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# ATARI USER

Vol. 2 No. 3

July 1986

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this  
issue



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Vol. 2 No. 3 July 1988

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All the news that's fit to print for owners of both 8-bit and ST machines.

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Two special offers for Atari User subscribers this month. You can save 50 per cent on insuring your Atari system (including all peripherals). And you can save up to £10 on blank discs.

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## New insurance scheme for your Atari

A UNIQUE personal computer insurance package which for the first time offers breakdown cover is now available to subscribers to Atari User.

Underwritten by the giant Carroll Insurance group, the scheme also provides protection against theft, accidental loss and damage at savings of up to 50 per cent, making it the cheapest in the country.

While the theft clause only applies to micros that are stolen from lockable buildings, the accidental loss and damage cover is for anywhere in the UK - even while the computer is in transit.

Negotiated by Database Publications on behalf of its readers with leading brokers Mason and Mason of Wiltshire, the breakdown section covers call out, labour and materials charges for all micros not under warranty.

As with all current policies, different rates apply to urban and metropolitan areas, the latter being judged high risk areas for theft.

Typical examples of annual premiums reveal that cover for a system - micro and peripherals - valued at £200 would be £10, at £500 some £16, and at £1,000 approximately £38.

Businessmen who subscribe to Atari User will also have the opportunity to join a company scheme which provides additional cover.

"The market has been crying out for a policy of this kind - particularly involving breakdown - for years", says Derek Maslin, head of Database. "We are just pleased that we are able to offer it first to subscribers to Atari User".

For further details see Page 50.

# ST is outselling the Macintosh

A TOP secret report has revealed that Atari ST computers are currently outselling the popular Apple Macintosh machines in the UK.

Commissioned by Atari UK and only just completed, the document provides conclusive evidence that the ST is showing its rival a clean pair of heels. So much so that in certain parts of the country the ratio is as high as three to one in favour of the ST.

"It is true that we have now learned that the Atari is outselling the Macintosh", says Max Bambridge, Atari UK's boss. "And our sales are almost equally divided between the 800XL and the 1040ST".

While refusing to disclose actual figures - "you'll get those at the end of the ST's first full year in operation" - Atari's men

in Britain is known to be well pleased with the results to date.

"This latest news only indicates that we are well on target", he told Atari User.

Meanwhile Atari's claim to have outstayed the Macintosh received support from a somewhat unusual quarter - the former Macintosh marketing manager.

Nigel Parry left Apple in August, 1984, and set up Laser Software primarily to cater for the Macintosh market. Since the arrival of the ST however, his company has been producing products for both machines.

Now he reports that the ST is accounting for a lot more sales than the Apple computer. "It works out to be in the region of 2.5 to one", he says. "Atari's policy of providing a simple user interface at a fraction of the cost of competitive systems has

inspired a large and increasing installed base".

The product most in demand by ST users from Laser is its Laserbase ST which retails for £59.95 - and Nigel Parry reports that much of the interest is coming from schools. As a result, the software house has announced educational discounts for its programs.

Not that this boom in sales from the ST market means that Nigel Parry intends to turn his back on the Macintosh.

"I'm not knocking the Macintosh in any way" he says, "and anyone who drops in at my office will find I use both a Macintosh and an ST."

But it seems as if as users are concerned Atari has delivered the right machine at the right price and is successfully exploiting the last slice left in the market.

## Kim's 800XL wins the MicroLink competition



Norman Budden, BR Travel Centre manager and his assistant welcome Mrs Jane Burgess, the winner's wife in London

COMPUTER shop salesman Kim Burgess used his Atari 800XL to win a free weekend in London.

Kim, 33, correctly answered 15 questions about MicroLink, the UK's fastest growing electronics mail service.

The competition was organised in conjunction with British Rail who offer seat and sleeper reservations using MicroLink's new telebooking service. Hun-

dreds of entrants successfully answered the 15 questions but Kim's was the first name drawn from a hat.

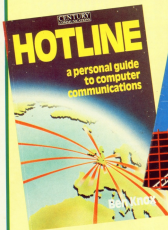
Much to the delight of his wife, Jane, to spend a weekend in London for two, free rail travel, luxury accommodation at a London hotel, free tickets to a Database Exhibitions computer show and finally a wonderful trip to Sheffield again even on a steam-heated excursion train.

Kim, of Bromley, Kent, said: "I used my Atari 800XL to log on to MicroLink and then searched through the text to find the answers."

"I find MicroLink very useful. In fact we have just booked two seats for a London theatre using the system."

"It was an incredible weekend. My wife and I thoroughly enjoyed the outing. Everything was perfect".

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**PLEASE USE THE ORDER FORM ON PAGE 57**

# John knows how to keep his customers happy

**SCOTSMAN** John Muller has turned his computer shop into a real *As Home with Atari* club. People who pay in with queries or wanting details about Atari machines and software end up sipping coffee served by one of his nine-strong staff.

And those who are really hooked on computers are even invited to join him on coach outings to see what's new in the computer world at exhibitions.

John, managing director of Warrington (Cheshire) All Computers, cannot stop thinking up novel ideas to keep his customers happy.

"When I had an Atari 800 XL a few years ago I just could not get any help with it. I realised there was a real gap in the market, so I set up my own shop. Now I have two branches and the Atari models have lots of enthusiasts", he said.

"To survive you have to be aware of the computer market, read magazines like the *Atari User* and visit trade and public shows to see how the public react."

"I found it expensive for a family to go down to London for an exhibition so I arranged to hire a coach to visit every show and have had no difficulty filling every seat with each customer just paying a share of the hire

price - which works out about £12 from here".

As well as a full repair service, John runs a customer request service. "Instead of them hunting about for new software - which generally is announced as being out but isn't - I do it for them and ring them when it is available", he said.

With the help of his manager, Robert Blackburn, he has now introduced an Atari Computer Club, held in the evenings in an adapted stockroom.

For £3 a year families are encouraged to learn new skills and discuss problems or ideas at the club sessions.

John and his wife, Kathryn, who does the accounts, believe keeping the customers happy and well served is a vital part of any business.



John Muller... software and coffee

## New releases

**NEW** business graphics software for the Atari 8 bit range has been released by **Perissoft**.

**BDGraph** is a presentation tool for sales, marketing, forecasting, accounting and management.

It can graph up to three factors with 100 data points each and convert instantly between graph types without re-entering data.

Statistical Analysis functions include standard deviation, variance, Chi square regression analysis and function plotting. The retail disc costs £29.95.

\*\*\*

**AM Atari 500** database that takes advantage of the Gem environment and works with a mouse has been released by **NuSoft**.

**Atari DB-Calc** is designed for customised reports, mailing labels, memberships, sales, stockists, office and personal records and financial statistics.

The database has an unlimited number of fields per

record, superfast sort and even faster search on a field, says **Robotek**.

It selects on any combination of fields, allows all printer control functions, and has a built-in text editor that integrates with mailmerge.

A calculator is built-in. Price £49.95.

\*\*\*

A **DATABASE** management system from **Haba Systems**, which is claimed to be intuitive, has been released for the Atari 520ST and 1040ST.

**Haba** is planning to introduce a new title for the ST every month. Next release will be **Haba Spelling Checker** designed to work with the company's word processor, **Halibut**.

Halibut costs £74.95.

\*\*\*

A **LEADING** budget games company has brought out a new label for its software aimed at

the Atari 8 bit range.

**Mastertrol** hopes this will increase its market share - currently 11 per cent - by as much as four per cent.

Announcing the new label - **Entertainment USA** - with two new games for the Atari 8 bit machines, **Bump** and **Spikes**, **Double Volley Ball** and **Vegas Poker**, a spokesman said: "Certainly over the next year we expect our market share to be in excess of 15 per cent and the Atari machines could be a significant factor in that increase".

The games each cost £1.99.

\*\*\*

**LATEST** Adventure released by **Level 9** for the Atari 8 bit range, is **Price of Magic**.

Object is to take over the red moon crystal ball and learn spells to control the enemy.

The game has two programs on a single cassette and costs £9.95.

## MERCENARY FOR THE ST

**AM Atari ST** version of the successful **Mercenary** - Escape from Targ game is due for release next from **Novagor**.

Out now is **The Second City**, a second data set for the **Mercenary** game, which uses the new game facility to provide a new scenario.

**Mercenary**, **The Second City** and a **Targ Survival Kit**, which includes maps and books, costs £24.95.

# Now's the time to link your Atari to the big wide world!



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## New ribbons for old

A NEW ribbon for old ribbons for Atari printers has been set up by Marlink. Used printer ribbon cartridges sent to the new Scottish company will be returned within a few days re-filled and ready again for use.

Atalink is offering the service at one third of its normal retail price, with a minimum of £1. The company suggests having two ribbons—one for use while the other is away being re-linked.

The service is available to anyone by posting a used cassette, together with a remittance equal to one third of the price originally paid for it, with a minimum of £1, stating the make and model of the printer.



TWO new compilers for the Atari ST have been brought out by ProFormat Software.

ProfFormat-17 can be used to compile programs transferred from main or mainframes and uses the existing library software.

It has 7 and 18 digit precision floating point, 4 byte integers

## Fortran, Pascal compilers

and full GEM, AOS and VDI bindings to take advantage of the GEM user interface.

ProfPascal is a complete ANSI 77083 ST standard Pascal compiler with extensions, including strings, 7 and 18 digit precision floating

point, separate compilation and 4-byte integers.

Turbo source code will port to the Atari with minor modifications.

Both costs £125 and comes with a 230 page manual. Neither is copy protected.

## ST's inside story

ROMA Software has published its first book for the Atari ST series - The Atari ST Explained.

Topics covered include GEM, TOS, the BIOS, ST Basic and so on. An in-depth coverage of 80000 assembly code is also included with details on system variables and operating system calls to the BIOS.

There are also chapters on how to configure the keyboard and using the RS232C interface to connect the ST to printers, electronic mail services and other computers.

Sales manager Jerry Day said: "It is written in very readable style, illustrated with diagrams and examples. For anyone wanting to learn about the capabilities of this advanced micro system, it is essential reading".

Price: £8.95.

## RACE GAME

A FAST action car racing game, Major Motion, has been released for the Atari ST by Microdeal. It will cost £19.95.

## Ataris are beach pavilion attraction

A SEASIDE cafe overlooking a magnificent view of Anglesey in North Wales is the unusual setting for Britain's newest and probably smallest computer club.

Retired amusement machine engineer, Harry Trew, 62 years young, set up the club, which uses two 80000s, in the beach pavilion and cafe at Llanfair-fach, near Gwynedd, a month ago.

"About five years ago I became interested in a computer, using it to do my cafe accounts. Now I have retired I thought it a good idea to encourage youngsters and given up to use the cafe as a base for swapping computer knowledge", said Harry.

"The nearest other club is at Colwyn Bay, about 15 miles away. We only have 18 members at present and about half turn up for the Saturday evening meeting".

Luckily two members are local computer experts who bring along their 80000s to help

the youngsters. Some are studying for A levels and use the machines for their homework.

After hearing about the little Welsh club Atari User contacted Community Computers UK, a division of InterAction Trust, established to help young people make better use of computers.

Molly Llewellyn, managing director of Inter-Action's computer projects, said: "After you told me about the little club we were only too happy to respond. Shortly we will have two handbooks out which will answer all their problems".

## LISP FOR ST

THE Lisp/ST system, a fast and compact version of standard Lisp, is now available for the Atari ST from Robinson Systems.

It provides a powerful environment for developing and running symbolic programs and includes multithreading support using GEM. Price: £99.95.

## Added to the menu..

MENU+ has been added to the Metacomco range of programming languages for the Atari ST.

It will now be offered along with the latest upgraded versions of Lattice C, Pascal and Assembly.

As a GEM-based command shell, Menu+ is a high specification programming environment using pull down menus and the mouse to control programs, avoiding complicated command lines.

Either single programs or batches can be run and users can add their own tools, arguments and options to the menus. It provides a history function of previous commands, allowing re-execution of commands at a double click and works with any program written for the ST.

Price: £19.95.

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Zero 64 Sept 1985

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Popular Computing Weekly

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Commodore User Oct 1985

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	1st ed.	2nd ed.	3rd ed.	4th ed.	Recommended Retail Price
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DECISION IN THE DESERT	●	●	●	●	Cassette, \$24.95 Disk, \$29.95
SILENT SERVICE	●	●	●	●	Cassette, \$24.95 Disk, \$29.95
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# Super simulation

**Program:** Silent Service  
**Price:** £19.95 (casualist)  
 £24.95 (hard)  
**Supplier:** Microgames,  
 Monaga Street, Brixtonham  
 DT1 4LZ. Tel: 021-850 0820

MICROGAMES, acknowledged experts in simulations, have another on release. Silent Service is a realistic American submarine simulation set in the South Pacific during World War II.

It offers three types of scenario - torpedobomber practice, convoy actions and war patrols.

Torpedo and gunnery practice gives you a swift and gentle way of familiarising yourself with the sub's controls.

Control of the sub's functions is handled by a mixture of joystick and keyboard inputs.

Although the list of more than 30 commands looks daunting at first sight, they have been well thought out and it is surprising how quickly you get to grips with them.

The simulation revolves around multiple battle station

sensors, all of which are graphically impressive.

The primary battle station is the conning tower. This basically acts like a detection menu, allowing you to gain access to other screens.

The periscope's black cross-hairs turn white when you locate a vessel, the torpedo-data computer is then automatically activated and target tracking displayed.

Data available includes target identification, range, speed and, for the benefit of really bright submariners, angle on bow and gyro angle.

While on the surface the bridge gives you a wide-angled view of nearby islands, the coastline and ships.

It also indicates current visibility, the bearing of your view and, like most of the other screens, the sub's heading, speed, depth and throttle position.

The maps and charts screen is something extra special. It combines geographic, sonar and radar information on a map and shows the location of your submarine (black blob), torpedoes and ship steering



strips (white blob).

And how brilliantly Microgames have implemented this feature. On call up you are presented with a superb map of the entire Western Pacific.

Even more impressive is what happens when you hit the zoom key - the map is replaced with a patrol map which shows the 500 by 300 mile area surrounding your position.

Zoom again and you'll get a navigation map 180 by 40 miles.

Hit zoom once more and there's the most detailed attack map, showing an area of just 8 by 5 miles with any ships shown as small tails indicating the direction in which they're moving.

You can reverse the whole

process by hitting the unzoom key. It's all quite stunning.

On top of all this there are a range of four skill levels which allow you to customise any situation (limited visibility, zig-zagging convoys, some dud torpedoes, expert destroyers).

All this adds up to one heck of a depth and width to the game play.

Silent Service has been brilliantly designed, immaculately implemented. Superb.

**Bob Chappell**

Sound	5
Graphics	5
Playability	5
Value	10
Overall	10

# Wheelie thrills

**Program:** Kix Start  
**Price:** £1.95  
**Supplier:** Mastertronics, 8-10  
 Paul Street, London EC2A  
 4AP. Tel: 07-327 6882

THE object of the game is to achieve the fastest time riding a motorcycle over three obstacle courses selected from a set of eight.

Obstacles include stationary vehicles, water, rough ground, walls and tyres, and each must be taken at an appropriate speed or you will crash, dropping to the bottom of the track and remaining at minimum speed to the end of the current obstacle.

Speed can be assessed from the changing sound of

your motor, and is controlled by digitalised movements of the joystick.

Wheelies are generated by pushing forward and you can jump by pressing the fire button. Pressing the Spacebar pauses the game. There is also a high score table.

