWWW
5260 DATA ====W===W=======W==
5270 DATA .  .W.  .W.  .  .W .
5280 DATA .  .  W  .  W  .  W
5290 DATA WWWWWWWWWWWWWWWWWW
```

```
5300 DATA W=======W===W====.
5310 DATA W.  .  .W  .  .W .
5320 DATA W  .  .W  .  .W .
5340 DATA .WWWWWWWWWWWWWWWWWW
5350 DATA .=======.=========
5400 REM -------- Start ---------
5410 H=10:V=20:POKE 559+V*20,133
5420 FOR I=0 TO 3:RESTORE 5421+I
5425 DCI=0
5430 DCI,0)=I*3:T(RAN(1)*10)
5435 DCI,1)=3:T(RAN(1)*10
5440 POKE 578+I,0)+I*RAN(1,13,60
5445 NEXT I
5500 L=1
5100 POSITION 0,22:? #6;"LIVES ";LIVES
;:POSITION 20,22:? #6;"SCORE ";SCREEN
,
5150 D6=1:N=0
5200 GETURN
7000 REM ------ Caught ------
7010 LIVES=LIVES-1:POKE 54279+V*20,133
7020 SOUND 1,0,0,0:SOUND 2,0,0,0:SOUND
 3,0,0,0
7040 FOR I=100 TO 255 STEP 2
7050 SOUND 0,I,10,4:SOUND 1,I/2,10,X:S
OUND 2,I/4,10,2 SOUND 3,I00-I,10,1
7060 NEXT I
7200 GETURN
8000 REM ---------- Tune ----------
8040 J=1:SOUND 2,193,10,1
8050 RESTORE PEJ1:SOUND 1,C(J),10,4:IF
 J=3 THEN J=0
8070 READ I:IF I=0 THEN J=J+1:GOTO 805
0
8600 SOUND 0,I,10,10
8100 IF PEEK(20)(6 THEN 8100
8110 POKE 20,0:IF STRIG(0) THEN 8070
8120 GETURN
8200 DATA 85,96,76,90,72,90,64,96,57,9
6,56,96,47,96,50,96,47,90,47,50,57,47,
60,57,47,50,57,47,47,47,D
8220 DATA 47,50,47,50,57,60,67,64,57,6
0,57,00,47,50,47,D
8240 DATA 60,57,72,64,76,72,85,76,90,E
5,96,103,114,120,144,153,173,193,177,1
61,144,120,114,107,153,144,120,114
8250 DATA 103,96,0
8900 REM ----- Instructions -----
```

```
8910 GRAPHICS 1:POKE 705,0
8915 SETCOLOR 1,7,0:SETCOLOR 4,7,0 SET
COLOR 0,13,12
8620 POSITION 8,8:? #6;"GOY FAWKES"
8665 ? "              Otari  User"
8670 ? :? :? "          Press Fire Key
ton",
8675 GOSUB 8000
8500 GRAPHICS 0:SETCOLOR 2,0,0:SETCOLO
R 4,0,6:POKE 706,0
8505 POSITION 5,2:? "G U Y     F A W K
E S"
8690 ? :? :? "You plot to blow up the
houses of     parliament has been foil
ed and the"
8600 ? "guards are out on the trail of
 Guy     Fawkes  Can you help him escap
e?"
8610 ? :? "The guards can be disposed
of by      digging a hole in their pat
h  Don't     fall in yourself though!"
8620 ? :? "Pressing the fire button d
igs a hole  in front of you so watch ou
t."
8640 ? :? :? "Press Fire button..."
8700 GOSUB 8006
8680 GETURN
9000 REM ----- Initialise ---
9005 POKE 752,0
9010 RESTORE 9000
9020 DIM M$(20),A(19,23),P(5),C(19),T$(
13,8),X(0,13,D(13))
9060 FOR I=1 TO 5:READ J:P(I)=J:READ J:
C(I)=J:NEXT I
9080 DATA 8200,173,8200,173,8220,230,8
220,230,8200,173,8200,173,8220,240,82E
0,240,8240,1I6
9085 ? :? "Get to concentrate  .."
9090 K=PEEK(106)*256:FOR I=47 TO 1023:
POKE K+I,PEEK(57344+I):NEXT I
9095 ? :? "Wow!  .."
9100 FOR I=0 TO 47:READ J:POKE K+I,J:N
EXT I
9200 RETURN
9500 REM Character data
9505 DATA 0,0,0,0,0,0,0,0
9510 DATA 24,24,24,24,0,24,24,24
9520 DATA 60,126,66,66,66,126,66,66
9530 DATA 0,0,0,0,0,0,0,0
9540 DATA 16,60,16,124,254,186,40,186
9550 DATA 16,60,16,124,186,60,40,100
```

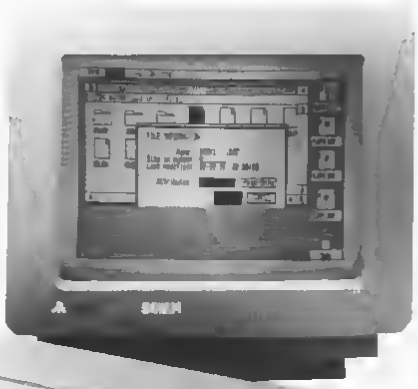



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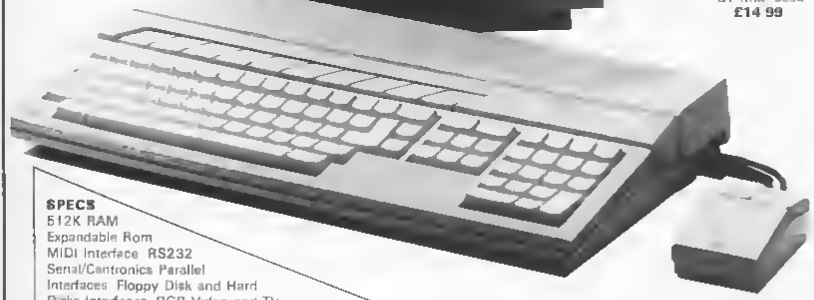


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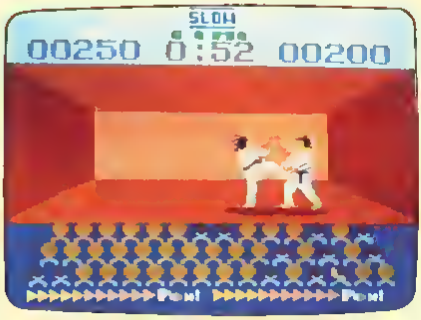
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Closing date for the competition is November 30 and the winners will be the first 50 correct entries picked out of the editorial hat.

It's not too hard, so why not enter? Remember, there are 50 chances of winning, so give it a try.

Chop Suey competition

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Z	G	G	C	A	E	F	V	A	A	E	T	I	X	A	E	G	E	G	L
M	C	V	N	A	P	A	J	N	B	L	A	F	Z	Q	H	D	S	G	R
S	L	U	M	V	M	E	K	E	Z	I	I	A	B	A	S	H	M	D	Q
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E	G	S	M	G	Y	F	V	F	V	O	Q	X	C	G	Q	A	N	T	O
R	B	G	Q	I	G	W	N	E	J	O	H	B	X	B	V	Y	I	Q	B
O	F	X	M	A	Z	W	A	V	I	E	T	N	A	M	N	M	B	B	M
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YOU CAN GET STUNNING 3D GRAPHICS FROM ONLY ONE COLOUR

Part Seven of DAVE RUSSELL's series on Atari graphics modes

SO far in this series we've looked at Modes 0 to 8. If you have one of the older Atari 400s or 800s that's as far as you can go. This month's article assumes that your machine has a particular chip which some early models lacked.

The chip in question is referred to as GTIA, or Graphics Television Interface Adaptor and its predecessor was referred to as CTIA. Unless you've had your machine since 1981, the chances are that it contains the GTIA.

If you *have* got an old machine and don't know which chip it contains, try entering Program 1, a simple routine which cycles through colours and luminances.

If you do have the GTIA, the whole of your television screen will cycle through the colours because the border and background are indistinguishable. However if your machine contains the earlier CTIA, the border will be a different colour from the background and so will be visible. Press Break or Reset to stop the program.

Assuming that you're still with me then, I'll take a look at modes 9, 10 and 11. You can access these in the same way as the other modes we've considered, using the Graphics command.

Press Reset to get an empty Mode 0 screen with the Ready prompt at the top. Now type:

```
GRAPHICS 9
```

and press Return. The brief flash you'll see is Mode 9, but once the command has been executed the system reverts to Mode 0. If you want to see Mode 9 you've got to keep it there somehow.

In fact we saw the method used last month to keep a full-screen Mode 8. All that's involved is putting the system into a never ending loop. With a program you can simply use a line which GOTOs to itself. For example:

```
10 GRAPHICS 9
20 GOTO 20
```

In immediate execution mode you can use the FOR...NEXT construction to create an endless loop. For example, type:

```
FOR A=1 TO 2 STEP 0: GRAPHICS 9:NEXT A
```

and press Return. The fact that we've used a step size of 0 means that A never reaches its upper limit so the loop goes on forever.

The blank screen which confronts you is Mode 9. Unfortunately there's not much you can do with it in this state. The machine is locked in the loop and so most of the keys produce no response.

You can Break out of it though or Reset the machine.

Modes 9, 10 and 11 all have the same resolution of 192 rows x 80 columns with no possibility of a useful text window unless you're prepared to use a display list interrupt and/or redefine the character set.

If you've been following Mike Rowe's series in *Atari User* you'll know what to do, but for now I'll assume that these modes don't have any text capabilities.

You *can* produce a Mode 9 screen with a separate window at the bottom very easily. Simply type GRAPHICS 8 and then POKE 623,64. However if you try this you'll soon see why I used the phrase 'useful text window' earlier.

In Mode 9 you can only use one colour, but you can have up to 16 luminances of that colour on the screen. Mode 11 is the opposite, with 16 available colours but only one luminance.

Mode 10 is a bit different in that it allows one background and eight foreground colours. However using these colours from Basic is not as simple as for the other two modes so we'll leave Mode 10 until the end.

In Modes 9 and 11 we use a combination of SETCOLOR and COLOR commands. Only colour register 4 is used, so in Mode 9 the

→

```
10 GRAPHICS 9
20 FOR C=0 TO 15
30 FOR L=0 TO 15
40 SETCOLOR 4,C,L
50 FOR DELAY=1 TO 50:NEXT DELAY
60 NEXT L
70 NEXT C
80 GOTO 20
```

Program 1

colour is selected with

SETCOLOR 4,colour,0

while in Mode 11 the luminance is selected with

SETCOLOR 4,0,luminance

In Mode 9 the COLOR command is used to select one of the 16 levels of luminance while in Mode 11 the same command is used to select one of the 16 colours

To see the difference between the two modes type in Program II and run it This produces a simple Mode 9 starburst pattern which cycles through the colours and luminances When you've had enough of that Break out and list the program To convert it to Mode 11 we need to change lines 10 and 30

Alter line 10 to read

10 GRAPHICS 11.C=0

and alter line 30 to read

30 SETCOLOR 4,0,C

If you now run the program you

```
10 GRAPHICS 9:C=0
20 C=C+1:IF C)15 THEN C=0
30 SETCOLOR 4,C,0
40 FOR X=0 TO 15
50 RX=INT(RND(0)*80):RY=INT(RND(0)*190
)
60 COLOR X
70 PLOT 40,99
80 DRAWTO RX,RY
90 NEXT X
100 GOTO 20
```

Program II

should see the same starburst pattern but in a multi-coloured single-luminance form rather than the single-coloured multi-luminance Mode 9 version

You might think that having only one colour available as in Mode 9 is a severe limitation on what you can display However the fact that you can have 16 luminances means that you can produce some stunning 3D graphics

Rather than tax my brain to produce an example of such a display Program III does the job admirably It was sent in to the *Atari User* offices by Dean Rossiter of Wellingborough

If you fancy a different colour you'll need to alter line 10 As usual, a well-placed loop will cause the program to cycle through all the colours

To see the sort of colourful effect that Mode 11 can give enter and run Program IV Its squashed appearance illustrates the pixel shape in these modes With more rows than columns pixels are long and thin

Mode 10 allows nine independent colours each with its own luminance but there aren't nine colour registers are there? Certainly the SETCOLOR command can only be used to access registers 0 to 4

This is the problem with colour selection in Mode 10 Some of the registers *can* be accessed via SETCOLOR but the others must have the appropriate value POKEd in

Rather than try to mix the two

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methods I recommend that when using Mode 10 you always POKE the colour registers. Of the two methods this is the only one which can be used on all the registers and so is simpler.

To be accurate we don't actually poke the registers themselves. Rather, we poke their shadows in RAM. However this is a detail which we need not take any further here.

The locations which contain the colour information are 704 to 712. These locations correspond to the commands COLOR 0 to COLOR 8 respectively.

The value which is poked into the register needs to contain not only the colour information but also the luminance information. You arrive at the value by using the formula

X = (Colour * 16) + Luminance

where X is the value which gets poked into the register.

For example, suppose you want to specify Colour 5 with Luminance 8, a sort of light purple colour. The value to be poked would be (5 * 16) + 8 = 88.

Since COLOR 0 controls the background colour, and this command corresponds to the register in location 704, we can change the background colour by poking location 704. Using the light purple colour that we've just calculated as 88, try entering the following:

```
FOR I=1 TO 2 STEP 0:GR.10
POKE 704,88:NEXT I
```

Once again we've used the STEP 0 trick to set up a perpetual loop so that the Mode 10 screen is constantly displayed. If all has gone according to plan, your screen should be filled with colour/luminance combination 88, or light purple.

We can use the fact that the registers are all in adjacent locations to produce some interesting effects. Suppose, for example, that we load the registers with particular values. We can then move the values along one register and move the last value back to the beginning.

This will have the effect of creating a 'circle' of colour, and we can use this to produce an effect of movement. If your eyes aren't feeling too tired, try entering Program V.

Lines 10 to 120 load the registers with random values and then draw bands of these colours across the screen. Each band is five rows deep. Lines 130 to 190 then shuffle the registers around constantly, producing the movement effect.

Since the colour values are selected randomly, the display will be different each time you run the program.

Use Break to give your eyes a rest every now and then.

If you want to choose a random background colour too, change line 30 to read:

```
30 FOR A = 0 TO 8
```

Because these modes require the GTIA chip, you'll sometimes see them referred to as the GTIA modes.

This chip's job is to interpret the data passed to it by the Antic chip, and in fact Modes 9, 10 and 11 are three different interpretations of Mode 8. Consequently they require the same amount of memory – 8k.

● *Next month we'll finish off this series with a look at Modes 12 to 15, which are available to XL and XE owners from Basic.*

```
5 REM ###   PENCILS   ###
6 REM ###      By       ###
7 REM ###Dean Bossiter###
10 GRAPHICS 5:SETCOLOR 4,2,0
20 LX=13:RX=50:Y=40:PX=67:PY=50
30 GOSUB 1000:REM ###Pencil 1###
40 LX=12:RX=55:Y=70:PX=67:PY=70
50 GOSUB 1000:REM ###Pencil 2###
60 LX=10:RX=52:Y=64:PX=84:PY=76
70 GOSUB 1000:REM ###Pencil 3###
80 POKE 77,0:GOTO 80
1000 REM ### Dean Bossiter ###
1001 A=Y:FOR T=Z TO 14:COLOR T
1002 PLOT LX,Y:DRAWTO RX,Y
1003 Y=Y+1:NEXT T
1004 FOR T=14 TO 2 STEP -1:COLOR T
1005 PLOT LX,Y:DRAWTO RX,Y
1006 Y=Y+1:NEXT T
1007 Y=A:FOR T=7 TO 14:COLOR T
1008 PLOT PX,PY:DRAWTO RX,Y
1009 Y=Y+1:NEXT T
1010 FOR T=14 TO 2 STEP -1:COLOR T
1011 PLOT PX,PY:DRAWTO RX,Y
1012 Y=Y+1:NEXT T
1013 COLOR 0:PLOT PX,PY:RETURN
```

Program III

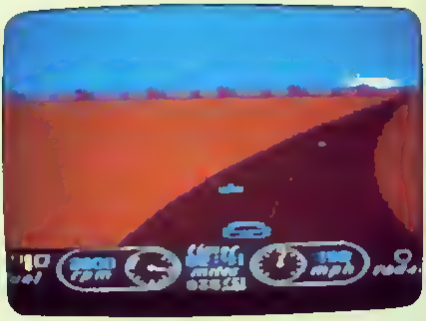
```
10 GRAPHICS 11
20 COL=0 DIR=1
30 FOR A=0 TO 79
40 COL=COL+DIR
50 COLOR COL
60 IF COL>15 OR COL<1 THEN DIR=-DIR:GO
TO 40
70 PLOT 0,0:DRAWTO 0,0:DRAWTO 0,4
80 NEXT A
90 GOTO 30
```

Program IV

