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ATARI USER

Vol. 1 No. 8

December 1985

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SuperScript

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

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ATARI USER

Official Atari Magazine

Volume 1
Number 8
December 1985



Vol. 1 No. 8 December 1985

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

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The long-awaited GemWrite and GemDraw have now arrived. Read Jeremy Vira's impressions.

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By public demand, Atari User's own checksum program. Get It Right! From now on, all our listings will be accompanied by a checksum table to help in your debugging.



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We've got ten sets of 4 US Gold games to give away and all you have to do is... read on.

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Order Form

Four pages of offers and one single form on which you can order everything you need.

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Disco

Your Atari will be the light and soul of the party with Stephen Prince's program to set the lights flashing.

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FREEBIE

This month's Freebie for Atari User disc and tape purchasers is guaranteed to entertain and delight you. And there's not an alien in sight.

Keyboard

If you've ever puzzled over how to produce those special characters from the keyboard, this page will solve all your problems.

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See Page 66

Here's a

IBM, Epson QX-50,

Acorn Electron, ACTS

Ericsson...and the

that fits them all—the

At last, your computer can have an Epson printer.

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

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

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

But first, read about the QX-80's other exciting advantages...

What happens when I change computers?

Gone are the days when you had to scrap a perfectly good printer just because it "didn't go with" your new computer.

Once bought, your QX-80 stays put. (Epsons tend to stick around for ages anyway, now we've taken tradition a little further.)

When the time comes to upgrade your computer, you simply go back to your Epson dealer and buy the corresponding new PIC.

It's a far sight cheaper than being forced to sell/scrap (but your printer only to buy another one. And in effect it makes the QX-80 your printer for life.



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Sirius/Apricot, Compaq,

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the new Epson GX-80.



A printer for life? What's the catch?

Stress, unremitting boredom.

The GX-80 takes all the fun out of printer ownership. You can't shout, "Lousy printer! It's fouled up again!" because it won't. It's just as reliable as every other Epson.

Not can you gleefully chuck it away because you've changed computers — PC's seem to do that.

But all is not lost. You could change your computer a bit more often. Just for fun.

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Guide to Microcomputing in Packet. Contains hundreds of page numbers covering games, education and business, and utility programs for the IBM, Apple, Commodore and Spectrum. Plus lists, tips and reviews of various products.



No. 2

Special supplement:
Guide to Communicating with your Micro. All programs for transferring data to and from communications programs, from manual, tell how-to, how-to, networking and P&B. Plus a guide to 38 modems listing all their special features.



No. 3

Special supplement:
Guide to Bulletin Boards in the UK. An in-depth survey of what bulletin boards offer and what they cost. How to choose them, interviews with 12 leading systems. Plus a complete listing of 28 bulletin boards, pinpointed on a map of the UK.



No. 4

Includes the Best Features & Wordware Files. Highlighting all the latest industrial news. Plus features on financial, legal and educational databases, start of a guide to knowledge bases. New word and your personal file and a survey on portable devices with some features.



No. 5

Special supplement:
Guide to Communications Software. A survey of 23 communications software packages for 11 of the most popular micros. Plus tables on standard options, descriptions of the 23 features featured for the 10, and online listings from Packet editor Alan Carter.

Tele Link

Rates of readers are soaring. The number of on-line databases and bulletin boards grows and grows. TeleLink is THE way to keep fully informed of the rapid changes now taking place in the world of communications.



No. 6

Special supplement:
Guide to Bulletin Board Design. A leading expert tells how to achieve eye-catching on-line graphics. Plus all about non-operating Packet, setting up international standards systems, using packet modes to set group calls, on-line credit reporting.



No. 7

Special supplement:
Guide to Using Videotext. Includes a detailed expert introduction to videotext and a time-saving and cost saving feature. Plus a challenge to Packet's monopoly, launch of the BBC's Videotext, interviews with a top UK dealer, and how videotext is becoming hot.

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Silence over Comdex

ATARI bosses were being tight-lipped about what surprises the company would spring on the computer industry at the giant Comdex exhibition in Las Vegas.

Puzzles circulating in the trade during the count-down to the show said the firm was poised to announce a number of new additions to its ST family - among them a 1-mbyte model, the 1040ST.

One report said the new machine would be offered here with a colour monitor for about £1,000, but apparently comparable with both the planned 1050ST and existing 1020ST, and feature a built-in 12mb formatted capacity disc drive.

It was also thought that Atari would preview its 32-bit workstation, the TT, based on the 13000 processor.

But sales and marketing manager Rob Harding dismissed the rumours as "pure speculation, completely unfounded".

He told Atari User: "I have no knowledge of these products being shown at Comdex, but even if they were it wouldn't necessarily mean we would bring them on to the market."

"We tend to use exhibitions as show windows to show we are capable of producing certain types of products."

"Mass production doesn't necessarily follow - after all, look what happened to the 1305T".

Half-price 800XL hits the Christmas marketplace

ATARI is poised to dominate the UK micro market this Christmas as a result of striking a multi-million pound deal with Glens.

It involves the sale of the entire stock of 800XLs - some 100,000 machines - to the High Street giant.

New Glens are slashing the price of the 800XL package by 50 per cent, bringing the cassette version down to just £99.99 in the run up to the festive season.

The net price offer includes an 800XL, joystick, 1010 cassette recorder and five pieces of software, which would have usually retailed for a total of £150.

At the same time the 800 clones in the Glens chain - which now also includes the Curve outlets - will also be offering the 800XL with disc drive and three pieces of

software at a bargain price of £199.99, down from £300.

"They will be selling an awful lot of 800XLs in the run up to Christmas," says Rob Harding, Atari UK's marketing boss.

"In fact this will mean that this year Atari will not simply be a leader but will actually dominate the entire market".

The company has gone to considerable lengths to ensure that independent dealers are not left with stocks of 800XLs and so to enable to compete with the new High Street prices.

But Atari has retained a small stock of the machines to ensure that any outstanding Christmas orders can be filled.

However production of the

800XL will now cease, with Atari concentrating on the 1300X in its ongoing machine in the 8 bit market.

"We are currently looking into special packages involving the 1300X as well", Rob Harding told Atari User, "and these will be available any day now".

Production is also to end of the 1010 cassette recorder and this will be replaced by a new 811 model.

Made in Japan, this will be powered internally from the 1300X, and will retail at the same price as the 1010 - £34.95.

Atari has also announced that it is to slash the price of its 1050 disc drive from £189 to £130.

"With what we are now offering the public, there will be nothing to prevent Atari running away with the market this year", says Rob Harding.

RAM discs for ST

A NEW utility enabling one or more RAM discs to be set up on Atari ST entries for increased speed of operation has been released by Kroma Computers. The company says its 4-Krom package enables files to be accessed and written to between 40 and 50 times faster than with a normal disc drive.

Additional features include a Help facility and an option for decreasing floppy disc write times by up to 50 per cent. 4-Krom can also enable the user to gain more free RAM by configuring the operating system, says Kroma. Price: £29.95.

ROM UPDATE - AT A PRICE

THE long-awaited ROM version of the 1020ST's operating system should be available here before Christmas. But it will cost ST owners about £25 for the kit to upgrade their machines.

Although the ST was originally expected to arrive on the market with a ROM system, the machines sold in the UK so far now have all been disc based.

Many people who bought these machines did so believing they would eventually be able to

make discs for ROMs replacing all files on disc.

But this is not to be the case. Atari UK marketing boss Rob Harding said: "There will be a small charge to existing ST owners for the upgrade kit. I expect it to be about £25."

"I believe this to be reasonable. The disc operating system was never intended to be a stopgap until the ROM version became available."

"It has always been an

option, just as the ROM will be an option when that becomes available any day now."

"Many existing ST owners aren't interested in running Gem programs - they are quite happy with the disc operating system in view of all the ROM software that is available".

An informed source says the 1020ST ROM chips are currently completing their Beta testing before going into full duplication and should be available soon.

1-2-3 clone released

An enhanced Lotus 1-2-3 clone has been released in the United States for the 1020ST.

Called the VIP Professional, its extras include GEM interfaces, 16 colours, multiple windows, mouse compatibility and pull down menus.

Available from VIP Technologies of Santa Barbara, California, its current \$99 price tag - claimed to be three times lower than that of its rival - is due to rise to \$149 in November.

A full tutorial is included in the price.

Hacker emulator

AT&T users can now emulate hackers — the electronic burglars who break into computer systems — but without fear of being caught.

It is all thanks to a new adventure-type game called *Hacker* from Activision. The company claims it is a challenging simulation of what a user might experience if he were to "accidentally stumble" into a foreign system.

The aim of the game is for the user to decide how to proceed in search of information which will help save the world.

The usual instruction book and hints have been deliberately left out to force the computer fan to be given the clues command the user is on his own.

Prices are £14.99 for the disc version and £9.99 for cassette.



MAIL order house Software Express is celebrating its first birthday this month, by giving presents to its customers.

At the moment who have bought goods from the firm have been sent an entry form for those free competitions offering prizes of software and hardware.

One is for the best birthday card designed by computer graphics and can be submitted either as a print out or screen photograph.

In the second competition contestants have to guess the actual day in December on which the firm's birthday falls.

The third competition involves identifying a product in the firm's catalogue with the

BIRTHDAY BONANZA

help of a cryptic clue.

Software Express general manager Jerry Howells said: "In addition each week during the month a selected range of products will have their prices set right down to the bone."

"And we will also have a special phone-in Make us an offer service where customers will be invited to name their own prices for the goods they want."

■ The Software Express team picture above (left to right) Ken Howells, Jerry Howells, Mike Jones and Pete Fellows.

p-System for the 520 ST

ADVICE and information about p-System for the Atari 520ST will be one of the main topics on the agenda of the eighth EURO-UK conference at Oxford Mount House, Westminster 23 to 24.

The keynote address will be delivered by Ed Millen, whose company is currently negotiating for the rights to p-System, the micro-operating system for software developers.

Other topics include high quality word processors, low cost CAD systems, networking, and there will be presentations by software houses that have developed multi-user applications.

Developed companies attending this year include Smile Mirex and Elix Computer from America, Paces from Germany, Versal from Sweden and Symbolic from Norway.



Tough cookie..

THE new Mach II joystick for the Atari was built to withstand intense punishment, claims Channel Marketing.

It also has three fire buttons, two — the trigger and thumb buttons — are on the insulated handle. The third, for two-handed firing, is on the base. There is also an auto-fire switch.

The base can either be hand held or stuck firmly on a table using its under base suckers.

Price: £8.95.

pForth gets the seal

THE first British package to get the new Atari Approved Software seal of approval is pForth, a multitasking system from Gigacore Software said to provide a complete development environment for the 800.

Among many features normally only found on mini and mainframe systems is the ability to run simultaneous tasks on the machine.

Used in conjunction with a serial console card the system allows the 800 to be used as a multiuser development system or to service several incoming calls on a bulletin board simultaneously. Price: £29.95.

TEACH-IN FOR THE ST

PUBLISHERS Unwipac are producing a range of teach-yourself style books for the 520ST.

Titles have yet to be finalized but five books are due, covering subjects such as an introduction to the machine, Basic, machine code, ST logic, graphics and the advanced user.



New link to micro

THE new letter quality 60-80 line pin dot matrix printer from Epson features a printer interface cartridge which makes it compatible with the Atari 800 and 800XL.

Based on the LX-80 launched earlier this year, the printer features a new method of connecting up to a computer.

At its back, instead of the normal Centronics connector, there is a space for users to fit the PIC of their choice with a cable and plug all in one.

An optional tractor feed and cut sheet feeder for second processing input are available.

Printing is bi-directional in draft at 100 characters per second and 180ps/second pass, in Roman MD.

The printer incorporates laser selection from the front panel to give choice of Pica, Elite and Roman as well as emphasised, condensed and double strike Pica.

Italic, sub/superscript, emphasis, enlarged and underlining are also available through Epson software control.

Price of the 60-80 is £249, the printer interface cartridge £50, sheet feeder £55 and tractor unit £25.



High-tech steam trip

DISTRIBUTOR Elite Computers chose to step back into the past when introducing the latest Atari technology to 100 of its dealers from the Midlands and North.

The company hired a steam engine and old fashioned carriages (purchased and operated by the North Yorkshire Moors Steam Railway for a scenic trip from Pickering to Greenham).

During the journey a range of

products from Atari, including the new 8 bit 130XE and 16 bit 520ST were demonstrated.

Guests from as far south as Birmingham viewed the new range of products now available to their customers of Elite's second caravans with Atari being a distribution rights throughout the North.

Elite sales and marketing director Roger Purnaglove said afterwards: "Both products

were very well received. The Atari machines not only offer a total package but also fill a large gap in the market at an extremely realistic price".

Atari UK sales and marketing manager Rob Harding described the novel computer demonstration as "an excellent start to what I hope will be a long and mutually beneficial business relationship between Elite and Atari".

Piracy fighter raps smear

THE president of an Atari user group has become the victim of high tech character assassination.

Ken Ward, leader of the Norwich User Group, says smear tactics are being used to link his name with software piracy arising from the Atari franchise.

An aggressive and outspoken opponent of the video cheats, Ward believes the current campaign against him was sparked by an article he

published in a recent issue of *Puggot*, the user group's newsletter, attacking piracy.

"This article appears to have upset a certain Atari-owner and I have received a huge parcel and several letters thanking me for providing contacts dealing in pirated software", he told Atari User.

"My name is being used on disc files containing pirated software which are being passed around the Atari community. Over the past two and a

half years I have put a lot of work into building up a respectable group and newsletter.

"We have gained a status and respect that is the envy of other groups.

"We have members all over the country and we are slowly gaining the confidence of the software industry.

"I don't intend to let a sick Atari user undermine that respect and confidence, and I am making my own enquiries to try and track down the person and get more evidence so I can take action against him.

"This particular nasty specimen is under the delusion that he is an intelligent Atarier.

"He's wrong - he's just a swindling little player who should be put down before he does any more damage".

