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October 1988

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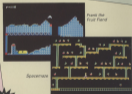
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All major listings in this issue are accompanied by checkmarks to help overcome typing mistakes. For full details of how they work, see the article on page 26 of the July 1989 issue of Atari User.

DRACONUS

Never has the 8 bit Atari been treated with such respect. Thanks to Zappell's unrivalled Atari experience, 8 bit owners everywhere can now rub their hands with glee at the prospect of playing the game that's got the games software world jumping with delight. DRACONUS is the ultimate Atari 8 bit experience putting Atari software and the 8 bit computers up where they belong - right at the very top.

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New US products are on their way

ANOTHER batch of important Atari 8-bit products have been announced by US developer Reserve Software (3101 213-263 2017).

News Station brings some powerful page layout capabilities to the XL/XE micros. It allows the user to combine graphics and text and print them out. Price \$29.95.

News Station Composer includes a plate manipulator to expand and centre News Station plates, an ASCII converter, ASCII picture converter for selecting part of a picture, and News Station Librarian which allows pages to be compressed to save disk space. Price \$29.95.

Publishing Pro is the first object oriented desktop

publisher available for Atari 8-bit micros. It allows users to create an entire page of text using columns, headers and icons, and is compatible with ASCII files, Print Shop icons and News Stations. Price \$28.95.

Business Manager 3.0 - a complete accounts receivable business package also prints statements, mailing labels and invoices. The program is entirely icon-based, tracks an unlimited number of customers and takes advantage of two floppy drives and the extra 64K of memory in an Atari 130XE. Price \$49.95.

Super ReserveKey is a CROM keyboard handler that will allow you to use your keyboard with most commercial software including

SynCalc, Your Personal Not Worth, and others. Also included is a keypad customizer that gives complete flexibility in designing new keypad layouts.

Keys can be defined to represent up to 10 characters. Price \$19.95.

Ditto XL - a powerful backup utility - will duplicate most un-protected commercial software without using any hardware. It is completely software based and will work with any disc drives. Price \$24.95.

Rhythmizer is a sound synthesis program intended to simulate a drum set, but which can be customized to imitate many other instruments. Included are sound and rhythm editors. Price \$24.95.



High scores the aim

A NEW arcade-quality joystick offering eight micro switches - and a range of features far over the most difficult of computer games - is being marketed by Computer (0608 670444).

The Micro Blaster, manufactured under exclusive licence for Replay, is ergonomically designed in red and black with non-slip rubber feet.

The eight micro switches ensure maximum efficiency and it has a rotatable single or rapid fire button for high score games.

A 1.4m cable ensures the player can take up more profiles. Price £12.95.

Business looks up

AN award-winning all-in-one, fully integrated business package from America for Atari 8-bit machines has been launched here by Computerhouse (01-731 1206).

Called Turbobase, it features three relational databases, word processor, spreadsheet, accounts system and report generator.

It has open invoicing, inventory/stock control, payroll, flexible mailing and file management, along with complete system error checking.

"And it's easier to use than dBase, Rouse or Lotus", says Computerhouse senior partner John May.

It comes with a 708 page manual including a quick review and cookbook. Price £129 in 40 column format, £129 in 80 column format.



Join the treasure hunt

ATARI users have been invited to take part in a treasure hunt to find the secret hiding place of a 25,000 replica of the legendary Holy Grail.

The nationwide quest has been organised by Mandarin Software (0675 830880) to mark the launch of *Lancelot* - a graphic adventure game based on the legend of King Arthur.

Handcrafted from sterling silver and plated inside with 22 carat gold, the 70 high points is encrusted with

semi-precious stones. It is hidden at a secret location somewhere in the UK.

To find the price, answers will have to solve a two-stage computer based quiz also contained in the new three-adventure Lancelot package.

Centre creator and Arthurian expert Alan Austin said: "All people need to do is study the Lancelot game carefully and the clues - plus their answers - will become obvious". Price £74.95.

Cut-price games

A NEW software club has been started which promises quality games at half-price for Atari 8-bit users.

Called Special Reserve (0379 725585), it claims to be able to offer the lowest overall prices for entertainment software.

Annual membership costs £4 and includes three issues of the Special Reserve buyer's guide, new release updates with each game bought, a folder and membership card complete with privilege ordering number.

One of the special introductory offers is a full set of discs to the Mandarin Software games Time & Magic and Lancelot.

RS-232

ANDRE WILLEY explores the mysteries behind computer talk

MOST people are familiar with the terms *Centronics* and *RS-232*, and many will even know that the first is a parallel system of transferring information while the latter uses a serial system. But what is the difference between the two types of interface — and why do we need both systems?

Well, whichever one is in use at the time, the aim is very simple — to transfer computerised information from point A to point B as quickly and efficiently as possible. In computer terms, each individual character to be sent is called a *byte*, and it is stored internally as a pattern of eight switches known as *bits*.

Some of these bits will be switched on and others will be off, and to transfer any information between a computer and devices such as printers or modems it is necessary to transmit these patterns down some form of connecting cable. To do this, each bit is converted into a short pulse of electricity — normally five volts for a 1 bit and zero volts for a 0 bit.

Imagine for a moment that each single bit-pulse of data within a byte is represented as a car travelling along a main road between two cities. As we would ideally like to send our eight car-bits down the road simultaneously it would seem highly logical to build an eight-lane motorway so that each car could have a clear lane of its own. Thus each car could drive alongside — or parallel to — the other seven vehicles making up a full byte, and the journey would be a fast and smooth one.

This is fine in theory, of course, but it would be rather impractical to construct eight-lane motorways all over the country, so for longer journeys we might expect to find ourselves driving along ordinary main roads with just one lane in either direction. In that case our eight cars must follow each other nose-to-tail the whole way, and the journey would take considerably longer.

This example shows how a single byte of data — or eight cars, whichever you prefer — is passed between two locations, but real-life data transfer is complicated by the fact that you rarely want to transfer a single byte on its own. More often a stream of bytes will be sent — such as printing out a full

document on your word processor, or downloading a bulletin board file via a modem.

If you are using a parallel interface, such as our eight-lane motorway, there is no problem — all you need to do is send each row of eight cars down the road after the previous one has left. When they reach the other end each row, or byte, of eight cars will still be driving side-by-side, and the next byte will follow straight after.

The problem occurs when using a serial interface — such as our RS-232 single-lane road. If you send another set of eight cars down the road immediately after the first, followed by another and another after that, then there is no simple way of telling where one block of eight finishes and the next begins.

This dilemma is prevented by sending out another vehicle, say a large lorry, before each group of eight cars. Once all the vehicles reach the other end of the road they will still be in the same pattern. One lorry, eight cars, one lorry, eight cars, one lorry, eight cars and so on. In computer terms, these lorries are called *start bits* because they indicate where one particular byte of data starts (see Figure 1).

To make our example completely true to the digital world of computers we will need to make one other alteration. Since a computer can only deal with bits of data which are either on or off — that is, voltage present or no voltage — we should really think of our roads as containing cars and spaces the same length as a car, rather than two different types of car.

Eight-lane traffic

In the parallel motorway example, a byte such as 10800001 would have a car in the outer lanes, empty spaces in the middle six lanes, and another car in the inner lane. As long as every car on the road, including those in the row behind, travel at the same speed they should arrive in the same pattern.

In order to tell the computer at what speed the information is being sent, an extra signal line known as a *strobe* is used to provide extra synchronisation pulses. This can be thought of as

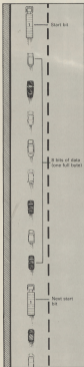


Figure 1. A serial interface

a serial in 8 bits

a line of extra cars driving down the hard shoulder of our motorway, always running alongside each main row of cars. See Figure 10.

If you think about it, this system also gets around another possible problem – that of how to detect zero information. Now that we are dealing with cars and spaces instead of just cars it would be quite possible to mistake a row containing ONLY spaces for the gap that occurs between two rows. The extra set of cars on the hard shoulder means that we always know the difference between an empty row and a gap.

One way system

In a serial system, where we are dealing with a single lane only, speed becomes even more important since we have no hard shoulder available for sync information. What happens instead is that the speed of our car-bits is very carefully regulated so that we know that there should be, for example, one along every five seconds. After the start bit – or lots in our example – has arrived we know that either a car or a space will be in position for checking once every five seconds.

The speed of the bits is known as the baud rate and basically refers to the number of bits which are sent out every second – so 300 baud refers to a data rate of 300 bits per second. This count includes any start and stop bits (normally two in total), so 10 bits can convey one full byte of data – thus giving a data transfer rate of about 30 characters per second at 300 baud.

To avoid any congestion on the line, and because the receiving end may not be able to handle data as quickly as you can send it, both parallel and serial interfaces allow a system akin to traffic lights in order to tell the computer when to start and stop sending information.

When the lights are at red – indicating the peripheral is currently busy processing and can't accept any more data – the computer will override its thumbs until the lights go green again. This is referred to as hand-shaking.

As you will probably have realised by now, parallel interfaces are very much simpler than serial, but require many more wires for the data to be sent along. This is why the Centronics parallel system is more often used for

short distances – say from the computer to a printer, and the RS-232 serial system is used for longer range communications – either from room to room or even, by phone, to any-where in the world.

Can you imagine having to use eight phone lines to send a message by modem? Well that is what would be needed if we were to design a parallel interface for telephone use. The layout used as a Centronics connector is

shown in Figure 11. You will recognise the eight data lines as the eight lanes of traffic in our example, and the Busy and Fault lines work like traffic lights.

The Busy signal goes to red to indicate that the printer can't take any more information for the moment, while the Fault signal is just the opposite and must always be switched to

Turn to Page 11

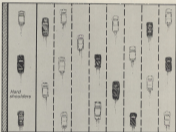


Figure 10: A parallel interface

Pin No.	Function
1	Strobe (Sync)
2	Data bit 1
3	Data bit 2
4	Data bit 3
5	Data bit 4
6	Data bit 5
7	Data bit 6
8	Data bit 7
9	Data bit 8
11	Busy
16	Ground
20	Fault



Figure 11: Centronics connector pin diagram

Pin No.	Function
3	Data Out
3	Data In
4	Request to Send
5	Clear to Send
6	Data Set Ready
7	Ground
8	Carrier Detect
20	Data Terminal Ready



Figure 12: RS-232 connector diagram (modem-end)

From Page 7

green from the computer to send anything at all. This prevents sending information to a printer which is not turned on, for example.

RS-232 is a far more complex issue. From Figure 11 you will note that there seem to be almost as many connections as we have seen on the parallel system, which surely defeats the object of a single-line highway for computer data. In fact the only two lines which are essential for full two-way communication are Data In and Data Out. These allow data to flow along a single line in either direction — rather like a normal highway in which traffic flows along opposite sides of the road.

All of the other lines operate as handshaking aids, like multiple sets of traffic lights. They are very rarely connected over long distances — more often acting as indicators to let the computer know the current status of the modem or other intermediate device.

These are especially important when sending data over telephone lines because you will often be using very slow baud rates — such as 300 or 1200/75 — which may require the com-

puter to pause for relatively long periods.

Most of these handshaking lines refer to the Data Terminal and the Data Set. These are generalised terms, and in our case the Data Terminal would be the Atari more itself and the Data Set would be the modem — or indeed any other RS-232 device we might have connected.

Ready or not?

To run through the handshaking pins then, the Data Terminal Ready is switched on by the computer to tell the modem it is ready to send or receive information. Some auto-answer modems will check to see if this signal is set before allowing themselves to answer an incoming call. Data Set Ready is just the opposite to DTR — it is a signal set by the modem to say that it is also capable of communicating.

The Request to Send signal is very similar to the DTR, except that it not only says that the computer is ready to send data but actively requests the modem to make ready for a transmission. Clear to Send is the modem's reply to this request, and gives the computer the green light to send its

message. The only other important signal line is the Carrier Detect, and all this does is let the computer know when the modem has established a connection via the telephone line. Until this happens there is no point in the computer even getting ready to send information. Carrier Detect is often used by Bulletin Board software to tell the host computer when a call has been received and a connection made.

In fact, the full RS-232 standard lists some 25 signal lines, but most are so obscure that they are almost never used. In fact, most modems will quite happily operate with just the Data In and Data Out lines connected — and those that don't will often only need a permanently-on signal connected to their DTR line.

Next time I'll explain how the Atari RS-232 interface system works, and how you can write programs to control your 850 interface or P.A.R. Connection.

Once you know how to do that you can connect hundreds of different devices directly to your micro — ranging from simple plotters to more advanced external editing equipment.

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E. & S.E.



Software

SCENE

Have a smashing time

Producer: Rampage
Price: £72.95 (Retail £8.95)
Genre
Supplier: Atari Works, 11
Forest Street, Manchester
M4 3DU
Tel: 061 432 4367

IT has been a long time since an arcade game has been converted on to the Atari 8 bit. But now Activision has released Rampage, formerly by Billy Midway.

It is based on the exploits of three indescribably nasty 8 movie behemoths: King Kong, Godzilla and Wolf-Man. And the only thing that will satisfy them is total destruction.

