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# ATARI USER

Vol. 3 No. 1

May 1987

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**FULL** and **part-time** writers are **urgently** needed by Database Publications, publishers of Atari User and its companion, Atari ST User. If YOU know the Atari or Atari ST inside out, can express your ideas on paper - and want to become part of the exciting future that lies ahead for Atari machines, then write now to: The Managing Editor, 55 Chester Road, Razi Grove, Stockport SK7 9ST. Please include your phone number.

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## Business package hits the chart

A BUSINESS software package has achieved a world first by storming its way into the all-important Gallup Top 40 chart on the eve of its launch for the Atari 8-bit range.

Mini Office II, the award winning title from Database Software (081-429-8008), entered the best-selling list at number 26.

The chart is considered the most significant of all on the UK software scene because it includes all machine formats.

And what is even more surprising about Mini Office II's most recent success is that it had to compete against games coding as little as £1.95.

Not that this is the first distinction to be achieved by the package. For from its launch in October, 1986, the original Mini Office was the finalist in two categories of the British Microcomputing Awards — the Queens of the Industry.

The first version for the BBC Micro also displaced games to reach the Top Ten for that machine.

Mini Office version one went on to win national acclaim for being ahead of its time in that it was the first professionally written low-cost business package. At just £5.95 on cassette for the BBC Micro, the price tag was considered revolutionary as its nearest competitor cost several hundred pounds.

Its much enhanced successor, Mini Office II, took 26 man years programming and contains six modules — word processor, database, spreadsheet, graphics, label printer and communications.

Mini Office II is priced at £19.95 on disc for the Atari 8-bit range.

# Atari is wooing software houses

ATARI's new good neighbour policy towards support companies is already paying dividends. Software house representatives are now visiting Atari UK headquarters at the rate of two or three a day.

And the result, says manager of software marketing Roland Whitehouse, is great cooperation.

"We are showing that we want to keep up with new releases", he said.

He is receiving assurances that there will be plenty of software for the 8-bit and especially for the 6500 games machine.

"What is really encouraging is that there is an increasing number of firms committing themselves to producing cartridges for the new games machine", said Whitehouse.

The software house response confirms the company's belief that a major revival in the video console sector will happen this year.

A company spokesman told Apple User: "We believe the average age of prospective buyers is getting younger."

This means there are a lot of youngsters out there who aren't really ready for a proper micro but are keen to

get their hands on a games machine.

"And it doesn't hurt Atari's prospects that we already have a games software range that is second to none."

Atari originally estimated it would sell 180,000 8-bit computers and games consoles in 1987.

But this figure had to be revised after advance orders for 70,000 units were placed within the first few weeks of the year.

Now the company is talking about selling at least 280,000 — and possibly a quarter of a million — games machines in 1987.

## Losing its magic . . .

MAGIC is old hat says text adventure specialist Robico.

The company is looking for new writers on the Atari 8-bit but, says software manager Rob O'Leary: "We are not too keen on magic adventures any more — unless they are really original".

He explained that the firm had a very good business programmer doing conversions to the Atari, so that only originals were needed.

"What we are looking for is finished or part finished programs which we will market. We would evaluate them and even if the programming is not brilliant we can work on them."

He said most Robico (0443) 277544 adventures had more than 200 locations, which was why graphics had never featured highly, though they were not out of the question.

O'Leary said that they were hoping to get more disc-based adventures for the Atari.



## A Mole in the micro

THE latest Adrian Mole series on Thames Television forms the basis of a new Virgin Games release for the Atari 8-bit machines.

It is the sequel to The Secret Diary of Adrian Mole

which was produced by Level 9 and Mosaic Publishing.

The Grogging Pair of Adrian Mole comes from the same joint source, but is being marketed by Virgin. Cassette price £5.95.



Derek Moxley and 100 fellow diggers attack the green field site of the new headquarters

# Digging away for Atari User's new home



The new headquarters of Atari User, due for completion at the end of 1987

THE world's first mass soil-cutting ceremony heralded the start of building a new £1 million home for Atari User and its sister Database Publications magazines.

All 100 Database employees took part in the traditional act of ground-breaking to celebrate their role in the company's rise to prominence in computer magazine publishing.

The new site in the Chesham countryside near Stockport echoed the sound of scores of spades and shovels hitting the ground simultaneously at a signal from Database head Derek Moxley.

"We originally toyed with the idea of inviting a leading figure in the computer industry to perform the ceremony", he said, "but decided in the end to keep it within the company."

"All our employees have contributed to Database becoming the UK's leading publisher of computer magazines — so they all deserved to play a part on the big day".

## BT titles collect 31 awards

ATARI's Telestar software titles have collected an amazing total of 31 awards here and abroad in the past 12 months.