Zork on the ST

AMERICAN software developer Infocom has announced a line of 18 interactive fiction products for the Atari ST.

The range includes best sellers such as the Zork Trilogy, Hitchhiker's Guide to the Galaxy, and Wishbringer.

Prices of the Atari ST versions will range from £39.95 to \$49.95 depending on the level of difficulty.

War game released

THE controversial war game Theatre Europe from PDS has been released for the Atari 400/500 XL series.

Based around a conflict between West and the Warsaw Pact countries, Theatre Europe is a simulation of the possible outcome of World War II.

The player has the choice of sides with the computer as the opponent. Chemical or nuclear weapons may be used to the point of world destruction. Price is £9.95.

Mind blowing

SOFTWARE house Activision has released its first graphic adventure *Minichadrow* for the Atari 800XL and XL.

The player finds himself on a deserted beach suffering from amnesia and must make a complete journey round the world to rediscover his identity.

Described as "a living computer novel", *Minichadrow* costs £14.99 on disc.

Sci-fi adventure

ROBOT in Paradise, the third part of the *Galaxy Stream* trilogy from Level 9 Computing, has been released for the Atari 486 machines.

It follows *Snowball* and *Return to Eden* and is described as a political science fiction adventure set in a future state where something has gone wrong with man's dreams and ideals and the player has to beat the system and escape to reality. Price: £9.95.

FOUR FOR THE STs

SOFTWARE house Microdeal has focused four programs for the Atari ST range from American publisher Microdeal and will be releasing them during the next month. They are an arcade game, *Mudpie*, and a board game, *Flipside*, each priced at £9.95, a theme disc emulator, *M-Disc*, and a pair speller, *Spelzpot*, each at £29.95.



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THE Atari ST was launched to an expectant computer audience eager to use the latest technology at a fraction of the price.

The thorn in the side of the launch was the conspicuous absence of software, including a large amount of the bundled packages to be included with the machine.

This is no longer the case, with a wide range of software beginning to appear. Digital

Research, responsible for the Gem operating system, has now got its act together and is producing packages to take the fullest advantage of the Gem working environment.

The first two of these are about to appear - Gem Write, which is the bundled word processor, and Gem Draw, a software package for diagrams and drawings.

Here are JEREMY VINE's impressions of them both.

WORD PROCESSING is almost certainly the most common application in business computing, even for the home user, and word processors have become an essential package to possess. Gem Write is a basic word processor which offers the essential commands for writing documents.

As a throw-in part of the ST package, I wasn't expecting too much. So how did it fare?

As a technical journalist I have probably used more word processors than I care to remember, and one outstanding feature of most packages is the amount of time it takes to become acquainted with just the rudimentary commands, let alone all the facilities.

Gem Write is almost unique in being delightfully simple to use yet powerful enough to offer sufficient facilities to provide for the average

user - whoever that may be.

It would not be an exaggeration to say that all of Gem Write's commands can be learned in the same time it would take to learn the basics of another package. This owes much to the Gem philosophy.

On loading Gem Write the user is faced with a blank window. The

cursor, a flashing bar, can be moved to any part of the screen by using the keyboard arrow keys or the mouse pointer. This doubling up on commands is present throughout the package and allows interaction between mouse and keyboard controls or just keyboard, though the former is the most likely scenario.

The typing starts from wherever the cursor is placed and text is automatically wrapped round at the end of a line.

The Edit menu offers the standard facilities of inserting, deleting and centering lines and moving, copying and deleting blocks of text. These commands, as for many others, rely on the user highlighting the text to be affected - that is, moving a block of text. This couldn't be simpler.

Using the mouse, the user need only move the cursor to the beginning of the text to be affected and drag the cursor - mouse button held down - over the desired area. This causes the text to be highlighted in inverse video - white text on a black background.

It is then only necessary to choose the desired command from the

Gem Write

Easy to get along with
yet powerful enough
for the average user



Gem Write: Still some bugs to be ironed out

pull-down menus. These commands can be carried out by using the keyboard function keys, sometimes in conjunction with the Control or Shift keys. But that's old fashioned. Well, it's there if you like it that way.

In a similar way the Font menu can be used to change the style of the text. This turned out to be quite a disappointment, as there was little choice of styles. Gem Write only allowing the text to be printed in normal, bold or italic print, plus the facility of underlining.

In comparison, Gem Draw - reviewed below - had more text variety on offer, which seemed slightly strange. It would have been no problem to provide a range of font styles, and this was certainly a weak point in this package.

All changes made to text are shown on screen, which makes a pleasant change to just seeing control codes all over the place. However these codes can be seen by the user on pressing a function key.

Graphics can be cut into the text using the Insert Graphics command

from the File menu, as can text from another document. Whereas inserted text appears in the document, graphics from Gem Draw or Gem Paint did not on my version.

It seems that an embedded command is placed at the appropriate spot in the document and on printing the picture is cut into the document. The user can specify to see the picture using the Turn Graphics On command, though I could not get this to work.

Rulers, tabs and margins can all be set from the Page menu, as can the format of the document - justification, pagination, line spacing, page length, margin, etc. The Search menu allows text to be found and replaced, the user also being able to specify which page to be shown on screen.

At the end of each physical page, not the screenpage, a page-break line is shown. The arrow keys on the keyboard allow the document to be scrolled in either direction vertically, with jumps of a page facilitated by use of the arrow and Control key. However there didn't appear to be a means of scrolling by each screen,

which was annoying.

A Shortcuts option on the Options menu acted as a help guide to the function keys, which was necessary as there is no way to remember what each function key did on the ST keyboard.

VERDICT: As part of the ST package Gem Write is a good word processor. If I had to buy it separately I would have more reservations, but as it stands Gem Write does its job and will suit the needs of many ST owners. I would be more than happy to see it and probably will.

My only gripe was that it did not have a word count facility - useful to us journalists, but maybe I just expect too much.

The more demanding of us may have to wait for another word processor, but as a freddie package I really can't complain.

GEM DRAW is one of two drawing packages to be released by Digital Research, the other being a basic painting package, Gem Paint. Gem Draw is intended as a computerised drawing board, allowing the user to mix text and graphics on-screen, to create diagrams or drawings. Like all Gem packages, Gem Draw takes full advantage of the Wimp (windows, icons, mouse, pointer) system and the package is entirely controlled from the mouse.

The menu bar runs across the top of the screen and offers eight pull-down menus, including the Desk one. They are used in conjunction with a range of drawing tools shown vertically on the left of the window.

Options range from drawing circles, ellipses, rectangles and squares to the user drawing in his own free-hand style. Text can also be freely mixed into the drawing. But more of this later.

When first loaded Gem Draw displays a blank area within the window on which the user draws. However it is not the entire area on which the final output will be printed,

but merely a window on a much larger drawing board.

Moving the mouse pointer over the second option on the vertical menu causes Gem Draw to show a reduced version of the entire board. This is particularly useful to see plans and diagrams that spill beyond the drawing area usually shown. It is also of assistance when using the Zoom facility (see later).

When anything is drawn, regardless of size or shape, a box is immediately placed around it. The boxed area defined is determined by the end of a drawing action by the user. In other words, once the user

releases the mouse button - which usually triggers the particular drawing event - the last element drawn is surrounded by a box.

At a later stage the user can then place the mouse pointer over a certain part of the picture and find out how many elements make up that area of the drawing.

Each of these boxed areas can be moved independently on the screen. This means that a drawing of, say, a camera, might be made up of several component parts, each of which can be separately manipulated.

If the lens of the camera is

Gem Draw

Not a professional CAD package, but it's fine in its line



Gem Draw: A delight to use



A wide choice of tones available

surrounded by a boxed area the user can then remove the lens by pointing to the box and dragging the lens to another part of the drawing. In this way the user can break a drawing into its smaller component parts and fit them together at a later stage to make a complete picture.

The options for drawing ellipses, circles, rectangles and squares are activated by placing the pointer over the relevant box and clicking the mouse button. The pointer then changes shape from an arrow to a cross-hair and the option chosen is highlighted by a black background.

Executing the drawing action is then a case of holding down the left mouse button and dragging the cursor till the shape/line is the appropriate size.

Once the mouse button is released a box is shown around the drawing element completed. Before going any further, the user can at this stage use the Pattern, Line or Colour menus to complete the drawing element.

The Pattern menu displays 39 shading patterns which fill the area shown by the box. Therefore if the user has just drawn a square it can be filled in by pulling down the Pattern menu and choosing a specific pattern – brick wall, vertical lines, and so on.

Like all Gem commands, the mouse needs only to be clicked over the desired option and the shape is redrawn with the chosen pattern filling the area within the shape.

The Line menu allows the user to choose how thick a line is drawn, whether it is broken, dotted or connected, and also adds a nice touch

of placing arrows at the ends of lines – very useful if you are drawing flowcharts.

Finally there is a colour menu to choose a drawing colour, providing of course that you have a colour monitor. If using a monochrome monitor there is only a choice of black or white.

There is, of course, a File menu which offers all the usual filing utilities such as Saving and Loading pictures, and the output to a printer. The format of the page – document size, etc – is changed using the Page menu, as is the use of grids and rulers. The size of the grid can be changed using one of six preset sizes and a ruler can be displayed horizontally along the top of the window if needed.

The Page menu offers also a Zoom facility which, as the name suggests, allows a specific area of the drawing to be shown in closer detail. This is an excellent method of touching-up and examining the finer details of a drawing.

As the zoom facility is used the picture often zooms into an area which the user does not wish to enlarge. This is where viewing the entire drawing board is useful, as the user can then see exactly what area is being magnified (shown by an outline box).

The outline box represents the window in which the user works, and this window can then be placed over the area to be magnified.

Text can be placed anywhere on the screen and the Font menu allows the user to specify different character

fonts, size, italics, and so on. It was interesting to note that the Font menu offered more choice than the equivalent option in Gem Write.

Elements of a drawing can be deleted, and undelated, using the Edit menu, which also has a Duplicate option to make a copy of any drawing element.

Finally comes what was far less the best part of Gem Draw – the Arrange menu, which aids the user in placing objects or elements of a picture wherever the user desires.

Drawings can be specifically placed behind or in front of another drawing. The user merely has to identify the drawing element and then place it over another drawing. The facility can also align drawings on the screen, as well as centering drawings on the page.

VERDICT: All in all, Gem Draw was a delight to use and like Gem Write could be put to work immediately. Its uses will no doubt be varied, though it will probably appeal to less professional use.

For computer aided design applications the package does not have sufficient options to make it a professional's tool. A pity really, but I suspect this is not the intended market. Having said that, I enjoyed using the package and it is a welcome addition to my programming library.

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A NEWS packet from Infocom is always something to be eagerly awaited, so when I got a phone call to say that a new Infocom title had just arrived in the country I was eager to try it out.

When I found that it was written by the same guy who gave us Planetfall, Berserker and Heek-Hiker's, and that it was only available for the ST, being much too large and complex to fit into the 8 bit range, I was doubly interested.

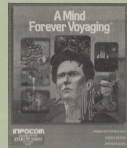
Thus, the very next day, thanks to the efficient staff at Software Express, I sat down at my desk, powered up the ST, and placed the *A Mind Forever Voyaging* disc in the drive.

And I suddenly discovered that it is rather like to stare into a window more than an electronic illusion created inside the massive memory banks of the Prism super-computer.

This fact is, perhaps, a little disconcerting, as I'll explain.

Early in the 21st Century, Doctor Abraham Perelman was involved in a project that would bridge the gap between computer "Expert Systems" and the workings of the human brain.

He proposed an artificial intelligence simulation which mimicked in every way the



Into a world of illusions

learning processes of the human brain.

Thus the Prism computer was designed, and hooked into five other massive mainframe computers which would

provide the substance of the simulation fed into Prism.

It would be fed from the outside world with everything a normal child could see and hear, and its reactions to this

input would cause the projection to alter accordingly.

This process would take many years to complete, in the same way that the human learning process takes many years.

Meanwhile, a small boy was growing up in Downtown Brooklyn. He went through all of the normal growth pains of any child in middle America.

He got lost in the local supermarket, was bullied at school, wanted to become a writer...

Then, at the age of 13, Perry's father died, and the family moved into an apartment in the more seedy part of town.

At the age of 20, just as he had met and fallen in love with... All activities involving getting down with her, he found himself as a rather strange job interview with a magazine editor.

They were discussing perception - how does one know that the real world is not an illusion generated by the mind?

As they talked, everything around him simply faded away, and he found the voice of Abraham Perelman, talking for the first time directly to his creation, Perry.

Given this background, you are also informed that the world situation is grim. Crime and urban decay are rampant, and there is extreme depopulation and poverty.

Senator Richard Ryker has proposed a "Plan for Renewed National Purpose", and the intention is to use Prism to create and study the effects of this plan on a simulation of the world 10 years hence.

If this were an ordinary adventure, you would expect to play Perelman and the computer would follow your orders to gather information.

However this is no ordinary adventure - this is a state-of-the-art Infocom game, and you actually play Prism, and must explore for yourself - reporting back to Perelman via the keyboard.

You can contact him, and

For more information, call
1-800-521-8600, ext. 100
or contact your local dealer.
© 1989 Infocom Inc.
This is the office of your creator, Dr. Abraham Perelman. It is situated and decorated exactly as described in the text. Perry's life is centered and centered in time, including a calendar, a map of the city, a telephone, etc. See a printed or a magazine article.

Prism
Prism Project Control Center
This is a large, air-conditioned room filled with banks of terminals and video monitors. You and Perelman sit at the top of each computer.
Prism Perelman is sitting in a hard chair, reading a long program.

Perelman
Perelman (last terminal): "You're needed over by Governor, off to it as it is... (collapses backward, and all) you're better off... (it goes back and it is like, right) it looks like you."

Game play/genre info
Perelman has to play by Perry's rules. In some, when he finally gets information, he'll tell you to do.

