

# ATARI USER

Vol. 3 No. 10 February 1988 £1.25

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## Console campaign continues

A COURT decision in the US has resulted in Atari being able to continue with its TV campaign for the XE video games console.

The case was brought by Nintendo who complained that the TV ad was false and misleading by comparing its games machine to Atari's.

Mike Katz, of Atari's electronic entertainment division, said: "We are very pleased about the ruling. The commercial was hard-hitting but truthful".

## New venue for show

THE biggest Atari User Show ever is lined up for the West Hall, Alexandra Palace, London, April 27 to 29.

Last November's show at the Novotel in Harrogate was so successful it inspired all previous attendees records.

The rapidly growing army of Atari enthusiasts ensured that a move to an even larger venue was a must for organisers Database Exhibitions.

And even after the switch to the spacious Alexandra Palace, increased demand from dealers has meant an extra 20 per cent of exhibition area has had to be provided.

Visitors will now have even more to see and more bargains to choose from than ever before, with exhibitors already promising price cuts on games, discs, printers, business packages, and hundreds of other items.

A money-saving advance ticket order form appears on Page 2.

# Woolworths to stock Atari budget titles

THERE is good news in store for Atari budget software buyers. Woolworths is ending its exclusive arrangement with Mastertronic, and stocking a selection of Finbird titles as well.

And there is a strong possibility that the High Street giant will also find shelf space for the fast-moving Code Masters games.

Books is also expected to reorganise its Mastertronic-dominated shelves and give more exposure to Finbird and Code Masters titles.

A company source said there are plans to deal with

all its budget software suppliers on an equal basis in future.

Meanwhile, Activision has agreed to let Mastertronic handle its entire catalogue of hit programs under the newly-created budget label Finchco.

Atari 8 bit versions will cost £1.99 on cassettes and £2.99 on disc.

The vast Activision range includes the Lucasfilm titles and classic hits like Ghostbusters - which will be one of the first Finchco releases.

A Mastertronic spokes-

man told Atari User: "We're delighted to do this deal. The Activision range reinforces our policy of only releasing the very best quality product on the Finchco label".

Activision's Rod Cousins said: "The agreement really demonstrates the importance of secondary marketing opportunities and of building a catalogue that has a worth over a period.

"In a business where shelf life may be short lived, the ability to recycle programs through budget labels is beneficial to all concerned".

## Case settled

FOLLOWING an injunction and court case involving Telesoft and Hewson, Finbird has won the right to publish Morpheus and Megatron this year.

The titles came under contention when Steve Turner, boss of Craftgold and editor of Magnetron signed a long-term programming contract with Telesoft for all future products and separate contracts for Morpheus and Magnetron.

Prior to this deal, Craftgold had published all its hit titles through Hewson which objected to Turner's new arrangement.

It could be several months before the dispute is finally settled, but in the meantime the courts say Telesoft can go ahead and publish the two contentious titles.



Mark Smith leads the way

## Virgin races ahead

VIRGIN Games moves into the fast track this year with motor racing sponsorship.

Driving its entry in the Formula 1st championship will be Mark Smith, author of interactive adventure books that have provided the inspiration for several computer games.

From those books Virgin Games has produced Falcon, the Renegade Lord and will soon release Dealmaster, Challenge of

the Magi, Granin Graphics has published Way of the Tiger and plans a second Dealmaster adventure called Blood Valley.

Mark will be sponsored for the Top Gear Formula First series at Brands Hatch - and Atari users will have plenty of chances to see the distinctive Virgin Games logo flashing around the track because the races will be covered by BBC 2's Top Gear programme.

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## Double helping from Red Rat

A DOUBLE helping of entertainment is being served up by Red Rat Software with the release of two twin-pack games for the Atari.

Both titles come on a single cassette or disc and feature high resolution graphics and scrolling animation.

The first release contains *Mad Jax* and *Planet Attack*. *Mad Jax* is a wild car game where you have to guide the vehicle through the desert en route to the city.

It may sound simple, but planes and heavily armed monster cars are out to get you.

In *Planet Attack* the object is to destroy enemy alien tri-jacks on a distant planet. Following take off from your landing pad you have to drop bombs and fire lasers to destroy the targets.

However, hostile flying saucers attempt to thwart your mission.

The other double pack from Red Rat (081-835 1066) features *Space Wars* — a good old shoot-'em-up in the style of the classic arcade game *Asteroblast* — and *Dreadnaught*.

From deep space to the deep blue sea, *Dreadnaught* follows the theme of the last city of Atlantis. Aliens are



trying to destroy the remains of the city and it is your job to stop them.

All double packs are priced at £2.99 on cassette and £3.99 on disc.



## Zepplin takes off

A WEALTH of new games titles for Atari computers are on the way following the recent formation of Zepplin Games (081-261 4481).

The company was launched last November and boasts a team of highly talented young programmers.

Zepplin's software director, Brian Zastlind, aged 19, already has some impressive titles under his belt, including *Phantom*, *Winter Olympics*, and *Who Games Miss II*, his latest offering

for the Atari is *Speed Ace*, a motorcycle simulation in which two players can compete against each other or 19 computer riders.

The game features some of the world's best known race tracks, such as Silverstone, Brands Hatch and Monza.

Colliding with any of the other riders on the track results in losing temporary control of the motorcycle at simulated speeds of up to 120 mph. Price £2.99.

**THE  
GALLUP  
CHART**
**TOP 20**  
SOFTWARE TITLES FOR FEBRUARY

THIS MONTH	LAST MONTH	TITLE (Software House)	PRICE
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5	▼	DECATHLON Firebird	1.99
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20	▼	SILENT SERVICE Microprose	9.95

Compiled by Gallup/Microscope

Mastertronic dominates this month's chart. Not only has it dethroned Firebird's *Decathlon* from the number one position — replacing it with the excellent *Henry's House* — the company also has seven titles in the Top Ten.

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JUST let me ease off these seven-league boots and soak my aching toadies in this bowl of hot mustard-water and I'll be with you. Ahhh! That's better. You see, I've just been playing in the All Deeds! 30-a-side crystal ball kicking championships and my legs are now the size, color and consistency of a bunch of overripe bananas.

My team — the Adventuring Alliance — lost 251-0 in the final to the Fought Diamonds — a mixed team of giants and ogres from over the western hills. They were bigger than us — about 15 feet to be precise.

Goodness knows how they were admitted to the competition: They must have bribed the committee with one of their famous dinosaur pies.

Still, enough of my pastimes. Let's get on with the real business — adventuring. I have exciting news of three great new games, all of which may well be on sale by the time you read this column. First, following up the superb *Gallop of Theives*, comes *Jinster* from Rainbird and Magenta Scrolls.

This light-hearted and humorous tale is set in Aquitania, a land sealed in luck and happiness where nothing nasty ever happens: A land protected from the naughty Green Magicians by a charm bracelet of magical powers.

But someone has been removing the charms from the bracelet, with the result that the Greenies are gaining power, and luck is at a premium. Your task is to recover the missing charms and so restore Aquitania to its former state of well-being.

Written by Michael Bywater and the Magenta Scrolls development team, *Jinster* is a far cry from being another run-of-the-mill adventure. You won't find any obsolete Gods, washed-up wizards or hammy Hobbits in this one.

What you will find is an adventure that provides puzzles and giggles in abundance. For instance, a guardian from beyond the veils of time is not a sleeked and bearded figure of awesome demeanor, but a morose, reluctant, time-serving bloke in a herringbone overcoat — a sort of Arthur Daley of Aquitania. "What's the point of necromancy, immortality," he grumbles, "if you can't get a decent bit of cheese in your sandwich, nonsense!"

And he's pretty hell at helping you learn the magic spells you'll need to succeed in your mission. "Just find the witcher-calt, say the doodah and chinggle's your necromancy. Charm. Ward. Bats. Uncle. Nonsense!"

The supporting characters are no less strange. The gardener is a cantabile megalomaniac and the village postmistress thinks she's Calamity

# Light touch by Rouloc in Aquitania

Jane. And what is the relationship between her and the thick-witted postman? What is going on in your best friend's cellar and what's that pang? Why is everybody so unwilling to give you speedy and polite service?

These and many other pleasures await you in *Jinster* — an adventure in which you can't die, except perhaps by laughing yourself silly.

The other two games are new releases from Infocom — they certainly seem to be stirring them out these days. The first, *Beyond Dark*, is a little different from Infocom's usual offering. It combines the traditional type of Infocom text adventure with elements of role-playing.

You can allocate a set number of points between attributes like strength, intelligence and so on, which

determine how you will fare in certain situations.

The adventure includes combat, and I believe there is even an on-screen mapping feature — a new departure for Infocom.

The second Infocom title is *Border*

Turn to Page 104



## From Page 2

Zoro, their first tale of international intrigue. The plot concerns a sick American spy, a KGB agent and a happy-go-lucky businessman. The trio becomes embroiled following the assassination of a diplomat and their paths cross as each carries out his particular assignment.

You see the story from the three differing viewpoints, and to help you on your way on screen hints are available – another new feature.

Written by Mark Blank, author of such illustrious adventures as *Deadline* and the original *Zork*, Border Zone promises to be a treat for all adventurers. Watch these pages for a detailed review of all these new products in the near future.

And now to your letters, most of which concern *The Pawn*. Dan Priddy from London and Jonathan Evans of Pretoria, South Africa, cannot get past the boulders. See the Hints section for instant enlightenment.

Among other problems, Jonathan doesn't know what to do with the floorboards in the tree and has found that the Gory does not want any Perrier water – what does he want? Help is at hand.

Mark Powell of Lewes in Sussex has completed *Hollywood Hijinx* and I am pleased to publish some of his hints for that adventure since many of you are still struggling gamely with it.

Diana Thresher of Hockley, Essex, says she has lost the novella which came with *The Pawn* and now can't read the game as she doesn't remember the passwords. I'm not surprised you can't recall the passwords – potentially, there as many of them as there are words in the novella.

Remember use the novella as a sensible and effective anti-piracy measure, the reasoning being that if someone hasn't got the documentation they probably didn't buy the original game.

It's bad luck on any genuine owner who loses the essential documentation, though. The only thing I can suggest, Dome, is that you write to Rainbow explaining the position and enclosing proof of purchase and perhaps they will be kind enough to let you have another copy of the novella. Better take good care of such documentation next time, because all Rainbow adventures use this password protection method.

Arnie Jackson of Cambridge is having a spot of difficulty with *Ultima IV*. He would like to know the exact position of the mandrake root using the sextant

## Hints & tips

### HOLLYWOOD HIJINX

■ **Need an underwater light source?**  
Light one of the candles with the red match and coat the green match with the wax. Take another candle with you and light it with the wax-coated match when appropriate.

■ **Don't know what to do with the plane?**  
Fly the plane that Aunt Hildegard likes. Push the plane North and remove the pillar from the south coast gate. Push the plane South twice to gain access to another treasure in the cave space.

■ **Accused in the bomb attack?**  
Push the right end of the plank down, pull the chain, stand on the right end of the plank then light the rope.

### THE PAWN: Solution – Part one

Look at your clothes. Go East. Say to Kratos "Greetings". Take note. Ask Kratos about wristband. Take chest. Go to palace gardens. Look for a key. Look in fountain. Go to shed. Look for a rake, hoe, trowel and pot. Show something to guards. Go to Goro.

Cover wristband. Go to large boat. Use the rake and hoe together with shirt. Lever boulder with axe and tree. Climb rocks. When the adventurer appears, give him the chest.

Get on horse. Get some snow. Return to Goro. Go to clearing. Look at stump. Mix items to get a white. Go to large tree. Unlock door. Enter and close door. Lift boulder. Go down stairs.

■ **First step is most crucial.**



and requires the correct order of the three parts of the word of passage. Can any reader help?

**Minotaur Reality** – The Dungeon is causing some anguish to Dave Hall. In his own words he's "a somewhat frustrated, droopy-eyed adventurer from Sheffield".

We wonder how you can get a city character into the dungeon without getting him killed off immediately. Why does the oracle tell you of quests that cannot yet be completed? What are the answers to the gargoyle's riddles? And why does the lycerman insist on taking Dave downriver contrary to what the manual says? A tell order – can any player assist?

I've shed I've changed my mind



# Calendar maker

Othman Abdul Hamid takes a look backwards and forwards in time

ACCORDING to the book *Inventions That Changed The World* the present Gregorian Calendar began to be used on Friday October 15, 1582 when Pope Gregory XIII revised the old Julian calendar. This then became the standard for most of Europe, although Britain did not begin to use it until 1752.

Bringing Pope Gregory up to date, this program will print - on-screen or to an Epson-compatible printer - a monthly calendar from October 1582 to any future date you care to enter.

When the program is first run you are asked to enter the month and year you wish a calendar for. The results must be entered as a number from 1 to 12; for example, if you want January you must enter 01, and so on. The year must be a four figure number greater than 1582, this being the date of the newly revised calendar.

Once the date has been entered you are asked to enter the size of the calendar you want to print - (S)mall, (M)edium or (L)arge. You also have the option to have no printer, which

means that the calendar is only displayed to screen. This is achieved by pressing any other key other than one that chooses size.

When the size is chosen the program will calculate the new calendar. If at this point you change your mind, just press C to start again, or press P to print the calendar.

The program works by counting the days interval between the year 1200

and the date entered - the year 1200 is taken as starting point to simplify calculation. The days are then converted into weeks and the remaining days - obviously a number not divisible by seven - determining the position of the last date in the calendar.

To check the accuracy of the program I have used it to check many well known historical dates, and found it to be accurate every time.

FEBRUARY 1988		7	14	21	28
SUNDAY					
MONDAY	1	8	15	22	29
TUESDAY	2	9	16	23	
WEDNESDAY	3	10	17	24	
THURSDAY	4	11	18	25	
FRIDAY	5	12	19	26	
SATURDAY	6	13	20	27	

## PROGRAM VARIABLES

LINE#	Screen lines to be dumped to printer
MONTH#	Names of the months
DAY#	Names of the days
MONTHLEN	Number of days in each month except in an errie
MONTH	Month of the calendar
Y	Year of the calendar
MDAY	Number of days between January 1 and the last day of the month
LYEAR	Number of leap years since the year 1200
LCENTURY	Century years (such as 1200,1600,2000) which are leap years since the year 1200
WDAY	Number of days in leap years
LEAP	Extra days in leap years
TOTAL	Actual number of days since the year 1200
LAST	Number to determine position of last date in the calendar