My young team parcel, aged 7 and 8, took to it immediately and delighted in driving the motorcycles wildly, enjoying the animation of the bikes, the riders spinning off in crashes, the wheelies and the jumps.

They were enthralled and did not notice the slightly jerky horizontal scrolling.

Once the initial excitement died down the competitive element became apparent, and this is the game's real



strength.

Two players can race on identical tracks, one in the top half of the screen and the other below.

Overall the game is fun, competing and challenging and with eight different tracks it will take time to exhaust real masters.

Kix Start will provide entertainment for all computer

game fans except expert arcade addicts who might find it too easy.

What a pity it is not available on disc.

**Ian Fildes**

Sound	7
Graphics	5
Playability	5
Value	5
Overall	5

## Bit of a drag race

Program: *Action Bike*

Price: £7.99

Supplier: Westminster, 21-12  
Paul Street, London EC2A  
4AR. Tel: 07-337 6880

LOOKING at the graphics on the cassette tape I was quite impressed by this game. However after loading, the game's graphics were a tad let down.

It appears that this is yet another example of a software house showing screen shots from other versions on the cassette case.

*Action Bike* is based on the levitate character in the KP Skips advert, Clumsy Colin.

The screen is divided into two sections, the bottom part containing information regarding the last object picked up, score, fuel and so on and the top of the screen scrolls

around Clumsy Colin and his vehicle.

Although the graphics could not be said to be bad, they are not that good either. This seems to be the general level of the game - mediocrity.

The sound is one thing that is not mediocre. It is terrible. It includes a painfully grating tune which can thankfully be turned off.

You navigate Colin and his bike around the city which contains a fairground, a building site and a lake among other things. In search of items which will improve the performance of Clumsy Colin's main machine such as a gear box, leather gloves and a crash helmet.

After you have collected one item, another appears somewhere else. The position of these items becomes progressively more difficult to



reach until you have to reverse the roller coaster or some scaffolding to reach them.

Once you have collected all the objects you take part in a drag race. I have not progressed any further than this, not because of the game's difficulty, but because it has not impelled me to do so.

On the positive side the game is very cheap and younger players would probably enjoy it because of its comparatively low difficulty

level.

However hardened gamers will probably find that there is no real challenge and will quickly become disinterested.

I cannot really recommend this game and my advice would be to give Clumsy Colin as wide a berth as possible.

Mark Woodward

Sound	3
Graphics	3
Playability	4
Value	5
Overall	3

## Crash on regardless

Program: *Racing Destruction Set*

Price: £14.99 (plus post)

Supplier: Jodelsch, 68 Comp  
Ave, Carver, Buxton,  
Cheshire M20N 5UN. Tel:  
07-628 3477

RACING Destruction Set, is put it all its simplest, is available on a computer.

You drive a red vehicle along a dotted track in competition with a yellow vehicle controlled by the computer or another player.

The reduced screen is split horizontally with your view of the action in the top window, your opponent's (computer or human) in the lower.

The basic idea is to beat round the track (straight, bend, ramp, overpass) an appropriate number of times and finish ahead of your opponent.

The graphics are nothing extraordinary - simple but adequate about turns, speed, sound effects include

engine noises, crashes and slips.

You can change nearly all the parameters in the game.

The graphics can range from one sixth of Earth's so when you go over a ramp, you really fly, or 2½ times that of the Earth. There are no less than 14 settings to experiment with.

The number of laps can be anything from one to nine and there are four types of background scenery - road-track, motorcross, lake and stadium.

And there's more. You can choose your own car and opponent's vehicle from any of 10 different types - grand prix racer, bike buggie, dirt bike, lunar rover, stock car and jeep to name a few.

You can customise any basic vehicle with each/extra own set of engine sizes and tyre types. For destruction play you can also add up to five layers of armour, seven layers of crusher power (useful when



ramming the opponent), nine gallons of oil (for dropping oil) and, would you believe, four fatalities (Destruction is the right word!).

There is a choice of an incredible 80 differently laid-out tracks to race on. The names are evocative - litter, snake, jump and tiger, for example, are as tough as they sound. Many are modelled on famous racing tracks and motorcross courses.

You can also design your own tracks or modify existing ones using a large selection of places.

The facility is simple to use and any tracks designed can

be saved to disc.

Given all these features, the game is really something special. The graphics may be a little lacklustre but that's a small point when set beside the wealth of options.

There are thrills and spills galore and for sheer versatility the program is unbeatable. Pass me the shaggyard flag - Racing Destruction Set is a winner.

Bob Chappell

Sound	5
Graphics	5
Playability	5
Value	5
Overall	5

## Hit for a song

**Program:** *One Man and His Band*

**Price:** £7.99  
**Distributor:** Mastertronic, 2-12  
 Piccadilly Street, London W1A  
 4JA. Tel: 01-357 6880

THE aim here is to navigate a droid through underground caverns in search of a flock of sheep.

On loading the program I was greeted with a bright, lively tune better than most found in full-priced games.

To begin the game, prepare to start first guide your way through a herd of cyber-birds called Ramboids which seem to be a mixture of sea-birds, from PacMan and smiling yellow blobs with red cheeks.

At first this can't be added to the game, but after a while it becomes a time-consuming annoyance.

The point of the game is to move all the Ramboids into the

transport receptors in the 30 minutes allowed.

This may sound easy, but you also have to transport the Ramboids in a certain order so not only do you have to connect one particular Ramboid to the transporter but you also have to prevent any of the others from reaching it first.

The screen is split into sections containing data on the Ramboids, the droid's status, mode and a monitor of what is happening around your well-armed and detailed droid.

The droid has three operational modes which can be toggled via the fire button.

Each Ramboid has a set pattern of movement (for which Mastertronic has wisely called them stupid) and once memorised it makes your task of guiding them much easier.

Once you have rounded up all the Ramboids, with at least four in the correct order, you



progress to the next level. Your task in level 2 is made harder by a plague of mobile brick walls getting in the way. Level three has a more complicated layout to master.

Mastertronic has included several very nice touches - a password for each level, a facility to obtain the position of each Ramboid in the caverns, a well-presented high score table and optional keyboard control.

The game's difficulty level is just right to optimise playability and it has very nice

colour graphics, a delightful continuous tune and very professional sound effects.

After an indifferent start I have become involved and am now an addict, not being able to leave the game alone.

At £7.99 this is a great value game which will become a massive hit.

**Mark Woodward**

Sound	5
Graphics	5
Playability	5
Value	10
Overall	5

## Out of the Ark

**Program:** *New York City*

**Price:** £2.99  
**Distributor:** American Software, Parkway Industries  
 Detroit, Michigan 482  
 Birmingham 27 45C. Tel: 021-355 3555

THE idea in *New York City* is that as a tourist you must visit 12 locations within a certain time. Included on your itinerary are the Empire State Building, Central Park Zoo, the UN Building, World Trade Centre and Grand Taxis.

More practically, you must also pay a call to such places as the subway, city hall, bank and post office.

New York is shown on screen in the form of a large, scrolling map of the city. The graphics are very blocky and what you get are large chunks representing different buildings, interspersed with roads.

You begin by travelling around the city in a car. If you

run out of gas or collide with another vehicle in the fairly busy traffic your car is towed away to the garage for where storage charges begin mounting up.

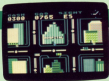
Getting the car back means paying bills for storage, gas and repairs.

On foot you are safe from the traffic while on the pavements and can even reach some of your destinations.

Provided they are open you can enter, whereupon the display will change to reveal the buildings' interior.

This is where the game is at its most disappointing. The interiors are graphically boring and all you get to do once inside is play a very simple and crude arcade game.

The most common one is to make your way to the top of a grid of platforms and ladders, grab the pole and exit the fun.



In the zoo the game consists of erecting fences around escaped animals (lions). At the bank, you dodge guards and bullets (atraz) while at the post office you must grab a letter and try to mail it (lions).

And really that's about all there is to it. You just keep wandering around streets and playing silly, unexciting arcade games for which you either earn or lose money. And keep doing this until your time is up.

Three or four years ago one could have said that this game

had some merit. Now, though, it looks as if it came out of the Ark. Dope graphics and a wider variety of challenges might have helped redeem it.

In a word, boring. My advice is to either save your money or look at some of the other offerings American Software have at this price.

**Rob Chappell**

Sound	4
Graphics	5
Playability	5
Value	5
Overall	5



THE computer revolution that swept through the West at the end of the '70s and the beginning of the '80s arrived in Poland, with a delay of about three or four years, in the shape of the Sinclair Spectrum.

At that time it was the unquestionable ruler of the Polish computer market — and it still occupies quite a respectable position. For over three years any other computers that were brought to Poland by people coming back from their visits to the West were scarce, and their unfortunate owners tried to get rid of them as soon as it was possible, mainly due to the lack of software.

Even such well-known brands as Commodore, Amstrad, Apple, not to mention our Atari, couldn't break through the curtain. One must be aware of the fact that a computer can only be useful if there are a certain amount of programs that can be used for both professional and entertainment purposes.

What good is a computer for which one could only get an odd few games and nothing else? Can it really serve one's purposes, or will it fairly soon degenerate into one more forgotten toy?

Poland does not supply its computer owners with any kind of software from the West. You can't just go into a shop and choose out of dozens of available programs. Even now the only way to obtain some really good and useful ones is to buy them from the computer clubs here, or to exchange the ones that you have for someone else's.

At the beginning of the '80s the situation was very much worse. Due to the fact that the Spectrum was the most widely used computer here, people planning to buy a micro in the West decided on the Spectrum. They knew that they would have no software problems whatsoever. And they were right.

It took them about three years to realize the serious limitations and inconveniences imposed by the Spectrum, and this was the beginning of the new period of computerization in Poland.

The change was swift. First Commodores, then Apple, the BBC Micro and other brands began to appear in Poland. There was never an official import of personal computers

# How Atari breached Poland's Electronic Curtain

into Poland. People brought them, however, from various countries and within months the Spectrum lost its monopolistic position. There were even a few earlier Atari products such as the 400 and 800XL.

But there was no one then who could predict which of all these brands would become a true leader in the field in Poland. Most people wanted something new that would shift the balance radically.

Then came rumors about the new release by Atari of the 800XL. Compared with the Commodore 64 it had better graphics and was to be

The chance occurred in August when I visited a second-hand shop at Northing Hill Gate and spotted a nice 800XL with a data recorder and three software items for only £73, which was almost half price then.

Without hesitation I took it back home to Cracow. It took me about a month to locate other Atari users. There were about 50 at the time and for the games I had bought, I received in exchange five others and became the proud owner of eight games altogether.

I played them, enjoyed them, and learned more and more about my

By **TADEUSZ MENERT**

more reliable. It had more memory than Sinclair's Spectrum and other products. One needn't buy an interface for printers, joysticks and so on.

Compared with the earlier Atari products it was more powerful and versatile, and it had fewer bugs in its version of Basic. Despite that, it was compatible with former Atari products, which meant that anybody deciding on buying it didn't have to wait months for interesting software.

But there was still a danger of buying something that wouldn't become popular here in Poland. Some took the risk, and I was one of them.

I was on holiday in England in 1985, and despite tight finances was positive about buying a computer.

Atari. Everything went its own standard way. And then came a real shock.

For the first time in history, Poland bought a batch of Western personal computers — about 500 Ataris plus a certain amount of data recorders, disc drives and long-awaited software.

Why Atari, and not Commodore or Amstrad? Well Jack Tramiel is, after all, of Polish origin, born in Warsaw (as far as I know). His Polish name was Jacek Tramiel.

One would think that the software and hardware problem in Poland was over now, and is consequently it was.

Things need, however, a little explanation. All this equipment was bought in by Paves, a firm that sells such goods in Poland for Western currencies. And that makes a great





# r train

difference. The computer plus 5010 data recorder was sold for about \$200, and one dollar (on the black market, of course, as there is no way of buying it legally) costs over \$500. This amounts to over 125000zl.

The most popular car in Poland, the Fiat 127e, costs here about 260000zl, if you still can't figure out how much it was, let me give you one more number. My monthly pay, as a teacher of English at the Jagiellonian University, is 12500zl. No comments. A Polish phenomena.

If, however, you think these Atari were long in the shops you are wrong. Within days they were gone. Peves immediately ordered further shipments of 800XLs, disc drives, joysticks, data recorders and rom cartridges. This time they got more than 5,000 computers.

Despite their high price, minis are desperately needed in Poland. They are so much in fashion here that youngsters sell what they can, beg from their parents, save money and buy them either in Peves or for our own currency at the so-called markets which are held in all the major towns in Poland.

The Polish government ended all restrictions when it came to individual export or import of personal computers, so there is no customs duty to pay.

This led to extensive import of Atari, which in turn lowered their price at these markets from over 180000zl to about 120-130000 for a computer with a data recorder. This

second lot of Peves-imported computers was also sold within days.

In the meantime there was such a huge demand for Atari software that even Peves couldn't cope. But the experiences of the former Spectrum users proved effective.

It took our Polish Atarians only a few weeks to organise a club. Although it does not act as an official Atari club, and does not provide membership cards, it serves an important role here being an informal association of all Polish Atari users.

Regular meetings are held four times a week in one of Cracow's cafeterias. One gains one's membership automatically when one buys an Atari computer, and there are no membership charges.

So Atari has become a leading computer brand in Poland. Of course there are regional differences, and in Lublin, for example, there are only about 80 Atari users, whereas there are over 3000 in Cracow, probably due to the location of the Atari club.

It is so strange that suddenly people who wouldn't even look at each other a few months ago now meet and talk as if they had been friends for years. Before the computer boom, I couldn't imagine myself talking about Basic, or about some mathematical formulas, with a complete stranger and what's more, one whose professional interests are utterly different from mine.

The gap between the scientific and humanistic minds is disappearing. I wouldn't like to suggest that we owe it all to Atari, although it's quite true in my case.

Most of my work can be done now much quicker and much more efficiently with the computer. Take translations. Before I bought my Atari I had to type and retype the translated text at least three times. Now Atariwriter does most of the work for me. The same applies to creating tests for my students and writing letters. I also never imagined that the adventure games I try to use during my English lessons would be so useful.

When a few years ago I read about the revolution in the field of computers and when I kept on seeing all these colourful advertisements of a great number of different brands of computers, I was afraid that we would be left far behind the

mainstream of modern technology and would occupy some inferior position because the gap between our societies helps the growth of the gap between our technologies.

Now I see we have somehow managed to get past this dangerous stage. We are still behind, that is beyond question, but we are moving, and this brings hope.

No one likes to be last. The urge to make up for lost time is so great that there is now not a single magazine, or even newspaper, that wouldn't publish something about computers.

There are even computer-dedicated TV programmes like Hala, Komputer and Spektrum, radio broadcasts of computer news, and programs transmitted on-air.

There are whole newspapers dealing only with hardware and software problems like Bajet, Komputer or Mikroświat. There are no magazines yet dedicated to a single computer, but who knows what will happen within a year?

Taking everything into consideration, the prospects for the Atari in Poland seem to look good, better than for any other computer here.

A lot depends on Atari themselves. Will they remain really reliable, and keep on supplying good programs? Much depends on Atari users, both here and abroad. The former must prove that their computers can do more than other machines. The latter, being far more experienced and having greater access to up-to-date information, could provide the Polish Atarians with their ideas and solutions to various problems.

I at last, am extremely grateful for all the letters and help I have received from Atari users from all over the world - mainly in England and the USA - with whom I got in touch.

When I needed them they were there, and that is what counts. We all do it for fun, for pleasure.

