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ATARI USER

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this
issue



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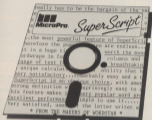
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Vol. 2 No. 8 October 1988

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SUPER SOUND CHIP ON WAY

ATARI is on the verge of launching a revolutionary sound synthesiser chip for the ST.

Leonard Tramiel, son of chairman Jack Tramiel and himself a leading company buff, revealed this to Atari writer Andrew Barnatt.

The early development of the chip—known as the Avey—began in the pre-Tramiel days and was the first and user project started after the 8000L.

"They set out to develop a custom chip of great complexity but they had limited resources and poor development tools," explained Leonard Tramiel.

"Although the architecture was brilliant the early version of the chip didn't work.

"When we took over Atari we saw Avey as an excellent potential product. Now we have sold the design to a company that I cannot name just yet and they are hoping to have the final working chips ready soon".

ST software

SEVEN new software titles for the Atari ST series have been announced by Mirosoft.

They include four games—Burrle 3, Title Challenge, Electronic Pool and Pinball Factory—multi-user bulletin board system 888 Version 2, wage package Payroll, and mailout system Mighty Mail.

All program listings in Atari Star are now available for free downloading on MirosoftLink, the UK's fastest growing electronic read service. They join hundreds of programs already available in the tabcoffices section, one of the most popular areas of MirosoftLink.



Surprise launches at the show

WITHOUT advance warning, Atari launched two new machines and a breakthrough graphics chip on the second day of the PCW Show.

Visitors to "The World of Atari" corporate stand at Olympia were surprised to see the latest additions to the ST range—the 1040STX and 4150STX—suddenly appear in a glass display case.

At the same time, officials began to demonstrate the 800 enhancer which increases graphics speed eightfold.

Even the Atari press office appeared to have been caught napping, having to prepare information sheets on the spot after the event.

The two new machines have the increased memory capacity of two megabytes and four megabytes respectively.

Both join Atari's ST computer line and feature an in-built one megabyte floppy disc drive.

According to Max Barnbridge, general manager of Atari UK, the 1040STX and 4150STX will find a ready market among specialists working in "RAM

disc operations, artificial intelligence applications and high level programming such as Lisp".

Price of the two megabyte machine is £1499 with monochrome monitor and £1,349 for the colour model. The top of the range four megabyte ST will carry a price tag of £1,499 monochrome and £1,699 colour.

Both the 1040STX and the 4150STX will go on sale in the UK in November.

The same month will see the

800 chip go on sale for £50 as an upgrade for the complete ST range.

It will need to be fitted by Atari authorized dealers and independent Atari service centres.

Comments Les Player, Atari's technical manager: "It's very simple in operation. The chip just moves memory around very fast without the need to use the 80000 CPU. This means that animation sequences will run much faster, without impacting normal processing power".

More 8 bit games

NINE all-action games for Atari 8 bit owners are being released by Red Rat Software this autumn.

Just out are Fleaky Factory and Rucker Reganman, both £4.99 on disc and £2.99 on tape. War-Copter and Aave Droic, £9.99 on disc and £7.99 on tape.

To come this month are Devilbird Derby and Domain of the Undead, both £9.99 on

disc and £7.99 on tape, and Treasure Island and Dragon's Breath, £4.99 disc and £2.99 tape.

Planned for release in November is Escape from Planet R which will cost £4.99 on disc and £2.99 on tape.

Red Rat will be releasing a version of its earlier success Scrambling Blings for the ST series in early December, price £19.99 on disc.

In brief

AT&T has appointed DDT Maintenance as a preferred third party contract maintenance source for its 1040STP and 8308TM machines.

The firm has a network of more than 100 engineers backed by 12 service centres and two repair centres covering the UK and Eire.

♦ ♦ ♦

INTERACTIVE fiction specialist Infocom is releasing two new titles for Atari machines this autumn.

Leather Cribbles of Phobos and Macromat bring the number of Infocom titles available for Atari 8-bit and ST to 22.

♦ ♦ ♦

A **NEW** business program released by CashLink Software for the ST series is Hostler designed for small hotels of up to 100 rooms.

It offers a front office system handling all guest charges and transactions, as well as a full back office consisting of sales, purchase and nominal ledgers.

Hostler also provides a word processor and memo writing facility. Price: £1,150.

♦ ♦ ♦

A **TRIO** of new products for the Atari ST has been launched by systems software house Metacom.

Cambridge Lisp is an interpreter with integral compiler, said to be the first fully-featured expert systems development environment for the ST.

It opens up applications such as robotics, natural language interfaces and expert systems. Price: £149.95.

Also new for programmers from Metacom are the BCPL compiler at £99.95 and Metacom's Make utility, £49.95.

♦ ♦ ♦

A **PERIPHERAL** which offers true 60 columns for Atari 8 bit machines was an exhibit at the BCW Show.

The XEP-60 to be released any day now is one of a string of new products reported to be in the pipeline for the 1300X and 8500X.

CHRISTMAS SHOW RUSH

With two months still to go, exhibitors are rushing to book space at the Atari Christmas Show.

They don't want to risk getting left out of a repeat success story following the enormous impact of the first Atari Computer Show in London last March.

A total of 18,000 visitors turned up then and that massive demonstration of support effectively re-established Atari as a market leader in the UK computer industry.

The spectacular Atari show-case returns to London on

Friday, Saturday and Sunday, November 28 to 30, at the centrally located New Horticultural Hall, Westminster.

All the leading producers and suppliers of Atari additions and software will again be represented, occupying well over 100 stands in the spacious 20,000 sq ft exhibition hall.

Big names like Software Express, Twitlatat, CDS, Microdeal, and Advanced Systems & Techniques will be there - ensuring plenty of interest for 8-bit and 16-bit enthusiasts alike.

New programs and additions

for the ST series and 8 bit range will be launched at the show, and there will be opportunities to question the UK's leading experts on Atari computers.

The event promises to fulfil all the wishes of pre-Christmas shoppers waiting to fill their stockings with the latest Atari hardware and software.

It opens from 10am to 6pm Friday and Saturday, November 28 and 29, and 10am to 4pm Sunday, November 30.

There is £1 off the price of tickets ordered in advance using the coupon on Page 13 of this issue of Atari User.



Some of the latest software packages available for the Atari ST series are pictured with a 1040STP whose screen shows the GEM standard operating system V35.

More power on tap

DESCRIBED as a "major advance in raw processing power availability", K-Max is a new 800-on from Karna Computers which plugs into the rear port of the Atari ST.

Inside K-Max is an interface board and a dual processor board which can contain two Intel 8014 transceivers and two Intel 8015 of ram.

Each 7414 is a 7.5 mips (million instructions per second) 32 bit floating point processor.

Parallel means they can easily be linked by simply adding their buses together -

two 7.5 Mips processors having the potential of 15 mips.

K-Max is controlled via the ST keyboard and screen using specially developed software.

Karna has supplied a cross-assembler and editor as the main tool for controlling and programming the 7414 transceivers.

Additional functions include a machine monitor, debugger and disassembler - the ST assemblies 7414 code at 80,000 lines a minute, says Karna. K-Max costs from £1,480.

Artwork utility

ALL kinds of artwork spring to life on the Atari ST with Make It Move a new package from Californian software house Aella Associates.

It comprises a set of utilities designed to enhance pictures and present them in a variety of dynamic ways by using such features as moving objects, video transitions, zooms and fades. Price: \$49.95.

8 bit speed boost

OWNERS of Atari 8-bit machines can load and run discs at twice normal speed and read/write up to five times faster with a new drive enhancement from Innovated Software.

The IS Plus device for the Atari 1050 disc drive has 188 of on board ram and is compatible with all operating systems on the market.

Sector skew is not required to obtain hi-speed as with US doublers. Other features are slow-down, fast write, fast read, drive write lock, skew on/off, and fast formatting.

Available exclusively from Chips Computer Centre, West Woking, the 1050 IS Plus disc drive enhancement costs £29.95.

New link-up to US database

MircLink has achieved a world first with a new electronic link across the Atlantic. It allows subscribers to have instant access to a giant American database - including a dynamic section especially for Atari users.

And the cost will be approximately half that of a conventional transatlantic call.

The breakthrough has come about as a result of a deal struck between MircLink, the UK's latest growing email service, and New York based Mmematics.

Gateway

With the help of its American partner, MircLink has set up a complex electronic gateway which enables the exchange of messages between nodes on opposite sides of the Atlantic.

The computer link opens up a host of new services to MircLink subscribers.

Included among some 40 special interest groups is one specifically for Atari users which provides all the latest information on what's available for the machine's British site.

There's an extensive Apple database crammed with information, along with message and chat facilities.

But Mmematics isn't just about computers. Special interest groups catered for include doctors, dentists, estate agents, lawyers and writers, and there is a micro-conferencing facility.

Instant

Other services include global news round-the-clock from the Associated Press and instant information from Dow Jones, the New York stock exchange monitor.

"We are delighted that we are able to offer this first," says David Maslin, head of MircLink. "It's going to transform the way we communicate with our cousins over in the States".

New technical plans at Mmematics are working on a reverse link to allow micro users in the USA to share all the facilities offered by MircLink.

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More ST packages

TWO powerful business packages have been released for the Atari ST by Escon.

Involve/Order Processing module includes order processing, price list and journal and has the facility to allocate either the complete invoice or individual entries to three main areas - such as sales representative, sales area and department - as required.

This can be used for many purposes in accounts, sales analysis and reporting, for example slow paying and bad debt report per salesman. Price £150.

Version Accounts includes sales, purchase and nominal ledgers, trial balance, forecasting and graphics.

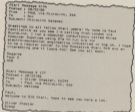
There is also an extensive search and reporting facility, and it is possible to use nominal account numbers to enhance reporting. Price £250.

DEALING WITH DATA

A PACKAGE designed to handle multi-disk and on-line data efficiently is soon to be released by Module 3 Software for the Atari ST. **Gridfile/ST** provides full access functions for the storage and retrieval of complex data structures, and is implemented as a set of library modules.

A demonstrator program showing the use of Gridfile for implementing a simple database of names and telephone numbers is included.

The price is expected to be around £30.



One of the earliest exchanges on the new MircLink/Mmematics system involved Atari user Paul Carrel of London and ST Atari user Oliver Chester.

Making music

MAKING music with your Atari 8 bit home becomes possible with two new products from 2 Bit Systems.

Mini Master is a MIDI interface featuring an eight track real-time time sequencer, a Casio CE voice editor for editing and storing voices on disk or cassette, and a Yamaha DG300/21 series voice editor. It

has a music player program allowing users to play **Musik Composer or AMOS** using files via MIDI. Price: £27.50.

Percussion Master is a professional quality drumkit featuring nine sampled drum-sounds, three drum polyphonic, a facility to load the user's own drum samples, and full drum

... and composing

LATEST release in the K series from Sigma Computers for the Atari ST is **K-Minimal**, a music composer package operating under GEM.