The accolades were awarded by reader polls and computer journalists' votes in

magazines published in Britain, France, Germany and the United States.

More than two-thirds of Telestarsoft's sales of programs on the *Fairchild*, *Ford* and *Bevco* labels are now overseas.

## After The Pawn, The Thieves

WHEN *The Pawn* from Bantam won acclaim across the board it was almost inevitable that there should be some sort of follow-up.

But the designers, Magenta Systems, resisted the temptation to do a "start where you left off" game.

Guided by *Thieves*, out on the Atari 8 bit, shares the same setting as *The Pawn*, the mystical land of Kamponia.

But there the similarity ends. All the characters and locations are new, as is the style. Designed to appeal to a wider range of adventures, it has a more direct gameplay but with more problems to solve.

Increased interaction, too, is another feature. Humans,

animals and plants can be addressed in complex sentences through the parser.

The adventure opens with your application to join the guild, an elite band of professional rapscallions, where tests are set to prove an applicant's worth and status.

You are given a task which will test both your wit and ingenuity. You have to ransack an island and capture its treasures while encountering a variety of useful and dangerous things.

It includes several complex puzzles and 30 scene setting illustrations which, claims Bantam (01-240 8838), add a new dimension to computer graphics.

## Soccer promotion

ONE of the first results of Priam's takeover of the Addictive Games label is the release on the Atari 8 bit of the best selling soccer computer game ever, *Football Manager*, at £2.99.

This means, says Priam, "the game, in its new double cassette packaging, will be competing in a new division against the budget software firms."

"We believe this newcomer is likely to cause quite a few upsets as it moves through the pack and to the top of the league".

Priam (01-804 8160) is plan-

ning to re-launch Addictive's Billion Joy label to carry more budget-priced games.

## Flying high

Hot air ballooning was never as essential as in *Up Up and Away* from Magbyte for the Atari 8 bit release.

The obstacles in your flight path include aircraft, kites, birds, lightning, and punks throwing missiles.

Fuel problems, landing and taking off again, and throwing sandbags at the punks add to the fun. Price £2.99.

THE  
GALLUP  
CHART

TOP 20  
ATARI SOFTWARE

THIS MONTH	LAST MONTH	TITLE (Software House)	PRICE
1	▲	BMX SIMULATOR (Code Masters)	1.99
2	•	COLONY (Blackdog)	1.99
3	▲	GREEN BERET (Magpie)	9.95
4	▼	GUN LAW (Mastertronic)	1.99
5	•	SILENT SERVICE (Microprose/US Gold)	9.95
6	▲	DISPATCH RIDER (Mastertronic)	1.99
7	▼	LA SWAT (Mastertronic)	2.99
8	▼	SPICY HAROLD (Firebird)	2.99
9	▲	HOUSE OF USHER (Micro)	2.99
10	▲	KNOCKOUT (American)	2.99
11	▼	CRYSTAL RAIDER (Mastertronic)	2.99
12	•	MOLECULE MAN (Mastertronic)	2.99
13	▼	RED MAX (Code Masters)	1.99
14	•	FOUR GREAT GAMES (Micro Value)	3.99
15	▼	NINJA (Mastertronic)	1.99
16	•	SUPERMAN (First Star/Priam)	2.99
17	▼	LEADERBOARD (Accom/US Gold)	9.95
18	•	WARHAWK (Firebird)	1.99
19	▼	NINJA MASTER (Firebird)	1.99
20	•	MONKEY MAGIC (Micro Design)	2.99

Compiled by Gallup/Microscope

Budget software is very much the order of the day, with Green Beret the top-selling full-price game, followed by the excellent simulation *Silent Service*. By the June issue we will know how Atari User's Star Game, *Spiral*, is selling.

## Bid to bring back BBC's Micro Live

TV's only regular computer programme, *Micro Live*, has been axed. But Database Publications, prompted by tons of letters from readers, is determined it should be brought back.

The last *Micro Live* in the present series appeared at the end of March.

Head of Continuing Education (Television) at the BBC David Hargreaves said: "This season of *Micro Live* was its third. We have decided not to plan a fourth for next winter.

"We want to pause, take stock and think about how we ought to be making the best contribution to our understanding of information technology in the future".

David Moxley, head of Database Publications, said: "*Micro Live* has played a leading role in introducing the delights of computing to an ever-growing audience.

"To kill the series now, when so many exciting developments are taking place in the whole world of microcomputing, is a retrograde step".

Programme director David Allen said he appreciated Database's concern.

"It is a very important area which needs to have continuing exposure on television.

"There is a job to be done in keeping the subject in the general public's eye because it is important for the community and consumer to be aware why".

So, Atari User readers, it's time to play your part. If you want to help save *Micro Live*, write to: The Controller, BBC 1, Elveden, Wood Lane, London W12.



