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ATARI USER

Vol. 1 No. 8

January 1986

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Vol. 1 No. 9 January 1988

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News

All the latest developments in the expanding world of Atari computing.

9

MicroLink

This month's update on news from Britain's electronic mail service.

12

Machine Code

Start of a short series on writing machine code games, with Alan Gooch and Andre Willey to keep you busy until next month.

15

Review

While you're waiting for Atari to release their ST colour monitor, read Andre Willey's views on a Sony offering.

18

Education

Alan Gooch describes some Atari experiences in the classroom.

21



Game

Help Mr Humpy rescue Esmaralda in this Atari version of the classic game.

26

Checksum

This month we explain why you've been having trouble getting our checksum program to give the right answers.

34



Output

David Goodyear provides a routine to dump Ascii mode 14 screens to an Atari 1020 printer/plotter.

53

Atari Computer Show

Advance news of the biggest event of the year for all Atari Users.

35

Software

Bratatoes for the ST, Mercury, Spot the Ball, Dieknagide and Summer Games keep our intrepid reviewers busy this month.

36

Mailbag

Five pages of letters. Of course we couldn't print them without your help.

55

Utility

Make listing a pleasure with Alan Puffer's handy utility program.

40

ST

Andrew Bennett peers round the two foot high stack of manuals to tell what it's like programming the ST in the C language.

63

Adventuring

Brillig is in a retrospective mood this month as he focuses on two Scott Adams classics.

42

Order Form

Three pages of offers and one simple form on which you can order everything you need.

67

Game

It might look like a simple game, but getting a micro to play well takes a little thought. Sol Guber shows you how it's done.

46



FREEBIE

This month's Freebie for Atari User disc and tape purchasers is Scramble Fighter. You'll need a clear eye and a steady hand or you'll never escape.



See
Page
68

Here's a

IBM, Epson QX-10

Acorn Electron, ACTS

Ericsson...and the

that fits them all-the

At last, your computer can have an Epson printer.

Even if it's only supposed to be compatible with 'own brand' printers like Atari.

Our latest printer, the GX-80, has a revolutionary new interface called PIC (it means Printer Interface Cartridge and that's it on the right). The cartridge slips into the back of the GX-80 and enables the GX to understand commands from the host computer.

So if you've ever wanted to have an Epson printer for your micro but thought you couldn't, here it is.

But first, read about the GX-80's other cooking advantages...

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Software demand booming

A MAJOR mail order company says there is both good and bad news in Atari's decision to sell its entire 80088 stock to Sierra.

The bad news - according to Steven Burke of Compuserve - is that smaller firms will not be able to compete with the half price machines, at 100,000 of them, Dixons have to offer.

The good news: "The long term effect will be that with so many more Atari computers in UK households there will be a tremendous demand for software and peripherals".

In response to the machine's lower price Compuserve is slashing the cost of some of its stock. It has dropped the price of the Atari 1007 laser quality printer by £100 to £145 and bundled in a free Atari Writer word processor.

The company is also offering the Atari 7500 disc drive and box of 10 blank discs for £129.95. Similar boxes of 10 discs will cost under £10.

"And Compuserve is already drawing up plans for other money-saving deals on Atari hardware", said Burke.

Acorn's Hall joins Atari

ATARI has recruited the former national sales manager of Acorn to strengthen its marketing operation.

Chris Hall, 38, and married with two children, will now become responsible for sales to dealers and distributors in the UK and Ireland.

"He brings a wealth of experience to the job", says Max Bambridge, Atari UK's general manager.

"This is of great importance at a time when Atari is consolidating its position as the market leader".

Rob Harding, Atari UK's sales manager, is to continue looking after multiple accounts and the mail order business.

ST owners to get big three free

THERE was good news for existing and future Atari ST owners at the Commodore Fall show in Las Vegas.

ST buyers will now get three free programs - ST Writer a powerful word processor compatible with Amstruc's from Atari's eight bit computer line, MacDraw, a preview version of their colour art program, and DocFile, a macrodrive sketching program.

Not mentioned officially by Atari, but certainly one of the stars of the show, was a demonstration disc they were giving away showing a full colour waterfall with water flowing and splashing, plus a montage of new hi-res pictures with a routine that would make a bird fly across the screen so realistically that you would think it was a movie film.

Atari consider them a great selling aid as it will probably be only a few days before they are available in British computer stores.

Big launch for Atari was a 20 mbyte hard disc system which will retail at \$800.

They arrived on the second day of the show and most of the software companies on the stand were using them within minutes and enjoyed four days of error free high speed hard disc usage.

The price of these units is a real breakthrough, and although they wouldn't give out a UK price, at £800 or less for a 20 mbyte hard disc coupled with the ST you end up with a highly sophisticated system for less than the substandard price of the Commodore Amiga.

Glidebit was showing its low cost colour printer which can print out the hi-res colour graphics screens.

One item surprisingly missing was a laser printer.

Melchior, one of the larger software producers, said they were working on interfacing an Apple laser printer made by Canon to the ST.

Atari themselves would say

nothing apart from the fact that when they brought one out it would be cheaper and better.

Star of the show is professional software, even in its not quite finished state, was with-

By JOHN SYMES
Managing Director,
Microdeal Ltd

out doubt The Professional, a looklike spreadsheet to the best selling Lotus 1-2-3.

It is produced by VFP Systems, a highly respected company and previous producers of an integrated suite of programs for the Tandy colour computer.

This and any future releases from VFP promise to be of a quality not previously known for computers costing less than £1,000.

A proliferation of other professional software is starting to establish the ST as a best buy.

Databases come from the British company Kuma, also

from Atari, spelling checkers from Haba, Hogo and Regen, word processors from Atari, GST, Regen and Kuma, plus many communication programs.

Typesetter gives you electronic page design and Haba Write helps you write your own file if you think your computing days are numbered.

Typed to be a mega seller is Microsoft's Time Bandit. This conversion from last Christmas's No 1 hit for the Dragon in the UK uses the ST's capabilities to the full.

The adventure hit of Commodore was without doubt Kings Quest from Sierra, a 3D graphic adventure with hundreds of screens and dozens of animated characters that walk, talk, run, climb, swim.

If you're into art design then Design from Bantam, included in Canada will probably set the standard for graphic design programs.

OFFICIAL BACKING FOR ATARI USER SHOW

ATARI has given its official backing to the first ever Atari User Show for the United Kingdom.

It is to be held in the Chempagne Suite of the Maxwell, Hammersmith, London, from March 7 to 9.

The event will be organised by Database Publications, publishers of Atari User magazine and already well established in the field of computer exhibitions.

"Due to our increasing presence in the marketplace, we feel that it has become necessary to have an official show-case", says Rob Harding,

Atari UK's sales and marketing boss.

"It will provide our ever-growing army of users with the opportunity to meet all the producers of peripherals and software first hand.

"And obviously there will be an exciting range of new products on display at the show".

"Will Atari itself be launching anything new?"

"People will just have to wait and see", says Rob Harding, "but you can be certain we won't be letting an event of this importance slip by without something significant happening".

Releases escape copyright rumpus



DIGITAL Integration has released *Fighter Pilot*, a jet plane flight simulation for any 48k Atari.

It offers panoramic 3D cockpit views, 3D air-to-air combat, sound and crash sequences, and costs \$9.99 on a cassette and £13.99 on disc.

DATABASE WITH GEM

A DATABASE for the 500ST has been developed by Laser Software.

Lasertech ST, which uses Digital Research's Gem operating system, handles a stage of information needs from order processing through time management and sending to customer records and sales tracking.

Sold marketing manager Nigel Perry: "The Gem environment is ideal for our concept of a powerful database facility that is easy to use, extremely powerful and yet not over-priced."

The cost is £39.

260ST on schedule

THE Atari 260ST is on schedule for a launch early this year, according to sales and marketing manager Bob Harding.

He told *Atari World* the machine would come in two versions, one with a built-in disc drive and one without. It will have a built-in RS modulator enabling it to connect to a television set.

An out-of-court settlement between Apple and Digital Research over alleged copyright infringements by Gem does not involve the latest two programs in the range for the Atari ST.

For this impending new releases—Wordchart and Graph—do not simulate the Macintosh, which was at the centre of the original row.

"Apple has no quarrel with us over the format of these two", Digital Research's Paul Bailey told *Atari World*.

Though Digital Research refused to concede it had violated Apple's copyright in any way, the company recently handed over an undisclosed sum as part of the settlement.

It also agreed to produce new versions of Gem designed to be substantially different to the Macintosh in both screen appearance and operation.

At the same time Apple was given the right to vet all changes.

"But these new releases do

HILDERBAY TAKEN OVER

THE Hilderbay range of business software has been acquired by a new company, Centredine, and will be made available for Atari ST computers.

Despite the popularity of its products over the past six years Hilderbay had run into difficulties which culminated in it going into voluntary liquidation.

Now Centredine has bought the rights to Hilderbay's Payroll, Invoice, Bookkeeper, and Statutory Sick Pay packages.

not fall into that category", said Paul Bailey.

The two combine with the other Gem products to form a complete business graphics presentation tool. "All that is missing is the page layout facility which we hope to supply soon", said Bailey.

Wordchart is a special word processor designed for producing text-based slides or films.

Graph is a general purpose graphics tool which enables the user at the touch of a button to produce a variety of format—bar charts, 3D map and symbol diagrams and charts.

They are due to be released in the first half of this year.



Action spans centuries

MEDIATOR, the latest arcade game from English Software for any 48k Atari, combines medieval and futuristic themes.

Encountering mountain robots, killer trees, skeletal horses and green slime creatures, the player's job is to search for the good Mediator. It costs £8.99 on cassette, £12.99 on disc.



Mid-price sector

TWO Atari programs have been released in Aristocrat's new mid-price series, *Axle Assassin* and *D-Rag*.

In *Axle Assassin* the player faces a swarming army of mindless killing single-handed. The game features 100 increasingly difficult battles, kamikaze hunters, relentless web spinners, robot tanks, spiders which double into mutant guards and Xenomorphs.

D-Rag is a computer game featuring a computer game called *Goats*.

The computer breaks down

during the game and it is up to the player to find the beast and repair it.

Price of both games is £9.99 on cassette, £9.99 on disc.

Aristocrat has also released another game, a conversion, for the Atari.

Reign of Impossibility is a dangerous drama in which the player faces attacks from snakes, giant spiders, zombies and hordes of other nasties.

It has four skill levels, 13 dangers, 129 different rooms and player mode, and costs £12.99.

Galactic battle

SPEED, power and points are the three goals in *Battlezone*, a new game for the Atari 800, XL and XE by Lucasfilm Games.

Distributed by Aristocrat, the game is set in the year 3007. The player is the first Texan to have battled through qualifying rounds to compete for the honour of his planet in the interstellar Battlezone Championship.

Two players can compete against each other or a player can take on one of nine pre-set Devil players, each with a

differing level of skill.

The screen is split so each player gets a view of the game through the windows of his own cockpit. The Passports—fuel—is also tied on to the grid for the opponents to try and capture and restore.

Battlezone, £9.99 on cassette and £14.99 on disc, comes on the heels of *Rescue on Fractalus*. And Aristocrat has two more Lucasfilm Games in the pipeline—*Baron's Rift* and *Edolon*, action strategy and fantasy action games.

Schools net for 520 ST

THERE has been a warm welcome from Atari for the networking facility developed by Software Punch which is expected to give the 520ST a real boost in the educational market.

Atari sales and marketing manager Bob Harding said: "It is a very good product - creates ahead of others available to the education sector".

Called SimpleNet, it will cost about £100, and is being talked about in the industry as a successor to the Atari Econet.

Software Punch managing director Nigel Barnatts-Moss says: "Econet is an absolute pig and takes so eight years old".

He added that his firm was already receiving inquiries from a number of educational authorities who were thinking about buying the 520ST in large quantities.

SimpleNet uses RS232 cables, runs under Gem, is local driven, and offers electronic mail and word processing facilities.

The teacher can look at any screen without the pupil being aware of being observed.

68000 ASSEMBLER

THE K-Seka 68000 assembler for the Atari 520ST has been released by Karna Computers.

A native code assembler using standard Motorola mnemonics, it produces either absolute or relocatable code at a rate of 30,000 lines a minute even for large files, says Karna.

Main features include text editor, full 68000 assembler, symbolic debugger, line assembler, built-in linker, conditional assembly, macro facility, formatted listing output, and absolute, relocatable or fixable code. Price: £49.95.

UK EXPORT

RW in the American market for the Atari 520ST is Star Global, an arcade strategy game produced by British Telecom software house Painted in the UK.

Reward offered to trap pirates

ANGERED by the extent to which pirates are infringing the Atari scene, the boss of utility specialist Computer Support is leading a campaign to bring the offenders to book.

Having discovered that at least two of his own products are being illegally copied, John Lawson is offering £100 reward for information leading to the successful prosecution of the person or persons responsible.

One of the Computer Support products involved is Utilinco, a built-in machine side monitor capable of stopping any program on the fly, which sells for £49.95.

The other is 80 Column Pack, a built-in 80 column text mode that works on an ordinary TV set, is compatible with most software and costs £89.95.

Lawson told Atari User that he has been informed that both have been pirated and are available on the black market for about £20 each.

"This is only the tip of the iceberg", he said. "Other companies supplying Atari hardware and software are getting ripped off for more than me."

"But I'm determined to take a stand against the pirates. If they can be identified I will proceed with court action to file them with the heavy penalties incorporated in the new copyright legislation - even if I have to bring the prosecution myself".

Leading anti-pirate campaigner Ken Ward, of the Newtish User Group applauded Lawson's decision to go after the pirates and promised the help of his contacts in the Atari fraternity.

He said: "One thing that puzzles me is how they can afford to copy chips and printed circuits and still make money."

"Pirating hardware is a very expensive business - I can't see how these people are making out so much money out of it".

But Lawson feels he has the answer to the economics of such activities. "Econet burners

are available to the general public for £90 or less, and once the pirate has the necessary equipment he can produce to copies quite cheaply".