Perelman is available for 20 and 28 years in the future.
Retail cost/price per: 1.00

other members of the research team, via communications outlets around the establishment is little like Ray'sa's voice/visual terminals in the film 2001.

You may also communicate with any one of the five simulation control computers and give them new instructions.

You can even tie into a vast library and into the world news network.

I received my instructions from Dr. Perelman, and activated the simulation mode. After entering the museum colour codes from the pack-afol provided in the package, I was transported from my cosy world of 2001 into a simulation of 90 years hence.

A map of Rockville circa 2001 is provided, but this doesn't really help you with anything other than major landmarks, as much development has taken place by now, and there is a lot of city to explore.

I took the underground to the other side of the city, being careful to record my journey to play back to Perelman later, and had a meal at a rather expensive restaurant.

Curiously finding out where I lived, I then tracked down my little apartment and visited Jill and our life baby.

Those familiar with Infocom prose will know that the events that take place are vividly described, and take on the same degree of reality that a good novel would as you lose yourself in its pages.

In contrast to many Infocom titles, however, the emphasis is not so much on problem-solving as on the control of the situation you're involved in.

You find out intriguing bits of information about life in the future, meeting and chatting to people as you go. Still, I soon found that I had overplayed all the tricks set by Perelman, and I reverted to communication mode to tell him what I'd discovered, and based on my information, the plan was approved.

Perhaps on a stand-out

cassette-based adventure, things would end there, but not with Infocom.

Perelman also told me that the information that I had provided had enabled his team to extend the simulation by a further 10 years.

It's seemed rather the best to give me further detailed instructions, viz. being the inquisitive computer I am, I set off to see for myself...

And the world has become a shadowy place, full of gloom and suspicion. The secret

police raid my house, and leave Jill.

My brother seems to be in some sort of trouble. The plot has obviously thickened, and it seems to be up to me to find out why, and warn Perelman before it's too late.

Again, this nightmare combination of 1984 and Star Trek World, the saga continues.

I can thoroughly recommend this adventure to anyone who likes a challenge and wants to get the most

from their ST, as it is perhaps the most fascinating concept that Infocom has yet come up with.

Some are the tricky problems and funny solutions of *Senseless Mystery's* last game, *The Hitch-Hiker's Guide to the Galaxy* — an essential game in its own right — and in their place is a frighteningly realistic view of a future we all hope we can prevent.

I'll let you know how I get on.

André Wilkey

The golden touch that saves cash

If you wished your Atari for any length of time and you're at all interested in games, you won't have failed to notice two things. Firstly, a lot of games originally in America. Secondly, they cost a small fortune.

The two points aren't unrelated. It costs money to import software. In the past I've been sent free review copies of software from the States and been charged an arm and a leg in VAT, import duty and Post Office handling charges.

Of course more games get written in America because the Atari market is bigger over there. Not fair, is it?

Fortunately, US Gold is in business to solve this problem. Basically, Gold "buys" a game from America in the form of a licence and sell it over here at less-than-Stateside prices. That way we get American games at British prices.

The latest batch of games to be released by US Gold are *Tapper*, *Up's Down*, *Spy Hunter* and *Zaxxon*.

Tapper is one of those games which saves its existence to the old stage act of spinning plates on sticks. The idea is that you've got four soda counters to look after. You must slide sodas along to the customers and collect the



Tapper... know you going

empties. If you miss an empty glass it crashes to the ground and that's a one of your "lives" gone.

The other way you fall is by being over-zealous and sliding a soda when there isn't a thirsty customer — not like any bar I've ever been in!

When you slide a soda the customer retreats and the way to complete a level is to satisfy all customers. Oh level 1 it's not too difficult.

Of course things get harder as you work your way up the levels, with more customers and consequently more empties. There are also bonus

sounds when you start a new level carefully.

The Soda Bandit shakes five of the six sodas onto the bar and then shuffles them around. You've got to open the machine can. Success brings a big bonus, failure brings a forfeit of lives.

It's a frantic game which has you leaping about while trying to develop strategies.

It's also slightly unusual for an arcade game in that it's essentially non-violent. The worst that happens is that glasses get broken — it's worse than the average fairies.

Up's Down is a bit hard to



Up'n Down... same and old

decade. It's a sort of car-driving game, but not in the Pole Position mould.

The road is a narrow lane-way that scrolls down the screen and as soon as you press the joystick forward your car starts along the road.

Every so often there are flags and as you pass them they turn white. Completing the 'level' involves turning all the flags white. To hinder you there are trucks going in your direction. If you hit them you disintegrate.

There are also wrecks sliding back down the screen, and if they hit you it's curtains.

Because there isn't much of the road system on screen at any one time, you don't get any warning of either the trucks or the wrecks. Also, because the road system isn't very extensive, there's often no way of dodging either trucks or wrecks.

However the car is unusual in that it can jump. Landing on your opponent's brings points, but you can also jump from one section of the road to another. You can jump off the road too, but that loses you a life.

Just to keep things moving, the whole game is speed, with different bonuses depending on how fast you complete the level.

It's one of those games which had the saying 'billy game - I'll just have one more go!' It's challenging enough to be fun if you like that sort of

thing.

Spa Hunter is another driving game, but more in the River Raid genre. You are a world class spy driving for your life. The road is crowded with enemy agents bent on your destruction and they'll stop at nothing, so neither can you.

What this means in practice is another vertically scrolling screen. The game starts with the weapons track pulling over and your car sliding out of the back, armed with machine guns.

The road branches as you move forward and you've got to be careful to stay on the road. The enemy agents will soon have you crashing off so there's a fair bit of dodging as well as shooting.

Each time you enter a new

level in the weapons track appears and you can get some more weapons. To do this you must let the track pass you and then 'dock' into the back of it.

It took me a bit of time to get the hang of Spa Hunter - I kept shooting innocent motorists and getting the 'No Points' message. Once I got the hang of it, though, it was fun to play.

Finally, Zaxxon is one of the all-time classics. It was one of the first games to give the impression of 3D by using a sort of diagonal scroll. 'Height' in the playfield is controlled by forward and backward joystick movement, with lateral movement being controlled correspondingly.

Since you're constantly moving forward, you don't have to worry about the third dimension.

However you do have to worry about the many hazards, both passive and active. On

the passive side there are all sorts of things into which you can fly, with the resulting loss of life. On the active side there are missile slots, enemy aircraft and lethal electronic barriers.

The chances are that you've seen Zaxxon in one of the many seminars around. If you've ever played it, you'll know that it is a great arcade game.

So there you have them. Four games which until recently would have cost considerably more.

Without realising it, I've arranged them roughly in 'value' order, from Tapper with its broken glasses to Zaxxon with its full-scale shoot-'em-up destruction.

If you're an arcade fan, chances are one of them would suit you. As an arcade addict, I've been spoilt for choice.

Pat Cookson

Unlocking hidden graphics talent

THERE was once a time when the average price for Atari software was about £30. Then along came Jack Tramiel. Hardware prices tumbled and in their wake software prices fell.

Nowadays, with most programs costing around £10,

anything for less than a fiver is regarded with suspicion.

So it was with some apprehension that I approached **Smart Art**, a graphics picture-drawing utility from P.F. Software that retails at £9.50. Could it really be any good for such a small amount?

Well, Smart Art certainly ticks the sophistication of the Atari Touch Tablet and its accompanying graphics controller, but that does cost well over 10 times as much.

Included with the package is a demonstration picture - Mickey Mouse in magellan's outfit is a nice reminder of Disney's Fantasia - which proves that it is possible with skill and practice to produce high quality graphic pictures with Smart Art.

On loading the program a cursor appears at the centre of the screen and a status display is at the bottom. Using a



Zaxxon... ultimate in mayhem

Solving the secret of the black box

AS I promised last month, we've more FOR...NEXT loops this time, so if you're not too sure of them perhaps you'd better find a few minutes for a bit of quick revision.

Actually Program 1 should be fairly straightforward. All it does is to print out

A BLACK BOX

three times. The loop variable COUNTER keeps track of how many times lines 50 to 90 — the body of the loop, between the FOR and NEXT — are repeated. Since line 30 reads:

```
10 FOR COUNTER=1 TO 3
```

this will be three times. Notice that lines 50 and 60 have semi-colons to "glue" the words together. Line 70 omits this, though, as we want to move on to a new line.

```
10 REM PROGRAM 1
10 PRINT "HELLO"
10 FOR COUNTER=1 TO 3
10 PRINT "H"
10 PRINT " BLACK"
10 PRINT " BOX"
10 PRINT
10 NEXT COUNTER
```

Program 1

So why the message "A black box"? Well, the idea is to stress that it doesn't really matter what's inside the "box" formed by the FOR and NEXT, it will be done as many times as is specified in the FOR Statement.

Admittedly our knowledge of BASIC isn't yet so encyclopaedic that we could think of many other things to go inside the box, but we can see the possibility.

The point is, given lines 30 and 50, whatever lies in the box between them will be done three times and you don't have to know what's inside the

Part VIII of MIKE BIBBY'S guide through the micro jungle considers the question of nested loops

box to be aware of this. There are stupid exceptions to this which we'll meet, but they involve bad programming, which, of course, you won't be interested in...

```
10 REM PROGRAM 2
10 PRINT "HELLO"
10 FOR LOOP1=1 TO 4
10 PRINT "DOING LOOP"
10 NEXT LOOP
```

Program 2

Now take a look at Program 3. Again, a simple loop. Nothing there to trouble you — it just prints out:

DOING LOOP

four times. Lines 50 to 70 turn the chunk of program that prints this message out four times.

The only odd thing about this

program — and Program 1, come to that — is that our line numbers haven't gone up in consecutive form. You'll see why in a minute.

Returning to Program 1, as I've stressed it doesn't matter what went inside the loop formed by lines 50 and 90 — it could be done three times.

So in a slightly wobbly manner, let's put a loop inside the loop of Program 1. We'll take the loop of Program 2 — lines 50 to 70 — and put them in place of the lines that give the "A Black Box" message in Program 1 — also lines 50 to 70 (now you see one of the reasons for the line numbers).

```
10 REM PROGRAM 3
10 PRINT "HELLO"
10 FOR COUNTER=1 TO 3
10 FOR LOOP=1 TO 4
10 PRINT "DOING LOOP"
10 NEXT LOOP
10 PRINT
10 NEXT COUNTER
```

Program 3

Program 3 is the result. We now have two loops, one nested inside the other like those Russian dolls. In fact we call them nested loops. And you won't be surprised to learn that we

Wheels within wheels
... loops within loops



‘The start and finish of the inner loop must fit neatly inside the start and finish of the outer’



call the loop that goes round the outside the outer loop, and the one on the inside the inner loop.

Before you run it, see if you can think through what happens. Lines 30 to 50 ensure that we do the intermediate lines three times. Of these lines, 50 to 70 form a loop printing out "Doing loop" four times, followed by a blank line (line 60).

So the outcome is that we get the message "Doing loop" 12 times in all, in three sets of four, each separated by a blank line.

To help you see what's going on more clearly, Program IV gives another version. I've changed the loop variable in lines 30 and 50 to SET to reflect the fact we're doing things in sets, and added:

```
40 PRINT "SET ",SET
```

to mark off each set. Note this line is inside the outer loop but outside the inner loop, so it only appears each time the outer loop is done. I've also altered line 60 so that the variable LOOP is printed out as it cycles through its various values.

To get a feel for nested loops, try changing the limits of the loops in lines 30 and 50, predicting what you'll get before you run the altered program.

After your experiments restore the original Program IV, swap lines 70 and 90, then RUN the result. You should be able to work out what's going wrong. Remember, they're nested loops – the start and finish of the inner loop must fit neatly inside the start and finish of the outer.

Anyway, arrange yourself from this mess by swapping the lines back and change line 60 to:

```
50 FOR LOOP = 1 TO SET
```

then run it. You should get:

```
DOING LOOP 1
DOING LOOP 2
DOING LOOP 3
DOING LOOP 1
DOING LOOP 2
DOING LOOP 3
```

We're still doing the outer loop three times, so we still get three sets of output from the inner loop. Now though, because of the change to line 50, the number of times the inner loop is done varies, depending on the value of SET. That is, the number of

```
10 RUN PROGRAM IV
20 PRINT CHR$(123)
30 FOR SET=1 TO 3
40 PRINT "SET ",SET
50 FOR LOOP=1 TO 4
60 PRINT "DOING LOOP ",LOOP
70 NEXT LOOP
80 PRINT
90 NEXT SET
```

Program IV

times the inner loop's done depends on the value of the outer loop's variable!

In this case the larger the tooth the outer loop is the more often the inner loop is done. The effect is that there's one more "Doing loop" in each successive set.

As we've already seen, we refer to the loops as outer and inner. Some people like to use these words as labels for their loops to help them keep track. Program V reinterprets Program IV in this way. Personally, I prefer more meaningful labels – it's up to you.

Program VI uses the idea of making the number of times we do the inner loop dependent on the outer loop's variable to print out a triangle of asterisks.

When deciphering what's going on

```
10 RUN PROGRAM V
20 PRINT CHR$(123)
30 FOR INTER=1 TO 3
40 PRINT "INT",INTER
50 FOR DIM=1 TO 4
60 PRINT "DOING LOOP ",DIM
70 NEXT DIM
80 PRINT
90 NEXT INTER
```

Program V

with nested loops it's helpful to have a quick look at the line defining the outer loop – in this case line 30 – to get an idea of the range of its variable. Then concentrate on the inner loop – here lines 40 to 60.

The effect of this inner loop is to print out LENGTH number of asterisks on a line. Our inner loop goes from one to LENGTH and a semicolon follows the asterisk in the PRINT Statement of line 60, which forms the body of the loop. After printing the required number of asterisks, line 70 moves us on to the next line of the display.

So looked at as a black box, what's inside the outer loop (lines 40 to 70) simply prints out a separate line of LENGTH asterisks.

We repeat this outer loop 10 times, with the value of LENGTH varying from one to ten. So the first time round the outer loop we get one asterisk on a line, the second time two asterisks, and so on.