*Micro Live* presenters Ian McNaught-Davies, Lesley Judd and Fred Harris

## Youth club runs an Atari micro workshop

A LONDON youth club that uses Atari micros to take computing to the community is appealing for support so it can continue its work.

Honor Oak Youth Club in Lewisham needs £5,000 for projects it hopes to carry out this year.

After being approached by the Lewisham youth service last year, it provided a workshop with computing facilities for 20 local youth groups.

Machines used in the project included two STs, three 1050Rs and eight 8000s, some owned by the club and the others borrowed from various sources. Main-power services funded five part-time computer instructors based at Honor Oak.

Over a four-week period more than 1,200 local youngsters were given

hands-on experience of micros.

Twice-daily sessions covered graphics, adventure program writing, music composition, robot-building, animation and pinball game construction.

This summer Honor Oak wants to run a similar computer workshop, but this time on four different public sites including a shopping centre and a museum to enable adults to join in as well.

There are also plans this year to take Atari micros along to the local children's hospital so that long-term patients there can enjoy them.

"We also need to keep the

momentum going at Honor Oak", senior youth worker Mike Forshaw told Atari User.

"The Atari micros are an invaluable tool in developing decision making, problem solving and other group exercises.

"If we don't get the financial help we need this year, not only will our community projects suffer but we shall possibly have to retract computer activities at the club itself.

"On the other hand, if we can find £5,000 from somewhere we can not only repeat last summer's success but can probably improve on it as well".

## Drive in America

ATARI has appointed former Texas Instruments and IBM executive Jerry Brown as vice-president and general manager for North American operations.

The appointment is part of a new bid to increase Atari's share of the US market, said Jack Trimble.

"Personal computers are a

key component in our corporate growth strategy", he said.

"The 520ST and 1040ST are already among the best selling personal computers in Europe - we now plan to focus our efforts on the US, and Jerry Brown will play a major role in leading that effort".

## More hits

THE seventh volume of English Software's Smash Hits for the Atari 8-bit machines has been released. It includes *Demoglide*, *Colossus Chess 3.0*, *Miss Max* and *Alley Cat*.

English (081-605 7058) has released it on twin cassette for £9.95 and on disc for £14.95.



HAVE you ever looked on in envy as your ST-owning colleagues gained access to all sorts of pop-up utility programs? Well now you can have something similar on your trusty 8-bit Atom — a four-function pop-up calculator taking only 21 bytes of user memory.

This program creates a pop-up calculator which hides itself under the Basic rom on an XL or XE machine. The routine which calls it is only 21 bytes long, hence the calculator doesn't even remove one of your program work spaces.

However, because of the way in which the calculator uses the bank-switched memory system of the XL/XE machines it will not work on an old 400 or 600.

Let's take a look at how it works. The program can be split into six parts. Lines 10 to 276 provide the first screen menu and check the data. The program will first ask if you want to make a tape or a disc, then go through the data to make sure that it's correct.

If there are any discrepancies a warning message will be displayed with the relevant line numbers. Correct the error and run the program again until it is free of errors.

Lines 508 to 776 generate a cassette form of the program. Lines 2080-2180 are fixed to the cassette, followed by the machine code data file. These lines may be omitted by disc users, along with the data statements 3000-3112.

Lines 1000 to 1170 enable the program to check its own data — it points to any data errors and flags them. The use of Get it Right! and this chapter should track down any data errors.

As this is a machine code program, any errors may lock your computer so with no escape except to reboot the machine. This is also a good reason to save the program before you run it.

Lines 2080 to 3198 constitute the data loading program for cassette users. They are linked to the cassette, followed by the data for the calculator and a short machine code loader.

This loader is poked into page 6 and puts the calculator data under the Basic rom. The program then deletes itself from memory. These lines may be omitted by disc users.

Lines 1000 to 4344 create the disc version. First an AUTORUN.SYS file is created. This is a three-part file consisting of a program to run the Basic rom off, the calculator in standard load format and a program to run the Basic rom back on.

After this is created a program

## Maths magic on your Atari

called CALC is written to the disc. Calling CALC from the Dos menu (menu option 1) will allow you to run the calculator directly. These program lines may be omitted by cassette users, along with the data statements lines 3500-3592.

Lines 5000 to 5054 display three pages of user information. Page 1 gives general background information, page 2 describes assembler use of the calculator and page 3 shows a program to run the calculator from Basic.

Loading the calculator is a little different depending on whether you are working with cassette or disc. Disc users should simply load the machine with the disc containing the AUTORUN.SYS file in the drive, which will install the calculator.

It is possible to expand another machine code program to the back of this one — for example an AUTORUN.SYS that runs a Basic program. As you need to be certain the original AUTORUN.SYS is TEMP, then create the calculator AUTORUN.SYS and append your reserved file to the end of it.