We deal with the so-called artificial intelligence. We operate the machines. How it is then that we still are human and friendly? Even more friendly and human than before we bought these unfriendly machines.

Best wishes to all of you! ■

■ Mr Menert would welcome correspondence from other Atari users. His address is: Tadeusz Menert, c/o Grzegorz Wrobel, at Skarbinkiego 10/21, 30-077 Krakow, Poland.

WE have already seen how to design a player and convert that design into bit-mapped code that the player missile system can recognise. The program this month illustrates how to initialise the system so that the player shape can be displayed on screen.

Before looking at how the program is constructed it is helpful to be clear about how the Atari keeps track of its memory. It stores information or data in memory locations, also known as addresses. In a 64k computer these are numbered from 0 to 65535.

If in direct mode you type, say, POKE 755,4 then you are storing the number 4 in memory location 755. The number that is stored must be within the range 0 to 255, and is measured as 1 byte of memory. A memory location cannot hold more than 1 byte.

Last month we saw the method of bit-mapping, in which a single number within the range of 0 to 255 can represent a pattern of eight pixels, or a binary number which consists of a combination of eight 1s and 0s. Using this method is one way of working in a binary number system without actually having to program in the binary 1s and 0s which can be very tedious indeed.

Each 1 or 0 occupies 1 bit of

# Hey Presto! Now things are taking shape on screen

## Part Three of STEPHEN WILLIAMSON's series on player missile graphics

memory — so in the player shape each pixel in the eight pixel row occupies one bit of memory and one row of pixels uses one byte. 256 bytes are known as one page and four pages equal 1k of memory — or 1024 bytes.

If like most of the population, you are used to decimalisation this may all sound like the old logical money system where 12 pence made one shilling, and 20 shillings made one pound. Don't worry, it is not vital to follow the reasoning behind the Atari's memory number system, but it

is important to remember that eight bits equal one byte, 256 bytes equal one page and four pages equal one k (1024 bytes).

Part of the Atari's memory is allocated to ROM (Read Only Memory) which contains the Basic interpreter and the operating system. Other areas of memory are known as RAM (Random Access Memory) and it is the RAM addresses where Basic programs are stored.

The first thing that is required when initialising the player missile system is the reservation of an area of RAM that is not needed by our Basic program, and where the bit-mapped data that represents the player and missile shapes can be stored.

In the case of single resolution players this must be a 2k section, and 1k for double resolution. The player missile system must then be informed where this area is so that it can be displayed on the TV screen by means of the GTIA chip. This method of taking information directly from RAM is known as Direct Memory Access, or DMA for short.

The start of this storage area is called the player missile base, or PMBASE for short. In theory we could reserve a 2k or 1k memory area in one of several places within RAM, but in practice it is usually allocated somewhere near the top to avoid clashing with Basic programs that are stored lower in RAM.

To find out where the top of RAM is on your Atari, type PRINT PEEK(1024) and press Return. If you own an

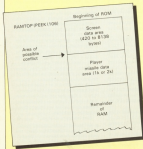


Figure 1: Memory map of RAM with player data area reserved

Graphics Mode	Approximate size in bytes	Number of pages for PMBASE Single res	Below RAMTOP Double res
0	992	16	8
1	872	18	8
2	400	18	8
3	400	18	8
4	888	18	12
5	1576	18	16
6	2184	24	24
7	4000	40	36
8	8128	40	36
9	8128	40	36
10	8128	40	36
11	8128	40	36
12	1184	18	8
13	688	24	24
14	4288	40	36
15	8128	40	36

Figure 3: Where do you put the player missile data area in order to avoid conflicting with screen memory area

8000h, you will see the number 160 on the screen. This will be different on models with less RAM, such as the 8000L.

The number 160 is the end of RAM expressed in pages. Immediately above this address is the start of the ROM area where the Atari Basic interpreter resides. The page number found in location 106 is known as RAMTOP, for obvious reasons.

If RAMTOP is 160 its address is 40960 bytes above the bottom of memory -  $256 \times 160$  pages. This is 40960. Remember that the Atari counts from 0, and not from 1 as humans tend to do.

The player missile data area must obviously be placed somewhere below RAMTOP. There are two factors that decide just how near RAMTOP we can go. The first is that single resolution data must start on a 2k boundary. This means that PMBASE must begin at 8 pages or 16, 24, 32 and so on below RAMTOP - eight pages being 2k.

For double resolution players we need a 1k or 2k boundary - 4, 8, 12, 16 and so on pages below RAMTOP. Why the system demands a 1k or 2k boundary I am not sure but Arctic has its own rules and we have to stick to them.

The other restriction is to make sure that the top of the player missile

data area does not conflict with the screen memory area which is also stored at the top of RAM.

Figure 1 is a memory map of the top of RAM when the player missile data

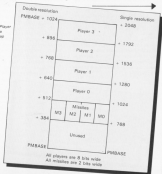
area has been reserved, and shows the possible conflict that may occur with the screen area if the player missile data area has been allocated too near the screen.

You can generally tell when a conflict has occurred. Strange combinations of numbers and letters mixed in with graphic symbols are seen on test screens, and odd mixtures of colours and shapes show up on graphic screens. This phenomenon is known as garbage.

Because no graphics screen occupies more than 8128 bytes - just under 8k - we could always store the player missile data area starting at 40 pages below RAMTOP. This is 10k under RAMTOP and would bring the player missile data storage area just below the beginning of the screen memory where there is no danger of conflict.

If memory is at a premium - which is especially the case with the 8008L - this can be a problem. For example, if you are using a Graphics Mode 0 screen which only occupies 992 bytes then you have effectively barred an area of about 7k that lies between the beginning of screen memory and

Figure 6: Player missile data memory map



the end of player missile data, which does not leave much RAM left for Basic.

If you want to conserve memory refer to Figure 8 which is a table of how far below RAMTOP the PMBASE need be to avoid conflicting with the different graphics modes.

In the demonstration program we are using Graphics Mode 0 which, from Figure 8, we see needs a PMBASE of 18 pages below RAMTOP in order to conserve memory, avoid conflict with the screen and still leave room for over 30k of Basic programs (on an Atari 800XL, or around 11k on a 800XL). Line 90 performs this calculation and gives the PMBASE address to the variable PBM.

It is possible to move the screen memory to a different position in RAM somewhere below the player missile data area and allow the player missile area to be closer to RAMTOP. Most Basic programs do not require this, so it is good practice to stick to the first system to avoid conflict.

The player missile system must now be informed of where the PMBASE is. Line 700 does this by storing PBM in address 54279. Location 54279 is the place where Arnic goes to find out where PMBASE is.

The 2k single resolution or 1k double resolution area is divided up into the specific data storage areas for each player and missile. Figure 9 is a map of how this area is allocated. All addresses in Figure 9 are relative to PMBASE.

Player/Missile 0	104
Player/Missile 1	706
Player/Missile 2	108
Player/Missile 3	707
Player/Missile 3	108
Playfield 0	709
Playfield 1	710
Playfield 2	711
Playfield 3	712
Background/Border	
Missiles normally take the colour of the corresponding player	

Figure 9: Colour and brightness registers

In the program we are displaying a Player 0 shape whose storage area begins at PMBASE plus 1004 and ends at PMBASE plus 1278, a total of 285 bytes. The data for the Player 0 shape must be stored somewhere within this area.

You will notice from Figure 9 that the first 768 bytes - or 384 bytes in double resolution mode - of the player missile data area are unused by the system. I have no idea why - Arnic works in mysterious ways.

These free bytes can be handy for short machine code routines that can be used to animate players. As long as the system has been initialised correctly the data stored in this free area is protected from corruption. I will show how this unused space can be put to advantage next month when discussing animation.

The program only deals with Player 0, but setting up the other players is done in exactly the same

way as long as you use the appropriate registers.

It is good practice to clear the player missile area of any garbage that may have accumulated there, otherwise unwanted pixels may light up on the screen. Line 90 clears the Player 0 data area with a loop which takes in zeros.

Once the area has been cleared we can start to load the bit-mapped numbers that correspond to our shape into the Player 0 data area. How far into the player data area we put the data determines the vertical position within the player shape when the player is displayed on the screen.

If the data is loaded from the beginning of the data area - in other words PMBASE plus 1004 - then the shape will appear at the top of the screen.

Line 100 loads the Player 0 shape data commencing 140 bytes beyond the start of the Player 0 data area so that the player will appear 140 pixels down the player shape, or part way down the TV screen.

This program leaves room for a 30 row player. As we are only using an 11 row design the rest of the DATA statement in line 170 is filled with zeros.

If you have designed your own

for playfield (switches off)	0
screen display	1
background playfield	2
gradient playfield	3
white playfield	4
enable missiles	5
enable players	16
single resolution	
enable DMA switch on	32
screen display	34
Default value if no options are	
inverted playfield, enable DMA and	
use line double resolution	

Figure 10: Location 559 DMA Control Register

Black	0
Red	16
Red-Orange	32
Orange	48
Dark Lavender	64
Coldest Blue	80
Ultramarine	96
Medium Blue	112
Dark Blue	128
Blue-Gray	144
Olive-Green	160
Medium Green	176
Dark Green	192
Orange Green	208
Orange	224
Yellow	240

Brightness range 0 to 14 (even values only). Add brightness value to colour value. 0 is darkest shade, 14 is brightest

Figure 11: Colour values to change colour registers

Player 0 63246  
 Player 1 63248  
 Player 2 63250  
 Player 3 63252  
 Missile 0 63253  
 Missile 1 63254  
 Missile 2 63255  
 Missile 3 63256

A value of 48 in these registers puts the player at the left hand edge of the screen and 208 puts the player on the right hand edge.

These values may vary slightly depending on how your TV is calibrated.

Figure VI: Horizontal registers

player, either using graph paper as detailed last month or by means of the Player Designer program, you might like to alter the program and substitute your own bit-mapped numbers in line 130.

In line 110 various options associated with the player missile system are switched on by poking address 559. Figure IV is a list of options available. To decide what number to poke simply add up the option values.

In the program I have set up a standard playfield (3) with enable missile (4), enable player (6), single line resolution (16) and enable DMA (32) — a total of 60.

Notice that it is possible to have a narrow playfield, as well as a wide playfield. To see how this works type in: PORE 559.20 — narrow playfield plus enable DMA.

Note that the text in a peculiar position as the screen editor does not automatically adjust for the narrow screen. PORE 559.35 gives a wide screen playfield. PORE 559.34 returns to a standard playfield.

PORE 559.0 turns off all options, including the screen display. When this happens CTIA stops displaying the screen, and the operating system can now process data approximately 30 per cent quicker. This option is useful if you are using a Basic program that is doing a lot of calculating.

PORE 559.0 lets the program get on with its calculations at increased speed while you twiddle your thumbs and wait for the thing to finish. PORE

559.34 switches the screen back on, to hopefully display the correct answer to whatever task you have set the computer.

Even though the demonstration program does not use missiles I have included the enable missile option. It is not strictly necessary, but it does no harm. The program is designed to represent a standard player missile initialisation, adaptable to many other situations where you need to set up the system.

Line 120 sets the colour of the player. The memory locations associated with player missile graphics are often called registers. Figure V is a list of the colour registers, and the values that can be poked into them are listed in Figure VI.

In line 120 the colour chosen has a value of 204 which is made up of medium green (152) plus a brightness level of 12. This number is then poked into location 704, the colour register for Player 0.

Line 130 sets the horizontal position of the Player 0 stripe to 140 so that the player will appear near the centre of the screen. Try altering line 130 to a different value — between 0 and 255 — and see what happens.

Figure VII gives the horizontal registers for the other players and missiles. It is important to set the horizontal registers. If not set, the register value defaults to 0, which means that the player stripe is so far to the left as to be actually off screen.

Now all that is required is to know the switch that turns on the player missile graphics. This is done in line 140 by PORE 532.77.3. Voila — the bug appears.

Three options are available with register 532.77. A value of 1 turns on the missiles only, 2 turns on the players and 3 turns on both players and missiles. Again it is unnecessary to turn on the missiles if they are not wanted, but I do so as a matter of course.

In this program no data has been loaded into the missile data area, so no missiles will appear, and even if some stray bytes of information have crept in, because the horizontal positions are still at 0 — their default setting — they will still not appear and spoil the look of the display.

As mentioned before the purpose of the demonstration program is to show how to perform a fairly standard initialisation operation for the player missile system.

Setting up the system can be a little tricky — forgetting to set one register, or putting the shape data into the wrong area can stop the system working properly.

Perhaps the best means of finding your way around the initialisation process is to experiment with the program, changing it and adapting it to set up a different player, with a different shape, colour and position on screen.

Try displaying more than one player at a time, or switch on a double resolution player. Trial and error methods often work wonders.

■ You will note that the bug does not actually do anything in the program. It is pretty useless, just sitting there playing dead. Next month I will breathe life into it by means of animation.

```

10 REM *****
20 REM *****
30 REM *****
40 REM *****
50 REM *****
60 REM *****
70 REM *****
80 REM *****
90 REM *****
100 REM *****
110 REM *****
120 REM *****
130 REM *****
140 REM *****
150 REM *****
160 REM *****
170 REM *****
180 REM *****
190 REM *****
200 REM *****
210 REM *****
220 REM *****
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```



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910 REM *****
920 REM *****
930 REM *****
940 REM *****
950 REM *****
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980 REM *****
990 REM *****
1000 REM *****

```

# American \$cene

EDWARD SHARK reports

THE Sunshine State is the source of new software this month. Florida is the home of Disneyworld, Miami Vice, the Everglades and Scott Adams of *Adventure International*.

Scott is about to release his first title for the Atari ST in the form of *Spiderman*. I am not the greatest fan of *Adventure International*, as I don't think they have really advanced in the field of software design.



Apart from the scrolling graphics controlled by the mouse, *Spiderman* does not look that much different from the 8 bit version.

I wouldn't pay money for this title. Although it works in both mono and colour, the mono hi-res mode is very disappointing.

For lovers of Print Shop on the XL/XE, Union have produced a very similar program on the ST called *Printmaster*, which will design letterheads, banners and signs.

You can print in a range of font styles, and there are a large number of pictures which can be incorporated into your design. You may also design your own pictures and store them on a data disc. At \$29.95 this is a very useful package indeed.



Moving back to Print Shop, news of a new data disc has just arrived, although no other details are available apart from the price, which is \$9.95.

Microprose Software has released a war game simulation for the ST called *Conflict in Vietnam* as part of their new command series. This simulation gives you the option of taking charge of either the free world or the communist forces.

Activision have finally released the long-awaited *Muscle Shuttle*, but you will need a colour monitor to run it.

The package contains a music paint-box where you may doodle with notes and experiment with different compositions. The program can drive the Midi interface which will allow you to connect your synthesiser to the ST.

When you have completed the composition you can even add lyrics and save the lot to disc. This application could be ideal for educational purposes. Activision UK should have it ready soon and it will only cost you \$49.95.

It is a joy to see that it is not only American software that is being distributed in the States, the Brits have landed as well.

Software written in the UK is making a significant impression on the market. Laser Software International have managed to score heavily with *Laserbase*, and *Mastertronics* and *Freelink* are doing well.



Because the ST is a relative newcomer we do not often see the real top end business applications programs. However, *Abacus of Michigan* has written a very powerful electronics design tool, *PC Board Designer*, a true CAD program.

Enter your design parameters and the computer will modify them for you. You may position components by using the mouse and move them around to make them fit into the best position.

The most powerful feature of the program is the tracing aspect, where the computer will draw the tracks of a job very accurately.

