

# ATARI USER

Vol. 3 No. 6

October 1987

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## Get it Right!

All major listings in this issue are accompanied by checkmarks to help overcome typing mistakes. For full details of how they work, see the article in the August 1986 issue of Atari User.

Link your Atari to the outside world with...

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Total price: £148.95

With either combination you can also log on to other databases and bulletin boards all round the world.

All you need - apart from your Atari - is a modem, which plugs into your telephone wall socket, plus suitable communications software.

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## PRIZE CRASH

A MATTOWMAN electronic mail competition offering a mugshot of champagne as the air prize resulted in a giant Amigover when the winner unwittingly caused the software in the central computer to crash.

When ex San Francisco police officer Cameron (Carol Lopez) posted the 70,000th message on the MicroLink Bulletin Board from his office in Glendale, all that should have happened was that he received a three litre bottle of Alcatraz Champagne to mark the milestone achievement.

Unfortunately when no one replied at that time was that the BBS system was only designed to cope with a data field of four characters — up to and including a space.

So when just one additional message was received, it was as if a giant fuse had blown.

In fact, the only person left with a grin on his face was Cameron Lopez.

Mind you — according to MicroLink boss David Beaslie — it should have been a straight one. For it seems that Carol checked a little bit.

"He'd obviously written a program that started sending identical messages just as the number of messages on the board was approaching the 70,000 mark".

All the messages said was: "Is this the one?"

## Playing to win

ATARI's 387 million turnover of American retail share The International Group is the start of a new era, says chairman Jack Tramiel.

"Atari is going to be an international electronics company", he said. "We want to expand into basic production and distribution and the vertical market in computers".

Speaking of his administration for American WWB here General George

# Atari gears up for Xmas boom

**MASSIVE** sales of video games and consoles have been predicted by Atari for the Christmas market.

The prediction has been made following a huge increase in sales of video consoles and games in the American market last year.

Figures just released show that the company's turnover was up by 38 per cent with profits of \$11.5 million as sales of \$70 million in just three months. The American success is expected to be mirrored

here this Christmas now that Atari's video games machines are to be sold in all the High Street multiples.

"For the past three years if parents with children aged 10 and under wanted a video games machine then they had to buy an expensive computer to do the job", said an Atari spokesman.

"With the 2600 video console retailing at £49.95 parents have an inexpensive way of having a games machine and getting their

children used to the idea of using a computer".

The two other machines which will also be on sale in the multiples are the new 8000 computer games console for £78.95, and the XE computer games system for £179.95, made up of the console and a keyboard.

The list of games for the consoles grows almost daily. Atari's own label software catalogue for the machines is already swelling towards the 100 mark.

## Lighter touches

**HUMOUR** has been injected into the latest Magnetic Scrolls adventure game released for the Atari 8 bit by Pandemic.

Arnie is set in Aquarania — a neighbouring country to the setting of top-selling The Pagan.

Pandemic 001-248 88381 say that the light hearted game is a quest for magic stolen by witches and hidden down seven mazes.

## Database heads for the States

A NEW transatlantic deal will see a British software house reverse recent trends by establishing a major presence in the United States.

Database Software has reached agreement on a joint venture with ShareData, pioneer of budget packages in the States and a public company valued at \$25 million.

The end result is the formation of Database Software Inc. in Phoenix, Arizona.

The new corporation aims to market the best British and European titles through ShareData's 22,000 outlets in North America.

Database Software is part of the Database Group, the UK's leading publisher of computer magazines including Atari User.

As a software house, it has striven to prominence in Britain in October, 1984, with the release of Mini Office — an Atari 8 bit favourite.

Database Software is today recognised as one of the fastest growing companies in its field in the UK. The last 12

months have seen its turnover increase more than five times.

Similarly, ShareData in the States has a track record second to none.

It has become the go-to for the American industry, recording sales of more than 500,000 units in the last three months.

Michael Meakin, joint managing director of Database, flew to Arizona to complete the British-American deal.

"We have spent a long time looking for a suitable partner in the States to make us a truly international company", he said, "and in ShareData we believe we have found the perfect answer."

"Now the search is on to find the hottest software properties in Europe and Britain to sell in America."

"It is a huge market with an insatiable thirst for good software", said Michael Meakin. "We intend to satisfy that demand with the help of the wealth of excellent software authors over here".



**The Controller Card  
Desktop Management System**

**For the Atari 800XL/1000E Computers**

One of the most powerful features of the ATANIST and COMMODORE AMIGA is the "DiskTOP". This system allows the user to have a range of utilities in memory while running commercial software, when you access the desktop system the commercial software will be temporarily frozen. The Controller Card is an internal hardware modification that when installed into your Atari 800XL/1000E will give you the most advanced Desktop Management System available today. . . .

**DESKTOP MASTER DISK**

**Snapshot Printer Computers with the SHG**

Printout screens from commercial game file pages to graphic application packages. Will handle any graphics mode including mixed graphics modes. Full A4 size printouts. Built in shade palette included in our unique SHG system which is available high definition bit image printer compatible to a protocol for Epson and compatible printers. . .

**Superdump II Memory Dumper**

The perfect utility for software development, just dump the contents of memory where the error occurs then examine and modify. Can also be used to upgrade your cassette software to disk or mini-disk to disk backups.

**The O.S. Boot Menu**

A Desktop resident bootload menu, by simply pressing the HELP key you exit the main program to the menu.

**Disk I/O Analyser**

A unique and very powerful disk debugging tool which prints out all the relevant information concerning the interaction between the disk drive and computer as the disk software is loading or reading/printing data.

**The Control Panel**

This utility will allow you to adjust a wide range of system parameters such as: turn sound, IC voices, screen lock, key lock, fast cursor/keyboard debounce rate, primary system status, the system load rate and the system character set (14 alternative character sets to choose from).

**400/800 Operating System Server**

This facility will allow you to save the O.S. from the 100/800 Atari computers to create true simulations of upgrade computers such as the AMIGA/64 or disk to survive the 800XL/1000E computers via the Desktop.

**Additional Desktop Library Disks**

**Library Disk #1 - 1000 Snapshot Printer Drivers**  
Similar to the SHG Snapshot printer dumpers but not dedicated for the 1000 printer.

**Library Disk #2 - SHG Professional Print Package**  
Combines the SHG Graphics converters and Post enhancers together on one master disk. The Graphics converter will give your outgoing publishing packages i.e. TYPESET TIPS (plant systems) a printout that matches a photocopy using Epson 8 pin dot matrix compatible printers with reverse line feed. In fact the only competition we have is a Laser printer !!

**Library Disk #3 - The Superdump II Toolkit**  
The ultimate backup system for standard and U.S. Double-Disk drives. This disk is an essential tool which features 11 useful bits up the whole of this software to describe them. . . . Please ring for details.

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  - o Track tracer, Diagnostic tester, 48k and 128k Disk Backup utilities.
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## Gnome on the Range

THE friends at Level 9 Computing have been taken over by a gnome, according to recent correspondence discovered in a follow-up.

Don't let the diary-looking date in the picture that they're posing with a cardboard cutout — they believe it is a rigid Britannica, their new managing director and founder of the latest Level 9 offering

for Atari 8 bit machines.

Called *Gnome Ranger*, it is a three-part recreation of an epic journey with multi-player games and a lot of what Level 9 calls "amazing text".

Characters, who all have their own lives, can be organized and ordered about by the player and there's a 48-page Journal to help. Price £3.99 from Level 9 (0344 487667).

## It's word perfect

BRITISH computer users can now have access to what is claimed to be the biggest and most up-to-date multi-lingual dictionary in the world.

And it is already being viewed as a major breakthrough for groups as diverse as businessmen faced with foreign correspondence through to schoolchildren struggling with homework.

It is all part of a new service being offered by MicroLink, the UK's fastest growing electronic retail network.

Sitting at their keyboards, all subscribers have to do is type in a word or a complete phrase and the Great European Dictionary does the rest.

Powered in an EEC sponsored renaissance computer in Luxembourg, the electronic dictionary is the result of a massive collaboration between language experts throughout the community.

The Great European Dictionary consists of more than

380,000 words and phrases in English, German, Danish, Dutch, French, Italian, Portuguese and Spanish.

Such is the sophistication of the computerized language facility that it offers translations from any one of those languages into any other — or into more than one at the same time.

Nor does the service confine itself to straightforward translations. It also provides detailed explanations of the word or phrase, together with relevant notes about how and where it should be used — both in English and foreign languages.

"Such explanations in the foreign language constitute an invaluable source of material for translators", says Derek Meakin, head of MicroLink.

"As it is being continually amended and updated it is far more accurate and up-to-the-minute than any conventionally printed dictionary".

THE  
GALLIP  
CHART

TOP 20  
SOFTWARE TITLES

THIS MONTH	LAST MONTH	TITLE (Software House)	PRICE
1	•	DECATHLON <i>Firebird</i>	1.99
2	◀	MILK RACE <i>Mastertronic</i>	2.99
3	▼	GAUNTLET <i>US Gold</i>	9.95
4	•	LIVING DAYLIGHTS <i>Dorank</i>	9.95
5	▲	AMAUROTE <i>Mastertronic</i>	2.99
6	▲	GUN LAW <i>Mastertronic</i>	1.99
7	▼	HÖNVER BOYWER <i>Mastertronic</i>	1.99
8	▼	MICRO RHYTHM <i>Firebird</i>	1.99
9	•	JACKLE AND WIDE <i>Bulldog</i>	1.99
10	•	FRENESIS <i>Mastertronic</i>	1.99
11	•	NINJA <i>Mastertronic</i>	1.99
12	▼	SILENT SERVICE <i>Microgrisee/US Gold</i>	9.95
13	•	BOULDERDASH <i>First Star/Prime</i>	2.99
14	▲	LEADERBOARD <i>Access/US Gold</i>	9.95
15	▼	COLONY <i>Bulldog</i>	1.99
16	▼	UNIVERSAL HERO <i>Mastertronic</i>	1.99
17	•	TABLE FOOTBALL <i>Athos</i>	1.99
18	▼	INVASION <i>Bulldog</i>	1.99
19	•	DEATH RACE <i>Athos</i>	2.99
20	▼	LA SWAT <i>Mastertronic</i>	2.99

Compiled by Gallup/Microscope

Decathlon from Firebird enters the chart this month at No 1, knocking Gauntlet from that position. See the review of Decathlon in this issue of Atari User. There is a great deal of movement with eight titles entering the Top 20 — while the majority are budget titles, the full-priced Living Daylights from Dorank enters at No 4.

# NEWSLETTER

## Spreading the word

In the centenary year of the International Language Exports, a new branch - in Gurgaon - has been formed in London, and MicroLink is its chosen electronic route to the rest of the world.

About 52 million people worldwide - 8 million in Europe - speak the amalgam of Anglo-Saxon and Latinate tongues invented in 1987 by Polish doctor Ludovic Zamenhof.

The Sud-Londona Esperanto-Grupo has been going for five months.

Secretary Gregory Fortis said: "We believe the time is ripe for a revival of interest in Esperanto. Not just because of its centenary, but also because it has been adopted as a subject for the new GCSE exams and is now the EC's official language for basic translation.

"The South London branch of Esperanto is using MicroLink to further spread the word about the benefits of learning the language".

## Typesetting over the line

**LOW-COST**, professional quality typesetting for everything from business cards to magazines is now available electronically on MicroLink.

Wordstream provides a 24-hours-a-day, seven-days-a-week service for companies and individuals who want to control their own printing and save on costs.

All subscribers need do is key in the text on their monitor and send it via MicroLink's electronic mail system. It is switched elec-

tronically to Wordstream in Bournemouth who typeset the material and return the finished product by first class post or special delivery.

Text for typesetting can be prepared on an ordinary word processor by inserting special codes to specify typefaces, sizes and measures. Then it is transmitted to the Wordstream mailbox on MicroLink.

Special software automatically checks the text file to ensure that codes

are correct, and initiates processing immediately. Within 30 minutes a bromide repro for off-making at camera is produced for despatch to the customer.

The service offers 105 typefaces from 6.5 to 72 point. The range includes expanded, condensed and italic type, variable letter-fit, accents and fractions, and paper-saving multi-column text.

Payment is by the foot length of repro and Wordstream registration is free on MicroLink.

## SPEEDING THE FACTS

**NEARLY 30** of Scotland's largest local authorities and six local government trades unions are communicating electronically via MicroLink.

The Scottish Local Government Information Unit was set up two years ago as an information research and publicity service for the organisations.

"We feed facts and fig-

ures in easily digestible format to well over 1,000 key elected officials and administrators", said the Unit's director Annie Fairley.

"In addition we are a source of local government information.

"MicroLink telex and electronic mail facilities will help us move all this information a lot faster than before".

## Aid to trade

**MICROLINK** technology is helping improve trade links between Britain and the Third World.

Latent overseas businessmen to take advantage of fast, efficient telex and electronic mail facilities is S.S. Wiyayashina.

He is managing director of Bureau-Matic, based in Abidjan, capital of the Ivory Coast, a former French colony in West Africa.

"My company imports computer accessories from various suppliers in the UK, but existing communications are not satisfactory", he said.

"Letters can take up to three weeks to arrive and the telephone service is very erratic.

"I plan to use MicroLink for all my international communications from now on because I know it will depend on its speed and reliability".

## New Open University Club

**LIKE** many of the Open University's 70,000 plus students, electronics engineer Jim Haxton often feels a sense of isolation.

"I can't get to evening classes every week, I have little or no contact with other OU students, and though the instructors are very helpful they are also very heavy and I dislike bombarding them with letters and phone calls", he said. Jim's solution - for

himself and other part-time students in the same situation - has been to form an Open University Club on MicroLink where people can communicate electronically about their courses.

"At a recent summer school I discovered that a lot of people like me can't get to the tutorials", he said. "But lots of us have micros and modems, so the technology for exchan-

ging ideas and opinions is there to be tapped.

"The Open University has a policy of encouraging self help groups where students can discuss problems and gain a greater understanding of their courses.

"I'm hoping that OU instructors will also log on to the Open University Club on MicroLink so that students can benefit from their input too".



# Play the game of life

**A PROGRAMMING assignment often asks for something computer scientists like to write a program that simulates the evolution of life at cell level.**

The rules are simple: if an empty cell is surrounded by exactly three live cells a birth will occur in it, but if a live cell is surrounded by more than three or fewer than two live ones it dies of overcrowding or loneliness respectively.