Cassette users should ENTER and then run the tape created by the program we have listed. This will load the data and NEW itself, leaving the calculator ready for use.

From Basic, a small machine code program needs to be run to call the calculator. Program 11 demonstrates one such technique.

Lines 10000 to 10003 hold the



necessary code, and this data can easily be placed into a string for convenience. The code can equally well be poked into page 6 (16384 onwards) and be run with **X=>16384** (16384).

This is more useful when working in direct mode, while strings are better for use within a program as they leave page 6 free. From a machine code program just skip the initial PLA, T0AL, and JSR to the start of the code.

The calculator doesn't offer anything fancy, just the basic number keys and the + - \* / function keys.

To clear an input error press E, to clear the calculator completely press A and to quit back to Basic press Q.

If a result is too large 'OVER RANGE' will show in the display. It will do continuous calculation (such as  $2 * 3 + 18 + 3 = 24$ ), but it won't show powers ( $1.3 \pm 14$ ). Results are not stored anywhere and so will have to be written down.

Operation is protected from the BREAK key but SYSTEM RESET will dump you back into Basic at the READY prompt. Division by 2080 is not trapped and thus can give some odd results.

Perhaps you might like to consider modifying the routine to patch into the screen editor device handler to allow you to simply type 'CALC' at the prompt instead of the JSR call. Let us know how you get on!



## A pop up calculator from ALAN NORMAN

### Program 1

```

10 REM *****
20 REM =
30 REM = POP UP CALCULATOR =
40 REM =
50 REM = WRITEN BY =
60 REM = ALAN NORMAN =
70 REM *****
80 REM
90 REM THIS PROGRAM WILL CREATE A
100 REM BACKING CARD POP UP APP
110 REM FUNCTION CALCULATOR WINDOW
120 REM UNDER THE BASIC APP
130 REM FROM THE INSTRUCTIONS TO
140 REM CREATE EITHER AN AUTOREG APP
150 REM OR A BASIC APP (SEE INSTRUCTIONS)
160 REM
170 REM
180 REM OPEN THIS PROGRAM BEFORE USE
190 REM
200 REM AUTO BACKING CARD
210 REM
220 REM CALCULATOR
230 REM
240 REM THIS FUNCTION CALCULATOR APP
250 REM
260 REM ALAN NORMAN
270 REM
280 REM THIS APP WILL WORK ON A
290 REM
300 REM
310 REM A CASSETTE WORKING ON A FL
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
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960 REM
970 REM
980 REM
990 REM

```

[illegible][illegible]

Things are going well, hundreds of new young men are being trained, the situation is improving.

**MicroLink**

[illegible]