At \$339.95, it is not a program that everyone will clamor for, but it sure will be an advance for the ST.

I received an interesting call from Chicago this morning from a company new to the Atari scene, Mark Williams Co. They have been producing software for the Macintosh and have now turned to its rival, the ST.

They have two titles ready for

release. The first is a C compiler prepared to be the best thing since salad and rye, and they will also be marketing a new language called *Cohesent*.

Not much is known about these titles but I should have more details next month.

Action Software Supplies, a new distributor of ST software in the UK, has negotiated a deal with a number of small software houses in the States to import products which would not normally be seen over here.



The programs range from games to specialist business applications. Details are scarce at present but news should break soon.

A metamorphosis has taken place with two titles from the 8 bit stable *Joust* and *Battletoads* have been converted to run on the \$29/1049.

Atari is the culprit, but I am very happy to see my favourite game *Joust* on the new machines.

The game play is similar to that on the old machines, and the enjoyment is as it was when I first learned these programs from my 810 disc drive. The prices are reported to be \$39.95 each.



On the 8 bit front *Beach Head 2* from Access should be winging its way across the ocean soon, and it won't be long before *US Gold* has a cheaper UK version available. This is no different from the version that was released for the Commodore 64 and Sinclair Spectrum over a year ago.

My advice would be to wait for the US Gold version rather than pay about £35 for the imported one.

Some new titles to look for are *Hi-Vision* by Activision, *Rogue* from Epic and *Universe II* from Dreamland. More details next month.

# SPACE MAZE

THIS month's game takes us once more into the realms of outer space. Your task is to pilot a small one-man spaceship around the hazards of an alien planet.

There are four stages, each a little harder than the previous one. First manoeuvre your ship between the rocky outcrops into the cavern below.

You may consider collecting some fuel as you go – you'll certainly need it later!

Next you must navigate the tunnels – but don't hit anything – down to the next level. Again, don't forget that vital re-fuelling point.

In the third level you have to steer your way around the asteroids and down to the fuel point. But where do you go from there? There is only one exit, and only one way to it...

The fourth level is the hardest of all, and we're not giving you any hints.

Controlling your ship is simple. Push left or right on the joystick to steer, and forward to use your main engines to go up.

You can give a quick burst on the main engines to stop moving left or right, and gravity will always pull you down if you don't do anything else.

The game is written in Basic, with a machine code routine to move the spaceship player vertically. The screens are drawn, using a redefined character set, in Auto Mode 8, which allows for all



By STEVEN DAVIES

the colours required.

Make sure that you type all of the numbers in any DATA statements exactly as printed, or you may crash your machine and have to start again. Always ensure you have saved a copy before trying to run it.

Be especially careful when typing in the statements in lines 1370 to 2330. Make sure you get the right number of spaces so that the ends of the lines in each of the four blocks match up with each other.

We have printed these lines slightly wider than normal to help you to see the spacing better, but

don't forget that they will overlap on to TWO screen lines on your TV set.

You will find de-bugging much simpler if you can run a printout in 80 column format to see the whole line at once. If you don't have a printer, try typing POKE 82,0 to set the left screen margin to zero, thus showing you two more characters per line than normal. (This is a good tip for typing in those "long" lines in programs which just don't seem to fit.)

The checksum will always let you know if you have made any mistakes.

```

1 0000 *****
2 0000 *****
3 0000 *****
4 0000 *****
5 0000 *****
6 0000 *****
7 0000 *****
8 0000 *****
9 0000 *****
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11 0000 *****
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99 0000 *****
100 0000 *****

```

[illegible][illegible]





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Architect III	1.00	10.00		Baseball II	1.00	11.00		Architect III	1.00	10.00		Architect III	1.00	10.00	
Architect IV	1.00	10.00		Baseball III	1.00	11.00		Architect IV	1.00	10.00		Architect IV	1.00	10.00	
Architect V	1.00	10.00		Baseball IV	1.00	11.00		Architect V	1.00	10.00		Architect V	1.00	10.00	
Architect VI	1.00	10.00		Baseball V	1.00	11.00		Architect VI	1.00	10.00		Architect VI	1.00	10.00	
Architect VII	1.00	10.00		Baseball VI	1.00	11.00		Architect VII	1.00	10.00		Architect VII	1.00	10.00	
Architect VIII	1.00	10.00		Baseball VII	1.00	11.00		Architect VIII	1.00	10.00		Architect VIII	1.00	10.00	
Architect IX	1.00	10.00		Baseball VIII	1.00	11.00		Architect IX	1.00	10.00		Architect IX	1.00	10.00	
Architect X	1.00	10.00		Baseball IX	1.00	11.00		Architect X	1.00	10.00		Architect X	1.00	10.00	
Architect XI	1.00	10.00		Baseball X	1.00	11.00		Architect XI	1.00	10.00		Architect XI	1.00	10.00	
Architect XII	1.00	10.00		Baseball XI	1.00	11.00		Architect XII	1.00	10.00		Architect XII	1.00	10.00	
Architect XIII	1.00	10.00		Baseball XII	1.00	11.00		Architect XIII	1.00	10.00		Architect XIII	1.00	10.00	
Architect XIV	1.00	10.00		Baseball XIII	1.00	11.00		Architect XIV	1.00	10.00		Architect XIV	1.00	10.00	
Architect XV	1.00	10.00		Baseball XIV	1.00	11.00		Architect XV	1.00	10.00		Architect XV	1.00	10.00	
Architect XVI	1.00	10.00		Baseball XV	1.00	11.00		Architect XVI	1.00	10.00		Architect XVI	1.00	10.00	
Architect XVII	1.00	10.00		Baseball XVI	1.00	11.00		Architect XVII	1.00	10.00		Architect XVII	1.00	10.00	
Architect XVIII	1.00	10.00		Baseball XVII	1.00	11.00		Architect XVIII	1.00	10.00		Architect XVIII	1.00	10.00	
Architect XIX	1.00	10.00		Baseball XVIII	1.00	11.00		Architect XIX	1.00	10.00		Architect XIX	1.00	10.00	
Architect XX	1.00	10.00		Baseball XIX	1.00	11.00		Architect XX	1.00	10.00		Architect XX	1.00	10.00	
Architect XXI	1.00	10.00		Baseball XX	1.00	11.00		Architect XXI	1.00	10.00		Architect XXI	1.00	10.00	
Architect XXII	1.00	10.00		Baseball XXI	1.00	11.00		Architect XXII	1.00	10.00		Architect XXII	1.00	10.00	
Architect XXIII	1.00	10.00		Baseball XXII	1.00	11.00		Architect XXIII	1.00	10.00		Architect XXIII	1.00	10.00	
Architect XXIV	1.00	10.00		Baseball XXIII	1.00	11.00		Architect XXIV	1.00	10.00		Architect XXIV	1.00	10.00	
Architect XXV	1.00	10.00		Baseball XXIV	1.00	11.00		Architect XXV	1.00	10.00		Architect XXV	1.00	10.00	
Architect XXVI	1.00	10.00		Baseball XXV	1.00	11.00		Architect XXVI	1.00	10.00		Architect XXVI	1.00	10.00	
Architect XXVII	1.00	10.00		Baseball XXVI	1.00	11.00		Architect XXVII	1.00	10.00		Architect XXVII	1.00	10.00	
Architect XXVIII	1.00	10.00		Baseball XXVII	1.00	11.00		Architect XXVIII	1.00	10.00		Architect XXVIII	1.00	10.00	
Architect XXIX	1.00	10.00		Baseball XXVIII	1.00	11.00		Architect XXIX	1.00	10.00		Architect XXIX	1.00	10.00	
Architect XXX	1.00	10.00		Baseball XXIX	1.00	11.00		Architect XXX	1.00	10.00		Architect XXX	1.00	10.00	
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Architect XXXII	1.00	10.00		Baseball XXXI	1.00	11.00		Architect XXXII	1.00	10.00		Architect XXXII	1.00	10.00	
Architect XXXIII	1.00	10.00		Baseball XXXII	1.00	11.00		Architect XXXIII	1.00	10.00		Architect XXXIII	1.00	10.00	
Architect XXXIV	1.00	10.00		Baseball XXXIII	1.00	11.00		Architect XXXIV	1.00	10.00		Architect XXXIV	1.00	10.00	
Architect XXXV	1.00	10.00		Baseball XXXIV	1.00	11.00		Architect XXXV	1.00	10.00		Architect XXXV	1.00	10.00	
Architect XXXVI	1.00	10.00		Baseball XXXV	1.00	11.00		Architect XXXVI	1.00	10.00		Architect XXXVI	1.00	10.00	
Architect XXXVII	1.00	10.00		Baseball XXXVI	1.00	11.00		Architect XXXVII	1.00	10.00		Architect XXXVII	1.00	10.00	
Architect XXXVIII	1.00	10.00		Baseball XXXVII	1.00	11.00		Architect XXXVIII	1.00	10.00		Architect XXXVIII	1.00	10.00	
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Architect XL	1.00	10.00		Baseball XXXIX	1.00	11.00		Architect XL	1.00	10.00		Architect XL	1.00	10.00	
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Architect XLII	1.00	10.00		Baseball XLI	1.00	11.00		Architect XLII	1.00	10.00		Architect XLII	1.00	10.00	
Architect XLIII	1.00	10.00		Baseball XLII	1.00	11.00		Architect XLIII	1.00	10.00		Architect XLIII	1.00	10.00	
Architect XLIV	1.00	10.00		Baseball XLIII	1.00	11.00		Architect XLIV	1.00	10.00		Architect XLIV	1.00	10.00	
Architect XLV	1.00	10.00		Baseball XLIV	1.00	11.00		Architect XLV	1.00	10.00		Architect XLV	1.00	10.00	
Architect XLVI	1.00	10.00		Baseball XLV	1.00	11.00		Architect XLVI	1.00	10.00		Architect XLVI	1.00	10.00	
Architect XLVII	1.00	10.00		Baseball XLVI	1.00	11.00		Architect XLVII	1.00	10.00		Architect XLVII	1.00	10.00	
Architect XLVIII	1.00	10.00		Baseball XLVII	1.00	11.00		Architect XLVIII	1.00	10.00		Architect XLVIII	1.00	10.00	
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Architect LI	1.00	10.00		Baseball L	1.00	11.00		Architect LI	1.00	10.00		Architect LI	1.00	10.00	
Architect LII	1.00	10.00		Baseball LI	1.00	11.00		Architect LII	1.00	10.00		Architect LII	1.00	10.00	
Architect LIII	1.00	10.00		Baseball LII	1.00	11.00		Architect LIII	1.00	10.00		Architect LIII	1.00	10.00	
Architect LIV	1.00	10.00		Baseball LIII	1.00	11.00		Architect LIV	1.00	10.00		Architect LIV	1.00	10.00	
Architect LV	1.00	10.00		Baseball LIV	1.00	11.00		Architect LV	1.00	10.00		Architect LV	1.00	10.00	
Architect LVI	1.00	10.00		Baseball LV	1.00	11.00		Architect LVI	1.00	10.00		Architect LVI	1.00	10.00	
Architect LVII	1.00	10.00		Baseball LVI	1.00	11.00		Architect LVII	1.00	10.00		Architect LVII	1.00	10.00	
Architect LVIII	1.00	10.00		Baseball LVII	1.00	11.00		Architect LVIII	1.00	10.00		Architect LVIII	1.00	10.00	
Architect LVIX	1.00	10.00		Baseball LVIII	1.00	11.00		Architect LVIX	1.00	10.00		Architect LVIX	1.00	10.00	
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Architect LXVII	1.00	10.00		Baseball LXVI	1.00	11.00		Architect LXVII	1.00	10.00		Architect LXVII	1.00	10.00	
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Architect LXIX	1.00	10.00		Baseball LXVIII	1.00	11.00		Architect LXIX	1.00	10.00		Architect LXIX	1.00	10.00	
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Architect LXXIV	1.00	10.00		Baseball LXXIII	1.00	11.00		Architect LXXIV	1.00	10.00		Architect LXXIV	1.00	10.00	
Architect LXXV	1.00	10.00		Baseball LXXIV	1.00	11.00		Architect LXXV	1.00	10.00		Architect LXXV	1.00	10.00	
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Architect LXXVII	1.00	10.00		Baseball LXXVI	1.00	11.00		Architect LXXVII	1.00	10.00		Architect LXXVII	1.00	10.00	
Architect LXXVIII	1.00	10.00		Baseball LXXVII	1.00	11.00		Architect LXXVIII	1.00	10.00		Architect LXXVIII	1.00	10.00	
Architect LXXIX	1.00	10.00		Baseball LXXVIII	1.00	11.00		Architect LXXIX	1.00	10.00		Architect LXXIX	1.00	10.00	
Architect LXXX	1.00	10.00		Baseball LXXIX	1.00	11.00		Architect LXXX	1.00	10.00		Architect LXXX	1.00	10.00	
Architect LXXXI	1.00	10.00		Baseball LXXX	1.00	11.00		Architect LXXXI	1.00	10.00		Architect LXXXI	1.00	10.00	
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Architect LXXXIV	1.00	10.00		Baseball LXXXIII	1.00	11.00		Architect LXXXIV	1.00	10.00		Architect LXXXIV	1.00	10.00	
Architect LXXXV	1.00	10.00		Baseball LXXXIV	1.00	11.00		Architect LXXXV	1.00	10.00		Architect LXXXV	1.00	10.00	
Architect LXXXVI	1.00	10.00		Baseball LXXXV	1.00	11.00		Architect LXXXVI	1.00	10.00		Architect LXXXVI	1.00	10.00	
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Architect LXXXVIII	1.00	10.00		Baseball LXXXVII	1.00	11.00		Architect LXXXVIII	1.00	10.00		Architect LXXXVIII	1.00	10.00	
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Architect LXXXXII	1.00	10.00		Baseball LXXXXI	1.00	11.00		Architect LXXXXII	1.00	10.00		Architect LXXXXII	1.00	10.00	
Architect LXXXXIII	1.00	10.00		Baseball LXXXXII	1.00	11.00		Architect LXXXXIII	1.00	10.00		Architect LXXXXIII	1.00	10.00	
Architect LXXXXIV	1.00	10.00		Baseball LXXXXIII											

LET'S look at how to get useful signals out of the joystick ports and how to amplify them so that they can switch external appliances on and off under software control.

With the power switch described you can make animated models, control a train set, drive low-voltage disco lights or operate equipment designed for use in cars, cranes or boats.

The switching action can be controlled directly by your software, manually from the keyboard or by an external sensor such as the light-activated switch described last month.

First let's look in detail at setting up the joystick ports. Each one has four signal lines — pins 1 to 4 — which can be made to behave as outputs by Program 1.

Line 10 notifies the computer that you are about to change the way pins 1 and 2 are handled, line 20 specifies that all eight signal lines are to be treated as outputs and line 30 sets 54016 back to its original value, with the new rules operational.

Line 40 clears the switch register, making sure all the signal lines are off. From then on, any number you poke into 54016 will appear as a pattern of high — on — and low — off — voltages on the output pins of ports 1 and 2.

Table 1 shows the numbers to poke for all possible on/off combinations at port 1. Each line has its own unique number — 1, 2, 4 or 8 — and by adding these numbers together in different combinations you can control each output independently.

Numbers higher than 15 will bring port 2 into operation. Pins 1, 2, 3 and 4 in this port are controlled by 16, 32, 64 and 128 respectively, as shown in Table 2, and these numbers can be combined as before.