## PROGRAM BREAKDOWN

- 70-800 DEM string/read and checks inputs
- 330-370 Counting days, adding extra days in leap years
- 340-360 Convert days to weeks, calculate positions of dates on the calendar
- 370-380 Print calendar on screen
- 400-570 Make selection: Restart or hard copy
- 580-600 Trap lines, date and printer codes

```

10 DIM MONTH$(12),DAY$(7)
20 DIM LINE#
30 DIM M#
40 DIM Y#
50 DIM MDAY#
60 DIM LYEAR#
70 DIM LCENTURY#
80 DIM WDAY#
90 DIM LEAP#
100 DIM TOTAL#
110 DIM LAST#
120 DIM MONTH#
130 DIM Y#
140 DIM MDAY#
150 DIM LYEAR#
160 DIM LCENTURY#
170 DIM WDAY#
180 DIM LEAP#
190 DIM TOTAL#
200 DIM LAST#
210 DIM MONTH#
220 DIM Y#
230 DIM MDAY#
240 DIM LYEAR#
250 DIM LCENTURY#
260 DIM WDAY#
270 DIM LEAP#
280 DIM TOTAL#
290 DIM LAST#
300 DIM MONTH#
310 DIM Y#
320 DIM MDAY#
330 DIM LYEAR#
340 DIM LCENTURY#
350 DIM WDAY#
360 DIM LEAP#
370 DIM TOTAL#
380 DIM LAST#
390 DIM MONTH#
400 DIM Y#
410 DIM MDAY#
420 DIM LYEAR#
430 DIM LCENTURY#
440 DIM WDAY#
450 DIM LEAP#
460 DIM TOTAL#
470 DIM LAST#
480 DIM MONTH#
490 DIM Y#
500 DIM MDAY#
510 DIM LYEAR#
520 DIM LCENTURY#
530 DIM WDAY#
540 DIM LEAP#
550 DIM TOTAL#
560 DIM LAST#
570 DIM MONTH#
580 DIM Y#
590 DIM MDAY#
600 DIM LYEAR#
610 DIM LCENTURY#
620 DIM WDAY#
630 DIM LEAP#
640 DIM TOTAL#
650 DIM LAST#
660 DIM MONTH#
670 DIM Y#
680 DIM MDAY#
690 DIM LYEAR#
700 DIM LCENTURY#
710 DIM WDAY#
720 DIM LEAP#
730 DIM TOTAL#
740 DIM LAST#
750 DIM MONTH#
760 DIM Y#
770 DIM MDAY#
780 DIM LYEAR#
790 DIM LCENTURY#
800 DIM WDAY#
810 DIM LEAP#
820 DIM TOTAL#
830 DIM LAST#
840 DIM MONTH#
850 DIM Y#
860 DIM MDAY#
870 DIM LYEAR#
880 DIM LCENTURY#
890 DIM WDAY#
900 DIM LEAP#
910 DIM TOTAL#
920 DIM LAST#
930 DIM MONTH#
940 DIM Y#
950 DIM MDAY#
960 DIM LYEAR#
970 DIM LCENTURY#
980 DIM WDAY#
990 DIM LEAP#
1000 DIM TOTAL#
1010 DIM LAST#
1020 DIM MONTH#
1030 DIM Y#
1040 DIM MDAY#
1050 DIM LYEAR#
1060 DIM LCENTURY#
1070 DIM WDAY#
1080 DIM LEAP#
1090 DIM TOTAL#
1100 DIM LAST#
1110 DIM MONTH#
1120 DIM Y#
1130 DIM MDAY#
1140 DIM LYEAR#
1150 DIM LCENTURY#
1160 DIM WDAY#
1170 DIM LEAP#
1180 DIM TOTAL#
1190 DIM LAST#
1200 DIM MONTH#
1210 DIM Y#
1220 DIM MDAY#
1230 DIM LYEAR#
1240 DIM LCENTURY#
1250 DIM WDAY#
1260 DIM LEAP#
1270 DIM TOTAL#
1280 DIM LAST#
1290 DIM MONTH#
1300 DIM Y#
1310 DIM MDAY#
1320 DIM LYEAR#
1330 DIM LCENTURY#
1340 DIM WDAY#
1350 DIM LEAP#
1360 DIM TOTAL#
1370 DIM LAST#
1380 DIM MONTH#
1390 DIM Y#
1400 DIM MDAY#
1410 DIM LYEAR#
1420 DIM LCENTURY#
1430 DIM WDAY#
1440 DIM LEAP#
1450 DIM TOTAL#
1460 DIM LAST#
1470 DIM MONTH#
1480 DIM Y#
1490 DIM MDAY#
1500 DIM LYEAR#
1510 DIM LCENTURY#
1520 DIM WDAY#
1530 DIM LEAP#
1540 DIM TOTAL#
1550 DIM LAST#
1560 DIM MONTH#
1570 DIM Y#
1580 DIM MDAY#
1590 DIM LYEAR#
1600 DIM LCENTURY#
1610 DIM WDAY#
1620 DIM LEAP#
1630 DIM TOTAL#
1640 DIM LAST#
1650 DIM MONTH#
1660 DIM Y#
1670 DIM MDAY#
1680 DIM LYEAR#
1690 DIM LCENTURY#
1700 DIM WDAY#
1710 DIM LEAP#
1720 DIM TOTAL#
1730 DIM LAST#
1740 DIM MONTH#
1750 DIM Y#
1760 DIM MDAY#
1770 DIM LYEAR#
1780 DIM LCENTURY#
1790 DIM WDAY#
1800 DIM LEAP#
1810 DIM TOTAL#
1820 DIM LAST#
1830 DIM MONTH#
1840 DIM Y#
1850 DIM MDAY#
1860 DIM LYEAR#
1870 DIM LCENTURY#
1880 DIM WDAY#
1890 DIM LEAP#
1900 DIM TOTAL#
1910 DIM LAST#
1920 DIM MONTH#
1930 DIM Y#
1940 DIM MDAY#
1950 DIM LYEAR#
1960 DIM LCENTURY#
1970 DIM WDAY#
1980 DIM LEAP#
1990 DIM TOTAL#
2000 DIM LAST#

```

```

*END*
END

```



# Software

## SCENE

### Gunfight at the corral – OK!

Program: *Gunfinger*  
Price: £14.95 (disc only)  
Developer: Datacube Ltd, Galt,  
Units 2 & 3 Halford Way,  
Halford, Birmingham B6  
7AX  
Tel: 01 266 3388

In this graphical text adventure you play Rip Starr, an unemployed Texas ranger who has just received two telegrams from his old buddy, James Bedard.

The first tells you that Bedard is in a jail south of the border and, if this isn't enough, the second informs you he is about to hang in two days.

Not wanting to let your old friend down you grab your legs and your trusty six-shooter and get ready to leave. Then out of the blue, yet another nasty telegram arrives.

This one is much more sinister: "We've escaped from jail. Just a warning for you and that buddy of yours. Signed: The Dalton Brothers (all six of us)".

Your prospects don't look so bright when you find yourself stranded in the desert after riding your horse to death. But things pick up when a traveller comes across you and offers you a ride into Dawson City.

So there you have it. All you have to do is break into and out of jail. Then you must keep your appointment at the OK Corral for a showdown with the six Dalton brothers. Simple.

You find adventure in a gold-rush ghost town, an Indian village and a US Army fort, all generously scattered on your way to

Mexico to save friend James from the hangman's noose.

Many other diversions stand in your way in the form of crooked poker games, runaway mine cars, dangerous waterfalls and ambushes. These are all presented using more than 180 very effective hi-res picture screens.

You can enter commands from the keyboard – in a fashion all text adventure players should now be familiar with – or use a combination of joystick and keyboard inputs: A novel approach and fun.

The screen shows your location on the left and a menu of verbs, nouns and prepositions on the right.

You can also bring a compass on to the screen by moving the on-screen arrow into the area just to the left of the command screen. You can save a game at any time by highlighting the SAVE command in the verbs box. Whatever you do, don't save a game as a reader disc.

If you are new to this form



of entertainment here are a few hints: Always save at regular intervals – the West is very dangerous and you can be killed at anytime. Make a map – it's always useful to know where you're going. Also watch out for the Indians – they have a habit of collecting scalps.

All the items you find will be used for something, so don't go dropping them. A horse can make all the difference, so be careful where you leave one, and remember stealing one is a hanging offence.

If you encounter a diabolical character – and there

are a few – remember this is the West and your gun speaks the only truth. For example, when I went into the saloon for a game of cards the man opposite me cheated. I didn't ask him to apologise; I just shot him dead – and he turned out to be Jessie Dalton – only another five to go!

This adventure is one of the largest I have ever played. The pictures are excellent, and I especially liked the one of the card player staring at me over his hand just before I shot him.

It's very playable and quite humorous in parts. Although not the most intriguing game ever, some thought is needed if you want to finish and save James.

If you like adventures and fancy something a little different, *Gunfinger* is a must. It's originality and ease of use makes it a winner.

Neil Fawcett



Presentation	8
Atmosphere	7
Graphics	8
Fun/entertainment	8
Value for money	8
Overall	8

# Software

## SCENE

### Snazzy but slow

Program: *Transmuter*  
Price: £1.99  
Supplier: Code Masters,  
Lower Farm House,  
Stoneyhale, Southam,  
Warwickshire, CV39 9JG,  
Tel: 02462 257237

IN the past Code Masters has only released two games on the Atari - Red Max and BMX Simulator. They are both graphically excellent, sonically superb and packed with playability. So it came as a welcome sight when I spotted the company's latest offering - *Transmuter*, a horizontally scrolling shoot-'em-up.

The story? Well, it seems that in the future the Sun becomes a red giant, and the extreme cold makes everybody go underground to keep warm. Up top, sentry robots and attack

droids are kept in place to defend from possible invasion.

Three passes, and using Earth's resources, the remaining humans build ships and travel out to the stars, seeking a new home.

Settled in their new planet, people wonder what became of the Earth, so a single man is sent back to the same world in a new fighter carrying, at its core, a reactor transmuter.

That is a device capable of transforming energy into separate forms for use in attack or defence.

You are that man, and on reaching the Earth you are attacked by the outer defences left a millennium ago. Activating the transmuter, you fly into battle - attack being your only chance of escape.

This story line covers

what is actually a version of the Konami arcade game *Nemesis*. Yes, they're all there - speedups, missiles, double 45 degree shots, lasers, multiples and shields - all the features of *Nemesis*.

All except one thing - speed. And unfortunately all the snazzy features in the world can't help if a game is slower than the proverbial tortoise.

Once you complete a level you are confronted with a mother ship, just like in *Nemesis*. When this is destroyed you have a bonus level with all sorts of starships flying at you.

Yet the game gets incredibly easy if you have speeded up. Frequent and two multiples, because nothing gets past you.

Graphically, *Transmuter* is not bad, with average



sound and gameplay. Though it's slow, if you really are desperate to play *Nemesis* on your Atari, at £1.99 I don't suppose it's hard that much of a hole in your pocket.

Robert Swan

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

### There's a mouse loose..



Program: *Basil the Great Mouse Detective*  
Price: £9.99  
Supplier: Zenon Graphics,  
Alpha House, 12 Carter  
Street, Shefford, MK44 0FQ,  
Tel: 0247 724427

221B Baker Street is home to the two greatest detectives in the world. Upstairs is Sherlock Holmes, and below in the basement is a

mouse named Basil, the most intelligent rodent mind ever.

This keen, sharp-witted mouse and his colleague - the amiable Dr. Dawson - have solved many a crime. But now the evil Professor Pattison has kidnapped Dawson, and it is down to you as Basil to find and rescue your friend and partner.

As the game loaded, the distinctive tones didn't sound quite as clear as they should, but then up came the message: "Please wait, now loading Basil". What appeared was a shaded loading screen of Basil in action.

What I certainly was not prepared for was the wait - about 20 minutes after loading started the screen advised "Please rewind tape to start of side 2 and press

speaker". Shades of Gauntlet.

After approximately half an hour the game was in go, plinking up my trusty joystick I set about it.

The graphics are in 16 shades of brown for the playing area, and the score area is blue, red, green and yellow. Need I go on? It's incredible.

The programmers of this visual feast have done some really fantastic work using the limited screen palette, and the sprites are cute and well detailed. The display is clear and easy to see, with more than adequate sound. The gameplay is a little difficult to start with - especially finding which items to use and examine - but you get used to it after a while.

What of the battles? Enemy mice rear the karts and gutters of London.

Slight contact with them reduces your energy and prolonged contact is lethal.

To reach high places you must leap and bound. Timing the jumps and finding the exact spot to do so takes trial and error - and time.

In fact, my overall impression was one of time: Time to load, time to get used to the controls and gameplay, and time to battle the game itself.

Basil the Great Mouse Detective looks great, plays well, and should have you stuck to your keyboard till the early hours.

Keith Pattison

Sound	7
Graphics	7F
Playability	7F
Value for money	8
Overall	8

# Software

## SCENE

## Adventure of a lifetime

Program: *Alternate Reality: The Dungeon*  
Price: £19.99 (plus post)  
Supplier: Datacube Ltd  
Units: 1 & 2, 10000 Way,  
Holford, Birmingham B8  
5AA  
Tel: 021-288 2288

**The Dungeon** is the second in the *Alternate Reality* series of role-playing adventure games. It's the sequel to *The City, Part One*, and is just as much fun.

The package contains three discs, a witty and amusing guide book, a basic map of level one, a letter from Trilog - another poor sole lost in *Alternate Reality* - as well as a complete map of the *Dungeon*.

Though this is of no real use, it looks pretty. However I would advise everyone to read the guide book diligently if they are to understand the game to the full.

The opening sequence which sets the scene is great fun to watch and listen to. As the music plays in the background the words are printed on the screen, and all this on top of a 3D rotating star field reminiscent of *Dr Who*.

As in *The City*, the game begins with you being abducted from Earth in a gigantic spacecraft. This all happens on screen with you transported to another planet, an *Alternate Reality* - hence the original title.

After this you find yourself in a room with only one exit. This faces the *Dungeon* and is covered by a force field with numbers spinning around above the door.

As you pass through, the numbers freeze as the *Dungeon* guide remarks: "As if you had pulled the lever to a cryptic slot machine". Their frozen



status - referred to as stats for the remainder of the game - determines your levels of stamina, charm, strength, intelligence, wisdom, skill, health and hit points.

You are now in the *Dungeon*, which is where the fun starts. In this maze of corridors and sewers you can meet all sorts of creatures - and probably will.

Near the entrance is the *Demon* and *Pythias* shop where you can buy almost anything.

And don't forget to barter with the owner - he really always gives in.

Scattered throughout the *Dungeon* corridors are lots of doors, but if you thought that doors were just doors you're wrong.

In this game there are magic doors invisible doors - I never saw one - and those that you can only open from one side.

Included in the guide is a grid you can photocopy and draw on - mapping is a must if you don't want to get yourself lost.

Eventually, as you work your way round you encounter a thief, a giant bat, an ogre and other equally obnoxious creatures. When this happens you have various choices: Charge, run away, transect and so on. Fighting is usu-

ally the best option, because if you win you can loot the body for treasure or weapons - treasure but rewarding.

Defeat usually ends in your demise, but you're not really dead - in the *Dungeon* is one that you and you can be resurrected for a small fee. In addition, if you are low on hit points you can always go to the *Rebirth* to recover.

Because the *Dungeon* is so dangerous I found it very useful to save a character at regular intervals. Fans of the *City* will be pleased to know that their existing characters are transferable, which gives you a much better chance of survival.

Movement is controlled by a joystick in part one or the keyboard. All other commands are simple key entry.

My favourite is F, for pause, which stops the action at any time without affecting the game.

Other commands include U to use any item you are presently carrying, and D to drop an item if you get too overburdened with stolen goods.

Various menus can be called up at any time and this, mixed with your stats at the top of the screen, action sequences in the middle, instructions and information at the bottom and having to flip discs all the time make the gameplay a little confusing.

The discs are constantly being swapped - although larger memory machines don't require as much updating.

All the on-screen text style is in old English. This is very appropriate but a little difficult to read at times without spelling.

All in all, this is another superb package from Datacube and well worth every penny. The graphics are superb and the music played throughout the game is stunning.

Burt James

Sound	50
Graphics	7
Playability	50
Value for money	50
Overall	50



# Software

## SCENE

### Stock car challenge

**Program:** Tailgate  
**Price:** £1.99  
**Supplier:** Top Ten, 17 Oak-  
 tern Drive, Centre,  
 Watton Road, Peterborough PE7 6AA.  
**Tel:** 0753 333662

**RICHARD** Petty, king of the NASCAR Super Stocks race scene, challenges you to a grueling race against 18 other drivers, each programmed to beat you.

This is Top Ten's description of it's latest release. Basically, it's Pitstop plus a

large dose of Pole Position. You have to race around a selected track – or choose one at random – inside the time limit to qualify for the main event.

You have to beat 18 racers – including Richard Petty in a blue flashing car – in order to win.

You can soon learn several tactics to help you beat the others – using turbo boosters which use up a lot of fuel and cut down control on bends, or sneaky manoeuvres such as

slipstreaming which cut down on fuel used.

You can also cut turns, which allows you to take a certain line through bends at 250mph – the car will do a four wheel drift but you can retain full speed or even lean on the other cars to shove them out of the way.

For balance there are things to hold you back or even put you out of the race – engine trouble is one but it is quickly remedied by a pitstop.

I didn't think Tailgate

was up to much graphically and its age is showing with old sound and gameplay. All in all it's not likely to make you race down to your local trackist to buy.

With Pole Position being sold nowadays for about £2.99, I believe you'd be better off spending the extra pound on that. **Robert Swain**

Score	5
Graphics	5
Playability	4
Value for money	4
Overall	5

### Jump at this one

**Program:** Twilight World  
**Price:** £4.99  
**Supplier:** Atari, Atari House,  
 Railway Terrace, South  
 Westgate, S21 3AE.  
**Tel:** 0753 822914

ISN'T it nice to see a familiar face again after so long? Yes it's true: Atari is now back in the software field after a long rest.

In its last release was the

disc-only Star Raiders II last Christmas. Well, now all you great tape owners can catch in Atari's comeback too, with this new offering from Matthew Trimby – author of Mastertronic's Crystal Maze.

Twilight World centres around you as a guy with a gun and the ability to leap over vast pits of flame while avoiding nasties and collec-

ting gems.

The nasties come at head, chest and feet height, and you can duck, jump or blast your way through the caverns ahead. A jet pack is also at your disposal a little later in the game.

The graphics are very good, and run along the line of the main character in US Gold's older titles such as Scooter, Oliver's Politics and

Shoot Chaser – except they are much larger.

Overall, a nice jump-shoot-collect game. A son of Oliver's Politics in Hell.

**Robert Swain**

Score	7
Graphics	6
Playability	6
Value for money	6
Overall	6

### Jumping back

**Program:** Henry's House  
**Price:** £1.99  
**Supplier:** Mastertronic, 8 1/2  
 Four Street, London EC2A  
 4AP.  
**Tel:** 01-237 8417

**POOR** Henry's got a bit of a problem. Although daddy happens to be the king, this hasn't stopped him from going where he's not supposed to – the royal laboratories. Now he's imprisoned him from drinking a potion which he shouldn't.

All this has resulted in a six inch high prince in a lot of trouble.

Henry must now traverse many different rooms,

collecting items on the way that will restore him to full size. These vary from eggs and food mixers, to boots and crowns – and some rooms contain televisions.

As you're probably guessed by now, you play Henry in this platform-jump-collect game. But somehow this has something which other offerings like Jet Set Willy didn't – it's highly playable. In addition control is a lot easier than in similar games.

Though the first few screens are a little difficult to start with, once you have managed to navigate your way through them things seem to fall into place and



the game gets progressively easier.