It has 3,200 chords in four chordal modes, with arpeggios, autoharmonic, diminished and retardantes to add expression

to the user's compositions. The MIDI interface allows music to be played on 4, 8, 12 or 16 channels. There is a full range of accidentals.

All or selected parts of a tune may be played, and several example tunes are included on the disc, which costs £29.95.

THE Personal Computer World Show has become the industry's main forum for demonstrating the latest technology and showing off its new class. It can not have escaped anyone's notice that Atari planned to dominate the 1988 Show at Olympia, and dominate it it did.

On the lower floor you could see the latest offerings from Amstrad, Sinclair, Acorn and the like, while upstairs Atari had taken over an entire hall with its World of Atari show-within-a-show. But what was there to show for this massive amount of floor space?

Well the single most obvious fact about the Atari stand was that it was predominantly ST-oriented. There were a few 8 bit machines about - mainly on the third-party stands - but Atari seemed far more interested in pushing the ST.

Indeed, the only specially interesting development for the XE range was the XEP-80 80 column box. This seemed a somewhat lousy unit, interfacing as it did through the second joystick port. You might have expected Atari to use the parallel bus for such a device, but instead they used the more awkward joystick option. The display itself was good, but it required a special driver to be booted from disc in order to run.

On the ST side, though, the story was quite different. Atari was showing three major additions to the range. The much predicted 2mb 2080 ST was on display in a glass case, as was the even larger 4 mb 4100 ST. These new machines - to be released in four to six weeks - were probably far less interesting than the new blitter chip which was running on an existing 1040.

It seems this will be a straight-forward modification for existing owners, considering of its new chips and the blitter itself, with the price including fitting by your dealer. Apparently the chip interfaces to the operating system by re-vectoring the Line A interface, thus speeding up almost every facet of the machine, including the rather slow GEM text displays.

The demo running on the stand

showed a whole flock of birds flying over a coastline landscape, and the blitter version ran three to four times faster than the "straight" 1040. An Atari representative said that the blitter was in final beta-test now, and should be available early in the New Year.

Atari is now awaiting delivery of the revised version of Basic, but from what I've heard so far you might just as well buy a copy of Computer Concepts' Fast ST Basic - a truly remarkable feat of programming with benchmark times at least three times faster than the IBM AT, and an amazing eight times faster than the BBC Micro.

As it also fully supports the GEM environment, I feel that this could well be the Basic of the future as far as the ST is concerned.

The future of the ST is bright indeed if the quantity and quality of ST software support continues at the pace we saw at the show. Notable products included MinorSoft's Art Director - a superb graphics art package which gives more features and facilities than ever before.

Kern and Microdeal had their latest offerings on display, and the number of accounts, spreadsheets, database, comms and other business packages available indicates that the market is treating the ST as a serious and useful business tool, not just a very pretty graphics machine as certain other 68000 based machines seem to be behaving.

All in all a very encouraging show, with Atari moving ahead in leaps and bounds with the ST range. We are the 8 bit machines being abandoned, although Atari does seem to be leaving that area mainly in the capable hands of the third-party suppliers while it concentrates on pushing back the frontiers of 16 bit technology.

With the 2080 and 4100, the blitter and the TT plug-in co-processor board on the horizon, there has never been a better time to move into the world of 16 bit computers, and there has never been a better machine to do so with than the ST.

André Willey

World of Atari focus was on the ST

An event NOT to be missed!

Atari Christmas Show

Royal Horticultural Hall
Westminster, London SW1

Friday November 28 10am-6pm

Saturday November 29 10am-6pm

Sunday November 30 10am-4pm

The first ever Atari Show last spring was an outstanding success. From all over Britain Atari enthusiasts flocked to London to find out all they could about their favourite machine.



Soon the record-breaking Atari Show will be back - with three days devoted to the exciting developments in this expanding market. Make a note in your diary NOW to make sure you don't miss this great Christmas extravaganza!

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- ★ Prizes will go to the senders of the first 50 correct entries opened on October 31.



THE QUESTIONS

- 1 Which game, written by American programmer Peter Minter, was the most successful ever written for the Atari?
- 2 What is the maximum number of colours the Atari 8 bit computers can display at any one time?
- 3 What girl's name was used to identify the Atari computer during its development over 5 years ago? Clue: It begins with a 'C'.
- 4 Which game was English Software's first machine code program for the 16k Atari 400?
- 5 Name the author of the Atari version of Tetris/Gravite.

Your answers

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- 5 _____

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THIS is a most unusual game and one none too easy to describe.

In the centre of the screen is a collection of grey sticks, the objective being to turn them all blue.

When you've done that you activate a game known as a Peris, which has the effect of collapsing all the sticks on top of each other.

Mission completed, you move to a new screen with a different configuration of sticks and do it all over again, and again until you've completed all the screens.

As well as the grey sticks a number of bridges are spaced around each screen. You use them to gain access to the

sticks. However, because there are insufficient bridges to get you to all the sticks, you have to construct more bridges.

Carrying out all this construction work, and under your control, is a small not-yet-poly character called Zan which operates in two modes - magic and normal.

In normal mode, Zan is yellow and will move left, right and up into only very down is by falling, turning any grey sticks blue on contact. A press of the fire button puts Zan into magic mode, when he turns red and can move left and right.

A press of the fire button creates a bridge in the required direction or, if near to a blue stick, sets a Peris (a sort of whirling lily) into motion.

Pulling back on the joystick while in magic mode releases a cloud of magic dust to freeze the aliens. Oh sorry, didn't I



mention them?

Well, any of the several Mobley aliens which float around the screen will get stuck on contact with the dust. Zan can pass over them in this state and collect extra points.

Contact with the aliens at any other time is harmful to Zan's health.

I also forget to mention the flashing diamonds. These can be picked up for extra points. And there are bonus points for collapsing the blue stick marks in one go. And one other small thing - there are 95 screens.

I really don't know what to

make of Collapse. Top marks for originality unquestionable, but the graphics are truly so-so and the abstract nature of the game doesn't generate excitement.

But credit where credit's due - Collapse is different, and that must be good news for jaded players.

Gregory Wheeler

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

Graphics plus

Program Ultima IV
Price: £19.99
Supplier: US Gold (Int'l) Ltd
Waltham Way, Woking,
Surrey GU24 0JG. Tel:
033-355 3366

ULTIMA IV, the latest in the Ultima saga, is the tale of the land of Britannia after the fall of the Triad of Evil.

Lord Britannia, the all-powerful ruler has sent out a message to all the lords to find a person capable of completing the quest of the Avatar, and you have taken up the challenge.

The beginning is like a graphics adventure. You move between locations until you meet a gypsy woman in her caravan. She bids you to sit and you proceed to answer multi-choice questions about cards which she places on the table in pairs.

As you answer you build up your character which is repre-

sented on an abacus-like object. On your last choice the game starts.

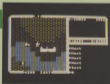
You will be one of eight professions - mage, fighter, thief, cleric, and so on - depending on how you answered the questions, and you find yourself outside the frame town of your profession.

The display shows you as a single figure in the surrounding countryside. You cannot see beyond mountains or dense trees, which sometimes means that blocks of the display are left blank.

Movement is with the arrow keys and other commands like Attack are carried out by single key strokes.

I found that the most useful command was Talk. If you stand next to one of the town's inhabitants and hit T followed by a direction key - his reply will appear in the text window.

If you type Ask he might say: "I search for the blue



stone". Then if you type Stone he will tell what he can.

Do not lie to characters when they ask for a response as this reflects on your character and will do you no good later on. Some characters will join your party if pressed.

Magic is important in this game, but it is also rather tricky. The Book of Mystic Wisdom, which is included with the game gives details of the reagents required for spells, and clues as to their objectives.

The whole game is, accord-

ing to the advertising blurb, 16 times bigger than Ultima III.

With two discs, a book on the history of Britannia, the Book of Mystic Wisdom, and a full colour vinyl map of the land, it is good value. Ultima IV is an excellent game which deserves the attention of every keen adventurer.

Simon Manton

Sound	8
Graphics	7
Playability	8
Value for money	10
Overall	8

Simply boring?

Program: *Leaper*
Price: \$2.99
Supplier: *Fun Arts, Library*
Address: 223 Rogers Street
London W1P 0JH, UK
Tel: 01-432 0466

LEAPER is a delightfully simple game, which is more or less identical to *Leggo* from Imagine Software released a few years ago and no longer available.

Surprisingly, to load the game you need to type *LOAD* followed by *RLN*.

You control a little green character, *Leaper*, who can move to the left and right as well as jump. The screen consists of six thin horizontal bars, each with a narrow moving gap.

Your task is to reach the top of the screen by positioning yourself below a gap then

leaping up to the next level. Unfortunately if a gap appears below you you fall down a level – and this happens with frustrating regularity.

You can run off the screen on one side and reappear on the other, which adds another dimension to the game. But you need to be careful as enemies can cover off screen and you could get killed.

Each jump costs you energy, a limited commodity. You also have to contend with the *Gribbles* which run along the various platforms.

They come in six different forms – *Gub-Gubs*, *The Last Will*, *Cap'n's Arrows*, *Mutant Hot Cross Buns*, *the Goo-Bits* and *UPDs*. Some move along the platforms at a leisurely pace while others really shoot along. Contact with any is fatal.



If and when you reach the top level you must jump up at a letter to illuminate it. You return to the bottom of the screen to face a greater number of adversaries. Your task is to illuminate six letters to spell the word *Leaper*.

The concept is quite entertaining and in general well executed. *Leaper* and the other characters are well animated, colourful and humorous, but action does freeze for a split

second when you jump.

The game is good value for money but its simplicity is its weakness. I suspect that the attraction may wear off after a few weeks because it lacks variety.

Mike Howes

Sound	5
Graphics	7
Playability	7
Value for money	7
Overall	6

Worth the wait

Program: *Ghostsbusters*
Price: £9.99 (overseas)
Supplier: *Activision, 23 And*
Street, Harmondsworth
Windsor, UK, Tel: 01-431
7121

PREPARE to be amazed! It's been a long wait for the increasingly successful *Ghostsbusters* game to reach the Atari single slot at last! The *Slimers*, *Roamers* and *Marshmallow Man* are here.

And what an excellent job *Activision* have made of the conversion.

New York has been invaded by ghastlies and ghoulses (without us reaching space central, the Temple of Zoot). As owner of a *Ghostsbuster* franchise you must catch these gross extraterrestrials, earn pots of money and make it to the grand showdown on top of the temple.

You'll be greeted with a shout of "*Ghostsbusters!*" followed by a fully laugh-lyrics speech synthesis.

When you finally manage to

take yourself away from the mainland into you buy your *Ghostsbuster* vehicle and equipment.