I use a similar technique in Program VII to produce a triangle of letters. Here the outer loop variable, FURROW, ranges from one to LENGTH(STRING). Since STRING is ABCDEFGH, this boils down to our familiar from one to ten.

I've chosen FURROW as a label because its value determines where

```
10 RUN PROGRAM VI
20 PRINT CHR$(123)
30 FOR LENGTH=1 TO 10
40 FOR ASTERISK=1 TO LENGTH
50 PRINT "*",
60 NEXT ASTERISK
70 PRINT
80 NEXT LENGTH
```

Program VI

```

10 REM PROGRAM VII
20 PRINT CHR$(205)
30 REM STRING=LEN
40 STRING="ABCDEFGHIJ"
50 FOR I=1 TO LEN(STRING)
60 FOR LETTER=1 TO FORMS
70 PRINT STRING$(STRING,I,LETTER);
80 NEXT LETTER
90 NEXT I
100 PRINT FORMS

```

Program VI

we end our printing of characters from STRING in the inner loop.

The inner loop prints out successive characters from STRING by picking them out with

TO PRINT STRING\$(STRING,I,LETTER);

as LETTER varies from one to LENGTH. Remember STRING\$(I,I) picks up the first letter of STRING, STRING\$(2,2) the second, and so on.

The semicolon of line 70 ensures they all appear on the same line. Once the inner loop is complete and the line finished, line 80 moves to a fresh line of the display.

The outer loop is then repeated, ANSW being increased by one, so that this time our inner loop will print out one extra character from STRING and so on.

Actually we could accomplish all this with far less effort, as we saw from Program IV last month. However it illustrates the techniques of nested loops quite well.

Now take a look at Program VIII. Before you start looking, it hasn't got nested loops - that will come later! The idea of the program is to add together all the whole numbers (integers) between one and a number you've input, then print out the result.

For instance, if you input 5, the

program would do the sum $1+2+3+4+5$ and print out the answer, 15.

As you can see, the numbers we add go up in steps of one, so it's a natural for a loop.

The number we're going to total up to is called NUMBER. Lines 30 and 40 get its value for us. Our answer is going to be stored in the appropriately named TOTAL, which we set to zero with line 60.

For a moment, think about how you do a sum like $1+2+3+4$. The answer doesn't just leap into your head all at once. You do it by adding two of the numbers, then adding the answer to the next number, then adding that new answer to the next number and so on.

In other words you think "One and two gives me three. Three and three give me six. Six and four give me ten. No more to add, that's the answer". We call it keeping a running total. This is how the micro does it, adding each new number to the answer arrived at so far.

To see how Program VIII works, assume you've input 4, so we've added the micro to do the sum we've just worked through. The actual work of adding is done in line 80, the body of the loop. This adds the integer we're considering to the total so far. INTEGER goes from 1 to 4 successively. Since TOTAL is initially zero, the first time through the loop line 80 boils down to $TOTAL=0+1$, so our total so far is one - correct.

We don't actually do this first 0+1 step when we do it in our heads, but the micro is a very literal beast.

Next time through the loop, INTEGER is 2, and the current value of TOTAL is one so, $TOTAL=TOTAL+INTEGER$, which boils down to $TOTAL=1+2$ and TOTAL assumes the new value three.

Next time through, INTEGER is three, so line 80 becomes in effect $TOTAL=3+3$ and TOTAL adopts the value six.

The next time through - the final in this case - line 80 is equivalent to $TOTAL=6+4$ and TOTAL becomes ten. We then stop through the loop and print the total out with line 100.

Program IX uses exactly the same technique, but this time I wrap the whole thing up in an outer loop that "does the input" for me, giving

```

10 REM PROGRAM IX
20 PRINT CHR$(205)
30 FOR NUMBER=1 TO 10
40 TOTAL=0
50 FOR INTEGER=1 TO NUMBER
60 PRINT INTEGER;"=";
70 TOTAL=TOTAL+INTEGER
80 NEXT INTEGER
90 PRINT CHR$(10);TOTAL;
100 NEXT NUMBER

```

Program IX

endpoints for the ranges I'm totalling over from one to ten (lines 30,100). In other words I get all the totals for

```

1
1+2
1+2+3

```

and so on.

I've also gone to some trouble to improve the appearance of the output. Just before I add INTEGER to the running total (line 70) I print it out, together with an accompanying + sign (line 60). Thus the effect of the inner loop is that not only do we calculate TOTAL, but all the integers being summed appear on the same line with + signs between them.

When we drop out of the inner loop we then print out the answer. However, we need to do a bit of tidying up first. You see, each integer is followed by a +, from line 60. After the last integer though, we don't want a +, we want =.

Well, once the cursor has printed the final + it moves on to the next space on that line of the screen (the effect of the semi-colon). All we do is to move the cursor back with the magical CHR\$(80), overwrite our + with an = and print TOTAL. Line 90 shows how it's done.

Then, of course, line 100 loops us back if we haven't done all our totals.

A final point. Before each repetition of the inner loop, in other words before we do each running total, we set TOTAL to zero. It's vital we set it back to scratch this way each time, otherwise we'll be adding in the previous running total to our current one. Try leaving line 40 out and running the program if you don't see what I mean.

■ That's enough for this month. Next we'll have a look at more of the fundamentals of BASIC - and you can be sure I'll play a vital part

SEASONS greetings to all you adventurers out there! This being the time of year when you may be contemplating either the purchase or receipt of some software here's my own Atari Top Ten for Christmas.

1 *The Witch Maker's Guide to the Galaxy*, Infocom (also only \$29.95).

As I've said before, and will keep saying until you all have them, if you do not own a disc drive then the purchase of an Infocom adventure should be the reason for going out and getting one immediately.

This is, quite simply, the best of the recent Infocom releases, being both a well-crafted adventure, and, by and large, faithful to the book — at least at the beginning — as well as depicting the characters exactly as Douglas Adams created them.

Absolutely the best adventure released this year — bar none.

2 *Adventures! Adventure International* (cassette or disc with graphics) \$19.95.

The original micro adventure from Scott Adams and still the best introductory one about. It probably won't keep you taxed that long, but by the time you finish it you'll be hooked, and that is the whole idea.

3 *The Pay-Off, Adventure International* (CD-ROM disc from Atari, \$5.95 cassette from Spectrum).

This flexible adventure from the Atari disc pack — and they tell me the new packs should include notches — is also available over the counter.

A bit tricky for a pure starter adventure, as there are not too many clues around at the start, but as you start to get into character the problems come thick and fast.

Now available in cassette format from the original authors, under license, for non-driving adventures.

4 *Colossal Adventure, Level 3* (CD-ROM cassette).

This is another for those of you without drives, the best cassette implementation of the original Crow-

Ten winners for my stockings

two/Woods mainframe adventure, complete with the bird and snake, maze, galax and with an extra 70 location endgame as a bonus to boot.

5 *Zork I, Infocom* (CD-ROM on disc).

If you do have a drive and have a yen to go exploring underground, then the Zork trilogy, of which this is the first and best, is number one for 1991.

Level 3 provides an accessible alternative but if you want to adventure with a drive then why

not have a drive as well as some truly awful jokes. If you found some adventures a bit tough, or *Adventureland* a bit easy, then this is the one for you.

7 *Lords of Time, Level 3* (CD-ROM cassette).

Written by Sam Gazdars and programmed by the Austins, this game gives an authentic feel to each of the nine time zones portrayed. There is more meat in the plot than in some of the other Level 3 offerings, and I loved the game thoroughly enjoyable. More for the experienced adventurer than the novice.

8 *Savage Island, Adventure International* (as AI other format).

Savage it certainly is, as this is a real toughie for Scott Adams fans, and all you get at the end of it is the password for *Savage Island II* — reward in itself for any adventure worth his salt.

9 *Mask of the Sun, Adventure International* (CD-ROM on disc).

At least a graphic adventure, I hear you say. Well this is a personal top ten and my predilection is for the purity of text and imagination than pictures.

Graphics strike me as being the

By Brillig

settles for less. Fascinating problems and good interaction with the characters you will meet on your journey add to the fun.

6 *The Count, Adventure International* (as *Adventureland*).

This game has a very special meaning for me as it is the first I ever completed. A typical early Adams effort with a little more lateral thinking required than *Adventureland*.

Say what you like, but the Scott Adams adventure series has a neat progression about it. You get the impression that he was learning as he wrote them, and so beginners are well advised to follow them in sequence.

This one has a beautiful twist in the



lazy adventurer's way of getting into character, and in all honesty you shouldn't need them. If graphics are your bag though, this is a fairly atmospheric adventure, although there is a bit too much driving along roads for me to go overboard.

But once you get into the tombs it is really rather good.

10 Emerald Isle, Level 9 On budget made at £8.95 as a cassette.

The best of the non-graphic Level 9 efforts, and as a big sprawling game it usually works, with a neatly constructed plot, a good dose of humour and plenty of problems to solve.

So that is what *Billy* is slipping into various Christmas stockings this year. Next year promises to be an exciting one, with the ST perhaps helping to break the mould of Atari adventuring.

Certainly the Infocom range is there already, and Talent is covering the QL adventures *Wear and Tear*. It would be good to see some

more new faces on the adventure scene to break the *Scott Adams/Infocom/Level 9* stranglehold.

To that end *Rignose Software* is releasing *Opera House*, a ghostly tale about a theatre terrified by the Phantom. You play the hero in a complex quest to save your career, guided from chorus line obscurity, before it has even begun. Available as disc at £9.95 and cassette at £5.95 it looks a worthy follow up to *The Pay-Off*.

This month's glitch was spotted by *Geoffrey McHugh* in *Level 9's Adventure Quest*. In the Orc's tower on the mountain there is a rope. Now where there is a rope there is somewhere to be it. Say "The Rope" and guess what you will find hanging from the staccato when you get to

the *Abominable Snowman's* cave?

"Mark Williams has the problem in *Hulk*, from *Adventure International*, of ending up dead whenever he finds himself in close proximity to the *Natter Energy Egg*. The *Hulk* can go to work on an egg if he takes his doctor's advice, it is not the Nightmare problem you think, Mark!

Merry Christmas and an Adventurous New Year to you all!



BRILLIANT'S New Year Resolution is to try to be a bit more relaxed of graphics in adventures. Here are a few resolutions I'd like to see from some of our illustrious adventure writing friends:

Level 9: More story, less padding and a sensible error message. "Miss Miss Bad" cannot be seen as an intelligent advance in "Ain't Batty Sleep".

Infocom: Pick up *Hitch Hiker's* and don't put graphics in any game they ever release.

Adventure International: Actually release *Questprobe IV - The Fantastic Four*, and to make it a game of an adventure rather than an adventure of goss.

Brian Howard: To find a compass in one of his Christmas crackers, and use it in his next adventure.

MicroLink

in association with

TELECOM GOLD

NEWSLETTER

Special interests groups

MANY MicroLink subscribers have been so much so they want to organize closed user groups within the service to protect their special interests.

Systems manager Colin Rogerson says MicroLink is only not happy to help out where possible and wishes interested parties to phone him on 065-625 2158 for details.

In order to assess the depth of interest in specific CLUGs, he suggests that service providers to form a group should advertise the fact in the Contents or Communications sections of the International facility.

"We have messages on the MicroLink page from people who want to form closed user groups for Commodore 64, Apple II, 80000 machines, and Telecom Gold subscribers," says Rogerson.

"The response to them will indicate the demand for such facilities and help us in planning to provide them".

Now Who's Who goes electronic

A WORLD first in electronic publishing, the Who's Who of the microcomputing scene in Britain, is now being made available on MicroLink.

It has been such a success since it was launched on DataLink, our value service, that it is now being moved to extend it to MicroLink.

Constantly updated by our team of researchers, it contains comprehensive details of all the top per-

sonalities in the world of microcomputing. And they have dug up some brilliant names to help make the electronic version come alive.

For instance, the Who's Who reveals that one leading maker has the middle names of Murray, once worked as a lecturer on Practical Wireless, and spends his reading power. He is none other than Sir Clive Sinclair.

**YOUR
chance
to join
MicroLink
- turn to
Page 18**

Oman connection

WHAT is helping to make MicroLink the fastest growing international electronic communications system is the remarkable way its News is spreading around the world.

From the *Tribune* of Oman, a retired engineer S.H. Rajan writes to say how he had heard all sorts of good things about MicroLink and would be pleased to become a subscriber. Rajan, general manager of the Oman Industrial Gas Company, is the father of many subscribers in the Middle East.

Many yen for MicroLink...

ONE of the growing number of Japanese users of MicroLink, journalist Yutaki Ishikawa of a 4 magazine, mailed from Tokyo to say how it has been serving him a lot of Yen lately.

This is because he discovered that it is cheaper to send a letter to his contacts in Japan via MicroLink than it is to use the Japanese telex service. It means his messages have to travel from Tokyo to the MicroLink computer in London and then back to Tokyo!

Yet there is an appreciable delay in getting

his message through - an essential requirement for a busy journalist battling against deadlines.

With the aid of Yutaki, MicroLink has now purchased the hardware to allow its regular telex correspondence with a contact in the Chinese capital Peking using MicroLink.

However Yutaki's active use of MicroLink is likely to be dwarfed by one of his neighbours - one of Japan's leading financial institutions, the Bank of Tokyo, recently became a subscriber.



EVER since we asked for readers' opinions on the subject of check-sum programs we have had a steady stream of letters. Almost without exception these have been suggesting that we use such a program in conjunction with our listings in order to assist in debugging.

In response to this demand I have written Get It Right! The idea is that you use this utility to produce a list of numbers from your program. You then compare these numbers with the list we'll print at the end of each program in the magazine.

If the check-sums differ for any lines then they are the lines where you've entered something slightly differently.

Of course a different REM line shouldn't affect the running of the program. If program lines are at least it should be a simple task to edit or re-enter the lines and repeat the process until your check-sums agree with the printed ones.