One thing I didn't like was that you die if you fall from too great a height. I can only suppose that if you're six

inches tall, everything's a great height.

The graphics are excellent and the sound adequate – I especially liked the rendition of Rule Britannia at the beginning. The game is certainly worth £1.99 of anyone's loot.

While the plot may be pretty thin for what is essentially a platform game with royal overtones, this is a must. We certainly were amused.

**Bob Powers**

Score	7
Graphics	7
Playability	7
Value for money	7
Overall	8



A LOT of companies have found success in the world of computer products, but perhaps the two largest and best known in the Atari field are MicroProse Software and Origin Systems.

These two giants of the software world have now agreed to unite in a venture and as a result a massive range of quality software will soon be marketed throughout Europe — and that is good news for all of us.

MicroProse is a subsidiary of MicroProse Software Inc. of Hunt Valley, Maryland, USA. The parent company was founded by Sid Meier and ace-fighter pilot "Wild" Bill Stealey. Since its formation in 1988 MicroProse has become one of the leading companies in the field of simulation games. The software is of a very high quality, and packaging and instructions are consistently superb.

Some of the titles that made MicroProse famous in the 8 bit Atari world can be seen in the panel below. These products, and many more, have always been a popular choice for software collections. This popularity can be put down to their high quality and availability on both tape and disc — a factor that a lot of companies forget about these days.

All the games are thoroughly researched before being released. For example, when Sid Meier was writing F-15 Strike Eagle he read everything available on the American Air Force's most sophisticated multi-role combat aircraft.

The cockpit display, performance figures and weapons systems have been duplicated as closely as possible on the computer simulation. If this

# A winning combination

## NEIL FAWCETT takes a close look at two Atari software giants

wasn't enough, Stealey hired F-15 pilots to test the final product. Now that's what I call research. This is why MicroProse products are considered to be the Rolls Royce of the software industry.

Origin Systems was founded in 1983 by a team of four: Richard and Robert Garriot, their father Owen and Charles Beaulieu. Today the company employs around 30 people and uses between 10 and 15 freelance programmers. Anticipated sales figures are over four million dollars a year.

The history of this company goes back long before 1983 to a young Richard Garriot, at that time a high school student. For many years he had an interest in fantasy role-playing games — TSR's Dungeons and



Richard Garriot  
Author of Ultima

Dungeons. This fascination led to his programming the software's single purchased-operated computer with his own mini adventures.

His first programming experience came when he went to Owen High School where he logged many hours on an Apple computer. This is also where, on the very first day of school, he picked up his now famous nom-de-plume — Lord British.

This was because when people greeted him with "Hi" he replied with the unconventional "Hello". People said: "What a proper way you have of talking — you must be British!". The nickname stuck, and later Richard placed the Lord in front. He now uses the name for the main character in his famous Ultima series — but more of that later.

When Richard left school he got a job in a computer store back home in Texas, programming its Apple computers. He wrote quite a bit of graphic adventures and one day his boss — unbeknown to Richard — showed one to an up-and-coming software company — California Pacific. In 1983 the

### MICROPROSE/ORIGIN PRODUCTS

Product	Cassette price	Disc price	Company
F-15 Strike Eagle	£9.99	£14.99	MicroProse
Solo Flight	£9.99	£14.99	MicroProse
Silent Service	£9.99	£14.99	MicroProse
Kennedy Approach	£9.99	£14.99	MicroProse
Spitfire Ace	£9.99	£14.99	MicroProse
Hill Cat Ace	£9.99	£14.99	MicroProse
Mig Alley Ace	£9.99	£14.99	MicroProse
Conflict in Vietnam	£9.99	£14.99	MicroProse
Crusade in Europe	£14.99	£19.99	MicroProse
Decision in the Desert	£14.99	£19.99	MicroProse
Rain Commander	£9.99	£14.99	MicroProse
Ultima		£19.99	Origin Systems
Ultima II		£19.99	Origin Systems
Ultima III		£19.99	Origin Systems
Ultima IV		£19.99	Origin Systems
Ogre		£19.99	Origin Systems
Autoduel		£19.99	Origin Systems

Some of the products that have made MicroProse famous

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company published Richard's first game — *Wastebud* — and it sold a very healthy 25,000 copies.

Encouraged by this success Richard decided to write another game. This eventually emerged as *Ultima*, one of the most successful adventure games ever. He sold the rights to Sierra On-Line, and it went on to sell around 60,000 copies. After this in 1981 came the sequel, *Ultima II*, which was also licensed by Sierra On-Line, and sold around 100,000 copies.

Richard always had strong feelings as to how his games should be marketed, so in 1983, while he was still working on *Ultima III*: Exodus, he decided to form his own company — Origin Systems — with his brother Robert, who had just come out of business school.

They also asked their father Owen — a former NASA astronaut — and a programmer — Charles Bessie — to join them. Just to show that this is a family business they also got Helen Garrick to do the superb illustrations in the *Ultima* booklets.

*Ultima III* was another massive success, far outselling the previous adventures. Now the scene was set for the next challenge — *Ultima IV: Quest for the Avatar*, which has sold over 200,000 copies.

However, the *Ultima* series aren't the only packages that Origin are famed for. Admittedly, the company's products are what you could call highbrow, needing a lot of thought and time, but they do move from the fantasy adventure theme.

For example, in *Gen* you challenge the might of a cybernetic supertank programmed to annihilate anything in its path. The game is set in the 21st Century and you must deploy conventional weapons and infantry to protect a defence post. It's a conversion of a Steve Jackson board game, and is a pleasure to play.

In another — *Azadad*, dressed as a strategic role-playing game — you again enter the 21st Century, this time in the NE of America, where death lurks around every bend of the freeway.

This is the first product to be launched under the MicroProse-Origin banner and is a nice addition to the already impressive joint range. It's based on a Steve Jackson board game called *Car Wars* and, again, is a very close translation. As with the *Ultima* series, the packaging is excellent: The box contains a miniature booklet — a very nice touch.



The world of Sosaria, elegantly portrayed on the cloth map

But now the \$4 million dollar question: How did Origin and MicroProse get together?

This goes down to Bill Stealey, president of MicroProse in the USA. Bill is a business associate of Robert Gallier who was intending to set up a UK company with Stewart Ball. He asked if Origin was interested in a joint venture arrangement — the company already had something going in Japan where the *Ultima* series is very popular.

Initially MicroProse will launch seven Origin titles on the British and European markets, including the *Ultima* series. They have been re-designed and include booklets and a beautifully made cloth map showing the world of Sosaria. It's worth buying for that alone, never mind the playability.

If you're into role-playing games and strategic simulations, the future seems very rosy indeed for the April 8th computers *Ultima V: Warriors of Sosaria* will hopefully be available around March for around £19.95.

Is the adventure continues with

Lord British leaving Britannia to explore the newly discovered underworld, but all contact between the good King and his companions is lost. In Britannia, panic-stricken breaks out when the sole survivor of the expedition returns to tell the tale.

You are summoned in an attempt to discover what has happened to the King and defeat the evil growing in the lands. Sosaria's great fun. New features added include eight dungeons, more animated monsters and 30 new towns to explore — some of them with as many as five levels.

You can choose from 10 people to come on the quest with you — up to six at any one time — and it's also possible to have intensive conversations with more than 200 characters. The combat system has been redesigned and should give more realism to the game. With all these options this can only be another winner for Lord British.

MicroProse plans to release a new simulator called *Curse* later this year to complement its already large range. And if it is up to the usual quality it will be well worth waiting for.

# LIGHT GUN BLASTER

## A super shoot-'em-up for the XE games system from ANDRÉ WILLEY

**FOLLOWING** last month's examination of the new Atari XE Games System with its accompanying light gun, here's something else for you to do with your new-found toy. Shooting bugs is all very well, but it certainly doesn't help you to use the gun from within your own software, so Light Gun Blaster was written as part game and part utility.

It's fairly simple – but very playable and quite addictive. I'm not claiming it's going to be another Star Raiders, but some of the routines may well be useful to you for your own games.

After keying in the program and checking it with Set It Right, run it and you'll see the main menu screen. You can use the Start, Select and Option keys to adjust the game settings for skill and speed, then simply pull the light gun trigger to commence play.

The aim of the game is very straightforward, but it takes some fast reactions to get a high score on the top level. You will see a grid of coloured squares – with more squares on the higher levels. These will change colour as the game progresses, and all you have to do is decide which colour is the most common and blast away at it. But make sure you aim well – you'll lose points for hitting the less common colours or the border.

So, how does it work? The light gun routine starts at line 100, and this returns two variables – H and V – which contain the Horizontal and Vertical position of the gun.

You might find that you need to adjust the numbers used to calculate H for your own TV, as different sets seem to return different values. The most likely changes will be to the number 88 on line 120 or the number 160 on line 140.

You will notice that the screen flashes white for a moment when you pull the trigger, but that's not just for effect. The light sensitive diode used inside the gun works best when the screen is fairly bright – indeed it won't work at all on a black background.

To get around this little problem all I've done is set the background colour

to white and disable the foreground display with POKE \$68,0 while the coordinates are being calculated. If you look carefully you will see that Atari's Bug Hunt does something very similar.

Line 1000 is the start of a machine

code routine called BCKX. No, it isn't Parker's portable voice-operated computer from Star Cops – this particular BCKX is a high speed plotting routine which changes the colours on the screen. Without this piece of code the program would run far too slowly to be playable.

Line 2000 sets up the screen size and block locations for each of the various levels.

Line 3000 contains a small DU routine used to reset the GTIA graphics mode when you reach the last window. Some of you might find this useful with your own programs as it enables both Mode 0 text and GTIA graphics to exist on the same screen.

The rest of the program is mainly concerned with altering the colour of the squares and keeping track of the

score, so I'll leave you to work those mundane details out for yourselves – well, I must give you something to tax your brains a bit!

■ If you write any software that uses the light gun, why not send us a copy? We'd love to see it – and who knows, you might even get it published!

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# Fancy a little sound advice?

LEN GOLDING journeys further into the wonderful world of Atari Basic

No game is complete without the occasional explosion, laser blast or musical theme, and even business software benefits from the odd distant beep or two. This month we'll show you how to produce sounds of all kinds, starting with simple musical notes, progressing through chords, phaser blasts, machine gun sounds, explosions and rounding things off with a singing jaybird. The new commands we will cover are: SOUND, GOTO and FOR...NEXT.

First let's look at the SOUND command. It's quite a complex one, since it needs four numbers tacked on to keep the syntax correct. Here's a simple example:

```
1000 0,10,0,0
```

If you type this and press Return you will hear a musical note close to middle C. The sound continues, even though the READY message appears on screen. You can turn it off by typing:

```
1000 0,0,0,0
```

The obvious question to be asked at this point is: What do the four numbers mean? Well, the first specifies one of four different sound generators or voices, the second is pitch, the third is tone quality and the last is the volume level.

Let's look at them in order. Unlike humans, your Atari has four separate voices, which it can use independently or all at the same time. Each voice has its own identifying number: 0, 1, 2 or 3, and in the examples above we've specified voice number 0. It's a bit confusing to think of 0, not 1, as the first number in a series, but that's the way computers like to do it.

Try changing the first number after the SOUND command to 1, 2 or 3 and see what happens. You probably

won't hear any difference, because the computer is still singing middle C, and it sounds the same no matter which voice is producing it. So why bother having more than one voice? You'll see when we start generating more complex sounds, such as explosions and musical chords.

The second number controls the note's pitch — the higher the number, the lower the pitch. Your Atari can produce musical notes which range from one octave below middle C to two octaves above it. Here's a short utility program using some of the things we learned last month:

```
10 PRINT "HOW DO I SOUND THIS ? TO"
11 "
12 INPUT P
13 GOTO P,0,0,0
14 GOTO 10
```

When you run this program, line 10 prints the message asking for a number from 0 to 255. Type the number, then press Return: Your computer takes the number you've typed, and calls it P. Then it moves on to line 13, where it sees that P is the pitch value, so it inserts your number just as though you'd typed it directly into the program line.

Line 40 contains a new command — GOTO — which works exactly as you might expect, sending the computer back to line 10 so that the whole process is repeated. This kind of circular movement is called a loop, and we'll be using a lot more about loops of various kinds throughout the series.

The third number after a SOUND command regulates the sound's tone quality, and it can be any even number from 0 to 14. Numbers 10 and 14 will give you pure musical tones, while 0,2,4,6,8 and 12 produce pulsing,

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hissing or crashing noises which can be used for special effects. Odd numbers will either turn the sound off or produce an annoying little click, so avoid them if you can.

The fourth and final number controls volume, and can be any number from 0 to 75. The higher the number, the louder the sound — 15 is about twice as loud as 8, and 0 turns it off completely.

That's volume, pitch, time and volume dealt with, but there's one more factor that we need to control — duration. In some versions of Basic, the SOUND command has a fifth number which controls how long the sound stays on, but unfortunately that's not the case with standard Atari Basic. Once our sound is switched on, it will stay that way until you switch it off, or until the program comes to an end.

Incidentally, that's why we didn't use a five number in our first example. If we had done so, the line would have become a program, instead of a three-voice command, and the computer would have switched off the sound before you could recognise it as a musical note. Try it and see.

To control a sound's duration, we need a separate command to handle the timing. The most common method is to use one or more FOR...NEXT loops. These are quite tricky to understand, but they crop up in all kinds of situations, so it's worth the effort to master them. Here's a simple example:

```
10 100 and 70 500
20 500 0
```

In ordinary English, these two lines mean something like this: Take a variable called *N* and set its value to 1. Now increase its value by one, and continue doing this until the value reaches 500.

Because the computer can process only one Basic instruction at a time, a FOR...NEXT command like this will hold its full attention until the loop has counted itself out. The result, from a user's standpoint, looks like a pause with nothing much happening. Here's an example:

```
10 1000 0
20 5000 0,0,0,0
30 100 and 70 500
40 500 0
```

You will find that lines 30 and 40 hold the sound on for about half a second, giving the effect of a short beep, before the computer turns it off

at the program's end. To get a longer beep, change the 500 to a larger number; for a shorter beep make it smaller.

FOR...NEXT loops can do other things with sound, as well as defining its duration. For example:

```
10 100 and 70 100
20 5000 0,0,0,0
30 500 0
```

This gives you a tone which falls in pitch from high to low. Can you see how it works? The loop is executed 250 times, with the value of *N* increasing by one each time. Since *P* controls the sound's pitch — the higher its value the lower the pitch — you get a rapidly falling note. You can do the same thing with volume:

```
10 100 and 70 70
20 5000 0,0,0,0
30 500 0
```

Here you get a tone which starts quietly, but gets rapidly louder as the value of *N* increases. FOR...NEXT loops need not always count upwards in increments of one. There is a related command — STEP — which gives you a great deal more flexibility. For example:

```
10 100 and 70 100 0.5
20 5000 0,0,0,0
30 500 0
```

This program counts to 250 in terms, so instead of a smoothly falling pitch you get a more jerky series of separate notes. However, because each note lasts only a fraction of a second, you don't hear them as separate tones. Instead, the result sounds like some kind of futuristic hand-weapon — let's call it a phaser. You can even use the STEP command to count backwards:

```
10 100 1000 10 0 1000 -1
20 5000 0,0,0,0
30 500 0
```

In this case the count starts at 250 and reduces by one every time the loop is executed, until it reaches zero. The result is a smoothly rising pitch. Try changing line 10 to:

```
10 100 1000 10 0 1000 -10
```

What would you expect to happen? Atari Basic allows you to put one FOR...NEXT loop inside another. This is called nesting, and lets you produce all kinds of special effects. Here's a

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simple example, based on the phaser program:

```
10 FOR I=0 TO 100 STEP 10
20 SOUND 0.7,10,0
30 FOR A=1 TO 50
40 NEXT A
50 NEXT I
```

This time, instead of the phaser sound, you get a series of musical notes. Lines 30 and 40 hold the sound at each step long enough for you to hear it as a separate musical tone.

The important thing to remember about nested FOR-NEXT loops is that they have to be un-nested in reverse order — the one which starts first must be terminated last, and so on. In the previous program we introduced the previous program we introduced the loop containing P before the one containing W, so to make them un-nest correctly we have to insert NEXT W before NEXT P (lines 40 and 50).

Well, that's the difficult bit over for this month — now let's have a bit of fun. Program 1 shows how you can use all four voices at once, each producing a different note, to make a musical chord.

Programs 2 and 3 produce sounds for tapping atoms, while the automatic rifle of Program 4 would suit shoot-'em-ups of a more terrestrial kind and Program 5 is an explosion. You could use it for hand-generated or set it at the end of a falling-pitch sound to represent a bomb dropped from an aircraft.

If you're into detective adventure games or police-style chases, the sound in Program 6 is a ringing telephone, while Program 7's produces the two-tone siren familiar to British ears.