0, 111, 142, 173, 192, 211, 230, 250, 270, 290, 310  
 330, 350, 370, 390, 410, 430, 450, 470, 490, 510, 530, 550, 570, 590, 610, 630, 650, 670, 690, 710, 730, 750, 770, 790, 810, 830, 850, 870, 890, 910, 930, 950, 970, 990  
 1000, 1020, 1040, 1060, 1080, 1100, 1120, 1140, 1160, 1180, 1200, 1220, 1240, 1260, 1280, 1300, 1320, 1340, 1360, 1380, 1400, 1420, 1440, 1460, 1480, 1500, 1520, 1540, 1560, 1580, 1600, 1620, 1640, 1660, 1680, 1700, 1720, 1740, 1760, 1780, 1800, 1820, 1840, 1860, 1880, 1900, 1920, 1940, 1960, 1980, 2000, 2020, 2040, 2060, 2080, 2100, 2120, 2140, 2160, 2180, 2200, 2220, 2240, 2260, 2280, 2300, 2320, 2340, 2360, 2380, 2400, 2420, 2440, 2460, 2480, 2500, 2520, 2540, 2560, 2580, 2600, 2620, 2640, 2660, 2680, 2700, 2720, 2740, 2760, 2780, 2800, 2820, 2840, 2860, 2880, 2900, 2920, 2940, 2960, 2980, 3000, 3020, 3040, 3060, 3080, 3100, 3120, 3140, 3160, 3180, 3200, 3220, 3240, 3260, 3280, 3300, 3320, 3340, 3360, 3380, 3400, 3420, 3440, 3460, 3480, 3500, 3520, 3540, 3560, 3580, 3600, 3620, 3640, 3660, 3680, 3700, 3720, 3740, 3760, 3780, 3800, 3820, 3840, 3860, 3880, 3900, 3920, 3940, 3960, 3980, 4000, 4020, 4040, 4060, 4080, 4100, 4120, 4140, 4160, 4180, 4200, 4220, 4240, 4260, 4280, 4300, 4320, 4340, 4360, 4380, 4400, 4420, 4440, 4460, 4480, 4500, 4520, 4540, 4560, 4580, 4600, 4620, 4640, 4660, 4680, 4700, 4720, 4740, 4760, 4780, 4800, 4820, 4840, 4860, 4880, 4900, 4920, 4940, 4960, 4980, 5000, 5020, 5040, 5060, 5080, 5100, 5120, 5140, 5160, 5180, 5200, 5220, 5240, 5260, 5280, 5300, 5320, 5340, 5360, 5380, 5400, 5420, 5440, 5460, 5480, 5500, 5520, 5540, 5560, 5580, 5600, 5620, 5640, 5660, 5680, 5700, 5720, 5740, 5760, 5780, 5800, 5820, 5840, 5860, 5880, 5900, 5920, 5940, 5960, 5980, 6000, 6020, 6040, 6060, 6080, 6100, 6120, 6140, 6160, 6180, 6200, 6220, 6240, 6260, 6280, 6300, 6320, 6340, 6360, 6380, 6400, 6420, 6440, 6460, 6480, 6500, 6520, 6540, 6560, 6580, 6600, 6620, 6640, 6660, 6680, 6700, 6720, 6740, 6760, 6780, 6800, 6820, 6840, 6860, 6880, 6900, 6920, 6940, 6960, 6980, 7000, 7020, 7040, 7060, 7080, 7100, 7120, 7140, 7160, 7180, 7200, 7220, 7240, 7260, 7280, 7300, 7320, 7340, 7360, 7380, 7400, 7420, 7440, 7460, 7480, 7500, 7520, 7540, 7560, 7580, 7600, 7620, 7640, 7660, 7680, 7700, 7720, 7740, 7760, 7780, 7800, 7820, 7840, 7860, 7880, 7900, 7920, 7940, 7960, 7980, 8000, 8020, 8040, 8060, 8080, 8100, 8120, 8140, 8160, 8180, 8200, 8220, 8240, 8260, 8280, 8300, 8320, 8340, 8360, 8380, 8400, 8420, 8440, 8460, 8480, 8500, 8520, 8540, 8560, 8580, 8600, 8620, 8640, 8660, 8680, 8700, 8720, 8740, 8760, 8780, 8800, 8820, 8840, 8860, 8880, 8900, 8920, 8940, 8960, 8980, 9000, 9020, 9040, 9060, 9080, 9100, 9120, 9140, 9160, 9180, 9200, 9220, 9240, 9260, 9280, 9300, 9320, 9340, 9360, 9380, 9400, 9420, 9440, 9460, 9480, 9500, 9520, 9540, 9560, 9580, 9600, 9620, 9640, 9660, 9680, 9700, 9720, 9740, 9760, 9780, 9800, 9820, 9840, 9860, 9880, 9900, 9920, 9940, 9960, 9980, 10000



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## Five liners

### CONSOLE KEY INTERRUPT DRIVER from STEVEN CHEUNG

Two very interesting little programs, written entirely in machine code, enables you to adjust various system control registers by using the Console keys - Start, Select, Option and Help. As a result, it is only function fully on an XL or XL, although the luminance change command should work on older systems.

Type in the Basic program as listed and RUN it. This will then POKE the data for the interrupt routine into page 6, then enable it with USR15386. You may now delete the Basic program by typing DELW, and the machine code will continue to run until you press Reset or turn the computer off.

Lines 10 and 20 translate the compressed machine code data into valid numbers ready to be POKEd into location 1028 onwards.

Lines 30 and 40 contain the actual machine code data while Line 50 starts the program running with X=USR15386 and also contains the last few bytes of data.

After installing it, you may operate the routine by pressing the following keys:

- Start:** Toggles the international character set on and off.
- Select:** Cycles through the various text luminance values.
- Option:** Toggles the keyboard click on and off.
- Help:** Toggles the left margin between 0 and 2 in the same manner as POKE 82,0 and POKE 82,1 would.

```

10 FOR I=1028 TO 1030:FOR J=0 TO 255:
  POKE I+J,153:NEXT J:NEXT I
20 FOR I=1031 TO 1040:FOR J=0 TO 255:
  POKE I+J,153:NEXT J:NEXT I
30 FOR I=1041 TO 1050:FOR J=0 TO 255:
  POKE I+J,153:NEXT J:NEXT I
40 FOR I=1051 TO 1060:FOR J=0 TO 255:
  POKE I+J,153:NEXT J:NEXT I
50 X=USR15386

```



LINE	DATA	LINE	DATA	LINE	DATA
10	15386	30	15386	50	15386
40	15386	50	15386		

### DECIMAL TO HEXADEXIMAL CONVERTER

from G. WATSON

This five-liner will accept a decimal number from 0 to 65535 and convert it into its hexadecimal equivalent instantly. After it has been POKEd into memory, the routine may be accessed at any time by using:

A=USR1680:NUMBER

For those of you interested in

machine code, it works in the following manner:

The number to be converted is divided by 168 and pushed on to the stack by the USR statement. The low byte goes on first, then the high byte.