Once you have typed in the program you wish to check, save it to disc or cassette so you've got a second copy in case anything goes wrong.

Now make a list copy of the program using LIST "C" (for cassette

By
RICHARD VANNER

used) or LIST "D" (for disc used). It is this version of the program that will be used.

Load Get It Right! and position the tape at the start of the program to be checked - or make sure the correct disc is in the drive. Now run it and the file will start loading.

Note that Get It Right! assumes the listed program file is called TEST, but you can easily alter this by changing line 1000. Cassette users will find their version of line 1000 in the REM

statement in line 999.

Get It Right! will take each program line, calculate the check-sum, and print it to the screen. If it's a short program the whole check-sum table will fit on the screen. However for larger ones use Control-F to stop the table scrolling off the screen until you've compared your values with the printed values.

All that remains is for you to type in Get It Right! and you should have no more debugging problems. We've even printed the check-sums for the program itself... er, isn't there a logical problem there somewhere?

Oh well, just make sure you Get It Right!

```

10 REM
11 REM GET IT RIGHT!
12 REM -----
13 REM Written by Richard Vanner
14 REM T 00 0100 0000 0000
15 REM
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HOTLINE HOTLINE HOTLINE

Dave Russell concludes his series on Atari graphics with a look at the rest of the modes you access from Basic



IN this, the last article in the series, I'd like to take a brief look at the remaining modes which XL and XE owners can access from Basic - 12, 13, 14 and 15.

Early Atari 400 and 800 models were capable of displaying these modes, but they required the building of a custom display list. Since that's a topic better suited to Mike Rowe's series, I'll confine myself to using the modes from Basic.

Modes 12 and 13 are very similar in behaviour and only really differ from each other in pixel size. Both are split screen modes, with Mode 12 having 40 columns x 20 rows and Mode 13 having 40 columns x 10 rows. Both have a four-line Mode 0 text window.

If you type GRAPHICS 12 and press Return you'll be presented with a largely black screen. The familiar blue text window and the Ready prompt should be at the bottom.

In many books on the Atari's graphics you'll read that text is difficult to display in Modes 12 and 13. You can demonstrate this to yourself by typing PRINT TAB(40);USER and pressing Return.

With a knowledge of what it's

supposed to say on the screen, you might be able to decipher it. Recipes for legibility though. For this reason books that don't say these modes are difficult usually choose to ignore them completely. It makes you wonder why some books list them as text modes, doesn't it?

Now, thanks to G. Thornton of Hazelle, in Haringhore, we're able to bring you a method of putting legible text on a Mode 12 or Mode 13 screen.

Type in Program 1 and run it. Voilà! Instant Mode 12 text without redrawing characters.

I've adapted Mr Thornton's original listing in order to encourage

experimentation. With each of the SETCOLOR commands on a separate line it's easy to REMOVE them either individually or in combination and observe the effect.

Just use the cursor and control keys to move up to the line, insert four spaces and type REM after the line number. When run the program will ignore the rest of the line.

To restore the line use the cursor and control keys to delete the REM. This method allows you to insert and delete lines repeatedly without having to re-type them.

Modes 14 and 15 both have the same resolution of 160 columns x 160 rows and both have a four line text window. Mode 14 allows two colours and Mode 15 allows four.

This makes Mode 15 useful because it has reasonable resolution and four colours while requiring the same amount of memory as Mode 0.

As with previous map modes we've considered, the COLOR command selects the colour to be used and SETCOLOR can be used to alter the contents of the colour registers.

In fact you can think of Mode 14 as Mode 0 but with 160 x 160 instead of 160 x 80 resolution, and Mode 15

```

10 GRAPHICS 12
20 SETCOLOR 0,0,0
30 SETCOLOR 1,4,4
40 SETCOLOR 2,4,4
50 SETCOLOR 3,4,1
60 SETCOLOR 4,4,4
70 PRINT "***** IS NORMAL TEXT"
80 PRINT "***** has a lower case first"
90 PRINT "*****"
100 PRINT "*****"
110 PRINT "*****"

```

Program 1

Graphics mode	Mode type	No. of columns	No. of rows		No. of colours	RAM required (bytes)	
			Split screen	Full screen		Split	Full
0	TEXT	40					
1	TEXT	20		24			
2	TEXT	20	-	24	1-1/2	-	
3	TEXT	20	20	24	5	-	262
4	GRAPHICS	40	10	12	5	474	672
5	GRAPHICS	40	30	24	4	424	420
6	GRAPHICS	80	40	48	2	434	432
7	GRAPHICS	80	40	48	2	584	580
8	GRAPHICS	160	80	96	4	1124	1128
9	GRAPHICS	160	80	96	2	2124	2184
10	GRAPHICS	80	160	192	4	4180	4200
11	GRAPHICS	80	-	182	1-1/2	6112	6138
12	GRAPHICS	80	-	192	9	-	8138
13	GRAPHICS	40	20	152	18	-	8138
14	GRAPHICS	40	20	24	5	-	6138
15	GRAPHICS	160	160	192	6	1164	1162
					2	684	680
					4	4270	4296
						6112	6138

Modes and screen format

as Mode 7 with the same increase in resolution.

I had intended to write a brief résumé of all we'd covered in this series. However my natural laziness led me to write Program 11 instead.

It's a "Russell Special" - in other words, not quite finished. What I've done is to provide a simple demo for graphics Modes 9 to 8.

The program waits for you to

select a mode and then reads the screen dimensions from the appropriate data statement. It then draws the pattern in the appropriate mode.

It will carry on drawing it until you either hold the Start key down or press Break or Reset.

As I said, I've done the easy bit and stopped at Mode 8. If you want to improve the program I suggest you extend it to include Modes 9 to 15,

assuming that your machine is capable of displaying them.

You'll probably need to revise what we've said about the colour registers, but maybe you could incorporate a choice of registers in the data statements along with the screen size.

One non-graphics problem which you'll have to overcome results from my use of the GET statement. Line 80 opens the keyboard as a device and line 85 returns the Atanasi code for the key pressed.

The trouble is GET only takes a single key-press so you can't use it to enter key 78 as a choice of mode. Of course there's more than one way to read input, isn't there?

I'd recommend that you experiment with all the programs I've listed in the series. That way you'll reach a better understanding of what you can do with each mode and therefore be able to choose the best one for each job.

With a bit of luck you might discover an unusual effect, just as Sir Thomson did, if you do make a discovery, don't forget the guys in the Atari User office - they'd love to hear from you.

```

10 GRAPHICS 100
15 PRINT "ENTER MODE TO BE USED (0-15)
20
25 PRINT "00-0000-0000-0000-0000-0000"
30 PRINT "00-0000-0000-0000-0000-0000"
40 OPEN "00,0,0,0,0"
50 GET #1,C
60 GOTO #1
70 GOTO #1
80 OPEN "00,0,0,0,0"
90
100 FOR I=0 TO 15
110  A=MODE(I)
120 PRINT A;
130
140 NEXT I
150
160 MODE 0,1000
170 MODE 1,1000
180 MODE 2,1000
190 MODE 3,1000
200 MODE 4,1000
210 MODE 5,1000
220 MODE 6,1000
230 MODE 7,1000
240 MODE 8,1000
250 MODE 9,1000
260 MODE 10,1000
270 MODE 11,1000
280 MODE 12,1000
290 MODE 13,1000
300 MODE 14,1000
310 MODE 15,1000

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Can you unscramble MIKE ROWE's letter and number puzzles before your time is up?



disc eliminates this. I therefore started to use my old version A Basic cartridge to finish Countdown.

Suddenly the number checking routine went haywire. After much cursing and checking of pencils I traced this to the VAL() function which apparently does not operate correctly after using it once.

The NEWB in line 240 which prints the value of B out of view behind the text window for some reason obscures this and allows the program to function normally. I hope this saves someone else a lot of wasted time.

PROGRAM MAP

20-48	Loop.
150-155	Countdown routine.
550-580	Wait for answer.
200-230	Check for valid numbers.
300-330	Check number routine.
400-550	Sound routine.
1000-1020	Letters game.
2000-2520	Numbers game.
3000-3200	Countdown game.
4000-4200	Score page.
5000-5200	Initials.

MAIN VARIABLES

I and J	AS	FOR...NEXT variables.
		Used in main parts of computer checker and in your word in letters game.
CONST		Fixed components for random choice.
VOWELS		Fixed vowels for random choice.
WORDS		Randomised pool.
CS		Original word in Countdown.
RS		Mixed up word in Countdown.
A,B,C,D		Used in calculator routine.

```

1 REM COMPUTER COUNTDOWN
2 REM BY MIKE ROWE
3 REM WROTE 2000 1980
4 REM 0900 0900
5 REM *****
6 REM *****
7 REM *****
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10 REM *****
11 REM *****
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Going out in a blaze of graphics glory

THIS month's article, the last in the series, takes a look at some non-standard graphics modes and rounds off with a non-standard display.

Right at the beginning I said 18 modes were available to the Atari user, but this can be stretched by a further 12 modes when you include text windows where available.

In reality things are not this simple. These 30 modes are only those directly available using the operating system on XL and XE models only.

Graphics modes 12-15 are available on the 400 and 800 but only by creating your own display list as demonstrated in the second article in the series.

In reality it is possible to get many more modes than this - would you believe over 100 different graphics modes?

Firstly there is another Arnie mode which is not supported directly by any of the current machines. This is Arnie Mode 3, which can be obtained easily by creating your own display list.

It is essentially similar to Graphics 0 but with one difference - it allows true descenders. That is, the tail in the small 'c' comes properly below the rest of the letter.

This is because it interprets the data for the character differently. A normal character is 8 pixels wide by 8 lines deep. In Arnie Mode 3 it is 10 lines deep and the two bottom scan lines appear blank. In addition some characters, notably lower case 'c' as well as a few others, are displayed with the first two bytes of the character appearing at the bottom of the character (see Figures 1 to 5).

As you might imagine, the standard character set would not be suitable for this mode. You really

MIKE ROWE concludes his series on how to produce brighter displays

need a custom set.

In the example in Demo 1 I have used the internal set for interest. However I have offset the character set one byte lower and moved the lower case set's last bytes to the first bytes. This gives a workable version of the character set.

In addition, to show the true lower case, I have redefined some of the characters to give true descenders.

Secondly several useful modes are based on Graphics 8, 10, 11. As Dave Russell mentioned last month, the first Atari protocol did not have Graphics 9-11.

Before late 1979 the computer had a chip called GTIA, which provided Graphics 0 to 8 only. After this they fitted the GTIA chip allowing

the three new modes.

In fact the display list is exactly the same for these modes as it is for Graphics 8.

The secret of the difference lies in memory location 603. Numbers from 0 to 15 are poked here in the case of player-missile graphics to decide priority - that is, which player shows in front or behind what.

However numbers from 84 up - bits 6 and 7 - will enable the GTIA modes.

If in Graphics 8 you POKE 603,84 (bit 6) you get Graphics 9. POKE 603,128 (bit 7) gives Graphics 10, and POKE 603,192 (bits 6 and 7) gives Graphics 11.

Leading on logically from this, the same could be done in any mode. This gives a theoretical maximum of 52 full screen modes and a further 52 modes with text windows. That is a staggering 104 graphics modes.

Don't get too excited. This is indeed possible, but most of them are quite useless, some are identical to others and all the text windows are illegible.

The last point can be circum-



Figure 1: Normal capital letter



Figure 2: Capital letter in Arnie 3



Figure 3: Normal lower case



Figure 4: Lower case in Arnie Mode 3

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expected but are as in Table 1.

Apart from this, the mode is just like Graphics 10 but with half the vertical resolution and half the memory usage. Similar hybrid modes can be used with Graphics 9 and 11 but are probably less useful.

Demc III is a seven colour 20x12 text mode which is a cross between graphics 2 and Graphics 10 (by using Graphics 1 a seven colour 20x24 mode can be obtained). Again, because of the way the operating system works, seven colours as above are available. Also, as in Graphics 11 proper, only 64 different characters can be displayed at once — characters 32 to 95 — space to Z.

If the other characters are printed

Colour register location	Colour numbers to use	Colour displayed
704	0, 1, 4, 6	0 (background)
705	2, 6	2
706	3, 7	2
707	—	3
708	—	—
709	8	8
710	10	10
711	11	11
712	—	—
	8, 12, 13, 14, 15	8

Table 1

they appear as an allowable character but in a different combination of colours. This is much the same as Graphics 2 and is how the different colours are obtained.

However this cannot explain the availability of seven colours. This

occurs because of the way the character set data is interpreted. A normal character is 8x8 pixel by pixel controlled by eight bits giving a horizontal resolution of eight per

```

18 DEM III
19 DEM III
20 DEM III
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25 DEM III
26 DEM III
27 DEM III
28 DEM III
29 DEM III
30 DEM III
31 DEM III
32 DEM III
33 DEM III
34 DEM III
35 DEM III
36 DEM III
37 DEM III
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175 DEM III
176 DEM III
177 DEM III
178 DEM III
179 DEM III
180 DEM III
181 DEM III
182 DEM III
183 DEM III
184 DEM III
185 DEM III
186 DEM III
187 DEM III
188 DEM III
189 DEM III
190 DEM III
191 DEM III
192 DEM III
193 DEM III
194 DEM III
195 DEM III
196 DEM III
197 DEM III
198 DEM III
199 DEM III
200 DEM III
    
```

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168 DEM III
169 DEM III
170 DEM III
171 DEM III
172 DEM III
173 DEM III
174 DEM III
175 DEM III
176 DEM III
177 DEM III
178 DEM III
179 DEM III
180 DEM III
181 DEM III
182 DEM III
183 DEM III
184 DEM III
185 DEM III
186 DEM III
187 DEM III
188 DEM III
189 DEM III
190 DEM III
191 DEM III
192 DEM III
193 DEM III
194 DEM III
195 DEM III
196 DEM III
197 DEM III
198 DEM III
199 DEM III
200 DEM III
    
```

```

190 DEM III
191 DEM III
192 DEM III
193 DEM III
194 DEM III
195 DEM III
196 DEM III
197 DEM III
198 DEM III
199 DEM III
200 DEM III
    
```



01	02	03	04	05	06
100	0000	100	0001	100	0010
100	0011	100	0100	100	0111
100	1000	100	1001	100	1010
100	1011	100	1100	100	1111
100	0000	100	0001	100	0010
100	0011	100	0100	100	0111
100	1000	100	1001	100	1010
100	1011	100	1100	100	1111
100	0000	100	0001	100	0010
100	0011	100	0100	100	0111
100	1000	100	1001	100	1010
100	1011	100	1100	100	1111
100	0000	100	0001	100	0010
100	0011	100	0100	100	0111
100	1000	100	1001	100	1010
100	1011	100	1100	100	1111
100	0000	100	0001	100	0010
100	0011	100	0100	100	0111
100	1000	100	1001	100	1010
100	1011	100	1100	100	1111

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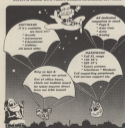
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It will display a pattern on the screen which will beat (pulsed) in time with music played into the Atari via the 1010 tape recorder.