He believes the pirate activities involving his products are centred in the North West of England.

"I received two reports about the availability of copies of Utilinco and 80 Column Pack and both came from this area", he said.

"One was from a dealer who handles Computer Support products and the other came

from a young Atari user. Both live in the Manchester area."

"In addition, I have heard two names on the grapevine - 'George of Liverpool' and 'Bob C. Manchester' - who are said to be involved in piracy of Atari-related products.

"This would seem to confirm that the North West is where this activity is going on, and it is now up to honest Atari users to help me track down the person or persons responsible."

"I can promise you I intend to make it very hot for them indeed once they are identified".

TWO FIRSTS FOR THE ST

ATARI has announced two more firsts for the 520ST, a Module-2 compiler and a full p-System with choice of UCSD Pascal and Fortran-77 compilers. Both are from TDI Software.

The compiler is a software development system which uses the Module-2 language, a development of Pascal.

It is claimed to provide many useful extensions which help it produce fast 32 bit native code.

These include a full feature program editor, a multi-pass Module-2 compiler, module linker and library facilities, and full interface to a large number of Gem functions.

The interface not only allows Gem applications in Module-2 but also full access to graphics, mice, windows and pop up menus.

Although a high level language, TDI claims it is both simple enough for beginners and powerful enough for serious programmers.

The p-System facilities

include a screen editor, file manager, disc recovery tools, printing utilities, library manager and other operating system services.

Available in both one and three separate p-System languages - UCSD Pascal, Fortran-77 and Basic.

The syntax of UCSD Pascal differs from standard Pascal, its major extensions being its string handling capabilities and memory management facilities.

Price for both Module-2 compiler and p-System is £195.

BOS CHOSEN

BUSINESS Operating Software has been chosen by Atari to help with its push into the business market.

Managing director Alistair Jarvis said BOS's operating system software opens up a wide range of business applications packages for the Atari, including its own suites of accounting, office and vertical software.

NEWSLETTER

NOW MicroLink subscribers can say it with flowers at whatever hour of the day or night. The mood strikes them, and their floral gift will be delivered anywhere in the British Isles.

MicroLink has joined forces with the world famous flower delivery service Interflora to create Floralink, which for the first time ever enables people to send flowers and plants by way of

Now it's e-mail with flowers

their computer. Floralink will have 24-hour-a-day open access and delivers by Interflora's 1,700 members throughout the UK and Euro can usually be made any day other than Sunday.

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day can be processed and delivered the same day.

The selection includes freshly cut flowers, bouquets, wreaths and sprays and potted plants - all manner of sizes and specially shaped arrangements to suit the customer's pocket.

Floralink will carry a

price list to give subscribers an idea of just what is available, and payment for the flowers will be credit card.

Eventually it is hoped to expand Floralink to serve all Interflora's 44,000 members in more than 120 countries.

OVER MicroLink, finally in getting bigger and bigger. Electronic mail opens in New and New Zealand can now be reached directly through MicroLink.

Subscribers can communicate with them just as easily as they can with other users in the UK.

88 users' needed in the system early number - the MicroLink's 71 - at the moment in Euro or New Zealand to be put in front of their IP number.

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Link to a train

WITH the aid of MicroLink an historic German built steam locomotive has been saved from the scrap heap and brought to Britain to feature in a permanent display of railway nostalgia.

Steam enthusiast Martin O'Keefe used MicroLink's tele facility to negotiate a deal with Kottmar, a Polish import-export firm specialising in the sale of railway equipment.

What he was after was a narrow gauge loco that had been seized from its job of hauling sugar beet from the fields to a processing factory.

It had been built in 1918 by the firm of Henschel at Kassel in Germany for use by the German army on

railway networks built by military engineers to supply the front lines in the 1914-18 war. O'Keefe's research showed that the loco had been used by the Polish factory since 1937.

It is now the property of the North Gloucestershire Railway Group Company, a small group of enthusiasts to which O'Keefe belongs.

When it is eventually restored to main conditions the engine will be one of the future attractions of the museum railway at Toddington in Gloucestershire.

There are a number of locomotives on display and O'Keefe and his fellow train buffs operate them on open days during the summer.

Motivation for youngsters

CHILDREN with learning difficulties and disabilities are being taught with the aid of MicroLink.

The 78 pupils at Kames School in Edinburgh all have special needs in the educational sense - but that doesn't mean they miss out on information technology.

MicroLink has been in use at the school for several years and, apart from their value as teaching aids, are extremely popular with all age groups says headteacher Jennifer Biddis.

The primary age youngsters use the computers to help them learn simple maths and spelling, while children at the secondary level are taught the practical use of micros and even some programming theory.

The school is a Pressed subscriber, which gives the youngsters access to a massive information database which is complemented by MicroLink's electronic mail service, computer industry news, UK bulletin boards for

and teleboards.

Asked if micros have advantages over more traditional methods of teaching children with learning difficulties, Miss Biddis said: "Absolutely, although we naturally have a low ratio of teachers to pupils because of the children's special needs, our youngsters are much more motivated to learn through the use of micros than by blackboard, pen and paper".

The school uses a number of special programs, includ-

ing the micro special pack from the Scottish MEP in Glasgow which helps learners of low ability to grasp the basics of the three Rs as well as preparing them for life after their schooling.

"But we are just as interested in seeing what computers can do as in getting information from them", says Miss Biddis. "We will use MicroLink's special features to help our pupils learn even more about practical applications of information technology".

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SuperScript

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Simple for the beginner If you are a novice when it comes to word processing, SuperScript's user friendly interface makes it so easy that you can be up and running in a single hour, and the easy command you simply move the cursor, the third way from the top of the screen.

Good with numbers SuperScript gives you an extended menu editing, key specific commands with documents like financial statements, and word document table it's easy to move property, justified text and numbers. SuperScript's simple to set up calculator has four pre-programmed interest levels or you can operate via keyboard from the text of your document, SuperScript's word mathematical functions like will subtract, multiply, divide, and percentages, you have the ability to add rows, columns or even whole tables.

Good with spelling, too The built in spelling checker gives you eight correction options. You can choose the option you want, ignore it, or add it to the built in word dictionary.

Editing options SuperScript gives you all the editing options of a business-style word processor with built in manipulation for column-pair coverage or text insertion modes, search and replace with patterns using wild card and wildcard case (upper/lower/both) search, case selective single word or longer words search, and search menu.

Powerful for the experienced user SuperScript allows you the ability to cut words down to a minimum by storing your own command sequences or text on single lines. This means that with simple keyboard or call-up sequences you can do things on multiple lines that other word processors, hard to document formats or create a pre-programmed sequence of operations.

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Anatomy of an arcade game



A FEW years ago I attended a party. There were the usual goings on — people getting drunk, loud music, the sound of breaking glasses.

I wandered into one room at the back of the house and, instead of people gasping, I found a small crowd huddled round a black and white TV which showed a picture of two thick lines moving up and down the screen with a square thing bouncing around between them.

At first, in my intoxicated state, I thought that I was witnessing some new bizarre late night cult TV programme, but then realised that I was present at the dawn of a new era in microchip technology — the video game had arrived!

So I bought my own video game console and played tennis and squash until the early hours of the morning. Later, when all the pubs and arcades had replaced their first generation tennis games with the more sophisticated Space Invaders, I acquired an Atari games machine and became a compulsive alien napper. I had no idea about programming, leaving such esoteric things to the experts.

Then the price of micros fell and, for £199.95 I was one of the first to buy a Commodore Vic after waiting

STEPHEN WILLIAMSON begins a series on the art of producing your own machine code games by presenting a shoot 'em up arcade epic which he will be dissecting in future issues

the then customary five months for delivery. To my surprise I found that programming was not all that difficult and soon became fairly proficient in Basic.

After trying lots of arcade style games listings from magazines, I began to design my own games. Unfortunately many of my efforts were spoilt by flickery, jerky animation due to the main limitation of Basic — it's too slow for fast arcade games.

So I decided to take the plunge and learn machine code. Many people hold their hands up in horror at its mention, believing it to be impossibly difficult and complex.

Well, machine code is certainly more tricky to work with than Basic. There are no friendly error messages to tell you when things go wrong, and often routines just stop with the Atari not revealing at what point the

program has stopped or why. Debugging can become a problem.

However what I hope to show in this series is that, given a bit of organisation and patience, machine code programming need not be all that difficult, and even with only a rudimentary knowledge of the language you can create fairly sophisticated arcade games.

I have written a fast and furious shoot 'em up arcade game, *Alien Attack*, which I shall use to illustrate machine code. The techniques and procedures can be copied and used in your own arcade games.

Alien Attack will work on all Atari except 18k ones, and, of course, the ST which does not use the 6502 chip.

Atari makes life easier for the games programmer by the use of the player missile or sprite system, and

ONE of the great advantages that the 520ST has over other computers of a similar ilk, such as the Macintosh for example, is its use of colour.

Much has been written about the ST's ability to display 512 colours. However most people can at present only access the monochrome high-res mode, giving a very clear and readable display, but without any colour.

There are two problems standing in the way of the potential colour user. Firstly, Atari has not yet released its own E400 dedicated monitor, and no release date has as yet been announced. Secondly, the 13-pin DIN connector at the rear of the ST is a non-standard analog-RGB port. Most RGB monitors use the less versatile digital RGB mode.

If you do decide to use a third-party monitor, Atari has made things as tricky as possible for you by using a 13-pin DIN socket, and there is simply no such plug available on the market at present.

Luckily anyone with a bit of ingenuity should be able to make one up from a small piece of 0.1 inch veroboard with pins stuck through it. Such a lead is available from Silica Shop if you're not too good with a



Get a little more colour in your life

ANDRE WILLEY
looks at a super Sony colour monitor

soldering iron.

Alternatively, if you don't mind a minor violation of your guarantee, you could simply remove the plug from the monochrome monitor and fit an in-line connector which would facilitate easy change-over between two monitors.

Apart from waiting for Atari to deliver its own monitor, what then are the choices?

In my search I looked briefly at three 14in colour monitors which have analog RGB ports in addition to

a standard composite video connector:

- A converted TV from fidelity.
- A Microvideo Cub monitor.
- The new Sony monitor.

Each was being promoted by the retailer as being ST compatible. Indeed the Cub had been specially modified by Microvideo for use with the ST.

The choice was an easy one. The Fidelity CM14 looked fine, although the 80 column mode was undeniably a little difficult to read. However at just £200 you must expect to get what you pay for.

The resolution on the Cub-800 was better, with 80 column text being quite readable, but the colour saturation and contrast were extremely disappointing and there seemed no easy way to adjust either.

By far and away the best was the Sony RX-14CF1 monitor, which I was so impressed with that I have since bought one for use with my own ST.

The Sony uses an enhanced version of the Trinitron tube - called the Black Trinitron, which includes an antiglare filter in the tube itself. It has a 0.37mm grille pitch, allowing a much higher resolution to be displayed than on conventional TV tubes.

The unit is rated at 640 x 200 dots, although I suspect it could handle a little more. The 520ST's 80 column display was rock solid, with the text below each line, which is smaller than normal 80 column text, still quite readable.

Colour was excellent, with a very

Pin assignments for connecting the 520ST to a Sony RX-14CF1

ST pin no.	Function	RX-14CF1 SCART pin no.
1	Audio in	2, 8, 9
2	Composite video	N/C
3	General control	N/C
4	Micro detect	N/C
5	Audio in	N/C
6	Green out	15
7	Red out	16
8	Ground	5
9	Horizontal sync	20 (via 22 kohm resistor)
10	Vertical sync	19 (via 250 ohm resistor)*
11	Blue out	7
12	Monochrome out	N/C
13	Vertical sync	20 (via 22 kohm resistor)
14	Ground	21 (via 200 ohm, optional)

*The resistor used between ST pin 9 and monitor pin 19 is to provide a voltage to select RGB mode on the SCART input. You may find that a 250 ohm resistor causes either a black band at the top of the screen or a complete blank screen with a faint image present. If so, simply replace the resistor with a 100 ohm linear pot and adjust until correct.

bright and vivid display, and I was pleasantly surprised how well it coped with two similar colours displayed side-by-side, as this often causes shimmering at the border points, as for example, on a Dragon or Spectrum.

The picture can be easily centred by means of the V-Size and Hi-Cast controls and with the image thus centred there was no visible distortion at the edges.

The silver controls on the side panel allow adjustment of contrast, brightness, colour, volume and tune. Unusually, all but the colour/tune controls function in RGB mode.

The audio performance was only fair, with a small front-mounted speaker being the main culprit. Frequency response fell short of what I expected, but I suppose it's sold as a monitor not as a hi-fi. Anyway, the sound was well up to the standard of a good portable TV.

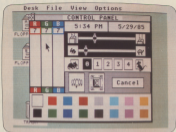
The unit has an comprehensive a set of inputs as the ST has outputs. You can connect either analog RGB or composite video (plus audio via the 21 pin Scart connector, and TTL RGB, with or without intensity signal, via the 8 pin, IBM-compatible, digital port.

There are also two standard composite video inputs - SBC and a phono - and an audio phono socket. Switching between RGB and composite is controlled by a front panel switch, making it an ideal monitor to use if you want to connect an ST and one of the 8 bit Atari computers at the same time.

In addition to all this, the monitor can be used for Pal, Secam, NTSC 4.43 and NTSC 3.58 television standards. Put simply, this means that virtually any computer/video recorder in the world can be connected. The power supply will automatically select between 110 and 240 volts.

The Sony is the largest of the three monitors - with a front panel of 16 x 13 inches, and a depth of 17 inches - so be sure that your computer desk is deep enough. The design, pale blue/silver casing with black base and screen surround, matches in well with any Atari computer - indeed, it could have been designed for them.

The screen is tilted back at an angle of about 10 degrees, although if you want it vertical, for use as a TV



The Sony KX-14CP1 monitor gives bright colours, crisp definition



monitor for instance, two clip-on feet are provided to raise the back end.