The high byte is then pulled off the stack by the routine and divided by 16. This number is then used as an index through a table of ASCII values of the hexadecimal numbers from 0 to F. This resultant digit is then printed to the screen by using the rom routine at address 1680. Please note that this routine may be located in a different place on older machines.

The remainder of the division is then used to index through the same table and the number is again printed in the same way. The low byte is then pulled off the stack and the process is repeated.

```

10 FOR I=1028 TO 1030:FOR J=0 TO 255:
  POKE I+J,153:NEXT J:NEXT I
20 FOR I=1031 TO 1040:FOR J=0 TO 255:
  POKE I+J,153:NEXT J:NEXT I
30 FOR I=1041 TO 1050:FOR J=0 TO 255:
  POKE I+J,153:NEXT J:NEXT I
40 FOR I=1051 TO 1060:FOR J=0 TO 255:
  POKE I+J,153:NEXT J:NEXT I
50 X=USR1680:NUMBER

```

```

PRINT "*****"
PRINT "*****"

```

```

START PLA
  LDA #802
  STA COUNT

```

```

LOOP1 PLA
  STA DINT
  LDA #800
  STA TWO
  LDA #804

```

```

LOOP2 CLC
  LSR ONE
  ROR TWO
  DEC
  BNE LOOP1
  LSR TWO
  LSR TWO

```

```

ONE TWO
TWO TWO
COUNT
TABLE

```

```

LSR TWO
LSR TWO
LSR ONE
LDA TABLE,X
JSR PRINT
LDA TWO
LDA TABLE,X
JSR PRINT
DEC COUNT
BNE LOOP1
RTS

```

```

BYTE $FF
BYTE $FF
BYTE $FF
BYTE $00,$01,$02,$03,$04,$05,$06,$07
BYTE $08,$09,$0A,$0B,$0C,$0D,$0E,$0F

```



LINE	DATA	LINE	DATA	LINE	DATA
10	15386	30	15386	50	15386
40	15386	50	15386		

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### DISPLAY:

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## Lively lobsters

**Program:** Space Lobsters  
**Price:** £7.99 (suggested) £9.95  
 (tdo)  
**Distributor:** Red Hat, 11 Farnell  
 St, Manchester, M1 3DU.  
 Tel: 061-934 4567

I've seen most of the science fiction films Hollywood has churned out over the last few years. I've also spent many a happy evening absorbed in the seemingly endless re-runs of Star Trek, and the weird world of the Twilight Zone. But never have I come across Space Lobsters in any of these fantasies.

In this game Captain Crumbie has to fight off three special crustaceans and other guardians of the Celestus spaceship to discover hidden computer codes to facilitate his

escape, should he become overwhelmed.

With limited ammunition, and via the use of teleport beams, Captain Crumbie is surprisingly quite a tough cookie, really, traversing through the various corridor levels of the ship, exploring more than 150 screens in his quest to find the 10 elusive computer codes.

Rendering his progress are the roaming Robo Drots, ancient descendants of the Rube Ducks, and famed for their problems with vowel pronunciation (and spellings) - but that's another story.

Captain Crumbie has to blast his way from level to level, occasionally finding points for supplies on his way.

Clever use of split-screen



graphics has produced a mixture of hi-res and character-based graphics, with good animation of Captain Crumbie being the main feature of the game.

Excellent title music and good sound effects serve to confirm the view that there is still a market for reasonably-priced software, although the charts seem to indicate that true budget Atari software is now the order of the day.

But if you are looking for a good, animated 'falcon' run, run away, turn around and shoot 'em again! - style game, with a mild degree of tactics to boot, then Space Lobsters might just be your cup of soup.

Walter Lasalle

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

## Against the clock

**Program:** Spectrolyr  
**Price:** £9.95 (suggested) £14.99  
 (tdo)  
**Distributor:** Electric Dreams,  
 37 Canham Crescent,  
 Southampton, Hampshire  
 SO1 2JG.  
 Tel: 0703 226666

SPIN DAZZY is a Marble Madness clone which involves guiding an inverted pyramid around the different screens, mapping them out and collecting any jewels along the way.

You play against a clock, which doesn't even pause when you plummet to your death - you lose a precious five seconds as well as a life.

If you collect one of the many jewels strewn about the screens, you gain 10 seconds, and you also get a bonus of seven seconds each time you enter a new screen.

Occasionally you may encounter a couple of nasty creatures who push you out of the room and zap your

time; avoid these at all costs.