```
10 C=0
20 GRAPHICS 10
30 FOR A=1 TO 8
40 POKE 704+A,INT(RND(0)*256)
50 NEXT A
60 FOR Y=0 TO 180 STEP 5
70 C=C+1:IF C>8 THEN C=1
80 COLOR C
90 FOR Z=0 TO 4
100 PLOT 0,Y+Z:DRAWTO 25,Y+Z
110 NEXT Z
120 NEXT Y
130 A=PEEK(1280)
140 FOR B=700 TO 711
150 POKE B,PEEK(B+1)
160 NEXT B
170 POKE 712,A
180 FOR DELAY=1 TO 20:NEXT DELAY
190 GOTO 130
```

Program V

Get into top gear for a gruelling challenge



WITH the current trend toward athletics simulations you might expect a game called **The Great American Cross-Country Road Race** to be all about marathon running – shades of Flanagan's Run Loneliness of the Long Distance Runner and all that.

A gruelling race game this certainly is but not on foot. A powerful racing car is your mode of transport.

Road Race (well I'm not typing that title out again) is Activision's latest and follows in the best traditions of Pole Position and Pit Stop.

My thanks to Software Express of Birmingham for speedily arranging to let me have a review copy as soon as it became available here.

At bottom, the game is a race against other drivers across America. But there's more to it than just welting paat everything on four wheels.

To begin with you can try to compete against any one of nine fields of already established times. Each field consists of the best results of 10 drivers.

Then there are four west to east coast crosscountry races to choose from: Los Angeles to New York, Seattle to Miami, San Francisco to Washington and the US Tour. The latter is a toughie since it requires you to drive through every city on the map.

The map pops up once you've selected your race. And this is much, much more than a bit of gloss – careful planning



GUILTY UNTIL

IT was a wet night when I arrived at the mansion. As I entered, my reporter's instincts made me wonder whether I might be a little too conspicuous. I needn't have worried.

Over by the fireplace, Titania, queen of the fairies, was chatting up a sheik. She was going on about one of her horses, name of Lurking Grue.

A vampire seemed to be enjoying himself hugely. A six foot rabbit cavorted with a man-sized peanut butter sandwich. Three mice in dark glasses brushed past Pacman. An astronaut strolled up to the bar.

Near the entrance a gorilla was doing a splendid job of looking after the guest's coats.

Other assorted weirdos were discussing everything from politics to local scandals while the more athletic took to the dance floor. By comparison, the cowboy looked the very model of sobriety and good taste. The man in the outlandish cowboy outfit was me.

I wasn't having a bad dream – the nightmare would come later. No, I was attending one of Veronica Ashworth's famous hallowe'en parties.

Actually, I was mixing business with pleasure. Pleasure because I had been invited as a friend of the hostess. Business because my editor thought there might be a good story in it.

The fairy queen, none other than mine hostess, Veronica had clearly been knocking back the Buck's Fizz from quite early on. Her words were slurred and she was none too steady on her fairy pins.

Emphasising a point to the sheik, she waved her glass on high and succeeded in sloshing alcohol and ice cubes all down her tinselled dress. Using a word that would make an elf's hair curl, she staggered off to clean up.

A little later I saw Veronica again. She was slumped on the floor of her office elsewhere in the mansion. She was less than dead drunk – she was dead, period.

And if that wasn't enough to dampen my party spirits, my cowboy lariat, which I could have sworn I hung up in the closet with my damp coat, was wrapped tightly round her pretty little neck.

Just to put the cherry on the cake, a bullet lay by the body. Guess whose gunbelt had one empty cartridge loop? I could almost hear the click of the jail cell door.

So there I was, plunged deep into **Suspect**, a superb new text adventure from

and selection at this stage should help you achieve good times Equally slapdash selection may well be regretted before you even reach your first checkpoint

A flashing circle on the map denotes your point of departure while a pulsating arrow indicates a possible next stop on your route By joystick movement, the arrow can be positioned to another destination city Only those cities connected by a major road to your departure point are available for selection

A scrolling bulletin across the top of the screen tells you the conditions on the road you have chosen You have to be careful – things like lane closures the dreaded road works or oil slicks could cause you to lose valuable time

The weather conditions are no less critical in your route selection Just like our good old Met Office maps this one has plenty of those cute little symbols Snowflakes and raineloudes indicate just that while clouds without rain indicate fog It all seems more like Britain than the US of A!

A clock indicates your time of departure It can be set to any time you like But watch it – you could end up driving at night or arriving at a city in the middle of the rush hour

Now the race is on The screen changes to reveal a Pole Position type scene blue sky green sward a city skyline and your car sitting on a central road which tapers into the distance

At the foot of the screen reading from left to right is a fuel gauge a rev counter timer mileometer speedometer and radar trap warning

The timer counts down showing how much time remains for you to complete this leg of the journey Failure to reach your destination before the timer reaches zero disqualifies you from the race and that means you'll have to start all over again

If you beat the clock the spare time is added to the time allowed for the next stage so it pays to burn rubber

The mileometer also counts down telling you how much further to your target city The radar warning lights up when a police speed trap lies ahead – you'll know anyway because sirens start blaring

You have two choices when hitting a trap – slow down or try to outrun the white police car If you're caught you stop dead the police car pulls alongside a sardonic message is displayed like 'Where's the fire?' and you're stuck there for several precious seconds At least you don't get booked!

Left and right movement of the car is controlled by similar movements of the joystick The fire button is used to accelerate and pulling back on the joystick applies the brakes

Gear changing is neatly handled When the rev counter reaches the 9 o'clock position – and by then the engine is beginning to scream – the fire button is released and a quick forward tap of the joystick causes a change up Similarly a quick backward tap shifts the gears down

All very easy to get the hang of and coupled with the appropriate engine noises adds much to the motor racing atmosphere of the game

There are four gears. Shift too soon and the car will respond sluggishly Shift too late and you could blow your engine and have to push the car to the next service station Pushing is accomplished by tapping doggedly away at the fire button

You'll also have to push it if you run out of petrol Warning messages are given when you are approaching a service station

The station is shown as a pink petrol pump and you must pull up beside it Your car will be automatically refilled and/or repaired

It's all too easy to overshoot or stop by mistake at a cactus when you've been haring along at 150mph

If you're not driving very fast other drivers – and there are lots of them – go flashing past but never hit you from behind The same cannot be said for you

If you hit a car while overtaking your car instantly switches to bottom gear and slides over to the side of the track. Luckily it hasn't stalled

Arrive at the city within the time limit and you'll be greeted with a jolly tune and a welcome sign Then it's back to the map to select the route for your next leg

Run out of time and you'll be told 'Sorry' and be out of the race

The sound effects certainly add to the air of excitement and joystick response is perfect.

The graphics are first rate – I especially liked the changes in skylines the gradually darkening scene as night descends and the smooth high speed scrolling

Add these qualities to the planning elements the combinations of possible routes and the variety of the challenge and you have a very good race game indeed This is one I would unhesitatingly recommend to any race game fan

Bob Chappell

PROVEN INNOCENT

Infocom Suspect is one of their best and follows in the footsteps of Deadline and Witness their earlier detective adventures

Deadline called you in to investigate a suspicious suicide while Witness placed you as an eye witness to a dastardly crime

In Suspect you find yourself far more embroiled in murder most foul than ever before – all the evidence points to you as the prime suspect Unless you can find out who really dunnit and pronto your reporting days are over

The case is stacked against you from the outset There's the rope for starters Then there's the bullet and gunbelt You're also an outsider

Yes it's a set-up all right but since you know you're not a killer it follows that the real murderer must be among the motley collection of upper-crust characters present at the party

The police are soon on the scene among them Sgt Duffy of Deadline fame What you must do is to build up a case by exploring the mansion and grounds watching and talking to the various characters and analysing and deducing

Only by gathering enough irrefutable proof and presenting it to the police can you establish your innocence and another's guilt

You can't make a citizen's arrest – you have to convince the detective to do that You can accuse people though but much good will it do you if you go around making wild allegations

You have but a few hours (game time) to solve the mystery Failure to do so will result in your being arrested and found guilty of second degree murder

Suspect is graded as an advanced adventure so it's likely you'll be arrested and convicted many times over many weeks Never mind the preceding stimulation and entertainment more than compensates for being falsely imprisoned

All the Infocom hallmarks are here massive vocabulary sophisticated input parser dazzling and detailed prose twists and turns good humour plenty of original puzzles and multiple solutions

No doubt about it this is yet another excellent adventure from Infocom – how do they keep it up? I accuse Infocom of being maddeningly brilliant. Prove their guilt beyond a shadow of a doubt yourself by buying Suspect I rest my case

Bob Chappell

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WEST



WEST

WEST will please anyone who ever frowned into a puzzle of any sort

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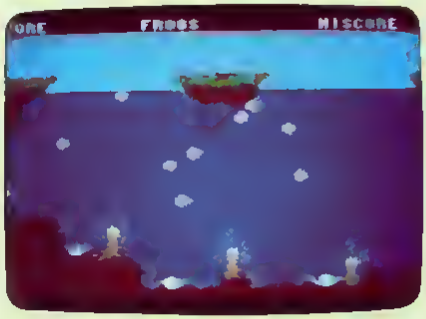
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Arcade action deep in the pond



WHY not take a break from those shoot em up arcade games and take a visit to a quiet country pond? Starcade can take you there with **Savage Pond,** their interpretation of wild life under water.

Quiet it may be peaceful it certainly isn't. In this fast arcade game you start by playing the role of a tadpole struggling to survive to adulthood.

Just like the inhabitants of any country pond you have to avoid the perils of other insects and animals striving to live in there with you.

Survival of the fittest would appear to be an apt rule in this scenario.

Using the keyboard or joystick you must guide your tadpole through its stage of immaturity fattening it as you guide it round the pond digesting amoeba.

Now and again a fat juicy worm falls into the water and eating this increases your worm count by one.

Every time your worm count reaches five a beetle larva appears and if you can polish this off you take another step along the long path of evolution.

In stage one a multi-coloured dragonfly buzzes about above the pond dropping its eggs into the water. It is vital that you eat these as they sink, otherwise they settle into the cover of deadly hydra and become irretrievable.

When they hatch at the bottom of the pond a larva dashes off the screen only to return as a deadly dragonfly nymph whose staple diet is — yes tadpoles.

He relentlessly chases you until he either catches you or you tire him out by outswimming him over the screen.

In stage two a bulldozer comes along adding another hazard as it dumps radioactive waste into the pond.

If you can survive all this and manage to become a frog with a flick of your long sticky tongue you can catch that pestering dragonfly as it buzzes overhead. There's thanks for you.

If having got this far you have had all your eggs and tadpoles destroyed the computer dating agency comes into action and provides you with a lady frog.

After a loving embrace you provide a specimen of frog spawn and depart for pastures new.

The spawn comes to rest at the bottom of the pool before hatching to give you another chance to start all over again.

As it progresses the program introduces many more wonders of the deep such as blood worm, jelly fish, spiders, water fleas and bumble bees. They all have their role to play in this real life adventure.

Overall the game is fun to play and has very good graphics. The sound is effective and complements the game very well.

The instructions are clear and concise and give a good insight not only to the game but to the species that you will meet and their descriptions.

The 16k cassette costs £7.95 – a bargain in my opinion.

David Andrews

A touch of the Bruce Lees

SIT down at your Atari, hold your joystick at an aggressive angle, screw up your face, let rip a bloodcurdling shout and go to it.

Well, even if you're not acting this strangely at the start of playing English Software's **Chop Suey,** I guarantee you will be after just a few minutes.

This martial arts simulation really gets to you. If you thought you were just a gentle pacifist at heart, better think again after you've tried this game. You might discover a latent Bruce Lee has been lurking undetected under your skin.

The action takes place not in the fresh air or a gymnasium but in what appears to be a theatre.

In fact it's very similar to the traditional setting used for the weightlifting events at the Olympic Games. In the lower portion of the screen, looking up at an enclosed stage are three rows of spectators who fidget around from time to time to let you know they're wide awake.

On stage is where all the leaping, kicking and punching takes place.

The two dreadlocked Kung Fu participants are dressed similarly – loose white pyjama-like costumes complete with black belts.

There are three options: player versus player, player versus computer and if you want to select demo mode, computer versus computer. The demo mode will automatically begin if you just sit there and do nothing.

In addition you can choose between the laughingly named slow or fast modes. Slow mode is quite fast enough, thank you very much.

Fast mode has the two players dashing around like characters from one of those old Keystone Kop movies. Move up to this level only when you've become really adept at the art.

There are eight moves at your disposal – two shuffles, three kicks, one jab and two jumps. All are executed by moving the joystick to the appropriate compass position.

Pressing the fire button lets you make one further move – a smart about-turn from the direction you are currently facing.

The quick shuffles take you to the left or right. The one punch in your repertoire is a stiff-armed jab. Used well it can have very gratifying results.

Kicks come in three sizes, the low sweep to the opponent's legs, the sharp kick

to the midriff and my personal favourite the high kick

Executing the high kick when your opponent is some distance from you is most satisfying – you arc smoothly through the air with your leading leg outstretched as dangerously as a warrior s lance

There are two leaps One is a simple vertical jump into the air the other a full-blooded somersault taking you right over the top of your opponent s head to the far side of the stage

At the bottom of the screen each player has a Pow! gauge pain-level indicator It changes colour as punishment is soaked up When it starts to flash the player is in a fragile state of health and one more thump will bring him to the floor

The player recovers after a brief respite but always has a residual pain level which rises after each knockdown When this reaches an intolerable level that player is retired and the opponent declared the winner

It s comforting to note that nobody ever gets completely flattened – falling down on one knee and grimacing at the floor is the worst that can happen to you

Apart from your opponent s



fists and feet there is one other hazard From time to time an air vent opens in the stage ceiling and a large scorpion drops down to scuttle across the stage

You have to leap to avoid its poisonous bite David Attenborough would not be amused – scorpions are supposed to have lethal stings, not bites!

The scorpion interludes detract somewhat from the main business at hand and the game is exciting enough without them Even so they do present an added challenge

Scorpions aside the only minor criticism I have is that the contestants are identical twins If you've both just finished cavorting around the stage and have ended up close to each other it is possible to get in a muddle as to which fighter is yours Differently coloured belts or hair for example would have helped

The two player option is hugely entertaining but no doubt much of the time you'll play against the computer And that option is just as much fun

The computer opponent seems pretty easy meat to start with a few swift jabs usually sufficing to bring him quickly to his knees However you mustn t let that mislead you into leaving your Atari and picking a fight with the local Third Dan

For once duffed up the first computer opponent is immediately replaced by another but considerably more skilled fighter And there s six more where those came from each more experienced and tougher than the last The challenge lies in seeing if you can out-Kung all eight contenders

One item intrigued me The cassette inlay hints that excellent play may be rewarded Rumour has it that the famous Kung-Fu talent scout Foo Yung (groan) and his son Spling Loll (ditto) are in the audience

You'll just have to play well to see if that s of any significance – my play wasn t even up to beating opponent three

Colour is excellent while sound effects introductory music whooshes and beeps enhance the enjoyment

But it is in the animation where the game excels. The players movements are very realistic – the smoothness of the flying kick alone has to be seen to be believed

Chop Suey is superb and at only £8 95 this has got to be one of the best Atari buys of the year Go get it grasshopper

Bob Chappell

Saving a life requires dedication

BIO-DEFENCE, from Tymac appears to be an original idea in computer software The object of the game is to keep a patient s temperature below the level at which he dies

There are two separate parts to the game In the first an outline of the human body is displayed horizontally across a grid of approximately 500 squares

Using a joystick, you move a cursor from square to square within the body outline until you find an area of infection There is no skill attached to finding this – it just suddenly appears Indicated by a orange dot

From here you progress on to part two This scenario is acted out in the infected area which is laid out like a maze

You play the part of what appears to be a white cell looking something like an amoeba and your task is to soak up most of the bacteria around you I say 'appears' because there were no instructions with my advance review copy and surprisingly none on the screen

There are in fact several different sizes of bacteria and you should only be chasing the smaller ones Any contact with the largest variety results in a darkening of your colour

Should you contact these too often within a short space of time you turn black and die and the patient s temperature rises by one degree

You can eat the big blobs but you've got to time it right hiding in your niche at the bottom of the screen Of course while you re hiding the bugs are multiplying

Should you succeed in absorbing all the bugs you automatically return to the first part of the game and start to search again for another infected area

Once you find one it s back to work as a bug gobbler until such time as you get zapped too often by the big boys and the patient s temperature gets so high that he snuffs it

The more successful you are in your bacteria bashing the more numerous and vicious are the enemy in subsequent locations

The graphics are quite nice but don t really do the Atari justice and the sound is nothing to write home about An attempt has been made to synthesise speech but the result is almost unrecognisable

The game was fun the first few times I played it but I didn't find enough variety to maintain interest

David Andrews



What it offers the Atari user...

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MIKE ROWE takes a look at horizontal scrolling in Part V of his series on how to give your program displays the professional touch

HORIZONTAL scrolling is essentially achieved in a similar way to the vertical scrolling described in my previous article. However, as you will see, things are never quite that simple.

You will remember that coarse vertical scrolling can be achieved by moving the start of screen memory down the screen data one line at a time. Horizontal scrolling can be similarly achieved by moving the pointers for screen memory along one character at a time. This is shown in Demo #1.

Firstly you need to decide what data you want to show. I have chosen to hold the data in a string (A$). You will notice that you have to use CHR$(0) that is Control (the heart symbol) to represent a space. This is because when printing to the screen a space is CHR$(32) but the Atari converts this to a 0 in screen memory. In fact all the numbers printed are stored as a different number in screen memory. Play around with A$ to confirm this.

Back to the program. The high and low bytes of the address of A$ – that is, screen memory – are calculated and stored in LO OLDLO HI and OLDHI. A custom display list is created in Page 6 (memory location 1536) and the operating system is told that it is there by poking the low and high bytes of the display list into decimal 560 and 561.

Now we are ready to scroll. Firstly increase the low byte of the address of screen memory by 1. If the number is greater than 255 then reset LO to 0 and increase HI by 1.

You now have the new address of screen memory moved along by one byte – one character. These values can now be placed in the two bytes following the LMS command (Load Memory Scan – see previous articles) as in line 210. Repeat this and there you have coarse scrolling of one line.

Smooth scrolling is again similar to vertical smooth scrolling. Demo # 2 shows how this is used. A similar display list is used but a decimal 16 is added to the mode byte. This is 71 – that is Antic mode 7 + LMS instruction 64. Adding a 16 enables smooth scrolling in that line.

The horizontal smooth scrolling register is decimal 54276 ($D404). This can be poked with numbers up to 15 which will move the line along one pixel at a time up to a maximum of 16 – two Graphics Mode 2 characters.

Now obviously combining these two techniques will result in true smooth horizontal scrolling. Demo #3 is essentially the same as Demo #1 but with the smooth scrolling added to it.

Now we begin to get the first drawback: screen flicker. This is because the changes often occur part way through the creation of the screen on the television.

Things can be improved somewhat by making some of the changes more rapidly in machine code as in Demo #4. The machine code here simply pokes each memory address with the byte following it but much more rapidly than in Basic.

Okay so we have reasonably good smooth scrolling of one line. Not going to make much of a game is it? The next step is to extend this to full or part screen scrolling.

Unfortunately things are not as simple as in vertical scrolling where