For example: POKE 54016,195 — or  $1+2+64+128$  — will switch on pins 1 and 2 at port 1 together with pins 3 and 4 at port 2. Similarly POKE 54016,155 — or  $2+4+16+128$  — will switch on pins 2 and 3 at port 1 and pins 1 and 4 at port 2.

Any pin which is not specifically

selected will automatically switch off when you poke a new number into 54016.

When a pin is on it carries 5V, and will supply 0.5mA. When it goes off the voltage drops to 0V, but it can pass 15mA in this state.

You can't do much with such tiny signals, and in any case it isn't wise to connect loads directly to the joystick port. But both of these problems can be overcome by using a transistor.

There are many different species of transistor, but for the moment we'll concentrate on the bipolar kind, which come in two varieties — PNP and NPN. Figure 1 shows the circuit symbols for both, together with the pin-outs for the two types; we'll be using:

Both types have three leads — collector, base and emitter. In each case a small current flowing through the base will enable a much larger current to pass between collector and emitter.

The current can flow only one way — from positive to negative in the direction of the arrow — so it doesn't behave exactly like a switch, but the effect is similar.

A PNP transistor turns on when its base voltage is at least 0.6V lower

than its emitter voltage, whereas the NPN variety needs the base to be at least 0.6V higher than its emitter.

Actually it's a lot more complicated than that, but we don't want to get into transistor theory at this stage.

Figure 2 shows how you can use an NPN transistor as a simple current amplifying switch. The load is a light-emitting diode — those small red

# Get switched on!

Part 2  
of LEN  
GOLDING's  
series on

controlling  
gadgets via  
your Atari

Number in 54016	Port 1			
	Pin 1	Pin 2	Pin 3	Pin 4
0	Off	Off	Off	Off
1	On	Off	Off	Off
2	Off	On	Off	Off
3	On	On	Off	Off
4	Off	Off	On	Off
5	On	Off	On	Off
6	Off	On	On	Off
7	On	On	On	Off
8	Off	Off	Off	On
9	On	Off	Off	On
10	Off	On	Off	On
11	On	On	Off	On
12	Off	Off	On	On
13	On	Off	On	On
14	Off	On	On	On
15	On	On	On	On

Table 1: Output switching

Pin number	Port 1				Port 2			
	1	2	3	4	1	2	3	4
Control numbers	1	2	4	8	16	32	64	128

Table 2: Switch control numbers

10 POKE 54016,16383 Set up Port Control  
20 POKE 54016,32768 All Pins as Outputs  
30 POKE 54016,65536 Re-set Port Control  
40 POKE 54016,0 Switch all signal lines off

lamps on your keyboard, cassette recorder and disc drive are LEDs – and its only purpose is to indicate on or off.

When pin 1 goes to 5V the transistor switches on, allowing current to flow through the LED. Nearly all the power comes from pin 2 – less than half a millamp is required at pin 1 – and the transistor acts as a kind of buffer, protecting the signal line.

Because they are so small, transistors and LEDs can be very fiddly to wire together, especially if you're not too happy about soldering.

The easiest solution is to use a solderless breadboard, like the one in the photograph. Each hole contains a spring-loaded electrical contact which can grip a wire or a component lead.

The contacts are connected together in rows of five, and there are longer strips of interconnected sockets at the edges, for use as power supply lines. You simply plug components into the breadboard and take wire leads from the adjacent holes.

Screw the breadboard on to your plywood base, and wire everything together as in Figure 11. Use single-conductor insulated wire – not the stranded type – as the bare ends will push into the breadboard holes more easily and you won't get broken strands coming off inside.

The LED won't work if it is fitted the wrong way round – the cathode is

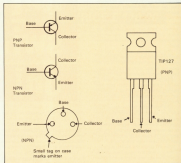


Figure 1: Circuit symbols and pin-outs

indicated by a flat on the LED body, and also by a shorter lead. Run Program 1, then type:

POKE 54016,1

and the LED will light.

Atter's technical reference notes specify a maximum current drain of

50mA from the joystick ports, and you must not exceed this under any circumstances.

In fact, the internal power supply starts showing signs of distress at about 20mA, so it's best to keep at or below this level if possible.

Therefore to drive anything worthwhile you will need an external power source capable of delivering higher voltages and currents. A battery or a power supply unit will do, and 12V is sufficient for all the gadgets we'll be describing this time.

A BC108 transistor can't handle more than 100mA as an extra amplification stage is needed. The circuit in Figure 12 shows how to add a second, much more powerful, transistor.

When TR1 switches on it supplies base current to TR2, which in turn handles all the power for the load.

If anything should go wrong with the battery circuit the two transistors prevent high voltages getting back to the joystick ports, so the risk is minimised.

The output of this switch is in

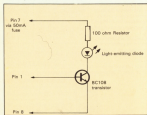


Figure 12: Simple transistor switch

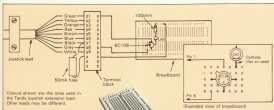


Figure 10: Breadboard layout of simple switch

phase with the input – a positive voltage on the signal line produces a positive voltage at the collector of TR2.

If the load is an electromagnet device – such as a relay, solenoid or motor – it will generate high voltage spikes on the power lines, which could damage the output transistor.

The diode D1 is used to suppress these, and it must be wired as shown with cathode to positive or it will self-destruct. The case has a black or coloured band to mark the cathode end.

Figure 11 shows how to wire everything up without soldering, using a miniature terminal block. The transistor leads are quite short, so you will need the smallest block you can find – not more than 6mm between terminals.

Be extremely careful when bending the leads of the TIP127. They have a flat cross-section and will break very easily if you try to bend them across their width, but a half-twist will help them round the corners.

The power transistor is rated at 5amps, but it gets very hot when controlling 1 amp or more, so some form of heat sink is necessary.

The twisted core type is adequate for loads up to 2.5 amps (25 watts at 12V), but heavier loads require larger heat sinks – a 5°C per watt type will enable you to drive up to 5 amps.

You can buy one of these, or make



your own from a piece of scrap aluminium – about 50 square centimetres of 3mm plate or angle should be adequate.

A touch of silicon grease will improve the thermal contact, but isn't strictly necessary so long as the surfaces are clean and the transistor is bolted down securely.

Because the first transistor places such a small load – about 1mA – on the joystick part you can have a power switch on every signal line,

giving you eight independent channels.

Now we have something really useful. You could construct animated Lego or Meccano models, moving displays for shop windows or even simple robots.

You could control up to eight separate tracks – or points switches – on your model train set, and program the whole layout like the London Underground.

A safe disco display for children can be made from 31 watt car indicator bulbs. Or you might use 12V pumps or solenoid valves to construct an automatic watering system for your conservatory.

Remember, though that the exten-

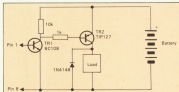


Figure 11: Low-voltage power switch

nal power source must be able to supply enough current. A car battery charger is worth trying, or you might use an old car battery itself.

Take the usual care to avoid sparks and excessive currents which could start a fire. Under no circumstances should you attempt to connect this circuit straight to the mains.

The power switches can be operated by external sensors rather than a fixed program. We'll be describing many different kinds — temperature, sound, humidity, movement and others — in a future issue.

For more you could try the cadmium sulphide cell we looked at last month. Wire it between pin 9 and the free end of the 50mA fuse, then use Program 8 to switch the load on when it's dark and off again when it's light.

Line 20 sets the switching threshold  $\lambda$ , and line 21 computes the

action by changing the  $\beta$  at the  $\beta_0$  to  $\beta_1$ .

You could use this device to set an intruder-deterrent system into operation at dusk. How about a gadget which switches low-voltage lamps on and off in random patterns to give the impression that your house is occupied while you are away?

A word now about buying all the necessary bits and pieces, which can be a problem, especially if you are relatively new to the game. It's all too easy to pay over the odds, or end up with the wrong thing since parts

genomes which look alike may have totally different configurations.

For things like transistors, resistors and other small components the easiest and safest method is to use one of the big mail order companies.

They all produce catalogs - some better than others - containing photographs and specifications.

We've tended to quote order codes from Maplin Electronic Supplies because they are among the less expensive quality suppliers, and their catalog is readily available from W.H. Smiths. Other mail order companies

```

IN FORT 34000,340 FORT 34000,350
IN FORT 34000,340 FORT 34000,0
IN L-ARMOR Threshold value
## IF PEEK(24000,1) THEN FORT 34000,10000 ##
## FORT 34000,0:0000 ##

```



**LAST** month I promised to have a look at the adventures of Jym Pearson, but before I do that a quick round up of adventure news.

At last, now courtesy of LG Gold, come the Thing and the Human Torch in Questprobe III by Adventure International, alias Scott Adams. If my review copy has reached me in time then I shall be looking at that one next month.

The same applies to The Price of Magic from Level 9, the follow-up to Red Moon. The poster boasts even more improvements in the number of locations, independent characters and spells you can cast. Also it claims very few bugs. Brillig's glitch hunters keep even the best on their toes!

Billy-Hoe from Infocom sends you on a quest to save the daughter of a fairy's owner from who-knows-what, and should be up to the normal superlative Infocom standard. That is another feature for next month's round up of new goodies.

Really, I had a nice play with an ST the other day and thoroughly enjoyed Borrowed Time from Activision, a very good graphical adventure, where you play a private investigator in trouble with some villainous characters.

I enjoyed using the mouse to select words and objects — much easier than typing them in — but the advertised price, £49.95, seems a bit steep for a game.

Now on to a request from A.R. Morris about the games of the aforementioned Jym Pearson. Do I know of any others apart from Escape from Trasm and Curse of Crowley Manor?

Of course I do. But first, for the uninitiated, a quick look at the two games he mentions.

Crowley Manor is my favourite Pearson offering, released by Adventure International a few years ago. In it you play a Scotland Yard detective travelling to a mysterious manor where all sorts of grim and gruesome discoveries are to be made.

As with all of the Otherworld series, the layout is very simple and highly intuitive. Visible objects appear at the top, a location description in the middle next to the title, followed by your inventory, and at the bottom of the screen a space



## Lost for words in a far from friendly manor

for messages.

The vocabulary is extremely limited compared with today's games, which probably explains why it will fit into the 1M, Atari 400. For instance, 'Get' is understood but 'Take' is not. All this might lead the player to believe that 'I don't understand' is an constant display in the message area.

Despite the seemingly simplistic vocabulary the games compensate by having some very obscure commands too. In Crowley Manor although Click can get you into the cals, it will take Get out to do precisely that. One experienced adventurer I know spent several weeks trying to do just that without succeeding.

With the above proviso, the game has a good atmosphere considering the brief descriptions, and there is plenty to explore.

Exploration in these games is

something else, however. I can forgive an adventure writer almost anything, but to write games with no directions, displayed is downright painful.

The most tedious part of these games is the fact that you cannot just glance at the screen to see which way to go. Pure navigation should not be part of the mystery!

Escape from Trasm is a game which I never really got into. The scenario, in which you have crash landed on a planet and have to escape, never gripped me enough to believe in it, and the limited vocabulary finished me off.

The game employs a technique used quite a lot in this series. After a few moves the ship crashes no matter what you do, and you are flung clear. Frankly, I wish I'd gone down with it.

In San Francisco 1956 the random event turns out to be an earthquake (historically accurate if nothing else). At the time you are locked in your hotel bedroom with a ransom demand, a wall of hills and a crowd that is incapable of prising open the

## By Brillig



door or window of the room – yet is able to get you out of the rubble after the earthquake.

Quite what you are doing with a crowbar under your bed I have no idea. Within a few locations of the hotel I was caught in a second quake and the Grand Opera House disappeared. I lost interest at this point.

However, I will mention one thing to annoy even the most patient of players. Given a visible object of a word of bills, and hovering in mind restricted vocabularies I typed Ger wasf with no success, followed, equally unsuccessfully, by Ger bills. You've guessed it! Ger word of bills was the required input. Hmmm!

**Saigon — The Final Days** starts in a Viet Cong prison camp when a mortal blast throws you clear of the hut and you start the long trek home. The game features the worst bit of south-side in all-outings.

Having rolled a round log down the hill to bridge a stream the

following commands do NOT get you across the stream, the bridge, the log, Cross stream, Cross bridge, Cross log, Walk stream, Walk bridge, Walk log.

In fact on returning to this game for this article I could not get across the stream at all. Not that I was really bothered as I only got stuck in the minefield two locations later the last time. I released it.

Finally Lucifer's Realm, a quaint little tale about trying to prove to the devil that Hitler is raising an army to overthrow him. Perhaps I had just had too much when I loaded this one, but after reading Adolf Eichmann and John Wilkes Booth in rapid succession both blocking my way I decided I really didn't care who was the boss in Hitler, as long as he stopped Jyn Pearson from writing about it.

There is another adventure, *The Institute*, from the pen of Mr Pearson. I haven't played it and I don't intend to.

## Glitches

## of the Month:

It is vitally appropriate that this month's gift, from R.C. Bassett of Tibbury, Essex should be from *Escape from Trapani*.

After finding the nylon rope in the wreckage of your spacecraft (all spacecraft carry rope don't they?) you stand at the bottom of a cliff. You'll fall if you try to climb it unaided, but there is a stout beam at the top.

The rope to Sarah means you can then climb happily to the top of the cliff. But if you can tie the rope to the bush, why bother?

## SIDEWINDER

The top selling Atari 486 game from FUTUREWARE  
*(See Atari 486 review, June '94)*

Fly Sidewinder through a maze of twisting underground caverns, pass enemy defence systems dodging lasers and blasting your way through layers of floating mines. Your mission is to destroy any underground enemy installations, fuel dumps and to get Sidewinder out in one piece.

Design and save your own screens with ease using Putresware's scrolling screen editor.

**Figure 1**

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1. **Introduction**  
 2. **Background**  
 3. **Methodology**  
 4. **Results**  
 5. **Conclusion**  
 6. **References**

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# An electronic your arts



*All these pictures were created using Technicolour Dream*



ONE of the reasons for choosing an Atari 8 bit computer is for its superb graphic capabilities when compared to other 8 bit home computers.

Among the recent crop of programs that explore the world of Atari graphics are Technicolour Dream from Red Rat Software and Dandy's Graphics Art Department, or GAD for short. Both programs allow you to paint pictures on the screen with a joystick. Technicolour Dream will also accept input from the Atari Touch Tablet.

The most impressive feature of Technicolour Dream is its vast range of colours. All 256 that make up the Atari palette can be displayed on the screen at the same time. There is also a choice of 128 filters, which are similar to lens filters on a camera. For example if a red filter is used all the colours on the screen are tinged with red.

Colours can also be mixed, plotting pixels of one colour next to pixels of another. Viewed close up this gives a patterned effect, but seen from a distance the colours appear to merge to form a mixed colour.

By using filters and colour mixes it is claimed by Red Rat Software that it is possible to create over eight million different shades for your Atari. I've

certainly found colours that I never thought possible.

An effects option allows you to change colours already on the screen, altering such things as overall contrast or individual colour values. Pictures can be stored to and loaded from disc. Some demonstration pictures are included with the Technicolour Dream package and my review copy came with a disc containing further pictures created using Technicolour Dream, most of a high standard.

Technicolour Dream pictures have a "tapestry" look to them due to the fact that pixels are plotted every other row only, leaving a thin blank between. This is due, I suspect, to the way that the 256 colours are put on to the screen by a process that ranges two graphic mode screens, one for luminance, the other for brightness.

To assist you when you are drawing there is a line command to plot lines between designated points. This is the only drawing command available. There are none of the usual options associated with drawing packages, such as circle or fill.