The amount of calculation involved to determine the status of a cell makes Basic Life programs very slow, so here is a machine code version which can analyse approximately 1000 cells in less than one second – less time than it takes a Basic version to analyse one cell.

Type in the program as it stands and



Figure 1:  
The glider

## PHILIP MASSAM's program simulates cellular evolution

save it to tape or disc so that you have a backup copy. Then run the program, and if it is well the display will change to two graphics: 8 lines sandwiching an area of graphics 12.

Now the program will allow you to set up the initial pattern of cells using the joystick. Move the cursor – shown by the cross – to the required position and to create or erase a cell press the fire button. When the cursor is on a cell, it will be red, otherwise all cells will be green.

If Option is pressed once you've set up the initial pattern the program will switch to single step mode instead of the default continuous generation mode.

Pressing Start will start the life process. All cells born in one generation will be coloured red and all cells surviving from one generation to another will be green. If the single step mode is used each generation will be created when the fire button is

pressed.

At any time the Life process can be stopped by pressing Help. The number of generations that the life form has survived is shown at the bottom left of the screen.

As you experiment you'll find many interesting patterns of cells, but to start you off the two figures show well known ones. Figure 1 gives a pattern that appears to walk across the screen and is known as the glider. Figure 2 is known as the seed and is best seen in single step mode.



Figure 2:  
The seed

```

10 REM LIFE by Phil Massam
20 REM 640 384 16000 3200
40 SCREEN 0
50 C=CHR$(0)
60 I=I: 100: REM 1000 BY LINE
70 I=I: 50: REM 500 BY PHIL MASSAM
80 I=I: 10: REM 1000 BY LINE
90 I=I: 10: REM 1000 BY LINE
100 I=I: 1000: REM 1000
110 I=I: 1000: REM 1000
120 I=I: 1000: REM 1000
130 I=I: 1000: REM 1000
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```

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```

7100 1000: REM 1000
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7160 1000: REM 1000
7170 1000: REM 1000
7180 1000: REM 1000
7190 1000: REM 1000
7200 1000: REM 1000
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7220 1000: REM 1000
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8000 1000: REM 1000

```

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If you've had your disc drive for more than a few months, you will know all about the joys of wedding. You load up Dos, read the directory to see if there are any old files you can get rid of, and discover that the names which seemed so appropriate when you invented them have lost all semblance of meaning.

What did WEENIES.BAS do? And do you still need it? To be on the safe side you return to Basic, try to Load the file and discover you've forgotten the exact spelling.

So it's in and out of Dos again to get the correct file name, load the program, list or run it and make your decision. Then back to Dos to erase it if necessary, and refresh your memory about other files on the disc.

This little autoboot program makes life much easier, whether you're on a wedding occasion or just attempting to find a file whose name you can't quite remember. It lets you read the disc directory without leaving Basic, so you can do all the searching and checking in relative comfort.

There are simpler ways of reading disc directories from Basic — OPEN, GET and PUT, or XIO, can be made to do the job. But these involve writing extra lines of Basic, which could get mixed up with the program you're checking, and will in any case be lost when you load anything new.

# Put the boot in

Obtain direct access to disc directories with this program by LEN GOLDING

This machine code routine loads automatically at power-up time into a safe area of memory which cannot overlap into a Basic program, and is pretty well immune to anything Basic can do.

Once installed, it stays in place until you turn power off or enter Dos, and you can forget it's there until you need it. Then a simple direct mode USB call will print the directory and return to Basic as though nothing had happened.

Program 1 is the listing to type in. As with all machine code programs, it's essential to type in the DATA statements exactly as they appear, or the system will probably lock up. And be sure to save a copy before you try running it for the first time.

Insert a disc that contains a copy of DOS.SYS, and make sure it doesn't also contain an AUTORUN.SYS file which you want to keep. Then run Program 1, and the new AUTORUN.SYS file will be created for you auto-

matically.

It needs to be loaded into memory before you can use it, and this is done simply by turning power off then on again.

Once the machine code is installed you can list the directory on screen with the command:

**X=10267650**

Alternatively you can send it to a printer by:

**X=10267650,1**

If anything goes wrong during execution of the routine — for example, if the printer is off-line or the disc drive not switched on — you will hear a beep from the speaker, and control will pass back to Basic. In this event, the error number can be found in address 1010.

Program 2 is the source code, but this will be of interest only to machine code programmers who have a fair knowledge of XIO and are used to working with assembly language.

### Program 1: Basic program

```

10 OPEN #1:J:0:0:1000:100
20 READ #1:Y=1:Z=0:0
30 FOR #1:Z=0 TO 25
40 DATA 250,250,2,2,250,250
50 DATA 250,250,250,250,250,250,250,250,250,250
60 DATA 250,250,250,250,250,250,250,250,250,250
70 DATA 250,250,250,250,250,250,250,250,250,250
80 DATA 250,250,250,250,250,250,250,250,250,250
90 DATA 250,250,250,250,250,250,250,250,250,250
100 DATA 250,250,250,250,250,250,250,250,250,250
110 DATA 250,250,250,250,250,250,250,250,250,250
120 DATA 250,250,250,250,250,250,250,250,250,250
130 DATA 250,250,250,250,250,250,250,250,250,250
140 DATA 250,250,250,250,250,250,250,250,250,250
150 DATA 250,250,250,250,250,250,250,250,250,250
160 DATA 250,250,250,250,250,250,250,250,250,250
170 DATA 250,250,250,250,250,250,250,250,250,250
180 DATA 250,250,250,250,250,250,250,250,250,250
190 DATA 250,250,250,250,250,250,250,250,250,250
200 DATA 250,250,250,250,250,250,250,250,250,250
210 DATA 250,250,250,250,250,250,250,250,250,250
220 DATA 250,250,250,250,250,250,250,250,250,250
230 DATA 250,250,250,250,250,250,250,250,250,250
240 DATA 250,250,250,250,250,250,250,250,250,250
250 DATA 250,250,250,250,250,250,250,250,250,250

```



10000000	10000000	10000000
10 1144	10 1467	10 1891
48 4881	60 10974	68 18344
70 11069	80 10185	88 18448
100 10411	110 10847	120 10441
130 10441	140 10942	150 11174
160 11440		

### Program 2: Source code of Program 1

```

10 10=0001
20 1100=0000
30 1100=4000
40 1000=4000
50 1000=1000
60 1000=0000
70 1100=1000
80 1100=1000
90 1100=1000
100 1000=1000
110 1100=1000
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```

Turn to Page 12 for

## 4 From Page 88

```

0430 PLS
0440 L20 #32      'IT is used to
0450 ST0 FLAG    (SELECT channel #)
0460 L20 CLEAR    Clear #)
0470 L20 #32
0480 L20 #0F00   that Open it again
0490 ST0 CLEAR_0 for the printer
0500 L20 #0F00#011
0510 ST0 CLEAR_0
0520 L20 #0F00#010
0530 ST0 CLEAR_0
0540 L20 #0F00
0550 ST0 CLEAR_0
0560 L20 #0
0570 ST0 CLEAR_0
0580 L20 CLEAR
0590 #PL #0F00
0600 L20 #0F00
0610 #PR00 #0F00 #0
0620 ST0 #0
0630 L20 #0
0640 L20 CLEAR    Clear #)
0650 L20 #0
0660 L20 #0F00   that Open it again
0670 ST0 CLEAR_0 for read directory
0680 L20 #0F00#011
0690 ST0 CLEAR_0
0700 L20 #0F00#010
0710 ST0 CLEAR_0
0720 L20 #0F00
0730 ST0 CLEAR_0
0740 L20 #0
    
```

```

0750 ST0 [00]#)
0760 L20 CLEAR
0770 #PL [00]#)
0780 #0F 0000#)
0790 #0F00 #0F00 #0#)
0800 ST0#00
0810 L20 #0
0820 L20 #0#)   Set #) to read the
0830 L20 #0#)   #)#0000#) #0000#)
0840 L20 #0F00#) and set #)#0#)
0850 ST0 #000#) #0 #0F00#) #)
0860 L20 #0F00#) #) #)F00#) #)
0870 L20 #000#) #) #)F00#) #)
0880 ST0 CLEAR_0
0890 ST0 CLEAR_0
0900 L20 #000#)
0910 L20 #000#)
    
```

```

0920 ST0 [00]#)
0930 L20 CLEAR    Set a record
0940 #0F 000#)   Branch on error
0950 L20 CLEAR
0960 L20 #0
0970 ST0 #0F00#)
0980 #0F00#)
0990 #0F 000#)   End of directory
1000 #00 CLEAR#)   Branch if ok
1010 #000#)
1020 ST0 #000#)   Load error type
1030 L20 #0F00   Load buffer
1040 ST0 #0
1050 L20 #0
1060 CLEAR#)
1070 L20 #0
1080 #00 #01#)
1090 L20 #0 CLEAR#) and #) if necessary
1100 #01#)
1110 #0
1120 #0F 000#)   Set up to load
1130 #0F 000#)   Drive dependent
1140 #000#)
1150 #00#)
1160 L20 #000#)   Clear the channel
1170 ST0 #000#)   #000 number #0#) in
1180 L20 CLEAR    in the # register
1190 #0
1200 #00#) #00#)
1210 #0#) #00#)
1220 #00#) #00#)
1230 #00#)
1240 #00#)
1250 #00#)
1260 #000#)
    