I used the KX-14CP1 with all of my Atari (800, 800XL, 130XE, 520GT) and also as a TV with my video recorder. The display was excellent on each, and outstanding with the ST. As previously mentioned, it is unfortunate that the sound very slightly lets down what is otherwise a superb monitor.

At £399.95, it is the same price as

the Atari colour monitor will be, but has the advantage of allowing the freedom of use that a dedicated monitor can't.

So if your ST needs a bit of colour in its life, and you've been waiting for the Atari monitor, then you need look no further than the Sony KX-14CP1.

(With grateful thanks to Jake Dittus and Henry McAloon at Sony UK, and Peter Fellows at Software Express for their help.)

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School explores wide-ranging Atari options

THE children of Southmead Primary School in Worldeaden were collecting information for a database about their interests which they entered into one of the school computers.

One question asked what type of home computer they owned. Games machines were included in the survey, and it turned out that most children had experience of the Atari.

All mentioned games as the main reason for having a computer. A few members of the computer club did simple programming as well.

Many children have more experience of using the computer in the home than they do at school. Their computer experience in primary school is normally limited to using the school's computer once a week.

Most schools have a machine bought when the Government met half the cost. With the education cuts of recent years, purchasing extra machines has meant sacrifices, but if the children are going to learn effectively with computers far more machines are needed.

Seamus Papert, who developed the educational programming language Logo, said at the British Logo Users' Group conference at Loughborough University: "If a proper computer culture is to develop in schools then the children need far more machines than the current average of one per 100 pupils".

The computers used in school are expensive and teachers haven't discovered the virtues of machines not prescribed by the Government.

Southmead is a London school with a difference. The children enjoy at least one computer per class. The school recently purchased three Atari including an 800XL with disc drive.

The attraction of Atari's came with the discovery of the first powerful version of Logo available on a home computer. The Logo's was so good we brought an Atari to run it in, and discovered that this machine had many other impressive features.

Atari Logo is on a cartridge and the children have none of the problems of loading from cassette or disc. They switch the machine on and Logo is

ready to run. It provides an environment of turtle graphics.

The children learn to program by building shapes. They analyse the parts that make up the shape, and teach the computer to draw it. Mistakes are common, but they provide opportunities for children to solve problems.

All Logos provide turtle graphics, but Atari Logo also has sound and sprites, controlled in the same manner as the graphics, by building procedures.

Logo gives the children power to produce exciting programs and they

processing programs already used in school. It was easier to use and the children preferred it.

Then the children discovered Snapper Troops, an American program by Spinaker Software which had excellent reviews in both the educational and computer press.

It is a criminal investigation undertaken by children. Someone has tied up Mike Tabasco and stolen Lucy the dog from her post. The police are baffled. They suspect Flatsy and several others. The children must find the culprit.

The aim of the program is to teach scientific method to children. They start the investigation with a car, the Scoopmobile, a wrist radio, a camera and the ScoopNet computer.

Children's initial reaction is to rush around making phone calls and interviewing suspects. Soon the information becomes too much to handle and they take stock of the tools the program gives them.

Skills such as note-taking are essential. They make a hypothesis and test their theories.

When they drive to the phone box or to visit an informant, the screen displays a map of the town. The children often have to get to a house before a suspect leaves and they need a knowledge of the streets. They need to draw a map.

They control the car using the keyboard. Driving is realistic - go too fast and you crash and have to wait for the repair man, missing vital messages.

It is an absorbing educational program and it is hard to keep the children away from it. It is fun, but

By ALAN COODE

love it. They soon produce animated pictures with accompanying tunes. Tiny helicopters or spacelips whirl around the screen.

One group of children constructs a motorway and another illustrates a nursery rhyme with pictures and music.

Atari Logo is the best version for a home computer, although there are comparable Logos for more expensive machines.

As Atari Logo has full word and file processing facilities the children simultaneously learn to solve problems and write programs in a high level language.

The children with Atari at home borrowed the Logo to use over the weekend. Some children borrowed an Atari 400 which the school picked up for £30 in a spring sale.

Other programs were purchased. Atari Writer supplemented the word

requires discipline to find the clues and ignore irrelevant information.

It encourages the children to write, make decisions and keep accounts records.

In fact, one of the major advantages of having Atari's on Southeast is the opportunity to use American software like the Spinmaker products. There is a considerable difference in the two educational systems, but computer experience in America is vast.

The home market for educational software has allowed the software houses to produce elaborate and often extremely good products.

One program the younger children enjoy is called Factory, which has three types of machine — a punch, a rotating machine and a strip cutter.

The children have to select the correct machine in the right order to produce a product. They also have to choose the right task for each machine. It is challenging and it

encourages the children's ability to think and plan ahead.

On the more traditional lines another program provides an exercise for mental mathematics. Teasers by Tables provides an array for the children to fill with answers.

The position of the answers offers a check, for the columns have to balance the rows.

The children have to think and not just repeat known facts. It gives meaning to work with tables.

The computer club, meeting after school, wanted to play games. To the purist, games appear to have no place in school but research in America now suggests that children who play video games learn complex skills that no other medium can provide.

Professor Greenfield, a psychologist at the University of California, states that as games require a rapid processing of different bits of information this skill can transfer to other areas of the

curriculum.

Often the rules for the games have to be deduced by playing them, much more like real life.

Professor Greenfield found that university students used to playing video games were more familiar with inductive thinking and that visual and spatial concepts were better taught by computer games than more traditional methods.

This all might well be true, but the children at Southeast are motivated mainly by the fun and by the desire to see who can score the highest on Role Position.

The future for Atari in schools looks bright, particularly with the new ST range — invest in Atari and you will not go away, so value for money is as important as ever.

To those schools who have only one or two machines, I say do what we have done — invest in an Atari and explore the exciting range of options it provides.

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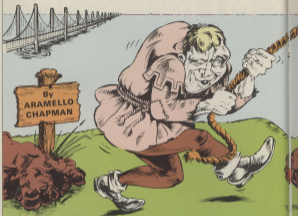
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Don't get the hump-

ONCE upon a time a bunch of nasty Frenchmen invaded Lincolnshire via the newly-opened Boston-to-Paris cross-Channel tunnel—or is it a bridge? Fearing that there was not a lot to do, they decided to go to the cinema.

After watching "Rendez Part 300" for the third time it dawned on them that there was more to life than watching American films with subtitles for those people who speak English. So they decided to kidnap the cinema ushahette.

New that ushahette happened

to be Esmeralda, and a certain lumpy chap with a hump was not too happy about it and decided to rescue her.

You must guide Mr Humpy across the fairly flat countryside, making him jump over the dykes and avoiding the traps the French have left behind to stop you.

Can you fill Mr Humpy's lumpy hump? Use joystick and Fire to move and jump.

There's a lot of setting up to be done, so don't be dismayed if the "Please wait" message seems to last a good while.





Rescue Esmerelda

VARIABLES

X,Y	Coordinates of Mr. Humpty.
NAME	Hold the character of Mr. Humpty's body and head.
HEAD	Makes and moves in high score table.
TIME	Time limit for each screen.
SPIN	Coordinates of spin.
SPIN	Direction of spin.
BRIDGE	Coordinates of bridge.
BRIDGE	Direction of bridge.
ROCK	Coordinates of rock.
ROCK	Direction of rock on screen 14.
LIVES	Number of lives left.
SCORE	Score of player based on time taken to complete each screen and bonus at end of screen 14.

ROUTINES

100	Main program loop.
1000	Moves Mr. Humpty.
2000	Makes Mr. Humpty jump.
2500	Moves rock.
2500	Moves spin up and down.
3000	Moves down bridge.
3500	Moves down bridge.
4000	Final screen.
4500	High score table.
5000	Lost a life.
5500	Reached end of screen (includes sequence when screen 14 is completed).
6000	Sets up the various screens.
6500	Sets up variables.
7000	Instructions.
8000	Sets up M. D.G.s.
9000	Mr. Woodford's tune.


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Check Sum

YOU'VE heard of Murphy, the guy who wrote the laws? What you might not realize is that he formulated all of them while trying to write a check-sum program.

Last month's issue of *Atari User* contained several features, most of which revolved around the Get It Right check-sum program.

First of all, if you've typed in the program and got it running, you may have noticed that it doesn't produce the same check-sums that we printed at the end of the programs.

The way to correct this is to make a small but important change to the program in line 4210. Make the line as follows:

4210 OPEN=OPEN+1:CLOSE=CLOSE

To produce the check-sums at the end of this month's and all future programs, you'll have to make one other additional change to the check-sum program in line 4250. Change this line as follows:

4250 CLOSE=CLOSE+1:CLOSE=CLOSE:PRINT:PRINT:GOTO 4210

Oops!



Be sure to make both of these changes to produce this month's check-sum tables.

If you bought the monthly disc or tape last month, you'll have found a version of the program which gave completely different results. Unfortunately that was a wrong version. However it shouldn't have mattered last month because if you'd bought the disc or tape you wouldn't need the check-sum program.

The correct version will be going out on all subsequent monthly discs and tapes.

To round off the saga, here are the correct (fingers crossed) check-sums for the program itself, after making both of the above alterations. Maybe this time we'll Get It Right!

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Don't miss the **BIG**
Atari event of 1986!

ATARI COMPUTER SHOW



For the first time Atari UK and all the major suppliers of Atari hardware and software are pulling out all the stops to make the first-ever Atari Computer Show the top event of the year.

Everyone who's anyone in the Atari world will be there. Already many third-party suppliers are planning to use the show as a launching pad for products still on the drawing board.

If you're a long-standing Atari user the show will bring you right up to date on all the exciting developments now taking place in the ever-expanding Atari world.

And if you're one of the many thousands of newcomers to Atari computing it will open your eyes to the vast selection of Atari hardware and software that is now available for the whole Atari range.

It's a show you cannot afford to miss!

Champagne Suite, Novotel,
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'It's about time there was an Atari Computer Show. It's a major breakthrough in the world of Atari'. - **Jerry Howell**, Managing Director, Software Express.

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Brataccas puts on a hard act to follow

If you saw the EEs on the floor stands at last year's PCW show, you can't fail to have noticed a pre-release version of *Brataccas* being demonstrated. The graphics quality alone was enough to make it stand out from the crowd.

Now you can get out and buy a copy, at a cost of £34.95, and the finished version certainly lives up to the expectations created by the demo.

In the game — or interactive video as Prognosis prefer to call it — you play the part of Flynn, a former genetic engineer who has been convicted of a tampered-to charge of genetic fraud. As the graphic constantly reminds you, Flynn is guilty.

The government, police and underworld would all like to get their hands on you, and you for your part would like to get hold of Bill Warr, the architect of your downfall.

In case you're wondering, Brataccas is the name of the planet where the action takes place.

The other inhabitants have their own lives to lead and will continue to do so even if you choose to sit in a bar all day. This means that some of them might not let you sit in a bar all day!

The task you face in the role of Flynn obviously pushes the game towards the adventure category. However, the range of actions available for Flynn calls for arcade-type control skills.

There are options to use keyboard or joystick, but really

the game is designed to be used with the mouse. For this reason you may have to spend some time learning how to control the character. Certainly I found myself jumping left walls more often than I might normally. Once you do get the hang of it the game is superb.

I'm not going to give you any clues about what you should do. Suffice to say that there's plenty to keep your mind and your mouse-hand active for quite some time.

Pressing Help at any time calls up an option screen. As well as providing the mechanics for saving and restoring games, entering demo mode or choosing the control device, this also provides a convenient way to pause the game.

After all, in a game where the other characters have independent lives you can't rely on them to wait patiently while you answer the phone.

The other times at which option screens is when you're offered a choice. For example, if a Sinton asks: "Want to know anything?" a series of thought bubbles appear above Kora's head, starting with "Mmm... all right...".

The sequence might be something like "ask for information", "ask about the evidence", "ask where I can get a drink", "say nothing".

These bubbles will continue to appear in sequence and you simply press the left-hand mouse button to choose the desired action. In this way you can take as long as you like to decide — for now, the inhabi-



tants of Brataccas hang on your every word.

Well Brataccas is the only games I'd seen for the ST since conversion from other machines. Here, at least, is a game written specifically for 68000 machines like the ST, for Mac and Amiga.

It's done more to bolster my faith in the machine than anything that's emerged from Digital Research or Star.

Perhaps that's because Prognosis have not used Gen

er-Too but have written their own routines to do everything.

While Gen provides a consistent interface to that packages use all look familiar, Brataccas uses the machine to best advantage.

From the Roger Dean illustration and poster to the end of the game, Brataccas sets the high standard which the machine deserves.

It's going to be a hard act for other software houses to follow. **Cliff McKnight**

Do you want

If like me you've been waiting patiently for *Mercenary* to arrive from Novograde, let me tell you right away that your waiting wasn't in vain.

A soldier of fortune, we've crash-landed on the planet Targ. It's the 21st century so such crashes are not fatal. However, all is not peace and quiet on Targ. Quite the opposite — there is a bitter conflict between the Robots and the Mechanoids.

Your ultimate goal is to escape from the planet... but how? Should you join one side and fight the other? Which side should you join?

Should you join neither side and try to stay friends with both? Or play both sides off against each other? Or maybe just steal a ship and blast everything to bits?

The choice is yours, and there's more than one way to achieve success. But first, you

start the game on the surface of Targ. There are two kinds of vehicle if you can get them — one is ground-based and the other allows flight. There are also underground complexes accessible from the surface, so there's plenty to explore.

Your interaction with Targ takes place via Benson, "an almost human PC", and it's on Benson's screen that all the action takes place.

Benson is constantly monitoring the situation and reporting, even asking the occasional question. As the instruction leaflet says, your contribution to the partnership is fair and endeavour.

Benson must be quite strong, judging by the size of the box of anvils which I managed to Targ. It's a pity he can't draw a map for you — you'll have to do that yourself. I'm not going to tell you any

SPOT the Ball from Creative Sports is a double game package aimed at the sports enthusiast. It contains Soccer and Snooker, both multi-player games simulating two of the country's favourite entertainments.