To use the program simply RUN it, press RESET, RUN again, place your chosen cassette in the tape recorder and press PLAY.

Note that we've printed two different versions of the program, the first a set display and the second random.

It makes use of these memory locations: 53778, 53781, 53867, 53873, 53879, 53884, 53871, 53887, 53893, 53913, 53926, 53931, 53867, 53883, 53999, 54018 which come in gaps of 16, that is 53778 + 16 = 53794.

These locations react differently, depending upon certain things. If you switch on and type

in:

10 GRAPHICS 0
20 F0R8 54018,82
30 A=PEEK(53778) - or any of the above locations
40 T A
50 GOTO 30

and then press a key, the value at location 53778 will be 123. If you play sound into the mixer, the value will also be 100 and 105. Normally the value will be 127.

If you then press Reset and run the program the values found in the locations will be 230 when there is sound of a strong enough level, 281 when a key is pressed and 255 normally.

When you want to use the program press RUN, then Reset. Place a music cassette in the recorder and press Play.

F0R8 54018,82 will disable the tape recorder.

Locations 708, 709, 710, 711 are used to control the colours. The following values give the following colours:

0-15	black/white
16-29	red/gold
30-43	orange
44-57	red/green
58-71	pink/purple
72-85	purple-purple/blue
86-99	purple-purple/blue
100-113	blue
114-127	blue-blue/white
128-141	teal/gold
142-155	green/blue
156-169	green
170-183	yellow/green
184-197	orange/green
198-211	orange-orange/white
212-225	orange-green/white
226-239	orange white
240-254	orange white

PROGRAM 1 STRUCTURE (SET DISPLAY)

- 10-30 ROM statements containing program name, author and magazine
- 60 ROM statement
- 80 Select Graphics 1 mode
- 70 Set left hand margin/parameter to 2
- 85 Remove cursor
- 85 Enable play on data recorder
- 100-110 Print Graphics 1 characters
- 104-490 Print Graphics 2 characters
- 500-530 Set character and text window colour
- 500-550 colour
- 700-800 Change colour by PEEKing locations and then POKing locations 708, 709, 710, 711
- 800-850 Stop colour code
- 800-850 GOTO colour changes
- 1000-1010
- 1700-1710

PROGRAM 2 STRUCTURE (RANDOM DISPLAY)

- 10-30 ROM statements containing program name, author and magazine
- 60 ROM statement
- 80 Select Graphics 1 mode
- 70 Set left hand margin/parameter to 2
- 85 Remove cursor
- 100-110 Enable play on data recorder
- 81 ROM statements
- 220-230 Variables for print/random Graphics 1 characters
- 300-490 Set if RANDOMISED8001 would produce a blank space
- 500-510 Print/random characters
- 600-670 A=1 to LOG variables
- 700-710 Set if enough characters have been printed
- 800-870 GOTO random CHARCODE variable
- 800-850 Set character and text window colour
- 800-850 colour
- 1000-1100 Change colour by PEEKing locations and then POKing locations 708, 709, 710, 711
- 1200-1210 Stop colour code
- 1200-1210 GOTO colour changes

Those special characters



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

However, we recognise that sometimes it's the simplest way and occasionally it's the only way of doing something. For this reason we're printing the two tables below. These show how to produce the special characters from the keyboard.

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

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

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

The Reverse Video Mode key has been abbreviated to REV. On early machines this key bore the Atari logo , while on XL machines it has a  design on it. If this key is pressed and released once, all subsequent input will appear in reverse (or inverted) on the screen. You turn Reverse Video Mode off by pressing the key again.

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

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

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

NORMAL VIDEO			
FOR KEY	TYPE KEY	FOR KEY	TYPE KEY
	CTRL .		CTRL 5
	CTRL 4		CTRL T
	CTRL 8		CTRL 8
	CTRL 9		CTRL 9
	CTRL C		CTRL 6
	CTRL 0		CTRL 0
	CTRL 6		CTRL 8
	CTRL 7		CTRL 7
	CTRL 5		CTRL 2
	CTRL 8		ESC ESC
	CTRL 0		ESC CTRL -
	CTRL 0		ESC CTRL =
	CTRL 8		ESC CTRL +
	CTRL 4		ESC CTRL 8
	CTRL 8		CTRL -
	CTRL 8		CTRL 1
	CTRL 0		SHIFT 2
	CTRL P		ESC SHIFT CLASH
	CTRL 0		ESC DELETE
	CTRL 8		ESC TAB

REVERSE VIDEO			
FOR KEY	TYPE KEY	FOR KEY	TYPE KEY
	REV CTRL .		REV CTRL 5
	REV CTRL 4		REV CTRL T
	REV CTRL 8		REV CTRL 8
	REV CTRL 9		REV CTRL 9
	REV CTRL C		REV CTRL 6
	REV CTRL 0		REV CTRL 0
	REV CTRL 6		REV CTRL 8
	REV CTRL 7		REV CTRL 7
	REV CTRL 5		REV CTRL 2
	REV CTRL 8		ESC CTRL 2
	REV CTRL 0		ESC SHIFT DELETE
	REV CTRL 0		ESC SHIFT INSERT
	REV CTRL 8		ESC CTRL TAB
	REV CTRL 4		ESC SHIFT TAB
	REV CTRL 8		REV CTRL -
	REV CTRL 8		REV CTRL 1
	REV CTRL 0		REV SHIFT 2
	REV CTRL P		ESC CTRL 2
	REV CTRL 0		ESC CTRL DELETE
	REV CTRL 8		ESC CTRL INSERT



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HAVE you ever felt left out in the wild when it comes to Basic programming on your Atari, especially when you compare it to the Amstrad and BBC Micro models?

Well there's no need to hang your head in shame any longer. With the aid of Optimized Systems Software's Basic XL you too can turbocharge your Atari.

Basic XL is an alternative Basic to the one you were supplied with by Atari, either in ROM form for the 400/800 series, or built in on the XL/50 series.

Since Atari Basic was written by OSS in the first place, you can be sure that Basic XL is fully compatible with any programs you already have. But more about that later.

As supplied, Basic XL comes as a bright orange ROM cartridge, complemented by a beautifully-produced A8 yellow ring binder containing more than 300 pages of information about the software.

The manual is split into two parts. The first section, and also the largest, is a comprehensive tutorial on how to program in Basic for the complete novice upwards. The second half of the manual details each of the commands available with Basic XL. When you think of the appalling documentation supplied with the XL machines, the manual supplied by OSS is welcome news indeed.

As for the ROM cartridge, it's really a wolf in sheep's clothing.

Basic XL is a full blown 16K ROM, but because of clever software and hardware engineering inside the cartridge, your Atari only uses 8K of RAM when installed. In other words, you get the benefits of 16K Basic, taking up no more memory than the standard Atari 8K Basic.

Truly a case of squeezing a quart into a pint pot.

So what's special about Basic XL? Well you get 45 extra-commands not included in Atari Basic for a start, if you're a disc user I bet there's been many a time you've cursed not being able to list out what files are on your disc without having to go into the DOS menu.

With Basic XL, all the commands to list a directory, lock and unlock files, rename files and delete files from disc

Basic XL A WOLF IN SHEEP'S CLOTHING?

STEPHEN DONOGHUE puts an extended Basic language package through its paces

are all there at your fingertips.

The ability to do those on their own is worth the purchase of the cartridge in itself.

So does condensed? Read on. Basic XL doesn't give a hoot about how you type in your commands. It will quite happily accept lower case, inverse video, or any combination of typing style that suits you, all without

intended for ease of reading.

Program logic is more constrained. Besides IF . . . THEN statements, we also have IF . . . ELSE . . . GNDIF, and WHILE . . . ENDWHILE statements to play with.

The string statements, LEFT\$, RIGHT\$, MID\$, are supported, as well as the normal Atari sub-string commands.

String arrays are supported, and if you intend to use a string variable in your program and its length will not exceed 40 characters, there is no need to DIMension it beforehand.

Player/missile commands direct from Basic are there to be explored.

I'd never bothered with player graphics before, mainly due to the enormous amount of work needed to create the shape, place it in memory, then animate it.

With no prior knowledge of player/missile graphics, I picked to

... you too can turbocharge your Atari

blending your lines of Basic program out as syntax errors.

When you list your programs, Basic XL has converted the text into several video with variables beginning with capital letters, and the remaining letters in lower case. Not only that, but all FOR . . . NEXT loops are

the manual and within 15 minutes I had a spaceship whizzing around the screen under joystick control. It's that easy.

While we're on the subject of joysticks, besides the normal STICK command, we also have HSTICK and VSTICK. These commands sense only the horizontal and vertical motions of the joystick respectively, and help simplify controlling movement.

How many times have you written or had use of a program that requests

... the benefit of 16k ROM for no more memory than standard Atari 8k

user input, and wish that entering ? would disappear, or better still, replace it with something more useful? Once again, Basic XL has the answer.

Using one of the 13 SET commands, you can have any character you like as the prompt to an INPUT statement, or if you desire, no character at all.

Other SET commands allow you to disable the Break key, set TAB stops for the screen, in Print statements, choose how your program looks when it is LISTed, and decide whether you wish just error numbers to appear when you make a mistake, or to have printed a short message explaining the error as well.

One other command that proves useful is MOVE which can copy blocks of memory at machine code speed.

If you've ever re-defined a character set, you know that every character has to be moved byte by byte from ROM into RAM where you can then alter the characters to suit your needs.

I wrote a program to compare the two methods and Basic XL was about 5.7 times faster than its Atari counterpart.

For program development you can have automatic line numbering, line re-numbering and block deletion of lines.

If your program has a bug in it you can use the TRACE command which lets you see at which line number the

program is currently, if that's not enough, you can also list to the screen or printer every variable and string variable used in your program, and what lines these were referenced on with the LVAR command.

My favorites, and the one I've kept until last, is the FAST command. As it's name implies, that's just what it does.

Make FAST the first line of your program, and things really begin to move. In general, Basic XL runs about 20 per cent faster than Atari Basic when running standard benchmark programs.

But that doesn't tell the whole story. If you understand anything about the way Basic works you'll know that it is an interpretive language. By that I mean it has to translate into machine code each and every line of your program at run time.

Not only that, every time a GOTO or GOSUB statement is executed, in order to find the target line referenced Basic must read all the line numbers from the beginning of the program to find out where it has to go.

This is one of the main reasons that Basic is so slow, and also why Basic programmers keep all their frequently called subroutines at the beginning of

... with no prior knowledge of graphics I had a spaceship whizzing around within 15 minutes

the program. That way, Basic finds its way around much quicker.

What the FAST command does is pre-compile every line number called in a GOTO, GOSUB, TRAP statement and so forth. When the program is running, each target line is found instantly.

To give an example, I wrote a Basic program for my eight-year-old niece which helped her with simple addition, subtraction and multiplication sums.

The program made extensive use of the Atari's graphics 18 mode, and was made up almost entirely of

subroutines.

By the time the program was debugged and fully functional it was nearly 20k long.

As an afterthought, I decided to add another subroutine which made a nice presentation screen for the beginning of the program. Having nowhere else to put it, this subroutine

Basic XL is about 57 times faster than its Atari counterpart

was at the very end of the program, and was the first one called.

By use of the FAST command the opening screen appeared almost instantly and ran smoothly as I designed it to be.

As an experiment I timed the opening subroutine to see how long it would take to execute with the FAST command removed from Basic XL. The difference was very noticeable - Basic XL took 20 times longer to execute the subroutine.

In other words, without this unique command my program could not run as I intended without a major rewrite.

That covers some of the new commands of Basic XL. There are a whole lot more I haven't even attempted to describe, but are just as much fun to use.

Furthermore, if OS's DOS XL is used in conjunction with Basic XL, some very interesting, and useful, new features come into play. But that's another story.

So is Basic XL worth buying? At a price of £175 or so, it's almost the cost of an Atari 8000X.

However you do get a powerful Basic which is more friendly and if you're new to the programming game, the accompanying manual is an immense help.

As for compatibility, 95 per cent of your programs will still run - but faster.

Don't forget, Basic XL was made to be compatible with Atari Basic, not the other way around.

With all these wonderful new commands at your disposal, who wants to use old fashioned Atari Basic anyway?

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Everyone knows that "fast idea" mail is far from perfect. The Consumer's Association reported in June that less than 10% of every first class letter fails to be delivered the day after they are posted.

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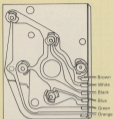
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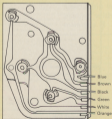
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The original wiring

Left-handed? Then stop right here...



The left-handed wiring

HAVE you noticed how many "lefties" there are these days? No, I don't mean the sort that the Tory party roll against, I mean left-handed people.

Joystick manufacturers seem largely to ignore the problems which face left-handed users of right-handed joysticks, and the Atari joystick is no exception.

The normal playing position puts the firing button on the left and the player moves the joystick with the right hand.