Technicolour Dream is not very user friendly. It took me a while to work out how to use some of the options — particularly in the effects

section. This is not helped by the manual which says such things as: "These commands move the 4 bit data 1 bit to the left or right". I am told that the manual is due for revision so hopefully some of the commands will be made clearer.

At the time of writing Technicolour Dream is available on disc only at £12.95, but a cassette version at £9.95 will be out soon.

Graphics Art Department is a powerful and versatile graphics package that should provide just about every option the computer artist should ever need.

A good test for software of this type is to try it out on someone who is not used to using computers. I have been using GAD extensively for the last few days to design graphics for a game. Helping me were two Atari friends who do not normally have anything to do with computers. They

# Electronic outlet for artistic expression

**STEPHEN WILLIAMSON** tries his hand  
at two painting programs for the Atari



found GAD a joy to work with and did not take long to master the techniques required to use it.

GAD has a multibank of commands but has a menu-driven control system that makes operation easy. My friends especially appreciated the zoom option which allows selected areas to be magnified at one of three levels of magnification to make plotting or erasing individual pixels much easier.

Initially four colours are available selected from a 128 colour palette. To increase the number of colours display list interrupts can be initiated. After selecting an area for

the display list interrupt to begin and choosing the new colour then the new shade will appear whenever a pixel is plotted below this point. This is not as versatile as the "256 colours anywhere" method employed in Technicolour Dream but for most practical purposes 128 colours are enough.

There are 40 different brushes to choose from, ranging from the very large for filling big areas of colour to brushes that draw parallel lines, and brushes for dabbing on small solid circles.

If the brush selection doesn't suit you an editor facility allows you to

design your own. Any so designed can be saved to disc and loaded again at a later date.

GAD uses a Graphics 7 screen with a definition of 160 x 80 pixels, which means that the size of the smallest brush is one pixel. A Graphics 7 pixel is more or less square which makes it easier to calculate proportions and angles but does restrict picture definition when compared to say a Graphics 18 picture with its smaller, but thinner pixels.

There are commands to help in drawing geometric shapes such as circles, triangles and rectangles. They can be outlines or solid shapes filled with one colour or a pattern chosen from a pre-set selection. The patterns can also be used during the fill command and, like the brushes, can be edited and re-designed to your own specifications, then saved to disc if required.

Shapes are drawn using a rubber banding facility which lets you view, move or enlarge the shape before pressing the fire button to fix the image on the screen.

Areas can be inverted to create a negative image, rotated, mirrored or moved. My friends wanted to plant a forest in front of a mountain scene. To do this just one tree needed to be drawn. Then, using the block move facility, the image of the tree was moved to various points on the screen and repeatedly plotted to form the forest.

Text can be printed on the screen at any point. A standard point font is included, and an edit mode enables custom designed letters to be produced and saved to disc if required.

Pictures can be scrolled in any direction. This helps centre a picture on the screen. I found it impossible to make a mistake on a picture that cannot be rectified in some manner. Undo is a marvelous option that restores a picture to its previous state before the last command. This is great for "unfilling" areas. The fill command on some graphic packages can be frustrating, if the area to be filled is not completely sealed the fill leaks out with disastrous consequen-

ces. Unlike simply bringing you back to the unfilled state before the mistake was made.

Pictures can be saved and loaded on disc and hard copy dumped to a printer. GAD is set up to be compatible with Epson, Gemini and Posiwriter printers with the option to customise it to work with other makes. I tried to make GAD talk to my Atari 1025 printer but without success. Perhaps I entered the wrong printer control code data – or it could be that GAD just will not work with the Atari model.

Technicolour Dream's plot option is designed to work with an Epson 8500 or compatible model. The poor Atari printer gets left out again.

Other GAD commands cover brush speed, rainbow colour rotation, ellipses, clear screen, jump to a point and kaleidoscope mode. There are many more.

Both GAD and Technicolour Dream pictures can be incorporated into your own programs. The Tech-

nicolour Dream manual provides a short Basic routine to load pictures, while GAD has a machine code routine that can be copied from the GAD disc as a DOS binary file and then accessed from Basic using a USR command. Both methods are straightforward and do not demand complex programming knowledge. GAD's machine code routine makes it possible to load GAD pictures to a machine code program without much trouble.

The Art Gallery section of GAD enables you to set up your own picture gallery of GAD pictures to show your friends.

Graphics Art Department costs £29.95 on disc only. This is over twice as much as Technicolour Dream, and at the top end of the Atari software market.

If you want to experiment with colour and draw pretty pictures, and also have a limited budget, Technicolour Dream is fine if you can accept its limitations. On the other

hand if you want to do some serious graphic work and need a flexible graphics package then fork out the extra and buy GAD. It's well worth the money.

In an ideal world I'd love to see a graphic package that combines the best of Technicolour Dream and GAD – Technicolour Dream's vast colour palette and smaller pixels, but without the interlaced blank lines, together with GAD's versatility. In the meantime I'll get back to creating my GAD art masterpiece. If only it could handle animation as well...

**Program: Technicolour Dream**

**Price: £12.95 (incl)**

**Supplier: Real Art Software, 11 Fennel Street, Manchester M4 3DU. Tel: 061-835 1055**

**Program: Graphics Art Department**

**Price: £29.95 (incl)**

**Supplier: Omnicore, Suite 214, Stone Terrace, Highgate Road, London NW6 3PL. Tel: 01-462 1782**

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MUCH has been said over the past couple of years about the bugs in Atari Basic (Revision B.1 present here Rambas, a short machine language routine which will cure the most serious flaw — the infamous lock-up which can occur when entering programs.

Many remedies have been suggested to alleviate this problem. Many are time consuming, most are inconvenient, and none are the stuff which makes for happy computing.

What is required as the definitive solution is a new and bug-free Basic interpreter. Short of paying out extra money for Revision C Basic from Atari, or Basic XL from QSS, the problem would seem to be intractable.

Not any more! You too can be free of the lock-up problem for good. If you have a disc drive you can save the routine as an AUTORUN.5YS file and never even see the change. Alternatively, for cassette users, the routine can be modified and saved as a Basic loader program.

The Basic interpreter is contained in ram, in the XL range this covers an area of free random access memory. When the computer is first switched on it is normally the Basic rom which is enabled; the ram area is merely a shadow and is rarely used.

If the Option button is held down during power-up then the operating system will disable the rom and allow access to the ram.

A machine language routine can easily move the entire contents of the Basic rom down in memory, enable the shadow ram which lies under the Basic interpreter, and move Basic back up to occupy its former position. Once this has been done it is possible to alter the Basic interpreter and put right some of its faults.

It is well known that the lock-up problem is caused by a fault in the EXPAND routine which is designed to move the Basic program tables down in memory very quickly. This was changed from its Revision A counterpart in a mistaken attempt to put right another bug. Actually it was the CONTRACT routine which as at fault. That bug was corrected in revision B but EXPAND was fine as it was and should have been left alone.

If the disassembly of the Basic rom in an XL machine is compared with

# Let Rambas lock out the lock-up

the EXPAND routine in The Atari Basic source book from Computer Books, it is easy to see that the EXPAND routine differs significantly by only four bytes. If the EXPAND routine is amended to act as it originally did, the lock-up problem will be solved.

Listing 1 gives the entire Rambas routine in assembly. Included in the listing is code to stop the computer

after Reset depends on which peripherals were booted, if any. If a cassette boot was successful the operating system will jump to the address held in CASINI the cassette initialisation vector, locations \$2 and \$31.

If a disc boot was successful the jump will be to the address held in DISINI the disc initialisation vector, locations \$C and \$D1.

By intercepting the disc initialisation vector and making it point to the RESTART code, the rom-based Basic is made permanent even if Reset is pressed. The RESTART routine re-enables the shadow ram and jumps to where the disc initialisation vector originally pointed, in order to pass control back to Basic.

Cassette users must feel the operating system into thinking that a peripheral was booted by setting BOOT? to one. At the end of the RESTART routine control is passed back to Basic by jumping directly to the Basic warmstart routine.

Disc users have two different ways of implementing Rambas.

If you have an assembler you can type in the assembly listing from Listing 1 and assemble the routine into ram. Alternatively you can type in our Listing II, which is a Basic loader program containing Rambas as data statements. Either way you should go to D08 in order to save the routine as an autorun file.

To do this, type D08 and use option K (binary save). In response to the prompt, give the following save parameters:

**AUTORUN.5YS,600,675,600**

**[Return]**

The routine will then be saved as

## By ROBERT GEAR

from rebooting every time the Reset button is pressed, and thus re-enabling the rom-based Basic.

When the Atari does a warmstart—that is, when the Reset button is pressed—the operating system looks at locations \$8 (BOOT?) and \$244 (COLDST). COLDST usually reads zero, but if the value in COLDST is one then the operating system thinks a powerup is in progress and will reboot the cassette or disc. Incidentally, this is a good way of protecting your programs from prying eyes. Rambas sets COLDST to zero to stop the system from rebooting.

The operating system looks at the BOOT? register to find out if either the cassette or disc was booted successfully:

BOOT? value	Meaning
00	No peripherals booted
01	Disc boot successful
02	Cassette boot successful

The operating system's action



— 8 —



# MicroLink

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Only applies to users outside the UK/London offices.

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Deferred messages sent on the night service are subject to a 35 per cent discount.

**Incoming rates:** 5p per each currently addressed unit delivered to your mailbox. Obtaining a mailbox reference from the sender incurs a further charge of 5p.

It is not possible to deliver a unit without a mailbox reference. If a unit is received without a mailbox reference the sender will be advised of non-delivery and asked to provide a mailbox address.

Each unit submitted for text and document filing will incur a charge of 4 storage units a month. Further storage charges could be incurred depending on the amount of text storage and the use made of that code and message file facilities.

**Telexgrams:** £1.20 line up to 350 words.

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## Software over the telephone

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MicroLink is part of the international Datacom network. In the USA, Australia and a growing number of other countries there are many thousands of users with electronic mailboxes just like yours. You can contact them just as easily as you do users in Britain - the only difference is that the messages from your highlighted log spanning around the world via satellite.

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# MicroLink

in association with

**TELECOM GOLD**

## Application Form

(This form only applies to you MicroLink)

☐ I enclose my cheque for £5 payable to Datacom Publications as registration fee to MicroLink.

☐ I do not wish to use Telex. I authorize you to charge an additional £10 to my initial bill for activation.

☐ I confirm that I am over 18 years of age.

☒ I confirm that I accept the terms and conditions for the time being in force, a copy of which are available on request.

Signature \_\_\_\_\_

Date \_\_\_\_\_

### FOR OFFICE USE ONLY:

Mailbox assigned \_\_\_\_\_

Start date \_\_\_\_\_

Previous \_\_\_\_\_

SEND TO:

MicroLink

Datacom Publications

Europe House

64 Clarendon Road

Stamford Green

Stockport SK7 5BN

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Name \_\_\_\_\_  
Position \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
Postcode \_\_\_\_\_

Telephone number \_\_\_\_\_

### Commencement of Service

Please indicate month of commencement  
Allow 10 days for activation of mailbox

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### Payment

While Datacom Publications Ltd is the supplier of the service and telex, the communications filing thereof will be handled by Telecom Gold as agent for Datacom Publications Ltd (one of their payments to be on 1st of month following commencement).

Please complete filing authorization form A, B or C below

### A. Direct Debiting Mandate (Enter full postal address of Bank Branch)

To \_\_\_\_\_  
\_\_\_\_\_

I/We authorize you until further notice to debit my/our account with you on or immediately after 10th day of each month unsummed amounts which may be debited thereto at the instance of British Telecommunications plc - TELECOM GOLD. Billers must 15 days before debit is processed.

Name of Account to be debited \_\_\_\_\_  
Account Number \_\_\_\_\_

### B. Please debit my/our

Account/View/American Express

account number \_\_\_\_\_

\* German subscribers only

I/We authorize you until further notice to debit my/our account with you on or immediately after 10th day of each month unsummed amounts which may be debited thereto at the instance of British Telecommunications plc - TELECOM GOLD. Billers must 15 days before debit is processed.

Signature \_\_\_\_\_ Date \_\_\_\_\_

### C. Please invoice the company monthly.

☐ If you select this option, which is ONLY AVAILABLE to government establishments and Public Limited Companies, you will be sent an authorization form for completion which will require an official order number to accept unsummed amounts.

WYM reference to M.A. Phillips' letter in the April issue of Atari User. I can confirm that 80001s with Rev C Basic in them are available in the UK — I have one.

I bought a Disk Drive 80001 package in Duxford recently and was having problems with the keyboard locking up after a lot of typing.

I wrongly assumed this was my fault until I read about the bugs in your March issue. I posted location 43234 and found I had Rev B Basic.

However, what really annoyed me was that a colleague at work had bought a similar package a few days later at a lower price and got Rev C Basic.

I returned my package to Duxford, and after showing the manager the magazine article got a full refund. I subsequently got a new package from Comco with Rev C Basic.

The moral is before buying an 80001 package check that you get 234 and not 35. — **Barry Parker, Winton, Middlesex.**

## Mine's a 234 too!

With reference to your comment after M.A. Phillips' letter in the April Mailbag, I have a bonded 80001 Pac, and on reading about the bug at 43234 I started the address in that the contents were given as 234. — **M. Smith, Bedford, Kent.**

■ Thanks for letting us know. If you have recently got an 80001, and you don't get an answer of 234 if you PRST PRST(43234) then you probably have an older machine.

Take it back to your dealer and ask him to provide you with the up-to-date version, as the Revision B machines have some bugs in them.

Our thanks to everyone who write in to us telling us about their own Revision C 80001s, including James Kelly, Mr A. Boardman, Elgar Dixon, Mrs S. Woodward, P. Ballard, Alan Norman, T.H. Ralphs, David French, Julian Medcoe, P. Abbott and many

# CHECK YOUR MICRO — REV C IS AROUND

others too numerous to mention. You can stop writing now . . . please.

## Screwdriver solution

REGARDING P. Ward's letter about the C20 play button on the 1010 recorder I have had this happen twice, the first time just five days after the guarantee ran out.

I duly read my recorder along to Silco Shop who quoted you guaranteed a C20 for the replacement. Having no alternative I handed over my crisp C20 note and my 1010 became operable once more.

After about another 12 months it happened again, this time before getting out of the reader I questioned one of the salesmen. After torture he broke down and confessed that it was possible to fix the recorder by myself.

So having gained some electronics experience I decided to have a go. I went back to questioning the salesman who by now was a quivering wreck.

I asked the price of a new button, half expecting the price to be in double figures, but was rebuffed when he told me £1.12. After picking my chin up off the floor, I found out how it was fixed.

Firstly unscrew the four base screws and separate the top from the bottom. Then locate the buttons inside — not hard. Remove the locking strip on the notched end of the buttons first, then push the rod through the bracket and pull out the rod and buttons.

Slide off the buttons and

replace the broken key with your new one. Replace the top the chassis, replace the locking strip and finally place the two halves together and do up the four screws.

Easy — honest it took me about a quarter of an hour.

I don't recommend this to be done when the recorder is still under guarantee but for those people handy with a screwdriver, whose units have expired, it's a great money saver.

Silco have admitted these buttons are extremely weak. So come on Atari, C20 for a lump of plastic is just not on!

I hope my letter helps people and saves them a lot of unnecessary expenditure. — **Ian Stibbings, Bexley Heath, Kent.**

## Key pinned

In the March issue I was surprised to read about the C20 button by P. Ward.