In all these examples, look at how the FOR, NEXT loops are used to vary pitch and volume, or just to hold the

```
10 REM Simple musical chord
20 SOUND 0,121,0,0
30 SOUND 1,70,10,0
40 SOUND 2,11,10,0
50 SOUND 3,40,10,0
60 NEXT 0
70 NEXT 0
```

Program 1: Simple musical chord

```
10 REM Phaser
20 FOR A=0 TO 0 STEP 10
30 FOR I=0 TO 100 STEP 10
40 SOUND 0.7,10,0
50 NEXT I
60 NEXT A
```

Program 2: Phaser

```
10 REM Attention please!
20 FOR I=10 TO 0 STEP -1
30 FOR A=0 TO 100 STEP 10
40 SOUND 0.9,10,0
50 NEXT I
60 NEXT A
```

Program 3: Attention please!

```
10 REM Machine gun
20 FOR I=0 TO 100 STEP 10
30 FOR A=0 TO 0 STEP -1
40 SOUND 0.7,10,0
50 SOUND 1,100,0,0
60 NEXT I
70 NEXT A
```

Program 4: Machine gun

```
10 REM Explosion
20 FOR I=10 TO 0 STEP -1
30 FOR A=0 TO 100
40 SOUND 0,100,0,0
50 SOUND 1,100,0,0
60 SOUND 2,100,0,0
70 NEXT A
80 FOR I=0 TO 0 STEP -1
90 FOR A=0 TO 100
100 SOUND 0,100,0,0
110 NEXT A
120 SOUND 0,100,0,0
130 SOUND 1,100,0,0
140 SOUND 2,100,0,0
150 NEXT A
```

Program 5: Explosion

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Figure 1: The notes produced with the joystick in various positions

sound on for a predetermined time, and experiment to see if you can improve the effects.

Program 8 is a musical joystick, and tests some commands which we'll be covering in detail later in the series. Line 20 reads the value returned by your joystick, which must be plugged into port one. Line 30 switches everything off if the stick is centred. Lines 40 to 110 determine the pitch value, depending on the stick's position, and line 120 generates the sound. The GOTO command at line 130 starts the whole process off again.

The net result is a joystick which can play the scale of C — the positions for each note are shown in Figure 1, a won't take the Atari ball by storm, but you can use it for nursery rhymes, children's hymns and other simple tunes.

We'll be returning to sound generators at a more advanced level later, but next month it's time to introduce graphics, and show how you can produce simple movement effects on screen.



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10 000 00000 00000  
20 000 00000 10 0  
30 0000 0,00,10,0  
40 000 001 10 000  
50 0001 0  
60 0000 0,1,10,0  
70 000 001 10 000  
80 0001 0  
90 0011 00001  
**Program 101: 4 Ringing Telephone**

10 000 00000 00000  
20 000 00000 10 0  
30 0000 0,00,10,0  
40 000 001 10 000  
50 0001 0  
60 0000 0,1,10,0  
70 000 001 10 000  
80 0001 0  
90 0011 00001  
**Program 102: 4 Ringing Telephone**



10 000 00000 00000  
20 000 00000 10 0  
30 0000 0,00,10,0  
40 000 001 10 000  
50 0001 0  
60 0000 0,1,10,0  
70 000 001 10 000  
80 0001 0  
90 0011 00001  
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# Those special characters

We often have enquiries about how to produce the "special" characters which sometimes appear in our listings. It's because of this uncertainty that we prefer authors not to use such characters.

However, we recognise that sometimes it's the simplest way and occasionally it's the only way of doing something. For this reason we're repeating the two tables below. These show how to produce the special characters from the keyboard and were first printed in the December 1988 issue of *April User*.

We've drawn a box around the characters so that you can see their position more clearly. These boxes won't appear either on-screen or in

the listings we print.

The Control and Shift keys are used by holding them down while you press another key. For example, if you read CTRL A, you hold down the CTRL/CONTROL or XL (machines) key and press A.

The ESC key is like a normal key, simply press it. For example, if you read ESC DELETE, you press and release the ESC key and then press and release the DELETE key.

The Reverse Video Mode key has been abbreviated to REV. On early machines this key bore the Atari logo while on XL machines it has a design on it. If this key is pressed and released once, all subse-

quent input will appear in reverse for a period on the screen. You turn Reverse Video Mode off by pressing the key again.

For example, if you read REV CTRL P the sequence of operations would be:

1. Press and release the REV key to turn on Reverse Video Mode.
2. Hold down the CTRL key and press and release the P key.
3. Release the CTRL key.
4. Press and release the REV key to turn off Reverse Video Mode.

It's easy to make mistakes with the special characters, which is why we prefer not to use them. If you do use them, take extra care.

NORMAL VIDEO			
KEY CODE	KEY TYPE	KEY CODE	KEY TYPE
01	CTRL .	01	CTRL 1
02	CTRL ,	02	CTRL 2
03	CTRL 0	03	CTRL 0
04	CTRL 9	04	CTRL 9
05	CTRL 8	05	CTRL 8
06	CTRL 7	06	CTRL 7
07	CTRL 6	07	CTRL 6
08	CTRL 5	08	CTRL 5
09	CTRL 4	09	CTRL 4
0A	CTRL 3	0A	CTRL 3
0B	CTRL 2	0B	CTRL 2
0C	CTRL 1	0C	CTRL 1
0D	CTRL 0	0D	ESC ESC
0E	CTRL .	0E	ESC CTRL .
0F	CTRL ,	0F	ESC CTRL ,
10	CTRL 0	10	ESC CTRL 0
11	CTRL 9	11	ESC CTRL 9
12	CTRL 8	12	ESC CTRL 8
13	CTRL 7	13	CTRL .
14	CTRL 6	14	CTRL 1
15	CTRL 5	15	SHIFT 0
16	CTRL 4	16	ESC SHIFT CLEAR
17	CTRL 3	17	ESC DELETE
18	CTRL 2	18	ESC TAB
19	CTRL 1	19	ESC TAB

REVERSE VIDEO			
KEY CODE	KEY TYPE	KEY CODE	KEY TYPE
01	REV CTRL .	01	REV CTRL 1
02	REV CTRL ,	02	REV CTRL 2
03	REV CTRL 0	03	REV CTRL 0
04	REV CTRL 9	04	REV CTRL 9
05	REV CTRL 8	05	REV CTRL 8
06	REV CTRL 7	06	REV CTRL 7
07	REV CTRL 6	07	REV CTRL 6
08	REV CTRL 5	08	REV CTRL 5
09	REV CTRL 4	09	REV CTRL 4
0A	REV CTRL 3	0A	REV CTRL 3
0B	REV CTRL 2	0B	REV CTRL 2
0C	REV CTRL 1	0C	REV CTRL 1
0D	REV CTRL 0	0D	ESC SHIFT DELETE
0E	REV CTRL .	0E	ESC SHIFT CLEAR
0F	REV CTRL ,	0F	ESC CTRL TAB
10	REV CTRL 0	10	ESC SHIFT TAB
11	REV CTRL 9	11	REV CTRL .
12	REV CTRL 8	12	REV CTRL 1
13	REV CTRL 7	13	REV SHIFT 0
14	REV CTRL 6	14	ESC CTRL 1
15	REV CTRL 5	15	ESC CTRL DELETE
16	REV CTRL 4	16	ESC CTRL INSERT
17	REV CTRL 3	17	REV CTRL 0
18	REV CTRL 2	18	REV CTRL 9
19	REV CTRL 1	19	REV CTRL 8

# AIR YOUR VIEWS

— and you could win in Red Rat's prize draw

What do you like best in Atari User? What would you see changed? This is your opportunity to let us know what you think.

Simply fill in the questionnaire we have devised — to provide us with more information that will help us make your favourite magazine even better.

If you also complete the name and address panel below you will be included in the Prize Draw — with a hundred superb Red Rat titles to be given away. These include:

- **Auto-Drive:** You take on the role of a cyborg and attempt to force the evil Raiders back to their own galaxy.
- **Screaming Wings:** Defend your airspace by relying on your wits and the powerful Pratt and Whitney engine in your charge.
- **Escape from Doomworld and River Rally:** Two games offered together as one prize. In Doomworld your mission is to steal a team of scientists from a planet under attack. While you can indulge in wacky fun in River Rally.

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Postcode \_\_\_\_\_

To enter the Draw, please return your survey form by February 28

Please tick your reply in the boxes provided. You don't have to fill in an answer if you don't want to. You may photocopy these pages to protect your magazine if you wish.

## ABOUT YOU

How old are you?

Under 11  35 - 39   
 11 - 25  31 - 35   
 25 - 35  40 - 50   
 15 - 22  Over 50

Sex? M/F

Occupation? \_\_\_\_\_

What area of computers or computing interest you?

	Very much	A little	Not at all
Business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Atari Games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adventures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Programming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hardware	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Future Tech	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Learning about	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Programming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hardware	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How do you rate your knowledge of:

	None	Poor	Average	Good	Excellent
Basic programming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Machine code	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hardware	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## ABOUT YOUR MICRO

What micro(s) do you own or use?

400  600  
 600XL  800XL  
 1300E  68000

How long have you had your micro?

Under 1 year  1-2 years  
 2-3 years  3+ years

Do you have any other computer? Yes/No

Which one(s)? \_\_\_\_\_



Are you thinking of buying another computer? Yes/No  
Which one? \_\_\_\_\_

What other hardware do you have?  
 Monitor     Copier     Modem  
 Disk drive     8080 (or 851)     850  
 Printer  
 Mouse

Please list any others: \_\_\_\_\_

What type of hardware would you like next for your micro? \_\_\_\_\_

Please indicate which of the following types of software you have:  
 Word processor     Spreadsheet  
 Database     Other languages  
 Assembler     Basic utilities  
 Data utilities

What type of software are you most likely to buy next for your micro? \_\_\_\_\_

What do you use your Atari micro for (fill in your own ideas in the spaces at the end of the list)?

	Only	Much	Some	Not much	Never
Adult games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adventure games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Programming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Own letters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Home accounts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What software do you use most frequently? \_\_\_\_\_

Is there any software (apart from games) you've bought that you never used? \_\_\_\_\_

## THE MAGAZINE

How long have you been reading Atari User?  
 0-3 months     4-6 months     7-12 months  
 1-2 years     3-5 years     From issue 1

How often do you buy Atari User?  
 Every issue     1 in 2  
 Less regularly

How do you get Atari User?  
 Subscription     Newsagent  
 Computer dealer     A friend

How many other people read your copy of Atari User?  
 None     1     2     3     more than 3

What other computer magazines do you regularly buy? \_\_\_\_\_

What do you like most about Atari User? \_\_\_\_\_

What do you like least about Atari User? \_\_\_\_\_

Which program listings do you type in?  

	Usually	Sometimes	Never
Games	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tutorials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Educational	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What is the maximum length of listing you would want to type in?

half page     1 page     2 pages  
 3 pages     4 pages     5 pages

Please circle the number which matches your level of interest in the following subjects (0 lowest - 9 highest).

News	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Software reviews	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Hardware reviews	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Garbages	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Communications	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Software solutions	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
File formats	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Books	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Files and Tips	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Marketing	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Education	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Business	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Spreadsheets	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Games programs	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Utilities programs	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Easy programming	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9
Maps	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6	<input type="checkbox"/> 7	<input type="checkbox"/> 8	<input type="checkbox"/> 9

Indicate any articles or series you would like to see in future editions of Atari User: \_\_\_\_\_

Any other comments you would like to make about Atari User? \_\_\_\_\_

## THE SHOWS

Did you attend any Atari shows in 1987? Yes  No

If you attended any, which? \_\_\_\_\_

Please circle the number that matches what would attract you to come to a show in 1988 (0 least - 5 most)

New products	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Bargain offers	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Technical advice	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Hands-on testing	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Show-theater/demos	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

Anything else not mentioned here? \_\_\_\_\_

Thank you for filling in this survey. Now send it to: Reader Service, Atari User, Europa House, Milling Park, Macclesfield SK10 5NP.

# 5

## LINERS

### LOGIC PUZZLE from Robin Edwards

THIS short program is designed to confuse and befuddle you. When it is first run you are prompted to enter a difficulty level from 1 to 50 - 1 being easy and 50 very hard. Enter your choice and then press Return.

After this the screen will clear and a 15x10 box of hearts will appear with various sections inverted. Your task is to return the whole box to the normal - not inverse - state.

You use the joystick to move the cursor around the grid and when the fire button is pressed the square that the cursor is above and the eight adjacent squares will be flipped over. It is a little tricky to get the grid back to normal - but wherever as it's fun trying.

```

100 1 1000000 1000000 1000000 1000
200 20 2000000 2000000 2000000 2000
300 30 3000000 3000000 3000000 3000
400 40 4000000 4000000 4000000 4000
500 50 5000000 5000000 5000000 5000
600 60 6000000 6000000 6000000 6000
700 70 7000000 7000000 7000000 7000
800 80 8000000 8000000 8000000 8000
900 90 9000000 9000000 9000000 9000
1000 100 10000000 10000000 10000000 10000
1100 110 11000000 11000000 11000000 11000
1200 120 12000000 12000000 12000000 12000
1300 130 13000000 13000000 13000000 13000
1400 140 14000000 14000000 14000000 14000
1500 150 15000000 15000000 15000000 15000
1600 160 16000000 16000000 16000000 16000
1700 170 17000000 17000000 17000000 17000
1800 180 18000000 18000000 18000000 18000
1900 190 19000000 19000000 19000000 19000
2000 200 20000000 20000000 20000000 20000
2100 210 21000000 21000000 21000000 21000
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2400 240 24000000 24000000 24000000 24000
2500 250 25000000 25000000 25000000 25000
2600 260 26000000 26000000 26000000 26000
2700 270 27000000 27000000 27000000 27000
2800 280 28000000 28000000 28000000 28000
2900 290 29000000 29000000 29000000 29000
3000 300 30000000 30000000 30000000 30000
3100 310 31000000 31000000 31000000 31000
3200 320 32000000 32000000 32000000 32000
3300 330 33000000 33000000 33000000 33000
3400 340 34000000 34000000 34000000 34000
3500 350 35000000 35000000 35000000 35000
3600 360 36000000 36000000 36000000 36000
3700 370 37000000 37000000 37000000 37000
3800 380 38000000 38000000 38000000 38000
3900 390 39000000 39000000 39000000 39000
4000 400 40000000 40000000 40000000 40000
4100 410 41000000 41000000 41000000 41000
4200 420 42000000 42000000 42000000 42000
4300 430 43000000 43000000 43000000 43000
4400 440 44000000 44000000 44000000 44000
4500 450 45000000 45000000 45000000 45000
4600 460 46000000 46000000 46000000 46000
4700 470 47000000 47000000 47000000 47000
4800 480 48000000 48000000 48000000 48000
4900 490 49000000 49000000 49000000 49000
5000 500 50000000 50000000 50000000 50000

```

✓ Get it right!

10 000 000  
20 100 000  
30 100 000  
40 100 000  
50 100 000

### DESCENT from Andy McAtear

HERE'S a game where you take the role of a chopper pilot who has to fly as far as he can into a mysterious cave. Movement is controlled by a joystick plugged into port one - but you can only move from left to right.

If you press the fire button you will cause the helicopter to descend at a faster speed - but be careful as this is very dangerous. As you get deeper your score increases and is displayed at the end of the game. You only have one life, so take care not to crash.

#### PROGRAM BREAKDOWN

- 1 Sets up the screen and positions the chopper and the cave. Sets the score to zero and prints the start of the cave. It also sets a TRAP which is needed later.
- 2 Prints the path of the cave and generates a noise if the fire button is pressed. Also gets the STICK value.
- 3 Determines the direction of the cave.
- 4 Sets the speed of the chopper by adding location 630 with a value obtained from the fire button which, when multiplied by 255, gives either 0 for fast scroll or 255 for slow. It also checks the chopper location to see if it has crashed and, if not, finds the new location, prints it and branches back to line 2.

- 5 End of game. The sound channel is set to zero and the score is displayed. Waits for Return to be pressed to start the game again.