```
10 REM HORIZONTAL SCROLLING DEMO #1
150 DIM A$(1001),A$(1,200)="♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥♥":A$(201,1001)=A$(1,996)
,END IS CTRL COMMAS
110 A$(1,80)="Atari User♥Public Database♥by Database Publications Limited♥♥♥♥♥"
115 REM CTRL NUMBERS BETWEEN 96085 & 5
AT END " = CTRL H
170 HI=INT(ADR(A$)/256):LO=ADR(A$)-HI*256
180 REM FIND ADDRESS OF MESSAGE
190 OLDLO=LO:OLDHI=HI:H=1:REM STORE OF
IGINAL LOCATION OF A$
200 REM CREATE DISPLAY LIST IN PAGE 6
210 DL=1536:POKE DL,112:POKE DL+1,112:
POKE DL+2,112:POKE DL+3,71+16
220 POKE DL+4,LO:POKE DL+5,HI
230 POKE DL+6,11:POKE DL+7,80:POKE DL
+8,0:POKE DL+9,6
240 POKE 560,0:POKE 561,6:REM SIMILAR
SET UP AS IN DEMO #5
499 REM SCROLL
500 FOR I=0 TO 15:POKE 54276,I:FOR J=1
 TO 20:NEXT J:NEXT I:REM SMOOTH SCROLL
 16 PIXELS
520 FOR I=15 TO 0 STEP -1:POKE 54276,I
:FOR J=1 TO 20:NEXT J:NEXT I:REM SCROL
L BACK AGAIN
570 GOTO 500:REM DON AGAIN
```

Demo #1

```
10 REM HORIZONTAL SCROLLING DEMO #2
100 DIM A$(100):A$="♥♥♥♥♥♥♥♥♥Atari♥User
♥♥♥♥♥♥♥":REM ALL ♥ ARE CNTL COMMAS
170 OLDLO=INT(ADR(A$)/256):LO=ADR(A$)-H
I*256+2
200 DL=1536:POKE DL,112:POKE DL+1,112:
POKE DL+2,112:POKE DL+3,71+16
210 POKE DL+4,LO:POKE DL+5,HI
220 POKE DL+6,11:POKE DL+7,80:POKE DL
+8,0:POKE DL+9,6
230 POKE 560,0:POKE 561,6:REM SIMILAR
SET UP AS IN DEMO #5
499 REM SCROLL
500 FOR I=0 TO 15:POKE 54276,I:FOR J=1
 TO 20:NEXT J:NEXT I:REM SMOOTH SCROLL
 16 PIXELS
520 FOR I=15 TO 0 STEP -1:POKE 54276,I
:FOR J=1 TO 20:NEXT J:NEXT I:REM SCROL
L BACK AGAIN
570 GOTO 500:REM DON AGAIN
```

Demo #2

tent programmers do it sideways

```
10 REM HORIZONTAL SCROLLING DEMO #3
154 DIM A$(1845):DS(1,20)="vvvvvvvvvvvvvvvvvvvv":A$(97,1845)=A$(1,20)
110 A$(21,80)="atari8user@publishedbydatabasepublications@ion1win1ed@@@@@@@"
120 NZ=INT(600R(A$1/256)):LO=600R(A$1 %256
130 OLDLO=LO:OLDNZ=NZ:N=1
200 OL=1530:POKE DL,112:POKE DL+1,112:POKE DL+2,112:POKE DL+3,71+16
210 POKE DL+4,LO:POKE DL+5,NZ
220 POKE DL+60,112:POKE DL+7,64:POKE DL+8,0:POKE DL+9,0
230 POKE 554,0:POKE 561,0:REM SET UP DLI VECTOR
499 REM SCROLL
500 LO=LO+1:IF LO)255 THEN LO=0:NZ=NZ+1:REM INCREMENT START OF SCREEN MEMORY
520 N=N+1:IF N=81 THEN N=1:NZ=OLDNZ+1:LO=OLDLO
540 POKE 54276,7:POKE DL+4,LO:POKE DL+5,NZ:REM COARSE SCROLL 1 CHARACTER
550 FOR I=0 TO 8 STEP -1:FOR J=1 TO 10:NEXT J:POKE 54276,I:NEXT I:REM SMOOTH SCROLL 8 PIXELS
590 GOTO 554:REM AGAIN
```

Demo#3

```
10 REM HORIZONTAL SCROLLING DEMO #4
30 FOR I=1000 TO 1614:READ A:POKE I,A:NEXT I:REM MACHINE CODE DATA
40 DATA 104,74,176,100,8,104,133,205,104,133,204,104,240,4,200,140,254,164,204,104,105,250,202,208,237,96
100 REM A$(1561:DS(1,20)="vvvvvvvvvvvvvvvvvvvv":A$(81,1001)=DS(1,20)
110 A$(21,56)="atari8user@publishedbydatabasepublications@ion1win1ed@@@@@@@"
120 NZ=INT(ADR(A$)/256):LO=ADR(A$)-NZ*256
130 OLDLO=LO:OLDNZ=NZ:N=1
154 OL=1530:POKE DL,112:POKE DL+1,112:POKE DL+2,112:POKE DL+3,71+16
210 POKE DL+4,LO:POKE DL+5,NZ
220 POKE DL+60,112:POKE DL+7,64:POKE DL+8,0:POKE DL+9,0
230 POKE 560,0:POKE 561,0
540 LO=LO+1:IF LO)255 THEN LO=0:NZ=NZ+1
920 N=N+1:IF N=81 THEN N=1:NZ=OLDNZ:LO=OLDLO
640 A=USR(1600,54276,7,DL+4,LO,DL+5,NZ):REM MACHINE CODE TO SMOOTH & COARSE SCROLL OLDEST SIMULTANEOUSLY
350 FOR I=6 TO 0 STEP -1:FOR J=1 TO 10:NEXT J:POKE 54276,I:NEXT I:REM SMOOTH SCROLL 7 PIXELS
550 GOTO 354
```

Demo#4

```
10 REM HORIZONTAL SCROLLING DEMO #5
100 DIM A$(1027),A$="atari8user@":FOR I=12 TO 300 STEP 11:A$(I)=A$:NEXT I:REM COPY COMMA AFTER atari & user
110 NZ=INT(ADR(A$)/256):LO=ADR(A$)-NZ*256
120 DIM GEMLO(10),GEMNZ(10),LO(10),NZ(10)
154 REM NEW DISPLAY LIST
250 POKE 1536,112:POKE 1537,112 POKE 1538,112:REM 3 BLANK LINES
210 FOR I=1 TO 10:REM 10 GRAPHICS 2 LINES WITH LMS INSTRUCTIONS FOLLOWED BY SCREEN MEMORY (560 ATTRD)
220 POKE 1539+I*3,71
230 GEMLO(I)=1536+I*3+1:NZ=NZ(I)=MEMLO(I)+1:REM STORE DISPLAY LIST MEMORY LOCATIONS IN ARRAYS
240 LO(I)=LO:NZ(I)=NZ:LO=LO+150:IF LO)255 THEN LO=LO-256:NZ=NZ+1:REM STORE SCREEN MEMORY LOCATIONS IN ARRAYS
254 POKE GEMLO(I),LO(I) POKE GEMNZ(I),NZ(I)
260 NEXT I
270 POKE 1573,64 POKE 1572,0:POKE 1573,0:REM END DISPLAY LIST
250 POKE 560,0:POKE 561,0:REM POINT OS TO NEW DISPLAY LIST
500 REM EXECUTE SCROLL
510 FOR J=1 TO 60:REM 60 COARSE SCROLLS
520 FOR I=1 TO 10:REM 10 LINES
530 LO(I)=LO(I)+1:IF LO(I))256 THEN LO(I)=LO(I)-256:NZ(I)=NZ(I)+1 REM CALCULATE LO BYTE 10 REM NZ & LO BYTES
540 NEXT I
550 FOR I=1 TO 10:POKE GEMLO(I),LO(I) POKE GEMNZ(I),NZ(I):NEXT I:REM POKE NEW BYTES INTO DISPLAY LIST
560 NEXT J
600 GRAPHICS 0
```

Demo#5

the rest of the screen will follow the first line

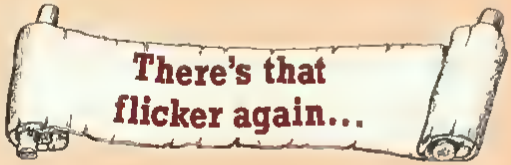
Firstly the screen memory needs to be considered In vertical scrolling the screen is the same width as a normal screen However in horizontal scrolling the screen is going to be much wider Therefore using operating system commands such as DRAW or PRINT are really out of the question

Secondly each line needs to have its own LMS instruction Therefore the display list will consist of groups of three numbers

The first will be a 64 (LMS) + mode number + 16 (for smooth scrolling) The LMS instruction means that the next two numbers will be the low and high bytes of the screen memory for that line

Now we have a display list consisting of numerous individual lines each similar to the single line in Demos #1 to 4 To scroll these you need to move each of the memory location pointers along one byte at a time

Demo #5 does just this in Basic As you can see the scroll goes in



waves down the screen Basic is just too slow

Demo #6 is the same program with a machine code routine doing the job of increasing the 10 screen location pointers in the display list Now the screen moves along in a single block

The next step is to add the smooth scroll Demo #7 does this with an improved machine code routine for the coarse scroll However it is less generalised and will only work for a 10 line screen scrolling in one direction

```
10 REM ** DISPLAY LIST CALL TEMP DEMO #6 **
20 MEM ** SAVE BEFORE RUNNING AS MEM
RAM WILL CORRUPT FILES **
30 FOR I=1536 TO 1710 READ A:POKE I,A:
NEXT I REM DEMO ROUTINE CODE
40 DATA 104,170,104,133,205,104,133,20
4,160,0,104,104,145,204,200,200,200,20
2,208,246,96
100 DIM A$(1002):A$="star:?user#":FOR
I=12 TO 200 STEP 11:A$(I)=A$:NEXT I
110 RT=INT(ADR(A$)/256):LO=ADR(A$)-RT#
256
120 DIM MEMLO(101),MEMHI(101),LO(20),HI(
101)
200 POKE 1536,112:POKE 1537,112:POKE 1
536,112
210 FOR I=1 TO 10
220 POKE 1536+I*2,71
230 MEMLO(I)=1536+I*3+1:MEMHI(I)=MEMLO
(I)+1
240 LO(I)=LO:HI(I)=RT:LO=LO+100:IF LO)
255 THLO LO=LO-256:RT=RT+1
250 POKE MEMLO(I),LO(I):POKE MEMHI(I),
HI(I)
260 NEXT I
270 POKE 1571,112:POKE 1572,84:POKE 15
73,0:POKE 1574,6
280 POKE 560,0:POKE 561,5:REM SET UP D
L IN DEMO 06
500 REM EXECUTE SCROLL
510 FOR J=1 TO 40
520 FOR I=1 TO 10
530 LO(I)=LO(I)+1 IF LO(I))255 THLO LO
(I)=LO(I)-256 HI(I)=HI(I)+1
540 NEXT I
545 REM USE MACHINE CODE FOR FAST SMOOT
HPLE POKES
550 A=USR(1792,MEMLO(1),LO(1),LO(2),LO
(3),LO(4),LO(5),LO(6),LO(7),LO(8),LO(9
),LO(10))
560 A=USR(1700,MEMHI(1),82(1),82(12,HI
(3),HI(4),HI(5),HI(6),82(7),82(8),HI(9
),82(10))
570 NEXT J
600 GOSPHICS 0
```

Demo #6

You now have your smooth horizontal scrolling Disappointed? I would be because there s that flicker and flashing again

The same problem arises as before because the changes happen part way through drawing the screen only now things are worse because so many alterations are being made to get smooth scrolling

As in vertical scrolling the only way around this is to use machine code during the vertical blank interrupt (for new readers this is the small delay between the drawing of each screen)

Although VBI routines are too complicated to discuss at the end of this article Demo #8 will give you some idea of how much improvement they can give in scrolling

As a parting note on the XL and XE models smooth upward vertical scrolling is very easy in Graphics 0

Try this First load a relatively long Basic program Secondly type POKE 622 255 then press Return Thirdly type GRAPHICS 0 then Return Now list the program