The same thing happened to me when I pressed the Play key on my recorder — it just snapped. I opened my recorder up to see what damage I had done, only to see the key in two halves.

I thought on it for a while and decided to replace the broken Play key with the Pause key.

This was not too difficult — just a matter of removing the metal cassette mechanism from the top half of the unit and removing a small circle washer from the key rod.

It was then simple to attach the key positions and test give me time to think of some way to mend the broken key. I hope

you, but after waiting for two days the key fell apart under use.

I then thought of drilling a small hole — using the smallest drill I could find — up the centre of the two halves, and pushing a pinned pin into them. I put a split of glue on them before bringing the two bits together, just to make sure.

The result was a stronger key than before, and a simple wire nail saved me up to £20 into the bargain. — **Barry Nelson, Linsam, County Antrim.**

■ Two good ideas, but don't forget that doing these repairs yourself will void the manufacturer's guarantee. So if it is within 12 months of purchase, take it back to your dealer.

## Graphics artists

TRAINING for printing three of my screens in the article on ST graphics in your May issue.

The quality of the screen shots was quite good, but I was a little disappointed to see that there was no credit for us hard working artists!

I have often admired published graphics in Atari User only to be left wondering who they were. — **Mr Warden, Borewich, Wiltshire.**

■ Ah yes . . . sorry about that Mr. We did mean to credit you — honest.

To set the record straight the Degas and NeoCrome pictures used in the May issue were by Ray Bulmer himself — bottom two pictures on pages 10 and 11. Mr Warden — third picture on page 11 and both pictures on page 13, J. Powell — Thompson, page 12, and Tom Hudson — M-Ti robots, page 12.

In the June issue the pictures on pages 12 and 13 were by Tom Hudson, with the exception of the Computer Aided Documentation which was by Ray Bulmer. The ST cover showed some of the stages involved in creating Ray's Aesthetic masterpiece.

If anyone has come up with

other graphic wonders on their ST or E-64, drop us a line if they can, and we may publish a few in a future issue.

## Graphics modes

*I HAVE just got an 800X, and find some of the Basic easy to understand, but I do not understand the graphics at all.*

*Do our school computers, all you have to do is use the word GRAPH, but on the Atari you use GRAPHICS followed by a number.*

*I do not understand this. Every time I attempt graphics, I get an error message. I feel this is a vital part of programming, so could you please help me. — Martin Harris, Northfordshire.*

■ The reason that the Atari requires a number after GRAPHICS is to tell it which graphics mode to use — there are 15 basic modes, plus some others.

Atari graphics are much more powerful than those on most computers, and there's not enough space in an online issue to cover them in full.

We did run a complete series on using graphics in our first eight issues — May to December 1985 — which should answer all of your immediate questions.

## Looking for Yohan

*I AM writing to you about Boneyark. After getting through Bob's enthusiasm, his pleasure Yohan's Revenge, even Acht Rak, where is Yohan Yohan?*

*After completing the final level there was still no sign of him. We changed him from a smiler to a grim cheerer and did it again, still no sign.*

*The game in every respect is brilliant probably the best I have ever played on my 800X, or anywhere else.*

*Finally if you know of an Atari user group in the Birmingham area, we would*

# ATARI USER Mailbag

WE welcome letters from readers — about your experiences using the Atari Mailbag, 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  
Europe House  
88 Chester Road  
Hazel Grove  
Stockport SK7 5NY**

*be grateful — Robert and Karen Goodwin, Birmingham.*

■ Sorry, cannot help you with Yohan Yohan. Perhaps a reader can oblige.

The Birmingham Atari User Group meets on the first, third and fourth Thursday of each month at the Royal George opposite St Martin's Church, Bull Ring, Birmingham.

## Bugs detected

*ARE there some bugs I have found in a couple of games. In Yohan, when you have lost your last life press the fire button three or four times to continue at the same level and none. After you lose this life you will receive eight stars.*

*Circle Professor, when you have lost a life — not been blown up — press the one key twice at the game screen turns Atari and the drive is running. Try this and see what happens — the result is very useful. — Brian Delfino, Brackley.*

## Where did the colour go?

*I HAVE just got an Atari 1200X with a 2093 program installed.*

*I was very pleased with the computer, until I tried it on a colour TV. I loaded a cassette game into the computer, but*

*could not get any colour on the screen.*

*I wondered whether it was just the game at first, so I tried the Basic colour command but still got none.*

*Should I get my computer repaired, or is this a problem I could solve myself? — Jason Dyke, Gwent, Kent.*

■ If you can't solve the fault by returning your TV set and adjusting the colour controls your best bet would be to take the computer back to your dealer and get it replaced. There is nothing you can easily do yourself.

## Spelling mistake

*WHenever I type a misspelled command, such as SET: COLOUR 2:55 I get this:*

**ERR0R- SETCOLUR 2:5.5**

*Please can you sort out this problem.*

*Also whenever I load some games with Start and Option, I sometimes get a BOOT ERROR, BOOT ERROR message and then the computer puts itself into SELF-TEST mode. What's happening? — Mark Kaye, Starnwood, Nottingham.*

■ You haven't looked carefully at your manuals, have you? The command is **SET:COLOUR, not SET:COLOUR**. If you type it correctly it will work OK.

As to your **BOOT ERROR** problems it sounds as though you might need to clean the

heads on the tape recorder.

All **Boot Error** means is that the tape has failed to load. If it happens on too many of your tapes consider taking the recorder back to be checked.

## Speedy listings

*I HOPE this will help Penelope Hill, Mailbag May 1986, regarding the speed listings sent.*

*Listings do send too fast to read, but there is a way of passing the listing without recourse to repeated use of Break, LIST (line no.), Clear.*

*This is done by holding down the Control key, then pressing the F key. This will pause the listing. Pressing Control-F again will continue the scroll.*

*Using Control-F will freeze the computer, and it will not accept any entry from the keyboard, except Control-F or Break. So if you use this remember to press Control-F to continue the scroll or Break to exit your program.*

*This feature can also be used to pause Basic programs while they are running, but remember to hit Control-F again to enable the program to continue. — Peter Rother, Twickenham, Middlesex.*

## Sluggish interpreter

*AS a confirmed Basic user, I am rather disappointed with the language provided with my recently bought 800X.*

*While its features are entirely adequate, its speed is prohibitive for the large data handling programs which I write.*

*I have used a BBC computer which offers speed, if not more facilities and yet seems much faster.*

*This may be a naïve comment, but since both these machines use the same processor surely a faster Basic for the Atari could be written.*

*I have been following the*

menter articles in Atari User on the Basic Compiler with some interest and, while this often probably the best solution to the speed problem, I feel that there is still room for a fast translator-type Basic.

Your comments on this subject would be appreciated. — **Mike Ross, Chilton, Devon.**

■ There are indeed faster Basic interpreters for the Atari, the best of which is probably G.S.S.'s Basic-88.

It is entirely incompatible with your standard Atari Basic programs, but runs between two and four times faster, has full procedure operations with parameter passing, player/mouse graphics, I/O control, GOS functions, and so on. — **W4M . . . BLS4 . . . DND4, WHILE . . . W6M2, strong error — plus LPT8, MDR, RND and so on.**

It also features fast array sort functions and much faster floating-point operations. All of this is packed into a bank-switching cartridge which takes up no more memory than standard Basic discs.

To top it all, if you happen to have a 1200KB with 128KB you can use that extra 64KB bank for programs completely automatically, which means that free memory than any other Basic.

G.S.S. products are imported from US by Software Systems, and are thus a little expensive, but since you've said there you'll never turn back.

## Getting it wrong

I OWN a 1200K, after about 1989 and AC II cassette deck, I have bought your magazine since January 1988, and am having some difficulty trying in the listings.

Could you print the listing of the Get It Right! program again so I can see where I've been going wrong with Get It! and Get It Again. — **J.A. Ross, Holland.**

I HAVE just read David Chapman's letter in your May

issue. I also am a newcomer to home computing, and would like to know how to use the checklist.

As you did not reply to this question from him, would you reply to mine?

By the way, a really good book explaining programming is Easy Programming for the Atari Micro by Eric Dawson. It is written in easily understood language, which means I could get to grips with it. — **Diane Birmingham, Basingford, London.**

I HAD your checklist in the March 1988 issue of Atari User as a program called *Checkme* from the February 1988 issue.

When I typed the program in I then typed LIST, and pressed return, then the computer started beeping.

When I finished it said "Delete program by typing NFF", which I did, it then said "Now load get it right into the machine taking note of instructions contained in APPEND 999" as all I did was type CLOAD, and after a few seconds I got Error 27 load the error.

Please, tell me what I'm doing wrong, and what is APPEND 999. — **Christopher McInerney, Dorchester, Dorset.**

I HAVE recently got an Atari 800X computer and since then have been buying your useful and informative magazine. However I have noticed

that your listings have a section labelled Get It Right! I get the feeling that this will be useful when inputting your programs, but I do not know how to use it.

Could you please explain to me how to use this facility and I invariably make mistakes in my typing. — **Dave Smallman, Peterborough.**

■ To use the Get It Right! program firstly make sure that you have the updated version of the program, as provided in the January 1988 disc/ cassette.

After typing it in CLOAD it to a spare cassette, or just save it to disc, and write-protect it.

Line 999 will need to be altered depending on whether you have a disc or cassette.

Each time you want to check out a new program type it in from the magazine, and then use it to type or disc — for example LIST "C", or LIST "DISK".

New type NEW and load the Get It Right! tape back into memory, with CLOAD.

Put your listed program back into your recorder/disc drive, and type RUN.

The checklist information will now magically appear on the screen. Check this off against the option printed in the magazine. If you have made any mistakes the numbers will not tally on the incorrect lines.

If you want to reload the listed program again, type

NEW and then use ENTER "C" or ENTER "DISK".

In response to numerous requests we shall be reprinting the Get It Right! program in next month's Atari User.

## Overlapped listings

I HAVE an Atari 800X, and am having difficulty trying in certain lines of your published programs.

When I type them in the 800X, reports them, I have also tried on two other 800Xs with the same result.

Some examples are October 1988 *Position* lines 800 and 1110, January 1988 *Das Balle* line 4070, and March 1988 *Horoscope* lines 1040 and 2070.

Is this because the games have been typed on a different model?

I have tried altering the lines and splitting them up, but still my very limited knowledge of Basic I am having little success. Any light thrown on this subject would be very welcome. — **William Jackson, Beckenham, Lewes, Pye.**

I HAVE an Atari 800X, and have been trying to type in Mr. Horner, but the last bit of line 4070 won't go in — 8-881000.15.7 6".

Can you tell me if there is any way to get the line to go? — **Bryan Vince, Luton Beds.**

■ YOUR problem lies in the fact that the Atari can only accept up to three screen lines of typing at once — that's what the ball near the end of the third line means.

Some of our listings, as you have found, overlap on to FOUR lines. So how do you type them in?

Firstly, before starting to type a program in, try typing POKE 82,0. This allows you to use the space in the left margin to type in, giving you an extra six characters.

The other way to pack more on to a line is to use

## Correction corrected

FOR those of you with XL or XE machines who have been trying to use Frank D Swann's Basic Compiler program, we're sorry to say there was a small mistake in last month's correction please on page 32 (When understanding . . .)

All you need to do to get it fully working (horror, it is ENTER the library section into your Assembler/Editor, and add the following two lines:

```
LIB LIB OVERLAY : STRADD CLIB "LIBRARY" : GET "LIB" : END
LIB CLOAD
```

Then LIST it back in to your master tape or disc. Otherwise your compiled program will more than likely just print a heart on the screen and promptly crash. When you've written some programs using the compiler why not send some examples in to us? We'll print some of the best in a future issue.

abbreviations. For example, typing POS, 12,12 means the same to the computer as POSITION 12,12.

The abbreviations are listed in the manual, but POS for POSITION, SE for SETCOLOR and DR for DRAWTO are some common ones.

Also don't type in spaces outside of double-quotes when you're short of space:

INT'HELLO"INT'HELLO

is just as good as:

IN "HELLO" INT'HELLO

to the computer.

Using a combination of these tricks you can type in anything that appears in these pages — don't forget, someone had to type it all in in the first place.

## Graphic characters

I did having difficulty programming Fruit (Lambert from your August 1988 issue).

In this month's issue a correspondent has explained how to get the arrow symbol, but I cannot say what the graphic characters printed in this program.

Could you tell me how to type these characters in? The issue that are causing me difficulty are 1150, 1160, 1170, 1175, 1176, 1178, 1179, 1180, 1185 and 1190. — M. Orykawa, East Sussex.

■ The characters you refer to are all created by pressing keys while holding down the Control key.

These are listed in full in our December 1988 issue, along with all of the arrows and so on that you mention.

Listings often contain these characters side-by-side to make block shapes and underlines.

## Contacts wanted

AT the end of last year I decided to sell my BBC Micro

after four years of total boredom.

With part of the money I bought an Atari 8000, and 1080 disc drive. Now I look on computers as a joyful hobby once more.

I am interested in contacting Atari users in the Cuckner district as I can exchange views, software and so on. Mark Gosling, 9 Marlton Avenue, Marston Island, Essex CO5 8BN.

\*\*\*

I LIVE in Egham Mallet, Somerset, and own an 8000X. Could you put me in touch with any other Atari users nearby? — David Stevens, Fox Malton, 8 Gold Hill, Egham Mallet, Somerset, England.

\*\*\*

REPAIRS are required in the Merseyside area to swap chips and fix an programming and

games. I own an 800 and 1300X, and am shortly buying an ST.

Please write to: Mike Lynch, 24 Cuckmere Road, Aintree, Liverpool, Merseyside L9 2BN.

\*\*\*

I WOULD be interested in getting in touch with anyone who is interested in perian, programming on the 8000X. I would like to swap ideas on assemblies, modules and so on. Mike Matassa, 66/67 Talbot Street, Dublin 1, Ireland.

\*\*\*

I OWN an Atari 8000X, and here in Malaysia, Atari computers are not as popular as in the USA and the UK.

Most of the people here just think of it as a games machine, so I have many problems in getting the software and hardware.

The nearest place where I

can get Atari Users is 100 miles away. I can't get every issue of the magazine, and the ones I can get are two months old.

I would like some game packs who own Atari 8 bit computers in my country outside Malaysia. Interested please contact: Ooi Choo Kian, 992 Tanjong Lian Road, 65200 Alor Setar, Kedah, Malaysia.

\*\*\*

I OWN an Atari 8000X and XCII data recorder, and would like to correspond with Atari users of any nationality, interested in assemblies, machine code and so on. Luis Alberto, Rua Miguel Pais No. 31 308, 2820 Beja, Portugal.

■ If you find yourself out in the cold when it comes to finding other Atari enthusiasts you would always join MicroLink.

There are thousands of users of computers, including Atari, from all over the world

# A good advert for Atari

I RAN the Atari help line to ask for details of a hard 8205T supplier.

They gave me the details of an ex-wholesaler who gave me the name of a company in Worcester from whom I bought the 8205T, a 1MB disc drive and an Atari LX-80 printer.

I received no damage, no assistance with setting up, and received only the systems disc — no other free issue software.

The disc drive never did work and was replaced, and by going direct to the wholesaler I managed to get the other free issue software.

From time to time I asked for the new free-issue software which I read about in your magazine, but to no avail. My dealer just told me that the new was not as good as the old, and that was that.

In February I read an advertisement by Software Express in your magazine and bought some business software from them.

They showed great knowledge and skill and were

obvious enthusiasts. I used the software, but experienced odd trouble with it, concluding that it was the lack of computer literacy.