#### VARIABLES

- S Score
- C Chopper position
- P Path of cave
- T Random path of cave
- V Value obtained from joystick
- G,H Values obtained from the LOCATE command
- DN Down key being pressed to enable TRAP statement to be executed
- N Value obtained from fire button

```

1 1000 1000000 1000000 1000000 1000000
2 1000000 1000000 1000000 1000000 1000000
3 1000000 1000000 1000000 1000000 1000000
4 1000000 1000000 1000000 1000000 1000000
5 1000000 1000000 1000000 1000000 1000000
6 1000000 1000000 1000000 1000000 1000000
7 1000000 1000000 1000000 1000000 1000000
8 1000000 1000000 1000000 1000000 1000000
9 1000000 1000000 1000000 1000000 1000000
10 1000000 1000000 1000000 1000000 1000000
11 1000000 1000000 1000000 1000000 1000000
12 1000000 1000000 1000000 1000000 1000000
13 1000000 1000000 1000000 1000000 1000000
14 1000000 1000000 1000000 1000000 1000000
15 1000000 1000000 1000000 1000000 1000000
16 1000000 1000000 1000000 1000000 1000000
17 1000000 1000000 1000000 1000000 1000000
18 1000000 1000000 1000000 1000000 1000000
19 1000000 1000000 1000000 1000000 1000000
20 1000000 1000000 1000000 1000000 1000000
21 1000000 1000000 1000000 1000000 1000000
22 1000000 1000000 1000000 1000000 1000000
23 1000000 1000000 1000000 1000000 1000000
24 1000000 1000000 1000000 1000000 1000000
25 1000000 1000000 1000000 1000000 1000000
26 1000000 1000000 1000000 1000000 1000000
27 1000000 1000000 1000000 1000000 1000000
28 1000000 1000000 1000000 1000000 1000000
29 1000000 1000000 1000000 1000000 1000000
30 1000000 1000000 1000000 1000000 1000000
31 1000000 1000000 1000000 1000000 1000000
32 1000000 1000000 1000000 1000000 1000000
33 1000000 1000000 1000000 1000000 1000000
34 1000000 1000000 1000000 1000000 1000000
35 1000000 1000000 1000000 1000000 1000000
36 1000000 1000000 1000000 1000000 1000000
37 1000000 1000000 1000000 1000000 1000000
38 1000000 1000000 1000000 1000000 1000000
39 1000000 1000000 1000000 1000000 1000000
40 1000000 1000000 1000000 1000000 1000000
41 1000000 1000000 1000000 1000000 1000000
42 1000000 1000000 1000000 1000000 1000000
43 1000000 1000000 1000000 1000000 1000000
44 1000000 1000000 1000000 1000000 1000000
45 1000000 1000000 1000000 1000000 1000000
46 1000000 1000000 1000000 1000000 1000000
47 1000000 1000000 1000000 1000000 1000000
48 1000000 1000000 1000000 1000000 1000000
49 1000000 1000000 1000000 1000000 1000000
50 1000000 1000000 1000000 1000000 1000000

```

✓ Get it right!

10 000 000  
20 100 000  
30 100 000  
40 100 000  
50 100 000



If you've written any useful or interesting five line programs why not send them to us to grace our pages?

We pay £25 for each one published.

You should give a full description of the routine and any other details that

# Win £25

are relevant. And remember if you want your material returning please enclose a suitably stamped postcard.

Simply send a copy of the program on disc or tape together with the documentation - preferably as a word processed file - to:

Atari User, Europa House, Adlington Park, Adlington, Manchester M20 5BP.

## MASTERMIND from Paul Seames

This program is a version of the classic board game, but instead of using coloured pegs it uses numbers from 0 to 9.

The computer will pick five random numbers for a secret code and give you 10 attempts to guess it. Five numbers at the start by just pressing the appropriate key. When you have entered the numbers for one guess, the computer will show you which, if any, of your numbers are in the correct positions.

It does this by showing a line of five pegs on the right of your guess. A filled in one means a correct number in that position and unfilled means an incorrect number. If you guess the code in the set number of guesses, it will be shown for your confirmation. If not it is shown with a beep and, either way, the program will automatically run again.

As the program starts it should

always be possible, with logical thinking, to guess the code in the 10 guesses allowed. The permitted number of guesses can be changed by altering the variable T in line 20, to any number you want.

### PROGRAM BREAKDOWN

- 10 Dimensions variables, picks the secret code and opens the keyboard for the GET command. The first quotes contain a clear screen character.
- 20 Sets the number of tries allowed, gets the five digits of your guess and increments the number of tries counter.
- 30 Uses a Boolean statement to set the elements of A\$ to equal an o for an incorrect answer and a C for a correct one.
- 40 Prints the number of tries so far, checks to see if you have every digit correct or if you have no more tries left. If the guess is incorrect it goes back to line 20 for another try.
- 50 Uses a Boolean statement to either play some tones for a

correct answer or play a beep. It waits a while before running the program again.

```

10 DIM A$(5), B$(5), C$(5), D$(5), E$(5)
   DIM N$, T$
   DIM I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
   DIM G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
   DIM A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
   DIM P, Q, R, S, T, U, V, W, X, Y, Z
   DIM A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
   DIM P, Q, R, S, T, U, V, W, X, Y, Z
   DIM A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
   DIM P, Q, R, S, T, U, V, W, X, Y, Z
   DIM A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z
   DIM P, Q, R, S, T, U, V, W, X, Y, Z

```



10 0 100
20 100 100
30 100 100
40 100 100
50 100 100

## ALARM from Granville Danby

HOW many times have you been programming and your mother or wife has told you that your dinner will be ready in half an hour? But you just keep typing away and end up getting a telling off.

Well, now you have a solution to that problem with this simple program. When you first run it you must enter the number of minutes before you want the alarm to go off.

This program works in the vertical blank period, so since it is installed you can be performing other functions or such as entering a Basic program or playing certain games - providing they are written in Basic and don't use

the VBL. It works by converting the minutes into Jiffies - the time units for the internal clock.

A small piece of machine code is then initialised to set up a vertical timer interrupt. The alarm is then activated and the only way to turn it off is to press Reset or switch the computer off.

Because the program uses the internal clock and page 0, any program that also uses these cannot be run while the alarm is working. It is accurate to within five seconds whether you set it to one minute or one hour.

### PROGRAM BREAKDOWN

- 10 Gets the time in minutes and converts a late Jiffies
- 20 Reads and pokes in the machine code data
- 30 Resets the clock and pokes in the VBL location

60 - 90 Data statements for the machine code

```

60 DIM A$(128)
   DIM B$(128)
   DIM C$(128)
   DIM D$(128)
   DIM E$(128)
   DIM F$(128)
   DIM G$(128)
   DIM H$(128)
   DIM I$(128)
   DIM J$(128)
   DIM K$(128)
   DIM L$(128)
   DIM M$(128)
   DIM N$(128)
   DIM O$(128)
   DIM P$(128)
   DIM Q$(128)
   DIM R$(128)
   DIM S$(128)
   DIM T$(128)
   DIM U$(128)
   DIM V$(128)
   DIM W$(128)
   DIM X$(128)
   DIM Y$(128)
   DIM Z$(128)

```



10 100 100
20 100 100
30 100 100
40 100 100
50 100 100



# BREAKIN'

by STEPHEN WILLIAMSON

If you are a compulsive games player you will probably remember a game called Breakout. It was probably one of the simplest games ever written - but very addictive. So, to bring back old memories, here is our version of that old classic - Breakin'.

The game controls are shown in Table I, and the idea is to keep a ball in play using a bat that moves across the bottom of the screen. At the top are high-scoring moving targets protected by a wall and, to reach them, you must make a hole by bouncing the ball against the wall to knock out the bricks. Points are awarded as shown in Table II.

This may sound simple, but in the land of arcade games nothing is ever that easy. So to make things more difficult, pin-table type bumpers appear on the play area to deflect the ball.

You need quick reactions and lots of concentration to predict where to place the bat to send the ball up the field of play again.

You start with five balls and one is lost if it travels past the bat. The game ends when all your balls have been used. There are 10 levels of play - shown in Table III - and these determine the speed of the ball and the number and way in which the bumpers are placed. The current level, together with the other information shown in Table IV, is displayed at the top of the screen.

Breakin' is written mainly in Basic, but plays at high speed due to the use of two short machine code routines that handle all the movement of the ball, the ball and the targets - lines 720 to 800 and 950 to 1050.

If you want to change the number of

```

10 REM BREAKIN
20 REM BY STEPHEN WILLIAMSON
30 REM 02/1981 0218
40 DIM X(20),Y(20)
50 DIM P(10),D(10),S(10),R(10)
60 DIM B(10),L(10),T(10),M(10),P(10),T(10),D(10)
70 DIM W(10),H(10)
80 POSITION 0,0:VTAB TAB:PRINT TAB(0),TAB(0)
90
100 REM BASIC DIGITAL SURPLUS
110 POINT 0=0,1=10,50,100,0=0,1=10
120 POINT 100=11,50,100,0=100,1=10,50
130 REM 100 TO 10,100,100,0=1,10,100,1=1
140 REM 1=100 TO 10,100,100,0=1,10,100,1=1
150
160 GOTO 1570
170 REM 0000 1570
180 REM 0000 1580
190 FOR I=0 TO 20:FOR J=0 TO 19:GOTO 1610
200 FOR I=0 TO 20:FOR J=0 TO 19:GOTO 1610
210 GOTO 1610
220 FOR I=0 TO 20:FOR J=0 TO 19:GOTO 1610
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980 FOR I=0 TO 20:FOR J=0 TO 19:GOTO 1610
990 FOR I=0 TO 20:FOR J=0 TO 19:GOTO 1610

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100 REM 0000 1570
110 REM 0000 1580
120 FOR I=0 TO 20:FOR J=0 TO 19:GOTO 1610
130 FOR I=0 TO 20:FOR J=0 TO 19:GOTO 1610
140 FOR I=0 TO 20:FOR J=0 TO 19:GOTO 1610
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980 FOR I=0 TO 20:FOR J=0 TO 19:GOTO 1610
990 FOR I=0 TO 20:FOR J=0 TO 19:GOTO 1610

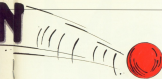
```

```

700
710 IF I=0 AND J=0 THEN POINT 0
720 POINT 100,0=10,100,0=100,1=10,100,1=10
730
740 IF I=10 AND POINT=100 THEN
750 GOTO 1000
760 IF I=10 AND POINT=100 THEN
770 GOTO 1000
780 IF I=10 AND POINT=100 THEN
790 GOTO 1000
800 IF I=10 AND POINT=100 THEN
810 GOTO 1000
820 IF I=10 AND POINT=100 THEN
830 GOTO 1000
840 IF I=10 AND POINT=100 THEN
850 GOTO 1000
860 IF I=10 AND POINT=100 THEN
870 GOTO 1000
880 IF I=10 AND POINT=100 THEN
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900 IF I=10 AND POINT=100 THEN
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920 IF I=10 AND POINT=100 THEN
930 GOTO 1000
940 IF I=10 AND POINT=100 THEN
950 GOTO 1000
960 IF I=10 AND POINT=100 THEN
970 GOTO 1000
980 IF I=10 AND POINT=100 THEN
990 GOTO 1000
1000 GOTO 1000
1010 GOTO 1000
1020 GOTO 1000
1030 GOTO 1000
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1050 GOTO 1000
1060 GOTO 1000
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1080 GOTO 1000
1090 GOTO 1000
1100 GOTO 1000
1110 GOTO 1000
1120 GOTO 1000
1130 GOTO 1000
1140 GOTO 1000
1150 GOTO 1000
1160 GOTO 1000
1170 GOTO 1000
1180 GOTO 1000
1190 GOTO 1000
1200 GOTO 1000
1210 GOTO 1000
1220 GOTO 1000
1230 GOTO 1000
1240 GOTO 1000
1250 GOTO 1000
1260 GOTO 1000
1270 GOTO 1000
1280 GOTO 1000
1290 GOTO 1000
1300 GOTO 1000
1310 GOTO 1000
1320 GOTO 1000
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1340 GOTO 1000
1350 GOTO 1000
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1370 GOTO 1000
1380 GOTO 1000
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1400 GOTO 1000
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1420 GOTO 1000
1430 GOTO 1000
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1450 GOTO 1000
1460 GOTO 1000
1470 GOTO 1000
1480 GOTO 1000
1490 GOTO 1000
1500 GOTO 1000
1510 GOTO 1000
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1530 GOTO 1000
1540 GOTO 1000
1550 GOTO 1000
1560 GOTO 1000
1570 GOTO 1000
1580 GOTO 1000
1590 GOTO 1000
1600 GOTO 1000
1610 GOTO 1000
1620 GOTO 1000
1630 GOTO 1000
1640 GOTO 1000
1650 GOTO 1000
1660 GOTO 1000
1670 GOTO 1000
1680 GOTO 1000
1690 GOTO 1000
1700 GOTO 1000
1710 GOTO 1000
1720 GOTO 1000
1730 GOTO 1000
1740 GOTO 1000
1750 GOTO 1000
1760 GOTO 1000
1770 GOTO 1000
1780 GOTO 1000
1790 GOTO 1000
1800 GOTO 1000
1810 GOTO 1000
1820 GOTO 1000
1830 GOTO 1000
1840 GOTO 1000
1850 GOTO 1000
1860 GOTO 1000
1870 GOTO 1000
1880 GOTO 1000
1890 GOTO 1000
1900 GOTO 1000
1910 GOTO 1000
1920 GOTO 1000
1930 GOTO 1000
1940 GOTO 1000
1950 GOTO 1000
1960 GOTO 1000
1970 GOTO 1000
1980 GOTO 1000
1990 GOTO 1000

```





**Select** Changes game level  
**Start** Starts game  
**Fire** Launches ball  
**Joystick left** Moves bar left  
**Joystick right** Moves bar right

*Table 1: Game controls*

**Block row 1** 10 points  
**Block row 2** 20 points  
**Block row 3** 30 points  
**Missing target** 100 points  
**Removing all bricks** 1000 points and an extra ball

*Table 2: Points score*

balls you start off with, after 1/1000 in line 1000. The speed of the ball and the distribution of the bumpers can also easily be altered. In line 1750 to 1840 ADCLAY determines the speed of the ball so to change it simply alter it in the statement:

`POW=INT(n)`

where n is the speed value of the ball. As the game stands a value of 15 is slow, 10 medium and 5 fast.

If you know how to plot characters to the screen display using the POKE commands and you should not find it difficult to alter the number or pattern of bumpers on any level. Lines 1810 to 2080 plot their positions and they are a predefined character X = internal character 56. 56F is the beginning of character sets.

Table 0: Levels of play

0	Slow speed	5 bumpers
1	Medium speed	5 bumpers
2	Fast speed	5 bumpers
3	Medium speed	10 bumpers
4	Fast speed	10 bumpers
5	Medium speed	Random bumpers
6	Fast speed	Random bumpers
7	Medium speed	High-density random bumpers
8	Fast speed	High-density random bumpers
9	Medium speed	Super-density random bumpers

- S Score
- H High Score
- L Level
- B Number of balls left

Table 3: Game status display

```

430 IF POW=0AL11111111 THEN B=12345
440 POW=0B00111111
450 IF A=5 THEN POW=0B00111111
460 IF A=1 THEN POW=0B00111111
470 RETURN
480 B=INT(1000/POW)
490 POW=POW*B
500 B=INT(1000/POW)
510 POW=POW*B
520 B=INT(1000/POW)
530 POW=POW*B
540 B=INT(1000/POW)
550 POW=POW*B
560 B=INT(1000/POW)
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580 B=INT(1000/POW)
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610 POW=POW*B
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650 POW=POW*B
660 B=INT(1000/POW)
670 POW=POW*B
680 B=INT(1000/POW)
690 POW=POW*B
700 B=INT(1000/POW)
710 POW=POW*B
720 B=INT(1000/POW)
730 POW=POW*B
740 B=INT(1000/POW)
750 POW=POW*B
760 B=INT(1000/POW)
770 POW=POW*B
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790 POW=POW*B
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910 POW=POW*B
920 B=INT(1000/POW)
930 POW=POW*B
940 B=INT(1000/POW)
950 POW=POW*B
960 B=INT(1000/POW)
970 POW=POW*B
980 B=INT(1000/POW)
990 POW=POW*B

```

Now on Page 24 B



# Melody Maker

**BRUCE WOODLAND starts you on the right note with this musical program**

THIS superb utility is designed to allow you to write simple tunes or to an on-screen simulated music sheet and play it back in a choice of voices. You also have full disc handling of the music files and a special facility which allows simple access to one from within your own programs.

Music is often added to programs, either to provide mood or to fill in those tedious intervals when data is being processed and nothing exciting is happening on screen.

Acari computers contain a versatile sound generator, but unfortunately the resident Basic buffers from complicated sound handling commands. Production of even simple tunes may require much trial and error.

Furthermore, since it takes a significant time to run the SOUND command, program operation is slowed or even stopped while music is being played, and this defeats the object of its inclusion.

Melody Maker presents an attractive solution to both these criticisms and is also fun and educational. Music is written on to a music sheet on the screen using a few logically-chosen keys. Standard musical notation is used, so composition or copying from sheet music is simplicity itself.

Disc handling routines allow music files to be saved or loaded and they can be added to or played in a choice of voices. An interrupt-driven machine code routine is used to play the music, so it will continue playing during most Basic operations. This option may be saved separately so it can be added to your own programs.

When you run the program the options available—shown in Figure 1—are displayed. Select W for the edit

mode and enter the music using the keys shown in Figure 2.

Position on the music sheet is marked by a player missile cursor which can be moved vertically on the staves by the arrow keys. You don't need to press Control; its position is translated to the appropriate pitch. The sharp and flat keys, which modify the pitch slightly up or down, have to be selected before the note is written.

Keys 1 to 4 will write a note of the correct type (length) at the cursor's position. The note length can be prolonged by 50 per cent by press-tension of the full-stop. The correct note

will sound, and be stored in memory. It is also possible to delete notes if necessary.

A key signature may be set up at the start of the composition or this can be bypassed if desired. The various key functions—shown in Figure 3—can be displayed on screen by pressing the I key, and these are usable at any point during composition. Only valid keys are accepted, so if you avoid Reset and Break you can't go far wrong.