Loading the disc-based game is simple. Just insert any cartridge as old machines or hold down the Option key on newer models while switching on. Cassette users must remember to hold down the Start key while following these instructions.

The game is designed to be played by two people using joysticks. Up, down, left and right move your monster in the desired direction. Holding the fire button and then moving the joystick will cause the monster to throw a punch or grab in the chosen direction.

In the very best of Hollywood tradition, Rampage unleashes monstrous mayhem on an unsuspecting public.

It seemed like any other day at the Greaseburger Fast Food Emporium, except for three unlucky customers who were to get something nastier than their usual Big Mugs.

The company's research

division had been playing around with several experimental food additives - and here they caused trouble.

A wave of nausea, foul aftertaste then chronic indigestion soon swept over George, Luke and Ralph. Then they ripped off their clothing and got into their designer label fur and scales.

Life isn't funny when you're a 50 foot Gorilla, Lizard or Wolf-Man and the rest of the world is just about to find out how bad it is.

You play the roles of George, Luke and Ralph. And in a desperate battle for survival you climb skyscrapers and smash walls with your fists as you look for something edible - anything from coasters to tasty little humans.

Be very careful though, damaged buildings will eventually collapse into rubble. Leap off them when the foundations start to crumble as getting trapped under falling masonry will weaken you.

The nation's military is also hell-bent on your destruction and you must



punch or avoid the snipers in the windows. Gunship helicopters are also buzzing around the screen in an attempt to shoot you. Shoot them like flies.

If you lose all of your energy - indicated by bars at the top of the screen - you will revert to your human form and, hiding your nakedness as best you

can, shuffle off the screen in embarrassment.

When a whole level of buildings has been demolished, a new city block appears ready to be flattened. There are 50 cities, and you spend three days in each, making 150 different screens to destroy.

Rampage is great fun to play and the graphics and animation are very good. Adequate sound effects complement the game, but the title music is atrocious.

Of late only budget games have been released in Atari 8-bit and it makes a nice change to see a full-price game appear on the market. I only hope that Activision follows it up with a few more.

Rampage has been very well written.

Ned Fawcett



Sound	2
Graphics	2
Playability	2
Value for money	2
Overall	2

Universal removal man

Product: *The Exterminator*
 Price: £1.99 (tape)
 Supplier: *Alain World*, 11
 Farnham Street, Manchester
 M4 3DQ
 Tel: 061-828-4867

YOU are the Exterminator, remover of unwanted items by force. Your task is to root out all evil from the universe and to help you do this you have been placed in charge of the Eagle X-Ray squadron. Your latest mission is to lead a counter attack against the forces of Les M who have invaded and enslaved your home planet. You must lead your nine vessels through a number of

waters which are patrolled by enemy pods and craft. After negotiating one level you have to blow your way through the sector wall to proceed to the next sector.

Loading is easy. Remove all cartridges from older machines and fold down the Start key while switching on. On never reaches you have to hold the Start and Option keys while switching on. Then press Return and the game will load.

You control your ship using a joystick plugged into port one - I found the joystick response a little sluggish.

At the top of the screen you will find a very colourful status line which indicates your score, lives remaining, power and what game level you are on. The main screen

scrolls from left to right, by splitting the screen into four parts and moving them at different speeds the programmer has given the game a feeling of depth.

The design of your ship is original and so are the enemy craft - one of them reminded me of a flying whale.

I found the graphics quite presentable and the sound effects rather good. The title music is a superb, jaunty piece and really got my foot tapping.

Stephen Fawcett

Sound	4
Graphics	4
Playability	4
Value for money	4
Overall	4

Going for gold

Product: *Quarter Gold*
 Price: £3.99 (tape)
 Supplier: *Alain World*, 11
 Farnham Street, Manchester
 M4 3DQ
 Tel: 061-828-4867

THE latest release from Red Hat Software is another compilation pack - *Quarter Gold*, containing *Space Wars*, *Dreadnought*, *Little Devil* and *Laser Hawk*.

Space Wars centres around the hostile actions of the Reidian Empire. At the last meeting of the Intergalactic Federation on the planet Alpine Nine the ugly, warlike Reidians from the dark stars declared war on Earth. As the Federation prepares its own fleet and

Reidian craft are massing to attack the Earth, you guide your space fighter through the asteroid belt and enter the fray.

All controls are via a joystick plugged into port one. Keep a sharp eye on your shield function panel at the top right of the screen. When it runs out you're dead. While your shields are off all you can ram Reidian craft and destroy them. But be careful, this drains your strength and you may end up losing a life.

The graphics and sound effects are reasonable. However, I was playing games like this 10 years ago when I first got my Atari. *Space Wars* is an acceptable game on a compilation pack, but I wouldn't have

bought it on its own.

Dreadnought is set deep under Earth's oceans. Here, a terrible battle is being waged in an attempt to save the city of Atlantis from being overrun by aliens from a distant galaxy.

Atlantis was once the home of a race of super-

scientists who developed fantastic war machines. Now the attacking aliens are attempting to steal them so they can conquer the universe.

Your job, as the commander of the SS *Dreadnought* - the latest nuclear-powered deep-water submarine - is



Keep on firing

Product: *Star Wars*
Price: £14.99 (cart)
Supplier: Atari World, 17
James Street, Manchester
M4 3QA
Tel: 061-624 6341

YOU are the pilot of the latest hi-tech space fighter trying to save the Universe from destruction by deadly anti-matter aliens who are invading it.

You load the game by removing all cartridges from older machines – or hold **Option** on newer models – and then press **Start** while switching on the main. Press **Return** and the game will load.

You move your ship using a joystick plugged into port



two. Pressing fire will shoot your lasers which have a devastating effect on enemy vessels.

At any time during the

game you can press **Select** to pause all action. Pressing it again will continue play.

The part I liked the best

was the main title screen. Clever use of DLI – display list interrupts – has allowed the programmer to create some interesting visual effects.

As budget games go this one is quite good. My only complaint is that the enemy vessels move too fast and you can't avoid them at times.

Stephen Fawcett

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

to destroy them before they destroy you.

You control the Dreadnaught using a joystick plugged into port one. The fire button will launch one of your missiles which will hopefully destroy the enemy.

Again this is an adequate game that should provide some fun. Yet another clone of the old defender style game, it unfortunately falls short of the original. I grew very tired of Dreadnaught after only a few goes.

Little Devil is a character trapped in Hades. The only way he can escape everlasting torment is to release the lost souls which are floating around in a state of limbo.

He must also free Princess Linera, King Mordred's imprisoned daughter, who is held in Castle Despair. You play Little Devil and you



must collect all the souls which are marked with a number, before the time limit expires.

This is done by bouncing and jumping around the various levels. You start the game with three lives and you lose one every time you come in contact with a guardian.

This is the best so far – considering it is yet another variation on a platform

can't tell you the story behind it.

The game scrolls from left to right and you must fly low over enemy installations bombing them. Missiles and enemy craft constantly buzz the area, making your life very difficult.

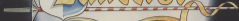
Make sure you watch your energy level carefully as when it drops to zero you are dead. However, located around the screens are fuel dumps. All you have to do is fly over them and your energy level goes up.

The graphics are excellent and the animation of your chopper is very well done. For me this is the most playable game of the four. Overall the compilation is well worth its price tag of £2.95.

Stephen Fawcett

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

Lancelot



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Screenshots from
 Mary ST version



Camelot
SOFTWARE

Level 9

Format	Tapes	Boxes	Price
Mary ST		●	£24.95
Amiga		●	£24.95
Amstrad PC/IBM PC and compatibles		●	£24.95
Amstrad CPC/PCW		●	£19.95
System Plus 2		●	£19.95
Commodore 64	●	●	£14.95
Spectrum	●	●	£14.95
Amstrad CPC	●	●	£14.95
* Atari ST/SE	●	●	£14.95
IBM, Master	●	●	£14.95
* Apple II	●	●	£14.95
Macintosh	●	●	£19.95
MSX 944	●	●	£14.95

Note: Tape versions have three cassettes in every package

Please send me Lancelot as cassette disc
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 Please debit my Access/Visa number: _____ Expiry date: _____

Signature _____
 Name _____
 Address _____

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 Send to: Mandrake Software, Europe House,
 Allington Park, Allington, Northampton NN16 9JF.
 Enquiries 0625 879940 Order Hotline 0625 879920

*These demands and all tape versions are not only

The American experience

NEIL FAWCETT takes another look at the products available for American 8 bit users

I LOOKED last month at American hardware and the problems of importing it into the UK. This time I want to concentrate on the difficulties you can face when trying to get good quality games for your Atari 8 bit.

Lately the software market in the UK has been undergoing what can only be described as a shortage of well written programs. Only a few local software houses are still supporting the 8 bit Atari - Zapella, TyneSoft,

Red Fox, Activision and Alternative - leading to mind immediately.

Lately most of these software houses have decided to continue producing games and they are waiting for Atari's new support for the 8 bit. This is coming in the shape of a large number of ST game conversions due to be released very soon. Atari's plan is to once again flood the market with expertly written games - just like in the old days.

Also, the High Street shops are

again fully supporting the sale of 8 bit hardware. One in particular, Discos, is packaging a 800K with disk ram, 8012 tape deck, a number of games and a 14in Salsito colour TV for only £298.99. Now that's value for money!

If you cast your mind back to last month you'll remember I said I was going to talk about a game called Infiltrator. It's a stunning graphical adventure which is currently only available in America - even though versions on other 8 bit micros have been here since the early part of 1987.

The scenario revolves around the exploits of Jeffrey McQuibley, super spy and ace helicopter pilot. Your mission is to penetrate and destroy several enemy ground installations.

To help you carry out this dangerous task you have been given control of the Glom GHX-1 attack chopper - codenamed the Stealthmaster. Once airborne you set your tactical computer and enter the coordinates of the enemy base.

During the game several airraids will enter your air space. You must decide whether they are friend or foe and take the necessary action - blast them into little bits or let them go.

Once you land you have to penetrate the base - posing as a guard. Once you have taken photographs of secret documents, gassed guards and planted explosives you have to get out - fast!

As you can see from the screen shot the graphics are marvellous. The most complicated part of the game is remembering what has been done.

Other 8 bit versions of Infiltrator have been released by US Gold in the UK. So what happened to the Atari version written by Mindscape? Does anybody out there know?

If you want to try and get hold of it the phone number is 019 412 381 8291 and the address is PO Box 111027, Dept. AT, Blawie, PA 15136.

Now on to another game I'm sure Atari owners all over the UK would want to own - Strip Poker. True, it is already available in the UK, but what you can't get are the extra data discs of new players.

The original game supplied you with female players but you can now get a disc of males to strip, too. There are also other discs of female players. Priced at \$14 - or around £8 - you can get it from the same people who sell Infiltrator.

In the desktop publishing field an American company called Springboard Software has just brought out Newsroom for \$49.95 - around £30.

You require an Atari XL001 with at



A stunning graphical adventure



Stripper for night

Turn to Page 128

From Page 12

least 6MB of memory, a 10MB disk drive — or any other that meets enhanced density disc — and a graphics-capable dot matrix printer. Remember that you'll need a Centronics printer interface to make most printers work with the Atari. The only printer directly supported without an interface is the Atari 8MBASE.

A superbly written manual is included and it won't take you long before you're making your own stunning creations. From the main menu you can access five sub-menus — Photo-Lab, Copy Desk, Borders, Layout and Press.

Throughout the program, sub-menus are selected by using either the keyboard or joystick to move control arrows to pick from a menu of items.

This superb product is a treat for all serious users of the 8-bit Atari. You can get Newsroom from Springfield Software Inc., 1808 Creighton Circle, Minneapolis, MN 55425. Or phone from 612 844 3912 for further information.

To reach the same subject a product called Printpower has just

been released. Very similar to Print Shop, it allows you to create cards, signs, stationery and banners.

You are also supplied with 22 printer drivers for standard dot matrix machines which will require a suitable interface to make them work correctly — an 850 interface box or P.R. connector from ICD will do the trick.

You can mix text with graphics and on the two discs you get 60 graphics and seven fonts ranging from old English to modern. You can also choose from a range of 26 different borders.

Priced at \$14.95 — around £10 — this package is fine value. Write to Hi-Tech

Creations Inc., 1740 N. W. 66th Avenue, Suite 5 Plantation, FL 33312 or Tel: 0121 308 504 6386 for more details.

To finish off this month below are 22 titles from the list of just one American supplier which you can't get over here very easily.

More goodies next month. Until then, write to the companies mentioned and wish all Atari users will try our best to get justice for the UK market.

Circle Knight

Linedraw French 1
Linedraw German
Linedraw Spanish
Snap Polar disc 1 to 5
Golf Strike
Rings Day Games
Video Vegas
Video Trip Shop
Age of Adventure
Financial Cookbook

Lords of Conquest
Mail Order Monsters
Music Construction Kit
Super Boulderdash
Seven Cities of Gold
Touchdown Football
Championship 2000
Suzanne St Print Kit
Ernie's Magic Shapes
Big Bird's Special
Delivery

Printpower
The Computer Club
Top Gunner
Bag & Whistle
Initiator
Initiator
Newsroom
Stinky Bear ABCs
Stinky Bear Numbers
Stinky Bear Opposites
Stinky Bear Shapes

Taken from the list of Software Discounters of America, P.O. Box 11207, Dept. AT, Rowlett, TX 75088.