The whole system then gave up quite recently, and it was thought to be the disc drive again. This was returned to the dealer who told me it had a 90 day warranty, but that they would send it for repair.

As I have a business to run and could not afford to wait the 7 to 10 days needed for repair I decided to buy another disc drive, so that eventually I would have twice the drive. At the same time I wanted to have ROM chips fitted to my board.

Eventually I returned to Software Express who found it to their surprise that the board was one of the first ever made, and in theory at least could not have been sold in December 1988, in consequence they could not fit the chips.

Although they were not the original dealer they arranged

for a wholesaler to replace the board with a new one, to which they fitted the ROM chips. In the short time since I bought the Atari I have learnt the following lessons — firstly Atari do not deal with correspondence. Also if you are a business user and require support go to a dealer like Software Express. My first choice turned out to be a computer game retailer.

The quality control on Atari products is absolutely not at all what it should be, so check the warranty terms carefully. In my case I later learned that the warranty on the disc drive is 12 months not 90 days.

Finally read Atari User carefully, and get the updated software and other equipment upgrades to which you are entitled.

I cannot praise Software Express enough for their service and efficiency — they are a better advertisement for Atari products than Atari deserve. — M.C. Fellers, Lower Broadbent, Worcester.

on the service, and you can send electronic mail or chat to them directly via your keyboard and screen.

Don't forget that you can do all of this with a local phone call, even if the other user is on the other side of the world. It beats having to rely on OnLineMail anyway.

## Joystick ports

*PLEASE could you tell me how to use both joystick ports within a Basic program?*

I suspect it will need a machine code routine accessed by the Basic program, or can I send lots of specific memory addresses to get the same results? — **G. Brown, Swindon, Wiltshire.**

Although you can use ports and machine code, why not use the STIO8 command to read the joystick?

All you need to do is use LET A=STIO8(0) or LET A=STIO8(1), depending on which joystick you are interested in.

The variable A, or whichever one you used, will then contain one value from the following:



The trigger button can be checked by using STIO8(0) or STIO8(1). If the answer is 0 the button is pressed.

## Printer software

I HAVE recently bought a 1007 printer to use with an 800X plus cassette recorder.

However I have been unable to obtain software—cartridge or cassette—to put

the printer to good use—the only word processor type software being on disc.

Could you tell me of anything available? — **B. Middle, Pongraig, Tarrymaddy.**

The best answer to your problem is, as you say, disc-based word processors such as SuperScript or PaperDip.

However Atari's own AtariWriter cartridge is quite a nice little word processor for the money, and it will work with cassettes.

Your only problem may be that of finding a copy, as they are a little scarce these days.

## Print quality

A DISABLED friend of mine was given an Atari 800X plus data recorder and a bundle of games for Christmas. She is now very keen to make up a word processor.

What she wants to do is to type words in upper and lower case that appear on the screen so that she can modify and then print them on an 44 sheet in good typescript—to say maybe a half word processor is not needed.

With financially strapped-together money I bought an Atari 1007 printer, knowing that other stuff would probably be needed.

She was pleased, knowing my technical aptitude, that I had not returned during a 1200 Birmingham typewriter and a PS battery, but when I told her the printer was more than disappointed for two reasons.

The typescript wasn't blank enough—despite changing that little roller and even rolling the spools one across the other die, it's unbearably mild looking.

Also there are two lines on the TV screen—topped one line on the 44 sheet. This will surely dash to pieces the dream of viewing a complete 44 sheet on the screen and then selectively printing stanzas.

BT of a depressing at-

tion. Perhaps I should have bought an electric typewriter with computer compatibility.

I know that I've got to buy a program but do I have to discard the data recorder and get a disc drive? — **J. Chapman, Birmingham.**

There is little that can be done to improve the print quality. Don't forget that, although it set you back quite a sum of money, the 1007 is still a budget type of printer when compared to most letter quality machines.

The screen problem can't be overcome completely, other than with a hardware modification, but you could use a word processor such as SuperScript, AtariWriter Plus or PaperDip, all of which give you preview mode which allows you to use the 80 column screen as a window on to a larger format.

This allows you to check that the columns are aligned correctly and so on before you commit the text to paper.

As to your question on cassettes—we would strongly recommend that you invest in a disc drive—all of the above programs being disc only—both for greater reliability and much greater speed.

## Reversing the screen

I TYPED into my 800X the Microprogram transfer program from February's issue of Atari Users. It's very useful but I have a few queries.

The program also works for Kiosk Plus (which uses 62 sector graphics) files. However since this appears mirrored when displayed to a printer in other words as negative.

Is there any quick way to reverse the screen before the G48 screen dump? I can do it only by changing or reversing each pixel on the screen. It takes ages but it works.

Normally, when a screen is saved it requires 64 sectors instead of 82. This doesn't seem to make any difference when loaded back on the screen, but when the saved

screen is dumped to a printer the last part of the printer draws two lines of garbage at the end — **R.G. Routledge, Worcester-on-Sass, Essex.**

The real answer to your problem is to use a machine code program, but the fastest that poor old Basic could do by using the following program:

```

10 ADDR=POKE(0)=PEEK(0)+254
20 FOR I=ADDR TO ADDR+127
30 POKE I,PEEK(I)-255
40 NEXT I

```

This should be run with the graphics screen displayed but before going to the dump routine. It will invert the whole of the screen—faster than LOCATE and PAGE, but still not very fast I'm afraid.

## Surviving Mercenary

I WOULD like to congratulate Morgan on his new game Mercenary. I have just spent two days playing it, and have just finished it, the easy way.

For anyone who is stuck in Mercenary I suggest you take the easy way out and send away for the manual kit and hint sheet.

This is a good way to get you to spend more money. But for around £2 it's well worth getting.

It is also a good idea to save your position at frequent intervals to save time if you lose the program. One last hint—don't go into the prison! — **W. Wetherburn, Ry Advinture, Scotland.**

## Advertising begins at home

I HAVE just read your opinion on Micro Live in Atari ST Users and I would like to say I and my friends wholeheartedly agree with what you say.

Micro Live has always been an advert for Atari micros.

# Mailbag

Ever since the first programme the BBC Micro has been regarded as being vastly superior to anything else.

In an early programme there was a comparison between word processors for home micros. This was done with five or six different micros lined up, each using its own program.

Atanorfer was featured on an 80001, operated by some TV personality. Needless to say, Atanorfer was found to be difficult to use because it only had a 40 column display and was generally fiddled about upon.

The Week, of course, was the machine for word processing, with Wordwise. When More Live's American correspondent announced the launch of, and impact of, the 8085T it was played down at this age, and the report

seemed to be just short.

Be fair though, its not only More Live, Tomorrow's World and Blue Peter are also involved in this massive hype.

Without this advertising support the BBC Micro may well have died from an excess of overcharging a long while ago. — David Butters, Southham.

## Bugs, bugs and even more bugs

SEVEN years ago when the BBC Micro was first announced there were many tales of bugs in ROMs, dodgy CPUs and faulty GLAs. It seems that over now a machine is played with problems from the point of purchase.

I bought an Atari 5200? in

October 1988 and have since had no end of trouble in trying to obtain the specification as advertised.

The operating system in ram is still not available as an upgrade in ram, so you effectively lose 200k of memory from the point on.

With Basic loaded you are left a meagre 5k of program space. I am now told by Atari that if I wish to connect a colour monitor to my machine after the ram upgrade which costs £28 I will be required to buy a new video chip for £40.

It also seems that to get a decent version of Basic, in other words without bugs, Atari users are going to have to fork out £90 for the new Atari Basic.

This is just typical of the computer industry. When will manufacturers finish their products before releasing

them? — David Halls, Ashford, Middlesex.

## Less costly control box

I HAVE had an Atari 1300X for about a year and would like to know if it is possible to control several monitors.

ATI want to the control box. I have seen the mini 3 robot for £119.95 but this is too expensive for me, so can you tell me where I can get a less costly control box.

I have tried Silco Shop, but they don't do robotics for the Atari. — Philip Mack, London SW8 4DT.

■ In the new Great Little Gadgets series we will be covering motor control and so on.

## SUNARO software

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## These back issues are still available

**June Issues:** Analysis of the 13001, Submarine Advertising, Random numbers, Software reviews, Frog design, MessagePad, Boards, Atari Insights - 800 User, Beginners and Graphics special 12 page feature on Communications.

**July Issues:** Chessboard, Board Box, OVA 15, 27 Commodore, Advertising, Display List Tutorial, Software reviews, Power Functions, Transient Port, Keyboard Sounds, MessagePad, Insights - 800 User, Beginners and Graphics.

**August Issues:** Analysis of 50001, program production routines, Fruit Graphics, Assembly, Touch Table programs, first look at Logo, Board 1990, On 2.0 upgrade offer, Display List Tutorial, MessagePad, Software reviews, Insights - 800 User, Beginners and Graphics.

**September Issues:** Response to the 50001, Mode 1 screen design routine, Main Menu, Data Menu, Inquiry List Tutorial, 68000 software routine, for programming with Logo, Software reviews, Insights - 800 User, Beginners and Graphics.

**October Issues:** Computer Culture graphics program, Updates for 8400 1000 number, 13001 Review offer, How fast is your display utility, Plotting Software reviews, 68000 operating environment, Ringway, Insights - 800 User, Beginners and Graphics.

**November Issues:** Christmas program, Screen operation utility, 800 graphics examples, 10 column file, Gps Keyboard game, Display List tutorial, Advertising MessagePad, Software reviews, Insights - 800 User, Beginners and Graphics, programming n-1 on the 800, Advertising, Software reviews.

**March Issues:** Machine code graphics, Knight's tour program, Computer Pt. 1, Superstars review, Checkmate for early games, Board reviews, Advertising, Software reviews, PLUS! Read 80 User 6 Special review, Jet Master and Colour

space Master Pt. 1, Making the most of the 800.

**April Issues:** Sound synthesis, Computer Pt. 2, Using modes 12 and 13, MessagePad review, also directory printing utility, Advertising, Software reviews, PLUS! Atari 800 User Review of Pt. 1, Module 2, make the most of the 800, and all the latest news.

**May Issues:** Sam Tassell Interview, Computer Culture main game, Computer Pt. 3, Player Music Graphics Pt. 1, Atari's Spelling Program, Advertising, Software reviews, PLUS! Atari 800 User, Atari Share report, The Print and Load Utility network, 800 Graphics Pt. 1, Superstar Chess, Picture processing programs, Making the most of your 800, and the latest 800 and ST news from the States.

**June Issues:** Course Design main editor, Part 1, 4000 User Guide Graphics - build a light screen, Final part of Beta-Complete games, Fox Lines 41, Player Music Graphics Pt. 2, Advertising, Software reviews, Assembly Room, PLUS! Atari 800 User, Contributors of 800 Art review, n-1 n-1 501 music games in Beta, Two 1 new applications, Software reviews, Making the most of the 800, and all the latest 800 news.

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**JUNE: Frog-Jump:** Guide the frog to his home in this version of the arcade classic. **130000:** **Ram Power:** Use the extra 64k of memory to good effect. **Submariner:** Navigate the submarine. **Strike-Strike:** Draw pictures with a joystick. **Random Numbers:** Get random numbers from machine code. **Willy Pilgrims:** Can you keep the Willy Pilgrims happy in their cell?

**JULY: Bomb-Bom:** Flatten the deserted city and land safely. **Disassembler:** Find out what's going on deep inside your Atari. **Treasure Hunt:** Use logical thinking to find the treasure. **Perimeter Generation:** Keep generating new walls till you find one you like. **KeyCommand:** Control your mine without eyes. **Quadrant:** Can you sort out the mess of ropes in the battle?

**AUGUST: Assembler:** Make machine code programming easier. **Print:** Simulate how money with this first machine simulation. **Mandelbrot:** Complex patterns made easy. **Protectors:** Protect your programs from prying eyes. **Display List:** Demonstration programs. **Roller 1995:** Futuristic test adventure. **Touch Table:** Demonstration programs.

**SEPTEMBER: Maze March:** Help finance the blind march the more mazes! **Maze:** **Data Maker:** Convert your machine code routines to DATA statements. **Display List:** Demonstration programs. **Screen Dumper:** Dump your Data 8 screen in a 1024 printer. **Strike:** Solve the Strike problem.

**OCTOBER: Pantomime:** Turn? Shut! **Memory Dump:** Examine memory in hex and Ascii. **Display List:** Demonstration programs. **Warp Trip:** Action game for one or two players. **Computer Camera:** Make your own movie masterpiece. **Assembler Update:** Improvements for RAM assembler. **Ram Drive:** Make the most of the 128K's extra memory.

**NOVEMBER: Guy Fawkes:** Help Guy escape from the guards. **Consume:** Touch your Atari to be a psychotherapist. **Display List:** Demonstration programs. **Random Operations:** Utility to provide logical functions. **Circle:** Draw and fill a circle. **Plan Profile:** of the month. **Cooperate:** machine code puzzle game.

**DECEMBER: Countdown:** More version of the famous TV game. **Get It Right:** **Atari User's** own check-out program. **Draw:** line art handler on your Atari. **List Update:** Makes listing easier. **Display List:** Demonstration programs. **Plan Profile:** of the month. **Join's Program:** machine code entertainment.

**BASIC COMPILER:** The entire set of Basic Compiler programs from the March to June issues on one tape/disc. Write easy routines for your programs that will run at machine code speed. Contains the Compiler, Library and many example programs. (N.B. Requires an assembler.)

**JANUARY 1986: Ballo:** Help Mr. Henry rescue Emmella. **Get It Right:** **Atari User's** own check-out program. **Allen Attack:** The game to accompany the machine code series. **Letter:** Make listing programs easy. **Data:** Play the music-to-music player at the drawing game. **Range:** 1024 printer/player routine. **Plan Profile:** of the month. **Assemble:** **Flight:** machine code game.

**FEBRUARY: Microcomputer:** Programs to manipulate Microcomputer screens. **Click:** Interrupt download utility. **Planet:** Flaming colour utility. **Research:** Simple to play, hard to master. **Bridge:** The thinking person's card game. **Plan Profile:** of the month. **Demon's Lair:** an adventure game you may never escape from.

**MARCH: Home Play:** Knight's tour program. **Basic Compiler:** Programs to accompany the new series. **Allen Attack:** Final part of assembly listing. **Plan Profile:** of the month. **Winston in the Cave:** - can you keep your head and help Winston beat his?

**APRIL: Synthesizer:** Activate the hidden depths of the Atari sound chip. **Word:** index. Keep track of the files and how space with the index printing program. **Graphics:** Make the most of Modes 12 and 13. **Plan Profile:** Can you beat the game that takes hours to win?

**MAY: Covert Escaper:** Can you help In-Go Joe escape from the labyrinth with King Wandering? **Player Master:** Program to accompany the rest of the series. **Rolling:** Automate those weekly school spelling tests.

**JUNE: Maze-Creator:** Create hundreds of new mazes for last month's Covert Escaper game. **Player Master:** **Designer:** Create your own DCLA shapes with this Player Master Editor. **Five Lines 1:** Simple Drawing routine - build it into your own programs.

**JULY: Space Maze:** Manoeuvre your space ship through the treacherous space caverns. **Player Master:** **Example:** Program to display your Player Master graphics. **Graphics:** Two programs to run devices via your own postscript interface. **Five Lines 2:** Create BBC-style displays on your Atari. **Random:** Correlate these bugs in the XL's Rom 8. **Random:**

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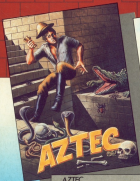
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