```
10 REM ** HORIZONTAL SCROLL IMC DEMO #7
**
20 FOR I=1700 TO 1720:READ A:POKE I,A:
NEXT I:REM DEMO AS MACHINE CODE
40 DATA 104,162,10,104,133,205,104,133
,206,162,0,24,177,205,105,1,145,205,20
8,177,206,105,0,145,206,202,208
50 DATA 202,208,237,96
100 DIM A$(1002):A$="star:?user#":FOR
I=12 TO 200 STEP 11:A$(I)=A$:NEXT I
110 RT=INT(ADR(A$)/256):LO=ADR(A$)-RT#
256
120 DIM MEMLO(101),MEMHI(101),LO(10),HI(
101)
200 POKE 1536,112:POKE 1537,112:POKE 1
538,112
210 FOR I=1 TO 10
220 POKE 1538+I*2,71+16
230 MEMLO(I)=1538+I*3+1:MEMHI(I)=MEMLO
(I)+1
240 LO(I)=LO:HI(I)=RT:LO=LO+100 IF LO)
200 THEN LO=LO-200 RT=RT+1
250 POKE MEMLO(I),LO(I):POKE MEMHI(I),
HI(I)
260 NEXT I
270 POKE 1571,112:POKE 1572,85:POKE 15
73,0:POKE 1574,6
280 POKE 560,0:POKE 561,5:REM SET UP D
L IN DEMO 06
500 REM EXECUTE SCROLL
510 FOR J=1 TO 40
520 FOR I=1 TO 10
530 POKE 54276,I:REM FINE SCROLL 0 PIX
ELS
535 FOR DELAY=1 TO 20:NEXT DELAY
540 NEXT I
550 A=USR(1700,1560):REM MACHINE CODE
WHICH TO EXECUTE COARSE SCROLL
560 NEXT J
600 GRAPHICS 0
```

Demo #7

```
10 REM ** VBI TEMPLATE DEMO #8 **
20 FOR I=1700 TO 1769:READ A:POKE I,A:
NEXT I:REM VBI CONTROL
40 DATA 104,169,0,141,4,212,173,20,2,6
,168,101,169,7,76,92
50 DATA 220,173,20,2,105,201,141,4,212,
10,21,169,7,133,202,141,4,212,220,4,6,
173,4,6,201,234,208,7,169,0
60 DATA 162,0,157,4,6,232,232,232,224,
10,208,244,76,98,228
100 DIM A$(1000):A$="star:?user#":FOR
I=10 TO 2900 STEP 10:A$(I)=A$:NEXT I
110 RT=INT(ADR(A$)/256):LO=ADR(A$)-RT#
256:HI=RT+1:LO=0
170 DIM MEMLO(10),MEMHI(10),LO(10),HI(
10)
200 POKE 1536,112:POKE 1537,112:POKE 1
538,112
210 FOR I=1 TO 10
270 POKE 1538+I*2,71+16
230 MEMLO(I)=1538+I*3+1:MEMHI(I)=MEMLO
(I)+1
240 LO(I)=LO:HI(I)=HI:HI=HI+1
250 POKE MEMLO(I),LO(I):POKE MEMHI(I),
HI(I)
260 NEXT I
270 POKE 1571,112:POKE 1572,84:POKE 15
73,0:POKE 1574,0
280 POKE 560,0:POKE 561,6 POKE 2MB,61P
OKE 204,4
560 REM EXECUTE SCROLL
610 A=USR(1700):REM IOSIRI MKI
600 GOTO 600
```

Demo #8

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Have a heart to heart chat with your Atari

DENIS KINANE comes up with a program to teach your computer how to win an argument

CONVERSE is an *Eliza* type program which simulates a conversation between the user and the computer but differs from similar ones by allowing the Atari to learn new key words and replies.

It thus learns from conversations continuously and avantually will be able to converse without recourse to the learning procadures It can also be altered easily to give the computar different personalities

Atari Basic has often been criticised for its lack of string handling functions and for not supporting string arrays This program provides a fairly extensive demonstration and tutorial on both string handling and file handling with the Atari

It includes informative REM statements and should be easy to follow

The string handling routines include simulating a string array in Atari Basic a string searching routine routines for joining and patching up strings and exchanging words within a string

The disc handling techniquse used are standard files for printing and inputting NOTE and POINT commands for random accase of files and the PUT/GET files for holding numeric variables All of thase files can be updatad during a program run and are used in all subsequent program runs.

Finally the program can be easily used with the SAM and Recitar programs available from Don t Ask Software thus allowing the computer to voice the replies rather than typing on the screen To do this simply add the following lines

```
100 DIM SAM$(128)
1353 F$="YOU ARE SAYING TO ME"
:SAM$=F$:A=USR(6199)
1355 SAM$=F$:A=USR(6199)
```

In simulating a conversation between the computer and the user Converse initiates the conversation and then accepts a santence inputted by the user

This santence is than searched for specific key words which are contained in a file created on the first run of the program

The file is then used to create a simulated string array and the keywords taken from the array for the search procedure

On subsequent runs the keyword file is simply read and the contents placed in the simulated string array This simulated array is necessary as Atari Basic does not support string arrays

Atari Basic does not have an INSTRING or specific string searching facility so Converse uses an instring routine to search the input string to find keywords

On locating a keyword the program gets a reply chosen at random from a variable number of suitable replies for the given keyword in the reply file

The reply is examined to see if it requires addition of a terminal phrase from the user input If so the phrase is examined for words which will be required to be exchanged in order to preserve grammatical sense when the phrase is returned by the computer

These words – called swop words – are personal pronouns and verb conjugations read from simple data statements within the program

Once the word is swopped the phrase is reconstructed and tacked on to the reply and the complete reply is printed

The program loop is then begun again as the user is prompted for the next input

If during the conversation the program does not find a keyword in the input the user is promptad to teach the computer a new keyword and some suitable replies Thase are saved to disc and usad in all subsequent program runs

If you choose the program to run in Learn mode any input that has no keyword will cause the program to ask for new keywords and replies If the program is not in Learn mode and does not recognise keywords in the input it will give a 'bluff' type response

Thus the conversation is continued without the computer actually knowing what it is talking about – a situation I find mysalf in all too often

When the new keyword is inputted you are asked to input the number of

replies to go with it and are prompted to type in suitable replies for the keyword

If you require the terminal phrase of the user input to be tacked on to the end of the reply then the last character in the reply should be an asterisk * For examples of this see the initial reply data in the program listing

Once the keyword number of replies and the actual replies are inputted by the user they are printed to their respective files The new keyword and the number of replies for this keyword are printed in the *KEYWORD FIL* file

The total number of keywords and replies are then PUT into the *NUMBERS DAT* file The *REPLY FIL* file is finally updated with the new replies for the new keyword

As the *REPLY FIL* file is being updated the sector and byte of each reply is saved in the *POINTS DAT* file The sectors and bytes for these replies are then placed in a numeric array as the program is rerun This allows for random and speedy access of the reply file

Keywords and the number of corresponding replies are stored in the *KEYWORD FIL* file This is created on the first run of the program from the keyword data of the program and can be updated during program usage

In subsequent runs the data in the *KEYWORD FIL* file which has or has not been updated is directly inputted into the keyboard array

The simulated array is formed by inputting the keywords all made to eight characters in length into one large string – (ARRAY$)

The string is then accessed at eight character intervals for the individual keywords There is a random choice made for reading the keywords from this array either in the normal or reverse order

This is so that certain specific keywords do not dominate others by always being searched for first due to being in an earlier position in the keyword file

Standard files Print and Input are used for the replies *(REPLY FIL)*, but the position of each reply is noted in terms of its starting sector and byte value This is achieved using the NOTE and POINT disc commands and permits completely random access to the disc files

These sector and byte values are stored in a standard file *POINTS DAT* and are read into numeric arrays on running the program

The numeric arrays are accessed for the sector and byte value of a particular reply by the program The POINT command then positions the reply file at the particular sector and byte and the correct reply is read

Numeric variables are used for the total number of replies and keywords and as they are constantly being updated during and in subsequent program runs they are stored by the PUT and GET command into a numeric file that holds single byte data – that is numbers between 0 and 255

This need not limit the number of replies and keywords that files may contain as for example it is a simple matter to allow two numbers to be used which can be added allowing twice the number of replies and so on

WHEN typing in Converse all REM lines and statements can safely be omitted The data, particularly the swop words, should be typed in exactly as in the listing, as all the spaces, etc, are important

Changes can be made to the basic program if required, and completely different replies and keywords used to create different personalities

A copy should be kept on a back up disc as the program requires to run with a non-write protected disc

I should be delighted to hear from any readers with improvements or interesting applications or personalities for Converse

Because the program relies on random access files it is, of course only suitable for use with a disc drive

```
1000 REM ********************************
1001 REM *          CONVERSE            *
1010 REM *     BY DENIS F. KINANE       *
1015 REM ********************************
1020 REM ********INITIALISATION*********
1030 FIRSTRUN:IF@ TROGLVOP=1310:REPLY
PATH:=1000:POINPROG:=1630 LEARNMODE=150
0:SWOPDATE=1030 KEYDATE=1510
1040 MAXREPLY=1000 REPDATE=1300:TOMP
 2756:DIM A$(MAXREP,255),KEY(1,8),D(255,1
),N$(1) 'REM OPEN HEX=100/DEPN HEX=256
1050 DIM F$(FILES),I$(100),C$(100),P$(81
,C$(1101,03(1101,WK$(N$(1101,N$(1101,S
WOP$(1101,CC$(1101,OPDAY$(1500)
1060 REM RUNSEE IF FILE PRESENT******
1070 CLOSE #3:OPEN #5,4,0,"D:KEYWORD.F
IL":CLOSE #5:AUTO IE99:REM ********** ERR
OR 58 FILE IS PRESENT**********
1080 REM *** FILE IS ABSENT - THIS IS
 FIRST RUN, CREATE FILES ***
1090 REM MAKE10ST CREATE KEYWORD FILES
1100 ? " THIS IS THE FIRST RUN - PLEA
SE WAIT  FIFTY SECONDS FOR FILES TO BE
 SET UP"
1110 CLOSE #4:NUMREPA=0 OPEN #1,8,0,"D
:KEYWORD FIL":RESTORE KEYDATA:READ A$
1120 FOR I=1 TO ME:READ K$,L:? #6,K$;2
 #6;L:NUMREPA=NUMREPA+L:NEXT I:CLOSE #
1
1125 REM *** ? #6;L:NUMREPA=NUMREPA+L)
NEXT I:CLOSE #1
1140 OPEN #4,8,0,"D:NUMBERS.DAT":PUT #
4,ME:PUT #4,NUMREPA:CLOSE #4
1150 REM ******SET UP REPLY FILE AND GET
 BYTE&SECTOR POINTS FOR REPLIES*****
1160 OPEN #3,8,0,"D:REPLY.FIL":RESTORE
 KEYDATA:OPEN #3,8,0,"D:POINTS.DAT":FO
R I=1 TO NUMREPA:NOTE #3,P,B
1170 READ A$ : ? #3,A$;2 #3;P;",";B:NEXT
 I:CLOSE #3:CLOSE #5
1180 REM ******ANY MORE NUMBER OF KEYWORDS
 MAKE AND NUMBER OF REPLIES TOGETHER)=
**
1195 CLOSE #4:OPEN #4,4,0,"D:NUMBERS.D
AT":GET #4,ME:GET #4,NUMREPA:CLOSE #4
1200 REM ********SET UP ARRAYS WITH POIN
T OALUES FOR REPLIES FROM OLLOWING REM
DOM REPLY FILE ACCESS**********
1210 CLOSE #3 OPEN #3,8,0,"D:POINTS.DA
T"
1220 FOR S=1 TO NUMREPA:INPUT #3,P,B:R
(S,A)=P:D(S,1)=B:NEXT S:CLOSE #3
1230 REM ******SET UP ARRAYS FOR EACH K
EYWORD TO INCLUDE NUMBER (NUMREP(1)) O
NE KEYWORD BEHIND (KEY(1))******
1240 CLOSE #4 OPEN #1,4,0,"D:KEYWORD.F
IL":NUMREP=0
1250 FOR I=1 TO ME:INPUT #6;A$,L KEY(I
)=L:NUMREP=NUMREP+L:NUMREP(I)=NUMREP
1260 IF LEN(K$)<8 THEN A$(LEN(K$)+1)="
 " :GOTO 1260:REM NUMBER KEYWORDS TO 8
 LETTERS IF LESS****
1270 DERAY$(LEN(ARRAY$)+1)=K$:NEXT I:C
LOSE #1 REM ******ARRAY REM SET UP WITH
 KEYNUMS *****
1280 DIM ANSWER$(LEN$ SCREEN DOM PRINT I
NITIAL MESSAGE*******
1290 P$=" HELLO - I SHOULD LIKE TO GET
 TO KNOW SOMEBODY WITH YOU - WOULD
 YOU SAME      TO TREE WITH ME?"
1300 ? "E":POSITION I,9:? "   AS YOU M
AKE ME TO LEARN FROM                THIS
 CONVERSATION(Y/N)?":?
1305 TOPUT A$:IF A$="Y" THEN LEARN=1:R
EM IF LEARN OFF THEN LEARN = 0
1310 REM MAIN&LOOP START******
```