Soccer is the most realistic game of football I have played on a home video.

It caters for up to four people, either four against the computer or two on each side, but the game is just as entertaining played by single players.

There is an option to select a match that will last for 30, 45 or 90 minutes.

Press the fire button to kick off. On an individual basis you can control any one of the 11 players on your team on condition that he is nearest the ball.

Pressing the fire button in these circumstances flashes the number of the first possible pass (1-8) momentarily in the position occupied by the passer or the screen.

This is only relevant in the multi-player game to identify which of the participants is

SOCCER SCORES BUT SNOOKER MISCUES



controlling the team with the ball.

Once you have possession the rest of the team runs forward with you, and you are chased by one or two of the opposition. They are certain to

catch you, as your progress is slower once you have the ball.

Success in surviving a tackle tends to depend on whether or not your opponent can guide his player accurately over the ball. However should

you decide to pass the ball a second press of the fire button will kick it in the direction in which you are running.

Receiving the ball is again a matter of getting one of your players nearest to it than one of the opposition and again pressing the fire button.

When the ball goes out of play, possession goes as usual to the other team.

The ball is thrown in under computer control, using a player from that team, in an apparently random direction, and the chase is on again.

The graphics are nicely done and the animation smooth. I soon found the game fun to play and very addictive.

However I cannot say the same for Snooker.

As a keen fan of the real game, I have played many versions on a variety of systems, but I found this one very disappointing.

It's a standard implementation, with a plan view of the table showing 15 red balls and six colours.

You control the cue ball's starting position in the D using the four arrow keys. The joystick moves a white cross around the screen to establish the direction in which you want the cue ball to travel.

The power of the shot is selected using the blue bar which constantly rises and falls at the side of the screen.

When the bar is at the right height for your shot, either short for a soft shot or long for a hard one, press the fire button.

Because of the Atari's restricted colour set in the mode used, the green and pink balls have been indicated using white circles and the brown is a red in a black circle, but this does work and the game is playable.

The major letdown for the real enthusiast is the inability

t to live for ever?

more about the content of the game because I don't want to spoil it for you.

What I will say is that the quality is high and the cost represents good value for money. The tape is £9.95 and the disc £12.95.

Both contain two versions, a 48k version for expanded 400 and 800 machines and a 64k version for 800XL and 1300E machines.

Graphics and animation are good, there is scope for different styles of play and it

should be big enough to last you quite a while.

In fact, given that you never get killed, you could literally play forever. Fortunately, then, there's a Save option so you can't get some sleep occasionally.

Also if you find yourself in an undesirable situation, the stick in the desert with days of walking ahead of you, there's a Quit option. The price you pay for this is that your possessions get scattered around.

When you do manage to achieve escape status, make sure you save the game because this will give you beneficial entry into Merry-mary II.

You mean there's more? As far as I'm concerned, Paul Weales can take his time writing the sequel - I think I'll be spending quite some time on Targ.

David Russell



to impact any kind of spin on to the cue ball.

This makes ball control a virtual impossibility and as a result the game ceases to be one of skill.

There are several versions on the market for a variety of micros that implement full ball control as standard.

Because of its shortcomings this version is left way down the list and as an individual game I wouldn't entertain it.

The fact that it is paired with a great football game gives it a chance of success and taken as a whole the package is good value for money at £9.95 for the £26 tape. **David Andrews**

POLE LEFT AT THE POST

ELECTRAGLIDE is a superb race driving game from English Software. There are two Pole Position and all its clones — this is the one you want.

The insert describes it as a "fantasy racing epic", which sums it up nicely.

It's fantasy because a variety of obstacles come bouncing down from the sky to impede your progress. If real

driving ever gets like this I'll go back to walking.

It's racing against the clock because you've only got a fixed time to reach the next section. The countdown timer on the left of the display shows how long you have remaining. When it hits zero, you've failed.

In addition to being a great game with really good graphics, the program has a few other refinements. For example, there is a choice of three "steering control envelopes" so you can choose the one which best suits your joystick.

With the standard Atari joystick I found the lightest control gave me the better chance of avoiding the obstacles.

Then there's the three tracks to choose from — Britain, America or Australia. The tracks may not seem all that different in play, but it's lovely the way the shape changes as you select each track from the option screen.

You don't have to steer round the banks, but there's enough to worry about without that. Of course you do have to steer at fork junctions and there are bands in the tunnels too.

All in all, **ElectrAGlide** is a terrific arcade action which demonstrates the real power of the 8 bit Atari. English Software should have another winner on their hands with this one.

The 48k cassette costs £9.95, the disc version £12.95.

Pat Cookson



A lot of bugs this summer

If my life depended on saying something good about **Summer Games** from US Gold, I'd probably have to admit that it enabled me to do things I've never done before... like swimming through concrete.

It's rare that a program makes it to market with so many "features". You might be even more surprised when I tell you that I saw a previous version of the package and told US Gold about the bugs.

One or two minor ones have been removed, but the vast majority have been left in on the grounds that they appear in the original American version.

Swimming through concrete is just one of the delightful possibilities. If your equipment establishes sufficient lead over you in the 100m freestyle you can be forced to swim a whole length backwards. Now that's what I call freestyle.

In the swimming relay, when one swimmer turns the other does too, even if he hasn't reached the end of the pool yet. The same goes for the hand-over — it's a case of

"one in, all in".

Mind you, it might as well be like that because you can't tell who's who anyway.

So the swimming's not too good, how about the running? Well, in the 100m dash the screen scrolls forward so that neither player was on screen. It's pretty silly going though all the running actions when you can't see the runner.

Even the general organization of the program is awful. Despite the two joystick option, if the next inlines are played at a time that all players must use joystick 1.

What's the point of having two joysticks — and billing the program about it — if you still get to pass joystick 1 around?

There's also far too much disc-flipping to make for comfortable play. The program occupies two sides of the disc and frequently seems to read something on the other side — so matter which side it's reading at the time.

I could continue in the same vein, but why bother? As a famous Australian who once said: "This is one for laying down and avoiding".

GUY McKNIGHT





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BASIC LISTER

Display Basic statements in a controlled and tidy manner with this useful utility

So far as the user is concerned, the Basic listing facilities provided by Atari leave a lot to be desired.

If, for example you don't know which program lines you want to examine, then you enter LIST and stop scrolling by keying either Control-I or Break.

However, getting the timing right - for instance to display the whole of a subroutine - can be quite difficult. If you do know approximately which lines you want then you can enter LIST to run, HJ runs, but if the lines are not consecutively numbered, or occupy more than one physical line, then the particular ones you want may get pushed off the top of the screen.

In addition, after each LIST operation Basic throws a blank line and displays a READY message, all of which wastes valuable screen space.

This latter feature is particularly annoying if you are attempting to display several separate sections of code at the same time. For example, you may wish to display program lines around a GOTO as well as those around its destination.

This Lister utility is intended to overcome all this and enable the user to display Basic statements in a controlled and tidy manner. It achieves this by controlling line by line scrolling with the option to jump to any line number, as well as

suppressing those blank lines and READY messages.

Another useful feature is that it can be made to operate on a window of line numbers as defined by the variables LD and HI. This enables it to ignore the presence of Basic utilities, say Lister itself, TYPG etc, and allows you to concentrate on the target program.

When screen editing is required Lister must be suspended. However this can be done in a tidy manner with

By ALAN PUFFETT

the option to re-display just the current line or update the screen when resuming.

Operation is simplicity itself. Merely enter RUN, at which an introductory message and the first line in the window will be displayed. Each subsequent press of the return key causes the next line to be displayed.

Alternatively, entering a line number within the range of the window causes that line, or the next highest, to be displayed.

Entries are not echoed to the screen, but since entry is buffered this is not considered a serious defect. In fact any entry which is not either a number within the window or 0 or -1 is ignored, and only results in the display of the next line. When the end

of the window, or the last statement, is reached the next area of Ramon will cause display to return to the start of the window.

If you want to exit then 0 or -1 should be entered. This will result in Lister being suspended and the screen editor enabled. The target program may then be modified and run by GOTO next if required.

So long as no other program has been run since Lister was suspended it can be resumed by entering CONT, otherwise it will have to be run again.

To assist in resumption, CONT is displayed above the STOPPED AT LINE message, so that it is only necessary to place the cursor against this and press Return. Of course, it will have to be re-entered if it has been pushed off the screen by editing.

If Lister was suspended by entering 0 then when resumed the current line will be displayed, otherwise if -1 was used then the window will be listed up to the current line.

There are few limitations involved in the program's use. The main ones are that it should be recorded in LIST GO format so that it can be merged with programs in SAVE or DSAVE format, and that the target program may need re-numbering. Since, however, renumbering is such a general requirement, it is probably well worth acquiring a suitable utility.

When wishing to record a program

VARIABLES

- HI** First line beyond display window (see inline 11).
- LO** Required line number.
- LO** Start line for display window (see inline 11).
- NUM** Line number from statement table.
- TBL** Address of start of line in statement table.

you may not want to have Lister included and decide to delete it. If you have a machine fitted with the early version of Atari Basic make sure that you delete lines in reverse order. This simple trick will save you from losing everything.

If by some mischance Lister does misbehave, simply press Reset and start again.

The program occupies less than 800 bytes without ROM statements.

✓ *Get it right!*

LINE NUMBER			ADDRESS		
1	071	0	2	071	0
2	072	0	3	072	0
3	073	0	4	073	0
4	074	0	5	074	0
5	075	0	6	075	0
6	076	0	7	076	0
7	077	0	8	077	0
8	078	0	9	078	0
9	079	0	10	079	0
10	080	0	11	080	0
11	081	0	12	081	0
12	082	0	13	082	0
13	083	0	14	083	0
14	084	0	15	084	0
15	085	0	16	085	0
16	086	0	17	086	0
17	087	0	18	087	0
18	088	0	19	088	0
19	089	0	20	089	0
20	090	0	21	090	0
21	091	0	22	091	0
22	092	0	23	092	0
23	093	0	24	093	0
24	094	0	25	094	0
25	095	0	26	095	0
26	096	0	27	096	0
27	097	0	28	097	0
28	098	0	29	098	0
29	099	0	30	099	0
30	100	0	31	100	0
31	101	0	32	101	0
32	102	0	33	102	0
33	103	0	34	103	0
34	104	0	35	104	0
35	105	0	36	105	0
36	106	0	37	106	0
37	107	0	38	107	0
38	108	0	39	108	0
39	109	0	40	109	0
40	110	0	41	110	0
41	111	0	42	111	0
42	112	0	43	112	0
43	113	0	44	113	0
44	114	0	45	114	0
45	115	0	46	115	0
46	116	0	47	116	0
47	117	0	48	117	0
48	118	0	49	118	0
49	119	0	50	119	0
50	120	0	51	120	0
51	121	0	52	121	0
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When Dracula ceased, for me, to be a pain in the neck

RATHER than look at the latest releases on the adventurer's horizon, I plan this month to take a look back at two classic adventures from the masters of adventure writers, Scott Adams, which have given me such a lot of pleasure.

As mentioned in my Top Ten adventures last month, *The Count* was quite literally the adventure that got me hooked on adventures. Played on an Apple, it provided a lunchtime focal point for myself and several colleagues for a good few weeks.

The idea of *The Count* is simple and obvious. Dracula's castle sits above a village and you have been lucky enough to be selected to try and destroy him and free the village forever. The start of the game seems to set you up fairly well too, in that you already own that vital piece of vampire hunting equipment - a stake.

The only problem is that stalking Dracula is a long and tiring process, and very soon your sleepiness gets the better of you. You wake up in that same old bed and yes, you still have a little something - only this time the stake has gone and you possess two neat little puncture holes in the neck. Dracula plays it rough in this game.

Scott Adams displays his humour in a variety of ways, from the slit to the bathroom to the response to the "no door" tablets hidden away to help you make it through the night.

The arrival of a package from the

postman offers more than is first imagined as the paper slip provides a very useful aid when your more notorious skills come to the fore. The kitchen supplies the stationary garlic to ward off the pasty but forever buzzing around your ears.

The whole essence of *The Count* is that you have to acquire items in the

By Brillig

correct sequence, and the wandering around intent on doing this can prove frustrating until the successive penalties drop. There is a nice more atmosphere in this game than some of the early Adams efforts, possibly because of the legend of Dracula being such a familiar story.

My fondest memory of it is of the moment of realisation of the solution, which had been troubling me for a fortnight. I think it was when I realised that I was an adventurer first and foremost. It comes to us all in time.

Mystery Fun House is another early Adams game which develops an adventurer's senses and sensibilities. You are a secret agent sent to investigate a fun house to rescue blueprints (shades of Circus from Charred & Lard). Unlike Roger Moore or Sean Connery however, you have very limited resources, so much so that your first attempt to gain admittance will get you thrown out on your ear, still winning at the pun that accompanies you.

With a bit of adventuring ingenuity you can find enough cash to get into the house, having to hang on to your ticket to appease the bouncer, and you can begin to explore the complex.

Weird goggles, a trampoline and a rapidly spinning callopo conspire to confuse and compound the problems.



Eventually, by springing into action and remembering the words of a rather English song, all the pieces should be falling into place, especially since you should have been blind to the mermaid by now.

Eventually your search should take you back to acquire one for an explosive finish – indeed, if you have not taken the necessary precautions, more explosive than you might have wished.

Mystery Fun House proves that it pays to examine everything, from a variety of angles and with a degree of imagination. Adventurers have to learn that not everything is as it seems, and that objects have more than one use. Fun House is an excellent introduction to the deviousness of mind required to succeed.

Now a word about the new Level 9 adventure system. It sounds quite a feat of programming to get a multi-tasking adventure system – with complete sentence analysis, graphics, the usual huge spread of locations, and, at last, proper time-speed facility to save tedious waiting time when heading across already explored terrain – in a cassette-based adventure.