The Basic END command will turn

Key	Note	Length
1	Quarter (q)	1
2	Quarter (q)	2
3	Eighth (e)	4
4	Half (h)	8

Table 1. The notes available

off any music, as will Reset and any disc accessing. No provision is made for accented beats, so the normal bar structure of music is conveniently ignored. In other respects Melody Maker follows standard musical notation very closely.

The program is very user-friendly and very little musical knowledge is required for its use, so an absolute novice can create superb music.

However, the complexity of the program renders it unsuitable for the smallest Acari machines such as an unmodified 400 or 800XL, and cassette storage is too slow, which means a disc drive is essential to store files.

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- Write Music** Draws the music notes and puts you into editing mode.
- Continue** Allows you to add to or continue with a composition in memory after using one of the main menu options.
- Save Tune** Saves your composition on to disc under a filename which you choose. All melody files are identified automatically by the suffix .MUS so do not add an extension yourself.
- Load Old** Displays all the valid melody files on the resident disc and you can select the one that you wish to load.
- Play Tune** Plays your composition after you have made your selection from five preset voicing choices.
- List To Disc** Lists a short portion of the Melody Maker to disc with the filename MELDDY.LST. Add this to your own Basic programs avoiding the use of any of its variables in your listing, and you can play any pre-stored disc file by first calling this routine. An excellent alternative to the notorious Press-eat - data-loading - screen.

Figure 1. Main menu options

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### Cursor up/down

Moves the cursor to the required position on — or slightly above or below — the starts.

- 8 Moves the note represented by the position of the cursor on starts without writing or storing it — useful for trial and error composing.
- 9 Places the notes entered so far. Cursor position and starts are unaltered and a single voice is used to avoid confusion.
- 1 Cycles between different on-screen instruction sets.
- 1-4 Writes a note to the screen of the desired note type shown in Table I and store its sound in memory. The cursor will then advance automatically. They are also used after the apostrophe, note identifiers are as follows:

### "B,A"

Gives a sharp, flat or naturalized note if it has been preset to sharp or flat in the key signature. These keys must be selected before the note is written.

### Spacebar

Allows the insertion of a musical rest at points, with length equal to the note type (1-4) selected thereafter. Dotted rests are possible. The cursor moves one place to the right after an appropriate symbol has been drawn.

### Delete

Deletes the last note entered from screen and restores — multiple uses are possible.

### Full stop

This should be used before the note and causes its length to be increased by 50 per cent. It's total length depends on you to the main notes from where you may play or store your composition.

## PROGRAM VARIABLES

MUSIC	MUSIC storage string
MACHINE	Machine code file handling
MEMORY	Reference list of note frequencies
NOTE	Key of note identifiers for key signature translation
FILE	Disc filename string
KEY	Valid keypresses check list
IO	Machine code for playing tone
CAP	Maximum storage capacity of tone store
KEYT	ASCII code of key pressed
SAS	Start address in term of PMS cursor
LEN	Note length
LNK	Store group offset value
NTC	Note frequency value
TRD	Term start of tone store
MC	Item start of tone store
RP	Positional translation of 80H
X	Horizontal screen index pointer
Y	Vertical screen pointer
L	Length of current tone file

Figure 8. Key commands available

0	000 *****	176	0000
1	000 # 00000 0000 #	178	000 *****
2	000 #0 00000 000.000	180	000 *****
3	000 # 000000 0000 #	182	000 *****
4	000 #0 0000 0000.000	184	000 *****
5	000 *****	186	000 *****
6	0000000 00000 0000 0000 0000 0000 0000	188	000 *****
7	000 *****	190	000 *****
8	00000 000 000 *****	192	000 *****
9	00000 0000 *****	194	000 *****
10	00000 0000 *****	196	000 *****
11	00000 0000 *****	198	000 *****
12	00000 0000 *****	200	000 *****
13	00000 0000 *****	202	000 *****
14	00000 0000 *****	204	000 *****
15	00000 0000 *****	206	000 *****
16	00000 0000 *****	208	000 *****
17	000 *****	210	000 *****
18	000 *****	212	000 *****
19	000 *****	214	000 *****
20	000 *****	216	000 *****
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98	000 *****	372	000 *****
99	000 *****	374	000 *****
100	000 *****	376	000 *****

# ATARI USER Classifieds

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- Archiver £85 WS2680 modem £80. Tel: 0245 288038.
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- Atari touch tablet and software £20. Plus original disc and cassette software from £50 to £9.99. Tel: 0792 974487.
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I certify that any software offered for sale is original and not a copy.

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POST TO: Atari User Classifieds, Empire House, Addington Park, Addington, Macclesfield SK10 5AP



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 3708 \*\*\*\*\*  
 3709 LIBRARY, LK,AP01, S00K-9711  
 3710 IF 974-9 THEN 7000  
 3711 RETURN  
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3801 IF 700000,90000 THEN GUN  
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WHETHER you're a first time user or a seasoned professional, I've no doubt that your Atari played a big part in the recent seasonal fun — but most likely as a games machine rather than a computer. Even I must admit to having spent a fair bit of time on the old joystick myself — which brings me round to our first question, from Keeser Neppahl of Mid Leithian in Scotland, who writes:

It is really amazing how few books there are that deal with the technical aspect of Atari 8 bit machines. It has been frustrating me for some time now to find out how the joystick part works, and what its configuration is.

My main questions are:

- What is the joystick pin configuration?
- How does the touch cable work?

Let's tackle the joystick connections first. Looking towards the side of the computer the pins are numbered as follows:



- 1 Forward movement (Up)
- 2 Backward movement (Down)
- 3 Left
- 4 Right
- 5 Peddle A (0 or 2)
- 6 Trigger button
- 7 +5 volts
- 8 Ground
- 9 Peddle B (1 or 3)

Figure 1 The joystick connector

The first four pins are detected by four bits within location \$D018 (\$D380). The lower four handle joystick socket one while the high four bits handle socket two. Bits 04 function with pin 1, 1/5 with pin 2, 2/8 to pin 3 and 3/7 with pin 4. Each of these are normally set to 1, and they drop to zero to indicate a movement of the stick.

The trigger button status may be found at location \$D264 (\$D016) for socket one and at \$D268 (\$D811) for socket two. These addresses are normally zero and they change to one when the relevant trigger is pressed. By using POKE \$D275,4 you can latch both of the trigger buttons. This means that, once pressed, the value will remain in the register until it is specifically cleared — even after you have released the trigger.

These locations are the actual

# SOFTWARE SOLUTIONS

## Your programming problems solved by ANDRÉ WILLEY

hardware addresses, but you will find it more convenient to use the shadow registers lower in memory, which are updated automatically by the OS 60 times a second.

Joysticks one and two show up separately at 632 and 633 respectively and the trigger buttons show up at 644 and 645. From Basic these values can be read by using STICK00L, STICK01L, STICK00R and STICK01R.

Additionally to the digital (on/off) joystick system, the Atari also boasts four analogue-to-digital converters. These are used to detect the movement of paddles — such as those used to play Breakout — and each contains a resistor giving a continuously variable voltage on pins five and nine of each joystick connector.

The computer converts the values from each of the four paddle controllers into numbers between 0 and 255 which may then be found at locations \$D180 to \$D18D (\$D300 — \$D30D). As before, shadow locations are available at \$D1 to \$D7 and the Basic functions PAD0L(1) to PAD0L(3) are also available.

Because there are two paddles connected to each joystick socket, they can't be connected to the single trigger line — so pin three gives the Peddle B trigger and pin 4 gives that of Peddle A. These may also be read using PTRIG00 to PTRIG03.

Now on to part two of your question. The touch tablet contains two resistance pads — one going from top to bottom and the other from left to right.

The slightest pressure at any point on the pad connects a given resistance value to the paddle A and B connections, so they are converted to digital values between 0 and 255 for both directions. The three buttons show up on pins nine, three and four and may be picked up using STICK05.

Here is a small program to illustrate

the use of the touch tablet:

```
10 GOTO(1) (2)GOTO (3,4,5)GOTO (6,7)
15 GOTO(8) (9) (10)
20 GOTO(11) (12) (13)
30 GOTO(14) (15) (16) (17)
40 GOTO(18)
50 GOTO (9,10)GOTO(11), (12,13)
60 GOTO (1,2,3)GOTO(14), (15,16)
70 IF 5/4=0 GOTO 80/81 GOTO 82
80 IF 3/7=0 GOTO 83/84 GOTO 85
90 IF 4/7=0 GOTO 86/87
100 (1) GOTO(2)GOTO(3) (4) (5) (6)
110 (7) 5/4=1 GOTO 7 (8) GOTO(9) (10)
120 (11) 3/7=1 GOTO 11 (12) GOTO(13) (14)
130 (15) (16) 4/7=1 GOTO 15 (17) GOTO(18) (19)
140 (20) 5/4=0 GOTO 20 (21) GOTO(22) (23)
150 (24) 3/7=1 GOTO 24 (25) GOTO(26) (27)
160 (28) 4/7=1 GOTO 28 (29) GOTO(30) (31)
170 (32) 5/4=1 GOTO 32 (33) GOTO(34) (35)
180 GOTO 20
```

## Printer problems

The next letter is from Mr Hill from Strassen.

Having written a program which determines the solution to a problem dependent on the input from the user, I would like to stamp the displayed solution to my 1025 printer.

Also, when I write software and run into difficulties, I would like to be able to print selected lines or groups of lines for later examination.

I am at present unable to do either of these, and any screen dump programs previously published are only intended for use with graphics screens and are not really suitable. I do hope you will be able to help me with this problem.

The listing problem is the easiest one to answer — all you need to do is use the LIST "P" command to list to the printer. Follow it with two optional

Turn to Page 42 ▶

## From Page 41

line numbers: The starting line number for the listing and the last line number to print. If you only give one number you'll get a single line listed to the printer.

For example:

```
LIST 70,100
```

would list line 700 on the printer, while:

```
LIST 70,200,300
```

would list all the lines from number 300 to 1000.

There are two possible solutions to your other question. One is to print the answer to the printer instead of the screen - which will only work if you print the lines sequentially rather than using a lot of POSITION statements to move about the screen. My series on I/O channels gave some information on re-vectoring the screen output to the printer, but you will probably find it easier to alter your program slightly.

Finally you must remember to OPEN a channel to the printer at the start of your program, and CLOSE it again at the end. Assuming we will use chan-

nel #1 for these examples, you would use:

```
OPEN #1,*,T;
```

and

```
CLOSE #1
```

If you want to print lines on the printer rather than the screen you should replace any PRINT or T statements with PRINT #1.

You could, for example, use the following routine:

```
10 OPEN #1,*,T;
20 PRINT#1,0;LIST 1;LIST
30 #1=(#1)+1
40 #1=(#1)+1
50 PRINT#1
60 CLOSE #1
70 END
800 GET #1:GOTO 1000
900 #1=#1+1:GOTO 10
1000 #1=#1+1:GOTO 10
1100 #1=#1+1:GOTO 10
1200 #1=#1+1:GOTO 10
1300 #1=#1+1:GOTO 10
1400 #1=#1+1:GOTO 10
1500 #1=#1+1:GOTO 10
1600 #1=#1+1:GOTO 10
1700 #1=#1+1:GOTO 10
1800 #1=#1+1:GOTO 10
1900 #1=#1+1:GOTO 10
```

Variables #1 and #2 are used to

specify the horizontal size of the text being - use #1=# and #2=# for the full line width. #1 and #2 perform the same task for the vertical axis - with #1=# and #2=# giving the full height of the screen.

Don't forget that you must have issued a GRAPHICS command before LOCATE can work - so the routine won't function correctly without the GRAPHICS G command somewhere earlier in the program.

You could have PEEKed the values of the characters directly from the screen ram but then you'd have to convert them back to standard Ascii codes before the printer would accept them - all of which would slow the routine down considerably.

The only disadvantage with using LOCATE is that it will corrupt the current cursor position, so don't forget to reset it with the POSITION command before you print any more text to the screen.

It'll be back next month with more answers to your technical queries, so keep them coming in. And how about all you new users who've just received an AT system for Christmas - what problems are you facing right now? Write in and let me know.

## ADVENTURE PROBLEMS?

AT LAST!! Help is at hand with this new all in one programme.

C.A.B. - Cassette Adventure Breaker - is designed to display hints on the screen to assist you to conquer those obstacles you can't overcome. Simply load CAB into your Atari before loading your adventure. Clues will then be displayed: verbs, nouns and locations but in such a way that it won't ruin your game - almost an adventure within itself!! And at an adventurous price of \$4.99 inc. p & p it must be the ULTIMATE UTILITY.

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# COLOUR PUZZLE

GAMES of strategy have always intrigued the human mind, and this one — an advanced version of the old sliding block puzzle — certainly has you in all sorts of trouble.

After the title screen is displayed press Start to begin. The display will go blank, then a 5 x 5 colour grid will be drawn, giving you 24 coloured squares and one blank one.

The middle nine squares are surrounded by a white line — remember! that these are the important squares in the puzzle. In the bottom right corner of the screen a smaller nine square grid displays the pattern you are required to create.

These small squares can't be moved, but you can move the large ones in Rubik cube style — after plugging a joystick into port one. It is possible to move the blank square in four directions — up, down, left and right. When this is done the blank square will swap places with the square adjacent to it, in the direction indicated by joystick movement. The only requirement for movement is that the blank square is in the direction of travel.

At first the movement of the squares seems strange, but you will soon get used to it. Also note that it is possible to move all 24 coloured squares, and not just the middle nine.

When you have got the nine large squares to match the small ones press the fire button. The program will then shuffle the colours of the squares for a

new game. You will then be given your time and the number of moves you needed to finish the puzzle.

Each time the puzzle is played the starting positions and colours of the large and small squares will be different.

### PROGRAM BREAKDOWN

50 — 160	Think of a new screen.
160 — 210	Draw screen.
210 — 320	Set up large squares.
320 — 5000	Set up small squares.
5000 — 5000	Movement of squares.
6000 — 6230	Title screen.

### PROGRAM VARIABLES

game%1	Colours of the small nine squares.
col%2%1	Colours of the large 25 squares.
best%1	Best time so far.
col	Position of the blank square.
row	Corner of the blank square.
ns	Number of moves the player has taken so far.

By MICHAEL O'CONNOR

```

1 REM COLOUR PUZZLE
2 REM BY MICHAEL O'CONNOR
3 REM (C)1989 JOHN BAZZILLI
4 REM PICO, COLLECT 0100-1000-1000-1000
5 REM
6 REM *****PROGRAM *****
7 REM
8 REM 10 10,20,30,40,50,60,70,80,90
9 REM *****
10 REM 100 100 70 5000 0000 0001,1000
11
12 REM SET UP SMALL SQUARES
13 REM *****
14 REM 100 100 100 100 100 100 100 100
15 REM 100 100 100 100
16 REM *****
17
18 REM SET UP LARGE SQUARES
19 REM *****
20 REM 100 100 100 100 100 100 100 100
21 REM 100 100 100 100
22 REM *****
23 REM
24 REM 100 100 100 100 100 100 100 100
25 REM *****
26 REM
27 REM 100 100 100 100 100 100 100 100
28 REM *****
29 REM
30 REM 100 100 100 100 100 100 100 100
31 REM *****
32 REM
33 REM 100 100 100 100 100 100 100 100
34 REM *****
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37 REM *****
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92 REM
93 REM 100 100 100 100 100 100 100 100
94 REM *****
95 REM
96 REM 100 100 100 100 100 100 100 100
97 REM *****
98 REM
99 REM 100 100 100 100 100 100 100 100
100 REM *****

```

```

01,7-SUBROUTINE 01
020 REM *****
030 REM *****
040 REM *****
050 REM *****
060 REM *****
070 REM *****
080 REM *****
090 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 *****
230 REM *****
240 REM *****
250 REM *****
260 REM *****
270 REM *****
280 REM *****
290 REM *****
300 REM *****
310 REM *****
320 REM *****
330 REM *****
340 REM *****
350 REM *****
360 REM *****
370 REM *****
380 REM *****
390 REM *****
400 REM *****
410 REM *****
420 REM *****
430 REM *****
440 REM *****
450 REM *****
460 REM *****
470 REM *****
480 REM *****
490 REM *****
500 REM *****
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830 REM *****
840 REM *****
850 REM *****
860 REM *****
870 REM *****
880 REM *****
890 REM *****
900 REM *****
910 REM *****
920 REM *****
930 REM *****
940 REM *****
950 REM *****
960 REM *****
970 REM *****
980 REM *****
990 REM *****
1000 REM *****

```

```

P,*****SUBROUTINE *****
0100 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
020 0000 0000 000 000 000 000 000
030 0000
040 *****
050 *****
060 *****
070 *****
080 *****
090 *****
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```

Turn to Page 44 >



# MONITOR# THE# MUSIC#

The two main features people notice first about Atari computers are their sound and graphics capabilities. Even though internally generated computer music can sound superb, you can never get a closer to create accurately the sound of your favourite rock megastar.

But with this fun and very easy-to-use program you can put your own pop, rock or classical music tapes in any Atari tape recorder and hear the music through the TV speaker.

The program also controls the movement of five vertical bouncing bars - which simulate the peak scan on a hi-fi - in time with the music.

Type in the program - remembering to check it using Get it Right! - then save a copy to tape or disc. To use it, all you have to do is press Reset, place the music cassette of your choice into the tape recorder and press play.

Now run the program: The main screen is drawn and then the tape

## CRAIG SMITH and MARK HARRIS scan the channels to give some amazing rhythmical displays

motor is turned on by the command POKE 54016,52. Music will now come through the microphone to the TV speaker.

The program looks at 16 locations between lines 53776 to 54016 to see if a value of 255 is found - this figure is present if a sound of a string enough loud exists. These are then used to control the movement of the bars up

and down the screen, so the louder the music the more the bars beat to the music.

The routine can be easily modified to create other interesting effects such as flashing lights or drawing graphical designs in time with the music. So Roll over Beethoven - let's have some music.