MILES BETTER SOFTWARE



337 Gamcock Road, Cheshamook, Eppanock, Pa. 19011 200. Tel: (610) 4867776

NEW SOFTWARE				BUDGET TITLES			
Title	Price	Age	Rating	Title	Price	Age	Rating
Adventure	1.99	10	4.0	Adventures in Time	1.99	10	3.0
Archie	1.99	10	4.0	Archie	1.99	10	3.0
Archie's Treasure Hunt	1.99	10	4.0	Archie's Treasure Hunt	1.99	10	3.0
Archie's Treasure Hunt 2	1.99	10	4.0	Archie's Treasure Hunt 2	1.99	10	3.0
Archie's Treasure Hunt 3	1.99	10	4.0	Archie's Treasure Hunt 3	1.99	10	3.0
Archie's Treasure Hunt 4	1.99	10	4.0	Archie's Treasure Hunt 4	1.99	10	3.0
Archie's Treasure Hunt 5	1.99	10	4.0	Archie's Treasure Hunt 5	1.99	10	3.0
Archie's Treasure Hunt 6	1.99	10	4.0	Archie's Treasure Hunt 6	1.99	10	3.0
Archie's Treasure Hunt 7	1.99	10	4.0	Archie's Treasure Hunt 7	1.99	10	3.0
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Archie's Treasure Hunt 48	1.99	10	4.0	Archie's Treasure Hunt 48	1.99	10	3.0
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Archie's Treasure Hunt 98	1.99	10	4.0	Archie's Treasure Hunt 98	1.99	10	3.0
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Total price: £149.95.

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Crush, crumble and print

Create your own superb labels with GRANVILLE DANBY's useful routine

This label printing program differs from most because it allows graphics to be mixed with text. The resulting size of the label is 7 by 4 cm, to fit comfortably on a floppy disc or its jacket.

The labels must be designed using a graphics package such as Graphics Art Department, Paint or any which uses a Graphics 7-based screen. Pictures from art programs which use a different graphics mode will not work unless modified.

Only one colour, placed in playfield register 1, can be used. GAD assigns the default colour of green in this register.

The program can be divided into two main sections - loading the picture and printing it. A machine code routine is used to crush the graphic file into a label sized picture on a hi-resolution screen.

Basically, two bytes of colour information are compressed into one byte of monochrome data, and to allow how the program does this, here's how the Atari stores its colour information.

In Graphics mode 3 there are 180

pixels across the screen using up 40 bytes of memory, each pixel needing two bits or one quarter of a byte to define it. All the possible combinations of 2 bits are shown in Figure 1.

Each pair of bits represent a colour register, so it can be seen that there are a maximum of four colours on a Graphics 3 screen. What the program does is to take every other bit in the file and plot it on the screen - see Figure 2.

This is how the two bytes of colour data are crushed into just one byte of monochrome data.

The second section of the program prints out the label. It will only work on an Atari 1020 printer, but if you own an Epson compatible machine, it is possible to add your own printer dump subroutine.

Before the program is run you must select the picture format. If you select Option 3 - any other format - you have to enter the number of dummy bytes preceding the picture file. This number will vary from one art package to the next so I'll leave the conversion to you.



VARIABLES

DATA	Acts as a buffer for the data
FILE	Picture filename
DUMMY	Dummy bytes to read
FILE#	Address of DATA
LEVEL	

```

00 000 *****
00 000 = LAST LABEL PRINTED =
00 000 = BY GRANVILLE DANBY =
00 000 = 000 0000 0000 =
00 000 *****
00 000 GRAPHICS, PICTURE, AT LEAST
00 1 "PICTURE NAME..."
00 FOR N=1 TO 255:GOTO PICTURE SCREEN,1
NEXT N
00 GRAPHICS, PICTURE, P,0,0
00 1 GRAPHICS,1 @ 0,0,0 @ 0 0000
@ ANY GRAPHIC?
00 1 "ENTER PICTURE FILE #:"
00 TEMP PICTURE# OF
00 IF PICTURE# OF 000 0000 000 000
00 IF PICTURE# OF 1 "ENTER NUMBER OF
00 PICTURE"
00 IF PICTURE# OF 000 0000 0000
00 IF PICTURE# OF 000 0000 0000
00 1 GRAPHICS, PICTURE, PICTURE, 0,1,1
00 PICTURE, PICTURE, 000,00
00 PICTURE#
00 000 00 0000 PICTURE# 00
00 0000 000000 00,0,0,0
00 000 000 00 000000 000000 1
00 000000000
00 0000 00
00 1 GRAPHICS, PICTURE, P, 00 PICTURE#
00 000 000,000

```

Turn to Page 110

00	REGISTER	000
01	REGISTER	001
10	REGISTER	002
11	REGISTER	003

Figure 1. All the possible combinations of four bits

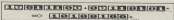


Figure 2. How two bytes of colour data are crushed into one

SOFTWARE Solutions

Your programming problems solved by ANDRÉ WILLEY

HELLO again, and welcome to this month's mixed bag of technical and non-technical queries, ranging from screen output redirection to disc storage problems. Let's start off with a letter from Mr A.H. King from Rip in East Sussex, who writes:

On a recent trip to the USA I spotted a bargain I thought too good to miss - an 8000L AT551 disc drive and XMM302 modem - all for the equivalent of £104. I didn't want the modem, so the store kindly swapped it for a Flight Simulator II cartridge. Because of the difference in TV systems, I also bought a cheap so-called colour monitor for £40.

My problem now is compatibility. Our family already has two 8000L and 1050 drive systems with which are all extremely satisfied. My new American hardware, which uses a 110V transformer, works better than either of the British machines. For example, the artificial horizon display on Flight Simulator II is ill-defined on the UK system but shows a nice crisp blue and green instrument display on the US monitor.

I bought the American system solely for the AT551 drive, thinking it would work with my UK standard 8000L - but it doesn't. The cassette does work though - a UK 1050 drive with the American 8000L.

Another peculiarity is that my Flight Simulator II discs - originally purchased in the USA - will not run on my American system, although 80 per cent of our other programs work fine. I'm very confused!

I'm a little puzzled by this one too. From your letter you seem to have done everything right - bought an NTSC monitor and used all the American products with an additional

300v-110v converter. As you know, the two major problems with imported equipment are the differences in mains voltage and frequency and the fact that America uses a different television system called NTSC - which is not compatible with our own PAL version.

One thing which might help is to buy separate UK 240v transformers from Atari UK, or order them through your local dealer. In the unlikely event that your problem lies with the mains supply itself.

This would allow you to plug the American product - with the exception of the monitor - directly into a normal UK mains socket.

Other than that, the drive should work fine with a British 8000L. I contacted the people at Atari on this one in case they had come across any difficulties, but the only comment they could add was that the drive's operating system firmware should really be replaced with a UK version for timing reasons.

Assembler printout?

Next a letter from Gerry Bowles from Ashdown in County Westmeath, Ireland:

Recently I have started learning 8007 assembly language programming on my 8000L with the old Atari Assembler/Editor Cartridge.

When using the assembler, and having already created and assembled a program, there is a useful facility to

trace or single step the machine code program using the T and S commands in the resident debugger. Since so much information is supplied for each instruction it would be much easier on the eye if I could monitor the various registers via the printer instead of the screen - rather like having a command such as:

```
S 1000,01
```

```
PR
```

```
T 1000,01
```

If this is not directly possible, a routine to allow me to dump a full screen of information to the printer would suffice. Do you have any ideas which might help?

Thanks for your letter and I'm glad to say there are in fact two fairly simple ways to print out the text from the Assembler/Editor - or indeed any other language.

Firstly, if you happen to use SpatialOn with your disc drive you can just type **PRINT P:** from the main Dos prompt. This will cause all screen text to be sent to both the screen and the printer - or to whatever device you specify. After entering this at the Dos level, just type **CR** and you're back in the assembler, with echo mode still activated.

Alternatively you can divert all the computer's output to the printer. This

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means all output text — such as prompts, filled lines, trace output and so forth — will not show up on the screen, but will get sent to the printer instead. Your own entries via the text editor will still show up on the screen, but I suspect that this won't worry you.

To accomplish this, first enter the debug mode by typing **BUG**, then look into the OS at location **\$E400** by typing **D \$400**. The last two hex numbers on the line will probably be CA and FE for an **SOERL**, but modified operating systems might alter this.

Anyway, whatever the final two numbers are, you need to place them into locations **\$040** and **\$041**. You must make sure that you do this using just one store instruction, or the computer will try to use a half-modified address and will most probably crash. In the case of the assembler/editor the alter memory command is **C**, standing for change memory contents. For example:

```
bug
C $040      <CA>SOERL
             <FE>SOERL
```

This will display the contents of location **\$E400** in the form:

```
SOERL CA FE CA FE CA FE CA FE
```

You should then enter:

```
C $040,$041 <CA>SOERL
```

To direct output to the printer, it's as simple as that. I hope one of these methods will solve your problem.

Text screen save

A slightly simpler question from Mr J. Galtrey from London who asks:

I have a 100K with a 100K disc drive and have written a lengthy word processor program after teaching myself Atari Basic.

The object of my program is to use a disk assembler, prepared using my word processor — in 40 columns — to save screens as pages of text on disc. These would then be mailed to members for re-reading and passed it would also serve as a simple word processor for the user.

I tend to save a complete screenful of text, 260 characters, as one page and as one file on a disc. However, it seems that with **PRINT #1,AB** you can only save about a quarter of a screen,

accelerating four separate files and four filenames for each page, which is rather cumbersome.

Is there any way to save a full screen of text as one file, or am I approaching the problem in the wrong way?

- By the sound of it you have slightly misunderstood the way the file handling system works on an 8 bit Atari. I assume your output routine looks something like this:

```
100 OPEN #1,FILE,"O:FILE1.TXT"
110 PRINT #1,AB "CR 0,000 #1
```

In this **AB** is a 260 byte string containing all the information from the screen. In fact, this will send 260 bytes of text to the file, but your problem really lies with the **INPUT** routine. If you try to list the file via Dos — by selecting File Copy and copying the file you have just created to B: — you will see that it is all there. So why can't you get it back into the string using **INPUT #1,AB**?

The answer lies in the input buffer area used by the operating system. In order to use **INPUT** the file system must transfer bytes of data into a temporary buffer while it looks for a carriage return character to tell it the

```
100 AB="1234567890"
110 OPEN #1,FILE,"O:FILE1.TXT"
120 PRINT #1,AB
130 GET #1,COM,AB2,"C:000000"
140 PRINT #1
150 CR 0,000 #1
160 PRINT #1; AB TO see the 1234567890
170 END
```

Program 1: Reading 260 characters using the GET command

current string is complete. Unfortunately this buffer area is located at **\$800** and is only 128 bytes long. In some cases this will exceed another 128 bytes into page 0 — up to **\$00F** — but this still won't be enough for your program (and you'll receive an error 137 — Record truncated).

There are two solutions to this problem. The first is rather slow, and involves using the **GET** command, which reads a single character at a time for each of the 260 characters, storing each as the next character in a string. This method is shown by Program 1.

The alternative is to use the Binary Get command, which is not directly supported by Basic and so requires a small machine code routine.

This will allow you to read 260 bytes of data from a file directly into

memory. This is slightly more complex because you must first load the memory ADDRESS of the string, which must already have space for 260 characters. Program 2 shows how this can be done, and the machine code routine could easily be used for other applications of CO data transfer.

```
10 CR 0,000,0,0,0,0
20 OPEN #1,FILE,"O:FILE1.TXT"
30 PRINT #1,AB "CR 0,000 #1
40 CR 0,000 #1
50 PRINT #1; AB2,"|"+AB2*10
60 GET #1
70 PRINT #1,AB,AB,AB,AB,AB,AB,AB,AB,
120,120,120,120,120,120,120,120
80 CR 0,000,0,0,0,0,0,0
90 CR 0,000,0,0,0,0,0,0
100 GET #1,COM,AB2,"C:000000"
110 PRINT #1;AB2*10
120 CR 0,000,0,0,0,0,0,0
130 PRINT #1;AB2*10
140 CR 0,000,0,0,0,0,0,0
150 PRINT #1;AB2*10
160 CR 0,000,0,0,0,0,0,0
170 PRINT #1;AB2*10
180 CR 0,000,0,0,0,0,0,0
190 CR 0,000,0,0,0,0,0,0
200 CR 0,000,0,0,0,0,0,0
210 CR 0,000,0,0,0,0,0,0
220 CR 0,000,0,0,0,0,0,0
230 CR 0,000,0,0,0,0,0,0
240 CR 0,000,0,0,0,0,0,0
250 CR 0,000,0,0,0,0,0,0
260 CR 0,000,0,0,0,0,0,0
270 IF NOT(AB=AB2) THEN PRINT
280 PRINT #1;AB
290 END #1
300 END
```

Program 2: Reading 260 bytes using a high-speed Binary Get routine

If you haven't got worked out how to get all 260 bytes of data from the screen itself into the string, you can use the **LOCATE** command for each of the 40 by 24 character positions. Each character can then be placed into the string and finally **PRINT**ed to disc. I've written a simple example of this technique as Program 3.

```
10 CR 0,000,000
20 OPEN #1,FILE,"O:FILE1.TXT"
30 GET #1 #1
40 FOR I=0 TO 23
50 FOR J=0 TO 39
60 LOCATE I,J,AB
70 AB=LOCATE(I,J)
80 CR 0,000 #1
90 PRINT #1
100 PRINT #1;AB
110 PRINT #1
120 PRINT #1;AB
130 PRINT #1
140 PRINT #1;AB
150 PRINT #1
160 PRINT #1;AB
170 PRINT #1
180 PRINT #1;AB
190 PRINT #1
200 END
```

Program 3: Converting a screenful of text into a string



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All together, now

LEN GOLDING continues his Basic series by showing you how to structure your programs correctly

THIS month we bring together all the techniques learned so far, in a complete Basic game. To show how it's done, we'll dissect the arcade shoot-'em-up listed on the following pages, which incorporates a joystick-controlled missile base, a randomly moving target and two types of missile.