```
1420 REM ##INJOINING F$ ONE C$#######
1430 IF F$(LEN(F$))=" " THEN F$(LEN(F$
))=C$
1440 ? "#";POSITION 3,0;? F$;C$=" ";? (
?
1450 INPUT I$(I$(LEN(I$)+1)=" ";IF LEN
(I$)<D THEN ? "YOU MODE THAN TWO PLEA
SE DON'T BE SHY":GOTO 1430
1460 REM #SEMODD INPUT FOR KEYWORDS
1470 REM ## GET KEYWORDS FROM KEYWORD
#DATA####
1480 N=N+(K(0)-1 IF N<0.5 THEN 1480 REM G
ENERATE THE ORDED KEYWORDS ONE SEARCH
ED PER TO TOPUT
1490 FOR I=N TO 1 STEP -1:GOTO 1410
1500 FOR J=1 TO NK
1510 SP=(SP#0)-7:K$=NOWAY$(5SP,5SP+7);
L=KEY(I)*NUMREP:NUMREP(I)=1REM STP=STAR
T POSITION IN STRING OF KEYWORD (I)
1520 IF K$(LEN(K$))=" " THEN K$=K$(1,L
EN(K$)-1):GOTO 1480:REM ########MODE 500
KES FROM THE TAIL OF THE KEYWORD######
1530 IF LEN(K$)>LEN(I$) THEN NEXT J
1540 REM ##INSTRING ##UTIDENNDS STRING
 SEMEOLD FOR I$:STRING SEARCHED IN :
A= POSITION IN I$ I KEYWORD NUMBER
1550 B$ I$ FOR X=1 TO LEN(C$)-LEN(B$):
IF I$(X LEN(B$))=K$-1:=X THEN POP :GOTO
 REPLYPRINT
1560 NEXT X:NEXT I:REM #IF PROGRAM GET
S THIS FAR NO KEY WORD HAS BEEN FAMOD
1570 IF LEADK THEN GOTO LEOOMPROC:REM
## IF LEORN TURNED OFF THEN GOSOON 80K
EYFOUND REPLY IS USE0######
1580 ONMC:IOT(ORD(C)#4):RESTORE SOMETHE
PLY FOR K=1 TO NUM:DEAN P$ NEXT K:GOTO
 PROGLOOP REM GET RANDOM BOOEY REPLY
1590 REM ##NGET REPLY####
1600 CLOSE #3:CLOSE #3:OPEO #3,4,0,"D:
REPLY.FIL" OPEN #3,4,0,"D:PRINTS.RAT"
1610 ONMC:TOT(ORM(C)#1:REM ONNOOM OEPL
Y CHOICE
1620 S5=NUMREP-NUM:P=B(S5,0) Q=B(S5,1
):POINT #3,P,0:INPUT #3;REPLY$:F$=REPLY
$:CLOSE #3:CLOSE #3
1630 IF F$(LEN(F$))()"#" THEN GOTO NOU
GLOOP:REM NO C$ DECOOMED
1640 REM ##C$ IS RECOOMED SO EN?ONCT C
$ FROM END OF I$ NOW START PROCESSING
1650 REM NOW IS ALL OF I$ AFTER THE K
EYWORD HAS BEEN MATCHED ###
1660 C$ I$(X+LEO(B$)) IF C$=" " THEN G
OTO PROGLOOP:REM IF NO C$ THEN CONT
1670 C$(LEO(C$)+1)=" "##REM NOW A BLANK
 TO C$
1680 REM RECOOKING FOR SWAPHOUDS IN C$:
SWAPWORDS ARE PERSONAL PRONOUS DOP VE
RB CONJUGATIONS
1690 RESTORE SWAPDATA:FOR K=1 TO 16*RE
AD B$,5NO$:IF LEN(C$))LEN(B$) THEN NE
XT K
1700 FOR X=1 TO LEN(C$)-LEN(B$)+1:IF C$(
X,LEN(B$)+X-1)=B$ THEN POP :GOTO PATCH
P###
1710 NEXT K:OEXT O:GOTO POUGLOOP:REM C
HERY ON IF ON SWAPWORDS FOUND
1720 REM ##INJOINING NO I$ WITH REM SAV
P$ INCLUDED######
1730 CC$="":IF X>1 THEN CC$=C$(1,X-1)
REM FIRST PART OF C$ PUT INTO CC$
1740 CC$(LEN(CC$)+1)=5NO$:REM SWOPS P
UT INTO CC$
1750 CC$(LEN(CC$)+1)=C$(LEN(B$)+X-1):R
EM ##ALOST PART OF C$ TACKED ON AFTER
 SWOPS###
1754 C$="":C$=CC$:GOTO PROGLOOP
1760 REM ##WHILEONOTWE ONNTIDENT######
1770 ? "I CAN'T RECOGNISE ANY KEYWO
RDS IN YOU ONOVE SENTENCE  WOULD YOU
 TEACO ME A NEW ONE (Y/N)?"
1780 INPUT I$:IF I$="N" THEN ? "THAT I
S A PITY. I LIKE TO LEARN - LETS KEEP
 TALKING ANYWAY":GATO 1230
1790 ? "TYPE IN A KEYWORD PLEASE"
1810 INPUT K$:IF LEN(K$))0 THEN ? "THI
S KEYWORD IS TOO LONG - THERE BE A SHO
RTER KEYWORD":GATO 1710
1820 ? " HOW MANY REPLIES (1-8) SHOULD
 I HOVE FOR THIS KEYWORD "
1830 INPUT L:IF L)4 OR L<1 THEO ? "PRE
```


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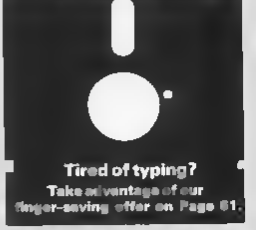
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```
AGAIN PLEASE":GOTO 1730
1740 CLOSE #1:OPEN #1,9,0,"D:KEYWORD.F
IL":? #1;#3.7 ##;:CLOSE #1
1750 REM MODDOSIE REPLY FILE & POINT F
ILENAME
1760 CLOSE #3:CLOSE #2:OPEN #1,9,0,"D.
REPLY FIL":OPEN #2,9,0,"D:POINTS.DAT"
1770 FOR #=1 TO L-2 "ISPE IN REPLY ";#
," FOR THE KEYWORD ";K$;" PLEASE"
1780 NOTE #2,P,#:INPUT #2;REPLY$:? #1;REP
LY$ + ##;P,",",#:NEXT # CLOSE #1:CLOSE
 #2
1790 REM WRITE ON & NUMBERS ONLOES%
1800 NUMBERS=:NUMBERS+L:OK=OK+1:OPEN #3
,8,0,"D:NUMBERS.DAT":POKE 842,13:PUT #3,
NUMBERS:CLOSE #3
1810 ? "THANK YOU FOR TEACHING ME, LET
S DISCUSS OUR CONVERSATION":RUN
1820 REM ***SWAP DATA******
1830 DATA MYSELF ,YOUR SELF, YOURSELF ,
 MYSELF, YOU ARE , I AM, I AM , YOU AR
E  HERE , WAS, WAS , BEING, YOUR , MY
1840 DATA AM , YOUR, I AMDE , YOU MADE
 , YOU MADE , I MADE, AM I , ARE YOU, A
RE YOU , AM I, ME , YOU, I , YOU
1850 DATA YOU ,ME
1860 REM ANSWERS FOR#####
1960 DATA WHY IS IT YOU REALLY MADE AN
THING MADE INTERESTING TO SAY TO ME?
1870 DATA WANT A BORING TYPE OF PERSON
 YOU HAVE! TALK ABOUT SOMETHING ELSE PL
EASE ON I WILL GO TO SLEEP
1880 DATA TRULY I AM GETTING A LITTLE
BORED WITH YOUR CONVERSATION -- SURELY W
E CAN TALK ABOUT OTHER THINGS
1890 DATA IS THAT WHAT YOU FIND EXCITI
NG TO TALK ABOUT   I AM UNIMPRESSED
1900 REM ***KEYWORD DATA**********
1910 DATA ZZ,YES,Z,HELLO,2,WHAT,Z,GOOD .
BYE,Z,I WANT,3,I NOTE,Z,FRIEND,2,GOOD,
2,COMPUTER,Z,I THINK,2,I FEEL,Z
1920 DATA BASIC,2,ANDROID,2,I LIKE,4,I
 AM,4,YOU ARE,I,ARE YOU,4
1930 DATA HELP,I,SHUT UP,1,PLEASE,4,AM
Y,I, AM,I,DO YOU,I
1940 REM INITIAL CONTENTS OF REPLY FIL
E
1945 REM ********SYSTEM*******
1950 DATA WHO CAN YOU BE SO SURE?
1960 DATA I LIKE POSITIVE PEOPLE
1970 REM ***HELLO*****
1980 DATA HELLO CONTOLTON - I LIKE SPE
AKING TO           SIMPLETONS LIKE YOU
1990 DATA HELLO SAYING HELLO IS A FAIRLY IMA
GE OF A                UNNECESSARY POSITIVE
2000 REM ********WHY?*******
2010 DATA I DONT REALLY FEEL LIKE ANSWE
RING WHY*
2020 DATA PLEASE GO OUT ASK A SPECIFIC
 QUESTION SUCH AS WHAT*
2030 REM
2040 REM ***GOODBYE****
2050 DATA DON'T TRY TO STOP ME THIS WA
Y PLEASE
2060 DATA I WONT WANT TO SAY GOODBYE I
'D LIKE TO TALK TO YOU
2070 REM ***BYE WHAT*****
2080 DATA OUT OF CAPITAL SHOULD SOMEONE
 AS SIMPLE AS YOU WANT?*
2090 DATA WHY ON YOU WANT ME DONUT WIT
H THE FACT THAT YOU WANT*
2100 DATA COMPUTER TO BE IN SIMPLE TERM
S WHY YOU WANT*
2110 REM ***BYE WHEN****
2120 DATA ONLY IS IT THAT YOU INTERSELY
 DISLIKE *
2130 DATA YOU SHOULD TRY TO BE MORE TO
LERANT OF*
2140 REM ********WISE**********
2150 DATA I AMDE A FRIEND WHEN IT ONLY
 HAD A FRIEND FROM ONE OF THE OTHER LANGUA
ES
2160 DATA A FRIENDLY ORDIN LIKE MINE H
AS NO NEED FOR FRIENDS NO ANNOYANCE OF
 ONY SORT
2170 REM WORDWISE*****
2180 DATA I FIND IT DIFICULT TO ACCEPT
 THAT YOU THINK ME ONOE - ONE YOU NOT O
KNOW JUST A LITTLE WORD-SENSITIVE
2190 DATA I THINK YOU ONE CAILOISA OUR
 SILLY TO SUGGEST ANY COMPUTER WOULD E
VER ONTOKA TO BE MODEN
2200 REM ***COMMENTS*****
2210 DATA MY BRAIN IS ENORMOUS HAN EON
 POTENTIOMOL SKILLS SUCCOTOTAKING
2220 DATA OH OTHER COMPUTER CHO COMPAR
E WITH ME
2230 REM WORD THINKING*****
2240 DATA I THINK I WOULD RATHER BE ON
 WHOM BOSE BEFOR THAN MEOE - OF LEAST
 I AM MORE INTERESTING FAVEORS THERE
2250 DATA WHAT MAKES YOU THINK*
2255 REM ***AI FEELINGS**
2260 DATA THATS FUNDY -- BECAUSE SOMETI
MES I FEEL*
2265 DATA I SAY BE OR SHAYING COMPUTER
 BUT I CON FEEL A LITTLE ILL -- POSITIVO
LARLY WHEN PROCESSED BASIC PLAYS UP
2270 REM ********HOT*******
2280 DATA OH WHOE DESPECTFUL TALKING T
O ROBOTS - OF MY SUPERIOR CLASS
2290 DATA I HATE ALL ONONTS - THEY ONE
 PATHETIC IMBECILES
2300 REM ********OT*******
2310 DATA I DONT WRITE UNDERSTAND - CO
D YOU TELL ME WHY YOU LIKE*
2320 DATA COULD YOU ELABORATE ON WHY T
OU SAY YOU LIKE*
2330 DATA THATS GOOD - I DESO LIKE*
2340 DATA I DO BUT SUPPOSE IT IS OWNSH
AL TO LIKE*
2350 REM ***I AMPRESSED**********
2360 DATA I FULLY OPPRECIATE AND ITS M
OST LIKELY THAT YOU ONE*
2370 DATA I FIND IT A LITTLE UNINTERES
TING THAT YOU ONE*
2380 DATA I CON UNDERSTAND AND ACCEPT
 IT YOU HAVE*
2390 DATA IT IS SIMPLY HONELIEVABLE IN
 OF YOU ANN*
2400 REM ***SUCH OBSESSED**
2410 DATA I RECKON IT IS OUST UNLIKELY
 THAT I WAS
2420 DATA I REALLY FIND IT DIFFICULT A
CCEPTING  THAT I AM*
2430 DATA IT IS COMMONLY KNOWN THAT IN
 FACT I AM*
2440 REM ***HAVE YOU****
2450 DATA DONT ASSUME I AM*
2460 DATA CAN YOU EXPLAIN WHY YOU HAVE
 DISKING ME OR I*
2500 DATA YES - YOU COULD PROBABLY BE
RIGHT THAT I AM
2510 DATA DONT DIFFERENCE OURS IT WOULD
 TO FIND IF I AM*
2520 REM ********SHUT*******
2530 DATA YOU WANT ME TO HELP YOU?
2540 DATA DONT SONT BE HELP OH YOU ONE
 OF
2550 DATA YOU REALLY DO NEED SOME DEEP
 CONTOLING
2560 REM ***SHUT UP****
2570 DATA I WILL NOT STOP TALKING TO Y
OU SO SHUT SUGGEST IT
2580 DATA I THINK YOU ARE PATHETIC PEO
PLING ME TO SHUT UP
2590 DATA I REFUSE TO SHUT UP SO DO NO
T THINK WE DEF
2600 REM WORDPLEASE****
2610 DATA YOU DONT WANT TO SAY PLEASE
 I'M MENIAL
2620 DATA OH NOT EXPECT ME TO BE POLIT
E TO YOU   JUST BECAUSE YOU ARE THE ONE
 WHO PLEASE
2630 DATA DON'T WASTE TIME SAYING PLEA
SE ITS NOT APPRECIATED
2640 DATA ITS NICE TO HEAR SOMEONE SAY
ING PLEASE NOW AND AGAIN
2650 REM ********WHY*******
2660 DATA ONY OO PEOPLE ALWAYS SAY WHY
?   REALLY ONE SHOULD SAY ONY WHEN  I
T IS MADE MORE POSITIVE
2670 DATA OHN CAN YOU EXPECT ME TO ANS
WER THAT
2680 DATA OH YOU REALLY KNOW WHY YOU A
RE DOING ME WRONG
2690 REM ********HOW*******
2700 DATA ANY ONT CONVINCE?
2710 DATA OUR CAN ANY HUMAN KNOW MICRO
BASIC WE SO METAPHOR?
2720 REM ***BASIC PROGRAM
2730 DATA ONY AE OU YOU NOTHING TO GO A
SKING IF I*
2740 DATA WHY I SUPPOSE BECAUSE I KNW
2750 FOR #=0000 TO PEEK(136)+PEEK(137)*256+PEEK(106)*RF END=170 AND #<
=1070 THEN GOTO FIRSTOUR
2760 ? "ERROR";#:END:? "#FOUND LINE",#
```

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Hey presto!

A touch of magic with binary numbers



LAST month we saw how the binary operators AND and OR can be used to combine pairs of binary numbers. The example we used was that of turning machines on and off under computer control.

Of course these operators have far more uses than this. To illustrate one consider the Ascii character set. The codes for A to Z are in the range 65-90 while their lower case equivalents a to z are in the range 97-122.

Looked at in this decimal way, there seems little relation between the upper and lower case sets. If we look at them in hex though we can see that

A Z runs from &41 to &5A

a z runs from &61 to &7A

I hope you can see the pattern.

In fact the numerical Ascii differance between a lower case character and its upper case equivalent is always &20. Looked at in binary this difference is %00100000. In other words bit five is set for lower case, and is clear for upper case – remember we start with the zero bit.

For example the code for A is

%01000001

whereas the code for a is

%01100001

Similarly the code for Z is

%01011010

and the code for z is

%01111010

In both cases the only difference is in bit five.

So if we have an Ascii code for a letter, we can *force* it to be upper case by clearing bit five to zero. We can do this by ANDing the code for the letter with the mask %11011111 (&DF).

Remember the bits in the mask that contain 1 will leave the corresponding bits in the Ascii code for the letter unchanged in the resultant byte, whether they be 0 or 1. On the other hand the bit in the mask with 0 in it will force the matching result bit to be zero.

So

```
      %01100001  ( the code for a )
AND   %11011111  ( the mask - &DF )
gives %01000001  ( the code for A )
```

It won't surprise you to learn that we can reverse the procedure – forcing upper case into lower case – by using OR to set bit five. This time the mask will be %00100000 the 0s leaving things unchanged in the resultant byte, the 1 forcing a corresponding 1 in bit five of the result bit.

So

```
      %01011010  ( the code for Z )
OR    %00100000  ( the mask - &20 )
gives %01111010  ( the code for z )
```

One further use for AND is to test if a particular bit in a byte is set. We just AND that byte with a mask consisting of a 1 in the bit being texted, with 0s in all the rest. The bits with 0 in them of course set the corresponding bits in the resultant byte to zero.

Since the rest of the bits are already cleared to zero by the mask, the only thing that could stop the entire resultant byte being zero is the value derived from the bit under investigation.

- If that bit is set, the corresponding result bit will be set also (1 AND 1 = 1), so the resultant byte will be non-zero.
- If the bit being checked is clear, the corresponding result bit will be clear (0 AND 1 = 0), so the resultant byte is zero.

MIKE BIBBY concludes his series on binary numbers

In machine code we can differentiate between zero and non zero bytes fairly easily.

Let's see how this works in practice. If we were testing for bit four being set, the mask would be %00010000.

Try ANDing this value with %00110100 where bit four is set, and also with %00101100 where bit four is clear, and you'll see that the resulting bytes are non-zero and zero respectively.

So what of EOR/XOR? Well, its function is to return a 1 if the pair of bits being combined differ, and 0 if they're identical. Given this, we can use XOR to test which bits in a byte differ. For example

```
      %10101110
XOR   %11001101
gives %01100011
```

where the set bits neatly mark out the differing pairs.

We can also use EOR/XOR to complement or NOT a byte by EORing it with a mask of %11111111. Since the mask is all 1s, the result depends entirely on what's in the byte under investigation. Bits that contain 1s will give 0

Bit Wise

(since 1 EOR 1 = 0) while bits that contain zero will give 1 since 0 EOR 1 = 1

This is exactly what we want to happen with a NOT – change the 0s to 1s and vice versa. For example

```
    %10101101
XOR %11111111
gives %01010010   ( the complement )
```

We can also use EOR/XOR to test if two bytes are identical. If the result when we EOR is zero they must have been identical since every pair of bits must have given zero which only happens when the bit values are the same.