```

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# It's a real steal!

Program: *Guild of Thieves*  
Price: £19.95  
Supplier: Rainbow Software,  
King's Cross, 24 Essex Street,  
London WC2A 3PS  
Tel: 01-437 2595

TO risk this or to risk that, that is the question. Well, it is if you want to join the notorious Guild of Thieves because, make no mistake about it, this is what this adventure is all about.

In this excellent follow-up to *Rainbird's The Pawn*, you have applied to join the Guild and must qualify for membership by proving you have the necessary knocking-off skills.

Cast away on an island (in Kerencia, naturally), you have been tasked with stealing every bit of treasure you can lay your little fingers on.

The game starts in a boat seat to a jolly, bearded, red-headed man, the Master Thief, beckons you to jump ashore and begin robbing the island.

When you disembark, the Master Thief disappears, but that's not the last you'll see of him. Throughout the game, he reappears briefly at the most unlikely moments, adding an extra bit of spice and fun to your escapades.

Your first step is to get out of the boat and on to the jolly. And because the parser seems a bit sluggish with this opening, leaving the boat isn't as straightforward as it should be.

But it doesn't really matter – failure to leave the boat fairly promptly causes the Master Thief to lose patience and drag you bodily from the boat anyway.

Generally speaking, the parser is very good at handling your commands. What is odd is that it seems better at handling really complex input than some of the simpler commands.

For example, **EXAMINE** ALL every useful describes all the objects in a single location but not those which are inside another object, even though they are clearly visible.

Two commands that really make progress much easier are **GO TO** a place and **FIND** an object. Provided you have already visited it, **GO TO** will take you directly to the location specified taking you through any intermediate locations on the way without having to fuss unless there is something that physically prevents you from going on.

The **FIND** command similarly takes you straight to the location of a previously discovered object – so handy if you have been littering the island with items and failed to take a note of where each was last left.

There are plenty of locations to explore on the island, not least of which is an imposing mansion. Getting inside calls for some suppression of your natural thieving tendencies – who said oh yes was dead?

The mansion is large and there are many unusual objects to discover and locations to search.

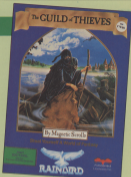
You have to be careful what and how you smuggle items out of the mansion – the Gatekeeper is always on the alert.

He is also a gambling man and will offer you the chance to bet on a real rat race. Don't pass up or be late for the opportunity when it arises – you could do with the winnings.

Some of the puzzles you'll find here include a bear guarding a chalice, a rat-infested cellar and a secret laboratory.

Make sure you visit the inn and stay a while there, if only to see one of the sudden and humorous appearances of the Master Thief.

Outside the mansion,



you'll come across a cove entrance leading to an underground complex. Again puzzles abound and you'll need to learn, for example, how to cross a room of hot coals, how to get a mouse to speak and how to deal with a venomous spider.

The Bank of Kerencia is nearby but always seems to be closed. You should eventually discover how to demonstrate that there are still signs of life within it (nice touch, that) but it will take some time to make the bank fully open up to you.

Make sure you visit the cemetery, not only for the picture accompanying the text but also to have a look at the three graves you'll find there. Bet you didn't know that this is where they ended up!

And speaking of pictures, the 25 scene-setting illustrations built into the game are well up to *Pawn* standard. One or two are a little on the predictable side and add little to the atmosphere, but most are good and some quite outstanding.

*Guild of Thieves* comes

in two discs with a clop, a Kerencian credit card, a Guild contract of service and a copy of *What Bungalow* magazine.

The latter serves as a guide to the game and will give you a few hints and belly-laugh into the bargain. The game needs a minimum of 66k to run it.

I much preferred *Guild of Thieves* to *The Pawn*. For one thing it is much more logical, for another it hangs together in atmosphere and detail so much better.

The puzzles range in difficulty from easy to mind-bending so there is plenty here for all adventuring skills.

This is an absorbing, funny and sparkling adventure and guaranteed to be another sure-fire winner for Rainbird. Don't delay – buy it. The Master Thief awaits you.

**Bob Chappell**

Presentation	5
Atmosphere	5
Playability	5
Value for money	5
Overall	5

## Mash a joystick

**Program:** Decathlon  
**Price:** £1.99  
**Supplier:** Firstline, 24-26  
Rear, Deodar Street,  
London WC2A 1PH  
**Tel:** 01-275-6667

HOW many times have you wanted to be Daley Thompson when he steps up to receive his gold medal? Here is your chance.

The first screen presents you with two men racing down a track, an atmospheric piece of music and a message scrolling down the screen telling you that it's not the winning that's important but the taking part. I would prefer a little gold medal to make me feel better.

You are offered the option of up to four competitors and in the track events two

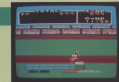
people may race against each other.

After choosing the number of players and entering your initials, you can choose from ten events in a scrolling window.

The events – 100, 400, and 1500 metres, long jump, high jump, shot put, discus, javelin, pole vault and 110 metre hurdles – are all in their own way hard to play but I found the 400 and 1500 metre events a little tough on the hand as you try to pull your joystick apart.

Your time and distance are displayed as a digital clock. I made a 58 metre throw and the javelin moved a very short distance and the clock whizzed up far too fast.

If this had been slowed down and the javelin allowed to hang in the air



longer the event would have had more atmosphere.

The graphics are reasonable but with poor sound, though the animation is quite well done. You can choose which event you want to play and not have to follow a set order of events and this is a saving grace.

The pole vault is let down by poor animation but as a budget game the good points far exceed the bad.

The major drawback is the fact that it is one of those

games where you have to nudge the joystick from left to right in a mad fashion to get the little man to run his socks off. So if you don't mind the risk of ruining your joystick you're all right to buy this one.

### Not Favours!

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

## Bargain time

**Program:** Universal Hero  
**Price:** £1.99 (special)  
**Supplier:** Mastertron, 8-10  
Rear Street, London EC2A  
4AP  
**Tel:** 01-277-6660

ALL I found out about Universal Hero in the blurb was that it's an arcade adventure. But there are no clues and instructions are minimal. Still, some people like to get into their adventures blind.

Our hero has a pretty everyday sort of chance to carry out, by Superhero standards anyway – to save the planet from imminent destruction.

The culprit is an out of control space freighter which must be repaired to avert disaster.

No real problems – but for the fact that the nearest intergalactic Halfords is on a neighbouring planet and the interplanetary shuttle is itself in need of a 5,000 mile

service and MDT.

To make things interesting, the freighter is due to crash into terra firma in one hour's time.

So the race is on to find the parts to the shuttle and sort out what to do with them. Then to whiz off to find the parts for the freighter and fix it.

In your quest, only nine objects can be held and displayed at any one time. Movement is via a jet pack, hindered by occasional aliens of varying degrees of ferocity, force fields and other obstacles.

Contact with the aliens may set away at your air supply or kill you outright. Your powers of logic and deduction will get you through otherwise impossible barriers.

The game is nicely presented, with good graphics and movement. Use of sound is minimal, which is at least preferable to bad use of sound. I



thought the game was immensely playable and addictive.

On reaching a control computer within the caves under the planet surface, and having in my possession all the items necessary to work it, I logged on and was asked to identify myself.

At this point my keyboard locked up and I could do nothing but reset the machine and restart the game. This happened every time and meant that I could not progress further.

I mentioned this to Mastertron, who said that they

had not come across the problem before, the suggestion being that perhaps I had a dud copy.

This reservation apart, I really enjoyed Universal Hero – well as far as I got, anyway. Full marks to Mastertron for putting out a great game at under £2 – it's a lot of entertainment for the price and puts many more expensive games to shame.

### Wish Raynolds

Sound	8
Graphics	8
Playability	10
Value for money	10
Overall	9

## Triple trouble

**Program:** *Survivors*  
**Price:** £2.99  
**Supplier:** Atlantic 28 Station  
 Road, London SE20 5AC  
 Tel: 01-571 8800

MAZE games are usually complicated enough when you have to concentrate on moving one person around. Here you have the unfortunate problem of having to manoeuvre three droids, each with its own ability.

Together you must rescue at least 1500 survivors scattered around seven levels in a laboratory dome damaged in a nuclear war. This is achieved by teleporting them to safety once you find them.

Your three droids have their own characteristics. The number one droid looks like two rows of teeth on a pole and is used to eat the earth to reach the survivors.

Number two droid looks like an abnormal conference and is used to move some of the many boulders scattered around the dome.

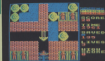
Droid three looks like a cross between Hercules and a Chiefain tank and is used to move some of the many boulders scattered around the dome.

To succeed you must move all of the droids around the maze together (but only one at a time) as only their combined abilities can save the day. But don't keep losing them as I did.

Droids have individual energy levels. If reduced to zero then you lose one of your three lives.

Energy can be lost by contact with one of the M.C.T. Guardian droids that constantly patrol the dome.

Unfortunately their logic circuits have been fried by the radiation and they will attempt to destroy you on



sight. Also beware of boulders.

Another problem is getting one of your droids stopped by falling boulders. If this happens then you simply hit Escape and forfeit a life. Boulders can also be used to trap or crush Guardian droids. Add to this a time limit, and this rescue has plenty of problems.

Be very careful in what moves you choose as a mistake can make you pay very dearly. Try to keep all your droids together and don't

disturb too many boulders if you can help it.

The graphics are quite nice but the sound effects are sadly lacking, the scrolling is quite well done and adequate for the job at hand.

If you are a fan of Boulderdash you will enjoy this.

**Neil Fawcett**

Sound	4
Graphics	7
Playability	8
Value for money	4
Overall	6

## Aztec romp

**Program:** *Aztec Challenge*  
**Price:** £1.99 (boxed)  
**Supplier:** Top Ten Software,  
 Children Enterprise Centre,  
 Station Road, Thane,  
 Berkshire RG7 4AA  
 Tel: 0334 503603

THE Aztec gods have demanded a sacrifice. They inform you that you are among the chosen victims.

There is, however, an opportunity to escape by undergoing a series of physical trials, pushing you to the limits of your agility and stamina.

It appears that the Aztec race has, over the centuries, developed running and jumping abilities that make Daley Thompson look like a seven stone wimp—and you are going to need to coordinate these abilities to survive.

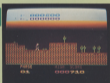
I must say that on starting Aztec Challenge, I was

impressed. However, the more I played the game the more it grew on me. Although easy to play, it proved rather more difficult to complete successfully.

The concept is simple. You must run and jump your way through 98 levels of obstacles, which become progressively more difficult.

You run continuously with no control over your speed, which is pre-set. The only control you do have is in choosing which of the three heights you are going to jump. But as you have no time to stop and consider a jump you must live by your reflexes.

There is an option for two players with both runners appearing on the screen simultaneously. In this case I found that the runner behind has a slight advantage, being able to benefit from the mistakes of the first.



Another pleasing option is that, when all your lives have been used, you can choose to restart the game at the beginning or where you finished.

The graphics are not unimpressive for a budget game and as screen shots are printed on the packaging you are able to form a realistic impression of the game. There is very little use of sound.

Aztec Challenge's appeal lies in its uncomplicated nature. The simplicity of controls and the gentle lead

into the game make it particularly suitable for children, while the higher levels should keep more experienced players busy for a good while.

I don't suppose it will go down as an all time classic, but I rather enjoyed it and feel it is well worth the money.

**Nick Reynolds**

Sound	5
Graphics	6
Playability	8
Value for money	8
Overall	7

## Passive piracy

**Program:** *Pirates of the Barbary Coast*  
**Price:** \$39.95/£14.95  
**Supplier:** Cascade Games,  
 1-2 Meyer Dramatic Mar-  
 ine, PO 1592  
 Tel: 0472 532278

IN contrast to the impressive packaging artwork, this game turns out to be very dull indeed. The idea behind it is good, if not entirely original, but sadly the implementation is lacklustre.

What we have here is basically a trading game combined with some elements of arcade action, luck and strategy.

You are captain of the US trading frigate *American Star* which has been raised by the notorious *Bloodthroat* the pirate.

(Play one of pirate tales is always to give the villain a British name - it would never do to have the wild pirate called *Ravenous* or *Batman*, for example.)

*Bloodthroat* has your daughter and is demanding a huge ransom, to be paid within 30 days or else. You must sail the *Barbary Coast*, trading and fighting, in order to raise the necessary ransoms.

The game sets sail with a keypad, mouse-like and switches to the main screen, a map of the *Barbary Coast*. Moving a roller left and sluggish pointer, you place

it on one of the several destinations you wish to sail to.

The disc drive then whirrs away for a not inconsiderable period and eventually the sea scene appears, a view from behind one of the cannons on your ship at sea.

There are a number of cannons and you can move along the deck - the picture simply slides to the left or right to reveal an identical scene.

A pirate ship may come sailing slowly past and you can engage it in battle or not.

Cannons are your only weapon and must first be loaded before they can be fired.

All or any of the cannons can be loaded in one operation, and while the procedure attempts to be technically realistic, I suppose, it is also a tedious and frustrating business.

It goes like this: Select load, select the numbers of the cannons to be loaded, move to any waiting cannon, point at powder, point at cannon, point at push rod, point at cannon, point at cannon ball, point at cannon, point at brush and finally (wow!) point at cannon again. Get any of this wrong and you must start all over again.

One of the pains of the cannon loading sequence is that having loaded away blooming one while at sea,



someone unloads them again whenever you dock, so you have to go through the whole rigmarole every time you sail.

To fire any loaded cannon, you point at the base whopop it will start to burn down. The ball will then be ejected with a feeble explosion ("Gasp me, boys, they're firing at us with cap guns and brass balls!").

The elevation of the gun can be altered and is necessary because the pirate ships sail past at different distances.

If you hit an enemy ship hard and long enough, you may board her and either claim the booty or tear her leg, but not both. Sailing safe, eh?

Hits on your ship are shown by any number of your cannons going up in flames and thereafter becoming inoperable.

When you reach a destination, the disc again whirrs and finally you will be told if there is anything at your chosen spot.

If there's nothing, the message "Captain, there be nothing here. Wish ye to set sail?" appears with the rather pointless single-choice answer "Aye".

In other words, there's no option but to sail to somewhere else. Long die whirr and it's map time again. Dullsville.

If there is something there, you are shown a treasure map and must pick one of several courses. With luck, you may find treasure, otherwise, it's sailing time once more.

By now your attention and grey matter will have decided that won't be needed on this voyage and have gone down to the pub. You may be tempted to join them, for there's not much more to this game.

Should you land at a port on the coast you are given an opportunity, in a very simplistic way, to buy or sell food and goods, hire men, acquire cannonballs, make repairs and before the port officer is return for a while.

And really there is very little more to it than that. The game plays exceedingly slowly and is unimpressed by graphics (they are not bad but there are so few scenes), sound (muted or silent).

I don't enjoy having to put down a game by a new computer, but I am afraid Cascade Games is going to have to do much better than this if it is to succeed.

Bob Chappell



Sound	3
Graphics	4
Playability	3
Value for money	2
Overall	3



# The big event of 1987...

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Organised by  
Candace Exhibitions

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10am-6pm Saturday November 21  
10am-4pm Sunday November 22

*The record-breaking Atari User Show is back  
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the ever-expanding Atari market.*

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- See the full AT range, including the new mega-ST
- Snap up the never-to-be-repeated bargains
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**ATARI  
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November 20-22, 1987

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Daytime

PHONE ORDERS: Ring Steve Walker on 01-893 6470

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Please quote credit card number and full address + postcode

AT 12

# 5 LINERS

## PAINT PICTURE LOADER

from E.M. Liddell

MOST Atari disc drives come complete with a graphics package called Paint. This five-line program allows you to load Paint picture files from Basic. The program works by loading the first five bytes of the file which hold the information for the colour registers and passing the colour registers with them. It then ignores the next 12 bytes and loads the next 3200 bytes which are the actual screen data.

You must remember that to load your own picture the alternate within the program must be changed to the same as your picture filename. The program can easily be converted to create a running slide show of pictures.

## PROGRAM BREAKDOWN

Line 1: Set graphics mode.  
Line 2: Find start of screen and opens channel to disc drive.  
Line 3: Get colour data and stores colour registers.  
Line 4: Ignore next twelve bytes.  
Line 5: Load and displays picture and then closes channel to disc drive.

```

1 GRAPHICS 1:0
2 OPEN "PICTURE" : GET#1: GET#1: GET#1: GET#1: GET#1
3 GET#1: GET#1: GET#1: GET#1: GET#1: GET#1: GET#1
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```

## PROGRAM VARIABLES

**COL:** Holds the information for the colour registers.  
**A:** Holds all information for the screen registers to form picture.  
**DUMMY:** Used to skip the twelve bytes not used.



LINE	LABEL	START	END	SIZE	BYTES
1	D61	3	1000	96	1000
4	D68	3	1000	96	1000

## EXTRA COLOURS

from Malcolm Knight

THIS short routine uses a DLJ (Display List Interrupt) to enable you to have eight different colours in Graphics 1 or Graphics 2 modes. This allows the screen to go on to become much more interesting with this new option of extra colours which can easily be altered to suit individual tastes.

```

10 FOR J=0 TO 7: GET#1: GET#1: GET#1: GET#1: GET#1:
20 GET#1: GET#1: GET#1: GET#1: GET#1: GET#1: GET#1
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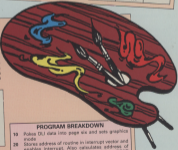
```



LINE	LABEL	START	END	SIZE	BYTES
10	D100	10	1400	39	1440
40	D106	10	1400	39	1440

## PROGRAM BREAKDOWN

10 Pokes DLJ data into page six and sets graphics mode.  
 20 Stores address of routine in interrupt vector and enables interrupt. Also calculates address of ORJ display list. The addition of 8 to POKE, ADD+8, PEEK(ADD+8)+128 determines which screen line the interrupt is called on. The addition of 128 to PEEK(ADR+8) calls the routine.  
 38 Holds the data. Each number after the 155 is a colour value.  
 40 Example text printed in Graphics 1.  
 50 Closed loop.



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

We pay £25 for each one published.

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

# Win £25

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

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

Atari User, Europa House, 58 Chester Road, Hazel Grove, Stockport, S83 5NY.

## CURSOR OPTIONS

from Darren Broome

THIS program sets up a VDI character block interrupt to scan both the joystick port 1 and the function keys to give you seven options for the cursor. If Start is pressed the cursor will be turned off. If both the Select and Start keys are pressed together then the cursor click is turned off.

If Option is pressed both the cursor and the cursor click will be turned on. Also the cursor can be moved around the screen with the joystick plugged into port 1 to allow you fast and comfortable movement of the cursor.

The program stores machine code data in page 6 of memory, so once you have typed the program in save it before you run it as it may crash if you make a typing error.