```

1 REM SIMPLE DISPLAY
2 REM 64K/128K USER
3 REM C. SMITH AND M. HARRIS
4 REM 2560 ROW 640X 400
5 REM 1000/1100/1200/1300/1400
6 REM 1000/1100/1200/1300
7 REM 100, 1000, 10000/100000, 1000000,
  10000000
8 REM 110, 1000, 10000, 100000
9 REM 100, 100, 1000, 10000, 100000
10 REM 100, 1000, 10000, 100000, 1000000,
  10000000, 100000000, 1000000000
11 REM 100, 1000, 10000, 100000, 1000000,
  10000000
12 REM MONITOR# THE# MUSIC
13 REM MONITOR# THE# MUSIC
14 REM MONITOR# THE# MUSIC
15 REM MONITOR# THE# MUSIC
16 REM MONITOR# THE# MUSIC
17 REM MONITOR# THE# MUSIC
18 REM MONITOR# THE# MUSIC
19 REM MONITOR# THE# MUSIC
20 REM MONITOR# THE# MUSIC
21 REM MONITOR# THE# MUSIC
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71 REM MONITOR# THE# MUSIC
72 REM MONITOR# THE# MUSIC
73 REM MONITOR# THE# MUSIC
74 REM MONITOR# THE# MUSIC
75 REM MONITOR# THE# MUSIC

```

### PROGRAM BREAKDOWN

- 10-20 Set up variables, turn cursor off and alter screen display
- 40-200 Draw the main screen
- 200 Turns the cassette motor on
- 300-350 Set the calculated BASIC statements
- 400-550 Read the locations to detect if any music is present
- 700-1400 Draw the bars that beat to the music
- 1500-1550 Draw black lines across the screen

```

69 POSITION 0,0:PRINT "MONITOR# THE# MUSIC"
70 PRINT "C. SMITH AND M. HARRIS"
71 PRINT "2560 ROW 640X 400"
72 PRINT "1000/1100/1200/1300/1400"
73 PRINT "1000/1100/1200/1300"
74 PRINT "100, 1000, 10000/100000, 1000000,
  10000000"
75 PRINT "110, 1000, 10000, 100000"
76 PRINT "100, 100, 1000, 10000, 100000,
  1000000, 10000000, 100000000, 1000000000"
77 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
78 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
79 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000, 100000000, 1000000000"
80 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
81 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
82 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
83 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
84 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
85 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
86 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
87 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
88 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
89 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
90 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
91 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
92 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
93 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
94 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
95 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
96 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
97 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
98 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
99 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"
100 PRINT "100, 1000, 10000, 100000, 1000000,
  10000000"

```

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# Van Gogh junior

RECENTLY my young brother has decided that he wants to be another Van Gogh. He uses my commercial art packages all the time to draw his masterpieces, but has problems with the complex range of commands designed for older age groups.

We looked around for a package aimed at young children but couldn't find any, so we created Child Artist. It is designed to be simple and easy to use for children of any age – providing they are old enough to be using a computer in the first place.

It's a four colour art program and nearly all the drawing options can be used by just pressing the function keys and moving the joystick, although some keyboard input is needed.

Figure 1 shows the drawing options available by pressing the function keys while Figure 2 shows the bars used to scroll through the available colours – the defaults are red, white, blue and green.

Once the program has initialised you are presented with a blank graphics Mode 2 screen with a triangular cursor at the top left. This is joystick controlled and can have a variety of shapes and colours which you can use to design any pictures you want by just moving the cursor around the screen and pressing the fire button to leave the shape.

Pictures can be saved on disc and

## MATTHEW AUGIER presents a fun art package for youngsters

each one only takes up two sectors, containing the screen information followed by the colour register information – 308 to 311 – and the colour of the cursor – 708. A picture can have a filename of eight characters and the program automatically adds the extension of .PIC to the name.

It is important to note that before a file can be loaded the cursor must be positioned at the top of the screen. This prevents the accidental erasure of a drawing by loading a file on top of it.

The program's player missile graphics are written in machine code so that movement is smooth and easy to see. The data for the shape of the cursor can be easily changed, so you can have hours of fun creating your own designs. Break has been disabled so you can't accidentally lose your picture, and the attract mode has been switched off.



Key	Function
Start	Align colours using the keys in Figure 2. Spacebar exits this mode.
Start+Select	Saves picture
Start+Option	Loads picture
Start+Select+Option	Clears screen

Figure 1: Options available

Colour	1 2 3 4
Luminance up	Q E T U
Luminance down	A D G J
Escape	Makes the cursor invisible. Spacebar brings it back.
Spacebar	Allows you to alter the shape and colour of the cursor by moving the joystick – pressing the spacebar again exits this mode.

\* These keys scroll through the brightness level of the corresponding colour.

Figure 2: Keyboard controls

00 000	000000000000000000000000	000 0000	00000000
01 000	000000000000000000000000	001 000	000000000000
02 000	000000000000000000000000	002 000	000000000000
03 000	000000000000000000000000	003 000	000000000000
04 000	000000000000000000000000	004 000	000000000000
05 000	000000000000000000000000	005 000	000000000000
06 000	000000000000000000000000	006 000	000000000000
07 000	000000000000000000000000	007 000	000000000000
08 000	000000000000000000000000	008 000	000000000000
09 000	000000000000000000000000	009 000	000000000000
10 000	000000000000000000000000	010 000	000000000000
11 000	000000000000000000000000	011 000	000000000000
12 000	000000000000000000000000	012 000	000000000000
13 000	000000000000000000000000	013 000	000000000000
14 000	000000000000000000000000	014 000	000000000000
15 000	000000000000000000000000	015 000	000000000000
16 000	000000000000000000000000	016 000	000000000000
17 000	000000000000000000000000	017 000	000000000000
18 000	000000000000000000000000	018 000	000000000000
19 000	000000000000000000000000	019 000	000000000000
20 000	000000000000000000000000	020 000	000000000000
21 000	000000000000000000000000	021 000	000000000000
22 000	000000000000000000000000	022 000	000000000000
23 000	000000000000000000000000	023 000	000000000000
24 000	000000000000000000000000	024 000	000000000000
25 000	000000000000000000000000	025 000	000000000000
26 000	000000000000000000000000	026 000	000000000000
27 000	000000000000000000000000	027 000	000000000000
28 000	000000000000000000000000	028 000	000000000000
29 000	000000000000000000000000	029 000	000000000000
30 000	000000000000000000000000	030 000	000000000000
31 000	000000000000000000000000	031 000	000000000000

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```

BC TAB,PORC000411,PORG 764,133
EADD SP,A500 AND PEEK174133 THEN PORG
710,PEEK174133-14PAGE 764,130
A170 SP,A540 AND PEEK174133 THEN SP
BE PEG,PORC000411,PORG 764,133
EADD SP,A500 AND PEEK174133 THEN PORG
710,PEEK174133-14PAGE 764,130
A170 SP,A540 AND PEEK174133 THEN SP
BE PEG,PORC000411,PORG 764,133
EADD SP,A500 AND PEEK174133 THEN PORG
764,PEEK174133-14PAGE 764,130
EADD A070 A070
EADD P00 010 24000000000000000-1
INSTR B,PORG 764,08,131
EADD A070 A070
EADD B04 1000
EADD 200000 1000
EADD 20020000 0,011 001 010000
**000000 1000
EADD 200000 1000
EADD 2000 2000 020,0,0,1,1,1
EADD P00 010 240000 010 240000 010 2400
020,0,0,1000 010 240000 010 240000
020,0,0,1000 010 240000 010 240000
EADD 2000 2000 020,0,0,1000 0
0200001 010 240000 020,0,0
EADD CL00 0100000 1000 010000
EADD 2000 011 20000 1000 010000
    
```

```

EADD P00 010 240000 010 240000
EADD P00 010 240000 010 240000
EADD P00 010 240000 010 240000
    
```

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BY EASYBINARY OF
EADD P00 010 240000 010 240000
EADD 2000 2000
EADD 200000 1000
EADD 20020000 0,011 001 010000
**000000 1000 200000 1000
EADD 2000 010,0,0,0,1,1,1,1
**000000 1000 200000 1000
EADD 2000 010 240000 010 240000
002 020,0,0,0,1000 010 240000
002 020,0,0,0,1000 010 240000
002 020,0,0,0,1000 010 240000
002 020,0,0,0,1000 010 240000
002 020,0,0,0,1000 010 240000
002 020,0,0,0,1000 010 240000
002 020,0,0,0,1000 010 240000
002 020,0,0,0,1000 010 240000
002 020,0,0,0,1000 010 240000
    