You'll either be presented with a loan of \$70,000 or, if you've played before and reached a certain level, an appropriate cash credit depending on your earned account number.

Then it's on to the streets to look for *Slimers*. The screen shows a map of the city, with the Zoot temple about centre screen.

Your position is marked by the famous *Ghostsbuster* logo which has to be moved by the shortest route to a likely building (and flashing indicates *Slimer* presence) touching land as freezing any *Roamers* on the way.

The screen changes again to show an overhead view of your car cruising down the street. Any *Roamers* encountered can be sucked up provided you have a vacuum.

When you arrive at the infested site the screen shows the front view of the building.



You manoeuvre your car to trap the fleeing *Slimer* using the handheld *blowers*.

Every *Slimer* captured pushes up your credit rating. If you miscalculate your positioning or let the two blasters touch, you'll be slimed.

When a *Marshmallow* alert is sounded, the *Roamers* join up to form the dreaded *Marshmallow Man*. Drop a deluge of bait first before he does much damage.

All the while, two moving creatures – the *Gatekeeper* and the *Keymaster* – are headed for the temple. When they meet there the game ends, if you haven't earned

sufficient credit. If you have, you can sneak in the *Ghostsbusters* for the grand finale.

The graphics are very good, the music and speech synthesis excellent. Combine these with game play that is simple but great fun and you've got a winner.

Ghostsbusters looks set to repeat its earlier conquests all over again.

Bob Chappell

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

Eastern bash away

Program: *Ninja Gaiden*
Price: £1.99
Supplier: Measurement, 4-12
Faul Street, London EC2A
4JA. Tel: 01 277 6660

As if as *Ninja Gaiden* didn't give you enough to do, *Ninja Gaiden II* brings the best, like, like.

So much for setting the Oriental atmosphere, I like not know much about *Ninja Gaiden* but what I do know is that this martial arts game is pretty good stuff.

This is a single-player only game in which you control an all-looking, all-punching ninja. Slightly clad in the traditional black garb of such fighters, you set off through five screens to conquer all foes.

As well as walking left and right, your bodily skills include high, medium and low height kicking and punching, all done very quickly, very smoothly. The animation is extremely good.

In addition to iron fists and lightning footwork, you have

other weapons in your repertoire – a slashing Samurai sword, spinning death stars and throwing daggers.

The sword you carry with you on your shoulder at all times, and can easily fend your opponent's swinging blow with a quick flick of the joystick.

The stars and daggers may be found lying around in different locations and can be picked up by crouching beside them. Hurling one at an opponent may weak fatal damage unless the opponent deflects it in time.

Unfortunately the enemy have similar weapons so you won't be the only one doing the kicking and hurling.

Also scattered around the area are small flashing idols which should be collected for extra points. Needless to say, these are alerted guarded by the enemy, who won't let you take them without a fight.

Moving off the screen either to the left or right causes the current picture to be replaced



by the name of the area you are about to enter. The screen clears again to show you in your new location.

The animation in this game's best feature, though – smooth, natural and fast, easily up to the standard of the more expensive games.

Once you've fended off your opponents to their knees – actually, they wrangle up like punctured balloons – you move to the next level where tougher fighters are to be found.

It may be because I was playing the game on an old 800 mhz pc the time says it is for 800K, and 1300K mark.

And but it wasn't all clear to me that I had actually moved up a level after defeating all foes – no level indicator appears on the screen.

It's a very good martial arts game with fine rate animation and sound. The sword, stars and dagger elements add an extra dimension to the fighting. For the low price, an unmissable bargain, grasshopper.

Bob Chappell

Sound	8
Graphics	8
Playability	8
Value for money	10
Overall	8

Good collection

Program: *Smash Hits Volume 3*
Price: £9.99 (unrated, £14.99 later)
Supplier: English Software, 1
Newt Passage, Passage
Gardens, Manchester M20
1RX. Tel: 091 432 1288

ANOTHER in the series of compilations of earlier releases, this new cassette of car anthologies features *Choo Choo*, *Mediator*, *Extrajungle* and *Questmode*.

Choo Choo is an impressive martial arts game making you to pit your Kung Fu skills against another player or the computer.

As well as being able to jump upwards and shuffle quickly to the left and right, each fighter can kick high, low or to the body. JKD 884 comes off over the opponent.

Extrajungle is a sort of Pole

Position with tunnels. There are no other drivers to compete against. What you have to watch out for and avoid are giant spheres and cubes which come rushing out of the sky towards you.

A crane will also fly over, dropping large columns into the track at added obstacles.

There are three courses and steering modes to choose from. The game plays very fast (the speed of the graphics will turn your hair white). As a result, it can be a bit on the difficult side but if you like a challenge and plenty of speed, you should enjoy this one.

Mediator is an unusual and tough mixture of multi-screen arcade action and screen scrolling.

Apart from the first, each screen offers something different and you can only progress by overcoming the



obstacles and solving the riddles presented on each screen. A real challenge.

Finally, *Questmode* is a platform and ladder type game offering three basic scenarios. Scene 1 has you throwing cementballs down from the castle battlements at ladder-climbing archers.

Scene 2 has you swinging from rope to rope in the hell town. The final scene sees you scaling the castle wall, fighting off all comers.

Questmode is graphically

the weakest of the bunch, but still offers some good play.

This is probably the strongest compilation yet issued and provided you haven't got most of the games on it, *Smash Hits Volume 3* is certainly a good buy.

Bob Chappell

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

Set yourself up with 16 extra keys

Part 5 of LEN GOLDING's series on
using your Atari to control devices



THIS month's constructional project is a plug-in keypad which gives you up to 16 extra keys, and behaves almost exactly like the standard keyboard.

The version described works as a numeric keypad with its own Return key and single-touch cursor movement, but each key is fully programmable.

It works in a similar way to a joystick, by setting up patterns of high and low voltages on the four input signal pins (as described in the June 1985 issue of *Atari West*). The operating system reads this pattern 50 times a second, converts it into a decimal number between 0 and 15, and stores it in address 632 (for Port 1) or 633 (for Port 2).

Figure 1 shows the circuit for four extra keys, one to each line, and this is



Figure 1: Four extra keys

about the simplest workable gadget you can build. You could make the keys extra large for disabled people, colour-code them for pre-readers, or set them up as function keys. You could label them "Yes", "No", "Don't know" and "Help" for a children's quiz, or "Strongly agree", "Slightly agree", "Slightly disagree" and "Strongly disagree" for a questionnaire survey.

You might like to consider connecting something other than

keyboard switches — for example, pressure mats to operate burglar alarms, or central-heating thermostats to monitor room temperature.

However, you're not limited to just four keys. By using all possible combinations of high and low states on the four signal lines, you can generate up to 16 different numbers (16 if you count 0).

Most keyboard switches are simple on/off devices and can't

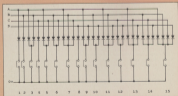


Figure 2: This slide matrix allows 16 on/off inputs to be channelled through a single joystick port



control more than one line without electronic help. But a simple diode matrix is all that's needed – and the circuit shown in Figure 11 will work perfectly well. When any of the keys is pressed, it connects one or more signal lines via the diodes to D_0 , while the other lines remain held at 5v by circuitry inside the computer.

Figure 11 shows a practical layout on the Verobloc breadboard – there's room for only 10 of the 16 possible combinations, but you can see the general principle.

The diodes are marked with a black band at their cathode ends, and must be connected the correct way – cathodes to the switches. However, you won't do any damage by trying them both ways round.

Connect the breadboard to Port 1 using the joystick extension lead, then run Program 1.

```
10 HOME:GOTO:PRINT:GOTO:GOTO:
20 POSITION:GOTO:PRINT:GOTO:GOTO:
30 PRINT:GOTO:GOTO
```

Program 1

The number 16 will be displayed – meaning all lines are high. Now connect a test lead to the D_0 line, touch it to each of the numbered points in turn and watch the number

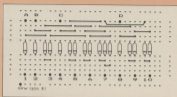


Figure 11: Breadboard circuit for the 16 keys. A, B, C, D are output joystick lines 1, plus A, 2-3 and A, 1 to PC switches – data coming one of them to D_0 and the contents of address 6552 will change

change on screen. The single touch action can be made to generate any number from 0 to 16.

Having established the principles of operation, we can move on to the keyed construction. A printed circuit board is available (see the parts list) and this makes assembly very straightforward.

If you have facilities to make your own, the full pattern is given in Figure 14. Holes for the diodes are 0.8mm, those for the switches are 1.2mm and the firing holes are 3mm or 1.8in. A ready-made board is available from RH Design, and this comes drilled and tinned ready for use.

For a professional finish, the design uses full-travel keyboard switches which have removable transparent covers so you can insert your own legends. The PCB holes are spaced so that the keys butt up to one another, avoiding the need for a complicated panel cut-out.

Solder the diodes first, making sure to get them the right way round (black band towards the centre of the PCB), then fit the terminal blocks and switches. Make sure the switch bodies sit firmly onto the board's surface with no gaps, otherwise

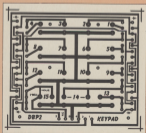


Figure 14: PCB full pattern

constant pressing will cause the computer track to peel away from the PCB.

Fit a cable clip to anchor the joystick lead, and mount the whole assembly in a suitable case using at least four of the six mounting holes. The front panel cut-out should be 75mm square.

Now we need some software to drive the gadget. You could program it in Basic, just like a joystick, but it's more impressive if the new keypad can be made to act like the existing keyboard, with no visible software driving it.

This means using a machine-code routine to scan the keypad during the vertical blank interval and activate the operating system's keyboard handler whenever a key is pressed.

There is a shortcut here: Whenever you write a number into address 764, the computer thinks you have just pressed a key which generates that number, and will obediently print the corresponding character on screen for you.

Our software simply reads the keypad (address 832), converts the number into an appropriate keycode and stores it in address 764. The operating system does the rest.

Once in place, the routine will execute every 1/60th of a second, independently of any Basic program which may be running at the same time.

From the user's point of view, the only difference between our new

```
00 000 010 10 010000 01000 002700 01
0007 0
00 0010 004 001 0, 1, 000 0, 000 0, 001 0, 0
00 00 00 100 0, 001 0, 00 0, 000 0, 0, 0, 0
00
00 0010 01 010, 07, 070, 000 000 0, 0, 001
000 0, 0, 000 0, 0, 0, 00 000 000 0, 0, 0, 0
000
00 0010 01, 00, 00, 00, 00, 00, 00, 00, 00,
000 000, 0, 000, 000
00 000 000 000 000 000 000 000 000 000 000
00 000 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
000 00000, 0000, 0000
00 000000 0000
```

Program 3



100	200	300
00 0000	00 1000	00 2000
00 3000	00 4000	00 5000

The new keys can be programmed to duplicate any key combinations

keypad and the existing keyboard is that the new keys don't have auto-repeat, which helps guard against accidental double-entry. The standard keyboard keys can still be used in circumstances where auto-repeat is an advantage.