To execute the program you call it by using the command *Q*—L649 L639.

```

10 100 0+1134 TO 1488:READ SUPRE P:G:
2000: PRINT "NR 122, A 189 21 188 A 21,
30 200 04, 74, 80, A 212, 208 2 208 16
40 300 042, 0, 201, 05, 248, 25, 281 2, 328
50 350 05, 10, 328, 25, 381, 35, 428 5, 474, 55
60 400 058, 208, 251, 284, 317, 354, 388, 421
70 500 072, 07, 57, 67, 77, 87, 97, 107, 117
80 600 078, 117, 127, 137, 147, 157, 167, 177
90 700 084, 177, 187, 197, 207, 217, 227, 237
100 800 090, 237, 247, 257, 267, 277, 287, 297
110 900 096, 297, 307, 317, 327, 337, 347, 357
120 000 102, 357, 367, 377, 387, 397, 407, 417
130 100 108, 417, 427, 437, 447, 457, 467, 477
140 200 114, 477, 487, 497, 507, 517, 527, 537
150 300 120, 537, 547, 557, 567, 577, 587, 597
160 400 126, 597, 607, 617, 627, 637, 647, 657
170 500 132, 657, 667, 677, 687, 697, 707, 717
180 600 138, 717, 727, 737, 747, 757, 767, 777
190 700 144, 777, 787, 797, 807, 817, 827, 837
200 800 150, 837, 847, 857, 867, 877, 887, 897
210 900 156, 897, 907, 917, 927, 937, 947, 957

```

**Get it right!**

120 0470	120 0480	120 0490
12 5878	28 5897	38 5927
48 5958	58 5977	

## QUASI

from Robin Edwards

THIS game shows what you can get into five lines if you really try. Here we have Quasimodo standing on the battlements with the royal guards climbing up to get him. What is poor old Quasi going to do? Simple, he thinks, throw some rocks down to knock them off.

You move Quasi left and right via the joystick plugged into port 1 and by moving it down you will throw a rock at a guard. The game ends when one of two things happens - a guard reaches the top or poor old Quasi loses his footing and falls off the battlements.

As your score goes up the guards get faster and the challenge is to see how many of them you can get before

## PROGRAM BREAKDOWN

- 10 Draw battlements, set variables
- 20 Repeat to set up guards
- 30 Draw and move player and guard
- 40 Drop rock
- 50 Game over routine

they get you. When typing in line 30 you must abbreviate all POSITION statements as POS, and miss out all spaces. Due to the length of certain lines it is not possible to supply a Get a Right for this program.

## TYPING IN NOTES

- 10 Type in as it appears.
- 20 Type in as it appears.
- 30 Abbreviate all POSITIONS to POS, and miss out all spaces.
- 40 Type in as it appears.
- 50 Type in as it appears.

ON ADDRESS: RIMING POL, LINES 176 TO 20  
 PROGRAM: QUASI  
 \*\*\*\*\*

\*\*\*\*\*  
 ON ADDRESS: RIMING POL, LINES 176 TO 20  
 PROGRAM: QUASI  
 \*\*\*\*\*



# An ideal companion

**PETER DAVIDSON** puts Panasonic's KX-P1081 printer through its paces

THE Panasonic KX-P1081 is a bi-directional dot matrix printer that is friction or tractor feed and has a switch to choose between standard, NLQ (near letter quality) or condensed print.

The printer reviewed here was supplied by Watford Electronics and came complete with a free printer cable. It's important to let Watford Electronics know you require an Atari cable when you order the printer.

The printer connects to an Atari 850 interface box or you'll need a Carry-over to Atari interface cable in place of the standard one supplied.

There are three buttons on the right-hand side of the printer controlling the online status, form feed and line feed. The feed buttons work while the printer is online, so it was not necessary to use the button controlling this, unlike many other printers.

Above these switches are three small lights - power, paperout and online. Power and online remain lit while the printer is being used and the centre one indicates things like paper-out or jammed.

The mains lead is permanently connected to the rear of the printer but needs a plug fitting. As it can't be removed, it gets in the way slightly if you move the printer, but at least you can't lose it.

The DIP switches are easily accessible under a piece of plastic near the print head. Flick it out of the way and the switches can be moved without searching for a screwdriver.

Epson compatibility is a feature advertised by many printer manufacturers. But just how compatible is compatible? Figure I shows the control codes and a P or E in the left-hand column shows ones applicable to Panasonic or Epson printers only. The Epson codes shown are those for an FX80 together with the extra ones from the LX85.

A feature I occasionally use that was not available on the Panasonic was reverse paper feed, but this was more than compensated for by all the extra ones offered over my Epson FX80. This printer has been so well accepted in the office that someone asked if another printer is Panasonic compatible.

The KX-P1081 is rated at 120 characters per second. I compared the speed with an Epson FX80 (rated at 180cps) and found very little difference. In NLQ mode the speed drops to 24cps so it's a good idea to check the document is draft before moving to NLQ.

In some circumstances the Pan-



Printer: KX-P1081 Panasonic Printer  
Price: £177.95  
Supplier: Watford Electronics, Great  
Maze, 250 Lower High Street,  
Watford WD1 3AA  
Tel: 0832 27776

sonic is faster than the Epson. A point to bear in mind when you choose a printer is that speed is affected by things like head turn around time so the cps, while being an indication, does not give the whole story.

There is a built-in 1k buffer so a small document can be sent to the printer whole and you can continue working as it prints. Unfortunately there is no flush buffer button so if you make a mistake you have to wait while it erases it switch off.

The print head has nine pins and these are used to give a 60x18. In NLQ the matrix is 18x18. You can see from Figure I that a wide variety of typefaces and styles are available. The Figure itself was printed after sending the codes 27,35,4,27,55,1,27,56,4 and is shown full size.

Figure II shows some of the many typefaces available and Figure III shows some NLQ text. As with all

printers not all combinations of styles are available, but all the important ones such as NLQ italics are.

If the character you want is not available you can easily define your own. If you've ever defined a character on a micro you should have no problems. The horizontal and vertical lines in tables can easily be created using underline to draw across and by redefining | character 33 using the codes 37,121,33,0,0,0,0,258,0,0,0,0 to give upright bars.

The NLQ feature can be implemented using the switch on the left hand side of the printer or by sending control codes. It is slower than draft because the printer outputs part of the letters, moves the paper slightly and then goes over them again to give four times the dot density. The last line of Figure III shows a line of text interrupted during the second pass of the print head.

Printing is rather noisy compared to more expensive printers, but it is acceptable. It can be quietened using the half-speed and/or single-direction printing modes, but I'd rather put up with the noise and benefit from the speed.

Perforated paper feeds in easily but

CHARACTER CODE	CHARACTER	CODE	CODE	CODE
0	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
1	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
2	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
3	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
4	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
5	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
6	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
7	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
8	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
9	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
10	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
11	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
12	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
13	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
14	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
15	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
16	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
17	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
18	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
19	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
20	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
21	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
22	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
23	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
24	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
25	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
26	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
27	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
28	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
29	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
30	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
31	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
32	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
33	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
34	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
35	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
36	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
37	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
38	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
39	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
40	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
41	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
42	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
43	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
44	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
45	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
46	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
47	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
48	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
49	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
50	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
51	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
52	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
53	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
54	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
55	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
56	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
57	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
58	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
59	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
60	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
61	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
62	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
63	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
64	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
65	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
66	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
67	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
68	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
69	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
70	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
71	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
72	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
73	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
74	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
75	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
76	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
77	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
78	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
79	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
80	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
81	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
82	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
83	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
84	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
85	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
86	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
87	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
88	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
89	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
90	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
91	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
92	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
93	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
94	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
95	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
96	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
97	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
98	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
99	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC
100	Normal (unformatted)	ESC+ESC	ESC+ESC	ESC+ESC

Figure 1: A wide variety of styles is available.

you must ensure you feed it straight in at the back otherwise it soon starts up.

There is no tear bar so you have to move forward to the next perforation to tear the paper easily.

The ribbon is a cartridge type and drops in with no problems at all. It's claimed to last for two million characters and there's a small button at the back of the cartridge you depress once printing becomes faint. This reinks the ribbon and allows a further one

million characters to be printed.

The manual is well written and far easier to understand than many I have seen. One of the appendices gives a summary of the features available, the code required to get them on the form, for example, ESC+S+01 and a page reference. That page translates this to 21.8D, where n=0,48,176,176. A little confusing and all the options for n don't help, but far more helpful than the naive usual form that the Escape codes are given in.

Each feature has a simple example to go with it. Unfortunately, they're not written for an Atari computer and they're not even all for the same micro. But in all of them it only needs a small change to allow the demonstration to be used on an Atari.

Overall this printer is excellent value for money. It does all the tasks you would expect of a low-cost dot matrix machine and works well with all the software I tried. It's an ideal companion to your Atari computer.

Here's Picas	Here's Condensed
<i>Italic</i>	<i>Italic</i>
Emphasized	Emphasized
Bold	Bold
L.a.n.g.e	Large
Proportional	Proportional
Here's Elite:	Here's NLQ:
<i>Italic</i>	<i>Italic</i>
Emphasized	Emphasized
Bold	Bold
L.a.n.g.e	Large
Proportional	Proportional

Figure 8: Sample styles

This is a Demonstration of NLQ printing in the Elite Typeface.

NLQ is obtained by the printer outputting part characters, moving the paper slightly and then printing the rest.

When the printer is stopped during NLQ output it looks like this.

Figure 9: NLQ output

# Your HINTS & TIPS

## Kickstart

YOU will get maximum performance from your motorcycle and start at top speed if you pull the joystick to the left as soon as you hear the starting tone. — Edward Harwood, East Grinstead, West Sussex.

## Star Raiders II

If you are having problems shooting the small Zylon fighters because they won't dive into your target sights when you are over a planet, simply change speed and they'll dive down into your sights. They are more willing to be shot when you vary your speed.

I have also noticed that you seem to be controlling the direction of the flagship. If you push your joystick down the flagship will respond in the same way. So if you move your joystick around quickly the ship will be more difficult to hit, so use very smooth joystick movements to line it up in your target sights — and then let it have it. — Stephen Averley, Moleen, Staffordshire.

## Drelbs

If and when you see a blue diamond go around the flip grid and collect it. You will then enter the Deathh corridor automatically. — Edward Harwood, East Grinstead, West Sussex.

## Gauntlet

THE best character for a solo game is the Wizard, with his excellent magic abilities. In a two-player game the wizard teamed with either the elf or the warrior works best. The Valkyrie, who seems to have the basics in all skills, loses out in that she is good at none of them.

All potions should go to the character with the best magic ability. If this seems unfair then the other characters should take care of the keys and be given the magic scrolls.

Special potions that increase character abilities should be distributed very carefully. The armour potion should be given to the warrior or elf. Valkyrie doesn't need it and the wizard is given only minimal protection. The magic potion should be given to the elf or Valkyrie first. The wizard's power is not increased by it.

The short speed potion is useful to anyone. The short power can also be used by anyone as it increases damage done, but the light power potion is best used by the elf, Valkyrie or the wizard — then the warrior is made enough. The pick up power potion is best given to whoever is carrying the keys.

The maximum number of health points you can get is 8000. Some of the scrolls can be shot, so take care.

To destroy bases in the later sections you have to shoot through the diagonals when this is possible. Death can be killed by transporting an to him, and when you see the transporters meet at the time you move to the nearest transporter in the direction you are facing and you appear on the opposite side of the one you want in. — Paul Collins, Lanes, Sussex.

## Timeslip

If you are short of time after having collected all the orbs and then have to play through each section to get the clocks to zero, then go for a timeslip and this will then go for a timeslip and this will usually drop the levels a bit.

If you miss an orb, crash and take it again, to save you time having to go through the whole section again. — Paul Collins, Lanes, Sussex.

## The Great American Road Race

On the straight section of the race, if you move your car to the far left of the road, getting as close to the grass as you can without actually going on it, you will find you can normally drive along at 140mph, no matter how many cars are on the road. You can only do this on a straight and when you encounter a bend you must drive normally. — Stephen Davis, Uppester, Essex.

## Mercenary — The Escape

HERE are some tips for Mercenary to help novice players.

The first stage of your escape is to steal the Dominion Dart on the pad fly backwards at -625 to pick off the attacking Palpat. This will work for any attacking enemy.

Use the Anti-Gaze to pick up the neutron fuel. It will also pick up the interstellar craft so you can relocate it outside the defence complex.

Carrying the Metal Detector changes the colour of Dawson's communications panel when you enter Palpat or any Mosheroid-held localities. — Kerry Selwyn, Portsmouth, Hampshire.

## Star Raiders

If you find that one of your starbases has been surrounded by enemies into the outer ring to bypass into the outer ring and with the threatened one and with all the positions of the alien with change. You then have 100 seconds to save the starbase from destruction. — Jonathan Evans, Dymchurch, West Midlands.

# Processor for all hands

**ALAN GOLDSBRO**  
tries it out

WHETHER you are a two-finger typist struggling to reach 10 words per minute (wpm) or a fully fledged 80 wpm professional, a word processor can make all the difference to the production of your letters and documents.

The First XLent Word Processor is a major shift from the "printer" programs XLent Software has previously offered. Many of you may be familiar with MegaFont II, Typesetter and Rubber Stamp and if you were favourably impressed by those offerings I'm sure this latest one will find a place in your collection.

Disk-based and requiring 48K, it can work on both 486/800 and 386 versions. The host of features include insert and overwrite text modes, advanced screen editing, print preview in 80 columns, cut and paste block moves, search and replace or delete, chaining of files, dual text windows, mail merge, joystick cursor scrolling and icon-driven commands.

There are also special facilities for inserting pictures into your documents, and you can also define double column printing.

Typing is the same as using a typewriter but, apart from the obvious differences between word processing and typing, the major difference is in the speed you can move around your text. Both the standard cursor keys and the joystick will move you round the screen in seconds and by using the speed editor you can select a rate from one to nine, one being the fastest; three is the default speed.

You can easily set tabs to any pre-determined place, while word wrap

functions automatically and can be toggled off and on. A handy position marker will jump you directly to any of the five user-defined points in your document.

Background and text colours can be altered to suit individual tastes and even the cursor can be changed.

The cut and paste buffer will hold up to 800 characters, which is one screen (80 columns x 20 lines). Cut, copy and move functions are all operated from the icons seen at the bottom of the screen. The limitations of the text buffer can be offset by the ability to modify text within the buffer itself without harming the text in the document.

Dual windows can make a large document easier to edit; plus two separate documents can be displayed in this fashion. The text buffer luckily supports both windows thus enabling the transfer of text.

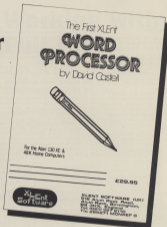
Searching through your document is quite easy but this function will only

read text downwards, so cursor position has to be at the top of the text you need to search. Working through the menu again, the search facility will not only work in replace mode but also in delete - you can replace a word with one of your choice or alternately delete the word.