I've seen one interview which says level 9 are going into con hunting. A laudable objective, and this can only

GLITCH of the Month comes from Andrew Laird of Bonfloat in Essex. He has found an amazingly persistent guard in *The Pay-Off*, from Atari/Signosa Software. When he drops the guard, he can drop him all over the place, even down into the festering sewage in the town centre.

Return to the desk in the bank and try to take the coffee from it and immediately the guard awakens and hastens back to arrest you. A T shirt on its way to you Andrew, and try not to be so light-fingered.

If you haven't got the gem yet, try going downstairs and through the chamber. If you cannot get through the chamber then you need to examine an office a little more carefully.

be good for adventurers the world over. I shall be reviewing the *Worm in Paradise*, the first game to use the new system, in next month's issue.

Speaking of Level 9, I see I have been taken to task in *Mugger*, the Norwich User Group magazine, both for my failing to like *Red Moon*, and also the heinous sin of publishing the *Blatant Fish Solution* from *High Heel's Guide*.

Well to be fair, I did tell anyone who was reading in sequence that I was about to do exactly that, and that if they wished to avoid the answer then they should jump to the next section. Presumably therefore, only those people who wanted to know the answer then proceeded to read it (and the solution was the answer to a desperate plea from many people).

Of course, some people who are less strong willed, or who were seduced by my writing style, may also have read on, but I think they would be the minority – especially the latter. However if anyone was unwittingly informed, I apologise. Perhaps you could write in and suggest ways of solving the problem of passing on hints. Cryptic comments or a code? You tell me.

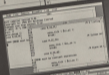
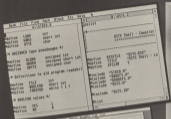
On the part of *Red Moon*, and the *Mugger* assertion that they "don't knock a damn good game", then that is their opinion, and mine remains as published. I'm sorry if L of *Mugger* didn't like it, but if we all liked the same things then it would be a pretty boring world.

Level 9 are the premier British adventure writers at present. That does not mean everyone has to like everything they do. In the case of *Red Moon* I disliked the combat system and found that the graphics were pretty bad and unattractive. It's my opinion. Feel free to differ.

Next month, as mentioned, I'll look at *The Worm in Paradise* and also *Anytime*. Note that they both have graphics. My New Year's resolution is holding up so far!



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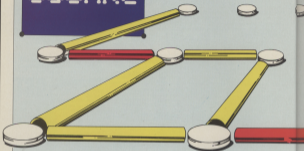


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DOTS SQUARE

SOL GUBER presents a micro version of the logic game which develops a player's ability to plan ahead



THE Atari can be used as a very good teaching tool, but it can also remove the drudgery of playing games.

A very good paper and pencil game of logic is called Dots, where the object is to teach the ability to look ahead of moves.

The game is quite simple. A grid of dots is placed on a piece of paper and each person in turn draws a line from one dot to a neighbouring dot. The lines must be in horizontal or vertical direction - no diagonal lines are allowed.

The person who draws the last line of a square is allowed to put his initial into it and take another turn. The person with the most squares is the winner.

This version is very similar. Instead of paper and pencil we now have a screen and two joysticks. The program starts by

asking if instructions are wanted. A Y or N answer is needed.

It then asks the names of the two players. The names are entered into the micro and Return is pressed. The first initial will be used to fill the squares as they are won. The two players can have the same first initial since they will have different colours for the squares. Two joysticks are needed - slot 1 for player 1 and slot 2 for player 2. Each player will know when it is his turn because his name will be seen on the bottom of the screen with the score.

Using the joystick each player moves a circle on the screen from one dot to another. The circle cursor will not wrap around the screen nor will it move over the edge. When the cursor is over the dot for the first part of the line, the player presses the trigger and a

beep is heard. The joystick is then moved to the spot for the other end of the line and again the trigger is pressed. Again a beep.

If it is a legal move a line is drawn on the screen. If the ends of the line are not neighbouring dots, or are not vertical or horizontal, there's a beep. If the line has already been drawn again a beep is heard. If the line completes a square, the person's initial is put on the screen.

There is an option for one player versus the Atari. At the start the names of two players are entered. If one of the names is COMPUTER then the computer will play. A question about the level of play is then asked.

The micro will play at five different levels of difficulty from 1 to 5. At level 1 most young children will be able to beat the

How it's done...

The programming of *Dots Square* is straightforward, but let's look at how one makes a computer into a good opponent. First, consider data storage.

In the Atari there are two kinds of variables, string and numeric. Numeric variables do not and in *Dots* take six memory bytes for each number.

String variables take only one byte and can have a value of 0-255 in each byte which corresponds to a letter.

So for numbers between 0-255 string variables use much less memory and the numbers are stored one after another rather than every six. The translation is also easier.

New people can look at data and see patterns easily. Computers need to be taught how to look for patterns so the data must be in a single - to a computer - form.

The computer will always win if it

is allowed to look long enough or hard enough, so there must be some way of handicapping it. The two main methods are to use of a time limit or a logic scheme that causes the Atari to play differently depending on the level.

The algorithm for the computer version takes much credit from the ideas of Chris Crawford on how a game should be made. The object of *Dots Square* is to win the most squares by completing the side of a square. If you win a square you get another turn, so that a complete turn can win many squares.

The logic of the game is equally simple. If there is a square with three sides completed, then complete the fourth side, and win it. If there are no such squares, then make a line between two dots so that your opponent will not be able to complete a square on his next turn.

If this is not possible then make a move that will give your opponent the fewest squares as he makes his move. The computer plays the same way.

When the computer plays it must be able to look at the board and see as a human would. It must be able to see squares that have all four sides completed, three sides completed, and so on. To do this, there must be a simple way to represent the data.

Since the computer uses binary notation it was decided to use a variable **RS** which contains 100 cells, each cell corresponding to one of the squares of the board.

Each cell contains information about the lines around that cell. The top side is 1, the right side is 2, the bottom side is 4 and the left side is 8.

So if a cell has all four sides around it, the value in the cell is the sum of the sides or 15 - 00001111 in binary.

Thus if a cell contains 15 it is filled and cannot be used. If a cell contains 0 there are no lines around it. From the other possibilities between 0 and 15, the computer can "see" what the board looks like.

For the computer to play a fast game it must scan the board quickly, and a machine language subroutine is

computer, but at level 5 it will play a very good game.

When the computer plays, the human uses joystick 1. While the computer thinks of a move, it makes sounds to annoy its opponent.

A demonstration mode is also available. Since the system checks only the first seven letters in the name, **COMPUTER1** can play **COMPUTER2**. The Cursor will be a different colour for each of the players. The computer will then play itself at any level desired.

The demo mode game lasts less than five minutes. Each of the players will move the circle cursor to where it wants to make its move and then a line will be drawn on one side of that square. It is very interesting to see the two computers battle it out.

used. The subroutine has three parts. It starts at a given cell in variable **RS** and looks forward through it.

The second part tells the subroutine how many sides in the cell to look for. It can look for cells with one, two or three sides completed. To look for cells with one side completed, it looks for the binary patterns, 00001000, 00000100, 00000010, or 00000001. If the search is successful, then that cell number is returned from the subroutine.

If the search is unsuccessful, then a 0 is returned.

Now that the computer can see the board, it must have a routine to find moves. The first thing it does is check for cells with three sides completed. It uses the search subroutine, starts with the first cell and checks for all patterns that have three sides completed.

If it finds one, the Atari makes that

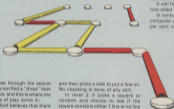
move, and for every move after that. When there were only 5 to 10 men left in an end game the moves would speed up.

This type of play is not very good when used for logical games. In *Dotz Square* there are five levels of play, but the computer will play in several levels during a game, depending on both the score and the maximum level that it is supposed to play at.

In the higher levels it will play a better game as the score increases, so it will not spend the maximum amount of time thinking about the first move when there are 50 possible good first moves.

Towards the end of the game, when the moves become more significant, the best move will be determined.

Let's look at the different levels of play. At level 1 the computer makes a move at random. It picks a square,



move, and goes through the search again. If it does not find a "three" then it makes a move, and this is where the different levels of play come in.

Chris Crawford believes that there should not be dozens of difficulty levels in computer games. It should play at various levels in different parts of a game.

The computer should not spend a lot of time on the opening moves, when there are a great many possible moves. When the possibilities have become more limited, then the best move can be determined.

An example of this is seen in one of the old chess computers where the various difficulty levels were determined by the time you allowed the computer to think of its next move.

The easy level used two minutes thinking time, and the most difficult level could take up to 24 hours.

If the 24 hour mode was set, it would think for 24 hours for the first

move, and then picks a side to put a line in. No checking is done of any sort.

In level 2 it picks a square at random and checks to see if the square contains either 1 line or no line in it. If it does, then this is the move.

If it does not then it picks another square at random. It does this five times and if it cannot find a move, then it goes to level 1 for the move, and picks a square at random.

Level 3 is a little more sophisticated. It looks for a random square that has one or no sides completed, but it does this 10 times.

If it finds one, it picks a side to complete. It then checks to see if it will make a three-sided square on the adjacent squares, and if it will, then that square is rejected. If it cannot find a good move in 10 tries, it reverts to level 2 and looks for a move.

If it cannot find a move on that level then it reverts to level 1 where it will always find a move.

Level 4 does not make random moves. It searches the whole board for squares that contain no sides and then for the squares that contain only one line. It checks to see that no three-sided squares are made.

If it cannot find a one or no-sided square it picks a two-sided square to complete at random.

Level 5 is the same as level 4, but this time it looks at 10 different two-sided squares and picks the one that will give the least number of points to the opponent.

The computer plays according to the level the human selects and the number of squares that have been won. For play at level 5, it starts out at level 3, and picks good empty cells or those with one side completed.

If it cannot find one, it will revert to level 2. After two cells have been won, then it plays a good game to find the cells that will not give the opponent a good move.

It will finally check to find the best two-sided cell move.

In contrast, if level 1 is selected the computer will play at random until 50 per cent of the cells are completed,

and then will try to pick better moves if possible.

With level 3, the random moves are only until 10 per cent of the cells are completed, which gives the computer a better chance to win.

In level 4 the game starts in level 2 and progresses to level 4 at the end. In effect, the overlap is such that it is difficult to determine exactly the strategy of the computer until most of the game is over. This way it seems more like a human opponent.

At the beginning of a game it will be careless, and let the human win a little to throw him off balance. It will play better as the end game starts.

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Picture this...

DAVID GOODYEAR discovers how to get much more than graphs from the Atari 1020 plotter



HAVING invested quite a large sum of money on an Epson FX-80 printer not very long ago I was somewhat annoyed to read about the full colour Okimate-10 that had suddenly appeared on the market.

Now I realise that the two are somewhat different animals and could be said to complement each other. Nevertheless I think I would have bought the colour unit first, as my primary use was for dumping graphic screens.

I then realised that I had, sitting in front of me, a four colour printer in the shape of my 1020 plotter. It just required up to me to make it print pictures instead of nice graphs and line drawings.

When run, the program asks for a picture file name. This must be one Atari made 14 (Graphics 7.5) screen saved in binary format, for people using the Micro-Illustrator package, Kool-Pad or AtariArt, just press INSERT when the picture you wish to save is on the screen and you will create a file called PICTURE on disc that is suitable for this program.

Next type the names of the four colours that you want the picture drawn in. These will be in the same order as the four colour bars along the Micro-Illustrator menu page.

As soon as the last colour is entered the file will be loaded and the picture will appear on the screen, so make sure that the correct disc is inserted and that the plotter is turned on, because it will start printing immediately the picture appears.

It is about here that I can hear someone saying: "Why isn't the actual dump portion, at least, in

machine code to speed up the process?"

Basically we are limited to the speed that the plotter can run at, and believe me it is slow. It takes about five hours to run one picture, as I tend to set it up before I go to bed and by the morning it has all happened.

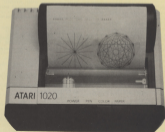
I have, in fact, run a compiled version of the program and it took exactly the same amount of time to print the same picture. An early version of the program ran over the picture once, changing pen colours each time they occurred but this took nearly twice as long as the second version that runs over the picture four times, once for each colour.

To speed up typing and save memory all the REMs can be removed - there are no references to them in

the actual code. The program is thus fairly self explanatory, with the possible exception of the trap in line 770 and the reason for moving the screen.

My 1020 has a habit of stopping and not responding to any input after about an hour of plotting. This leads to a time out error and the trap simply feeds the flow back into the plotting routine.

Another way to speed up the plot, if you are there when it stops, is to press the Break key and then type 0070 the line number that the program broke at. This, of course, will destroy the screen and hence the reason for reserving space right at the beginning to protect the screen.