You can call up a map at any time to show you your relative position in the game, any unmapped rooms, mapped rooms with a jewel in, and completed rooms. There are more than 350 to visit.

A nice feature is that if you lose sight of yourself on the screen you can turn your viewpoint round so that you can see all angles of the room, or you can point yourself round.

To make life on some screens a whole lot easier, there are lifts which can take you up to a higher ledge, which would be otherwise inaccessible without searching many other screens for a ramp.

A word of warning about the lifts: To get some of them to work you have to find and collect the object which is depicted on the lift's surface.

When you need a bit more speed to jump over a gap in



the pathway or climb a big hill, there is always the speed boost, which is activated by holding down the fire button. This sends the potential flying along, but it's easy to overshoot and overshoot your target or crash.

Hopefully you can press the emergency stop key (the spacebar) to stop you dead on any surface with grip, which excludes ice, water and trampolines.

Falling off trampolines, you can use them to be any odd to an area impossible to reach by any other means.

The 3D graphics are prob-

ably the best I've ever seen and the sound effects quite realistic, but you don't hear them very often. This is a shame as they enhance the game greatly. Another minor gamble is that there is no music whatsoever.

Despite these minor nig-gles this is an excellent game which will keep you coming back for more for many weeks to come.

Stephen Barber

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

# Beginners chess

**Program:** Master Chess  
**Price:** £1.00  
**Supplier:** Masterlogic, 8-10  
 Paul Street, London EC2A  
 4JA  
 Tel: 07-327 6660

As far as I'm concerned, no home computer should be without a chess program, but cost may be a deterrent to some would-be Kings. Attempting to fill a gap at the low-cost end of the market is this no-frills chess playing program from Masterlogic.

Available for the Atari 800 and 130 series, Master Chess offers you the game, plain and simple. Given the price, you won't be surprised to hear that it has few of the extras you'll find in more expensive offerings.

The grey and green chessboard fills the left two-thirds

of the screen while the remainder is used for entering your move and for the computer's messages.

You input your moves using standard algebraic notation via the keyboard, so typing E2 E4 moves your king's pawn forward two squares. The black and white pieces are clear and easily identifiable.

At the start of a game you are asked whether you want to play black or white, then you set the skill level by entering the number of seconds allowed for the computer's thinking time.

There are several options available from a separate screen, reached by pressing Return when it is your turn to move. From here you can reset the skill level, set up or rearrange the board (useful for taking back mistakes or bad moves), have an action



reply of a game, and load, save or play a new game.

The last six moves for both sides are listed at the options screen, along with a pictorial representation of all pieces that have been captured.

The program does not appear to have an openings book and can make some very strange moves on the lower response settings.

If you just want a cheap program to play against and one which is fairly easy to beat, this could be just the

ticket.

For any serious chess player or as a better long term investment, I would advise you to save your pennies for a far more sophisticated program, such as Colossus which, although more expensive, offers far better value for money.

**Bob Chappell**

<b>Sound</b>	✓
<b>Graphics</b>	✓
<b>Playability</b>	✓
<b>Value for money</b>	✓
<b>Overall</b>	✓

# Rambo in green

**Program:** Green Beret  
**Price:** £3.95 (casualist)  
**Supplier:** Imagine Software,  
 8 Dorset Street, Manchester  
 M2 5AS  
 Tel: 061-437 6633

"HEEYYYY! Don't push me!". Yes, you guessed it - another Rambo-type shooter-up. Predictably, your mission is to rescue hostages captured by the enemy forces.

It's no game either as the enemy are out to stop you with all the great forces they can muster.

Green Beret is based on an arcade game so there are inevitably some compromises in this 8 bit version. But Imagine has done a pretty fine job in this, its first release for the Atari in quite a long time.

During the game you progress through the screen which scrolls smoothly from right to left. Enemy soldiers

run towards you from different directions, intend as you capture.

Some will take potshots at you with rifles, while others try to tell you with a kunzite flying kick. You can dispatch them with your knife, operated by the fire button. However the response to the button is slow, calling for good timing.

If you come across white soldiers and kill them you will be provided with a backpack holding four rounds. This can be fired in either direction by pressing the spacebar at the moral moment, taking out all the men in that direction.

Some parts of the arcade game, such as the mortar crews and ground mines, seem to have disappeared, however if they had been included it might have made the game a little too difficult, as Green Beret is quite



challenging as it stands.

One funny remark is provided at the end of the second stage, in the arcade game you are attacked by Doberman and Alsatian guard dogs.

The programme's pace retained this feature, but the attacking dogs look like emaciated Yorkshire terriers.

The background graphics are detailed and colourful and are as excellent. However I was a little disappointed with the graphics of the figures. These were a little too big and lacked detail.

There is no music, though

the game starts with a wall of drums followed by a drum rhythm which accompanies you throughout, adding to the atmosphere. Sound effects are limited and could have been better.