Wildcards are allowed throughout and both uppercase and lowercase can be selected without defining. Global replace/delete or manual confirmation are as standard.

Your margins can be altered at any time, both inlets and outlets are allowed along with justification of lines. Line spacing and page size follow the same easy structure. In fact most of the commands are embedded directly into the text document.

Headers and footers can be blocked left, right or centred. There's also automatic page numbering as part of the header/footer set up. A valuable



## From Page 23

feature is the conditional page breaks, which can be defined to protect paragraphs from being split over two pages.

When it comes to saving your work, you can either save the entire document or only selective parts. Files can be added to any document in memory and there is an insert command to let you insert a file into your current document.

Viewing the disc directory or any other document can be done without leaving the current document in memory. The directory command will show you up to 40 filenames, which can either be loaded or deleted at random regardless of what's in memory.

There are very few word processors that will allow you to insert picture files in text documents. The First XLIII Word Processor has the ability to insert any 82 sector (Micro-Point)

picture file in between your text.

Other picture formats such as Typewriter faces and BitGraph can also be used. This feature is configured for Epson and compatibles only, but a printer driver construction set is included on the disc which may help 1029 owners print out their pictures within the document.

Because the editing screen is only 40 columns wide a printer preview screen is brought into operation; this feature doubles as the print formatter and lets you select how the page will be printed, whether you require double columns, number of pages to print and number of copies required. Output can be to printer, screen for previewing or disc for media transferring.

Mail merging can be undertaken with comparative ease, and the program readily accepts data from Spillfile. All the usual text enhancements such as bold, italic, super-subscript are controlled from the printer drivers. These can be customised

for the majority of printers available.

The XLIII has a facility to insert international characters into a document and custom fonts can easily be loaded as the default text, although the standard Ascii text is usually best to read.

I'm only scratched the surface of what the First XLIII Word Processor can do. As an avid user of Batteries Included's Paperclip, I'm impressed with the huge range of facilities available. Standards like these are hard to come by in 8 bit word processing.

Whether you're writing a short note to your granny or a full length review for Atari User, First XLIII Word Processor will accommodate itself around your nimble fingers.

Product: First XLIII Word Processor  
Price: £29.95 (later only)  
Supplier: Atari Software, 210 Atari  
Road, Atari Park, Birmingham  
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# Fast access

**ANDRE WILLEY** takes the Supra hard disc drive for a spin

DO you remember the day when you finally scraped together enough cash to buy your first disc drive? Tapes suddenly became a thing of the past as you marvelled at the speed of your new acquisition.

Operations which used to take 10 minutes were now finished in as many seconds. But time passes and you start noticing that discs aren't perhaps all they were cracked up to be.

Have you ever tried to re-save a long file with Dos 2.2? Or copy such a file in append mode? Okay, so it's faster than tape but it still takes a while, doesn't it?

The answer, as all business computer users will know, is to use a hard disc unit - but until now such a thing has been difficult to get for an 8 bit Atari.

Enter the Supra Corporation in America who saw the need for a high speed interface which would allow the use of a hard disc, and so designed one. Marketed for the first time in the UK by Frontier Software, the Supra 20 Mb drive is now available from your local Atari dealer.

So what is a hard disc, and how does it work? Well, it's not really all that different from an ordinary floppy disc, but it spins very much faster and is sealed inside an airtight container. This single, non-removable, unit can pack up 20 megabytes of data on to its surface.

The access speed is also very much greater than an ordinary floppy, with data being read and written many times faster than the serial drives are able. Because a hard disc requires a far greater track reading accuracy than a floppy, the disc itself is sealed inside an airtight box to avoid contamination from the dust and moisture in the air.

The Supra contains a 3.5in mechanism, which means that it is considerably smaller than a 7090 drive (about a little larger) measuring just 14 cm by 7 cm by 28 cm. In addition to the drive itself you will need to find desk space for this SCSI interface module which plugs into the parallel port at the back of an 8086.

This module takes its power from the drive unit and so only one main cable is required - and no more extra back boxes since the transformer is built into the casing. As a bonus, the interface also provides a high speed parallel Centronics printer port running at some 8 to 16 thousand characters a second.

10000 users need not worry because a special converter board is also supplied for your machine which also extends the cartridge port making it much more accessible.

Once you've connected the unit to your computer you're ready to initialise the system. Rather like floppy discs, the hard disc must be formatted before you can use it.

Firstly you should boot the Dos floppy disc which is provided with the drive. My review sample was supplied with MyDos - a slightly modified version of Atari Dos 2.0 - which is frankly a bit of a muddle, and the whole Dos 2.0 file system is not really geared up to using 20Mb of space effectively.

Frontier Software had obviously

already come to this conclusion and the drive is now being packed with SpartaDos - probably the most powerful available for the 8 bit Atari.

The interface is capable of deciding if the hard disc is ready for use, and if not it will boot from floppy disc but (as don't forget to enter the drive select switch at the back of your 1050).

Once SpartaDos has loaded you should run the format program provided. This will format, partition and zero the drive ready for use. Formatting will probably already be familiar to you, but partitioning may be a new concept.

Since the hard disc can contain such a large amount of information it is split up into smaller, more manageable, units which the computer can treat as different drives. Thus a small partition of 1000 is set up as drive one (and will be booted from each time you power up the system), while the rest of the space is allocated equally between two 100000 drives numbered 2 and 3.

Files may be accessed by using D1, D2 and D4, respectively. D2 refers to the real floppy disc drive you first booted from. After each of these partitions has been accessed you may write your Dos files to the file drive one and you're ready to go.

At this point it's best to re-boot the system from scratch to check you've done everything correctly. The computer will automatically load SpartaDos from the tape drive one unless you hold down the Help key to indicate a floppy boot is required for test game discs and so on.

I revised the load time using SpartaDos with a standard 1050 and then using the Supra Drive - the 1050

Turn to Page 28 >



Test	7090	Supra
Load 10076 byte file	18.28	3.28
Save 10076 byte file	21.81	3.68
Open/Close outputfile (20 times)	34.12	6.62
Open/Close input file (20 times)	3.94	1.68
Write 50,000 bytes	48.00	5.68
Read 50,000 bytes	48.70	4.68

Figure 1. Speed comparison table



# More from Zork and the Ballyhoo man

by  
**Rouloc**

WELL, here I am again after yet another adventure into the great unknowns, and this time I have brought back some great news for Infocorn fans.

Out on any time now is another new release from those masters of the text adventure. Don't know about you, but I simply can't get enough of Infocorn — they just seem to go from strength to strength.

The most exciting part of this news is that the new adventure is called *Beyond Zork*. Now in my book the *Zork* trilogy is an all-time classic, so the fact that there will now be an addition to the series fills me with glee.

Another release is one that I have mentioned before, but here is some more gossip on it. It is a real weird one and you couldn't really forget the title — *Lord and Ben Castle's Make Head Or Tail Off It*.

Jeff D'Neil, author of that splendid circus mystery, *Ballyhoo*, is the perpetrator of this highly unusual product.

The program consists of eight vignettes, all set in a town called Funster. As you might possibly guess from that, the tales are all concerned with English Language pyrotechnics. The idea is for the player to solve the various puzzles on words that abound in each story.

*Lord and Ben* is a long way from the usual Infocorn adventure. For a start, each tale can be completed individually. There is no mapping to be done and you may be pleased to know that there are built-in hints for you to avoid yourself should the going get too hard.

The individual titles of this castor, with a hint of what they contain in brackets, are Shopping Spoons (similar sounding words), Shake A Tower (Spoonagrams), Wag The Farm (Icthes), Azr The Part (Fifties-style situation comedy), Plus Javits (words beginning with "ja"), Eat Your Words (idioms), Visit The Manor of Speaking (literal meanings?) and Finally, Meet

The Mayor, which can only be played when you've solved all the others.

If you like word games, an intellectual challenge spiced with plenty of

Flow to Page 28 >

## Hints & tips

### BUREAUCRACY

*Old lady, heading you?*

Ring the bell that rings round the back and grab the portrait before she returns.

*Mayor won't give up the mail?*

Show him the portrait — that should make it see real!

*Puzzled by the letters?*

Open the mailbox, open the bag of flame treats, put the bag in the box then look in the trough.

*Bothered by the poster stickers?*

Put down the order in which you found them and watch out — those letters get shuffled about each time you start a new game. The stickers are no use to themselves but you'll need to remember the order in

which they were collected when you get further into the game.

### HOLLYWOOD IS-JIVE

*Agony columnist a problem?*

Hit the buttons in this order: Green thrice, black twice, white twice, green thrice, black once, blue once, green four times and lastly red three times. Phew!

*Safe won't open?*

Look at the names on the safe's plaques: Levy, Pagen, Labing. Take the initial letter for direction and the number of letters as the number for the combination. Yes, left to 4, right to 9 and right again to 1. Click! Easy when you know how!

*Can't grab the seed in the window?*  
Hold the sack, open the window then open the sack. Easy peasy.



#### 4 From Page 28

the traditional Infocom wit and humour, then Ward and Berk looks like a program you'll enjoy. Watch out for a full review in *Star Line* soon.

Turning to the cries for help that

continue to pour in, I thought that I'd stick with Infocom this month and help you along the way with a few tips for Hollywood Hit-Jinx and Bureaucracy.

We look in a month - keep that brass lamp well lit until then!

See you next month

## Review

# Something nasty lurks ...

"BY the pricking of my thumbs, something wicked this way comes". Perhaps you recognise that as a quotation from Macbeth or as a part title of a Ray Bradbury book (he borrowed it from our Will).

Whether you do or not (and even if you were forced to look it up in my *Wizard's Book of Knowledge for Dots and Total Ignoramus* - *Illogic* may be pretty but he's not awfully bright, I'm sure you'll agree that these words beautifully convey the sense of something unspeakably nasty waiting just round the corner.

That quotation would be equally appropriate for Infocom's latest text adventure, *The Lurking Horror*. Now, it, like me, you enjoy a good monster

Program: *The Lurking Horror*  
Price: £24.99  
Supplier: Infocom, c/o Activision, 23  
Road Street, Newcastle, London  
NE2 2PB, Tel: 01-437 1191

score (always providing you're really safe at the time), then Infocom have got just the bag of creepy-crawlers for you.

You are a student attending the George Underwood Edwards Institute of Technology, about which many unwholesome rumours have been circulating, such as legends of ghostly goings-on in the basement, young master.

One snowy night, you return to the college to finish off a long overdue Classics paper ...

After a swift fainting fit while seated at your computer terminal it was something you read, not what you had for tea back at the diggs, you begin to wish you had stayed at home. Too late, old chum. There's now a blizzard blowing outside and you're well and truly stuck here for the night.

Feeling the need for a little exercise, you might care to try your hand at clearing away a huge pile of books jank down in the basement if thought I told you there were rumours about something nasty in the basement - never learn, do you?!

When the rubbish is shifted (with some mechanical aid, another room is revealed. And therein sits a closed wardrobe cover. Now just like those poor innocent souls who, when lost and hooded in a rainstorm, go knocking on the castle door at midnight, failing to notice the 20 foot high neon sign that says "The Doctor", so could you wish to open the cover and descend.

Don't say you weren't warned. In a cave down below is what looks suspiciously like an altar. No cudgily

toy for guessing what those red stains are (unless you're right for climbing down manholes, nose!). There's a knife lying nearby, its purpose obvious, wouldn't you say? But worst of all is the sliding iron plate embedded in the floor. Pull that to one side and the bars on the back of your neck are likely to do handstands.

Greyfriars was never like this, master. As the fat owl himself might have said if he were in your current shoes, "Oh, lord! Oh, okay!". Given the nightmarish experiences you are about to undergo, you could be forgiven for using stronger language than Bunter's.

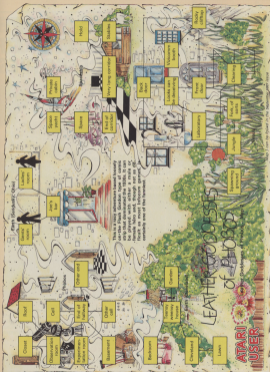
Elsewhere, down on one of the campus floors, a maintenance man is polishing brass on his mobile machine, a strange gleam in his eyes (it red on the floor). He will not let you pass. Taking an axe to him may seem like a pretty over-reaction on your part to his unfriendliness but prepare to be shocked if you do decide to attack him. And, perhaps I should add in all fairness, prepare also to be throttled for your impudence in assaulting what now appears to be one of the undead. Yes, a zombie.

And there's far more horrible things lurking around the campus. What is going on? Among the books in store are voodoo dolls, a bookcase cloyer tentacle thingy, a winged voodoo-may-pole, something dead and unpleasant in a plant tub and a mob of cheating zombies for starters. Can you get out alive? Will you ever sleep soundly again?

*The Lurking Horror* was written by Dave Labrie, famed writer of the *Zork* trilogy and four other Infocom adventures. He has come up with a tale that brings together many of the elements found in the best horror stories like those by such notables as Stephen King, H.P. Lovecraft and James Herbert.

This is another original triumph for Infocom who just can't seem to put a foot wrong, these goodness. So turn down the lamp, shut the door and get down to playing *The Lurking Horror*. But be not to keep looking over your shoulder.





Map of Phoenix City, Adventure 2 by Atari

This is a very adventure based beauty of the South Korean type of comic strip that dominated the 1980s. It can be played with either a male or female hero and, though not as good as most Indiana Jones games, is certainly one of the favorites.

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Developed by Phoenix

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Signed .....

Name .....

Address .....

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TEL: 061-490 0171

Atari 800 Database Software,  
Europe House, 68 Chester Road,  
Hemel Hempstead, Herts SG9 7PW

# Doctor Boris

Play **ALEX DEWDNEY's**  
game of the month

**YOUR** name is Doctor Boris. You have just graduated from medical school and have gone to work in a new hospital somewhere in the North of England. But the building work isn't complete and due to cutbacks in the NHS you have to go out there and do the work yourself!

Unfortunately the building site is littered with unexploded bombs, so as you rush about constructing the hospital you have to stop to defuse them before the entire area goes up in smoke.

To make things even worse, the dastardly Mad Norman is constantly bouncing about making sure you're not slacking. One touch from his steady skin and you drop dead.