Two different versions of the software are presented. Program 3 is the simpler, and runs as part of a Basic program using page 6 to store the machine code. Program 4 is the deluxe version for disc drive owners.

It will create an AUTOREUN SYS file which boots automatically at power-up, resets the MEMIO pointer to make a safe area for our machine code and traps the SYSTEM RESET routine to ensure that the new keypad stays active as long as the computer is switched on. This version is completely invisible to the user, and can be used with cartridge-based languages other than Basic.

Both programs work in exactly the same way. Pressing any keypad key

```
00 0000 01, 0, 0, 0, 000000, 0007
00 000 010 10 0000000 01000 00000 0
00 0010 000, 000, 00, 00, 000 00, 000, 00
0, 00, 00, 000, 00, 000, 00, 000, 00, 000, 00,
0, 000
00 0010 00, 000, 00, 000, 00, 00, 00, 00, 00
0, 000, 00, 000, 00, 000, 00, 000, 00, 000, 00,
0, 000, 00
00 0010 000, 0, 000, 00, 000, 000, 0, 000, 000, 0
0, 000, 000, 000, 000, 00, 00, 000
00 0010 00, 00, 000, 00, 000, 00, 00, 00, 00,
000, 000, 00, 000, 000
00 0010 000, 0, 000, 0, 000, 000
00 000 0000 00 000000 00 0000 000
00 000 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
0000 00000, 0000, 0000
```

Program 4



100	200	300	400	500
00 0000	00 1000	00 2000	00 3000	00 4000
00 5000	00 6000	00 7000	00 8000	00 9000

will return a number from 0 to 14 in address 832. The bit pattern is inverted — which is equivalent to subtracting the number from 15 — and the result is used as an index into a table of keycodes supplied by you. The number retrieved from this table is written into address 764, then the operating system takes over to print out the selected character.

The new keys can be programmed to duplicate any of the standard keys — or key combinations — by changing the values in the keycode table. This table appears in the Basic programs as 15 entries in a single line of DATA line 40 in Program 3, line 70 in Program 4, and can be altered simply by changing the values.

Let's say you want one of the new keys to print a comma, to allow you to type in long DATA statements with one hand, and still hold down your program listing. First you need to find the keycode which corresponds to "," (it's not the Atascii number), so type in and run this line:

10 PRINT PEEK(764):GOTO 10

then press "" on your keyboard. The number that comes up is the keycode you want — in this case 32.

Now decide which of your new keys you want to do the job, and get its number from the underside of the

The parts for the keypad are available from Maplec Electronics Supplies, PO Box 3, Mayleigh, Essex SS8 8JA. Tel: 0702 822011.

Approximate cost £8.40.

A joystick extension lead is available from Tandy stores (code 276-1976) or from large computer shops.

The printed circuit board (order code DAP2) is available from R.M. Design, 137 Stonehill Avenue, Harrogate, North Yorkshire HG2 7NS. Tel: 0423 508333.

Price £8.40 including VAT and postage.

IT is possible to access the player missile system without using the direct memory access method we have been using so far. This new method is much simpler to operate but has one major drawback - only a single byte can be plotted in the player strips and this runs the whole height of the screen.

To see how easy it is to turn on a non-DMA player type:

**POKE 53248,180:
POKE 53261,231**

and press Return, and you will see a player strip. The number 231 is the bit-mapped code that switches on selected pixels along the width of the strip and this pattern is then copied on every row.

Locations 53261 and 53264 switch on players 0 to 3 and 53265 the missiles. The normal registers associated with player missile graphics can be used with non-DMA players - horizontal registers, colour, size, collision detection and so on - but vertical movement is impossible.

Program 1 is a demonstration of some of the effects that are possible with non-DMA players. The first section shows quadruple size player stripes adjacent to each other. The number 235 is POKED to locations 53261 to 53264 to turn on all the pixels within each strip.

Additional colours are obtained on areas to the right of the screen where Playfield 0 (the text window) overlaps the players. The Graphics Mode 3 text at the top of the screen takes on a different colour depending on which player strip it is over.

The programmer has little control over what colours appear - experiment by changing the colour registers in the program to see other combinations.

If the stripes remain next to each other, and are set to the same colour - as in the second section of the demonstration program - the effect is like creating a square playfield. Notice that text that appears on the right hand side takes on a different colour to that on the left.

Finally, the program shows double size stripes with selected pixels plotted and illustrates how easy it is to move all the stripes together. By altering priority in register 6355 the stripes can appear to travel over or underneath the text.

In part VI of his series on player missile graphics STEPHEN WILLIAMSON brings all the techniques together in . . .



Non-DMA players can be used as an easy method of creating additional colours to those normally possible on a graphics screen. They can also be used as borders, or incorporated into graphs and charts.

Program 11 is Bughunter, a game starring all the player shapes that have appeared in other programs in this series and demonstrated something of what can be achieved by the use of player missile graphics and the Basic language.

The object of the game is to catch a bug in a net and take it to the cage on the right of the screen. Treading on fruit, being bonked on the head by falling fruit or being stung by the bug costs one life. Points are awarded according to how long it takes to catch each bug - the longer the time takes, the lower the score.

To assist you in following the program, Figure 1 is a summary of all the main registers associated with the player missile system.

Player 0 is the man, Player 1 the top of the tree, Player 2 the net and Player 3 the bug. The falling fruit are missiles.

Playfield 1 is the tree trunk and vertical cage bars, Playfield 2 the border line and top of the cage, and Playfield 3 the dark green ground at the bottom of the screen (set to the same colour as the text window).

The listing is liberally sprinkled with REM statements that document each section of the program. Lines 60 to 740 initialise everything. They reserve the player missile data area,

set the PVRBASE address, load shape and machine code data, set colour, size and horizontal registers, set initial values for the variables and set the Atari clock registers to zero.

If you have followed the rest of this series then a lot of these routines will already be familiar to you as they are fairly standard player missile initialization procedures.

Three machine code routines are included in the game, the same ones used in previous programs in this series. The first is a high speed clearance routine that clears any garbage that may have accumulated within the player data area. Line 200 calls up this routine.

The second routine transfers specified bytes from one area of memory to another and is used to control up and down movement of Player 3 (the bug). The last routine handles the downward movement of the missiles.

Bughunter is written in a series of subroutines. Each is responsible for a particular operation of the program - movement, collision detection, sound effects and so on. Lines 760 to 830, the control routine, decide the order in which these subroutines are accessed.

This type of program structure makes both writing the program and fault finding much easier than if the program was written largely in one continuous section.

If, for example, there is a fault in missile movement, then it is a safe bet to assume that the error lies within

the missile movement routine (lines 1080 to 1120) or the re-plot missile routine (lines 1640 to 1675).

Line 780 prevents the game going into the attract mode which normally happens if no key has been pressed for about 9 minutes, causing the Atari to cycle its screen colours.

If the joystick is not in the central position with STICK001 equal to 15, then POKE 77,0 stops the attract mode dock.

The first subroutine that the control routine calls is found between lines 880 and 950. These lines handle movement of Player 0, the man, and Player 2, the rat. Players move horizontally unless the man has been hit by fruit or the bug (this situation is handled in a later subroutine).

If the joystick is moved left or right, then the horizontal register (H0REG) is increased or decreased by 2 and the updated horizontal coordinates POKE'd to the Player 0 and Player 2 registers.

The man and rat movement routine is called up twice from the control routine for each cycle of the game. This gives additional speed for the man and rat compared to the bug, so that the player has a chance of actually catching it.

Line 930 checks if the bug is in the net. When the variable NET is set to 1, and if the man has reached the cage in horizontal position 49, if both these conditions are met the program POKE's out of the routine to increase the score.

Line 940 checks to see if the bug

Type	PL0	PL1	PL2	PL3	M0	M1	M2	M3
Horizontal position	53248	53248	53260	53261	53262	53264	53265	
Player 0 collision	53282	53283	53284	53286	53246	53249	53260	53261
Player collision	53260	53261	53282	53283	53284	53267	53268	53269
Bug	53264	53267	53268	53269	53280	53280	53280	53280
Non-DMA player	53261	53263	53265	53264	53265	53265	53264	53265
Colour	704	705	706	707	704	705	706	707
Data Area*								
- Single	1004	1200	1520	1782	768	768	768	768
- Double	912	640	768	896	384	384	384	384

* All data area addresses are relative to PMSB007. Location 53279 needs to hold the PMSB007 address (in page) for the DMA system to work.
 POKE 53278,0 clears all collision registers.
 POKE 53277,0 clears - 1 turn on missiles, 2 turn on players, 4 flash trigger.

550 options

- 0 No PT
- 1 Priority PF
- 2 Standard PF
- 3 Missle PF
- 4 Enable M DMA (Missile)
- 5 Enable PL DMA (Player)
- 12 Enable DMA (both)
- 16 Single resolution
- 32 Enable DMA system

832 options

- 1 Priority PL 0-3,PF0-3,BAK
- 2 Priority PL 0-1,PL 0-3,PL 2-3,BAK
- 4 Priority PF 0-3,PL 0-3,BAK
- 8 Priority PF 0-1,PL 0-3,PF 2-3,BAK
- 16 All missiles to have same colour
- 32 Overlay of players to have 3rd output

PL=Player M=Missle
 PF=Playfield BAK=Background

Figure 1 Player-Missile registers

has touched the net. If it has, the program branches to 1140 to see if the catch was successful. If the bug has been caught, line 930 moves the bug, Player 3, along with the net.

Player 3 movement is handled in lines 970 to 1080. Line 970 checks the Player 3 collision register to find out whether the bug has touched the

ground (Playfield 3) in order to send it flying upwards again by reversing the direction change when the bug is about halfway up the screen during its upward flight. Line 990 alters the horizontal coordinate stored in variable H0REG20 by a random amount to

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10 REM *****MAIN*****
20 REM *****OVER*****
30 REM **********
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2500 REM **********

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PL0	PL1	PL2	PL3	M0	M1	M2	M3
53248	53248	53260	53261	53262	53264	53265	
53282	53283	53284	53286	53246	53249	53260	53261
53260	53261	53282	53283	53284	53267	53268	53269
53264	53267	53268	53269	53280	53280	53280	53280
53261	53263	53265	53264	53265	53265	53264	53265
704	705	706	707	704	705	706	707
1004	1200	1520	1782	768	768	768	768
912	640	768	896	384	384	384	384

D	Vertical direction increment (-1 up, 1 down)
DOWN	Vertical coordinate for players.
HORIZ	Horizontal coordinate for players.
LIVES	Number of lives left.
M	Vertical coordinate of missile.
NET	Bug in net flag (1 in net, 0 out of net).
PG#	Data area address in pages.
PMS#	Data area address in bytes.
SCORE	Total score.
SCORE1	Score of last bug catch.