The objects can move over a background scene without disturbing it and the program includes sound, colour and explosion effects, with full on-screen scoring.

Your missile base — gun for short — moves horizontally along the bottom of the screen under joystick control, firing missiles at a target that appears and disappears randomly. The target also shoots at you and if the two types of missile meet, they will destroy each other.

If either target or gun is hit you get a full-screen explosion which wipes out any missiles still in flight. Because of the firing and dodging features, you have to keep moving to stay alive and stand any chance of hitting the target.

Let's look at the game in detail. Line 10 contains four labels — names which are used to replace numeric constants. All four labels represent COLOR numbers, which identify a particular colour/character combination. For example: 42 is an orange star and 118 is a yellow exclamation mark.

The advantage of a label is that it makes it easy to experiment with alternative values. For example, if you'd prefer the target to be a blue cross, just change the label's value from 42 to 171. Whenever the program encounters a reference to the target, it will now use a blue cross. This is a major advantage over raw numbers, and meaningful names are a lot easier to follow than cryptic figures.

The table overhead lists all the labels and variables used in the program together with their functions.

Lines 20 to 60 set up the initial screen, in Graphics 1 without a text window. Most of the work is done by subroutines, which break the task down into simple blocks. This keeps the main line code uncluttered — and much simpler to understand.

The subroutine at 700 draws a

background pattern of dots to prove that the objects can move across a playfield without disturbing it.

You can easily replace this subroutine with one that draws a more inspiring background, using PRINT#0: COLOR and PLOT. Just

remember to keep the gun track — horizontal line 19 — clear.

Line 40 draws the gun at its central position, then line 50 calls a subroutine to print the initial values for HITS and LIVES, which were set at line 20. Line 60 jumps into the target

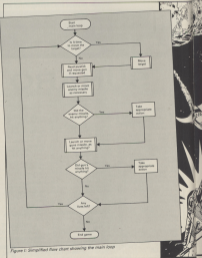


Figure 1: Simplified flow chart showing the main loop

movement subroutine, skipping the first two lines because we don't need a sleep, and there's no previous target to erase.

This routine draws the target at a randomly determined position, and calculates a random value for COUNT, which determines how long it will stay at that spot.

When initialization is complete we can enter the main loop—the section of code which moves all the objects around on screen. Everything has to move more or less simultaneously—you'll want to dodge the missile while it's in flight, not be stuck in one position until it hits you. This means that the various movement routines have to be interleaved.

To do this in main line code would

be complicated and difficult to debug. So instead we've adopted the subroutine approach again, which means that the main loop occupies just five lines, from 88 to 126. If anything goes wrong now, we can easily isolate the faulty section of code, and the use of subroutines makes it much easier to add extra features.

Figure 1 is a simplified flow chart showing how the main loop works in principle. Decision points are shown as diamonds, and unconditional actions appear in rectangular boxes. Subroutines are indicated by a new symbol—a box with double lines for its vertical borders.

Line 88 starts by decrementing

COUNT to see whether it is time to re-position the target. If so, the target movement subroutine is called, starting at line 190. This produces a short sleep and erases the current target by plotting the original background character over it. Then it picks a new target, as we saw during initialization.

The next statement in our main loop—line 90—jumps to the gun movement subroutine at line 290. This reads the joystick and uses a Boolean routine to calculate the gun's next position. We'll be talking about Boolean expressions in detail next month, so just treat line 90 as a "black box" for now.

Line 130 moves the gun along its horizontal track. Since this is an otherwise blank line, we don't need to waste time checking and starting

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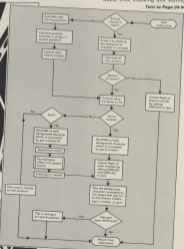


Figure 1: Flow chart showing the strategy-missile movement routine.

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background characters — their COLOR number is always 8.

To move the gun we first erase it by plotting 0 at its current position (XPOS,Y), then re-plot it at its new position (XPF1,Y). The gun can't collide with anything when it moves, so there's no need for any hit-detection code.

Back to the main loop, and line 108 calls the complicated subroutine which moves the enemy missile. This routine is shown pictorially at Figure 8, so you can trace its operation.

To keep things tidy we've used several variables as flags. These carry on/off information from one part of the program to another. GUNFLAG holds the current status of the gun's missile — 1 if it's in flight, 0 if it has reached the top of screen, been destroyed or hit the target.

This flag can be read, or altered, at any point in the entire program, so all the subroutines can keep in touch with each other. ENMFLAG monitors the enemy missile's status, and GFLAG holds 1 temporarily when the gun has been hit so that line 490 can take appropriate action before returning to the main loop.

Now we're back to line 110, which calls a subroutine to move the gun's missile. The flow chart is almost identical to that in Figure 8, though the labels and variable names will be different. If the target is hit, this routine sets COUNT to 8, so that line 90 will drop a new target on its next pass.

Finally the main loop, line 120, checks to see if there are any lives left. If so, it re-cycles back to line 80, otherwise it drops through to the end-of-game routine at line 140, which is described in the BDM.

The explosion subroutine at line 400 is called if a gun's missile hits the target, or an enemy missile hits the gun. It flashes the background colours, in the way we described last week, and produces an explosion sound. If you're not happy with the effect, just play around with this subroutine — it won't affect any other part of the program.

Once you understand how everything works you can start writing your own versions, either by modifying the program or by using the various routines and techniques in games of your own design.

Next month we'll look at Boolean techniques, and explain how these very versatile expressions can replace many lines of variables IF...THEN statements, especially in joystick control routines. We'll also show how you can use them to simulate a few conditions which Atari Basic doesn't possess.