The final problem you face - and things are getting pretty desperate by now - is that the site is also full of half-baked skulls which glow with the radioactive light. Like Norman, these are fatal to the touch.

After the title page you find yourself in the middle of the screen surrounded by bushes, skulls and bombs. One of the bombs is slowly counting down from 10 to 0, and you must defuse it by walking over it.

As soon as one bomb has been defused, another starts to count down and it's up to you to carry on until the site has been made safe. As this point you proceed on to the next level. If you let a bomb reach zero it explodes and you lose a life but an extra life is awarded when you reach level eight.

As you move you build the new hospital wall behind you, and this sometimes blocks your path. If this happens you must use some of your limited supply of explosives by pressing the fire button and pushing the joystick in the direction required. Keep a careful watch on your dynamic gauge at the bottom of the screen, as your supply is used very quickly.

Play the game as fast as you can, as by doing this you gain more points. It is written entirely in Basic and is fairly short, so typing it is should pose no problems. Use the Get It Right checklist to make sure you're correct. You'll find full details in the August 1988 issue of *Atari User*.



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## PROGRAM BREAKDOWN

00-99	Define arrays and main variables. Set graphics mode and set title page.
00-100	Move Nod Norman
100-200	Main loop. Read joystick. Move Bombs and advance bomb countdown
200-250	Detect collisions
250-300	Fire dynamics
300-400	Draw main screen
400-500	Define bombs and checks to see if screen complete
500-600	Set up PWD to form explosion gauge
600-800	Draw title page and effects
800-1000	Game over. Reset main variables and print score
1000-1030	Redline character set

```

20 REM *****
30 REM OF ALSO REMOVED
40 REM *****
50 REM *****
60 REM *****
70 REM *****
80 REM *****
90 REM *****
100 REM *****
110 REM *****
120 REM *****
130 REM *****
140 REM *****
150 REM *****
160 REM *****
170 REM *****
180 REM *****
190 REM *****
200 REM *****
210 REM *****
220 REM *****
230 REM *****
240 REM *****
250 REM *****
260 REM *****
270 REM *****
280 REM *****
290 REM *****
300 REM *****
310 REM *****
320 REM *****
330 REM *****
340 REM *****
350 REM *****
360 REM *****
370 REM *****
380 REM *****
390 REM *****
400 REM *****
410 REM *****
420 REM *****
430 REM *****
440 REM *****
450 REM *****
460 REM *****
470 REM *****
480 REM *****
490 REM *****
500 REM *****
510 REM *****
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810 REM *****
820 REM *****
830 REM *****
840 REM *****
850 REM *****
860 REM *****
870 REM *****
880 REM *****
890 REM *****
900 REM *****
910 REM *****
920 REM *****
930 REM *****
940 REM *****
950 REM *****
960 REM *****
970 REM *****
980 REM *****
990 REM *****

```

## PROGRAM VARIABLES

A	Value for joystick input
B	Number of the bomb currently counting down
C	Counter for bombs
D	Variable for locate command
S	Sound flag
X	X position for Bombs
Y	Y position for Bombs
AA	value counter for when bomb is defused
DL	Start of display list
EX	Amount of dynamic remaining
LL	Current level of play
LV	Number of lives left
MX	X position of Norman
MY	Y position of Norman
MX	Horizontal velocity of Norman
MY	Vertical velocity of Norman
NB	number of bombs on screen
SC	Score
DEC	Rate at which bomb counts down
CTS	Redlined characters used as numbers in countdown
EX(0)	X position of bombs
EX(1)	Y position of bombs

```

350 REM *****
360 REM *****
370 REM *****
380 REM *****
390 REM *****
400 REM *****
410 REM *****
420 REM *****
430 REM *****
440 REM *****
450 REM *****
460 REM *****
470 REM *****
480 REM *****
490 REM *****
500 REM *****
510 REM *****
520 REM *****
530 REM *****
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870 REM *****
880 REM *****
890 REM *****
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910 REM *****
920 REM *****
930 REM *****
940 REM *****
950 REM *****
960 REM *****
970 REM *****
980 REM *****
990 REM *****

```

```

400 OF BOMB THEN STOP POSITION B,Y
410 REM *****
420 REM *****
430 REM *****
440 REM *****
450 REM *****
460 REM *****
470 REM *****
480 REM *****
490 REM *****
500 REM *****
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860 REM *****
870 REM *****
880 REM *****
890 REM *****
900 REM *****
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930 REM *****
940 REM *****
950 REM *****
960 REM *****
970 REM *****
980 REM *****
990 REM *****

```



In the last few months we have been looking at some features of the GPU (Display List Interrupt), and you should now have an insight about how this part of the computer works.

This month let's consider another function of the display list, the LMS (Load Memory Scan). This is a complicated routine but if used correctly it can create some very useful effects quickly and without a lot of programming. Its main job is to tell the Antic chip where to get data from when displaying the screen information for any mode.

Any line on the screen can have this option set, and so allow screen data to be accessed from any place in memory and in any order.

The importance and use of such a feature may not be apparent at first but it is in fact a very powerful command.

An example display list is shown in Figure 1. It is only a very small display list, but from it you can see the way in which the LMS works.

To start with, the first three bytes are blank lines to bring the start of the screen down to ensure that the first line of screen data is displayed on all TVs and monitors. The next byte describes the type of mode to use for the next line - in this case Antic Mode 2 (Graphics 0). It also has the LMS bit set, and this is essential for the first line in a display list so Antic knows where screen data starts from.

Following this byte is a word address which Antic uses as a pointer from where screen data must be received. This could, for example, be an area in page six where a life is stored. Setting a mode line with LMS followed by the low and high bytes of \$0000 would result in data being displayed.

The final command, 05, tells Antic that the display list has ended and it must wait for vertical blanking before restarting a display list.

The address following 05 is the start

Command	Description
112	Blank line
112	Blank line
112	Blank line
00	Graphics mode 0 (Antic Mode 2) with LMS
LOW	Low byte of screen memory
HIGH	High byte of screen memory
00	Wait for VBLANK
LOWD	Low byte of display list address
HIGHD	High byte of display list

Figure 1: An example display list

# SPECIAL FX

In the fourth part of his series on amazing effects RICHARD VANNER takes a look at the use of load memory scan.

address of the display list. This is ignored during normal operation of the Atari but is read when a pointer is being used. Don't worry too much about this but always make sure you finish a display list with these bytes.

Before we go any further, type in Program 1 and run it. You will find that the top line of your screen has been re-displayed many times. This is achieved by making a new display list that loops repeating the LMS on every line, with the same address for the screen data.

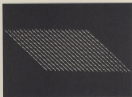
What use is it, I hear you ask. Well imagine a game with split screens - player one at the top part and player two at the bottom. These screens would scroll around memory independent of each other giving a wider scope for game design. Many programmers have used this technique in games, and an excellent example can

be seen in Sempier's Shadow World.

Let's now move on to another example of the LMS with Program 2. This listing inverts a Graphics 0 screen, so when you run it everything goes upside down. Try LISTing the program to test the effects.

Again this is all due to the LMS function. The new display list this time creates LMS addresses that start from the base of the screen and work backwards, creating a reversed memory format. The program also changes the character mode register to display upside down characters.

A useless program you might say, but this idea can be used to invert a Mode 0 screen, and this brings us on to Program 3. Again the display list is re-designed for a backward memory format, but in this mode the picture on screen becomes flipped over. Notice how the program switches between



A normal GDI screen

## PROGRAM BREAKDOWNS

**100-115** Sets up screen and mouse pointer  
**120-140** Finds the display list address  
**145-160** Points the new display list into page six  
**165-220** Points in the mandatory and bytes of the display list  
**230** Tells Basic the address of the newly created display list  
**240** Prints a small message

Program I

**180-190** Sets up screen, set pointer and find display list  
**195-199** Points new display list with backward pointer  
**200-220** Points in and bytes and tells Basic the address of the new backward display list  
**240** Sets character mode register for upside down characters.  
**250** Prints a backward message.

Program II

**95** Lowers memory so that new display list can be stored in a safe place and so that it won't cross a 16 boundary  
**100-110** Sets up hi-res mode and draws a pattern  
**120-140** Sets up display list pointers  
**145-160** Creates new display list for inverted screen  
**165-220** Points and bytes in  
**230-240** Switches to new display list and pauses  
**250-260** Switches back to original display list and pauses  
**270** Loops back to keep switching

Program III

**95** Reserves memory  
**100-102** Sets up Graphics 8  
**105-110** Draws diagonal lines  
**120-140** Sets display list pointers  
**145-160** Creates display list with varying levels of depth  
**165-170** Sets and labels  
**175-180** Switches to new display list  
**220**

Program IV

the two display lists at such a quick rate — much faster than moving the actual screen data. You may also find that when the screen changes there is a small flicker. This cannot be helped in Basic but a vertical blank interrupt would solve the problem.

Now on to the final listing, Program IV, which unlocks the hidden secrets of Colourspace. If you have ever seen this program you may have wondered how the curve modes are generated. Well it's all down to the LMS, which this time causes screen data to be dis-

played in varying steps.

The program sets up a display list that produces the same lines at increasing lengths giving them a curved effect.

The LMS is very important in the display list design and is quite a difficult subject, but even if you don't understand the theory you can use the useful routines from these programs in your own.

One final warning. Make sure that your display list never crosses a 16 boundary and that screen data never

crosses a 4k boundary or else rubbish will be displayed.

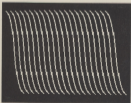
## Program I

```

10 DIM *****
20 DIM A:PRINT A:GOTO 10
30 DIM B:PRINT B:GOTO 10
40 DIM C:PRINT C:GOTO 10
50 DIM D:PRINT D:GOTO 10
60 DIM E:PRINT E:GOTO 10
70 DIM F:PRINT F:GOTO 10
80 DIM G:PRINT G:GOTO 10
90 DIM *****
100 GOTO 10
110 PRINT "I,J,K"
120 PRINT "L,M"
130 GOTO 100
140 GOTO 100
150 GOTO 100
160 GOTO 100
170 GOTO 100
180 GOTO 100
190 GOTO 100
200 GOTO 100
210 GOTO 100
220 GOTO 100
230 GOTO 100
240 GOTO 100
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850 GOTO 100
860 GOTO 100
870 GOTO 100
880 GOTO 100
890 GOTO 100
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920 GOTO 100
930 GOTO 100
940 GOTO 100
950 GOTO 100
960 GOTO 100
970 GOTO 100
980 GOTO 100
990 GOTO 100
1000 GOTO 100

```

The effect created by Program IV







# SOFTWARE Solutions

Your programming problems  
solved by **ANDRÉ WILLEY**

## Trapped by a loop

WE'VE got a really mixed batch of questions this month — one of which had me a little puzzled for a time. Don't forget that this is your forum — so keep those questions coming in on any aspect of Atari programming.

Let's start the ball rolling with a letter from Jim Cullery from Whitlow in Sheffield. He writes:

**I** would appreciate your advice on a problem I am having with my Atari. In fact, what I really want to know is whether or not I have a fault in my machine.

I am using a 1000K G.S.S.'s Super 32 cartridge, two 1050 disc drives and two printers — a 1025 and a 1020, neither of which are turned on at the same time.

My problem concerns the TRAP statement. I find that when I use it from inside a loop to direct the program back within the loop I get Error 13 — NEXT without FOR. However, I have only found it to happen when using GOSUB — for example:

```
10 FOR P = 1 TO 10
20 TRAP 30: GOSUB 1000
30 NEXT P
40 NEXT P
```

*I would have expected that when the program attempts to branch to the non-existent line 1000 that the TRAP would bring it back to the loop and execution would continue. But if that's the error 13 when plainly there is a FOR statement. None of the manual's comment upon this so I am wondering whether there is a bug in my cart. I hope that you might be able to set my mind at rest.*

The problem you have encountered is not a bug as such, merely a slight misunderstanding of the way Atari Basic functions.

When a FOR statement is encountered the program stores the details of the loop by pushing them onto a special run-time stack. This is simply a place in memory where numbers can be placed one at a time and then retrieved afterwards. Think of it like a pile of letters on a desk: whenever you add a new letter to the stack you always place it on the top of the pile, and whenever you take any off again you always start with the one on the top.

This is known as a first-in-last-out (or FILO) stack because the first item you put on the stack will be on the bottom of the pile and hence be the last to come out again. Incidentally, some computer operations will use first-in-first-out stacks which work the other way — rather like pulling the letters from the bottom of the pile and dealing with the oldest first and the most recent ones last.

Anyway, to get back to the point, Basic uses its run-time stack to keep track of where to go back to for FOR ... NEXT loops and GOSUB ... RETURN invocations. Therefore, for your problem, let's look at what Basic does during your program:

Line 10 is a FOR statement, so it pushes all the information it requires onto the stack and goes on to the next line.

Ignoring line 20 for a moment, line 30 prints out the value of P and then line 40 pulls the FOR details back off the stack and thus returns to line 10.

Now, when you add line 20 the following sequence of events takes place:

action is taken on it at this point. Then the program comes across a GOSUB statement, so it pushes the calling line number details (line 20 in this case) onto the stack and goes off to find line 1000.

At this point the error handler cuts in because there is no line 1000 to go to. It detects this error (Error 13) and also notices that a TRAP has been set to line 30 — so instead of printing an error message it branches and commences execution at line 30 (PRINT P).

Line 40 is a NEXT statement, so it tries to pull the information about the associated FOR command from the stack — and what does it find but the unused reference to the RETURN address for the non-existent GOSUB. Of course, it can't know that the next item on the stack is the one it wants, so it gives up and produces an error.

Now for the solution: All you need to do is remove the RETURN address entry from the stack before you get to the NEXT statement. The POP command will do this, so if you change line 30 to:

**30 POP: PRINT P**

your program will run as required. Don't forget to remove the POP statement if you decide to use the GOSUB to line 1000 because if the stack is already in order when you POP it then you'll remove the perfectly valid FOR reference and you'll get the same error!

Oh, and by the way — you CAN attach two printers at the same time, but be careful if you are trying to use a word processor or other similar program. The normal printer reference used by most software is "P:" or "P1:", either of which will drive any

The TRAP line is set to 30, but no

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## SOFTWARE Solutions

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printer on the serial bus. However, most Atari printers also have a unique device ID number built into their rom chips. An 850 interface, for example, will also respond to "PC", and each new Atari printer has its own code ("P3", "P4", and so on). I don't know the code for a 1020 file hand, but the 1020 responds to "P6".