Figure 4. When variables used in *Bugster*.

give the bug its jerky flight pattern, and lines 1030 to 1010 check the horizontal coordinates to prevent it flying off the screen.

Lines 1030 and 1050 use the machine code routine to re-plot the bug shape, first with wings, then without, to give the illusion of flapping.

The sound effect for the flying bug is sorted out in line 1040. The two sound channels are changed according to the current vertical position of the bug stored in the variable *DOWN*.

Missile movement is processed in lines 1080 to 1130. Missiles only move down and line 1090 calls the machine code routine that moves them down the missile stripes. A fresh set of missiles is plotted at the top of the tree when the missile vertical variable *M* has reached a random value between 44 and 80 (calculated in line 1120).

This means that either the missile fruit will stay above ground to become a hazard to the man, or will fall to a position that allows the man to pick over it.

Lines 1140 to 1210 check to see whether the bug is in the net.

Line 1190 sees if the horizontal position of the bug corresponds to that of the net. If this is not the case, the rest of the routine is not entered.

Another check is made in line 1180 to see whether the bug is below the net or flying upwards. Lines 1150 to 1160 determine the conditions under which a successful catch is made. The bug must be flying down into the net, and must be caught at exactly the right horizontal position. To make the game easier, these two lines could be altered to allow a greater margin of error.

If the bug has been successfully caught then *NET* is set to 1 and the bug moves 4 pixels down so that it

appears to sink into the net (line 1200).

If the bug has been put inside the cage then lines 1220 to 1350 update the score. Locations 18, 19 and 20 keep count of the internal clock. Line 1330 works out how much time has elapsed since the clock was reset during the initialization routine and subtracts this time from 10000 to give a score based on how long it has taken to catch and cage the bug.

The rest of this subroutine updates the current score and performs some initialization functions before re-starting the game.

Lines 1310 to 1380 check the collision direction registers to see if the bug (Player 3) or the missiles have hit the man. If a collision has been detected then the program jumps to the man dead routine at 1480.

The sound routine at 1380 to 1420 mixes an alarm sound when the bug has been caught.

Lines 1480 to 1620 control things after the man has been hit. The FOR ... NEXT loop between 1480 and 1580 moves man and net 14 pixels

down the screen which, because of the shape priority options set at location 623, means that the player's gas underneath Playfield 3 (the ground) appear to sink into the earth.

Line 1610 reduces the remaining lives by 1. If no lives remain then the program waits for the start key to be pressed before re-initialising the game. Address 53279 detects the Option, Select or Start keys.

The rest of the man hit routine initializes the system ready to start the program again, and lines 1640 re-plot the missiles near Player 1 (the top of the tree).

■ Now you've seen how to write a simple game using player missile graphics, why not give it a go or create a program of your own?

Program 4

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THIS month's tape-in game is an epic. Written in a combination of Basic and machine code, *Cubes in Space* follows the G'bert style format, with some very colourful Amig Mode 4 graphics and Player Missiles.

This is the scenario: You have become bored with destroying yet more alien invaders, jumping on and off platforms and running around mazes feeling peevish.

Realising there is now a gap in your life you have decided to indulge in a little bit of extra-terrestrial graffiti by drawing lines all around the galaxy-recovered Space Cubes, base of the now liberated Pacron clan. (It seems that you weren't the only one bored with running around mazes...)

The Pacrons are naturally not at all amused by your vandalistic activities, and decide to have a go at stopping you. Everybody knows that wild Pacrons are quite hairless, but due to their prolonged stay in space these ones have become contaminated by assorted cosmic rays and the like, and are hence likely to burn you to a frazzle if you come into contact. You are advised to give them as wide a berth as possible.

There are eight different configurations of Space Cubes - each a little harder to cover than the last. After completing the eighth level you move on to level one again at a higher speed.

You move your graffiti marker with the joystick, but note that movement is diagonal only.

You lose one of your lives if you run into a collective Pacron or fall off the side of the Cubes. The game may be paused at any time by pressing the speaker.

Be especially careful when typing in lines 1110 to 1112 (scrolling) and 10010 to 10016 (sprite movement).

There are lots of other data and print statements to keep you busy, so try to make sure that you type in all of the special characters correctly. Don't forget that if you have any problems the checklist should help - or why not get the completed program on the monthly cassette or disc? ■

Full listing starts on Page 30

CUBES IN SPACE

By MICHAEL BAXTER



PROGRAM STRUCTURE

3-7	Variables.
50-500	Initial movement.
350	Disable Basic key.
400-410	Marked junction of side of cubes.
500-510	Check effectiveness of marker graphic if needed.
600-660	Level life routine.
660-665	Print new marker.
700-705	Define new character set.
1100-1112	Marking code for scrolling.
2000-2100	Soundeffects.
3000-3570	Print various cube formats. (Type carefully!)
7000-7005	Remove completed cubes.
10000-10016	Sprite wrap.
10100-10400	Title screen and instructions.
20000-20005	Pause routine.
20000-21001	Screen/level display.

4634 T ********* 000000000000000000000000
 4635 T ********* 18, 19, 20, 21, 22, 23, 24, 25, 26
 4636 T ********* 000000000000000000000000
 4637 T ********* 11, 12, 13, 14, 15, 16, 17, 18, 19, 20
 4638 T ********* 2188 11880
 4639 T ********* 000000000000000000000000
 4640 T ********* 18, 19, 20, 21, 22, 23, 24, 25, 26
 4641 T ********* 000000000000000000000000
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 4768 T ********* 0000 11880
 4769 T ********* 0000 11880
 4770 T ********* 0000 11880
 4771 T ********* 0000 11880
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 4776 T ********* 0000 11880
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 4778 T ********* 0000 11880
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 4780 T ********* 0000 11880
 4781 T ********* 0000 11880
 4782 T ********* 0000 11880
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 4784 T ********* 0000 11880
 4785 T ********* 0000 11880
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Five liners

COLOUR ROTATION from D. ROBSON

TREX' program draws a pattern in Graphics 10, and then rotates the colours with a small machine code routine.

The colours are rotated by cycling the shadow colour registers T05 to T12, and this method could be used for animation in other programs too.

Line 10 contains a TRAP statement to return the program when all the colours have been used. Graphics 47 is used instead of a plain Graphics 10 in order to retain the pattern on the screen.

POKE 599,D turns the display off to speed up the screen update; POKE 599,B4 (line 20) turns it back on again.

Line 20 POKes the machine code data on the first run, and also FORes in the different colours as the program needs them.

Line 30 simply contains the machine code data.

Line 40 draws the actual pattern on the screen.

Line 50 handles the colour rotation via a USR call. Variable T is used to slow down the colour change, but the value 32 could be reduced to speed up the effect.

Some of the lines are very long, and you will need to use abbreviations to type them in - for example, use DR.42 instead of GRAPHICS 42.