Variables list

TARGET	The COLOR number representing the target — an orange "X"
GUN	The COLOR number representing the gun — an orange "
GMISL	The COLOR number representing the gun's missile — a yellow "Y"
EMISL	The COLOR number representing the enemy missile — a yellow "Y"
COUNT	Duration of target at its current position
HTS	Number of targets destroyed
LIVES	Number of lives left
XPOS	Current horizontal position of gun
Y	Next horizontal position of gun
XPF1	Current horizontal position of gun's missile
GMFL	Current vertical position of gun's missile
GMFL	COLOR number of character concealed by gun's missile
GMFL	Current horizontal position of target
TWR	Current vertical position of target
RGQ	COLOR number of character concealed by target
EMFL	Current horizontal position of enemy missile
EMFL	Current vertical position of enemy missile
EMFL	COLOR number of character concealed by enemy missile
EMFL	Horizontal position of gun, when enemy missile is launched
GMFLAG	Holds 1 if gun's missile currently in flight, otherwise holds 0
ENMFLAG	Holds 1 if enemy missile currently in flight, otherwise holds 0
GFLAG	Holds 1 if gun has been hit, otherwise holds 0
S	Current value returned by joystick
ROW	Loop variables used in drawing background
COL	Loop variables used to vary volume in explosion routine
V	Loop variable used to set delay in explosion routine
W	

```

1 REM TARGET (800100) GUN
2 REM (800200) (8011)
3 REM (11111) (81)
4 TARGET=81:GUN=80:GMISL=EMISL=70:R
5 (8011)
6 ((XPOS+1)*40:GUN)=GMISL:GUN=X
7 (8011)
8 ((XPOS+1)*40:GUN)=GMISL:GUN=X
9 (8011)
10 ((XPOS+1)*40:GUN)=GMISL:GUN=X
11 (8011)
12 ((XPOS+1)*40:GUN)=GMISL:GUN=X
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ATARI

CHRISTMAS

SHOW



Is Santa really in danger of being scared this year?

This question won't be answered until the Atari Christmas Show, when all that's new in software cosmetics comes to light.

The theme is Atari in Entertainment - and that translates into games, games and more fun and games.

- Take part in the non-stop Big Game Highest Score Contest for a major prize.
- Drop in on the spectacular Atari Games Arcade.
- Visit the Atari Games Workshop and discover what makes a bestseller.
- Try all the latest chart entries before you buy.
- Choose your Christmas presents from many hundreds of bargain offers.

**Alexandra Palace,
Wood Green, London N22
November 25-27, 1988**

Fri-Sat 10am-6pm; Sun 10am-4pm

ATARI CHRISTMAS SHOW		ADVANCE TICKET ORDER		ATARI
<p>Post to: Database Exhibitions, Sunset House, Acton Park, Acton, Middlesex W3 7JN.</p>				
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<input type="checkbox"/> 1 child: 16 tickets at £2.50 (over 11)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
			TOTAL £	
<p><input type="checkbox"/> Cheque enclosed made payable to Database Exhibitions <input type="checkbox"/> Please debit my credit card account <input type="checkbox"/> Access <input type="checkbox"/> Visa</p>				
<p>_____ Expiry date: _____</p>				
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<p>ATARI TICKETS: £1.00 (under 11s) ADVANCE TICKET ORDERS MUST BE RECEIVED BEFORE NOVEMBER 15</p>				
<p>Please Order: My Atari Palace £24.95 (incl. Post) Private Order (over 18) over £100.00 (incl. Post) Member's Season Card Order £40.00 (12 MARCH)</p>				
<p>Please quote credit card number and full address</p>				
<p>DATABASE EXHIBITIONS</p>				

ATARI and more than 70 other exhibitors are determined to make this the most fascinating show ever held.

No matter which Atari machine you use - or whether your interests lie in entertainment or more serious computer activities - you'll find just what you are looking for. Plus a few exciting things you didn't even know existed.

All the leading companies in the Atari market will be out in force to demonstrate the latest breakthroughs - from the most startling of software through to the most innovative of hardware.

Get into us in a jiffy!
SEE US NOW! SEE CHRISTMAS 1988!

HOW TO GET THERE

Alexandra Palace is so easy to reach by car, rail, underground or bus. It has its own British Rail station, just 100 metres from King's Cross, and there's a free bus service shuttling between the station and show every 10 minutes.

• If you're travelling by road, Alexandra Palace is only 15 minutes from Junction 26 on the M25. Car parking is free.

Programming

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XC 12 Recorder 130

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With the Olympics upon us we have got together with Powerplay to offer you the opportunity to win a share of £306 worth of the very best in portable sports listening. You can follow your favourite sport and competitors wherever you want and whenever you are. PLUS you can add to the thrill of playing any game with one of 18 Cruiser joysticks.

SOUNDS FANTASTIC

There's well over £306 worth of prizes to be won.

FIRST PRIZE

Sony Soundbag cassette radio worth £150

This is the new stylish cloth covered cassette radio which at first glance looks like a sports bag. It comes in black or blue and is complete with pockets for your accessories. As you would expect from Sony it incorporates the very latest in technology:

- Automatic music search
- Tone control
- FM medium wave reception



SECOND PRIZE

Sony Sports stereo cassette radio worth £26

This bright yellow water resistant radio cassette comes with shaver port, lightweight headphones and is compact and light. You can use this on mains power or when you are out and about. Its many superb features include:

- Dolby B noise reduction
- Anti-ringing
- Auto reverse

THIRD PRIZE

Sony Sports Walkman worth £58

This is another in the new Sports range. Fits easily into anyone's Matchpak with all the features you could want from a Walkman whatever you like to listen to. And watch out for these features:

- Solar alarm clock
- Double headphone socket
- Rechargeable battery



WHAT YOU HAVE TO DO
Simply choose the correct answers to the four questions below. All of these refer to the below. All of these refer to the below. All of these refer to the below. Once you have chosen events. Once you have chosen events. Once you have chosen events. Fill in the entry form and send it (or a photocopy) to arrive by later than November 30.

15 RUNNERS UP PRIZES

5 Cruiser joysticks worth £12.00

The very latest in joysticks from Powerplay are on offer. The new cruiser has a clear body and a new auto fire feature.



10 Cruiser joysticks worth £5.00

Spit black or blue bodies these Cruisers have an adjustable colour allowing three different settings.

No matter how you joystick to suit your playing style and give yourself the edge when playing your favourite game.



QUESTIONS

1. Mark Spitz was famous for his gold medals in which sport?
a. Decathlon b. Swimming c. Fencing
2. Steve Grim has run all over the world, but which town is his home base?
a. Wolverhampton b. Sunderland c. Manchester
3. The Modern Olympic Games changed venue each time, but where was its origin?
a. Greece b. France c. China
4. The film *Olympic at Fire* concentrated on the events of which Games?
a. 1928 b. 1932 c. 1936

ENTRY FORM

1. _____ 2. _____ 3. _____ 4. _____

Name _____

Address _____

Postcode _____

Now send your completed form to:
Cruiser Competition, Atari User, Europa House,
Aldington Park, Adlington, Macclesfield SK10 4NP

DRACONUS

The making of a legend



NEIL FAWCETT takes a look at a new game and a new software house supporting the 8 bit Atari

OUR spectacular front cover this month shows two creatures from a sensational new game called *Draconus*, released by Cognita. Linked with the budget company Zappelin – remember *Zylos* and *Speed Ace*? – it is promising to support the 8 bit Atari market by producing value for money, full-price games.

Cognita was formed soon after Zappelin Games came to terms with the success of its 8 bit titles. Massive sales and a number one spot in the Gallup chart – by both games – for a number of weeks, still show that there is a good market for Atari games.

Zappelin produced the Commodore 64 version of *Draconus* and it received a magazine's Silver Medal award. After this success it was decided that the Atari was capable of equalling the quality of the 64 version – and happily its financial success.

So a sister company Cognita was formed and 22 year old programmer Ian Coolidge began writing *Draconus*. He saw this as the peak of his programming career: "*Draconus* is the best game I have ever written, and I feel it is the best game ever written for the 8 bit Atari".

Based in Newcastle-upon-Tyne – and not a million miles away from Zappelin – I found Ian gutting the finishing touches to the game.

He has, over the years, written a number of games for several software houses. The number one best seller *Gun Law* for Mastertronic was his first, closely followed by *Space Hawk*, which came out on a Microcassette budget pack.

Next came a joint effort with his sister Maureen. The excellent shoot-'em-up *Turansator*, released by Code Masters, was yet another best-seller. Ian got his first Atari in 1982 – an old 480 and tape deck. He started programming in Basic, but soon found out that it wasn't the correct environment for him.

So in 1985 he bought an 800XL, 128k disc drive and Assembler/Editor cartridge the perfect machine code tool with which to write games. However, he found his Assembler cartridge wasn't powerful enough, so he bought the Mac 65 which is still in use today.

Brian Jobling – Zappelin's software director and author of *Zylos* and *Speed Ace* – has coordinated the writing of *Draconus*. "Ian is one of the few programmers who has the ability to write a game of this calibre on the 8 bit Atari," he said. "He's dedicated to his work and loves his 8 bit. What more can you ask from a programmer?"

I was curious to know how Ian came

to start working for Cognita. "That's easy to explain", said Brian. "He came to work for Zeppelin on week assignments while he was at college taking a computer science course. I quickly realized he was a very competent programmer so I showed him the Commodore version of *Draconus*. I asked him if he could write it and he said he could. The rest is history".

Shortly after this Ian began working for the newly formed company, and has never looked back since. "It's nice to be able to work with people who appreciate the quality of the 8 bit Atari", he said. "And ones who are also willing to support the machine to the full".

What of the future? Brian Jodging said: "After the initial success of Zeppelin's title and the almost guaranteed success of *Draconus* from Cognita we are intending to go into a joint venture and release a trilogy of games.

"They have been brought out on just about every other micro and have been a huge success. We thought it was very unfair that Atari in the UK didn't have a chance to play them too".

The game

Draconus is set on an alien planet ruled by an evil tyrant beast which must be destroyed. Only by doing this can the planet return to more peaceful and happy times.

You control both major game characters, *Draconus* and *Prognus* which share the same body. When you stand on a Morph Block and pull down on a joystick you can transform between the two.

Prognus who plays the major role, can walk, jump, punch, duck and breath fire. Although *Draconus* cannot leave his watery environment he can blow a powerful water jet to kill other monsters.

Together the two form a very strong fighting force incorporating everything needed to destroy the tyrant.

Throughout the labyrinth that you must traverse are countless alien nasties just waiting to meet you - or eat you. They include giant rats, bats, sea monsters, tentacles, caterpillars and bone blades. The last are balls of gummy matter which hang from ceilings and drip off when you enter. When they hit the floor they bounce around in mid air causing you even more problems.

However, not everything is there to kill you. Several key artifacts have been scattered around the labyrinth and you must collect them to stand a



Now they death can be a life saver

chance of getting to the final screen and battle the beast itself.

The artifacts are: The Gemma shield, resurrection's staff, dragon's eye and the Morph belt. Flasks of flame fluid and energy crystals can also be found around the caves. When you drink the contents of a flask it will allow you to exhale 10 good blasts of fire. When the crystals are ingested they will automatically put your energy rating back up to full.

The graphics are brilliant. The graphics artist Michael Owens has done a wonderful job of the back drops for each screen. Meticulous care has been taken with even the smallest detail.

One thing I like in a game is a catchy signature tune. Here Adam Gilmire, the music expert at Cognita, has excelled himself by writing a marvellous piece that accompanies the

superb title screen. Other sound effects have also been written with great care. I loved the crunching noise you hear every time you die. This sequence is also accompanied by *Prognus* spitting into two and blood spouting from the remains of his body - very gruesome.

The best that you must destroy is the final screen is one of the most terrifying creatures I have ever seen in a computer game. It reminded me of the mother alien from the *Alien* movie - big, mean and with large teeth. A wonderful graphical creation from the mind of Michael Owen.

When Ian Copeland said that *Draconus* was the best game to have been written for the 8 bit Atari he wasn't far wrong. It's really addictive. Buy it!



Take care: A gruesome death awaits you on every screen



Six modules in one powerful package ...at a price that can't be matched!



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- Using a modem with the **COMM** module you can access services such as MicroLink and order a wide range of goods from flowers to software, and send instant electronic mail, fax, telex and telemessages.

What the reviewers have said:

"Incredible value for money and its current success is truly well deserved". - *Stop 64*

"Little short of miraculous at the price". - *Atari User*

"Makes some of its over-priced competitors hang their heads in shame". - *Commodore User*

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<input type="checkbox"/> Please send me Mini Office II (1 license) (1 disc) (1 data machine) <input type="checkbox"/> I would like a demo please to familiarise software <input type="checkbox"/> Please debit my Access/line number Expires date: <input type="text"/> / <input type="text"/> / <input type="text"/> Signature: _____ Name: _____ Address: _____ _____ _____ Postcode: _____	<table border="1"> <thead> <tr> <th>Product</th> <th>Price</th> <th>Disc</th> </tr> </thead> <tbody> <tr> <td>Mini Office II (1 license)</td> <td>£19.95</td> <td>1</td> </tr> <tr> <td>DB (Database)</td> <td>£14.95</td> <td>1</td> </tr> <tr> <td>SP (Spreadsheet)</td> <td>£14.95</td> <td>1</td> </tr> <tr> <td>GP (Graphics)</td> <td>£14.95</td> <td>1</td> </tr> <tr> <td>Label Printer</td> <td>£14.95</td> <td>1</td> </tr> <tr> <td>COMM (Communications)</td> <td>£14.95</td> <td>1</td> </tr> </tbody> </table> <p>Send to: Database Software, Europa House, Allington Park, Allington, Mansfield NG20 6NP. Enquiries: 0800 870000 Order Hotline: 0425 210000</p> <p>DATA BASE SOFTWARE</p>	Product	Price	Disc	Mini Office II (1 license)	£19.95	1	DB (Database)	£14.95	1	SP (Spreadsheet)	£14.95	1	GP (Graphics)	£14.95	1	Label Printer	£14.95	1	COMM (Communications)	£14.95	1
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If you have been looking for a league table program look no further. Enter the results from the menu option and this program will calculate the table for you. Originally written for football results, it can be used for any other table with the played, won, lost, for, against and points format - see the program modifications panel.

Once all the relevant data has been input and calculated the program will save it to disc for you - sorry cassette users, it would be too slow to use a tape as a storage medium. You can also create hard copies of your tables with any 88 column printer.

The best way to use the program is to save it on its own disc. Format a blank disc and save Dos files to it - option H on Dos 3.3. This will leave plenty of room for the data files the program will create. Now type in the listing and check it with Get it right! Once you're sure there are no mistakes save it to your newly-prepared Dos disc.

It is important you leave this disc in the drive at all times. When first run the program will check to see if any table data exists on it. At the moment none is, so it will default to the initialisation screen. Just follow the prompts to set up your new table.

Enter the teams in alphabetical order - this will be useful when entering data later. A team name is limited to a maximum of 14 characters in length, if you exceed this you must re-enter it. On entering the last name, the newly created table will be saved to disc. Be very careful at this stage, you may overwrite an existing league table if you're not careful.

This may take some time because all team information will be set to zero and the data is calculated in four sort levels. The sort order is: Highest points, goal difference, goals for and alphabetically. Your disc will now contain four data files and, assuming all is well, you should see the menu screen.

This means that when you next run the program the new data files will be loaded and the menu screen will appear. Your options are:

- 1 Enter results
- 2 New league tables
- 3 View fixtures
- 4 Search fixtures
- 5 History tables
- 6 History fixtures
- 7 Enter team data
- 8 Toggle printer status

You have now reached the stage where you have to enter the team results. After selecting option 1 you

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Create your own fixture tables with **MALCOLM DOMONE's** neat program

will be prompted to confirm your selection - press Y followed by Return. The screen will change to allow you to enter the results.

Use the + and - keys until the home team appears on the screen. Press Return to make a selection and the name will echo back on to the screen. Enter the team's score and then select the away team and its score in the same way. Once you have made your

entries the fixtures will be saved to disc followed by the league table once it has been calculated. You will then be returned to the menu screen. At the moment the printer status will be set to OFF.

If set to On any information sent to the screen will also be echoed to the printer.

Ensure your printer is connected
Turn to Page 22 P

10

fabulous
programs
from your
favourite
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TO ORDER PLEASE USE THE FORM ON PAGE 47

4 From Page 27

when using this option, so an error message may occur if it isn't. If you don't have a printer, follow the instructions in the modifications panel. Most of the other menu selections are obvious but others require some explanation.

Option 5 will display any league table. Enter the date of the table required and the program will search the disc for it. If a table doesn't exist for the date entered a message will appear on the screen.

Option 7 can be used in one of two ways. The first is to change team data and the second is to allow data to be entered into the program during a season if games have already been played - for example, setting up a mid-season table.

Once selected you will be asked to confirm your action with Y or N. Enter the date - this should be later than the one shown - and the current team data will be displayed. If no change is required just press Return.

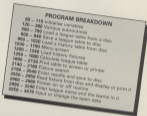
If you want to change any data enter

the new number followed by Return. A beep will be heard when a new team name is displayed.

If an error is made on an entry the team will be re-displayed and all the data will have to be re-created, so be very careful what you type. When the

changes have been made your new table is calculated and then saved.

And that's it. Enter your table now, but be careful when entering data as errors are not easily corrected after pressing Return.



MODIFICATIONS

The program as shown awards three points for a win, if your table awards a different number you will need to replace the 3 at the end of lines 2600 and 2610 with the new value.

If you don't have a printer and the following line to your program:

```
1610 PRINT *** "0000 1100
```

This will inhibit the printer output if option 6 is selected.