Output

```

10 DIM M(10)
20 FOR I=0 TO 10:PRINT I:NEXT I
30 END

```

```

40 PRINT "HELLO WORLD"
50 END

```

```

60 PRINT "HELLO WORLD"
70 PRINT "HELLO WORLD"
80 END

```

```

90 PRINT "HELLO WORLD"
100 PRINT "HELLO WORLD"
110 END

```

```

120 PRINT "HELLO WORLD"
130 PRINT "HELLO WORLD"
140 END

```

```

150 PRINT "HELLO WORLD"
160 PRINT "HELLO WORLD"
170 END

```

```

180 PRINT "HELLO WORLD"
190 PRINT "HELLO WORLD"
200 END

```

```

210 PRINT "HELLO WORLD"
220 PRINT "HELLO WORLD"
230 END

```

```

240 PRINT "HELLO WORLD"
250 PRINT "HELLO WORLD"
260 END

```

```

270 PRINT "HELLO WORLD"
280 PRINT "HELLO WORLD"
290 END

```

```

300 PRINT "HELLO WORLD"
310 PRINT "HELLO WORLD"
320 END

```

```

330 PRINT "HELLO WORLD"
340 PRINT "HELLO WORLD"
350 END

```

```

360 PRINT "HELLO WORLD"
370 PRINT "HELLO WORLD"
380 END

```

```

390 PRINT "HELLO WORLD"
400 PRINT "HELLO WORLD"
410 END

```

```

420 PRINT "HELLO WORLD"
430 PRINT "HELLO WORLD"
440 END

```

```

450 PRINT "HELLO WORLD"
460 PRINT "HELLO WORLD"
470 END

```

```

480 PRINT "HELLO WORLD"
490 PRINT "HELLO WORLD"
500 END

```

```

510 PRINT "HELLO WORLD"
520 PRINT "HELLO WORLD"
530 END

```

```

540 PRINT "HELLO WORLD"
550 PRINT "HELLO WORLD"
560 END

```

```

570 PRINT "HELLO WORLD"
580 PRINT "HELLO WORLD"
590 END

```

```

600 PRINT "HELLO WORLD"
610 PRINT "HELLO WORLD"
620 END

```

```

630 PRINT "HELLO WORLD"
640 PRINT "HELLO WORLD"
650 END

```

```

660 PRINT "HELLO WORLD"
670 PRINT "HELLO WORLD"
680 END

```

```

690 PRINT "HELLO WORLD"
700 PRINT "HELLO WORLD"
710 END

```

```

720 PRINT "HELLO WORLD"
730 PRINT "HELLO WORLD"
740 END

```

```

750 PRINT "HELLO WORLD"
760 PRINT "HELLO WORLD"
770 END

```

```

780 PRINT "HELLO WORLD"
790 PRINT "HELLO WORLD"
800 END

```

```

810 PRINT "HELLO WORLD"
820 PRINT "HELLO WORLD"
830 END

```

```

840 PRINT "HELLO WORLD"
850 PRINT "HELLO WORLD"
860 END

```

```

870 PRINT "HELLO WORLD"
880 PRINT "HELLO WORLD"
890 END

```

```

900 PRINT "HELLO WORLD"
910 PRINT "HELLO WORLD"
920 END

```

```

930 PRINT "HELLO WORLD"
940 PRINT "HELLO WORLD"
950 END

```

```

960 PRINT "HELLO WORLD"
970 PRINT "HELLO WORLD"
980 END

```

```

990 PRINT "HELLO WORLD"
1000 PRINT "HELLO WORLD"
1010 END

```

```

1020 PRINT "HELLO WORLD"
1030 PRINT "HELLO WORLD"
1040 END

```

```

1050 PRINT "HELLO WORLD"
1060 PRINT "HELLO WORLD"
1070 END

```

```

1080 PRINT "HELLO WORLD"
1090 PRINT "HELLO WORLD"
1100 END

```

```

1110 PRINT "HELLO WORLD"
1120 PRINT "HELLO WORLD"
1130 END

```

```

1140 PRINT "HELLO WORLD"
1150 PRINT "HELLO WORLD"
1160 END

```

```

1170 PRINT "HELLO WORLD"
1180 PRINT "HELLO WORLD"
1190 END

```

```

1200 PRINT "HELLO WORLD"
1210 PRINT "HELLO WORLD"
1220 END

```

```

1230 PRINT "HELLO WORLD"
1240 PRINT "HELLO WORLD"
1250 END

```

```

1260 PRINT "HELLO WORLD"
1270 PRINT "HELLO WORLD"
1280 END

```

```

1290 PRINT "HELLO WORLD"
1300 PRINT "HELLO WORLD"
1310 END

```

```

1320 PRINT "HELLO WORLD"
1330 PRINT "HELLO WORLD"
1340 END

```

```

1350 PRINT "HELLO WORLD"
1360 PRINT "HELLO WORLD"
1370 END

```

```

1380 PRINT "HELLO WORLD"
1390 PRINT "HELLO WORLD"
1400 END

```



BASIC 2.0 COMPATIBILITY			
LINE	STATEMENT	RESULT	RESULT
10	PRINT	10	1000
20	PRINT	20	2000
30	PRINT	30	3000
40	PRINT	40	4000
50	PRINT	50	5000
60	PRINT	60	6000
70	PRINT	70	7000
80	PRINT	80	8000
90	PRINT	90	9000
100	PRINT	100	10000
110	PRINT	110	11000
120	PRINT	120	12000
130	PRINT	130	13000
140	PRINT	140	14000
150	PRINT	150	15000
160	PRINT	160	16000
170	PRINT	170	17000
180	PRINT	180	18000
190	PRINT	190	19000
200	PRINT	200	20000
210	PRINT	210	21000
220	PRINT	220	22000
230	PRINT	230	23000
240	PRINT	240	24000
250	PRINT	250	25000
260	PRINT	260	26000
270	PRINT	270	27000
280	PRINT	280	28000
290	PRINT	290	29000
300	PRINT	300	30000
310	PRINT	310	31000
320	PRINT	320	32000
330	PRINT	330	33000
340	PRINT	340	34000
350	PRINT	350	35000
360	PRINT	360	36000
370	PRINT	370	37000
380	PRINT	380	38000
390	PRINT	390	39000
400	PRINT	400	40000
410	PRINT	410	41000
420	PRINT	420	42000
430	PRINT	430	43000
440	PRINT	440	44000
450	PRINT	450	45000
460	PRINT	460	46000
470	PRINT	470	47000
480	PRINT	480	48000
490	PRINT	490	49000
500	PRINT	500	50000
510	PRINT	510	51000
520	PRINT	520	52000
530	PRINT	530	53000
540	PRINT	540	54000
550	PRINT	550	55000
560	PRINT	560	56000
570	PRINT	570	57000
580	PRINT	580	58000
590	PRINT	590	59000
600	PRINT	600	60000
610	PRINT	610	61000
620	PRINT	620	62000
630	PRINT	630	63000
640	PRINT	640	64000
650	PRINT	650	65000
660	PRINT	660	66000
670	PRINT	670	67000
680	PRINT	680	68000
690	PRINT	690	69000
700	PRINT	700	70000
710	PRINT	710	71000
720	PRINT	720	72000
730	PRINT	730	73000
740	PRINT	740	74000
750	PRINT	750	75000
760	PRINT	760	76000
770	PRINT	770	77000
780	PRINT	780	78000
790	PRINT	790	79000
800	PRINT	800	80000
810	PRINT	810	81000
820	PRINT	820	82000
830	PRINT	830	83000
840	PRINT	840	84000
850	PRINT	850	85000
860	PRINT	860	86000
870	PRINT	870	87000
880	PRINT	880	88000
890	PRINT	890	89000
900	PRINT	900	90000
910	PRINT	910	91000
920	PRINT	920	92000
930	PRINT	930	93000
940	PRINT	940	94000
950	PRINT	950	95000
960	PRINT	960	96000
970	PRINT	970	97000
980	PRINT	980	98000
990	PRINT	990	99000
1000	PRINT	1000	100000
1010	PRINT	1010	101000
1020	PRINT	1020	102000
1030	PRINT	1030	103000
1040	PRINT	1040	104000
1050	PRINT	1050	105000
1060	PRINT	1060	106000
1070	PRINT	1070	107000
1080	PRINT	1080	108000
1090	PRINT	1090	109000
1100	PRINT	1100	110000
1110	PRINT	1110	111000
1120	PRINT	1120	112000
1130	PRINT	1130	113000
1140	PRINT	1140	114000
1150	PRINT	1150	115000
1160	PRINT	1160	116000
1170	PRINT	1170	117000
1180	PRINT	1180	118000
1190	PRINT	1190	119000
1200	PRINT	1200	120000
1210	PRINT	1210	121000
1220	PRINT	1220	122000
1230	PRINT	1230	123000
1240	PRINT	1240	124000
1250	PRINT	1250	125000
1260	PRINT	1260	126000
1270	PRINT	1270	127000
1280	PRINT	1280	128000
1290	PRINT	1290	129000
1300	PRINT	1300	130000
1310	PRINT	1310	131000
1320	PRINT	1320	132000
1330	PRINT	1330	133000
1340	PRINT	1340	134000
1350	PRINT	1350	135000
1360	PRINT	1360	136000
1370	PRINT	1370	137000
1380	PRINT	1380	138000
1390	PRINT	1390	139000
1400	PRINT	1400	140000

Modified Frog Jump

I HAVE found Atari User very readable and informative.

I found Frog Jump in the June 1988 issue to be a really addictive after I had made three modifications to the program.

Modify the 230 to read:

```
DE 00000000 00000000
```

Otherwise the screen display for the "control panel" is a little prettier.

Modify line 400 to read:

```
DE 00000000 00000000  
DE 00000000 00000000
```

This prevented the screen going into a sleep mode if I had been playing for some time unless the joystick had not been moved.

Modify line 1040 to read:

```
DE 00000000 00000000  
DE 00000000 00000000
```

Originally only Sound 1 was turned off, leaving an annoying buzz when playing the higher levels.

I am still having difficulty with Bomb Run (July issue). I have modified the graphics subroutine to suit my 400 machine - luckily the same issue explained how to do it - but the use of the screen memory does not work.

I presume the screen memory starts at location 40220 in graphics Mode 1 on my Haseltine's computer but not on a 400.

Do the 1 have been unable to find an equivalent location by trial and error. Could you tell me what the location should be? — David White, Newton-le-Willows, Merseyside.

Thanks for the tips on Frog Jump. Bomb Run will not run on anything other than a 486 machine without modification. See Peter Apstein's suggestions on Page 68 of the October issue.

You can, of course, always ask your computer where its particular screen memory begins in a given graphics mode. Locations 80 and 84 contain a two-byte address for the current start of screen

memory. To get at it, use

```
SCREEN=SCREEN
```

or

```
SCREEN
```

If you have Basic-6L, try it, and then F042 NEXT I and look at the top left corner of the screen.

Cardiff user group

I AM a "nut", do you have "tips" and files in the Cardiff area? If so and you are interested in joining or forming an Atari user group please contact me at the address on this letter.

Five easy ways find a computer being put to rest that you had not thought of. Look forward to hearing from all you Atari enthusiasts out there in the wilds of the Cardiff area. — Raymond Price, Mandeville House, 8 Lewis Street, Canton, Cardiff.

You might like to know that there is a Cardiff user group, c/o Mr R. Khan, 322 Whitechurch Road, Heath, Cardiff CF4 3ND.

Getting DATA taped

I HAD an AT8000 with a 1000 program recorder but I cannot seem to record data on to cassette tapes.

The recorder manual is of

no help and neither is the information in the User Guide for the computer.

Please can you advise a program to use to allow me the input of 20 names and addresses of friends and their birthdays.

I have no problem with someone dealing with the computer of current date with a date on file, but I want to be able to keep the data separate from the program, including the use of DATA and READ. — A.P. Johnson, Potters Bar.

The best way to do what you're asking is to use a separate tape for your data. The main program would load from one tape, and input/output its data from the second tape in the form of

```
DE 00000000
```

or

```
DE 00000000  
DE 00000000
```

Note the way that the PRINT statement also prints commas between each item of data. This is because INPU would otherwise see the line as one long piece of text.

Don't forget to test OPEN the files as follows:

```
DE 00000000 DE 00000000  
DE 00000000 DE 00000000
```

As cassette systems can only handle data in one direction at a time, you must read all of the data into an array or a string - perhaps using long strings to simulate a string array - process it in whatever way you wish, then

output it all to the tape again. Because of a quirk in Atari Basic, you may have to read the numbers into an ordinary variable, and then put it into the array, for example:

```
DE 00000000 DE 00000000
```

It is best to use a terminator record, such as four asterisks, or all zeros for numerical data, to tell your program when the data is finished, otherwise you'll get an End-of-file error (line 138) when reading a block in again.

You should find this method a lot easier to use than trying to update data statements within one program.

Computer suspected

I AM 12 years old and an Atari 8000X owner. Recently, while I have been programming, the computer has returned errors where I can see nothing wrong.

Then if the line is entered again slowly, usually the same, so errors occur and the program ends perfectly.

But in a few cases the computer returns error 12 in some F04/0627 loops when polling is involved.

It sometimes seems if I change variable names, what difference should this make?

Also, having saved and loaded the program again on loading the computer will sometimes print the first few lines of the program and then a jumble of characters.

This usually happens when the computer has been on for quite a while. Can you tell me if anything is drastically wrong with my machine, or is it just me? — Michael Lord, Birmingham.

Sounds like you might have a faulty computer. It could also be you! Basic giving you trouble, which might be solved by a Revision C.

Also be very careful when doing pages, as these are potentially very dangerous to your program.

The computer could lock-up because of one wrong page, and you've lost your program.

ATARI USER Mailbag

We welcome letters from readers - about your experiences using the Atari stores, 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
88 Chester Road
Hazel Green
Stokeport SK7 5NF

readers - about your experiences using the Atari stores, about tips you would like to pass on to other users... and about what you would like to see in future issues.

On the whole, though, we would advise having the computer looked at, preferably by Alan Thompson, or an authorised service agent.

Auto run for Basic programs

QI There any way that I can make Basic programs auto run after LOADING?

A I own a 400 154 and hope to get either a 1500X or an 850X.

When typing in long programs my 400 sometimes "locks up". I can enter commands but when I press RETURN nothing happens. Only when you restart it, but the same thing happens straight away.

Will an old 410 recorder work with XL and 3D computers?

A I typed in BASIC Run from your July issue but when it's run the play area goes black. Is there an error in the listing?

Are Microscan and Micro II the same? If I get a suitable modern record I'll be able to communicate with other makes of computer, keyboard to keyboard? (Communications 17) — **B.S. Balfie, Ayrhead, Gwent.**

Q To make a program RUN after loading save it using the SAVE "C" option, not SAVE. This takes longer, but allows you to run it with the RUN "C" command.

If you also protect it as shown in August's Alan User, any other extension RUN "C" will crash the machine after loading is finished.

The problem you mention about lock-ups when programming, stems from a bug in the old Revision A Basic.

It showed up most often after a lot of heavy editing, and the cure is to buy a copy of Revision C Basic.

The 1500X has this built in, so you may prefer to wait until you get your XL. In the meantime SAVE your programs regularly if you are editing a lot.