VARIABLES

- C Colour being used (1-78)
- B Has program been run before? (1=Yes, 0=No)
- T Delay timing/loop
- A Data being read in
- L Line being drawn

```

00 1000 20000000 00100 00000000
0000 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
10 000000 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
20 0000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
30 0000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
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50 0000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
60 0000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
70 0000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
80 0000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
90 0000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

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I WOULD just finished reading your excellent article on packers in the July issue of *Amateur User*.

I was just a little concerned about the author's recommendation to use a battery charger for recharging the 72 volt DC required to run the unit.

From my point of view it would be no problem as I have worked in electronics for nearly 30 years, but for the novice it could have potentially disastrous results.

The reason for this is that the standard car battery charger has no processing circuitry to detect 12.6 volts (or DC at 300mA). This will almost certainly destroy any semiconductor used.

I would recommend a smoothing condenser of between 1000 and 3500 uF rated at about 20 volts (WDC electrolytic) be connected across the supply rails, or that a car battery be used as a reservoir. — **R.C. Gurnell, St Leonards-on-Sea, East Sussex.**

Printer switches

I HAVE an Atari 800X with an 810 disk drive connected through an 880 interface and a Tandy Paper RP-810 dot matrix printer attached.

Can you please tell me what I should set the dip switches to on the printer?

I have tried various combinations but still have double

printing even simple things like lines to print properly. — **K. Hittlings, Wrexham, Hampshire.**

■ The most important DIP switch to set is the auto-feed, which should be set to ON. Other than that, select UK character set, 11 inch paper, and any other values to suit yourself.

If you have any further problems, contact the dealer who sold you the printer.

Pros and cons of Logo

COULD you please explain what the advantages and disadvantages of Logo are? I only know that it is a language. Can Logo be used on my 800X? Also, it must be made a hard as everyone says it is to learn?

I bought my Atari at Christmas and after I am quite satisfied. I have only one complaint. Why do cassette tape so long to load.

I have 480 words takes 18 minutes and 500 V 500 2 which takes 18 minutes.

What of my friends have Spectrums or Commodore 64s and their games take

about 3-5 minutes to load.

Is there any way to shorten this loading time — except by doing a disk drive as I don't have enough money? — **Julian Turner, Weston-Super-Mare, Avon.**

■ Logo started life as an educational language. It is very good for use with children, as you write the programs in English and better words can be defined and used as you go along. However, it is not really suitable as a language to go on to after Basic — for that, something like machine code may be more appropriate.

Machine code does take a bit of learning, although once you have got the hang of it it makes a lot of sense.

It is very logical, but rather long-winded and also not very forgiving of little mistakes.

If you want a fast language and power from your computer, but feel that machine code may be beyond you at this stage, then Basic is the language for you. People who have written complete commercial packages in this very straightforward language, say it is worth every pain.

There is no easy answer to your last question, unfortunately. The Atari tape system simply can't be

speeded up beyond about 500 baud without becoming very unreliable.

The only answer is to keep on saving for a disk drive or to have your recorder fitted with a hardware modification to speed it up, which may not work with some commercial programs.

Digitised snapshots

DO you know of anyone offering a service to have photographs digitised and saved onto disk? — **G. Forester, East Kilbride, Glasgow.**

■ Aside from paying out a small fortune for a Cambridge/Apple add-on and a video camera, does anyone know of a commercial service that can digitise photographs for Mr Forester?

Locking problems

ITS that lock up bug which it had again, renders my early model machines unusable. The alternative solution 80 column screen program gives in August's issue looks with deleting the numbers.

The answer to this one is easy — after installing the program to delete the lines given by the FOR loop in lines 1020 and 1100, in reverse order, or do it by hand.

Clearly, when using strings using PRINT the system uses long intermediate gaps when they really don't seem necessary. Is there a way of forcing the system into using short gaps, and still PRINT codes all right? — **Alan Pullen,**

Disc indexing and DOS

ON the April issue of *Amateur User* a file index utility program was listed which promised to be an excellent utility for my recently-bought 1020 printer. All my files (this could be listed on paper in an orderly and organised manner without wasting paper).

Yet after spending nearly an hour typing in the program and running it, I get a disc error statement after the filenames have been printed. No sign of

the number of files, and disk status or free space prompts which should appear.

Is this due to the fact that I am using DOS 2 and DOS 3 with the 800X and 1020 drive?

Also, is there any way in which to overcome this error and get a complete printout without actually using DOS 2.5 as suggested in the article? — **Ian Williams, Corwith, Dyfed.**

■ The program should work fine with DOS 2.0 or DOS 2.5, and my only reason why it shouldn't work with DOS 3 also.

Check lines 130 and 280, as they are the only ones that between the file names being printed and the bottom line being started.

If you can, stick to DOS 2.0 or 2.5 rather than DOS 3 — you'll find there a lot more efficient.

Higham Ferrers, Northamptonshire.

Thanks for the tip to help out Rev B Basic software. To make the cassette system use short inter-record gaps, simply use 135 instead of 0 as the second parameter of the Basic OPEN statement.

For example, use OPEN #1, 0, 135, "C:" or OPEN #0, 4, 135, "C:".

Don't forget that you won't be able to exit the tape in this mode, and that Basic's GET command may be too slow to pick up some data. INPUT and PRINT should be fine, though.

You will probably find that if you PUT bytes from Basic you will also be able to GET them back again. This is because the gaps will have extended to allow for the slower PUT speed.

Colour compatibility

I RECENTLY saw an Atari 1300X computer system with a 1000 printer. While I am extremely pleased with the computer, the printer no longer meets my needs and I am therefore in the market for a new one.

I am interested in an Okidata Okimate 3D affordable colour printer, but I am unsure if it is compatible with my system. Please let me know if this is suitable and if so, where I can obtain the necessary software and interfaces — **Charles T. Miller, R&F Alsenberg, Huntington.**

The Okimate 3D is quite compatible with your com-

puter — all you need to do is get a Commodore interface such as the FCC model to link it to the computer.

Be warned, though, that you won't be able to get instant full colour screen outputs. If you want them you'll have to do a good bit of programming for yourself to get them to work. Ordinary text should print with no problems.

Printer interfaces

I HAVE an Atari 1300X, an 8050X, a 1050 disc drive and a Brother M100B printer.

I have sought advice from various sources over a long period of time as to what I

need to link the computer to the printer. The advice I have been given so far has been either vague or non-sensical.

The biggest disappointment was writing to FCC systems who advertise in Atari User and from whom I got the address. I asked them if their interface would work with the Brother M100B and even enclosed an ad for their use.

They did not even have the courtesy to reply.

As I am asking to far someone, please to tell me what interface I need to connect the two machines. And if instead an interface is available, where can I purchase one.

Can someone please give me some authoritative advice? — **N.B. Fairbrother, Huddersfield, West Yorkshire.**

The Brother M100B has a

Games people play...

Many of you have been writing in with questions on how to get through some of the tougher parts of the latest games, but unfortunately not all of our staff see afford the time to sit around all day playing games...

Days — very — evaluating and also testing mid-level entertainment software releases...

However, we've decided to let you all help each other out. If you send in your questions and queries, and also include a few tips of your own favourite titles, we'll print the best ones. Here's a selection to be going on with:

PLUMBI help! I am desperate — would someone who has 'Feasibility Experiment' tell me how to get the diamonds?

I have had this game for months but cannot get them, even though I can go back to the altar and read the inscription — **Michael Pope, Baiton, Essex.**

MY friend and I have been

reading your magazine for a few months and thought your readers would be interested in tips for the following games. **Ghostbusters** — to get \$800,000 use no name and the code 37222645. **Stealth** — to get extra lives and be transported to the halfway mark type 'Fred several times followed by 'Rende' — do not move while typing.

In **Redneck**, if it is possible you can type the command 'Fred' followed by the name of the object or creature, but beware for it will disappear forever. Miss 'Palles' passwords in order any 'Frank, Lewis, West, Zoom, Blue Max' be careful not to bomb your own hangar as the game will crash.

With **F-15 Strike Eagle**, if out of fuel keep your finger on the afterburner key to keep flying. 'Touch and Fly' in the high jump when the bar is set at 2.00m, you can go under it. We would be interested to hear other gameplay tips, particularly the passwords for **Bounty Bob** and **Wildlands** — **Stephen Grove and Mark**

Spray, Loughborough, Leicestershire.

I AM seeking help on **Bounty Bob** James Brock.

Do you know how to get past the 'Bad Man'? I have tried many times but failed.

Also, is it possible to save the position you are at on the game as I feel like beating my head against the wall when I run out of lives and have to start all over again. — **Stephen D'Neill, Newquay, Cornwall.**

I THOUGHT you might be interested in the following codes and maps for **Bounty Bob** and **Sea Man** and **Widow**.

The codes for the latter are: 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100. Edwards.

Bounty Bob special code numbers are: 0, 8, 40, 49, 89, 90, 91, 92, 100, 2049, 282, 6887.

40 — Fill up the high score with 'Y' (YUKON) so you don't have to go through the game 70 times to see Yukon.

100 — Give Bob a haircut. Finally the secret maps in **Bounty Bob** are: 01. Pick up flower pot, press 1 and start 02. Pick up coffee pot, press 02 and start 03. Pick up milk, press 3 and start.

03. Get golden 4 and start 04. Get pitch fork 5 and start 05. Get golden 4 and start 06. Get pig and get wooden tub 1 to left 9 and start — **James Lloyd, Bookham, Surrey.**

I AM writing to tell you how much I like your magazine and to tell everyone that **AtariWorld** for the Atari is not really **AtariWorld** for **Steve Thunder**.

I was lucky that the shop keeper said that, or I would have wasted my money. — **G. Wilson, Hillingdon, Middlesex.**

ATARI USER Mailbag

WE welcome letters from readers — about your experiences using the Atari magazines, 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:

**Mailing Editor
Atari User
Europa House
64 Chester Road
Hazel Grove
Stockport SK7 5WY**

Continuous interface the industry standard for computer to printer connections, and so the FCC interface should work fine, and is reasonably cheap.

Paperboy for Atari?

I WOULD like to make a complaint, not to Atari User, but to the Atari software houses.

It is about the arcade game Paperboy. I think it is a disgraceful that Commodore, Amstrad and Spectrum should bring out the game while Atari has not.

I was also wondering if any Atari software houses were thinking of bringing out *Shanghai* in Graphics, as I have played it in an arcade and think it is a very good game. — **B. Cartledge, Stoken New Forest.**

Dumping graphics

I'VE battled through click and drag, through dead-end mouse but I still can't figure out how to dump a graphics screen from my 80088 onto my Atari 1020 printer. Is it possible? If it is can you please help? — **Jonathan Evans.**

See our article, Screen dumps with the 1020. In the September 1988 issue. By the way, don't be misled by a thick coat and an umbrella?

Basic update

I BOUGHT my 80088 over a year ago now and it is now out of guarantee.

I recently discovered it has Rev B Basic. What should I do, if anything at all, to get the updated Rev C machine?

Recently in future issues I would like to see an occasional free gift, for example small game on tape.

To receive the cost just for that issue you could put the price

up 20 or 30 pence. I think this would please many people and increase your market. — **Steven Hill, Kidderminster, Worcs.**

If your 80088 is out of guarantee when you find out that it has Rev B Basic you can always purchase a game cartridge of Rev C, which will only cost you about £5.99 from most good Atari dealers.

As to your second question — while not entirely sure we can get away with asking people to pay an extra 30p for a free gift.

Cavern Escape — again

FORWARD to my earlier letter about Cavern Escape if notice you have issued a correction in the August issue of Atari User and that it works without the 8508.

I have contacted all the firms in the Cavern Checkouts but it still will not work. Please let me know where I go to from here. (Keep it short!)

Is it possible to produce a Checkouts which tells you whether the tape you have typed in is correct after you have typed it in? (I had Got It Right very slow concerning, especially if you only have to correct half at the end of one or two long programs. — **B.M. Marsland, Colmit Heath, Bristol.**

As we said in the August

issue, the listing is fine with or without line 8508 — and apart from that it was printed quite correctly.

If you have now got the checkout values to match and you are still having problems, could it be related to the old Rev B for users Rev A3 bugs in Basic? Check your revision and see if that might be where your problem lies.

That XL handbook

I HAVE tried to get The XL Handbook, Century Publications, but no bookshop in Edinburgh stocks it. Could you please tell me where I should be able to get it? — **Ellen Ballard, West Lothian, Scotland.**

I AM rather new to the Atari world, and obviously new to your magazine.

On buying the Atari 8000, and tape recorder I opened the box and after frantically searching for a user manual, it was back to *Diagrams* Network branch.

They said "No, you are not successful in getting a manual, besides the reference guide" in their usual upper class voice.

Is this now? If so could you recommend a good basic book?

Also, I had problems with

the graphics listings featured last month. How do you make your own graphics in preference to the bag? I fiddled with the data statements but got no good results.

— **Stuart Vyea, Long Barnington, Nottinghamshire.**

You can get copies of The 13008 Handbook, which covers the 8000, as well as the 13008, from most major Atari dealers, or by mail order from Software Express or Silos Shop if you have any problems.

As for Mr. Vyea's problem with his creature — have a look at Stephen Williams's Player Move article in the June 1988 issue, which featured an editor which allowed you to create your own shapes.

Loading problems

ABOUT three years ago I purchased an Atari 400 and 410 recorder from Cozy.

About a year ago I discovered the computer would not load programs, I even tried the master process but all this game me was BOOT ERROR.

The tape recorder worked just and I tried the saved programs on an 8000, and they worked!

Only I bought Magic Molecule from Quixote I had only used cartridges so I don't know the error.

I sent the data recorder back for repair and afterwards five months later again I loaded a cassette into my computer and after the waiting has finished I heard the usual beeps covered up with a horrible noise.

Over 148 are now printed on the screen, I tried again and again but to no avail. So this time I sent the computer and recorder back. Six months elapsed and I received a postcard saying there would be a small delay.

After nine postcard I rang and was told the parts were not being fixed. I waited a

month and run again to be told the parts were just going to be fitted.

Does it really take six months to repair a small fault? I think Lesty's repair services should post their skills up!

Also, I heard about an adventure printing program by Cadaver. Could you give me a phone number on which I could inquire? — **Stephen Beck, Hartford, Hartfordshire.**

■ We're sorry to hear of your misadventures, but hope you've got a fully working machine now.

The Cadaver program is no longer available, but you could try asking round some of the mail order dealers to see if they have any left.

Extending Alphacom 81

GMW sometimes help me in getting my Alphacom 81 thermal printer working with any of these programs: 1. Pinpoint, 2. Magellan 6+, 3. Transceiver, 4. Rubricator, 5. Printing? — **David T. Beech, Bristol.**

■ Can anyone help Mr. Beech? We don't know of a driver that will allow the programs he mentions to work with an Alphacom thermal printer, but there are an awful lot of successful readers out there. Please let us know if anyone has managed to get any of them working.

If you are considering buying a printer do try to stick to something that is Epson RX11 compatible, as this will save you an awful lot of headaches in the future.

Transferring programs

I have a 1302E with 1080 disk drive. Please can you tell me if there is a way of transferring several programs from one to 5 1/4-inch disk within another program?

I have tried using the Run and Save commands in the software menu, but of course

RAMDISK just typed into my Altair 800 the modified version of Gen-Right but keep getting error 18 at line 4310. I am unable to find an error despite checking it thoroughly.

Could you also advise me where I can obtain a 5-pin monitor lead as I wish to connect my 80001 to my video.

I have also been looking for Summer Games II and Winter games but have not been able to find them — are they around for the Altair yet?

Finally, can the Home Filing Manager 319 be obtained

other than as a disc pack, and is the search facility still available? — **James R. Woodworth, Nottingham.**

■ Your problem could be caused by one of two things. The first is that you might be trying the checksum on a CHANGE or SAVE "Q error" program. Don't forget that you must use LIST format to record your program before turning Gen-Right on it.

If that is not your problem, check over any lines that set up or use the variable LDR are correct — especially lines 80, 4000 — 4040 and 4310.

The error is caused by trying to find a valid number in LDR where none is present.

Most of the larger mail order firms can supply you with a lead, or alternatively you could take your copy of the March 1988 issue of *Altair User* into a local hi-fi shop and ask them if they can make up a lead as shown on page 48 for your type of video.

Summer Games II and Winter Games are not yet available, but the Touch Tables is. As for Home Filing Manager, check around and see if you can find one.

GMW advise that the main program is just a support that the answer is connected with Input and Print.

Also please can you review some peripherals and accessories in future issues, and another price on machine code would be appreciated. — **G.R. Goodfellow, Newbury, Berkshire.**

■ All you need to do is OPEN a channel for input to the file on disc, and another for output to the monitor.

Then simply GET each byte from the first file and PUT it back into the second. Use a TRAP statement to detect the end-of-file error when the last byte has been read.

To transfer a file called MYPROG.DAT, you would do the following:

```
10 OPEN "D:\MYPROG.DAT" FOR INPUT AS #1
20 OPEN "C:\MYPROG.DAT" FOR OUTPUT AS #2
30 FOR I=1 TO 1000
40 GET #1: PUT #2
50 NEXT I
60 CLOSE #1
70 CLOSE #2
80 END
```

You could speed this up considerably if you modified Ascon Spilling's binary-get and binary-put routine for transferring blocks of memory to and from files.

Simply read the data into a long string, then send it out to the second file. Keep doing this until the whole program has been transferred. See the Data Buffer article on Page 62.

Double sided discs

ENTER I got it wrong or my first thoughts were right and there's really something wrong with your Gen-Right.

I've typed the program, checked and double checked it but it won't work. The problem is that it doesn't print my number at all.

By the way, is the 8512 IF START=0 THEN CC=1... or IF START=0 THEN C=1...?

I've bought four double sided, double density discs from SASF. I asked the salesman how to use the two sides of the disc and he said I should cut a notch opposite the existing one. Is this possible? Will it damage the disc drive? The disc's reference is 8 25 20 51V. — **Joel Paulo F. Silva, Lisboa, Portugal.**

■ The line reads: IF START=0 THEN CC=1....

If you still have problems, why not get the quantity tape or disc with it on?

Cutting a notch in the other side of the disc is an accepted practice. There are arguments on both sides, but we use B-sides in the office all the time with no problems to speak of.

All you need to do is mark up a hole exactly opposite the original one — use another disc as a template if you like. Then carefully cut it out with a sharp knife or scissors.

Ensure that you don't get any bits inside the slots, and that you don't cut into the media itself. You can even get discs pre-cut like this if you search about a bit.

Autorun for cassettes

CONGRATS on a first class magazine. I get more information out of *Altair* than most of the books I either buy or borrow. The 3-discs are very useful too.

I am writing to ask if you can tell me how to make my programs autorun? I have a 5200V with a 1010 data recorder. I have phoned up Altair Help Line and they imply that this is only possible on disc.

If this is so then how is it like some of my better games, once loading has finished, will go straight into the run mode?

Please, please will you help me solve this very frustrating problem. — **Ian James, Lewes, Sussex.**

■ The Help Line was half right. It is only possible to have a program automatically run

on disc, but there is no reason why someone couldn't come up with a routine to do the same thing on cassette.

If through people are interested we'll print one in a future issue that will allow your Basic programs to load and go via the normal loading down the Start key procedure.

Saving on the 800 XL

I WOULD like some information on how to pay for the programs on my Atari 800XL.

The cassette I got with my computer is a photo-card recorder but after I have found in a game from Atari User I cannot seem to save it.

Also, when I try to save it I have to hold down play and record so they don't stop down, and when I try to load the program back into my computer it goes in so far and then stops.

I would also like to know at the end of each program what the Get It Right! in the file editor and Checkmate mean. — **David Peterson, Thornton, Pitt.**

It sounds very much as though you have a faulty recorder. Try taking it back to the shop you got it from and asking them to repair or replace it.

You will probably find that you can SAVE things correctly then.

Have you read your August issue and found out what the Get-It-Right! keys are for yet? All is made clear there.

Swapping ideas

I OWN a BOXE and NEO 1080. I would like to swap ideas with people in Europe, especially Germany.

I have a lot of disc games and a good few cassettes. Please could you put me in touch with someone? — **Barron Scully, Dublin, Ireland.**

Colourful characters

DO I have a PORE statement or something to change the sound of the cursor? If so please could you tell me how.

Also, how do you get multi-coloured characters? I want to know as I am writing my own game.

I Miss Atari User is a great mag. It has helped me quite a lot. — **Richard Hider, Havert, Hampshire.**

You want PORE 731.1. This disables the key lock on XL or XE machines. PORE 731.0 to turn it back on again.

As for multi-coloured characters, have another look at John White's article in the April 1988 Atari User using Graphics Modes 12 and 13. We think this should answer most of your queries.

Getting it right

MANY thanks for the updated version of Get It Right! I was obviously one of the lucky ones having already obtained your December 1985 and January 1986 versions, but the added printed edition makes life much easier checking Checkmate listing on paper as opposed to in an option.

However, I do have one problem with checking large programs on my Atari 1050 printer, in as much as I only use single sheet paper, and there is no mention in the instructions of any way of interrupting the printer while it is printing.

That is, after it has printed the real file is also printing while I insert a new sheet of paper and then type CTRL or some other command for it to continue printing. I have experimented but cannot find any combination of Escape or Control keys to assist in this task.

The other thing I thought of was to save the open program in another, changing each screen (less than one page in

length) at a time, but I am not yet experienced enough to be able to then get the sections together as one program after checking.

Finally, would it be possible to add a line or two to the Get It Right! program to count the number of lines printed while creating Checkmate and then bring the program forward the printer while the paper is changed? — **Chris Barker, Woodley, Berkshire.**

The following lines could be added to the Get-It-Right! being printed in the August 1988 issue to pause the listing when you hit the spacebar.