This means that lefties have to use their stronger hand to push the button and their weaker hand to move the stick.

This is great if you're playing a left-handed person in competition, but not so great if you happen to be that left-handed person.

If you have an Atari joystick, it can easily be converted for left-handed use as follows:

Open the joystick by removing the four screws from the bottom and pulling the top off. In the base you'll find a printed circuit board with six wires attached.

In fact there are two types of board - the type we've shown here with all six wires on one side, and another type with three wires on each side. In fact, it doesn't matter which type you have because they follow the same colour coding.

Make the wiring changes by unclipping the wires from the circuit board and clipping them into the new positions. They should just pull off and push on the board with no problem.

When you've got the wires in the new positions, screw the whole thing back together and ignore the word "Top" that's embossed into the case.

Simply hold the joystick so that the firing button is on the right-hand side and move the stick in the normal way.

There you have it - a left-handed joystick.

It will improve your performance and cause no end of confusion for your right-handed chums!

Business package can roll out the £s

RECENTLY I bought what was described as a business package consisting of an 80001 computer, a 1000 disc drive, a 1007 printer, Visiwriter and AtariWriter.

At the time it seemed an excellent bargain, and it turned out to be very good value, particularly the printer.

However there was one snag.

The AtariWriter program came on a disc, the reverse side of which printed the manual.

This contained no mention of the international characters, which include the dollar/pound sign, which is essential for business purposes.

I learned that the cartridge version of this program includes various commands which allow the international characters. For example Ctrl-05 produces the pound sign, but this does not work with the disc.

Is the disc version an inferior program, or does it have commands for the pound sign and other international characters available for not published? — G.D. Dabney, Mansfield.

■ The disc version of AtariWriter does have the features you mentioned, but in order to use a pound sign, which is Ctrl-05 followed by B, as you say, you must first set the printer to use the International character set.

This is the printer's

equivalent of F0R5 796,104 for the screen.

To do this use Ctrl-0, followed by 27 then Ctrl-0 and 11.

Once you have done this you can print any of the international characters listed in the book.

These codes apply equally to the cartridge and disc versions of AtariWriter, and are the equivalent to LPR-7ing the key sequence: ESC ESC.

Missing some games

I OWN an 80001, but before that I had the 2600 MCS and some of the games, for example DemonStar by Accolade, were good games but are not available for the home computer.

Why is this and after all why did I see Atari listed in one of your games?

As there were problems relating them to Accolade, also or another cartridge? — B. Lloyd, Brighton.

■ Not all games from all

companies are brought out for all computers. The only way to get companies to bring out titles for the Atari is to make them know you want them.

You can do that in two ways. Firstly write to them, and get your friends to do the same, telling them how many copies they'd sell if they did release it.

The second, more general, point is this. When they do release a game you like, buy it, don't accept a copy of it.

The last thing a company is prepared to do is specially commission a game to be written costing tens of thousands of pounds then have it speed off left, right and centre.

Help in the manual

IT read with much interest the letter by R.G. Moss, in September's Mailbag. I too had suffered the same problem with my printer and Home Filing Manager.

My printer is a Star Microdot 55-10, and I found upon further reading of the

manual that it has the capability of 7 or 8 bit operation then software control.

In a single LPRINT statement set up the printer. Then look Home Filing Manager and no more word characters.

The 55-10 is Star's replacement for their Commodore, and that many Atari owners will have heard of if they have access to the American magazines Atari are reading.

I would enter one plea to Star Microdot, as they now produce the 55-10C a Commodore compatible version of the 55-10, how about another compatible version? That is, one that requires no separate interface.

It's too late for me, but I am sure it would boost their sales to Atari owners.

Finally, thank to Alan User and R.B. Moss for the letter which prompted me to read my printer manual again. I have found several useful tips in Mailbag. — Bruce Allen, Burton-on-Trent.

Check it again

I WROTE to you a couple of days ago regarding the Maze Hunt game, and my difficulty in getting it to work properly.

After having checked to see the advice you always give to other readers, I checked my typing by typing "LIST TO — LIST TO etc" through the computer program, and found nothing wrong.

So I did the same again. Nothing. After doing this four or five times, I eventually found a letter G where there should have been a number 0. And

Interfacing to a printer

I HAVE recently bought an Atari 80001 and wish to interface it to other equipment, in particular a Familyline printer 10.

Whenever I cannot find any reference to the pin configurations of either the serial or parallel ports in either the Atari manual or any books available locally in the shops.

I would be grateful if you could publish this information for the benefit of myself and other users interested in the

more technical side of Atari computing. — G.L. Durkin, Huddersfield.

■ In order to interface a serial printer to the Atari you will need an RS-232 interface. The best is Atari's 880 module, but these are now very difficult to obtain.

If you find one — buy it! Demonstrate a number of companies are bringing out their own modules, but we have not yet seen one on sale.

If you are very technically

inclined, you could try to design your own interface via the joystick ports.

However unless you are an experienced machine code programmer with a fairly good knowledge of electronics, an advice is: Don't even think about it.

Atari magazine (Vol. 3/8 to 3/12) carried a series of articles about developing a serial interface for the PDI bus connector at the back of the XL computers.

now the game runs perfectly.

As I said in my earlier letter, I have owned my 80081 only two weeks. Before taking the plunge I thought you had to be above a bit of effort to use a computer.

All I can say now to all those new owners or potential purchasers of Atari equipment is go ahead and do it, don't buy games, lose them yourself from Atari User, join your local group, but most of all, if you make a mistake, CYEDA SOLAR FRYING!

Don't be silly mistakes, not obvious ones. It will all be learnt while in the end I have just finished typing in Asterix 1987 from the August Atari User and, although I don't really like the game—probably because I keep getting killed as a spy—I typed it with 80 errors.

I don't expect to do this every time, but at least I know that all the thinking is so very worth while. — Peter Hunter, Norwich.

Math pack lock-up

I HAVE found on a few occasions that while entering a program into my 80081 the computer will go faulty.

I don't print any characters on the screen and does not carry out any instruction I give it.

However when I press **Reset** the computer prints **READY** and lets me type things in, but as soon as I press the **Reset** key I can't input anything again. — Richard E. Newbould, Harrogate.

I AMN tried to program the Alphabet Maze from your first issue on my 80081. When I reach the end of line 430 the computer no longer responds to any key pressed, apart from **Reset**.

This of course, means the screen but then after typing **LIST** or **RUN** the same thing occurs. The keyboard gives no response in any combination of keys pressed.

This problem is most fre-

DOS disc directory reader

HERE is a short program which will print a list of any Atari content onto any disc drive and disk.

It reads the directory from a DOS disc and prints all the filenames in the sixteen 12 on each disk.

ICDC stands for input/output control disk. — Chris Porter, Isworth.

DO DEM 40100
DO OPEN M.L.A.A."B"R."P"REN SET UP DATA TO READ DIRECTORY
DO READ DOOPEN M.L.A.A."REN READ A FILE NAME FROM DATA & CHECK TO SEE IF IT IS THE LAST
DO T "DOIT" "I"REN & SPACE
DO DATA DO
DO CLOSE DOOPEN CLOSE DATA
TO END

quency as there is no error from correct and it results in the loss of many hours typing. — D.J. Stansell, Walthampton.

■ I sounds as though you both have a computer with the infamous math pack lock-up.

This is due to a small problem with going on the Atari 8002 chip, see earlier, and can be easily fixed by replacing that chip with one of the newer versions.

Contact your dealer and if it's still under guarantee this should replace the computer.

If anyone gets a similar problem with an old Atari 800800 the solution is even easier. The problem in your case is a bug in the Basic cartridge.

If you replace this with a Revision C cartridge you'll get no more lock-ups.

Moving pictures

WHEN I got my 80081, I only had a black and white TV to use it on.

Every so often I had to re-tune the channel because of the picture moving about. I thought it was my TV and took no notice.

Recently I bought a new colour TV and the picture still keeps moving. It is most annoying. Could you please let me why it does this. — Matthew Kemp, Farnborough.

■ You could have a faulty installation in your computer, or the TV tuner could be at fault.

Generally the cheaper TVs

don't lock on to a signal as well as the more expensive ones.

Also, the computer signal could well be drifting as it gets warm.

Perhaps you should consider taking your computer back to your dealer, or better still contacting Atari's Service Department in Slough.

User group sought

I'VE been trying to make contact with a user group. I've written to Cambridge Computer Club at Winton-on-Charney and the Athlone Office in Wellington, Surrey, enclosing an ad that I have evolved to apply from either.

I can only find that both groups no longer exist. I phoned Atari Helpline, but they could suggest no other groups, so perhaps you or your readers may know of a local group. — P.D. Little, Crowthorn.

■ You've tried the only two groups we have in that area. Perhaps one of our readers has up-to-date information.

Special interests

I AM starting a special interest group for Atari computer users which will concentrate on matters other than the games—music, robotics, computers art and other specialist activities.

The idea is to promote the

more serious applications of Atari home computers.

The group will initially offer two main services, a newsletter/magazine and a central service.

Members wishing to produce an article for publication will not have it refused on the grounds that it is of a too specialised nature. The contact service is for members who wish to exchange ideas with other members.

If the bulk of the ideas for the newsletter programme of the group appeals to your readers I shall then be able to see whether a site for an application form. — G. Leader, 163 Richmond Road, Leytonstone, London E11 6BT.

COULD you please tell me the closest club to Kilmarnock. — Gordon McQuibben, Kilmarnock.

■ There is a Glasgow group. Contact Mr Fletcher c/o 118 27 Castleridge Drive, Milton, Glasgow. As far as we know, that's the nearest to you.

Plea from Poland

I REQUEST an Atari 80081 cassette player pack and the Atari User magazine in London last month.

The pack contains the Pole Position game, which appears to be defective.

When I started to load after 15 seconds loading sound I hear "beep" and the screen displays game. I can see "7" in the right bottom corner at the same time. The tape is rolling but I

don't hear a loading sound. After another 70 seconds the loading sound is heard once again.

Other software, and the Atari disks, which is on the other side of the cassette, works very well.

I am a beginner in video, so I'm very interested in your exciting magazine Atari User.

Would you like to advertise if there is any possibility of getting other copies, because in Poland there isn't any Atari service or magazine. — **Witold, Gliniszyn, Poland.**

■ You will probably find that the game is still loading quite slowly. The reason is simple while the computer checks that the memory is OK to run the game, then the rest of the game loads into memory.

Leave it for about five minutes after the "I" appears, and you should be okay.

Many magazines and software/hardware items are available by mail-order to anywhere in the world. Why not try Silicon Shop or Software Express, or one of our other advertisers?

You could also contact some of your own computer stores in Poland, and complain about the lack of Atari products!

Alternative inputs

COMPUTERS can produce visual and printed output, so wouldn't it be nice if they could accept visual printers and even spoken input?

I would like to develop software to allow my 80080 to "see", "hear", speak and read and hope that you can provide the name of a company which makes visual and audio digitizers, voice synthesizers and optical character readers, compatible with the Atari. — **R. Williams, Leigh-on-Sea.**

■ The sort of items you ask about are available for many machines, but software is up to you. I'm afraid you also will be talking of thousands of pounds worth of equipment.

The best way to connect

such units to an Atari are via the RS-232 port on the 850 module. Alternatively, use the parallel ports as simple parallel or tristate input/output ports to custom designed devices.

The contacting of any company advertising such devices for other machines is up to you if they would be RS-232 compatible.

Board open for calls

I AM writing to you on behalf of the Birmingham Atari Group, which has recently opened up a new bulletin board. The Central Birmingham Atari Bulletin Board

will do so to a file.

This programming program would be run on several occasions before the secondary program was required. The hardware I worked with the computer and also drive give me fast in no information on writing data to and reading data from disc and tape programs.

Please could you advise me whether or not this can be done and also recommend a reference book on the subject. — **M.C. Powell, Bristol.**

■ You're right. The hardboards provided with the 8000 are shallow, a little light weight. The program which you outline is, of course, very simple to write given the

length to ask for the updated version, which has some extra information regarding the XL range.

Lost in the maze

I MADE a muddle about the game in the September Atari User. Mike March — I sorry get it is with.

I get "Error 6 on disc 8000". I checked this up in my manual of the Atari that it is an input statement error — "the user attempted to input a non-number's value into a numeric variable".

Can you help me clear this up? — **P.B. Hunt, Leigh-on-Sea.**

■ Check your listing! If you can't stand to check it again, see the cassette offer on Page 61.

Program provided

I WOULD like to write a small sub-routine program that will load a basic program which will be a menu to load more basic programs.

I hope to be able to hear straight in to my Atari 800. I have a 1050 also drive. — **A.J. Linn, Leigh on Sea.**

■ The DOS 2.0 disc has a program on it which does what you want! See the order form at the back of this magazine to send off for your copy if you haven't yet got one.

Copying programs

I OWN an Atari 800 and have 87 disc drives. I don't mind buying software but what I do mind is the chance of a special offer involving £75 hard earned cash down the drain.

Any respectable disc drive owner would make a back up of each program and I would if I could, but the programs are protected.

So could you possibly

ATARI USER

Mailbag

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

The address to write to is:

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

Service. Our phone number is 021-430 2181.

The board runs 24 hours a day, closed only on a Thursday, emergency again on Friday at 7:00 hours. — **Mike Coleman, Wyco, Birmingham.**

Lightweight handbook

I BOUGHT an Atari 8000 and a 1050 disc drive in the hope of writing programs that would be able to use data stored on disc by another program which supplied ASCII/7 data, made certain checks on it and then write the

right information.

Basic uses the normal INPUT and PRINT commands, but you will also need to know how to use OPEN, probably with both normal and random access files.

The best book for this sort of information is "Your Atari Computer", from Osborne/McGraw Hill.

This covers basic from first steps right up to some complex graphics facilities and complex I/O control, which is what you want.

It doesn't come cheap — about £17 — but it's worth every penny.

If you can't get one from your local stores by one of our real order advertisers, don't

review some copying programs?