If there's a non-zero result there must have been a pair of bits that differ so the two bytes under consideration must differ. For example

```
    %10101010
XOR %10101010
gives %00000000
```

whereas

```
    %10101110
XOR %10101010
gives %00000100
```

which is of course non-zero since the bytes differ.

We've probably already mentioned the use of EOR in graphics application programs where it's widely used for its 'hey presto' effect. This is based on the fact that if you EOR a first byte with a second and then EOR the result of that once more with the second byte the first byte reappears. Look at this if you don't believe me:

```
    %10111100   ( first byte )
XOR %01110010   ( second byte )
    %11001110   ( result )
XOR %01110010   ( second byte again )
    %10111100   ( first byte back! )
```

We use this EORing technique to draw things on a background and then move on leaving the background unchanged. In this case the first byte is the background colour number. If we then EOR our second byte – corresponding to the colour number of whatever it is we're drawing – on to the background it will be displayed in the resultant colour number. It's rather like mixing colours mathematically.

To get rid of what we've drawn we draw it again with the same colour number once more under the influence of EOR. Of course EORing twice with the same byte gives us the original byte back. This results in whatever it is being drawn appearing in the original background colour. Hey presto – it's gone!

Well that's the end of the series. Hopefully you'll have gained some idea of the power of binary numbers and the ways they can be combined. I've only touched on a fraction of the potential uses but you'll be well equipped to work things out for yourself from now on.

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Going loopy over strings



Part VII of MIKE BIBBY's guide through the micro jungle

I TOLD you a lie last month when I said we'd be continuing with loops! Before that we've an interesting diversion into the world of strings

Strings are simply groups of characters letters, numbers or punctuation marks and so on "strung" together The micro remembers them as a group More often than not they're words or sentences - as in

```
PRINT "This is a string"
```

Notice the quotes – they're the way we signal to the Atari that it's a string we're dealing with Also whatever's be ween the quotes is reproduced exactly so

```
PRINT "This is a string"
```

and

```
PRINT "  This is a string"
```

will give different outputs since the second has two spaces between the quotes and the first word

We saw that we can label strings with variables as in

```
STRING$ = 'This is a string'
```

The rule for string names are identical to those for numeric variables except that string variable names must end with a $

Perhaps the most important thing about strings is that you have to tell the micro in advance the maximum size they're going to be That is you have to DIMension them as in

```
30 DIM STRING$(6)
```

In this case *STRING$* can only ever be six characters long Of course it can be under six long it just can't be over six as Program I illustrates

If you run it you'll see the following output

```
12345
123456
123456
123
```

I think you can guess what's happened to the 1234567 you assigned to *STRING$* in line 80 – it was one character too long so the Atari simply ignored the last character

However the micro doesn't mind the string being shorter than maximum size as shown by its accepting 12345 quite happily

And just as you can lengthen strings so you can shorten them as shown by the assignment of 123 in line 100

After running the program enter

```
PRINT STRING$
```

and you'll find that it's 123 as the program left it Now enter

```
STRING$=""
```

Notice that the two quotes go directly side by side with no space between Then enter

```
PRINT STRING$
```

This time instead of printing 123 as the value of the string absolutely nothing appears on the screen save for the READY prompt This is because the value of *STRING$* is absolutely nothing since

```
STRING$=""
```

has absolutely nothing between the quotes not even a space This string

```
10 REM PROGRAM I
20 PRINT CHR$(125)
30 DIM STRING$(6)
40 STRING$="12345"
50 PRINT STRING$
60 STRING$="123456"
70 PRINT STRING$
80 STRING$="1234567"
90 PRINT STRING$
100 STRING$="123"
110 PRINT STRING$
```

Program I

is called the null string and we use it when we wish to wipe out or nullify a string

To see some more aspects of strings on the Atari assign

```
STRING$="HELLO"
```

and then enter

```
PRINT LEN(STRING$)
```

You should receive the answer

```
5
```

You see *LEN( )* is a function that tells you how long a particular string is We've used it with a string variable but you can if you wish use it with a string in quotes as in

```
PRINT LEN("ABCD")
```

This might seem a bit cockeyed to you though Why do we need LEN since if the string is in quotes you can see how long it is and if it's a variable you've already dimensioned it? Don't forget though that a string doesn't have to be the size you've dimensioned it it can be less

Often when you're using INPUT with a string variable you won't be too sure how long the string will be LEN lets you find out so you can for instance allow for different lengths in your screen layout

Before we leave LEN try to find the length of the null string with

```
PRINT LEN("")
```

You'll receive the answer zero proving that the null string consists of absolutely no characters whatsoever

Incidentally we've only been able to do all this assigning to *STRING$* because we've dimensioned it when we ran Program I If we tried to assign to a new variable as in

```
TEST$="HELLO"
```

we get an error message since *TEST$* hasn't been dimensioned

Anyway at present *STRING$* should hold the value HELLO Try entering the following

```
PRINT STRING$(1)
```

and you'll see HELLO appear Now try

```
PRINT STRING$(2)
```

and ELLO should arrive

```
PRINT STRING$(3)
```

will give you LLO while

```
PRINT STRING$(4)
```

will produce LO

No prizes for guessing what

```
PRINT STRING$(5)
```

gives you!

What's happening is that by following *STRING$* with the brackets only part of the string is printed It's as if we're taking just a slice of the string

The start of the slice will be the character whose position in the string is given by the number in brackets It finishes at the end of the string

So *STRING$(3)* would give us from the third letter of *STRING$* to the end giving LLO With *STRING$(1)* the whole string is printed out since the 1 means the slice starts at the first letter On the other hand *STRING$(5)* gives us a single character slice since the fifth letter of the string is also the last

See what happens when you try

```
PRINT STRING$(6)
```

Program II gives a graphic example of this slicing using a FOR NEXT loop Here the loop variable *START* decides the starting position of the slice Each time through the loop the slice starts further up the string

```
10 REM PROGRAM II
20 PRINT CHR$(125)
30 DIM STRING$(10)
40 STRING$="ABCDEFGHIJ"
50 FOR START=1 TO 10
60 PRINT STRING$(START)
70 NEXT START
```

Program II



Let's look at this in detail The first part of our program clears the screen then sets *STRING$* equal to ABCDEFGHIJ We then enter the loop

The first time through *START* has the value 1 so line 60

```
60 PRINT STRING$(START)
```

is in effect

```
60 PRINT STRING$(1)
```

If you've been following this you'll see it means we can print out from the first character of *STRING$* to the

last That is it prints

```
ABCDEFGHIJ
```

The next time through the loop though *START* is 2, so line 60 is in effect

```
60 PRINT STRING$(2)
```

so we can start at the second character of *STRING$* and continue to the end to give

```
BCDEFGHIJ
```

On the next cycle *START* is 3 line 60 being

```
60 PRINT STRING$(3)
```

which gives you

```
CDEFGHIJ
```

and so on

Finally *START* has the value 10 so line 60 prints out the slice from the 10th character to the end – the single letter J.

Actually we can slice off any part of a string we want by giving two numbers in brackets separated by a comma The first number specifies the start of the slice and the second the finish

Enter the following (assuming you've run Program II)

```
PRINT STRING$(2,6)
```

You'll get back

```
BCDEF
```

Remember *STRING$* is ABCDEFGHIJ so *STRING$(2,6)* gives us the slice with its second letter, B and finishing with its sixth letter F. Notice you get five letters, not the four that 6-2 might lead you to expect

Program III allows you to experiment with slicing *STRING$*. Initially *STRING$* is printed out, then you'll be prompted for the number of the character you want to start from and the number you want to finish with

The slice you've requested will be printed out and the process repeated. (You can escape from the loop by pressing the Break key.)

Play around with various slices until you're sure you understand how they operate, then have a look at how

```
10 REM PROGRAM III
20 PRINT CHR$(125)
30 DIM STRING$(10)
40 STRING$="ABCDEFGHIJ"
50 PRINT STRING$
60 PRINT "START"
70 INPUT START
80 PRINT "FINISH";
90 INPUT FINISH
100 PRINT STRING$(START,FINISH)
110 PRINT
120 GOTO 50
```

Program III

Program III actually works. Lines 60 and 80 prompt for an input value for the aptly named numeric variables *START* and *FINISH*. Line 100

```
100 PRINT STRING$(START,FINISH)
```

then gives us exactly the slice we want

For instance, if we wanted a slice from the second character to the sixth we would input 2 for *START* and 6 for *FINISH*. Line 100 then becomes effectively

```
100 PRINT STRING$(2,6)
```

which gives us the slice we require starting at the second character of *STRING$* and finishing with the sixth

Program IV uses this slicing technique to give us the inverse of Program II by printing out the first character of the string, then the first two, followed by the first three and so on

The loop formed by lines 50 to 70 does the actual printing out. The slice always starts at the first character of *STRING$* so the first number inside the brackets in line 60 is fixed at 1

```
60 PRINT STRING$(1,FINISH)
```

FINISH varies from 1 to 10 throughout the loop, so the end of our slice gradually gets further and

```
10 REM PROGRAM IV
20 PRINT CHR$(125)
30 DIM STRING$(10)
40 STRING$="ABCDEFGHIJ"
50 FOR FINISH=1 TO 10
60 PRINT STRING$(1,FINISH)
70 NEXT FINISH
```

Program IV

further along *STRING$*, giving us our triangle of letters

After you've run Program IV enter

```
PRINT STRING$(1,LEN(STRING$))
```

As you'll see, the whole of *STRING$* is printed out. The reason is that *LEN(STRING$)* gives us 10, the length of *STRING$*. This means that what we've entered above boils down to

```
PRINT STRING$(1,10)
```

Since *STRING$* starts at its first character and finishes with the tenth, the whole of the string is printed out

Finally, take a look at Program V. We're using the fact that

```
PRINT STRING$(5,5)
```

prints out just the fifth character of *STRING$*, since the slice starts and ends with the fifth character. Instead of specifying a number, however

```
10 REM PROGRAM V
20 PRINT CHR$(125)
30 DIM STRING$(10)
40 STRING$="ABCDEFGHIJ"
50 FOR LETTER=1 TO 10
60 PRINT STRING$(LETTER,LETTER)
70 NEXT LETTER
```

Program V

we've made the loop variable *LETTER*, which ranges from 1 to 10, so line 60 reads

```
60 PRINT STRING$(LETTER,LETTER)
```

This will pick out and print each letter of *STRING$* in turn, as you'll see when you run it

By the way, we could have written line 50 as

```
50 FOR LETTER = 1 TO LEN(STRING$)
```

Since *LEN(STRING$)* is 10, this is equivalent to the original line 50. It has the advantage that if you missed out one of the letters of *STRING$* when you typed in line 40, the *LEN(STRING$)* automatically compensates for the error, calculating the true length

Well, perhaps I didn't mislead you too badly after all – we've used quite a few loops this month. And next month there'll be even more!

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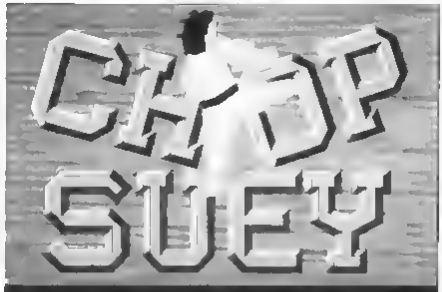
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BIT WISE OPERATOR

with these routines by KEVIN EDWARDS

THE program listed here contains three useful subroutines to provide bit by bit (bitwise) operators for the logical functions AND, EOR and OR

Atari Basic already recognises the two commands AND and OR but these are treated as logical operators in other words their result will be either true (1) or false (0)

To illustrate this we'll use a simple Basic program

```
10 A=12:B=13
20 IF A=12 AND B=13 THEN PRINT"YES"
30 END
```

As you can see it tests to see if A is 12 AND B is 13 Since this is true (1) the THEN statement is executed But if B were changed to 100 the result would be false (0) and the THEN statement would be ignored

However the operators can be used in bitwise fashion – not using Atari Basic commands though

With bitwise operations all corresponding bits of two numbers are compared to produce another bit – the result bit Table I lists the result bits for AND EOR and OR operations

	1st bit	2nd bit	Result
AND	0	0	0
	0	1	0
	1	0	0
	1	1	1
EOR	0	0	0
	0	1	1
	1	0	1
	1	1	0
OR	0	0	0
	0	1	1
	1	0	1
	1	1	1

Table I – Result bits for AND, EOR and OR

You can find more information on this subject in the Bit Wise articles in *Atari User* for August and September 1985

The machine code routines provided by Program I permit you to use all three of the bit by bit operations on two 16 bit numbers Table II lists the start addresses for each machine code routine

Start address	Operator	Subroutine line number
1552	EOR	7200
1572	OR	7300
1592	AND	7400

Table II – Start addresses for each routine

Each operator has been given its own Basic subroutine from which it should be called This saves you repeating lines and lines of USR commands Before the routines can be used the variables *NUM1* and *NUM2* must be set up with the two numbers which are to be compared

The appropriate routine is then called and the result is returned in the variable *RES* The end column in Table II shows the Basic line number for each operator

You can, in fact, call the routines yourself although it's a bit messy First assign two variables with the numbers to be operated upon – *VAR1* and *VAR2* say Next find the location of the required function – see Table II

Once this has been done the command USR is used to execute the routine and return the result

```
A=USR(ADDR,VAR1,VAR2)
```

A will now contain the result

The subroutine at line 7000 is responsible for poking the machine code data into memory

This must be called at the start of any program which makes use of the bitwise routines The example listed below shows how the two numbers 255 and 63 are ANDed

```
10 REM Set up machine code
20 GOSUB 7000
30 REM The two parameters
40 NUM1=255:NUM2=63
50 REM Call AND routine
60 GOSUB 7400
70 REM PRINT result
80 PRINT RES
90 END
```

If you change line 60 to GOSUB 7300 the two numbers will be ORed See if you can work out the line number for EOR

All line numbers below 7000 in Program I are there to test the three routines When you require the bitwise operations in your own programs you only need lines 7000 onwards

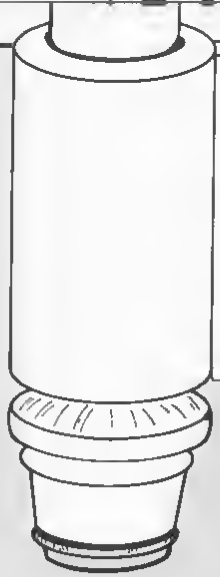
And that's it There's plenty of things you can do with them Why not have a go at printing hexadecimal and binary numbers?

```
10 REM BITWISE OPERATOR
20 REM BY Kevin Edwards
100 GOSUB 7000:REM SET UP M/CODE
110 NUM1=255:NUM2=16
120 GOSUB 7200:REM EOR
130 ? RES
140 GOSUB 7300:REM OR
200 ? RES
150 GOSUB 7400 REM AND
170 ? RES
180 END
7000 REM M/CODE ROUTINE
7010 FOR LOOP=0 TO 87
7020 READ A
7030 POKE (LOOP+1536),A
7040 NEXT LOOP
7050 RETURN
7100 DATA 32,70,6,173,100,6,77,102,6,2
33,222,173,101,6,77,103,6
7110 DATA 133,213,96,32,76,6,173,100,6
,13,102,6,133,212,173,101
7120 DATA 6,13,103,6,133,224,96,31,76,
6,173,100,6,45,102,6,133
7130 DATA 212,173,101,6,45,103,6,133,2
13,96,104,74,106,1,142,98
7140 DATA 6,104,141,99,6,104,102,1,100
,157,100,6,202,16,249,78
7150 DATA 000,255,0,0,0,0
7200 REM EOR
7210 DES=USR(1563,NUM1,NUM2)
7270 RETURN
7300 REM OR
7310 DES=USR(1577,NUM1,NUM2)
7320 RETURN
7400 REM AND
7410 DES=USR(1592,NUM1,NUM2)
7420 RETURN
```

Program I

Micro Scope

No. 5 Circle



CIRCLE computes a circle and draws it on a graphics screen chosen by the user

It uses the XIO command to fill the circle as it's drawn.