On your other questions, a 410 recorder will work with an

£s and graphics problems

I Am writing the letter using the new Alan 8025 printer and WordMaster word processor.

I have just run into some trouble and was wondering if anyone out there could help me.

I am trying to get my 1025 to print the £ sign in progress that I write myself. The problem is not in getting the pound sign to print, it is in stopping the line feed. The way I do it is as follows:

```

1 PRINT "THE £ SIGN IS THE MOST
  AN INTERESTING SUBJECT TO WRITE
  ABOUT"
2 PRINT "END"

```

The problem is that the LPRINT statement in line 20 causes a line feed on the printer, so I end up with the amount on the next line.

I'm also having trouble in trying to get Master Word to print in boldface and underline. Is this because I'm using a 1025 and WordMaster does not support these functions?

If so, is there a word processor that will support them?

Writing just printed out a defect in WordMaster I must say I do find it a very good word processor and consider it very good value at £50. — **S.M. Lupton Jnr, Magill, Gwent.**

Q Dealing with your last point first, you can configure printer options on the main menu. This will let you enter the codes used by your printer to do various styles of printing, including underline and bold face codes are listed in the 1025 manual.

You can use Control-W to write these changes into your defaults file. See the WordMaster manual and your printer manual for further details.

You could use a semicolon ; at the end of the LPRINT line to pause at that point, rather than do a line feed, but this gives somewhat unpredictable results.

For better re-write your program as follows:

```

1 PRINT "THE £ SIGN IS THE MOST
  AN INTERESTING SUBJECT TO WRITE
  ABOUT"
2 PRINT "END"

```

Better still, all of your CHR numbers can be typed from the keyboard, which saves a lot of time. For a £ sign by using the following:

```

1000 PRINT "£ £ £ £ £ £ £ £ £ £"
1010 PRINT "END"

```

I HAVE an Alan 8000X, with Alan 310 disc drive, Alan

1010, Alan 850 and an Alan 830VCT printer.

My problem is printing graphics, because although I have tried the various control codes and examples in the operation manual I only seem to be able to print blank space.

Also when using the Alan Writer the first line is always printed in condensed mode. — **Herbert Spencer, Mold, Wales.**

Q Use Option 3 on the printer menu with the Epson range to avoid the first line problem, or better still use a printer driver to configure AlanWriter for use with Epson printers.

We don't know which graphics you refer to, but we suspect you mean the bit image modes, not the little image modes — pictures of lines, men, cars, etc.

Don't forget that, as Mr Lupton has found out, LPRINT gives odd results in Alan Basic when used with semicolons.

Change all LPRINTs in the examples in the printer manual to PRINT#.I. (Don't forget to OPEN the channel first, with OPEN #1,0:P1).

This should solve the problems, but if it doesn't, write back and let us know exactly what you're having difficulty with.

XL/XL, there is no error in the Basic Run listing. Microsoft and Microsoft are quite separate (the former being part of Telecom Data) and the latter part of Personal, and yes you would be able to communicate assuming the other micros also had a modem and both micros had suitable software.

Laser disc link?

CONGRATULATIONS on a

nice informative quality magazine. I would like to make several suggestions on additional to your magazine.

Q I've found Alan's software/hardware for sale or exchange.

Q A 1014 to 2 of Alan games (various faces last page) in each issue with an option to buy a disk.

Q An article about laser discs to use with Alan (are they going to design something to this standard) so that you could use games like Snake, Dragons Lair, or is there something already available to achieve laser disc type graphics?

MSX users tell me they can use laser-disc based games on their computers at Exotic, Dragons Lair. — **T. Green, Preston.**

Q As far as we know there are no plans to bring out a laser disc interface for the 8 bit Alan range. Basically because, with the small number of laser disc players around, there seems little point.

There will be a CD-ROM device available for the 310, and we see no reason why something similar couldn't be

done for the old songs, given the customer interest.

However, if the M&K people think they've got the edge on you because they can spend £300 on laser disc equipment to play games on, show them what you can do with Reverse on Fractalax for £75!

Pointers on printers

I THINK the content of Atari One is very well balanced and the special offers a real bonus.

What I would like to know is are you going to do hardware reviews for such things as printers, modems etc.

I am interested in purchasing a printer for the market in my area and would like to know where to start.

Perhaps you could run a page on a range of Atari-compatible printers covering the various price ranges.

Also if this letter gets printed perhaps someone or somewhere could call up if Atari joystick controllers are available as a separate item.

Cheerio forward to your next issue here is Great Gannery. — Ian HB, RAF Bruggen.

There are so many printers available, as you've already discovered.

What we'd like to suggest is that readers send us details of the printer they use, together with details of how it is interfaced — 850 modules, joystick port, etc — and a brief list of the good and bad points they've discovered. We should then be able to print a real users' report.

Joystick controllers, called 4-pin D sockets, can be bought from electronics shops or mail order from Maple.

No go cartridge

I HOUGHT an Arvision Star-master cassette car containing that it wasn't compatible with my Atari 800XL.

It should be possible to construct an adaptor so that

TAPE letter refers to the extra publication of my program *Converse* in your magazine. I was very pleased with the way your magazine dealt with it. Thank you.

There are however two main following points which should be made.

I have written a short routine to speed up string searching within the program — I enclose the additional listing.

With the *Converse* program loaded, type in their address list and make the appropriate changes as indicated to lines 1460 and 1610. Then save this updated version.

The second comment refers to an error in the instructions for use of *Converse* with the commercially available *Star* program from Don't Ask Software. The three steps listed should have been:

```
1. Run the program
2. Run the address list
3. Run the program with the address list loaded in memory
```

Unfortunately the *Star* and

it can be plugged in. I should be most grateful if you would send me details of the best way of doing this. — M.B. Holland, Wolverhampton.

There is, unfortunately, no way at all that a cartridge for even cassette or disc, could be that designed for any other system will run on an Atari computer.

This is because the chips used for each machine are very different, and thus all functions under different types of operating system software.

So if you have VCS Games Console cartridges, Commodore 64, BBC Spectrum, Amstrad, or any other computer cassette, or basically anything that doesn't say Atari 400/800/XL/SE or Atari Home Computer System (HCSS) on it, then it simply won't work on your 800XL. Sorry!

Following up Converse

Recent programs take up too much memory and memory savings are required from the *Converse* program. These are carried out as follows:

- Run the original *Converse* program to create files.
- Ensure you have a back-up copy on another disk.
- You can now save memory by making a short version of *Converse* which stores not about 60 files present nor create original files.

- Delete all *HEM* files.
- Load 1050 Delete *HEM11.C*.
- Delete files 1060-1180.
- Delete the *DATA* lines 1300-1760. The short *DATA* file delete routine enclosed can be used for this purpose.

After *Converse* in memory, type in this routine, then type in direct mode *GOTO 32100*.

- After save the new shortened version of *Converse*.

I hope this will be of use — **Dr. Steven, Dundee.**

Lines added to replace slow Basic string searching with machine code search:

```
1000 DIMENSION HEM(1000)
1010 FOR I=1 TO 1000:READ HEM(I):NEXT I
1020 FOR I=1 TO 1000:READ HEM(I):NEXT I
1030 FOR I=1 TO 1000:READ HEM(I):NEXT I
1040 FOR I=1 TO 1000:READ HEM(I):NEXT I
1050 FOR I=1 TO 1000:READ HEM(I):NEXT I
1060 FOR I=1 TO 1000:READ HEM(I):NEXT I
1070 FOR I=1 TO 1000:READ HEM(I):NEXT I
1080 FOR I=1 TO 1000:READ HEM(I):NEXT I
1090 FOR I=1 TO 1000:READ HEM(I):NEXT I
1100 FOR I=1 TO 1000:READ HEM(I):NEXT I
1110 FOR I=1 TO 1000:READ HEM(I):NEXT I
1120 FOR I=1 TO 1000:READ HEM(I):NEXT I
1130 FOR I=1 TO 1000:READ HEM(I):NEXT I
1140 FOR I=1 TO 1000:READ HEM(I):NEXT I
1150 FOR I=1 TO 1000:READ HEM(I):NEXT I
1160 FOR I=1 TO 1000:READ HEM(I):NEXT I
1170 FOR I=1 TO 1000:READ HEM(I):NEXT I
1180 FOR I=1 TO 1000:READ HEM(I):NEXT I
```

Data line delete routine:

```
1000 DIMENSION HEM(1000)
1010 FOR I=1 TO 1000:READ HEM(I):NEXT I
1020 FOR I=1 TO 1000:READ HEM(I):NEXT I
1030 FOR I=1 TO 1000:READ HEM(I):NEXT I
1040 FOR I=1 TO 1000:READ HEM(I):NEXT I
1050 FOR I=1 TO 1000:READ HEM(I):NEXT I
1060 FOR I=1 TO 1000:READ HEM(I):NEXT I
1070 FOR I=1 TO 1000:READ HEM(I):NEXT I
1080 FOR I=1 TO 1000:READ HEM(I):NEXT I
1090 FOR I=1 TO 1000:READ HEM(I):NEXT I
1100 FOR I=1 TO 1000:READ HEM(I):NEXT I
1110 FOR I=1 TO 1000:READ HEM(I):NEXT I
1120 FOR I=1 TO 1000:READ HEM(I):NEXT I
1130 FOR I=1 TO 1000:READ HEM(I):NEXT I
1140 FOR I=1 TO 1000:READ HEM(I):NEXT I
1150 FOR I=1 TO 1000:READ HEM(I):NEXT I
1160 FOR I=1 TO 1000:READ HEM(I):NEXT I
1170 FOR I=1 TO 1000:READ HEM(I):NEXT I
1180 FOR I=1 TO 1000:READ HEM(I):NEXT I
```

Stubborn listings

I AMN'T had an Atari 800XL, 800 and 1300 recorder for just over two weeks now and so have learned how to complete simple tasks such as writing, loading and running simple programs.

I now get *Atari User* and in August's copy I noticed a program for a game called *Harder FASTER*, so I thought it a good idea to have a go and try it program it.

As I am not fully used to the keyboard yet, it took me a few hours to type it, with a few mistakes along the way which were soon corrected.

After completing this test and coming to the end I typed in "LOAD", to which the computer began loading it

correctly.

You can imagine my relief and satisfaction when the computer came back with "READY".

Then I typed in "RUN" and the computer came back with "ERROR" — 8 at line 1110.

So how did you find I typed in "LSD 1110" and the computer duly returned with the aforementioned line. I checked it against what was printed in the magazine and could find no fault.

So I checked the "Error" message with my Atari Basic Reference Guide.

According to the guide the "Error — 8" means "Error or wrong disc error", thus not implying too much about wrong cartridges or disc statements or of yet, I put it down to the magazine making a

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printing error and I missed the program.

So when September's magazine came out I was determined to program the game featured in it, which was *Blaze Mania*, and I sat about it.

And to cut a long story short, it all happened again.

Now I'm not complaining, but I would like to get half of the right ideas to do it into the program. Any help or advice you could give me would be great, as I would surely love something that I have done myself to come up on the screen.

I do not think that it is the computer or joystick or control cassette games like *Pole Position* that normally. — **David Stephenson, Liverpool.**

● Both games should give no problems on an 80000, so you've almost certainly made a typing error. Our advice would be to check your listing very carefully indeed.

Baulking Apocalypse

WELL knowing through the advertisements in *Atari User* I came across one for *Demomorphosis*. They had *Chuckie Egg* for the 224 Atari but more things were to come. *Samurai Software* had *Chuckie Egg* for the 484 video. Could you please let me see it right?

Sincerely I bought *Pole Apocalypse* for all of the Atari but it won't load. It loads the loading screen and comes down the display to 0 then the 1000 10000 and nothing happens.

All my other games load and come into the loading procedure. I have bought it from two shops and still they had to load. What's wrong? — **C. Hollinshead, Stockton-on-Tees.**

● The best thing for you to do in both cases is contact the companies concerned. We can't hold detailed information on all the thousands of games available for the Atari.

Moreover, we assume *Chuckie Egg* to be 32k and *Pole Apocalypse* should run on

any Atari with a minimum of 48k.

If it doesn't, send your tape back to US Gold and ask for a replacement.

Calling all radio hams

I HAVE an Atari 8000X, and I'm also a radio amateur. There seems to be a great shortage of information on radio-related programs. Does anyone know where this can be obtained?

I have a 90TY and *Maxim* tutor program but I would like to hear from anyone with the same hardware. My phone number is Wexford 829763 after 6-30 or weekdays. — **G.W. Giles, Wexborne, Dorset.**

American disc drives

MEMBERS of my family are planning a trip to the USA and as they know about my coming for a short drive they said they would try to get one for me.

My question is, would it need a transformer or bush etc to make it work on my 800 XC PC2.7?

Also, is the game *Fast Over Moscow* by US Gold out on cassette for the Atari and if not, will it be available soon? — **James Woodworth, Nottingham.**

● You can use an American

disc drive over here, but you must change the power supply to a UK one before using it, if you don't you could hurt yourself.

Some power supplies are available from Atari in Slough, or dealers could order you one. Otherwise, the drive will work fine over here.

If anyone is contemplating the same idea with a computer, forget it. The TV system used over here differs from that used in the States, so you'd need to buy an American TV set too!

There are no plans to release *Fast Over Moscow* in the near future.

Sour note at the Disco

I KNOW you always say that programs won't run because of typing errors, but I reckon I've spotted a real mistake in one of your listings.

In last month's Disco program the only way I could get them to work was by changing line 60 to 004999C57. Does it show that, they worked beautifully.

Am I right, or did I make a really stupid mistake somewhere else? — **Tim Henschamp, Slough.**

● Completed items — you spotted the deliberate mistake and a prize is on its way to you. Seriously though, you are right and the mistake was one of ours, not Stephen Pinfold's.

The limits for GOSUB

WHAT are the rules for any of more than one set of alter statements in a program?

In issue 2 of *Atari User* in the second article GOSUB is used as a procedure that Atari terminology doesn't have.