Also, I am considering buying a printer, so a printer review would be useful. — **Pervin Bangal, Hartlepool.**

■ You have raised one of the most debated points in the software industry. Because of the danger of misuse and impending legislation, we will not be publishing any reviews or adverts of products designed primarily for copying software.

You have raised a valid point regarding personal backups of software, but until the public can be trusted not to pirate software by copying it illegally for their friends, such protection will not only remain, but become more complex.

There are devices which can copy protected software—none of which will fit an Intel 801 or—but due to the possibility of misuse, they are not generally imported into the country.

If you accidentally damage a disc or cassette which is protected, the company who made the program should provide you with a replacement at nominal cost providing you send them the faulty disc and a copy of your receipt.

Running Hexer on 16k

COULD you please tell me whether your Hexer program and the subsequent random number program will run on Atari 400 or 16k?

I have listed a number of times, only for the program to crash after printing very few random numbers.

I would also like to know if the listings printed in your brilliant magazine—Bomb Run and Ping Jump—are available for my wife from Atari's past as I have had problems with character shifting.

Another thing I would like to know is if my computer can be upgraded with more memory, and if so, how high can I go?

Congratulations on a very great magazine, only one suggestion I would make,

Substitute for string arrays

FIVE writes a database program for my ZX5004A which involves string arrays and I would like to know if for use on my 8008A.

The problem is, how to get string arrays in Basic. The format would be in a similar manner to this, but with a different approach:

```
10 DIM A$(1000)
20 INPUT A$(COUNT)
30 LET COUNTER =
   COUNTER+1
40 GOTO 20
— David Brockton, Northwich.
```

■ Atari Basic does not have string arrays as such, but it does have "long strings", and "sub-strings" which can be used to the same end.

A long string is simply a string set up for thousands of characters long—like the whole of an array.

A sub-string is a portion of any string, accessed by using two numbers in brackets after the string name.

For example, A\$(10,40) would mean a smaller string

from character 10 to character 40 of A\$.

These two features can be put together to write our own string array routine.

Let's say we want to DIM a simulated string array for up to MAX items, each of up to SIZE characters long.

Let's use ITEM to indicate which element we're talking about. ITEM will be a temporary holding string.

First, you must DIM the string array:

```
DIM A$(MAX*SIZE),
   BSIZE)
```

Then, fill it with items:

```
A$(1)= " " * A$(MAX)
"ABCDEF" * A$(2)=A$
```

To use element ITEM in our Array, use:

```
INPUT BS
A$(ITEM-1)*BSIZE
+1,ITEM*BSIZE)=BS
```

To read element ITEM back again, use:

```
BS=A$(ITEM-1)*
   SIZE+1,ITEM*BSIZE)
```

Thus, your example (assuming up to 40 characters per item) becomes:

```
10 DIM A$(1000*40), BS(40)
20 A$(1)= " " * A$(1000*40)
30 INPUT BS: A$(COUNT-1)*BS+1,
   COUNT*BS)=BS
40 LET COUNTER=COUNTER+1
50 GOTO 30
```

This is a little more complex than the TI version, but it does the job. Basic-8L, Microsoft Basic etc., all have string array operations built in, so this technique becomes redundant when using any of these languages. — **André Willey.**

However: How about telling us your bits with smaller machines how much memory is needed for listing? — G. Davidson, Newcastle upon Tyne.

■ Most listings we print are for more than 16k, I'm afraid. Hexer will run on a 16k machine, but its default address of 64000 will not be available, since that is actually beyond your machine's RAM

capacity. Try using 63000 instead.

Since the random numbers program is assembled at 64000, it will not run on a 16k machine as printed, and would need to be modified byte-by-byte by a machine code programmer in order to work.

Just changing the start address won't make it run, unfortunately.

You can upgrade a 400 to a

512 400, but you may find it difficult to get the upgrade board these days. Try the major mail order companies, or a local Atari specialist.

Printing is internal, and requires soldering on to the computer's motherboard, so should not be attempted by the novice.

Memory update

I HAVE a 6000k, and wish to upgrade the memory. Where can I get one, and how much will it cost for a 6400k pack to upgrade to 48k?

Where can I get and what price a local expanding as fully as possible the PDPK command?

How do you reload a program stored in cassette using LIST "C:"? I have tried everything and just keep getting "ERROR 21" — **Ian Brockton, Poole, Dorset.**

■ On the first two points, try Silice Shop or, if copying some of our advertisers—they can't include everything in their ads.

The book you might like to investigate is "Mapping the Atari" by Ian Chadwick at a cost of around £15.

To reload a LISTed program, try ENTER "C"

Monitor

At the October issue of Atari User you published a letter from Jeff Gossard of Commodore who was complaining that after he had purchased an 8000, Atom Sales Shop and joined their user's club he received no information or news about how them and neither did his brother.

In the reply to this letter, you stated that the Atari Owners Monitor is only published quarterly.

I would like to clarify some points here. First, Monitor is a magazine published by the List Atari Computer Owners Club every quarter and has an association with Silice Shop.

The Club is an independent organization and up to 1579

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UK with nearly 2,000 members.

The club run by Silvio Sirois is something different and, as far as I know, does not have a publication called *Member*.

The author of the reply was obviously under a misapprehension in believing that the UK Atari Computer Owners Club was the one referred to by Mr Dunstan.

I could not like to think that your readers, who may well have heard of *Member* magazine, are now under the impression that the club gives a slow or bad service to its members.

In fact we try very hard to keep our members well informed and up to date with Atari events. — **Ray Smith, Editor, Member, Rayleigh, Essex.**

DIY interface

I AM an Atari 800 owner interested in DIY interfacing.

There seems to be a host of addresses of firms offering such schematic diagrams and kits for all computers except Atari.

Please could you publish the address of any such firm which can provide these things. — **Roger Shimm, Upton.**

■ You want to contact Asti Corp. in Stought. They publish a book called *The Technical User Notes*, which includes circuit diagrams, a full operating system listing, and the OS User Guide.

All possible this covers the 400/800 range, but most of the information and all of the regarding use of ports, etc. is applicable to the 130XE range.

Birmingham board

ABOUT two weeks ago we sent you a letter asking you if you would give our new *Bulletin Board* a mention in your magazine. We were most disappointed when it did not appear in your latest edition.

We are the Birmingham User Group, of which there is now 100 members, all Atari owners, and with your help we

Back into the Dark Ages?

4040s are certainly providing computers with 'Power without the price' but what is happening on the software front?

Last year *OS Drive* were advertising *Signs in the Snow* at £14.99 for several months pre-Christmas in *Your Computer* but now, that magazine we see to read before *Read User!*

would like to see our Bulletin Board take off.

Here are the details again: Central Birmingham Atari Bulletin Board OS4000 running at 300 baud 24 hours a day, closed Thursday. Speak Mike Coleman. Would it also be possible for you to include each month a list of Bulletin Boards? We are sure many readers would like to see this. — **M.J. Coleman, Birmingham.**

The clubs' club

I AM endeavouring to set up a national Atari club for all users clubs. Basically, we hope to monitor all national user groups, compiling a directory for re-distribution to user groups of news and events throughout Britain.

I would be most grateful if you could let your readers know of this operator service, and if all user groups could submit their latest newsletter to us, together with an ATR, we'll see how truly committed we all are about our Atari. — **Paul Critchlow, 28 Tudor Road, Bank Ferry, Birmingham, West Midlands, B42 5PH.**

Missing mode

ATARI Over gets better with every issue, although it is not without it's faults.

In particular Mike Rowe's article on graphics modes fails

I made several attempts to buy it from Silvio Sirois, who insisted the price was £40.

Now approximately 12 months later having seen *Zoomsoft* advertise this title at £14.99 (Issue No 4), I rock back and played *Software Progress* (refers for *Zoomsoft*) I was told the price was £17.75 and I said OK but... well... I could have a

OS4000 version for £14.99!

Unless good, reasonably priced software is available for the Christmas the impact of the Atari revival will be less and a new dark age will descend upon us as we all struggle with our miserable cartridges! — **C.R.J. Bennett, Preston, Cumbria.**

■ OS 40 — not the intrusive cartridge!

to create *Atari Mode 2*. This mode gives a 40 column 30 row text display with true descenders.

True, you have to write your own display list to use this mode, but that is true of four other modes on the 40 Atari.

I think it is a great shame that this mode is so little used as it does give an exceptionally good text display.

As far as I know *Speedy* Atari 2D is the only program that uses this mode, although many character replacement utilities after the mode and often a single character set for use with it.

Atari do their best to hide the features of their computers, but please don't follow suit. — **Chris Ross, Balfour, London.**

■ Mike Rowe covers Atari Mode 3 and some other exotic modes in this month's article, the last in his series.

Sharing

MY brother has an 80080 with 1000 disk drives. I have a Spectravideo which runs under CP/M.

Can we share our software between the two machines with some device?

If not I may be inclined to buy another 80080 and also drive providing copies can be made from the other. Please advise.

I shall also appreciate any information regarding a better combination to obtain the desired results. — **J.M. Ali, Ahmed, Kuwait.**

■ No, you can't use the same

software on both machines, as we've indicated previously, only Atari software will run on Atari computers.

Your suggestion of getting an 80080/1000 seems the best alternative though you might consider the new 1000X/1000 pack. You'll get twice the memory for very little extra cost.

You can copy any software which you've typed in your brother's machine, it has to be given to you by other Atari owners, but you obviously won't be able to run commercial games.

Quite apart from the fact that it is illegal, they will probably be heavily copy protected.

POKE list

I HAVE been an Atari computer owner for about a year now and I must say I am very happy with most of the things my 80080 does. The only downfall I can see is the so called Basic Reference Guide.

The thing I must want to bring to the attention is a full list of the POKE statements and their functions.

Could you let me of a book that contains these or will you be printing a listing in a future issue?

I found the *ACWZ* statements in the May edition very useful, but there must be a lot more. — **R. Thompson, Leeds.**

■ You should get a copy of the revised edition of 'Mailbag on the Atari' by Ian Chadwick and published by Computer Books.



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ENTRY FORM

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These back issues are still available

May issue: Profile of Jack Tramiel, producer of three new machines, Atari Spectrum, Advantaging, Alphabet Train, Home utility, Software reviews, Sounds, the 68000 Microscope, Atari Insights - regular series of tutorials for the Atari Megaforce and Graphics.

June issue: In-depth analysis of the 130XE, Software, Advantaging, Keyboard numbers, Software reviews, Frog Jump, Microscope, Sounds, Atari Insights - regular series of tutorials for the Atari Megaforce and Graphics, special 32 page feature on Commodore.

July issue: December, Best Mac, DRUGS, 27 Commodore, Advantaging, Display List Tutorial, Software reviews, Power Functions, Trainers Hunt, Keyboard Sounds, Microscope, Insights - Regular series of tutorials for the Atari Megaforce and Graphics.

August issue: In-depth analysis of the 520ST, program production reviews, Fruit Gumbler, Amazebox,

Touch Tablet programs, first look at Logic Painter 1995 (Dra 2.0 upgrade offer), Display List Tutorial, Microscope, Software reviews, Insights - regular series of tutorials for the Atari Megaforce and Graphics.

September issue: 8 page special on the 520ST, Macs in the Sun, Jump reviews, Macs Manuals, Data Maker, Display List Tutorial, 48K/50K addressing, reviews, first processing with Logic, Software reviews, Insights - regular series of tutorials for the Atari Megaforce and Graphics.

October issue: Computer Connect graphics program, Updates for the 644 6502 assembler, 130XE Remake utility, low RT look on offer, Hit Hit! memory dump utility, Portals, Software reviews, 68000 operating environment, Wipeout, Insights - regular series of tutorials for the Atari Megaforce and Graphics.

November issue: Consumer program, Bitwise operator utility, 32 graphics examples, ST software list,



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JUNE: Frog Jump: Guide the frog across the road and over his home in the version of the article (disc). **13000E: Home Power:** Use the extra bits of memory to good effect, or use the extra floating point processor to do things properly. **September:** Sounds: the advertisement. **October:** Hit It: Uniquely pictures with only 48K/50K. **November:** Numbers: Get random numbers from the line code. **File by File:** Copying and deleting files from floppy to the disk.

JULY: Search Box: Patterns learned (spread and used). **December:** Find out what's going on deep inside your Atari Trainers Hunt: Use logical thinking to find the treasure.

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Protectors: Complex patterns made easy. **Protectors:** Protect your programs from copying tools. **Display List:** Demonstration programs.

Maker 1995: Fantastic text adventure. **Touch Tablet:** Demonstration programs. **SEPTEMBER:** Macs Manuals: Help-Power for that search the many manual manuals. **Data Maker:** Convert your machine code routines to DATA statements. **Display List:** Demonstration programs. **Screen Damage:** Dump your Mode B screens to a 1024 printer. **Bitwise:** Value the Bitwise problem.

OCTOBER: Protectors: Total! Real Money

Change: Expense money in bits and Atari **Display List:** Demonstration programs. **Wipe Out:** Action game for one or two players. **Computer Connect:** Make your own mini-microscope. **Assembly Update:** Improvements for the 68000 assembler. **Run-Disc/Make the most of the 1300E's extra memory.**

NOVEMBER: Gay Future: Help you escape from the guards. **Connect:** Teach your Atari for a parathroter. **Display List:** Demonstration programs. **Hitler's Depression:** Delays provide logical functions. **Circle Drive and Hit a circle:** Atari Future of the month - **Coopcode:** machine code word game.

DECEMBER: Commodore: Micro version of the famous 130XE. **Hit It Again!** November's own check-out program. **Circle Out:** Atari on your Atari. **Display List:** Demonstration programs. **Planet Power:** of the month - **Atari's Program:** machine code entertainment.



FREE

This month's feature is a delightful machine code program that defies description. Drop blocks of colour, watch them bounce, and listen to the musical sounds. Called Jane's Program by its author Douglas Crookford, it's one of the most unusual programs you've seen in a long time.

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