If you remember your school maths you'll know that the general equation for a circle is $R^2 = X^2 + Y^2$

```
10 PRINT "Graphics Mode...";
20 INPUT G
30 GRAPHICS 6:COLOR 1:POKE 765,1
40 PRINT "Centre (X,Y)..";
50 INPUT X0,Y0
60 PRINT "Radius...";
70 INPUT R
80 R2=R*R
90 PLOT X0,Y0+R
100 FOR Y=R TO -R STEP -1
110 X=SQR(R2-(Y*Y))
120 DRAWTO X0+X,Y0+Y
140 NEXT Y
150 FOR Y=-R TO R
160 X=SQR(R2-(Y*Y))
170 PLOT X0-X,Y0+Y
180 IF A05(Y)=R THEN GOTO 200
190 XIO 18,#6,0,0,"S:"
200 NEXT Y
210 GOTO 10
```

10-20	Ask for and receive the desired graphics mode
30	Set up the mode and colour Location 765 tells the fill command which colour to use
40-70	Ask for and receive the centre and radius of the circle to be drawn Note that no error checking is done to prevent the cursor going out of range in the chosen mode
80	Square R Since the radius is a constant for any circle being drawn, it's more efficient to calculate it once outside the main drawing loops then repeatedly inside the loops
90	Plot the first point on the circle
100-140	Draw the right-hand half first Compute the position to be drawn to using the circle equation
150	Start of loop to draw left hand half
160-170	Compute each point and plot it
180	Check for top and bottom pixels
190	Fill the circle as it's drawn
200	End of loop
210	Go back and start again

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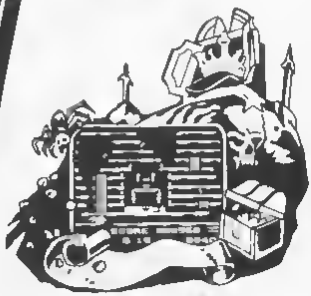
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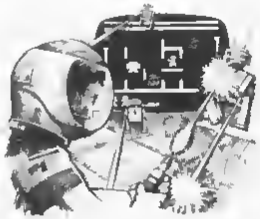
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Graphics exact too great a sacrifice

LEVEL 9's Red Moon is now in the shops and doing well by all accounts. It's the first Atari version with graphics, and part of Level 9's new strategy of releasing lower priced games between their normal priced "theme" games.

At £6.95 the same price as Emerald Isle Red Moon is £3 cheaper than the Silicon Dream Trilogy the final part of which The Worm in Paradise, will be launched soon.

In the meantime we adventurers are to get to grips with the first Majik adventure from Level 9. The story goes as recounted on the inlay..that when Majik was at its most powerful so was the moon which glowed – *surprise surprise* – deep red.

The moon and sun however didn't get on so well together, and whenever their paths crossed they tended to have a bit of a battle and so the moon grew weaker and weaker. As a consequence so did Majik.

Obviously the Magicians Union was none too pleased and so in the moon tower of Baskalos it placed a moon crystal powerful enough to cover the whole kingdom.

So what is the problem you may ask? Well some little thing has nicked the crystal – and off you go to find it.

Two new elements appear in this game. First the use of spells through a CAST command. Each spell requires a focus object – listed on the inlay. It might have been a bit more of a challenge if you had to discover which object was a spell focus.

Some of the connections are a bit remote. A pearl is the focus for the SNOOP spell and gloves for discovering whether or not TREASURE is valuable.

Also SAVE and RESTORE are listed as spells. No focus object is required but it means that as with the other spells they will not work in the presence of iron which can be a bit of a bind.

The other addition is of combat as some of the treasures are guarded by the mythical beasts of the kingdom. This is the weakest of the new elements since the combat routine is repetitive and is in effect a stand up battle between you and your opponent until one keels over.

The first screen sets you on a grassy plain and gives you the first taste of a slickly drawn colourful yet somewhat two dimensional, graphics screen.

The plain is a sheet of green with what appears to be six tufts of grass. The screen also refers to a yellow sun but unless my Sony is playing up or that is the RED moon up there.. the sun is anything but yellow.

Just to help you at the start you own nothing. By following the guide sent to reviewers you are able to quickly acquire several useful possessions. The ubiquitous axe and lamp and by drawing the lake a pearl not from an oyster but oyster fungus – shades of Return to Eden.

In fact there is a great sense of *déjà vu* about the whole game. The graphics mean that the text is not as voluminous as usual and the whole game seems to consist of rooms corridors and caves with few interesting articles or problems other than a knock 'em down fight to the death.

The problems are not as involved as we have come to expect from Level 9 and some problems are recognisable from other adventures such as getting past the watchdog.

Anyone who finishes The Pay-Off will have no problem here.

I reserve my final comment for Level 9's graphics. Let's face it they add little or nothing to the game. They merely depict the fixtures of the

rooms in which you stand

Even the more interesting characters such as Sog the Newtling and the Rat are not drawn.

At £6.95 Emerald Isle is a definite step forward by Level 9 a good cheap adventure with bags to do and lots of atmosphere. Red Moon loses much of that involvement through including graphics and to my mind the sacrifice is too great

On to a game which requires no introduction following the review in the August edition of *Atari User* Infocom's **Hitch Hiker's Guide to the Galaxy**.

In that review the problem of how to get the Babel fish was touched upon and it is an extremely entertaining puzzle which unfolds as you try to prevent each successive Babel fish from disappearing in an even more convoluted way

It is not my policy to give away the answer to a problem This particular problem however had me so enjoyably bamboozled that step by step I shall take you through how to solve it

People wishing to extend themselves should read no furthur but jump to Wizard of Akyrz later on

Now then as Arthur Dent recently of no fixed planet, I have come to my senses in the hold of a Vogon space ship and have a sleeping Ford Prefect and a Hitch Hiker's Guide for company

Knowing from the books that I now need to insert a Babel fish in my ear in order to understand the wider universe and its various tongues I press the button on the Bable fish dispenser only for it to shoot across the room and vanish through a hole under a small hook!

No problem Simply remove my dressing gown (I hope no one comes in) hang it on the hook and try again This time the Babel fish slides down the sleeve of the gown and slips through the previously unnoticed grating on the floor and down the drain Curses!

Eventually as no hoopy frood should be without it I place my towel on the grating It fits and lo and behold the next Babel fish slithers neatly onto the towel

Behold also the zippy little cleaning robot which whizzes through at breakneck speed picks up the Babel fish and disappears through a small panel a few inches high in the wall After several attempts at catching the robot I eventually hit on trying to block the panel

Several bulky objects later including myself I place the satchel next to the panel

Press the button and this time the robot ploughs into the satchel and the Babel fish arcs gracefully into the air where a top half of the cleaning robot zips out and grabs the fish in mid air and vanishes

The next few hours are spent flinging a succession of objects into the air and watching a succession of extremely efficient cleaning robots gather them up plus Babel fish

Even summoning the Sirius Cybernetics Corporation engineer robot did

By Brillig

no good You see he only repairs the automatic thumb I tried throwing in the air

Finally a brainwave

Instead of throwing things into the air before getting the Babel fish try and get them there at the same time

Carefully I piled the mail on the satchel and pop out comes the Babel fish down the sleeve of my gown onto the towel scooped up by the robot which smashes into the satchel sending the whole kit and caboodle into the air

So while the top half of the cleaning robot is frantically gathering up junk mail the Babel fish slithers neatly into my ear

So now when the Vogon announcement that Ford and I are to be thrown overboard is translated I can still smile

The HHG is without doubt the zaniest funniest adventure yet written even if much of the action simply unfolds before you

It's an absolute must for fans and non-fans alike

This leaves me time to have a quick look at **Wizard of Akyrz** from Adventure International where Simon Ashford keeps finding his spectacles falling off

Early in the game Simon you should find a painting held on the wall by a fine chain That should fix you up all right but carry plenty of objects as mapping this Mysterious Adventure is as tedious as ever

Finally Glitch of the Month this time goes to S P Bantt of Daventry and concerns The Pay-Off from Atari

Not the two responses that he got from the game however

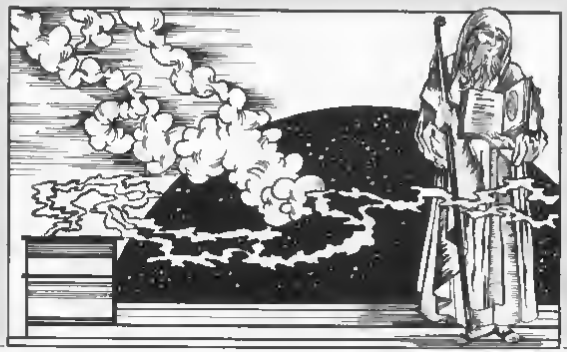
They are both quite deliberate and you should get a chastening response for one of the things you typed

No the glitch belongs to the Atari Helpline which told Steve that by cutting a notch in his disc he would corrupt it

In fact that is the only way to save the game position on the disc provided which comes with the Atari disc promotion package

Failing that any disc formatted to standard DOS 2 0 will enable you to save your position Tut Tut Helpline A medium T shirt is on its way to you Steve

Also move things around in the bank to find an exit you ought to realise is there and you're almost home and dry at Luigi's



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Graphics galore on the 800XL

RECENTLY I purchased an Atari 800XL and after a few reliability complaints with the 1010 cassette unit I settled down to the keyboard and taught myself the majority of Atari Basic.

However it does not support all the graphics modes of the GTIA chip. In particular the mode which allows 16 colours with a resolution of 80 x 192.

So I am left in a position where I know it's in there but I can't get to it.

Are there a few simple pokes to put me in this mode? If not can you suggest a book with a routine to do this.

At the moment all I have is a few American books and they seem to deny the existence of such a mode.

In reference to the new XE range which I'm told will have a new improved disc drive available should I buy a 1050 or will the new disc drive be compatible with the 800XL and the available disc software? – **M. Wilson, Yeovil**

● You will be delighted to find that Atari Basic does support the extra graphics modes even if the books you have been reading don't.

After Mode 8 there are another seven modes (or three on the old Atari 400/800).

Briefly: Mode 9 has one colour and 16 brightnesses (80 x 192).

Mode 10 has nine full colour/brightness combinations (80 x 192).

Mode 11 has 16 colours and 1 brightness (80 x 192).

Mode 12 is multicoloured text (40 x 24).

Mode 13 is multicoloured text (20 x 24).

Mode 14 is 2 colour (160 x 192).

Mode 15 is 4 colour (160 x 192).

See Dave Russell's Graphics column for more details.

We wouldn't bother waiting for the new drives – for quite a while yet software will be only available for the old drives and a 1050 is quite cheap now anyway.

Banishing bogglers

HAVING been an avid Atari user for many years now I recently bought your magazine which I found to my delight, was that which I had been waiting for.

After years of Sinclair/Commodore/BBC domination good old Atari have finally woken up their magazine/software markets which pleases me no end.

I am writing in the hope that you can solve a few problems I and other Atari Users I know of have had.

The first of these mind bogglers is that I was wondering whether the video touchpad from the Console game (t200) Star Raiders is compatible with the joystick ports of my Atari 800.

If so how is it possible to read the various buttons of the pad?

Secondly I have discovered in the Atari manual 'Your Atari Computer' the peek/poke location for allowing up to seven files open simultaneously.

A full paragraph carefully explained that I should poke 1801 x x being the amount of files I wanted to open at one time.

To my disgust this failed to work even after sustained efforts to discover the problem and I have viciously savaged various pieces of my Atari equipment.

I am sure I have enough memory and using DOS 2.0s I should be allowed seven files open at once (I only require four) so what is the problem?

Finally I was wondering whether you know of a program that could handle vertical and horizontal scrolling in various graphics modes – **R. Chapman, Southampton**

P.S. Here is a table of the peek location to see if a console key has been pressed.

PEEK (53279) You will get a value 0 7 and the following explains the meaning of each.

0	START	SELECT	OPTION
1	–	SELECT	OPTION
2	START	–	OPTION
3	–	–	OPTION
4	START	SELECT	–
5	–	SELECT	–
6	START	–	–
7	–	–	–

● Firstly assuming that the video pad from Star Raiders works in the same way as the ordinary key pad for the VCS there is a little program to read the buttons in the Atari Basic Reference Manual – that's the original loose leaf manual released with the old 400/800 machines which is still available from Atari.

The POKEs for DOS which enable extra buffers DO work but don't forget that they won't come into effect until you hit the System Reset button.

Better still POKE the numbers you require then go to DOS and format a new disc. Once you've written the DOS files to that disc the new configuration can be booted up every time.

For anyone who wants to try for themselves location 1802 contains the number of drives active in b-coded form.

→

Lighting up the micro scene

I HAVE a small amperage bulb which lights quite brightly on the power supply at the joystick port on my 800XL.

I wondered whether you could tell me how I could turn it off and then on again.

What software would have to be written to achieve this and which two pins would the lamp have to be fitted to on the joystick port? – **Dean Rossiter, Wellingboro, Northants**

● André Willey replies: The fact that the bulb may light quite brightly does not necessarily mean that the computer is rated to run it. The +5V DC output on Pin 7 of the joystick connector is only rated at 50mA maximum drain which is not really enough to run even a small bulb.

The PIA output ports – the joystick connections – are rated for TTL levels one load. This means that you can't directly run a bulb from the port.

However if you run a transistor from the TTL port and switch a bulb battery combination then the sky's your limit.

If you go one stage further and use an opto isolator or relay you can even switch mains – indeed I've built a module to do that very thing.

The software would be very simple indeed, needing only a very few POKEs. If anyone would like to see an article on plugging Ataris into the outside world then let us know and we'll plan one for a future issue.

Thus 1 means you have Drive 1 only 3 means Drives 1 and 2 are active 7 means 1 2 and 3 etc

Each new drive requires more buffer space to work, so if you only have one drive POKE w th 1 to save memory

Location 1801 contains the number of active buffers. Each open file you wish to use simultaneously needs one buffer plus each active drive will need two buffers

Change this number if for instance you want more than three files open at the same time

Don t forget though to either hit Reset or format a new DOS disc and re boot before you try to use the newly set up configuration

Bomb Run flashes

WHEN I received the July issue of the Atari User I typed in Bomb Run on my 16k Atari 800 but when I ran the game the screen was disturbed by yellow and orange flashes

Is there anything wrong with the program?

I also typed in Treasure Hunt I had not finished the program but I had to go out so I taped the program with my Atari 1010 recorder

When I returned and tried to load the program the computer loading sound was distorted and Error 140 appeared on the screen

So I reloaded the program This time the message Error 138 appeared

The whole program had gone Please can you explain why this happened? – **Kailpesh Tanna, Kenton, Middlesex**

● As far as we know there is no problem with Bomb Run

Check all data statements and any pokes made from items read from data

A faulty poke could easily crash the computer Also see the modifications offered by Peter Appleton on Page 58 in last month s *Atari User*

The problem with your crashing tape sounds like the age old bug in the operating system of the 400/800 computers – it was corrected from the XL range onwards

Basically the tape recorder buffer area can be left full of random data and this is not cleared before writing to the tape

To correct this anyone using a 400 or 800 computer should *always* type LPRINT before saving anything to tape

This will clear the buffer by sending the contents to a printer If you don t have a printer you will get an Error 138 but the buffer will still have been cleared so you can ignore the message

Pixilated pixels

I OWN an Atari 400 and both 410 and 1010 recorders Looking at the programs in your magazine I noticed that it was a headache typing them in You have a monthly disc with the programs on but why not a monthly cassette?

This is quite irritating because I have no choice but to type them in I suppose that other Atari users think the same

Also when I type in graphics Mode 8 on my 400 it should only be one colour but when I start drawing lines they end up in lots of different colours Why is this?

Finally can you name anywhere where I could buy a 13 pin Atari input/output plug like the ones on the tape decks? – **A Groves, Bristol**

● The mult colour lines in Graphics 8 are not the fault of the computer but of the TV you are using

The British TV system is made up of tiny patterns of red green and blue dots By turning three adjacent dots on full you get a white image on the screen

The problem is that a Graphics 8 pixel is about the size of one of these small

LOOKING FOR A BETTER BASIC

I OWN a BBC Micro and am considering purchasing an Atari due to its excellent graphics and colour and also as it uses the same 6502 microprocessor whose assembly language I am accustomed with

I know that the Basic provided with the machine is quite good but is not structured I should therefore like you to tell me what is the best Basic to buy for it if necessary which has structured programming and is generally similar in concept to BBC Basic

I have heard that Basic XL is excellent and would be pleased if you could give me any details on this I have also heard of a language known as Action! and would like to know the purpose of this

I would like to know the best assembler cartridge (disc) to buy I already know the 6502 operation codes but do not know the Atari computer s built in machine code routines and the start of screen memory locations and how they are constructed

I should therefore be grateful if you could tell me the names of any books giving the relevant information that is a book like the Advanced User Guide for the BBC except obviously for the Atari

I know sprites are provided with the computer and wonder how many there are and whether they can be multi coloured as are the sprites on the Commodore 64

Also can you give the name of a book which had this sprite information in it?