```
10 GO TO 2700000
15 GO TO 30000
20 GO TO 4000
25 GO TO 5000
30 GO TO 6000
35 GO TO 7000
40 GO TO 8000
45 GO TO 9000
50 GO TO 10000
55 GO TO 11000
60 GO TO 12000
65 GO TO 13000
70 GO TO 14000
75 GO TO 15000
80 GO TO 16000
85 GO TO 17000
90 GO TO 18000
95 GO TO 19000
100 GO TO 20000
105 GO TO 21000
110 GO TO 22000
115 GO TO 23000
120 GO TO 24000
125 GO TO 25000
130 GO TO 26000
135 GO TO 27000
140 GO TO 28000
145 GO TO 29000
150 GO TO 30000
155 GO TO 31000
160 GO TO 32000
165 GO TO 33000
170 GO TO 34000
175 GO TO 35000
180 GO TO 36000
185 GO TO 37000
190 GO TO 38000
195 GO TO 39000
200 GO TO 40000
205 GO TO 41000
210 GO TO 42000
215 GO TO 43000
220 GO TO 44000
225 GO TO 45000
230 GO TO 46000
235 GO TO 47000
240 GO TO 48000
245 GO TO 49000
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255 GO TO 51000
260 GO TO 52000
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270 GO TO 54000
275 GO TO 55000
280 GO TO 56000
285 GO TO 57000
290 GO TO 58000
295 GO TO 59000
300 GO TO 60000
305 GO TO 61000
310 GO TO 62000
315 GO TO 63000
320 GO TO 64000
325 GO TO 65000
330 GO TO 66000
335 GO TO 67000
340 GO TO 68000
345 GO TO 69000
350 GO TO 70000
355 GO TO 71000
360 GO TO 72000
365 GO TO 73000
370 GO TO 74000
375 GO TO 75000
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400 GO TO 80000
405 GO TO 81000
410 GO TO 82000
415 GO TO 83000
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425 GO TO 85000
430 GO TO 86000
435 GO TO 87000
440 GO TO 88000
445 GO TO 89000
450 GO TO 90000
455 GO TO 91000
460 GO TO 92000
465 GO TO 93000
470 GO TO 94000
475 GO TO 95000
480 GO TO 96000
485 GO TO 97000
490 GO TO 98000
495 GO TO 99000
500 GO TO 100000
```

```
500 GO TO 100
570 PRINT 0: GOTO 10
580 INPUT 55,17,19,20,24,14,27,25,37
590 NEXT 5
600 CLEAR 50
610 OPEN "L.A. 5, 7, 9, 10, 00, 00, 00"
620 INPUT 50,100,00,00,00
630 POSITION 31,14: PRINT
640 IF 2000 THEN POSITION 6,17: GOTO
650 TO 1000: GOTO 1000
660 PRINT 0: POSITION 17,17:
670 GOTO 100
680 INPUT 50,100,00,14,
690 INPUT 50,100,00,14
700 INPUT 50,100,00,14
710 INPUT 50,100,00,14
720 INPUT 50,100,00,14
730 INPUT 50,100,00,14
740 INPUT 50,100,00,14
750 INPUT 50,100,00,14
760 INPUT 50,100,00,14
770 INPUT 50,100,00,14
780 INPUT 50,100,00,14
790 INPUT 50,100,00,14
800 INPUT 50,100,00,14
810 INPUT 50,100,00,14
820 INPUT 50,100,00,14
830 INPUT 50,100,00,14
840 INPUT 50,100,00,14
850 INPUT 50,100,00,14
860 INPUT 50,100,00,14
870 INPUT 50,100,00,14
880 INPUT 50,100,00,14
890 INPUT 50,100,00,14
900 INPUT 50,100,00,14
910 INPUT 50,100,00,14
920 INPUT 50,100,00,14
930 INPUT 50,100,00,14
940 INPUT 50,100,00,14
950 INPUT 50,100,00,14
960 INPUT 50,100,00,14
970 INPUT 50,100,00,14
980 INPUT 50,100,00,14
990 INPUT 50,100,00,14
1000 INPUT 50,100,00,14
1010 INPUT 50,100,00,14
1020 INPUT 50,100,00,14
1030 INPUT 50,100,00,14
1040 INPUT 50,100,00,14
1050 INPUT 50,100,00,14
1060 INPUT 50,100,00,14
1070 INPUT 50,100,00,14
1080 INPUT 50,100,00,14
1090 INPUT 50,100,00,14
1100 INPUT 50,100,00,14
```

From the Page 26 in


```

1000 IF (X) THEN GOTO 1010
1010 GOTO 1000
1020 GOTO 1000
1030 GOTO 1000
1040 GOTO 1000
1050 GOTO 1000
1060 GOTO 1000
1070 GOTO 1000
1080 GOTO 1000
1090 GOTO 1000
1100 GOTO 1000
1110 GOTO 1000
1120 GOTO 1000
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1150 GOTO 1000
1160 GOTO 1000
1170 GOTO 1000
1180 GOTO 1000
1190 GOTO 1000
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1240 GOTO 1000
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1490 GOTO 1000
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1510 GOTO 1000
1520 GOTO 1000
1530 GOTO 1000
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1550 GOTO 1000
1560 GOTO 1000
1570 GOTO 1000
1580 GOTO 1000
1590 GOTO 1000
1600 GOTO 1000
1610 GOTO 1000
1620 GOTO 1000
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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
2000 GOTO 1000

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4 From Page 38

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TIME once more tries to dip into the mailbag and see what sound advice and welcome tips our readers have for fellow Atari adventurers. Although shortage of time and space means that it is not possible to deal with all of your letters, and that sometimes there may be quite a wait to see your own replies mentioned in these pages, do not despair.

I do try to get round to as many of your letters as I can so keep on writing in — the law of averages says you're bound to score sooner or later.

First out of the sack comes instant relief for all frustrated Knight On players, thanks to Andrew O'Hara of Epsfield in Cambernald. Although it was a little while ago now, Andrew has supplied a detailed solution to this challenging adventure, the first part of which you will find over the page.

In return, Andrew would like some help with *Asylum*, an adventure which I myself have rarely played, never having been a big fan of maze-based games.

The axe, gold and silver sands, telescope, bird costume, copper wire and battery are already in Andrew's possession, but if you can help him further, please phone him on Cambernald 724666 or write to him at 72 Bee Nests Way, Balfour, Carlisle, Cambernald 098 53A.

Arno Brouwer from the Netherlands is having a problem with the *Gold of Thieves* game-wigger who is getting very annoying, prohibiting Arno from digging a mine. Sorry, Arno, but the game-wigger is helping you in a way — you don't need to go digging in the cemetery. What you do need, though, is hanging from one of the saw trees nearby — and that is berries. Go get 'em — the game-wigger won't mind.

Another problem he has with the same adventure is the speck case. For Arno and other adventurers, may I suggest that you look at your map and note the pattern of the locations surrounding the room with the case. It should remind you of the five-spot side on a die. Roll all the dice and they each show a five, pop them in the appropriately coloured slots and the case should open up for you.

According to Arno, it isn't my feet that are too big — it's the rest of my body that's too small! I've not seen if that's a compliment or not!

Dave Gregory from Brecknell has had an Atari computer since last Christmas but is being driven round the bend by two adventures he bought — *Clash of Death* and *Quest For Serenity*.

As I said in the July issue, I would

There's light for the Knight, but a grave problem follows

not recommend these two games to anybody new to adventures. They are short on essentials and long on inflexibility.

My plea for help with the adventures fell on deaf ears earlier this year mainly, I suspect, because few adver-

help write to him at Millstone Cottage, 46 Beauvais, Newthorpe, Motts NG18 2EY — and don't forget to enclose a tin.

There's just room to say thanks for various hints and tips to Richard Morrison of Crewe (*The Poyoff*), David Talbot of Dublin (*The Worm in Paradise*) and Thomas Holzer from Parkstone (his top ten appears here).

Until next month, keep your sword sharp and your lamp filled!

THOMAS HOLZER'S TOP TEN

- 1 *Galix Quest*
- 2 *Glads in Space*
- 3 *Mask of the Sun*
- 4 *The Pawn*
- 5 *Leather Goddesses of Phobos*
- 6 *Atlantic (German adventure)*
- 7 *The Dark Crystal*
- 8 *Time and Magic*
- 9 *The Seven Cities of Gold*
- 10 *The Adventure Writer*

turers have persevered with these tough and frustrating puzzles. I haven't either — my advice is to switch over to playing one of Level 9's releases. If you really want to find out what a good modern adventure should be like.

Gunslinger, from US Gold, is not an adventure I am familiar with but it comes highly recommended by Christopher Beard of Neils. Christopher has sent in a list of his worst, in addition to his favourite, adventures and has scathing words about *Questprobe II* which is number one in his list of stinkies and which he describes as "absolutely pathetic as well as impossible". You have been warned. Christopher knows a thing or two about *Atariware Reality II* and 3, so if you want some



by
Rouloc

HINTS AND TIPS

Knight and – Part 1

MYST cloak, get halfpint from Guggin, get letter from post. Kill Queen Knight's horse and get wine, get washing line from oak tree, get noose from gibbet, get everything from the well out the treasure.

Put welcome mat on beam hedge and climb over. Cut Rapunzel's hair and get it. Go to castle, get wine, throw it at abbot/nidge, get it again, go in and sleep it. Go in again, unlock chest, open it and take food. Go to hermit and give him the key. When his back is turned, dispatch him and get his belt.

Go to well, tie all eight pieces of "rope" together, tie rope to roller,

climb down, get Axeman. Up and get rope. Tie rope to rollers, tie rope to signposts at crossroads and wait for thunder. Get his Axep and tie it to rope. Get spear from bar, tie it to rope, go to post, throw spear at ring – and bingo!



Magical moments

Program: Time And Magic
Price: £79.99

Supplier: Mandarin Software, Europe
House, Addington Park, Addington,
Wokingham RG20 0AF
Tel: 0675 476666

TIME and **Magic** is a welcome bargain package of three first-rate adventures from one of the country's leading experts in the fantasy field, Level 9. This trilogy is one of the first releases by a new company, Mandarin Software, which has judged wisely in picking Level 9 products as its initial entry into the marketplace.

Level 9 has always offered good value for money and adventure-hungry gamers will be well pleased with this latest crop.

The trilogy comprises *Lords of Time*, *Red Moon* and *The Price of Magic* and although none of the three is new, they are some of the best ever produced by Level 9. All have been updated.

Lords of Time involves you in a search, through various ages, for nine wily/evil objects – a jester's rag, a dweepler's egg, an olive branch, a dragon's wing and a beardtop, to name a few.

It seems that the evil Time Lords have been trying to reimpose history in their favour and it has fallen to you to

try and repair the rent in the fabric of history.

As the time travelling device of a grandfather clock, the *Time* will take you, in almost any order you like, through the Ice and Stone Ages, on across the times of Rome and Vikings, past Medieval and Tudor periods, right on up to the present then forward to the future and far future, nine ages in all.

Lords of Time happens to be one of my favourite Level 9 adventures, particularly because many of the puzzles are so enjoyably challenging and the theme is very neatly worked out.

Red Moon revolves around a crystal, the source of all magic, which has been stolen. It is your job to get it back. There are nine treasures to be collected along the way (note how Level 9 have a penchant for the number nine). *Magic* features prominently – there are a dozen spells available, most of which require a specific item for them to be effective. *Red Moon* won much acclaim as its original release, including being voted best adventure of 1989 by several magazines.

The Price of Magic is a direct sequel to *Red Moon*. The plot centres on your endeavours to defeat Mygale, once a good sorcerer now gone bad. The adventure features an even stronger



magical element (with 10 spells to learn). The *Price of Magic* also has its own combat system and there are a goodly host of independent creatures which you may, given the right circumstances, command to do your bidding.

Time and Magic is unquestionably good value for money and no adventure is likely to be disappointed with the volume of puzzles, locations, prose and fun that this trilogy offers.

Presentation	8
Atmosphere	7
Plot/Adventure	8
Value for money	8
Overall	8

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Even
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don't
care a
fig for
Forth,
think
of all
that
lovely
speed

EARLIER this year a computer magazine published a complete list of benchmark results covering a range of micro and languages. The Arabesques came out on top, but coming a close second was the ST. No real surprise there, but what language gave it this turn of speed, Fast Basic, Modula2 or C? It was none of these. A public domain language called Fig-Forth took the honours.

As a 16 bit owner will be pleased to know this fast and versatile language is now available for their machines. It may not be able to match the speed of the ST version but it can knock spots off Alan Basic.

Fig-Forth is one standard of the language Forth as defined by the American Forth Interest Group. Other standards include Forth-70, Forth-83 and polyForth, the former being implemented on the Atari as Go-Forth.

All are similar to each other in being very different to most other languages. Two features central to its design are the use of a stack and the idea of the word.

The stack is the route for all processing - it's a list in first out data structure which will be familiar to machine code programmers. You can think of it as a pile of numbers with only the top one being accessed at any one time.

However, Forth provides various ways to add, remove, do arithmetic on and juggle about these numbers very quickly. The word is the basic unit of instruction, the core words of a Forth system are normally defined in machine code but most other words are made up of words themselves.

A program in Forth is merely a word which performs the desired function and is built from words which in turn are built from other words which in turn - well perhaps you get the general drift. An example of a word is shown in Figure 1. If used it should be added to one of the editor screens. It will automatically list the next screen to the one last listed.

This extensibility makes Forth very powerful, as it allows the user to build his or her own language to suit a particular set of tasks.

I have already mentioned that Fig-Forth is traditionally a public domain language, in fact versions are available in many PD libraries for just a couple of pounds. However, Pulsar Software is selling its implementation for £14.95. So what do you get for your money? A manual is the most obvious benefit, but there are also some useful extensions to the basic language such as a mouse handler for a standard ST mouse.

The language comes on a double-sided disc, the first containing the language kernel in an AUTORUN.SYS file and all the DOS 2.0 files you need. The second side contains 134 Forth screens, each taking up 16. Most are empty but a few contain word definitions for the various extensions you require. Those of you with mathematical minds will have worked out that the disc is formatted in enhanced density. This is tough on 810 owners, myself included.

I initially thought this may just be a quick of the review copy, but after

COLIN BLACKBURN takes a look at a recently expanded version of Forth, formerly available only as a public domain program

borrowing a 1050 drive I realised the language was designed with that device in mind.

For instance, the disc copier, which is part of the extensions, copies 134 screens rather than the 80 which would be found on a single density disc.

This can be altered fairly easily, but it is short-sighted on Pulsar's part as the disc will not even boot on an 810 drive. The A4 format manual is 66 sheets of duplicated typescript bound with one of those plastic slide-in spines. It hasn't been written as a guide for the beginner, but is simply a systematic list of all the Forth words with a few appendices on error messages and the like.