```



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Independent User Group

# NOW FT BUSINESS REPORTS GO ON LINE

THE Financial Times Business Reports database is now part of Profile information – the online service formerly known as Dataserve International – which is obtainable through MicroLink. It is the first venture between Profile and its new

owner, The Financial Times, which recently acquired the company from Dataserve for £18 million.

Based on the highly-regarded FT newsletter service, the new database provides the full text of 32 regular newsletters covering technology, business, finance, media and energy.

Profile is best known to MicroLink subscribers for its World Reporter database containing the complete text of more than 26 worldwide newspapers, periodicals and news services.

As well as the world's leading business newspapers –

the Financial Times and the Wall Street Journal – Profile also offers publications such as the Washington Post, the Guardian and the Daily and Sunday Telegraph.

Several major international news services such as Associated Press and Asahi are included, along with a wide range of authoritative services on international politics, business, markets and finance.

Profile also offers access to McCarthy Online, which contains full text articles selected for their relevance to business and commerce from more than 80 of the world's top business publications.

## The social side wins

MICROLINK subscriber Nigel Inwood temporarily abandoned a career in accountancy and law to help his parents open a business. Fourteen years later he very much doubts he'll ever return to the office.

The business his family took over was Judges Bakery, in the High Street of Hastings – old town near the horizon.

With the addition of a restaurant, it became the only bakery to be listed in tourist guides such as Egon Ronay and the Good Food Directory.

"I'm on MicroLink for pleasure, because computing is my hobby", said Nigel Inwood. "Despite its international fame this is still a one-shop business – my email communications are more likely to be social than official."

"I chose MicroLink because it offered more interesting and entertaining features than the other systems available".

## It's the Tory line

TORY politicians and party workers all over the country are being urged to join MicroLink.

The Conservative Computer Forum, an organisation formed 30 years ago to promote computing among party members is behind the campaign.

Committee member Warwick Childs said: "Perhaps the greatest potential a computer can offer electronic communications – has up to now been totally neglected in the Conservative Party. In this respect we are well behind the other main political parties.

"At present we have something approaching 200 CCF members – think what an advantage it would be if they were able to provide a nation-wide electronic visual network for the benefit of their constituencies.

"These people are our prime targets for linking together electronically. Eventually we hope to see all conveniences, MPs, party officials and offices on the MicroLink system".

## Software speed-up

IT's now quicker and easier to use the massive MicroLink library of free computer software.

With the number of titles available for downloading fast approaching the 800 mark, subscribers were in danger of experiencing difficulty locating specific programs. As a result

MicroLink has completely redesigned the telesoftware database to speed up the process of selection.

Users can now choose from a menu a complete database of program titles suitable for their own particular make of computer.

## Third World connection

A LEADING independent authority on conditions in Third World countries has joined MicroLink to improve its international communications.

The Overseas Development Institute was formed nearly 30 years ago to study and monitor economic and agricultural development abroad.

As one of its first it has as many as 30 research projects underway in different parts of the world. As well as publishing vital information about conditions in various countries,

the ODI also tries to influence the decisions of policy makers around the world.

"We have an ongoing need to communicate with researchers and other institutions worldwide", said ODI spokesman Peter Gee.

"As part of a project to improve communications we are looking at electronic messaging, and MicroLink is as good a base as any to start with its excellent Email and telex facilities".

# Your HINTS & TIPS

## Escape from Traum

If you are having trouble with this superb science fiction adventure don't panic - help is at hand. When you crash your ship, look at it, get the nylon rope, push the ship and get the laser.

Go South and tie the rope to the bush then climb up and talk to the alien warrior - you have to talk to him twice. Now go South, then West into the dark cave and once you're inside it keep moving until you bump into an object - the rest is up to you. - **Petrick Brown, Newton, Leicestershire.**

## Donkey Kong

### Junior

WHEN the game has loaded press Start. Then press shift and hold it down as you type the word BOOGA, if you now press K you will never be killed as you play the game and if you press B you will be able to skip levels. - **George Bayle, Livingston, West Lothian.**

## Spiderman

HERE is the complete solution to this addictive adventure:

Walk along the walls, go West, look in the crib and take the formula. Now look in the crib again before taking the first gem. Go N, N and drop the gem followed by the formula then go S, S, E and open the doors.

Enter the shaft and have a look around, especially in the niche, and get the gem. Now go up the shaft and have a look around in another niche before getting the gem. Go up again and search around for another gem. Push the shaft and go up, take another look before getting the next gem.

You are now in the Penthouse, so lower the thermostat twice before reading it then open the desk and get the sixth gem. Take the painting and pull it, then get the paper and drop the picture. Go back into the shaft and go S, D, D, W, W, N, N and drop a gem six times.

Go S, E and take the aquarium. Go W, S, E and enter the shaft again. Go U, U, U, W and raise the temperature. Empty the aquarium and take the gem, then drop the aquarium. Lower the temperature, take the desk and couch and go back into the shaft.

Go D, D, D, W, W, N, N and drop a gem then go S. Next move E and take the statue and go W, S, E. Go into the

shaft, climb up and go W where you drop the statue, couch and desk.

Enter the shaft again, go U, W, W and close your eyes. Go W then push the knob, open your eyes and get the gem. Type RUN and go E, S to get the acid and calcium, then go S, S and get the other chemicals. Go N, N and mix the chemicals first and then get the calcium - then off.

Go S, S and take the chemicals before going N, N, now make a web. Drop the paper then go S, E and enter the shaft. Go D, D, W, W then South before dropping the calcium. Have a

look in the scenery and take the gem you find there, then go N, N, N and drop the gem twice.

Go S and shoot your web at the gem before you get it, then go N and drop the gem before going S, S, S. Take the corners and go N, E to get to the roof. Open the mesh and then drop it, go down the duct and get the gem.

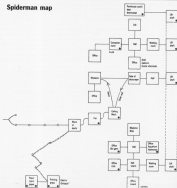
Examine the fan before shooting your web at the button five times, then enter the fan to take the gem before going D, D, D, D, D. Get onto and hit electro then go W and read the dial - it should say 80F. Go R, U, U, U, U, U, enter the fan, go down and feel N before you take the gem.

Go S and then feel S and take the gem before going N, E, E. Enter the shaft and go D, W, W, N, N so you can drop the gem seven times. Go S, S, E and enter the shaft before going U, U, W, W, W and type RUN.

Go E, E, enter the shaft, then go D, W, W and enter the roof. Now enter the duct then the fan before going D, D, D, D, D and take the newspaper. Open it and take the gem. Go U, U, U, U, U and enter the fan before going D, D, E, E so you can enter the shaft.

Go D, W, W, N, N and drop the gem - now ask for your score and it will print MICARI 100% - you have just finished the game. - **Lee Harding, Bradford, West Yorkshire.**

## Spiderman map



HAVE you reached the stage in your programming career when a standard blue-and-white screen no longer fills you with inspiration? Perhaps you've envied other makers of computers which use different colours or formats for their programming screens. Or maybe you just want to give your lovable old Atari a facelift, and impress your friends with its new customised appearance.

If so, this autoboot program is for you. It lets you override the operating system so that whenever you switch on, or press Reset, a different screen layout with lots of new features appears instead of the boring old blue one.

What new features? Well, for starters the new screen can be any colour you like, with or without a border, and the text can be brighter or dimmer than usual. The left and right margins can be set at any positions you choose - perhaps to give balanced margins at either side, rather than the standard right-heavy effect.

The cursor can be adjusted so that it rips around at up to four times its normal speed, while still allowing precise single-step positioning and without affecting the auto-repeat on any other keys. You can also have it flashing on and off at whatever rate you choose and, unlike most flashing cursors, this one stays visible whenever it moves - so you will never lose track of it no matter how quickly it whizzes about.

If you like the BBC Micro display, with thin lines under each line of text, you can incorporate a similar effect in your new custom screen. And, if you enjoy this feature, you can move the whole text area up or down to centralise it, should your TV be slightly

# Customising the default screen

**KEN BREARLY** gives you a superb autoboot program that could brighten up your Atari

out of adjustment.

A feature unique to the Atari is the attract mode colour rotation - that is, when you don't touch the keyboard for about 10 minutes, the screen colours will start to change randomly every few seconds. This can be very irritating when you're programming, so the autoboot routine gives you the option of switching it off.

There's even an extra feature for advanced programmers, which allows you to reserve a safe area of memory below the MEMLO pointer. This area can be used to store display lists, character sets, player missile graphics tables, machine code routines or any other data that you want to keep out of Basic's clutches but which won't fit on page 0.

Because the routine is written entirely in machine code, and installs itself before Basic takes control, it behaves just as though it were part of the built-in operating system.

You can load, save and modify your Basic programs without affecting it in the slightest, and even typing MIIII won't erase it. The new screen

will disappear, of course, when you select any new graphics mode, and you can change the colours using SETCOLOR in the usual way. But if you press Reset, everything will be automatically restored to its former glory.

The machine code is quite complex, and would take too long to discuss in detail, so we'll just look at the Basic version and how to customise them.

Program 1 is for disc users. When you run it, it creates an AUTORUN.SYS file containing all the routines and data for your new customised screen. Make sure, though, that the disc you're saving it to contains a copy of Dos, and doesn't contain an existing AUTORUN.SYS file that you want to keep.

Program 2 is similar, but creates an autoboot cassette file. Insert a blank, re-recorded cassette. Run the program and proceed as for CSAVE when you hear the familiar double beep. To get the new screen routine installed and working, you now follow the normal boot procedure.

With a disc drive, simply insert the disc containing your AUTORUN.SYS file and switch the computer on. To load the cassette version, insert the fully-re-recorded autoboot cassette, switch power on while holding down the Start key, then follow the usual LOAD procedure.

If you keep the routine in its present form, you will get a green screen with blue-grey lines under each line of text, margins set at 1 and 38, a cursor which flashes twice per second and no attract mode colour rotation. The disc version also gives you a protected area of ram between addresses 7001 and 8276, while the cassette version gives you 2002 to 3072 - see Figure 1.

All these parameters can be altered by changing a few numbers in either program, then making a new autoboot file containing the customised data.

Number on line 230 or 260	Function	Existing number	Permissible range
1st	Background colour	194	Even numbers from 0 to 254
2nd	Border colour	170	Even numbers from 0 to 254
3rd	Character brightness	19	Even numbers from 0 to 254
4th	Left margin	1	0 to 38
5th	Right margin	38	1 to 38
6th	Attract mode on/off	0	0 = off, 1 = on
7th	Flashing cursor on/off	1	0 = off, 1 = on
8th	Cursor flash rate	14	1 to 255
9th	Cursor movement rate	2	1 to 0
10th	Underlines on/off	1	0 = off, 1 = on
11th	MEMLO pointer, low byte	0	Best left at 0
12th	MEMLO pointer, high byte	0	Minimum 32 (see text) Minimum 8 (see text)
		38 (total)	

Table 1: The possible program-changes and their effect

It's quite easy to do.

Look at line 230 in Program I or line 380 in program L. Each of these 12 numbers controls some aspect of the new default screen. For example, the first three — 194, 178, and 18 — affect screen colours. Table 1 shows what each number does, together with the range of numbers you can use as alternatives to customise the screen.

You can experiment with most of these numbers while your new screen is in place. First test the autoboot file, to get the green screen and so on, then experiment by **POKE**ing different numbers into the control registers, as follows:

**Background colour:** **POKE** 710 with any even number from 0 to 254.

**Border colour:** **POKE** 712 with any even number from 0 to 254. If you do not want a visible border, make it the same colour as the background.

**Character brightness:** **POKE** 708 with any even number from 0 to 14. If you accidentally make the text invisible against the background, just press **Reset**.

**Left margin:** **POKE** 82 with any number from 0 to 36.

**Right margin:** **POKE** 83 with any number from 0 to 36.

**Colour rotation:** **POKE** 1808 (disc) or 1808 (cassette) with 0 to cancel the atial mode colour rotation, or 1 to enable it.

**Flashing cursor:** **POKE** 1807 (disc) or 1806 (cassette) with 0 to stop the flashing or 1 to start it again.

**Cursor flash rate:** **POKE** 7862 (disc) or 1807 (cassette) with any number from 1 to 255. The higher the number, the slower the flash rate.

**Cursor movement rate:** **POKE** 3662 (disc) or 1808 (cassette) with any number from 0 to 4. Numbers above 4 will not slow the cursor down any further.

**Text up/down movement:** **POKE** 3660 and/or 7868 (disc) or 1812/1813 (cassette) with 0, 16, 32, 48, 64, 80, 96 or 112. These values will have no effect unless the thin lines are present on screen.

**Underlining:** **POKE** 3668 (disc) or 3668 (cassette) with 0 to turn the lines off, or 1 to turn them on, then press **Reset**.

The one parameter which you cannot change in this way is the **MEMLO** pointer. It can be altered only by changing the last two numbers in line 230 or line 302 — see Table 1 — and

Turn to Page 84

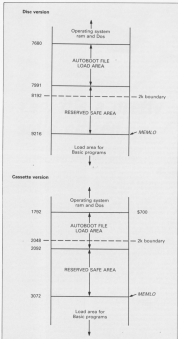


Figure 1. Memory usage



THE LSP-100 bi-directional dot matrix printer is Citizen's latest addition to an already impressive range of products. As with most printers, you have the option of friction or tractor feed and this can be selected easily by moving a lever on the top right of the casing.

You also have the option to load paper from underneath the printer using a process called bottom-loading (see Figure 1). Loading paper this way can only be done when your printer is mounted on a stand. The tractor-feed mechanism must be attached to the printer and you must use continuous stationery. Loading paper is just like setting the tractor-feed up, except the paper comes from underneath.

The printer will connect to your micro via an Atari 850 interface box, but you will need to buy a lead to connect them – or a Centronics-Atari interface cable, which costs about £50.

On the front right side of the printer are three buttons controlling the online status, form feed and line feed. The printer must be brought offline before the feed buttons will work – rather annoying, but this is the case with several printers. Next comes a panel with three small lights – power, paper out and ready.

The DIP switches are easy to access. You simply switch the printer off and remove a cartridge-style interface located on the right of the printer as you look at it. You can then alter the switches to suit your micro. Instructions on how to do so are very well documented in the manual.

Now for the all-important question: Is it Epson compatible? The answer is yes, and it is also switchable to IBM-compatible, not that this will affect Atari owners.

Citizen says that the LSP-100 is an 80 column printer and the print head has nine pins which are used to give



## Yes, it's a pretty solid citizen

NEIL FAWCETT examines the new LSP-100 printer

you a 3x9 matrix. When used in NLQ mode a double pass of the head allows the matrix to change to 7x9 and this gives you a wide variety of styles and typefaces.

The print speed is 150/175 characters per second (cps) at 10/12 cps (characters per inch) in draft mode and 40 cps in NLQ mode. Now that is quite a powerful, but it gives you an idea of the capabilities of this machine.

It is interesting to note that although

this is quite a fast printer it is also very quiet. Even when doing a screen dump I could still manage to concentrate on other work while it was churning away.

There is a built-in 4k buffer – very useful indeed, as it allows you to continue working on your micro as the printer does its work. However, there is a snag with the large buffer – there isn't a flush button. So, if you make a mistake you have to wait until that large 4k buffer empties. Alternatively you can turn the printer off.

Fitting the cartridge type ribbon poses no problems. It's claimed to last for two million characters – but I didn't have time to test this.

The LSP-100 has a sleek modern look and is surprisingly compact when you consider that it does some tasks that printers twice its size can't. The manual is well presented and easy to read with plenty of diagrams showing things like fitting the ribbon and so on.

This is a superb printer, well priced and should satisfy the needs of most homes and small businesses.

Product: Citizen LSP-100 printer  
Price: £249 excluding VAT  
Supplier: Citizen Europe Ltd, Wellington House, 4-10 Cowley Road, Oxford, OX4 1JF  
Tel: 0895 7007

### Specifications

- 150/175 cps at 10/12 cps in draft and 40 cps in NLQ
- Epson and IBM compatibility
- Parallel interface standard
- Tractor feed and friction feed
- 4k buffer
- 8 bit graphics capabilities
- Downloadable characters
- More than 400 print styles
- Automatic sheetfeeder available
- Bottom-feed paper loading option



Figure 1. Loading the printer using bottom-feed

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# An American eye on the 8 bit scene

I LIVE in Boston USA and I was in London for two weeks when I heard of the Atari User Christmas Show, having owned an Atari 1300XE - which was once available in the UK - for nearly three years, I naturally decided to attend.

I am a great fan of games software and boast a 1,200 program collection which includes 82 cartridges. In my two week visit I have been to many software outlets in the West End, but have discovered that Atari 8 bit computers are rarely sold as well represented as others I could name.

This is a shame really, as they offer excellent graphics and superb sound facilities, which by far exceed the standards offered by other micros.

In the US, Atari 8 bit computers are now one of the most popular micros. With the arrival of the new XE, software houses have really been booming.

But it is not like this in Britain, so as I entered the Champagne Suite in

## EQ LETTER

Boston! I had little hopes of enjoying myself. But, was I surprised!

Software here is just as good as that in the UK - only it's more difficult to obtain. I had never even heard of titles like Phantoms, International Karate and Arkonoid, but they proved to be excellent games.

I found business software here to be of a very high standard too. Overall I was very pleased with the software I bought - if only it was stocked by every software outlet in the UK.

But to the point of my letter - at the show I discovered Atari User. It is an excellent magazine, and much better than anything in the USA.

I brought all the back issues which were on display and look forward to some interesting reading

and more projects like the speech synthesizer. Thank you Atari User, for making my visit worthwhile.

By the way, games deals may be interested to hear of the games which are all the rage in the US on the Atari: Kang Fu Master, Rocky, Phoenix and World Cup Football - Just out for them in Britain. - Z. Javel, Boston, USA.

## Printer transformed

I HAVE just returned from Seoul Asia with an Epson 4000 printer that I bought out there.

The printer is 120 volts and I am at present using it with a voltage transformer. Can I convert it to 240 volts? - Regal Potter, London.

It should be possible to convert your printer to 240 volts. Some transformers are multi-standard and require a link to be changed inside the printer.

If your printer contains a single voltage type, it will be necessary to replace it. Boston UK should be able to help you. The address is Boston UK, Dorland House, 388 High Road, Wembley, Middlesex HA9 6JH.

## No Ninja

COULD you please tell me if the Last Ninja from Systems 3 will ever be available for Atari 8 bit computers? I have waited a long time but it has not come out yet. - Scott Howden, Birling, Scotland.

At the moment, the Last Ninja has not been released for the 8 bit Atari and it appears a conversion is unlikely to be forthcoming.

## WIN A TENNER!

EACH month we will award £10 prizes for the most interesting letters sent to us.

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Get your pens out, start writing and you could be one of the winners. The address:

Mailbag Editor  
Atari User  
Europa House  
Aldington Park  
Aldington  
Massenhield SS16 5BP

## Faulty keyboard

I BOUGHT my 800XL about two years ago from Curry and we had a few problems loading games. After a few weeks - and computers - we found one that worked and I've been happy with it ever since.

Everything was fine until about two months ago when the console key started to stick and a continuous stream of them poured out. I ignored this as I didn't do much typing for a while, but when I did, none of the keys would work.

I could still load games, as the keyboard keys worked, and after the beep the disc recorder started automatically. If it's a major fault could you please recom-

mend someone to repair it - L. Stephenson (Basington Col), Co. Durham.

Your best course of action is to send your computer to a service engineer for repair. Here is the address of someone close to you who may be able to help: ISC Electronics, 12 Robinright Grove, Hemlington, Middlesbrough, Cleveland TS8 9PS.

## Stopped on the red

OCASIONALLY the text background on my monitor display develops a pale green/yellow cast which sometimes lasts up to a minute.

Also the top of my print head doesn't work making the text difficult to read. - Michelle Nixon, Waddington, Lincoln.

The cast on the picture is due to an absence of a red signal. This could be a faulty lead or connector at the computer or monitor end. Alternatively it could be a problem inside the monitor circuit board.

The print head fault can probably be rectified by cleaning or replacing it. Alternatively the Darlington driver - inside the printer - which controls the top solenoid of the head may have gone faulty and need replacing.

## Lighting up

I WAS very interested in the disco light controller in the December 1987 issue of Atari User. I would like to know if it can be bought

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#### ■ From Page 87

ready-built, and if so what is its price?

I am not electrically minded and don't know anyone who could build it for me, but I would like to put on a light show. — **R. Windhaugh, Ashington, Northumberland.**

■ The disco lights are available ready-built from RH Design for £39.50 plus £1.50 postage and package. The company also sells some of the other gadgets featured in Atari User ready built.

The address is RH Design, Units 2 and 3, Stonefield Studios, Stonefield Avenue, Harrogate HG2 7NR.

## Printing screens

I WOULD like to tell you that Atari User is really great and I buy it every month in my country — Israel. I have two questions and was wondering if you can help.

Can my dot matrix printer dump screens from games and pictures from adventures?

I use Atari the game King's Quest for my Atari 800X with 2MB memory. Do you know where I could

# ATARI USER Mailbag

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

The address to write to is:

Mailbag Editor  
Atari User  
Europe House  
Adlington Park  
Adlington  
Macclesfield SK10 5NP

get this? — **Eyal Levy, Mardin, Israel.**

■ As your computer stands it is very difficult to dump screens from adventure games. However, using something like the OS Controller card from Computerhouse it is possible.

The board is an internal modification to your micro and allows you control over the operating system. Their address is Computerhouse, 14 Bandy Court, Landridge Road, Fulham, London SW6 4LL.

The King's Quest adventure game is only available on ST format in the UK. However, if you write to Sierra On-Line Inc. in America you will be able to

obtain full details of the products for the Atari. Their address is Sierra On-Line Inc., Cosumnes Oaks, California, CA 95814, USA.

## Software shortage

HOW is it that if I sit Atari owners always get left out when games like Out Run are released? I have written to many of the major software companies, but to no avail.

If games like Out Run and many others — too numerous to mention — were released they would be bestsellers.

There is a massive user base for Atari if not computers and there, so why are we still ignored? — **Markie Ockema, West Wickhams, London.**

■ Do any of our other readers have problems obtaining software? Write to us, we'd like to hear from you.

## A sound investment

I RECENTLY bought a second-hand 800X and 10MB disc drive, but there were no manuals. I am interested in music and programming, so I tried to produce some tunes on my micro.

A friend explained the

SOUND statements to me, but my problems arose when I tried to convert numbers for the pitch value into musical notes. Can you please help me? — **Denise Swinton, Cleveland.**

■ The panel below shows a range of musical notes and their numeric equivalents. There's also a short program to play a musical scale and demonstrate the SOUND statement in use.

High notes	C	29	
	B	31	
	A# or Bb	33	
	A	35	
	G# or Ab	37	
	G	39	
	F# or Gb	41	
	F	43	
	E	47	
	D# or E	53	
	D	55	
	C# or Db	57	
	C	59	
Middle C	B	64	
	A# or Bb	68	
	A	70	
	G# or Ab	72	
	G	81	
	F# or Gb	85	
	F	91	
	E	96	
	D# or Eb	102	
	D	108	
	C# or Db	114	
	Low notes	C	121
		B	128
A# or Bb		136	
A		144	
G# or Ab		153	
G		162	
F# or Gb		173	
F	183		
Low notes	D	190	
	D# or Eb	204	
	D	217	
	C# or Db	230	
	C	243	

Figure 1. Pitch values and their relative musical note.

```

1 8000, 1000, 1000
2 800
3 7 10 100 100
4 100 100 100
5 10 100 10 100 100 100
6 100
7 100 100 100 100 100 100
8 100 100 100 100 100 100
9 100 100 100 100

```

## Topical translations

FOLLOWING the amusing article on Computer Speak in the November issue of Atari User, here are some more in a similar vein. — **P. Buller, Mucknell, Staffs.**

Apple... grows on a tree.  
Brand name... last someone has found a use for it.  
Byte... a hungry computer programmer.  
C... a letter after it.  
CMOS... moss that grows on the underside.  
Data... asking your girlfriend out for a date.  
Data bus... mobile library.  
Doc... a spreadsheet.

Designed by a computer... no one will take the blame.  
Forth... a bridge.  
IC... rough weather for ships.  
Latest technology... see it in a new case.  
One meg byte... expensive double decker.  
Mega bytes... demand for computer people.  
Monitor... school milk distributor.  
Nibble... not-so-hungry computer programmer.  
Unrepeatable after... hurry up, we're going bankrupt.  
Serial input... candidate for headless.  
Micro chips... small portions of fried sliced computer.

## Enter the magical world of Kerovnia!

This fascinating adventure features the most sophisticated parser around. You can type complex sentences and interact with the many characters, including some very intelligent animals.

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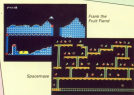
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