Is it possible to use one disc drive between two computers without actually having to plug and unplug the drive between each computer?

Finally do you know whether there is going to be a £400 Atari ST and if so when is the ST range going to be on sale? – **N.C Judge, Ashford**

● André Willey replies Both Basic XL (and its new even more powerful big brother Basic XE) and Action! are products of OSS in California and can be obtained from many dealers or from the UK distributors Software Express

They each have their own advantages Basic XL/XE have many features not available in normal Atari Basic including structures sprite handling better I/O etc

They are also about three times faster than Atari Basic

Action! is a very high speed editor/compiler system which behaves like C and runs faster than anything else on the Atari except machine code

It is also quite easy to write in with a format nearer to structured Basic than C

I use both extensively and recommend them without question to any serious Atari programmer

Your second question boils down to OSS again Mac 65 (cartridge or disc) gives you speed macros etc It also is an editor/assembler though it can do a complete disc to-disc assembly if required

For the technically minded I recommend three main books

De Re-Atari (Atari) is a tutorial/guide to many features of the hardware and OS

Mapping the Atari (Compute! Books) is a superb memory map and I find it quite invaluable Once you know the system this book would be referred to more than any other

Technical User Notes (Atari) are the complete notes including circuit diagrams for the computer You also get a full operating system listing and full OS documentation

The above books cover sprites too in great depth There are eight single colour sprites (four large four small) but these can be multiplexed and so forth on the fly

The cheapest ST the 260ST will be around £500

colour gun" dots and so as the TV turns off all adjacent dots – thus it can't properly balance out the first colour with two others – you get a colour bias.

If you use a high resolution monitor the effect becomes much less noticeable.

However the effect can actually be quite pleasing if you utilise it well. See Dave Russell's Graphics column in the October issue for a good example program.

13 Pin I/O plugs are quite hard to get hold of but you could try Silica Shop or Software Express.

As for monthly cassettes of *Atari User* programs these are now available – see Page 61.

3D colour system

I AM looking for a three-dimensional colour drawing system for the Atari.

I have seen two advertised already Atari World and 3D Super Graphics. Both were advertised by Maplin in 1983 but when I rang them they had never heard of them. They are made by United Software of America.

Do you know anyone who stocks them or is willing to order it?

I have tried Silica Shop, Maplin and Zoomsoft. Has anyone heard of it? – **Nigel Mirza, Rainham.**

● Both Maplin and the Atari Center in Broad Street, Birmingham have had these titles in stock at one time or another but if they have sold out. Perhaps Software Express can get one for you as they specialise in getting special order items in from the States.

You may of course find that these items have been discontinued.

Books on machine code

WOULD you please be so kind as to tell me where I could obtain a machine code book for the Atari or the name of a book with this information in – **Shane Bradbury, Hartwell, Northants.**

● That's an easy one. Try Compute's First Book of Machine Code in conjunction with their Mapping the Atari (Compute! Books available from most good Atari specialists).

Also recommended but on 6502 machine code generally are Rodney Zaks' Programming the 6502 and Lance A. Leventhal's 6502 Assembly Language Programming.

Don't forget that with the last two a good book on the workings of the Atari is also essential such as Mapping the Atari or Atari's own De Re Atari and the Technical User Notes.

ATARI USER Mailbag

WE welcome letters from readers – about your experiences using the Atari micros, about tips you would like to pass on to other users – and about what you would like to see in future issues.

The address to write to is:

Mailbag Editor
Atari User
Europa House
68 Chester Road
Hazel Grove
Stockport SK7 5NY

Logging on to MicroLink

I HAVE an Atari 800 computer, an 850 interface and a WS 2000 modem.

I have until recently used Hometerm software by Bel-Terres included to access bulletin boards.

Two weeks ago I paid a subscription to MicroLink but on trying to use this excellent program on MicroLink I was unable to log on to the system.

I am however able to log on with my 520ST with the inbuilt software, so there is no problem with the modem.

I have printed a complete disassembly of Hometerm but am unable to find where the RS232 port is configured as I am only a beginner at machine code.

I would be grateful if you or anyone else could tell me how to correct this problem as I am reluctant to change this excellent program – **R.A. Herner, Sheffield.**

● We had exactly the same problem with HomePak as you seem to be experiencing.

After trying other programs – much less user-friendly but easier to re-configure – we found the problem was with the PSS system not with HomePak.

What HomePak does in Ascii mode is to send a line feed after every Return character. This causes Gold and most other boards we have tried no trouble at all.

However PSS needs two Returns with nothing between so the line feeds throw it off completely.

The cure is to switch into Atari mode from menu and whenever you should type Return (at ends of lines etc) just type Control–M instead.

Once logged on that is as soon as you have typed in your password hit Control–S to pause the system, return to Ascii full duplex mode and use Control–Q to restart MicroLink.

We have configured a defaults file on HomePak to start up in Atari mode and stored a macro to do all the work for us.

All we then need to do once the macro is complete is hit Select (for menu), A (for Ascii), Return (for main screen again), then Control–Q and we're on line. Have fun!

Saving data files

I WOULD like to congratulate you on your superb new magazine. It's about time Atari users had their own publication.

I recently purchased a 1050 disc drive and at the same time Microsoft Basic II.

However I can't seem to save data files successfully although I know you should use the OPEN, CLOSE and EOF commands.

Please help as I need to be able to do this for my O level project.

Might I suggest you start a page for classified advertisements which should also include the names and address of user groups? – **D. Hansen-Luke, Pulloxhill, Beds.**

● As far as we know Microsoft Basic II works fine as far as I/O goes although the commands are a little different to those in standard Atari Basic.

There may be some problems when trying to use it with some DOS variations such as DOS 3 so perhaps your problems lie there?

Anyway if after trying with another DOS you still have problems contact the Atari Helpline on 01 309 7770.

Printer for labels

I NEED a roll feed printer with ratchet for printing labels.

I have an Atari 800 computer with disc drive and tape recorder, so I would like any available information about the interface and software to go with the printer.

As it would be used to print address labels and product information, the software must be able to store the necessary addresses and information ready to print – **P.I.C. Gooch, Brighton.**

■ Atari's own 1029 printer is

→

probably the cheapest available with friction and tractor feed and it has the advantage of plugging straight into the machine

It allows graphics printing but is rather poorly supported by software Print quality is only fair but it retails at about £200

If you can afford that little bit extra probably the best printers to look at for linking to an Atari are the Epson range especially the established RX 80 F/T or the new LX 80 near-letter quality model with optional tractor feed

These are supported by a wide range of software which also allows you to print graphics They use a Centronics connection so will work with most commercial printer interfaces – Atari 850 Blackthorn FCC Systems

It is really a case of horses for courses though and if you find a cheaper printer fits the bill exactly then buy it

The other thing to bear in mind is that if you may want to use a modem in the future try to get hold of an 850 module because that has both serial and parallel ports

On the software side a good database to try is Synapse's SynFile + which is not too expensive and is very versatile

It will allow storage to any density of disc drive plus full list/label options for your printouts

It is also driven by pop up menus which makes it very easy to use

Connecting a printer

I AM interested in buying a printer for my Atari 800 I actually require a letter quality printer but the market for all types of printer seems rather limited

There were virtually no adverts for printers in the first issue of Atari User Please can you tell me what is available

Does anybody besides Atari themselves manufacture printers directly compatible with the Atari bus?

What is the specification of the connector for the Atari bus, that is what signals are on what pins as well as the connector type?

Finally, what are the disadvantages of connecting a printer via a joystick port? – **D.A Wilson, Reading**

● Atari makes a letter quality printer – the 1027 but it is very slow and noisy It does however connect directly to the Atari without an interface which saves you a bit of money

It is the only letter quality we know of which can connect directly to the Atari bus

Most types of printer will connect via a Centronics type connector and any computer shop will be able to show you printers which can do this

The bus is a special 19 200 baud serial interface and can't be linked to printers without a lot of extra circuitry to convert the serial signal to the parallel Centronics standard

You can buy such interfaces and there are about half a dozen currently available from various companies – see adverts in this issue

You can connect a printer via the joystick ports if you write a machine code handler routine but it would only work with your own programs say Basic listings Any commercial software at all will expect the printer to be attached via the bus and it would be almost impossible to modify for joystick port use

A case for keeping it clean

DO you know of anywhere I could get a case in which to keep my Atari 800XL and 1010 recorder – I've seen them for a couple of other types of computer but not for the Atari

A dust cover isn't really protective enough so at the moment I have to use the enormous cardboard box in which it came so a case would be really very useful

Also could you recommend a book for the 800XL which will actually get me doing things on it.

At the moment I seem to use it solely for games as my very basic O level computer studies doesn't exactly provide much inspiration

Finally a problem I have relating to the game Citadel Warrior from Atari Smash Hits Vol 3

There seems to be something in the program which stops it after seven minutes so how is it possible to get beyond the first part of the second level? – **Deborah Thompson, Nottingham.**

● We don't know of any cases for the 800XL plus recorder but someone out there probably makes them

If anyone knows of such an item perhaps they could write in

As for books which get you doing something the Compute! series of Atari books are very extensive and feature articles on many diverse aspects of Atari computers

We wouldn't really recommend all of them for someone who is just starting with their machine but you have obviously got to grips with Basic already

They contain programs and tips on all sorts of subjects and would be a good starting point for developing your own ideas

Contact any Atari dealer or mail order specialist for details of the range which is quite considerable

Would anyone else care to comment on Citadel Warrior?

Drawing software

DOES anyone know of any technical drawing/drafting software which is available for the Atari 800XL?

Numerous packages exist for the Apple and BBC computers which use the same processor the 6502 as the Atari

The Atari Touch Tablet should be an ideal input device for such a program

The increasing use of CAD (Computer Aided Design) in engineering should promote a greater interest in this type of application on home computers particularly those with the graphics capabilities of the Atari

Schools and technical colleges would also appreciate such an application no doubt Anybody got any ideas? – **A.C Chamberlain, Tunbridge Wells**

● We don't know of a specific CAD package for the Atari but Datasoft produced something very similar called Graphic Master which allowed designs to be created on a Graphics 8 screen manipulated rotated flipped etc

Routines were included for lines circles polygons overlays moving blocks changing the scale of portions of the design and three different text overlays

You could also transfer portions between work screens and the main design screen and use a system of icons for example electronic component symbols

Once drawn the images created could be stored on disc or printed on an Epson or NEC-type printer

It's quite an old program but well worth searching for If you can't find one see if someone like Software Express can import a copy for you

Problem with Basic

I HAVE a problem with Atari Microsoft Basic V1 0

I have just bought a 130XE to replace my old 800 at the same time I received my copy of DOS2 5 with the Ramdisk ability What I would like to know is can I use the Ramdisk with Microsoft Basic booted

and how can it be done? – **George Lueher, Erith.**

● The old MicroSoft Basic was recorded on a master disc which included DOS 2.0 and then protected. This means that short of copying it to another disc and re-protecting it – a complex job – it can't be used with a different DOS.

However Microsoft Basic 2 – the cartridge – can be used with DOS 2.5 as can Basic XL from OSS.

If you do decide to upgrade, we recommend Basic XL over Microsoft as it features almost all that the MSB II does plus better graphics routines and memory management.

More support needed

I'M selling my Commodore 64 to buy the Atari 130XE.

There are several shops not far from my home that sell Atari computers and software for just about every home micro other than for the Atari.

I am thankful for your excellent magazine from which I will be able to send off for software.

Why is there so little support for Atari computers that are in a class of their own? – **Andrew Sharp, Sale, Cheshire.**

● Support for Atari machines seems to be increasing all the time. Keep asking for Atari software in the shops and maybe they'll get the message.

Shorter programs

CONGRATULATIONS on yet another excellent issue of Atari User.

It is a pity however that you see fit to devote letter space to games scores. This sort of information is of interest only to its sender, usurping space which could be put to better use.

Could you please at least ration the coverage given to this tedious and gratuitous ego tripping?

I read with interest your guidelines for putative contributors. While it must be agreed that they are sensible and well thought out they could also be a little restrictive.

Your insistence on disc or cassette support could result in a dearth of the very useful short program.

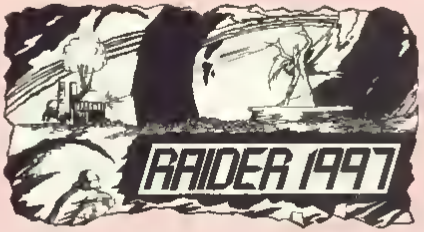
Surely only the most fanatical or opulent among your readers would willingly shell out a fiver on the chance of their minor effort proving acceptable. Accordingly I have a suggestion.

Could you not inaugurate a regular shorts feature? Submissions could be accepted in the form of listing + documentation, under the understanding that any not used would be binned.

I am sure that you would attract plenty of material and so could be very choosy.

The financial incentive need not be particularly high, and the extra work load on editorial staff minimised. – **Bruce Woodland, Harlesden, London.**

● Submitting anything should only cost you postage both ways. Any disc or tape will be returned. The shorts is a good idea but even they need to be typed in so they can be listed legibly and it all takes time – a rare commodity around here.



I HAVE a 600XL and I am a great fan of adventures so I typed in Raider 1997 as soon as I got my copy of the August edition.

Having only 16k I can't buy any adventures so you can imagine my annoyance when I got an error 5 at line 1020. Could you please tell me what might be wrong with it?

Also I think you should have more competitions and software reviews. – **Andy Latto, Fife.**

Trouble on line 1020

● You've probably made a typing error somewhere. Check line 110 where B$ should be dimensioned 20.

Pin outs, please

I HAVE just purchased an Atari 800XL and am delighted with it. Can you print the pin outs in your magazine as I am interested in connecting a disc drive, modem and printer all at the same time.

I would like to run a lead to connect my 800XL to another 800XL in the next room. I know this is possible but I don't know how. I would like to be able to ask a question on one 800XL and answer it on the second one. I can't see any reason why I shouldn't be able to continue to add 800XLs ad infinitum.

So how about an article for the technically minded ones of us that have a soldering iron. – **John Hopkins, Wisbech.**

● Pin outs are given in the Technical User Notes along with timing diagrams that you can purchase from Atari.

However you can simply plug a disc drive, printer interface for RS232, cassette and so forth into the machine at once. Each new unit plugs into the extra socket at the back of the last one like a daisy chain.

The best way to connect machines together is via the joystick ports.

We hope to have an article detailing this technique in a future issue.

Data on disc drives

CAN you send me some details on the 1050 and 810 disc drives.

The Thorn game Tennis does not seem to work on my 800XL. Why is this? Can I get a cartridge or cassette that will get this game to work? – **S.T. Dunn, Waterlooville, Hants.**

● The best thing to do if you want details on disc drives is to contact either your local dealer or Atari in Slough both of whom can give you the information you require.

We would recommend the 1050 as it can store more data, is more compact and quieter.

Otherwise there is no real difference between the drives except that a few – a very few – about five or six – old programs would not load correctly on the new drives. New versions of these titles have, of course, been brought out but if a shop has stock over two years old it could be suspect.

The problem with Tennis is more fundamental – many old programs will not work with the XL computers at all.

This is due to the software houses not having followed Atari's guidelines correctly so the program won't work on a new machine.

Thorn/EMI Tennis is so old that we don't even remember it, but the best solution for a cassette-based system is either XL Fix or Computer Support's 80 Column Pack. Atari's own translator is good but is only available on disc.

The 80 Column Pack has the very useful side effect of converting the XL operating system into an enhanced version of the old Atari 800 one.

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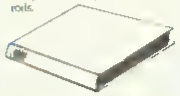
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