This is obviously only useful with programs which allow the use of printer ID numbers (as Atariwriter is not, for example), and it also only works with the XLSD operating system.

## Disc's density

A.W. Crawford of St. James's Gardens, Farnham, has two questions:

Is there any way of checking, in machine language, the density of which a 1080 disc is operating? At the moment the *Atariquest* I am using involves trying to read a sector outside the single density range, say 1080, and assuming that an error indicates single density, which isn't a particularly elegant technique. Is there a better way, perhaps one that involves interrogating the drive controller?

Also, to settle an argument, what is the clock speed of a PAL Atari? Mapping the Atari says that PAL Ataris run at 2.177 MHz, as against the 1.79 MHz of NTSC machines. Since the 1.79 MHz rate was chosen to give two colour clocks on the display per cycle, and PAL has a greater number of scan lines, I can see the reasoning behind this statement. Moreover, the Hardware Manual, while documenting many of the differences between PAL and NTSC machines, does not mention a change in the clock speed. Which is the correct figure?

Well, the standard 1080 drive doesn't seem to have any register available from the Status call to indicate the density of the disc. It's density sensing mechanism would seem to be totally internal and transparent to the user. It doesn't even

support the \$4E and \$4F SID commands used to configure the access mode on true double density drives.

However, all is not lost. The US Doubler chip, designed to give you faster disc access and true double density on a 1080 DDBS base (the capability you require. These cost about £25.95, and are available from Frontier Software or your local dealer.

The US Doubler returns far more information via the Status request command (\$63) than a normal 1080. This data is placed into the four bytes starting at \$2EA, and is mapped as shown in Figure 1. In addition the US Doubler also provides the full \$4E and \$4F modes, plus some additional fast formatting commands.

As far as the clock speed of a PAL Atari computer goes, you are quite correct in your assumption that our machines run at 2.177 MHz. In fact, the crystal which governs the speed of both British and American machines runs at exactly 3 MHz, but the amount of cycles stolen by AMTC and GTIA during their DMA access to the screen

varies depending on the television system in use at the time.

A PAL picture is made up of 60 frames per second, each being some 312 lines deep. An NTSC picture, on the other hand, is made up of 60 frames of 262 lines each second. This accounts for the difference in stolen clock cycles, and hence the variation of the two CPU speeds.

That's all we've got room for this issue, but there'll be more of your technical and programming questions next month.

\$2EA	\$0	BUSY (Normally 1)
\$2E	\$1	CRD (Normally 0)
\$2E	\$2	LAST DATA (Normally 1)
\$2E	\$3	CRC ERROR (1=Clear, 0=Read error on last sector)
\$2E	\$4	SECTOR NOT FOUND (0=Last sector read was not found)
\$2E	\$5	RECORD TYPE (Special write command used on last sector)
\$2E	\$6	WRITE PROTECT (0=Disc was write protected)
\$2E	\$7	NOT READY (0=Drive clear still open)
\$2E8	\$A	COMMAND FRAME (1=Error in last command frame)
\$2E	\$1	CHECKSUM (1=Error in last checksum data)
\$2E	\$2	OPERATION (1=Operation error, for example bad sector)
\$2E	\$3	WRITE PROTECT (1=Chip is currently write protected)
\$2E	\$4	MOTOR ON (1=Disc spinning)
\$2E	\$5	SZS (1=256 byte sectors, 0=128 byte sectors)
\$2E	\$6	Unused
\$2E	\$7	1080 DD MODE (1=Dual Density (1080))
\$2E		Unused
\$2E0		DRIVE TIMEOUT VALUE (500ths of a second)
\$2E2		Unused (Always 0)

\* Not used with the US Doubler.

Figure 1—Status bytes returned by a US Doubler drive.

Are you having problems getting your programs to work? Write to Software Solutions, Atari User Group House, 96 Chester Road, Harlow, Essex, SS16 3BQ.

We will answer as many as we can within the pages of *Atari User*, but unfortunately we cannot give personal replies.

# A sort of iso-bar chart

**ANDY DORAN uses Mini Office II to chart our wonderful weather**



LAST month we set up a spreadsheet containing lots of data about the weather. It would be nice to see the fruits of our labour pictorially, and this is the task for which the graphics program was written.

Let's take the data you've already entered into the Spreadsheet and display it graphically in preparation for a report or holiday brochure.

Before doing this it's a good idea to obtain a printout of the spreadsheet. This will make the collation of the graphics data much more simple, and is shown in Figure 1.

A number of sets of data could be used to create the graphics. For instance, it would be interesting to see the average, best and worst results in each category compared.

Looking at the printout, we can see that the columns that contain these items of data are I, J and K. The titles for each value appear in column A. This is all the information we need to save data ready to load into the graphics program.

After selecting the option to save graphics data, the first question that is

asked is Select from Row/Column. As we have seen, the data is in columns, so enter C. You are then asked for the column in which the headings appear, so type A in answer to this question. Finally, you are asked to give the column in which the data is stored - column I.

Once you have answered these questions you will be presented with the values in individual cells, the cell number (I7) and the contents of that cell.

You have to state whether or not this cell is required by answering Y or N. Answer N for cell H and Y for cells I to K and then press Return. Finally you are asked for the filename in the same way as when you saved the spreadsheet. Enter the filename as AVERAGE.GRA.

Repeat the process for the two columns BEST and WORST. Again for easy reference, save these as BEST.GRA (column J) and WORST.GRA (column K).

You can now leave the spreadsheet and move on to the graphics module. Make sure you have the Mini Office II

disk in the drive, select the Mini Office II menu and from the next screen choose graphics.

The three sets of data you saved - AVERAGE.GRA, BEST.GRA and WORST.GRA - should be loaded into data sets 1, 2 and 3 respectively. This is achieved by selecting Load Data and then indicating the data set number and giving the filename (make sure that your data disk is in the drive).

Note that when you load data sets 2 and 3 the old filename must first be deleted or edited before the new one is entered.

With the data sets loaded, you can now draw some graphs so let's obtain a bar chart comparing all three sets of data.

Selecting Bar Chart gives a white screen with a set of icons down the right hand side. You need to tell the computer that you wish to use all the data, because if you don't only one set will be used. To do this, select the icon that reads Option (using the cursor keys and Return as we do to select a menu option).

Next, select the Data icon. This will prompt the computer to ask how many sets are to be used (the question appears near the bottom of the screen). Answer 3, to this question, and then define the primary, second-

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 AVE (BEST)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2 AVE (WORST)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3 BEST (BEST)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
4 BEST (WORST)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Figure 1: A typical week's weather



Figure 2: Iso-bar chart

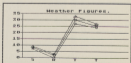


Figure 3: Line graph

Point to Page 48 in

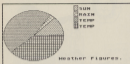


Figure 11: Pie chart

#### 4 From Page 41

ary and tertiary data sets as 1, 2 and 3 respectively.

Once you have done this, pressing Escape will take you back to the first set of options, with the top icon representing a bar chart. Select this, press Return, and the bar chart will be drawn on screen.

Label it by choosing the pen and ink icon and entering the required text. Press Return, and position it by using the cursor keys. Confirm the position with Return.

Now you've got a graphical display of the data, it might be useful to obtain

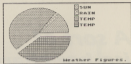


Figure 12: Segmented pie chart

a printout. You do this by selecting the Screen options icon like the one with a picture of a TV screen on it) and you will be presented with a further set of icons.

To print the screen, select the one bearing a picture of a printer. The computer will ask whether you want the printout on a printer or to disc - press P to indicate printer.

You now have to answer the question Atari 1020 or Epson by pressing either A for Atari or E for an Epson or Epson compatible printer and once you do this the computer will dump the screen to the printer (see Figure 13). This method can be used to create a

line graph like the one shown in Figure 10. As the primary, secondary and tertiary data sets have been defined, there's no need to define them again.

Only one set of data is used at any one time but experimenting with the various options produces results like those for the pie chart shown in Figures 11 and 12.

Now that you have used the graphics program and spreadsheet together once, you should have no problems repeating the process again to create other spreadsheets - perhaps even an accounts spreadsheet with pie charts and bar charts to finish it up bit.

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# Extra memory and faster access

I RECENTLY bought a 120KB to add to my collection of Atari files and bits. This was mainly due to the idea that the extra 84k memory over my 800XL would be really useful for programming purposes.

When it came to using this extra memory the whole process seemed mind bogglingly difficult and the manual seemed almost apologetic about how to use it.

I find that the only use of the memory is the random facility you get with Dos 2.1. Strangely I have seen very little about this extra memory in magazines, and was wondering if you or your readers could reassure me about it.

Also could you please tell me if you know of any software that will print musical notation onto a 1029 printer as I have searched for such a program and have up to now found none. — Richard Martin, London.

■ The 128k memory of a 1200G can only be used in sections and not all at the same time from Basic. This means that it can be used for storage space and you can then retrieve the information when you require it.

This allows very fast access to data, and we'll show you how in a future issue of Atari User.

You could buy Basic XL which allows you a full 84k block of memory to use for

programming and gives you a 38k block for variable workspace.

This comes on a cartridge and can be obtained from several suppliers including OSS (Optimized System Software) for around £70.

We have not seen any software that will print musical notation to an Atari 1029 printer, but if any of our readers can help please write in to Mailbag.

## Groaning disc drive

I HAVE read the advertisement in Atari User for Fast & Free Data Floppies, and was wondering if I fitted a heavy 1029 printer would it then allow me to use Printshop with it?

I also have a problem with the amount of noise that my 1050 disc drive makes when in use. I have tried using sewing machine oil, but it only helps for a short while.

How can I stop this, as it is very annoying when loading or saving programs? — Marcel Lammerse, Land-

sterweg, The Netherlands.

■ The Fast XL chip fitted to Atari 1029 printers is a 15k ram that allows the inclusion of three new character sets as well as retaining the original Atari character set. But it will not make your Atari 1029 work with Printshop.

The idea of using sewing machine oil on your drive to reduce the noise is all right, but you have to be very careful when applying it.

If it comes in contact with areas of the drive other than the arm that carries the drive head you can cause damage — especially if oil gets on the head.

The groaning noise that your drive makes is not actually a fault and if you can put up with it it's best not to go putting around inside your disc drive.

## Revision update

MY Atari 800XL computer has a Revision B Basic and I have a cartridge with the Revision C Basic in it.

Is it possible to remove the Revision C chip from the cartridge and replace the chip in my computer with it, and if not could you please explain why? — M G Angel, Hemgrove, North Yorkshire.

■ Providing that your cartridge has a 24 pin 8k chip you should have no problem swapping it with your old Revision B chip.

Atari also issued this cartridge with two 4k chips and if this is the case you will not be able to replace the Basic rom.

But if the cartridge is left

plugged in the computer it will disable your old Revision B Basic and replace it with the Revision C on the cartridge.

Basically it replaces the rom to disable your Basic rom from the computer and take your cartridge to pieces.

## Squashed up pictures

I TYPED in Kevin Millard's Dump 78 program from the July 1987 issue of Atari User and find that pictures from the Paint Artist program are compressed into the top half of the screen as they load and are then printed in this way. Is this correct? — D J Deeming, Gillingham, Kent.

■ The Dump 78 utility is designed to be used with files created by the Atari TouchPaint and MicroPaint programs. Unfortunately Paint files are in a format that the program doesn't interpret correctly, and so can't be printed with this program.

## Mission X blues

I TYPED in the Mission X issue from the August 1987 issue of Atari User and found that when I ran the program it came up with error level 7-3.

I typed in level 7, pressed Return and the screen went blue in the top right corner and then simply did nothing else.

What is the problem? Is

Time to Page 88 >

## Protection pleases

I HAVE now obtained a copy of the August 1987 issue of Atari User and I'm glad that I did as it is the most interesting issue to date.

The article about protecting programs by Leo Gattling is very useful, and also of great interest to me are the articles about Mini Office II and the Five Drive joystick device.

The article on the Dos map confirms my opinion

that the people who wrote the Atari OS were just to separate rooms and not allowed to talk to each other. How else can all the different processing systems within the OS be explained?

Keep up the good work supporting the Atari and thank for giving us non-games players as much to read this time. — P Boulton, Tyneside.

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there a fault with the listing in the magazine? — **Karel Madusa, Uptan, Wrex.**

■ The listing in the magazine is correct and you will find that you made an error as you typed it in. Check your program very carefully, especially any DATA statements, and you should find your error.

It appears to be happening while the computer is setting up the playfield, and this takes place between line 4000 and line 4990, so check these lines especially.

You can use the Get It Right! checklist to help you and full details of how to use it are in the August 1986 issue of Atari User.

## Recipe for success

Is it possible to run a word processor system on an Atari with only a disc drive, as I have not got a printer? I am a chef and have a large selection of recipes and menu sets that I would like to keep a record of. I have a varied selection of databases but none seem adequate for the job.

Eventually I would also like to add a costing system to work out multiple recipe ingredients and cost including what I would need to do this last.

Also would you or any of your readers please tell me if there is an astrology data program available for the 800XL and disc drive system? — **John Upton, Brighton, East Sussex.**

■ It is possible for you to enter your recipes into a word processor and store them. The printer is only required when you decide to make a hard copy of a file.

As to adding a costing system, you will find that a spreadsheet package is ideal for this purpose. An

# ATARI USER Mailbag

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

The address to write to is:

**Mailbag Editor  
Atari User  
Europe House  
88 Chancery Road  
Hazel Grove  
Stockport SK7 5NY**

ideal package for you to use for both your word processing and for a spreadsheet is Mini Office II, which includes other programs such as a database that make of use to you.

Unfortunately we do not know of an astrology program for the 8-bit Atari, but if any of our readers know of one please then just drop us a line.

## Speeding Fast Mover

AFTER typing in the Five Lines program Fast Mover from the September 1987 issue of Atari User I was very disappointed to find it did not work properly. Are there any errors in the listing? — **Ruth James, Heston Chapel, Stockport.**

■ Sorry, there is an error in line 20. The sixteenth number — 105 — should be 205.

## Doubler difficulty

I OWN an Atari 1050 disc drive with a US Doubler chip installed and it was working perfectly.