Rather hard on beginners

I would have preferred a little more detail in some of the word descriptions, but the author has recommended a couple of excellent books which will help the novice get to grips with the language. I will repeat the recommendations for those of you who would rather read about the language in detail before buying. They are: *The Complete Forth* by Alan Welford (Sigma Books) and *Starting Forth* by Lee Brodie (Prentice Hall Books).

Although Forth can be used in an interpretive way, directly entering new words at the keyboard, for any real applications the words need to be saved to disc thus allowing them to be compiled. This means an editor is required and one is provided as one of the extensions. It is fairly simple but will allow screens to be entered.

Unfortunately, the Forth words load

If are redefined by the editor; in practice this makes testing programs which use them difficult. The editor can be altered to get round this, and at the same time it can be improved by adding a few extra commands. But Pulzar should have provided a more comprehensive editor in the first place.

The screens I have mentioned are made up of 18 lines of 64 characters each. This fits block conveniently into a screen on an 80 column system, but the Atari's 40 columns make full screens look weird since the lines wrap around.

One solution is to restrict lines to 32 characters, but this means that half the disc space is wasted. Pulzar should have considered breaking with the Forth 1.4 tradition and had screens of 16 lines by 32 characters to save problems later.

Printer left out in the cold

The Forth system itself seems to be a complete Fig-Forth implementation with the necessary Atari-specific words added. Graphics, sound commands and disc I/O are all supported, but annoyingly there are no words for sending any output to a printer. The appropriate words could be added by anyone with some knowledge of FORB commands, which are covered by the language, but a beginner may run into problems.

There are a few minor bugs in the language. Occasionally the system entered a loop when I deliberately tried to

- :N The colon begins all word definitions. N is its name.
- ! The number one is put on the top of the stack.
- SCR This variable holds the current screen number. Executing a variable puts the memory address on the stack rather than the value of SCR.
- +! Add 1 on to the address. For example: SCR+SCR-1
- L Lists the screen whose value is in SCR and is a word defined in the editor.
- : The semicolon ends the definition.

Figure 1. Example word used in Fig-Forth take the top number off an empty stack. When the stack is empty an error should result if attempts are made to remove a value from it. This doesn't always happen with Fig-Forth. Also, screens with blank first lines don't always compile. Both bugs should present no problems if good

programming practice is followed.

Forth normally contains in-line assemblers for time critical definitions. Fig-Forth has the necessary words but contains no hint as to how the code should be entered. A small chapter in the manual would be very welcome since the textbooks on standard Forth are not usually machine specific.

Mouse or mice?

The most interesting extension to the core of the language is the inclusion of a mouse handler which can read the second joystick port when an ST mouse is plugged into it.

There are some restrictions on its use. Since it utilises the noisy chip, sound channel 2 cannot be used if the mouse is enabled. Also the right mouse button is not read.

A simple sketch program is included on the disc and is a useful illustration of how to use the mouse. Unfortunately the documentation which accompanies it is a little sparse, and if you aren't familiar with Forth you will have problems.

I found the mouse handler an interesting feature but £26.99 seems a bit to pay for it. However, if you buy Forth and the Assembler for £25 the package seems to give value for money.

If the documentation was clearer for a novice and showed in clearer detail how to use the mouse from within your own Basic programs, it would be a superb buy. As it is, I would say it is more for the seasoned programmer.

The disc includes several programs — an editor, two disc copiers, the sketch routines and additional words supporting player-mouse graphics and some programming tests. These are of varying use, but can easily be

stopped from the disc to make space for your own words.

The screens containing these words are scattered over the entire disc, and it would have been better to have them all clumped at the lower screen numbers, allowing the rest of the disc to be used more easily by the programmer.

Finally, the disc has some of the words necessary to turn the language into Forth-78. This is not complete and omits the word J, but again, words such as this are easy to add once you have got to grips with the language.

Do balance perhaps not

Is it Pulzar's Fig-Forth worth buying? As a language Forth is certainly worthwhile, its speed, versatility and extensibility make it an excellent language for many applications. However, there are other versions available for the 8-bit machines. The public domain Fig-Forth's may not be manuals, but the discs tend to be contained with documentation screens and useful — and not so useful — extensions.

On the other hand, commercial Forths are also available. Go-Forth is a 78 standard with numerous extras, including two advanced editors and a very technical manual costing around £20.

Pulzar's Fig-Forth falls somewhere between these two at £14.95. However, a later revision with a more advanced editor, printer handler and availability of a single floppy-disc version would offer excellent value for money.

Pulzar Fig-Forth disc
Price: £14.95 (CIB with an ST mouse)
Supplier: Pulzar Software, 4 Church Hill
Road, East Street, Ayles 254 825
Tel: 07-497 0767



The VCS System

This month NEIL FAWCETT casts a critical eye over several game cartridges

In the first part of this series I took a detailed look at the VCS 2600 and explained what it was. Now that you are all familiar with its workings and have decided whether or not you

want to buy one you will be wondering what the software is like. So let's examine a few games and a couple of products aimed at children's education.



Sport in the snow

Product: Winter Games

Price: £14.99

Supplier: Epyx Electronics, Poshish House, Brunelwick Industrial Estate, Brunelway, London W11 1AX, Tel: 01-266 5240

THIS excellent rom cartridge from Epyx gives you the chance to compete in a series of seven exciting winter sports. Designed to be played by up to eight people it can be turned into a true international contest with each individual representing a different nation, but no two people can choose the same nationality.

You can compete in pure speed events like skiing or in speed-and-control events like the slalom, bobbed and luge. If these don't appeal you can

test your digital dexterity on the ski jump or hot dog skiing. The nation that scores the highest points will take home the coveted gold medal.

Once you have selected the number of players and their nationality you choose the event you want to compete in: Slalom, bobbed, ski jump, biathlon, speed skating, hot dog or luge.

The object of the slalom is to make the best time down a course while weaving in and out of a set of gates marked by a pair of flags. Pressing the fire button starts your skier down the slope and you control his motion by moving the joystick left or right; his turning action can also help slow him down.

Each time you miss one of the 30 gates you incur a three second time penalty. Avoid hitting any objects or persons — especially the trees, which hurt — or you will be slowed down considerably. All time penalties are added at the end of a run.

As with the slalom, the two-man bobbed is a speed game. The idea is to negotiate a winding, level course in the fastest time possible. Don't go too fast though or you will end up crashing.

You can control your sled round the tight, banked corners by moving left and right. To speed up the sled you have to bob the joystick up and down in a constant rhythm. You can monitor your sled speed by the speed indicator at the bottom of the screen — the wider the bar the faster you are going.

The ski jump will demand your fullest concentration if you don't want to break your skier's legs. A split-screen shows your position and the hill below.

You will cover the greatest distance during your flight if you maintain a stable diagonal position — and don't forget to extend your skis when it comes to the landing.

The biathlon requires a combination

of speed and accuracy in an event mixing cross-country skiing and shooting. When you finish the course it will be replaced by a firing range.

There are five targets which you must shoot as quickly as possible. A five second penalty is added for each target missed.

Speed skating is the simplest of the seven events. Rotate your joystick from left to right in rhythm to build up speed and the first across the line wins.

Hot dog is the ski acrobatics event and points are awarded for the most original and complicated jump made. I rattled the joystick like a machine in order to perform several consecutive stunts in a matter of seconds.

The final event is the luge, basically a one man bobbed event. You have three tries to make it quickly and safely down the chute.

The graphics and sound effects are — for a 2600 game — very good. What makes this cartridge great value for money is its playability. If you like sport simulations give this one a try.

Run in the sun

Product: Summer Games

Price: £14.99

Supplier: Epyx Electronics, Poshish House, Brunelwick Industrial Estate, Brunelway, London W11 1AX, Tel: 01-266 5240

AS with winter games, up to eight players can participate in this competition. Each can choose a different nation to represent. The seven different events are hurdles, swimming, shot shooting, 100 yard dash, swimming relay, gymnastics and rowing.

First comes hurdles, where you

have to run as fast as you can over a course (jumping as you go). Very simple, it shouldn't pose too much of a problem.

Swimming like the bundles, is a race against time. You gain speed by hitting the fire button on each down stroke, just as your swimmer's arm reaches the water. Turn quickly at the end of the pool by tapping the joystick left before you hit the wall. Time your strokes and turn well and you'll splash home to victory.

The 100 yard dash is another speed event. Runners line up on two parallel tracks, as in the hurdles event. When the gun goes, press fire and away goes your sprinter. By wiggling your joystick from side to side you can keep up a constant speed.

The swimming relay is basically an extension of the swimming race. Remember that each man on your

he is marked. Remember that you can only move the hand that is in the air, so time your movements very carefully.

The final event is the rowing. As with most of the other events you wiggle your joystick from left to right to gain speed.

This is another superb sport simulation from Epox. All the events are a pleasure to play and I spend hours attempting – and failing – to win a gold medal.

Let battle commence

Publisher: Commando
Price: £14.99
Supplier: Future Electronics, Phoenix House, Brunel Industrial Estate, Brunel Way, London W11 1PX.
Tel: 061-624 4941

FOR assignment is very simple – annihilate the enemy and destroy all their vehicles. When you get to the mega fortress you must battle your way inside and blow it up.

The main screen display is split into a number of sections. At the top is your score and at the bottom, running from left to right, a tally of grenades and lives remaining plus the level you are playing.

You are equipped with two types of weapons – a rapid-fire machine gun and three hand grenades. You have unlimited firing capacity with the gun and can fire in eight different directions – just aim the joystick and press the fire button.

Although you start the game with only three grenades you can easily pick up more – just walk over them as they lie scattered around the terrain. To throw one you pull the joystick back and press the fire button.

As you move towards the fortress

you have to avoid a multitude of enemy soldiers and obstacles like palm trees, bridges, barricades and footbats.

At the end of each level – there are eight – you'll see the giant fortress. After you've killed a given number of



grenades you'll be allowed to enter the building, die through the doors as quickly as you can. When you have done this the mega fortress will be destroyed and you'll go on to the next level.

Having completed all eight levels you start back at level one, but things will be a lot harder. At the beginning of a game you have three lives and an extra one is awarded for every 10,000 points.

Although the graphics aren't very good the game play is outstanding. I fully enjoyed playing Commando and recommend it to lovers of a good shoot-'em-up.

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team swims two lengths of the pool. As the first swimmer leaves the left side of the pool, try to anticipate his arrival and tap the joystick right to cause the lead swimmer to dive in.

Only one athlete competes at a time in the gymnastics event. The winner is determined by the points gained in special sequences during his routine.

The initial screen shows your gymnast ready to start his run at the pommel horse. Press the fire button to start your man running towards the horse, and as he nears it press fire again to initiate a mount. Once mounted, your gymnast holds the pommel horse bars and circles the horse's axis in a rhythmic rotation.

Various joystick movements will cause your man to perform different manoeuvres and it is those on which

Here is a list of some of the 2600 rom cartridges available from Atari World
 21 Farnham Street, Manchester M4 3JG. Tel: 0161 424 4941.

HERO

Kung Fu Master
 Doctor Doom
 I am Robot
 Escrow
 Superstar
 The System
 Scorpion
 Digger
 Joe Blawing
 Magnum
 Cosmic Master Assault

The Kid's Controller Hardware

Smurf
 River Rat
 Side Diver
 Atlanta
 Bolo
 Bowling
 Carnival
 Cosmic Ark
 Countdown
 Cybernetic Control
 Chopper Command

Agonising

Excess
 P.T.
 Crusader
 Fire Fighter
 Game Plus
 Lady 800
 Tobacco
 Assault Course
 Moon Patrol
 Nightlight Night
 Agonising

Useful child's play

Product: Cookie Monster Munch and The Kid's Controller
 Price: Kid's Controller £9.99 (with a free Cookie Monster Munch cartridge)
 Supplier: Alan Watts, 21 Fenner Street, Manchester M4 3DU.
 Tel: 061 632 4961



The Kid's Controller is a numeric keypad designed to be plugged into the joystick port on a 2600. Several cartridges have been released to work in conjunction with it and each contains a colourful overlay card which fits neatly on the controller.

It has 12 large buttons which even the smallest of children's fingers can push with ease. But remember, only cartridges made with a picture of the controller will work with it.

I chose Cookie Monster Munch because it is one of the most amusing children's games available. There are 10 levels of play designed to accommodate children of all ages.

In the first six games the child takes the role of Cookie Monster. Using the four arrows and cookie symbol - which are printed on the overlay card - you must traverse a garden maze looking for cookies to eat. Eventually the mazes get harder and you have a time limit in which to complete them.

After level six the child is the Cookie Kid, collecting cookies for a surprise party for the Cookie Monster. Unfortunately, every time he sees you pick up a cookie he will jump the garden fence and chase you. What you have to do is get to the cookie jar and place your cookie in it.

This sort of game can be helpful in a number of ways for children. Firstly, they will learn eye to hand coordination, which is important in reading

and writing. Using the arrows on the controller also helps the children to learn the concept of up, down, left and right. The parents manual explains all this and prompts you at times to ask your child questions about the game.