```

1000 IF @=0 THEN GOTO 1005
1010 PRINT @
1020 GOTO 1005
1030 GOTO 1005
1040 GOTO 1005
1050 GOTO 1005
1060 GOTO 1005
1070 GOTO 1005
1080 GOTO 1005
1090 GOTO 1005
1100 GOTO 1005
1110 GOTO 1005
1120 GOTO 1005
1130 GOTO 1005
1140 GOTO 1005
1150 GOTO 1005
1160 GOTO 1005
1170 GOTO 1005
1180 GOTO 1005
1190 GOTO 1005
1200 GOTO 1005
1210 GOTO 1005
1220 GOTO 1005
1230 GOTO 1005
1240 GOTO 1005
1250 GOTO 1005
1260 GOTO 1005
1270 GOTO 1005
1280 GOTO 1005
1290 GOTO 1005
1300 GOTO 1005
1310 GOTO 1005
1320 GOTO 1005
1330 GOTO 1005
1340 GOTO 1005
1350 GOTO 1005
1360 GOTO 1005
1370 GOTO 1005
1380 GOTO 1005
1390 GOTO 1005
1400 GOTO 1005
1410 GOTO 1005
1420 GOTO 1005
1430 GOTO 1005
1440 GOTO 1005
1450 GOTO 1005
1460 GOTO 1005
1470 GOTO 1005
1480 GOTO 1005
1490 GOTO 1005
1500 GOTO 1005
1510 GOTO 1005
1520 GOTO 1005
1530 GOTO 1005
1540 GOTO 1005
1550 GOTO 1005
1560 GOTO 1005
1570 GOTO 1005
1580 GOTO 1005
1590 GOTO 1005
1600 GOTO 1005
1610 GOTO 1005
1620 GOTO 1005
1630 GOTO 1005
1640 GOTO 1005
1650 GOTO 1005
1660 GOTO 1005
1670 GOTO 1005
1680 GOTO 1005
1690 GOTO 1005
1700 GOTO 1005
1710 GOTO 1005
1720 GOTO 1005
1730 GOTO 1005
1740 GOTO 1005
1750 GOTO 1005
1760 GOTO 1005
1770 GOTO 1005
1780 GOTO 1005
1790 GOTO 1005
1800 GOTO 1005
1810 GOTO 1005
1820 GOTO 1005
1830 GOTO 1005
1840 GOTO 1005
1850 GOTO 1005
1860 GOTO 1005
1870 GOTO 1005
1880 GOTO 1005
1890 GOTO 1005
1900 GOTO 1005
1910 GOTO 1005
1920 GOTO 1005
1930 GOTO 1005
1940 GOTO 1005
1950 GOTO 1005
1960 GOTO 1005
1970 GOTO 1005
1980 GOTO 1005
1990 GOTO 1005
2000 GOTO 1005

```

The disc may continue to burn for a few moments after you press the spacebar while the computer is working out a line, but no further lines will be printed until you hit the spacebar again.

This also applies to the screen for those who are too lazy to use two-fingers to press Control-I.

Monkey Wrench II

I HAVE been using an Atari computer for about five years now. I began on an Atari 800.

After a life in America my parents returned me a Monkey Wrench II with cartridge. This proved to be incredibly useful.

However, when I was given my own computer, an 800XL, I found that this utility did not work. When the cartridge is inserted a blank screen is all I get, allowing no input or output.

Can you help? I am open to suggestions. — **D. Hutton, Catterick, Essex.**

As you have quite rightly said, the old Monkey Wrench cartridge will not work on XL or XE machines.

You could send to the Bates for an 800XL version, but perhaps better still you might like to consider getting a copy of Basic XL or Basic XE from O.S.B.

Both feature lots of the

useful features of Monkey Wrench, and might be quite a bit cheaper as they are available from UK sources such as Software Express.

Lost in Space Maze

I HAVE just typed out your Space Maze and on the first board there is a tower, but what is it for?

On board 2 there is what I think is a fuel station, but I have not been able to get there.

On Board 3 I get through the walls and land on water! I thought was fuel but was killed.

Could you please tell me how to get fuel? — **Carl Dickinson, Preston, Lancs.**

To fuel all you need to do is hover inside the fuel during the giving quick bursts on the rockets until you are stationary. The fuel will then load automatically.

Screen flicker

I AM writing to ask about a problem I have with my Atari 800XL.

The screen display flickers and wobbles, in parts, with some games, usually scrolling games like BoulderBlast. I later have an 800XL and this is not a problem. I've purchased a television to see the effect.

Can you tell me if this is a hardware defect which needs dealer attention, or might it be the modulator needs a tweak?

The 800XL is still guaranteed, but if it only needs a tweak this would save time.

I have unfortunately bought your magazine from the shop and don't remember reading of a similar fault. — **J.C. Bower, Sudborough, Cleveland.**

This sounds like a fault in the computer. It could be a dry joint, but to be on the safe side you should take it back to your dealer for repair.

THIS program lets you edit various types of media — cassettes or disc files, disc sectors and defined areas of memory. Modified data can then be stored back on any of the four media, regardless of where it originally came from.

To leave as much space as possible for the editing buffer, the program does not include many REM statements. After typing in the listing, it is possible to edit a file of up to approximately 12k. Disc and cassette subscribers will also have a compressed version which enables approximately 17.5k to be edited.

The editor is designed to accept either hexadecimal or Atascii input, which can be toggled by holding down the Option key and pressing M on the keyboard.

Other options are:

- N Go to next block
- P Go to previous block
- G Go to block number xx
- C Convert a number from hex to decimal or back again
- F Format disc
- S Save data
- A Abort

You should save the program after typing it in as if there is the slightest error in the way you have typed in the machine language data statements the computer may lock-up, losing everything that has been keyed in so far.

After typing RUN, a title screen is displayed and "Please wait..." appears as the program goes through its initialization routine. After about 30 seconds the main menu is displayed.

There are five options, allowing you to load the edit buffer from a cassette or disc file, disc sectors or memory, or alternatively to exit the program.

When loading from cassette the program prompts insertion of the tape and to press Start to continue or Option to abort. On Option the program returns to the main menu to allow another selection. If Start is pressed, the tape file is loaded and the editing screen appears.

Follow the same procedure for disc files, but you will obviously need to enter the filename too.

When loading from disc sectors, start by entering the first sector to



DATA EDITOR

By AARON SPILLING

load, followed by the number of sectors to load. Then, as with tape loading, press Start to continue or Option to abort the process and return to the main menu.

To load from memory, enter the starting address in decimal, ranging from 0 to 886399, followed by the number of bytes to transfer to the buffer.

The editing screen is displayed automatically after loading. The top line shows "bitting block xx of yy", where xx refers to the current 128 byte block being worked on, and yy is the total number of blocks currently in the buffer.

Below this is the actual data, with hexadecimal codes on the left of the screen and Atascii text on the right. At the bottom of the screen are notes to remind you of all the available options.

Simply hold down the Option key and press the highlighted letter of the function required. For example, to move to the next screen block, hold

down Option and press N.

The bottom line displays the status of the editor — hex or Atascii mode and the caps and inverse video settings. To toggle from upper-case to lower and back, press the Caps key only — neither Option nor the Shift key are necessary.

To move the cursor around the screen hold down Option — not Control — and press one of the arrow keys. You can then change the data by typing in the new information.

Editing in hex mode you may only use the 0-9 and A-F keys, and as you change the bytes the Atascii representation is automatically updated and recorded in memory.

To change between the hex and Atascii modes, press Option and M. The cursor is always displayed in the hex area of the screen, but when in Atascii mode you can enter any keyboard character you like and both the text and hex codes will be updated.

There are three ways of moving on



Birthday tips for Level 9

By Brillig

LEVEL 9 Software, which celebrates its fifth birthday this year, has provided much pleasure to untold numbers of adventurers. Happy Birthday to the team and long may they continue.

By way of a small tribute here is a collection of tips for three Level 9 adventures, including the very latest, *The Price of Magic*.

We're also featuring hints from two of Infocom's Enchanter trilogy. As any Infocom's aficionado will know, the standard punishment for wandering in the dark without benefit of lamp or other source of light is to be

pounced on by a gnu and immediately slain to death.

Not all of Infocom's adventures star these feared (yet strangely welcomed) denizens of the dark, but even so they do seem to crop up fairly regularly. I'm pleased to say.

In Brian Moriarty's new adventure, *Trinity*, revealed in this month's issue of *Avatar 27 User*, the mere mention of a gnu meets with a sigh as a response. Although gnus fail to put in an appearance in this one, their omission is more than made up for by the inclusion of one of the most fearsome-looking *Baroque* Wights it's ever been my misfortune to meet up with.

Go and get *Trinity* — it's marvelous. And be sure to visit the one-eyed cutie.

Really, what do you think about seeing direct, but simply coded, solutions to problems in *Star Trek*? Would you rather they weren't coded at all? Or perhaps, like some adventures, you might prefer not to be given solutions, but instead would rather have cryptic clues so that some of the brainwork is still left up to you.

I'm sure you've got strong views on the subject, so why not write in and let me hear them? ■

GLITCHES OF THE MONTH

This month two illustrious adventure companions to have their glitches revealed for all to see.

Firstly, in Infocom's *Trinity*, you'll eventually find yourself standing by a waterfall. If you then type **GET WET**, you'll receive the Gallegos

response: "You're already holding the handful of honey".

Secondly, when you're in front of the guru's hut in *Hainbird's The Pawn* say **CLIMB THE HUT**; You won't end up on the roof as hoped but merely inside the hut — it must be open-topped.

HINTS 'N' TIPS

LORDS OF TIME

Having problems in the amphitheatre? To deal with the lion:

**SOUL BHTT ATZW ENTW DAWT
TWED WTE WTMW AMT**

To elude the gladiator:

SLAD NADD RDM WDMT MLEM

Can't pass the invention room?
WTMW SOON EMTA KRUU ETUD HZ

THE PRICE OF MAGIC

Want to help the ghost and get the plate armor?

TPWE CEMT WISE WORD WALL UNSE NOBLE LKCU

NEW FURY 9

Can't see in the dark?

**NDAM AGEM ZWET TMDR FTWJ JAME KEEM TTEC
SWE NTH SWE EYOS UM**

What use is the wargame on the large table near the roof garden?

**KDS AMYT WTD BKAM WDTF ULLE PSAN RAEI LLW
UDT**

RED MOON

To carry the sword from the forge:

SEVO LGRE WJAE LEHT KAEW

Adventuring

Problems in the misty room?
STOO EWOT GRK LEWE HTRA EW

SORCERER

This adventure features, for the first time, an actual gnat's lair. However, these are no ordinary gnats but mutations - they aren't scared of lights.

So just how do you manage to get by them, to get by them you must?

TKON GYTC EYOM PCYD AMZZ OBOH FEHT DEER LUDY
NODGA LEWY FORD BLAF HYND SITY
SWW TYRE KEPE ODUD HFD EYOM EBYL WDMA
CETA RCHN T
DWA TTON ERNU OYSA EWOL SADR A
EFAS DUYF COKL DWRT AISE URGD HTRG YRAE WY
TWIL LEPE REWY HYHM FLES RUDY DWY YARP SRO
AGUD KYVL TYW SPO SRAE WYNE LEP DREW T

When you meet a gnat in the dark in this adventure, and in Spellbreaker, have you ever seen what happens when you attempt to FROTH GWUST?

SPELLBREAKER

In this final and toughest part of the excellent Enchanter trilogy, there's a gnat cave which is simply brimming with the nasty buster. There's only one way to survive this gruesome experience.



EWAC EWYD EHTO TWY HGL YWAY RMAC TONO D
EWOD TWX RUYL JYMU DRYW ASUM QAO WAW S

As soon as you've completed the above, perhaps for fun you might like to try the following. They won't help you to escape but they're a giggle!

AWA LS
EUYD AKCA TTA
EWAQ A TA KOD

Lastly, when you first enter the cave, have a go at YDWINing a gnat.



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NEWSLETTER

Helping relieve famine

MICROLINK was used to keep track of progress in a nationwide computer game marathon which raised more than £5,000 for Ethiopian famine relief.

The event involved micro owners all over the country playing the role-playing adventure Dungeons and Dragons.

Two teams of nine took part in a stamina-sapping Dragonathon at the Trafalgar Square Community Centre in London and wrote themselves into the Guinness Book of Records after 64 continuous hours.

Other major Dragon Aid events were held simultaneously at Aberdeen and Birmingham, and hundreds of mini marathons took place in family living rooms throughout Britain.

Organiser Adrian Mars said the on-line adventures raised at least half of the £5,000 which will go to Red Cross's Band Aid Trust.

RADIO FANS ARE TUNING IN TO MICROLINK

WHILE 38,000 members communicate with one another across the ether, the Radio Society of Great Britain has been conducting its business closer to the ground via telephones, small mail and traditional rates.

But all that is changing thanks to the society's group of mailboxes on MicroLink.

Chief executive David Evans says: "We see using MicroLink as a means of exchanging information between myself and a large number of members in the field who serve on our 18 committees, and other individuals both nationally and internationally."

"Being a commercial organisation, by law we cannot use the services to conduct our business as the national organisation for

radio amateurs in the UK.

"We represent the licensed amateur at government level and also publish books, magazines and technical material under 25 different titles.

"A remarkable two-thirds of our members are micro owners and we hope MicroLink will eventually be used for much of our committee work and the transmission of material for our publications, taking the place of ordinary rates and, to a certain extent, the telephone."

Sales link

WIDER MicroLink subscriber John Heritage found that friends of his were having difficulty selling their house so came up with a bright idea.

Why not advertise the £84,950 det. det. res. in Fleet, Hampshire, on MicroLink's bulletin board? His duty did and within a few hours recorded more than 20 responses from other subscribers intrigued by the special offer of "at least three per cent discount" for MicroLink members.

But before the offers started rolling in the property was sold through normal channels.

Sunny solution

OUT on the sunny Costa Blanca, David Corvino is spreading the word about MicroLink to Spanish-based business people and fellow expatriates.

Corvino, whose background is in insurance, believes there's a real need for fast reliable communication among a community that has strong ties with other countries, particularly

the UK. He has been living in Alicante for 18 months, setting up a company providing computers, modems, economic consultants and various software to Spanish residents with links abroad.

He has made MicroLink his choice as the recommended communications system for his clients, setting a target of 500 new mailboxes in the first year.

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ATARI ST

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