Then I attempted to load

Graphic Art Database and it simply wouldn't load and no error messages appeared. All my other software loads all right, so could you please help me. — **Sarah Keates, Woods Saint Georges, Brighton.**

■ The error may be caused by the protection on the disc. Some forms of protection on disc time the disc access and if this time is not the usual one the program will not load.

Because your doubler chip increases the speed of your drive it will return the wrong time and prevent the load.

## Short of a £ or two

AFTER buying Mini Office II I wrote a document and within 17 used the pound sign.

When it came to printing the article the pound sign came out on preview mode but when I printed it got on my 1025 printer it came up with a # where my pound sign should have been.

Apart from this I find Mini Office II a superb piece of software, so can you please help me? — **Past Debeney, Barnsley, South Yorkshire.**

■ To be able to print the pound sign on your Atari

1025 printer you must go to the printer setup section of Mini Office and set printer code 7 to the following codes: 27, 23, 6, 27, 24. Then whenever you require the pound sign in your text simply type Control + 7.

## Dumping pictures

I OWN an Atari 800XL disc system with 1025 printer and touch tablet with AtariArtic software. Is there any software that will allow me to dump my touch tablet pictures to my 1025 printer?

Could you also tell me if it is possible to attach the Magni-DIV reader kit to my Atari using an Atari 850 Interface and Mini Office II? — **Peter Knight, Ashburn, Under-Lyme, Levenshale.**

■ In the July 1987 issue of Atari User you will find a listing called Dump 16 that takes your AtariArtic pictures and dumps them to either an Epson-compatible or Atari 1025 printer.

The Magni-DIV reader kit will work on your computer using an Atari 850 Interface box and the Mini Office II communications software.

Unfortunately this system is only 360 baud, so you could run up quite a sizeable telephone bill when you use it. Also it is not BT approved, so its connection to public telecommunication systems is prohibited.

## Missing level

I RECENTLY bought Doremi's The Living Daylights after reading your review in the August issue of Atari User.

When I loaded the game I was disappointed to find six odd pages, and that there were only seven levels to

the game.

This intrigued me very much as you mentioned a life page and eight levels. Could you please explain why my game is different to your review copy? — **Stephen Buxton, Normandy, Cleveland.**

■ We reviewed an advance copy sent by Denmark and it contained a life screen and level 8. Unfortunately in the release copy of the game the life screen and level six were removed due to memory problems.

## Spectrum software

I WAS wondering if there is any device produced that will allow me to use Spectrum software like Barry McEugan's *Swing*, *Match of the Day* or *Microgolf* on my Atari 800X, and 1870 tape recorder. — **Scott Gallacher, Arley, Leicester.**

■ There are no devices available to allow you to use Spectrum software on the Atari, but with the superb software available for the Atari why would you need one?

## Keeping in touch

SOME time ago, you were offering Dos 2.5 to your readers. Can you still supply it?

Also could you please tell me if it is possible to print out touch tablet picture files on to the Atari 1020 printer plotter and if so how?

Can the 1020 also be used to imitate a normal printer such as the Atari 1027 letter quality printer? — **B. Swales, Forest Gate, London.**

■ Unfortunately we have no more supplies of Dos 2.5 disk, but this does not mean you can no longer obtain one. Various advertisements in *Atari User* still

# Bored by low baud

I ALWAYS read the mailing section of *Atari User* and wonder if you can help me with a problem I have with the Atari tape system.

Why do the games take so long to load when other computer systems load so fast? And is it possible to speed the loading time of my games up? — **Andrew Mac, Babrook, Glasgow.**

■ The Atari tape system works via the serial port located at the rear of your XLXE computer or on the side of the old 800/800 computers.

Unfortunately, the system that Atari have used for loading/saving files on the

tape uses a slow baud rate (9600). It is possible to alter this, and theoretically the input baud can range from 318 to 1407 baud.

To be able to load a program at a higher baud rate it must first be saved using the slow baud rate, so you could save your own programs or listings from *Atari User* at a higher speed, but to release commercial software that is already at the slow rate yourself at a higher speed would infringe copyright.

Although it is not easy to alter the baud rate it is possible because this rate is controlled by a routine

called the SIO and this can be altered via software.

The OS uses it to account for different drive motor speeds or stretched tapes, and once a true baud rate is calculated then the hardware is adjusted to suit the load status.

Once the workings of this routine are known it is possible to alter the OS parameters that control the input of the serial port and increase the loading speed.

However it is not possible to explain how this is done within the confines of the letters page due to the complexity of the software required.

offer Dos 2.5 for £2.

Your 1020 plotter will dump your touch tablet picture files, and in the January 1986 issue of *Atari User* we published a dump program for this printer.

It was a little slow, but did the job. The 1020 can print your listings and work from within your programs, but don't expect it to be able to imitate letter quality as it just isn't capable of it.

## Pictures for Palette

I HAVE just created a picture using the Technicolour Dream art program and was wondering how I get it printed in the Palette page of *Atari User*. Do I send it in on a disc or as a photograph? — **Kevin Campbell, Livingston.**

■ Send your picture in to us on a data disc or tape,

stating clearly which utility you used to draw them, your full name and address and a note saying it is your own work and you don't mind us printing them. We will assess them and consider them for publication.

## T shirt ribbon

I UNDERSTAND from a friend that it is possible to obtain a printer ribbon which enables designs to be printed on T-shirts. My printer is an Epson FX-80, so will the ribbon fit it?

I have spent some time looking through various magazines but can find no reference to it anywhere. Can you please tell me the phone number of the company which sells the ribbon? — **Andrew Goddard, Manchester.**

■ The ribbon is designed to work on Epson printers so

you will have no problems with it. You can obtain one from MQS Microsystems 06906 4278.

## Smudged paper

I HAVE a problem with my printer ever since I acquired a new ribbon it has been leaving marks on the paper where the head has been moving.

It I leave the printer for a day or so a large spot of ink appears on the paper underneath the printer head.

I have checked with the manual and the position of the head is correct. Any help would be gratefully received. — **Andrew Smith, Chorleywood, Herts.**

■ In most printer heads there is a shield to prevent the ribbon touching the paper. Make sure your ribbon is behind the shield.



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– Anthony Ginn, writing about the Atari ST version in the May 1988 issue of the Atari User

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HAVE you ever thought of using computer games to raise funds for your favourite charity? Here's a little device which will prove invaluable if you do. It's a joystick extension cable, games timer and computer-hog deterrent all in one.

Our photograph shows the de-luxe version, with flashing lights and a buzzer, but it can be made in much simpler form if you need to keep costs down.

Figure 1 shows the circuit, which is built around a single IC chip containing four NAND gates. This chip must be one of the new J-C series, since only that type has the necessary input and output characteristics.

The time delay is provided by gates A and B, which form a monostable, whose output (pin 8) is connected to the joystick's common pin. Pressing S2 starts the timing period, and sends pin 8 low (5V).

The joystick then behaves normally for the preset period when pin 8 goes high (5V) and the joystick stops working. SW1 can adjust the on time from a few seconds up to about five minutes, depending how generous you feel.

Gates C and D are not needed for

## Time gentlemen please!

LEN GOLDING shows how your Atari can help fund-raising

the basic timer, but they don't cost any extra, so we might as well use them. Figure 1 shows the two gates wired as an oscillator, which runs at about 0.5 Hz and can pulse an LED or buzzer on and off. Choose a lower value for R2 if you want to speed up the pulse rate or

a higher value to slow it down.

S2 is optional and allows you to select one of three states: On without time limit, off or on with preset time limit. If you don't want this facility, just

Turn to Page 88 in

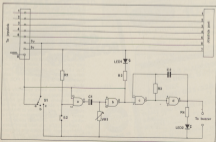


Figure 1  
The circuit

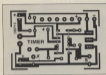


Figure 8: The PCB layout

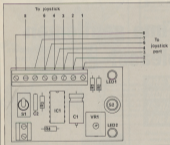


Figure 9: Component layout for the deluxe version

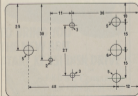


Figure 10: The position of the holes in the case

#### From Page 52

test points b and c on the PCB. Because the postack stops working when time is up, you don't strictly need the LEDs or buzzer, but they make the gadget friendlier to use.

Buy a ready-filled PCB from IRI Design, or etch your own using the pattern given in Figure 8. Holes for S2 should be 2mm diameter, while those for W1 and the terminal blocks are 1.5mm.

S1 requires rectangular slots for its pins, so drill three 1.1mm holes at the positions marked in pads a, b and c, then remove the material between them using a craft knife.

A 2mm hole is needed at the point marked X so that you can adjust W1 from the back of the PCB when it is fixed into its case. All other holes should be 0.8mm.

Component layout for the deluxe version is shown in Figure 9. If you don't require a pulsing light or buzzer, leave out R2, LED2, C2 and the two-pin terminal block. R2 and LED2 are also optional, but it's best to retain them unless cost is of paramount importance. And you can dispense with the terminal blocks if you don't mind soldering wires directly to the PCB tracks.

The board is designed to fit into a Verobox type 501, which is about the cheapest case you can buy. Figure 10 shows how to drill the case top, and you will also need holes in the long sides for entry and exit of the extension lead. These can be made by pressing a hot 4mm knitting needle downwards on to the case edge, until the melted slot is just deep enough to take the postack cable.

Assembly is easiest if you do things in the following order: First solder the resistors, capacitors and IC socket, taking care that C1 goes the right way round. Next solder S1 in position, ensuring that it is vertical in both dimensions, then slot the LEDs and S2 into place but don't solder them yet. The LEDs must be fitted with their cathodes (flat section on the case) towards the bottom of the PCB, as shown in Figure 8.

Now offer the entire assembly into the case, making sure S1 and S2 locate properly in their fixing holes. Don't worry about the LEDs at this stage. Fix S1 and S2 firmly to the case, using the nuts provided, then turn the whole assembly over and solder S2.

Feed the LEDs into their slots holes, pushing them through from the back until they project about 3mm, and solder them in place. Then remove the

assembled PCB and fix the buzzer in position, routing its leads through the 2-pin hole.

Finally insert IC1 into its socket - making sure it's the right way round -

connect the buzzer and joystick wires and assemble everything into the case.

Plug the gadget into either joystick port and experiment with W11 until

you get a time delay that suits you, then screw on the case lid.

Your timer will operate consistently and accurately every time you push the buzzer.

## PARTS REQUIRED

	Magnetics Code
R1	100k brown/black/yellow
R2	330 ohm red/violet/brown
R3	1 megohm brown/black/green
R4	330 ohm red/violet/brown
VR1	4.7 meg horizontal preset
C1	180 mfd 15v axial
C2	0.22 mfd polyester layer
IC1	744C08 quad NAND gate
LED1,2	5mm red LED
S1	SPDT centre-off switch
S2	Push-to-make switch
	8v 15mA buzzer
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All components available from: Magnetics Electronic Supplies, PO Box 3, Rayleigh, Essex, SS6 9JH.

Ready-drilled PCB and joystick extension lead available from BH Design, 133 Stonehill Avenue, Harrogate, North Yorks. Tel 0423 886532. Prices including VAT and postage.

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# PAC MATHS

$$8 \times 5 = 40$$

$$12 \times 4 = 48$$



**GARY TINSLEY** presents a maths tables game that's both educational and fun

RECENTLY someone asked me if I would write a program for them that would test children on their multiplication tables, but at the same time be fun to play.

After a few hours of brain ache I presented them with Pac-maths, which as you may have guessed, is based on the very popular arcade game of Pac-man, complete with the Hungry Pac-man and the chasing

Ghost. When the program is run there is a short pause while a new character set is defined. You are then asked for the number of the multiplication table that you are to be tested on (answer from 2 to 92).

You are then asked for the speed level and you reply between 1 for the fastest level and 9 for the slowest. The speed is how fast the Ghost will chase

the Pac-man if you delay in answering the question.

The child is then presented with the first of 12 random questions. He must select the correct answer from a choice of three possible answers given on the screen by choosing A, B or C. If the correct answer is chosen the Pacman will advance one place towards the Powerpill and if he reaches it the Ghost will turn blue with fright and the Pacman will eat him.

If the child chooses the wrong answer the Ghost moves one place towards the Pac-man and if he reaches the Pac-man he will get his own back and eat him instead.

## VARIABLES

DL	Start address of display list
LL1	Loop4
CR	Location of new character set POSE
	TR034
CHG	RAMTOP where the new character set will be placed
SPEED	How fast the Ghost will chase the Pacman
PACMANX	X position across the screen of the Pac man
GHOSTX	X position across the screen of the Ghost
MULT	The multiplication table to be tested on
MULTNUM	The number to multiply MULT by
B	Random answer position 1=A, 2=B and 3=C
RA1,RA2	Random answers for the other two positions
GL	Actual game input loop
AW	Contains the ASCII value of the answer entered by the child
D	Data variable
CHSETS	Contains the machine code to move ram character set in to ram
ANSWERED	Bitly containing 1 if question is answered correctly or 0 if it is answered wrongly or has not been asked yet

```

40 REM *****
50 REM *****
60 REM *****
40 REM
50 REM *****
60 REM05: 37:DL,POSE,CHSETS,TR034,RA1,RA2
62:AW,POSE,AW-1,TR034,AW,TR,AW,AW,AW
64:AW,AW,AW,AW,AW,AW,AW,AW,AW
70 REM *****
80 REM 004: POSE,POSE,AW,AW,AW,AW,AW
90 REM 000: TR,AW,POSE,AW,AW,AW,AW,AW
AW,AW,AW,AW,AW,AW
98 REM POSE,AW,AW,AW,AW,AW,AW,AW,AW
AW,AW,AW,AW,AW,AW,AW,AW
100 REM *****

```

Turn to Page 59



## ► From Page D7

100 POSITION 2,817 "FIVE-HEAT"  
100 POSITION 2,147 " PLATE IN  
IT A POWER" "SWITCH DOWN"  
100 FOR USE TO DISCONNECT SWITCHEST &  
THROTTLEBODY EXHAUST AIR IN  
100 FOR USE TO DISPOSITION 2,817 " " " "

100 L  
100 POSITION 2,817 "FIVE-HEAT"  
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100 POSITION 2,167 "SPEEDY GARY TEN  
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Produced by ALBERT R. BROCCOLI and MICHAEL G. WILSON Directed by JOHN GLENN Screenplay by RICHARD MAYERLUM and MICHAEL G. WILSON

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