The graphics are very good and the Controller and game together could be an invaluable aid in educating children.

Smurfing can be fun

Product: Smurf
 Price: £7.99
 Supplier: Alan Watts, 21 Fenner Street, Manchester M4 3DU.
 Tel: 061 632 4961

THE treacherous Gargamel has captured the young Smurfette and is keeping her prisoner on a steel high above his laboratory floor. To reach his castle laboratory Smurf must run and jump through fields, woods and caves. After this he must climb tall mountains and duck dangers on the forest paths including hawks, snakes, bats and spiders.

Once he reaches the laboratory Smurf must jump on the benches and tables until he is high enough to reach the shelf and free Smurfette.

You play Smurf and start the game outside your house. A number of obstacles are placed in your way and the game constantly gets harder.

Soon after you leave the forest area you will reach the mountains and this is when you really have to be quick if you want to survive. Each time your Smurf is attacked by an animal or falls over he grows more tired. Eventually he gets too tired to continue and another Smurf must take his place.

The game is great fun and has a very addictive quality. Pretty graphics and sound effects make this an ideal choice for children.



Tonight's the night

Product: Title Match Pro Wrestling
 Price: £9.99
 Supplier: Pogo Electronics, Preaton House, Brunswick Industrial Estate, Brunswick Way, London E11 5AX.
 Tel: 01-359 5545

"...the screams of the crowd shake the arena as the title belt contenders circle one another. Mad Dog makes the first move smashing his face into Skin Head's chest who gasps for air, then realises with a skin-cooking wick.

"Mad Dog groins and grabbing him behind the legs Skin Head swings the ring whipping him around in an epileptic spin. Crying go he fly into the ropes and bounces back to meet Mad Dog's concrete forearm across his neck - a painfully associated clothline..."

That is a scene-setter for a superb wrestling game - Title Match Pro Wrestling - in which you have the choice of four wrestlers to fight with: Mad Dog, Skin Head, Mr. Mean and Big Chief. All are merciless and given half a chance will crush you to a pulp.

You can use a number of different moves to defeat each opponent - bear hug, body slam, power lift and back drop being just a few. To bring any of them into effect you use a combination of joystick movement and fire button.

Each fighter has a specific strength, displayed at the top of the screen in bar forms and what you have to do is sustain your strength while depleting your opponent's. Then you have to hit him with a finishing blow.

It's a little tricky to get used to the joystick/fire button combinations, but when you do the game becomes really enjoyable. Not one for the younger children, but great fun if you are into sport simulations.

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Please see paragraph 6 (page 449)

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I'M writing to you to complain about the games reviews in your magazine. There simply aren't enough of them and they are too short. A vast majority of Atari owners use their computer solely for games, so why have some of your recent issues had so few or just a few reviews?

There are many more games available than you review. I have never seen reviews of International Karate, Eldorado, Scooter, Ball/Blazer, Spacebound, Antares, Chinese at Fortune Hill. You should review at least six games a month and give them a full page with loads of screen shots.

A game like Zylax deserves at least six pages on it, not just the one you gave it. In the August issue you only reviewed four games and the best of them, Tarkus, didn't even get a screen shot - pathetic!

However, I am glad to see that Atari User is getting more game-oriented with regular hints, tips and maps. I think you should also include a hi-score chart, best music chart and have many

HOW MANY REVIEWS ARE SUFFICIENT?

more interviews with programmers. You must get more involved with the software houses and Atari games. It will pay off. - Robert Stewart, Irvine, Strathelyde.

Well Robert, that was a lot you got off your chest, wasn't it? Nearly all the games you have mentioned have been reviewed in Atari User. And those that haven't are too old for us to take a look at.

If we dedicated more pages a month to games reviews we would have to cut pages for utility and game programs. And according to our reader survey, most of you use your computer for programming and other serious tasks.

We try our best to keep up to date with reviews, and we can safely say that our reviews department gets the games to us well on time. If it's new games come out

every month we would look at them all.

Now on to the other points you made. If we included a best hi-score chart and a best music chart we would end up spending all our time compiling these and none on writing Atari User.

And that would upset a awful lot of readers.

As to our involvement in Atari games, we do our best but in the end it's up to the software houses to make their minds up whether or not a program is going to be reviewed.

New section approved

THANK you for the new 2000 section of Atari User magazine. I have for a few years now owned a 2000 VCS system which I use to keep my children busy on

while I program away on my 8 bit Atari system.

The chance to read about a game before I go out and buy it for them is wonderful. Thank you again for the new section and keep up the good work. - Les Mack, Bensville, Cleveland.

Saga of that Dodgy Dos

THERE is something interesting about the long-running saga of the new Atari Dos-SE, reviewed in the August issue of Atari User.

Firstly, it is incredible that it should take longer to write the Dos than it took to manufacture the hardware.

Secondly, it appears from the article that you need to access several disks simply to perform simple operations. Considering the only feature Dos 2.5 lacks, compared to Dos-SE, is the ability to access 180K of data, how long will it be before a Dos 2.8 appears to replace Dos-SE? - P. G. Finch, Walsingham, Berks.

The appearance of a Dos 2.6 would be welcomed by most owners of the 2F-551 disc drive. Dos-SE isn't the friendliest Dos, whereas 2.5 is one of the easiest to use.

However, as the review stated, you could always use SpartaDos with the drive and then you get the best of both worlds. High speed, extra capacity and user-friendliness - what more could you ask for?

Commander boot error

I HAVE owned my Atari 4000 computer and tape drive since Christmas of last year and I have been very pleased with its performance. I have just bought a new game from Star

Turn to Page 52

BIGGEST IN THE WORLD?

I SEE from several letters and news reports in Atari User that Atari UK is planning to support the 8 bit computer properly. I feel that Atari has left it a little late to help the lifespan of the 8-bit micros.

It is and always will be the best 8 bit computer to be sold in the UK. This may well be a bold statement, but you only have to take a look at the last 10 years to see what I mean.

Since the first day the old 400 computer appeared in the High Street stores it has never had any advertising behind it.

Atari has never advertised the 8 bit micro in any trade magazines or on TV or even in Atari User. For the con-

sumers have still sold!

Now why is this? Could it be that the word 'open standard' about how well made they are? All I know is that Atari has never liked a longer to support the 8 bit in the UK.

So, here we are in the late 1980s and all of a sudden Atari is saying what a great 8-bit computer it is, let's open some game centres for it.

If this new advertising campaign of Atari's does inject new life and popularity into the 8 bit for one will be very happy about it. I have owned my old 800 for nine years now and I plan to own it for another nine.

To finish off with I was

wondering if you can help me with a little bit I have with a friend.

After looking through all the Atari specific subscriptions I have come to the conclusion that you are the biggest 8 bit Atari magazine in the world. My friend says that you aren't. Are you or aren't you? - Kimberley Jenkins, Sutton Coldfield, Birmingham.

Well Kimberley, you did have a lot to say didn't you. As to whether we are the biggest 8 bit specific magazine in the world, we don't really know. But after looking at the other UK and American magazines for the Atari micros we do appear to be the biggest.

■ From Page 41

Circle Software called Commander. The tape has two games on it — Ford Commander and Baltimore Commander.

They are both very good games and I enjoy playing them very much. My problem is that nearly every time I try to load one of them I get a hard error.

Is there anything I can do to cure this problem as I would like to know what is causing it? — **Mark Metcalf, Rushden, Northants.**

■ Unfortunately Mark, there isn't a definite solution to your problem. All we can recommend is that you have the heads of your tape deck cleaned. Also keep your serial ID cable away from any mains leads.

You could try fast-winding through your tape and then re-winding it to make sure the tape is tensioned.

Unfortunately, tape decks are a unpredictable medium for game storage and the more they are used the worse they get when it comes to loading.

Cause for complaint

THERE'S a term over here in Australia for the English — scribbling commentaries. Coming from England myself, I have always argued against this, until now.

When I read the mailing in the August 1989 issue of Atari User there were four lengthy letters complaining about the lack of software. But have you ever thought about the software shortage over here?

Budget-priced games are non-existent so third party sales the AC Game System came out. Before that the nearest place that knew what an Atari home computer was in there to hear about their away.

I know Atari UK has nothing to do with Atari Australia, but do you think

Manager modified

I WAS very pleased with the article in the June issue of Atari User about using MCF data files as word processors. I learned a lot about the way the Name Filing Manager program is structured, and because of this I have sent in some modifications to the original program.

Modifications to take into account for the marked cards are as follows:

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In addition to these, if you want to have the option to select a particular card to

someone, you'd contact Australia and tell them how to run a computer company?

Surely it's not too hard to convince someone that the Atari 8 bit is better than any other computer. Even if that person happens to be an Aussie called Bruce! — **Steven Arora, Pine Rivers, Queensland, Australia.**

■ It would appear that the Australian 8 bit Atari users are having the same problems we in the UK are having. But don't despair Bruce — sorry Steven — hopefully help is on its way very soon.

£10 LETTER

transfer type these changes in:

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The reason for the changes are that you search cards when searching for a word or item. The result is that the sector number of the marked cards

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is incremented by 02,768 (128*256). You have to take this into account or the program will crash when it encounters marked cards. — **GM. De Graeve, Overijse, Belgium.**

■ Thanks for the help, if any of our other readers have any modifications for other programs we have printed send them in. You too, could win a tenner for your efforts.

Zeppelin hits the spot

At the March 1989 issue of Atari User there was a superb article about Zeppelin games. After reading it I promptly went out and bought them — Cyber and Speed Ace.

They are two of the best games I have ever seen on the Atari 8 bit, and I would like to take this opportunity to thank Zeppelin for its great programs.

Finally, could you please

tell me if it is possible to release any more games for the Atari? — **Kevin Carlidge, Adelaide, Hall.**

■ We got in touch with Brian Jobling — head of software development at Zeppelin and author of the two games you mentioned — and passed on your kind comments.

He told us that the company will be producing as many new games as possible for the 8 bit Atari. The next release, due any time, will be called Discocon — see the article on Page 38 of this issue.

Gallup Software Chart

THIS MONTH	LAST MONTH	TITLE (Software House)	COMMENTS	PRICE
1		GREAT AMERICAN ROAD RACE <i>Firebird</i>	Ten drivers await you in this race crossing the USA. Breakers of the police, your speed and the obstacles.	1.99
2	•	GAUNTLET <i>Atari</i>	New re-release at a budget price. It is well worth the money. A classic with a Deeper Dungeons tape available.	2.99
3		AIR WOLF <i>Enigma</i>	Translated from the TV programme. You are a man with a mission flying a helicopter.	1.99
4		ZYBEX <i>Zappella</i>	An excellent shoot-'em-up, worth more than its budget price. Good graphics.	2.99
5		SPEED ACE <i>Zappella</i>	Zappella's first release for the Atari. Good use of the split screen in this motorcycle simulation.	2.99
6		DAYLIGHT ROBBERY <i>Atari</i>	From the same stable as Captain Puddles - a fun, budget priced romp on the wrong side of the law.	1.99
7		GRAND PRIX SIMULATOR <i>Code Masters</i>	The ultimate in car simulators stays at the front of its field. This can be played again and again.	1.99
8	•	LEAGUE CHALLENGE <i>Atari</i>	As the football season gets into full swing you can take the role of the manager of a series of teams.	1.99
9	•	SHOOT 'EM UP <i>Budgie</i>	Highest new entry this month from the company famed for Duckie Day. Well worth it for a simple blast 'em.	2.99
10	•	BUBBLE TROUBLE <i>Players</i>	Based in the kitchen sink, this drama has you avoiding the drain while collecting a dubious bounty of goods.	1.99
11	•	PLATFORM PERFECTION <i>USI Gator</i>	A compilation of four classic games originally released under the Gamesoft label. Good value.	9.95
12	•	QUARTET GOLD <i>Real Mart</i>	Another compilation but this time from Manchester based Real Mart. Includes Space Wars, Breakthrough, Little Devil and Laser Wars.	3.99
13	•	SKY SKIPPER <i>Parker</i>	An American game making its debut over here. Watch out for the review of this one in Atari User.	4.95
14	•	ATARI SAFARI <i>Atari</i>	Yet another budget title, but like most for the Atari line, clean and excellent value.	1.99
15		MATTA BLATTA <i>Firebird</i>	Re-released by Firebird you can read our reviewer's opinion of this one in this issue of Atari User.	1.99
16		LEAPSTER <i>Alternative</i>	Great if you enjoy jumping over cars and lorries while collecting items from open windows.	1.99
17	•	TRANSMUTER <i>Code Masters</i>	Smelling shoot-'em-up which is one of the very best games written for a gift. Musteen Copeland.	1.99
18	•	TALLADEGA <i>Top Ten</i>	If you love car games this is not the best of the bunch - budget quality with a price to match.	1.99
19	•	MONKEY MAGIC <i>Alternative</i>	Based on the TV programme Monkey - with you as the issuer. Only who must succeed in his mission in smother Onix.	1.99
20	•	DIG DUG <i>Atari</i>	Originally an arcade block buster, has been available on coin cartridge for some years.	12.99

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