What are the limits for GOSUB as a procedure call? Also can you suggest a program for testing 3D objects? — **M.B. Books.**

● Any routine using DATA will fetch the next item of data available from within the program.

To change that sequence, simply tell the computer to RESTORE line no. and the next READ will be of data from line no.

In the other case you refer to, GOSUB DELAY, we think you are mistaking a variable for a procedure name.

DELAY is simply a variable which contains the line number to GOSUB to GOTO. For example, after typing GOSUB=500, the command would translate to GOSUB 500.

To rotate 3D objects by Atari World or 3-D Supergraphics, if you can still find any copies about.

Alternatively there was an excellent program written in Asterix which appeared in *Atari magazine*, June 1985 (Vol 4, No 2).

Mere shadow of Elite

I have no wish to criticise *Star Raiders*. I own a cartridge copy and have had many battles with Zylon starships.

However, it is little more than a good old shoot 'em up game. I feel that D. Barrett of *Acorn* years for the loading and tactical possibilities that *Elite* has to offer in addition to the *Star Wars*-style engagements.

Perhaps *Jupiter Mission*, which I believe is now available for the Atari, might have done a more appropriate suggestion.

Anyway, now to my problem. I was determined to use the program for the 1029 screen dump. Perhaps this could be modified for the 1000 printer driver? If not, where can I obtain a screen dump for the latter?

Please convey a large 'thumbs up' to my old self. — **A.A. Richards, Basingstoke.**

● Thanks for your comments. See David Goodyear's 1000 dump program on Page 63 of this issue.

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ST software developer ANDREW BISHOP, currently working on his first game for the ST, writes about his initial experience of the new machine and gives an introduction to a language we're going to be hearing a lot about - C.

C will help you get more out of your ST

TO a registered software house, Atari supplies a two foot high stack of A4 paper, consisting of 25 manuals totalling nearly 4,000 pages of detailed information about the ST and Gem, the ST's operating system.

Not one of these manuals is hole-punched for insertion into a folder, so this is one of the first tasks that must be completed before any real work can get started.

After several hours of frantic hole-punching, it is time to sit back and try to digest some of the information contained in those manuals. This is, to say the least, not at all easy and it can take many weeks to be able to grab the correct manual when you wish to look up one particular piece of information.

Gem itself is made up of hundreds of small programs that each perform

a separate task, such as opening a window, drawing a line, changing a colour, checking the mouse and so on.

Each of these programs, or routines as they are more commonly known, is fully documented in the Gem manuals and can be included in the programmer's programs.

Writing a program therefore becomes simply the linking of the various routines, in the right order, along with some others to perform whatever task the programmer wishes.

Unfortunately this is not quite as easy as it seems, because tasks such as moving a window are not done automatically by Gem, but must be carried out by the program.

Another difficulty is the fact that a program must take account of the fact that the ST can operate in various

different resolutions - the number of dots on the screen. All this adds up to a computer which is not difficult to program, but takes a long time to get to grips with.

Although the ST manuals are only available to software houses, and are not particularly cheap, the everyday home programmer need not feel left out.

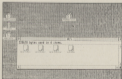
During the next couple of months several books will appear that will include most of the useful parts of the manuals, written in English rather than jargon.

The first quarter of this year should see the build up towards the hundreds of programs that will soon be available for the ST. Those of you who owned an Atari 400 or 800 during their early days will recognise this time delay, as programmers get to grips with a new computer. Be patient! You won't be disappointed.

Along with the documentation Atari also supplies two languages for software houses to develop their programs with - assembler and C.

Assembler, or machine code, is the language that the ST speaks internally and is the fastest available for it. Unfortunately developing programs in assembler is a long and error-ridden task.

Software houses want to get their programs out as soon as possible and therefore most of them are using the other language, C, to write programs



on the ST.

C is nearly as fast as assembler and is easier to write and learn. It is a compiled language. This means that you write your program, save it to disc and then set a program called a compiler loose on it. The compiler turns your C program into machine code and then places it on disc as a .PRG file, ready to execute. The compilation takes at least five minutes, during which time the ST can do nothing else.

Writing a program in C is much the same as writing one in Basic or Pascal, and if you know either of these languages C should be very easy to learn.

I've included an example C program here, complete with explanations. If you don't find it too difficult and you want to do some serious programming on your ST you should consider buying a C compiler. There are several available starting at about £50.

Programming in C becomes more attractive when you remember that you can't use the ST's mouse or windows easily from Basic or Logo.

The ST, being a complex machine, will have many thousands of words written about it over the years to come. Many of the articles to be written will be supplying hints and short cuts to allow you to get the most from your ST.

Let me be the first to give you a hint that I have discovered during my hours at the keyboard.

◆ When you save the desktop you are also saving the position of the disc icons and whether a directory is on the screen or not.

Make the desk look exactly as you want it and then save it. You will find that the desk will now look just the way you want it every time you boot up the ST.

◆ Always set the clock at the start of a session. Since the time is saved along with a file, it will help you to

differentiate between different versions of the same file.

◆ It is possible to change the name which appears under the disc icons on the desktop. You can change the disc icon's name to, for example, MY DISC.

The method is fairly simple. First select disc A by clicking on it once, then go to Options and select Install disc drive. You will be presented with the name and letter of the drive.

Move the mouse pointer to the name line and click once. You can now backspace over the name and type your replacement. Certain characters, such as the space will not be accepted.

A little experimentation will show you which characters will and will not be accepted. When you have finished entering the name, don't press Return, but click on the INSTALL box.

Your name will now appear under the icon and will be saved if you save the desktop.

THIS IS WHERE C AND BASIC DIFFER

THIS example program, when run, will place the ST's seven possible text modes on the screen (see screen dump above). In simple terms it can be broken down into the following steps:

- ◆ Start the program and link it with Gem.
- ◆ Print "ATARI USER" on the screen seven times, changing the text type every time.
- ◆ Wait for the ALTERNATE key to be pressed.
- ◆ Exit.

I suspect that most of you could write such a program in Basic, given the necessary routines to do such things as print to the screen and change text type. Writing it in

C is just as easy as soon as you have noted various differences between Basic and C.

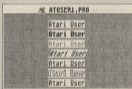
- ◆ All variables and arrays must be defined at the start of your program.
- ◆ Array text square brackets [] rather than rounded brackets ().
- ◆ The C program can be divided into procedures, which are called in whatever order the programmer wishes. A procedure starts and ends with curly brackets {}.
- ◆ When you run a C program it goes to a procedure called main and executes it.
- ◆ You can mix upper and lower case as you wish. The compiler

ignores spaces and case.

- ◆ C program lines must finish with a semicolon ;

The example program starts with a large comment box. Comments in C are enclosed in /* and */. The next five lines are #include lines which tell the compiler that it will need the files enclosed in quotes to compile the program. The files contain definitions of the Gem commands.

The next seven lines define certain system variables that Gem needs to operate properly. Notice that the maximum size of the array is also defined here. The remainder of the definitions are variables and arrays used by the program. INT



```

#####
/*      Test program for Atari 5200
/*      By Andrew S. Demmel
/*      January 1984
/*      -- Willis G. Herold, last update to the screen --
#####

#include "util.h" /* Include files */
#include "video.h"
#include "video2.h"
#include "graphics.h"
#include "text.h"

/* Variable Definition */

int  xstart(0); /* Screen window variables */
int  xend(100);
int  ystart(0);
int  yend(100);
int  xstart2(0);
int  ystart2(0);
int  xend2(100);
int  yend2(100);
int  xstart3(0);
int  ystart3(0);
int  xend3(100);
int  yend3(100);
int  xstart4(0);
int  ystart4(0);
int  xend4(100);
int  yend4(100);
int  effect; /* The name of the screen */
int  delay; /* Delay variable */
int  i; /* For loops */
int  key_state; /* The state of the ALT key */
int  rows, cols; /* The x and y row of the screen */
int  test_type[7]; /* Array to hold types of test */
int  effect; /* The test effect in question */

/* Open graphics window */

open_graph()
{
    for(i=0; i<sizeof(test_type); i++)
        test_type[i]=0;
    test_type[0]=test_type[1]=test_type[2]=test_type[3]=test_type[4]=test_type[5]=test_type[6]=1;
    rows=100; /* The x and y row of the screen */
    cols=100; /* The test effect in question */
} /* End open_graph */

/* Main for key */

main_key()
{
    int
    {
        int key_state, key_state2;
        while (key_state != 1)
        {
            /* End key_state */

            /* Print string */

            printf("\n");

            test_type[0]; /* Delay test */
            test_type[1]; /* Roll */
            test_type[2]; /* Flip */
            test_type[3]; /* Rotate */
            test_type[4]; /* Mirror test */
            test_type[5]; /* Rotate 90 */
            test_type[6]; /* Rotate 180 */

            for(i=0; i<rows; i++)
            {
                effect=test_type[i];
                vst_effect(rows, effect);
                vst_test(rows, i, test_type[0], test_type[1], test_type[2], test_type[3], test_type[4], test_type[5], test_type[6]);
            }

            /* End print_string */

            /* Main routine */

            graph();
        }
    }
} /* End Main */

```

means "make the variable an integer".

If you look to the end of the program you will see the main procedure. This procedure calls each of the others, defined above it, in order, let's look at each one in turn:

open_graph() starts the program and links it to Gem. This procedure is defined in one of the `#include` files and must be called at the start of all your C programs.

open_window() is defined just after the variable definitions and sets up the screen to be used by the program. Don't worry too much about its concerns. Here it is a variable which the program

keeps to point to the screen. The `x` and `y` resolutions are also passed to the program so that it knows what type of monitor it is operating with.

print_string() is the most important part of the program. Its first seven lines set up an array to hold the values for each of the test types. The test line contains a FOR statement. C's FOR loops are different to Basic's, but have the same purpose. The eighth line of `print_string` means "start at zero and execute the loop enclosed in curly brackets until `i` equals 7". The loop changes the test type, using Gem's `vst_effect` routine, and then places "ATARI USER" on the

screen at a certain line.

wait_key() employs Gem's `vc_key` routine to wait until the ALTERNATE key is pressed by using C's do-while loop.

graph_exit() is the last procedure called and it simply tells the ST that the program is over and commands can be returned to the desktop.

Not too difficult, is it? C is much more like Basic than you might have previously been led to believe. If you do decide to learn C you can obtain more information from several books.

Some of the latest ones are tailored for the ST and will also give you information on Gem.



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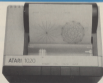
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September issue: 8 page special on the 10000, Made It screen, cheap reviews, News March, Data Maker, Display List Tutorial, 10000, Advertising reviews, but prominently with Logo, Hardware reviews, 10000 - regular series of tutorials. By Wiles, Rogerson and Douglas.

October issue: Computer Census applies program, updated for the 10000 10000 reviews, 10000 Reviews with, from 70 books on titles, they also contain cheap titles, Flashes, Software reviews, 10000 - regular series of tutorials. By Wiles, Rogerson and Douglas.

November issue: Computer program, Update updates, 91 applies examples, 92 software by Top Feature game, Display List tutorial, Advertising, Memoranda, Software reviews, Insights - regular series of tutorials. By Wiles, Rogerson and Douglas.

December issue: Circle run program, Special updated, December Book 92, reviews, Graphics and Graphics, Commodore game, Display List Tutorial, Software reviews, Left-handed special, Advertising, Rogerson and Douglas.



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JUNE: Frog Jump: Guide the frog across the road and don't let the fence in the way of the snake slither.

10000: Game Power: Use the extra info of computer's good effect, or use the drawing routines to produce more graphic displays. **Keyboard Sounds:** the information, **Book March:** Data, party games with only a keypad. **Random Numbers:** Get random numbers from machine code. **Play Fitness:** Can you keep the Filly Fitness happy in the hole?

8000: Snake: Take the slithering joy and lead with. **Disassembly:** Find out what's going on deep inside your Atari. **Escape Hunt:** Use logical thinking to find the treasure. **Personal Computer:** Keep generating graphics till you find one you like. **ByteWorld:** Covered pages, design help, an editor. **Commodore:** Covers test and forums throughout the issue?

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ARGENT: Assembler (Make machine code program) program that generates code ready with the best machine instructions. **Machine:** Complete job with code only. **Protection:** Protect your programs from copying. **Display List:** Demonstration programs. **Buffer:** 1000, 10000, 10000, test addresses. **Track:** 10000 Demonstration programs.

SEPTEMBER: News March: Help finance the Book month the main magazine's records. **Data Maker:** Convert your machine code binaries to 10000 subroutines. **Display List:** Demonstration programs. **Screen/Escape:** Jump your Machine screen to 10000 screen. **Book:** Take the book's position.

OCTOBER: Protection Test: Best Memory Dump, Machine memory to hex and Ascii. **Display List:** Demonstration programs. **Wipe:** Taps, home-grown for 1000 in ten bytes. **Computer Census:** Make your own list of computer. **Assembler Update:** Important for the 10000 assembler. **Game Files:** Make the most of the 10000's data memory.

NOVEMBER: Easy Features: Help the escape from the game. **Compass:** Search your Atari to be a great first time give. **Top Feature:** Display List Demonstration programs. **Book:** Operations. **Utility:** to provide logical features. **Circle:** Data and 10000. **Play Fitness:** of the month - **Escape:** machine code program.

DECEMBER: Countdown: More version of the famous 70 game. **Get It Right!** Atari User's own checkered program. **Escape:** them as feature on your Atari. **List Utility:** Make listing easier. **Display List:** Demonstration programs. **Play Fitness:** of the month - **Ann's Program:** machine code entertainment.

JANUARY: Hello! Help! Help! Happy new Year! **Escape:** Get It Right! Atari User's own checkered program. **Book:** Atari. **Game:** to accompany the machine code series. **Index:** these being programs only. **Data:** Play the game in modified mode at the 10000 game. **Display:** 10000 production volume. **Play Fitness:** of the month - **Scorable:** Fighter machine code game.



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