All in all, a good game which should sell well. Hopefully just the first of many conversions from Imagine.

**Mark Fawcett**

<b>Sound</b>	✓
<b>Graphics</b>	✓
<b>Playability</b>	✓
<b>Value for money</b>	✓
<b>Overall</b>	✓

## Not daring enough

Program: *Who Dares Wins II*  
Price: £29.95  
Supplier: Tynesoft, Addison  
Industrial Estate, Raydon  
upon Tyne, Tyne and  
Wear NE21 4JG  
Telephone: 021 414 4017

*WHO Dares Wins II* is very much a *Commando* clone – run to the top of the screen and shoot anything that moves.

You start in the middle of a forest, looking a bit short, squat and silly – rather like Lewis Collins in the film of the same title.

The term forest is perhaps a bit of an overstatement, as it comprises of a sparse collection of kids' lollipop trees. Indeed, the graphics generally have a child-like look to them and the colours used are rather drab.

All around enemy soldiers are shooting away at random. You must break through their ranks, trav-

elling up the screen towards the end of the zone a few screens further on.

Apart from the trees and soldiers, the scenery shows bombed-out buildings and various discarded oil drums. No cover or protection is afforded by any of these objects – bullets pass straight through them all.

Indeed, you can even walk through some of the walls, which certainly doesn't add to the game's realism.

Dodging the flying bullets, you can return fire, either with your gun or your pack of 12 grenades. When the enemy is shot, you are treated to what looks like a brief rendition of "Mammy" as the unfortunate soul writhes in his death throes before expiring.

Further along you encounter helicopters and armoured cars. There are also ponds to be avoided – you'll drown if you tumble



into one. Eventually you reach the end of the zone, a guard post and barrier crossing.

Movement is slightly on the slow side, and the speed of your bullets frustratingly so. Throughout the game the computer bleeps out a banal ditty, sketching the Atari's second capabilities about as much as the visuals do its graphic abilities – not a lot.

Although the game is playable, to my mind there are better versions around. It is not uncommon that a

good game concept is spoiled by not being carried through thoroughly enough.

I recently reviewed *Gun Law* which is almost identical to *Who Dares Wins II*. Although by no means perfect, it was altogether more pleasing and was around a quarter of the price.

Nick Reynolds

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

## Out in the cold

Program: *Winter Olympics*  
Price: £29.95 (casualty £9.95)  
(share)  
Supplier: Tynesoft, Addison  
Industrial Estate, Raydon  
upon Tyne, Tyne and  
Wear NE21 4JG  
Telephone: 021 414 4017

*WINTER Olympics* from Tynesoft is another event compilation following on the heels of *Summer Games*, *Winter Games*, *Demolition* and so on. There are five events – speed skating, ski slalom, ski jump, downhill and the *Cresta Run* bobsleigh.

Speed skating is a straight-line race against the clock. There is a computer controlled opponent in the top half of a split screen and, although this may help you pace the race, it would have added more to the game to have allowed a two player option.

Movement is achieved by frantic wiggling of the joystick.

In the slalom event the skiers, consisting of a rather sparsely-wooded forest, scrolls smoothly upwards.

You steer your skier through gates marked by two poles, but hitting a pole incurs a time penalty and colliding with a tree means the end of the heat.

Next comes the ski jump. Accelerating down the slope, you press the fire button to jump, the aim being to leap as far as possible.

As in the speed skating event, how much you want to risk snapping your joystick determines your terminal velocity.

The downhill race is virtually identical to the slalom. There are no gates to steer through, but some slight



deviations in the course marked by trees.

The last event of *Winter Olympics* is the *Cresta Run* in which there are two views of the race.

One is a plan view of the whole course, by which you can see how far you have progressed. The second and smaller outlook is from behind the bobsleigh, looking down the ice tunnel.

This is poorly done – the graphics are blocky and over simplistic, and the movement jerky. Speed is gained by sliding as close

as possible to the rim of the wall around the bends.

*Winter Olympics* sounds evocative of excitement, daring and great fun. Unfortunately Tynesoft fails to deliver, as the individual games lack attention to detail and atmosphere.

Nick Reynolds

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

## Chess goes on Email

**SCHOOLBOY** Michael Harrison has emerged triumphant at the end of the first major chess tournament conducted via electronic mail.

Michael, aged 16, from City of London School best Avenue School, Richmond, is the first of the British Chess Federation under-18 quick play individual championships.

The last three rounds of the tournament, which attracted 560 entrants, were staged on the MicroLink system and shown move by move on national television.

MicroLink provided individual electronic mailboxes for each competitor and linked them to Ceefax on BBC Television, live's move in each game was shown as it happened.

Moves were transmitted between opponents as MicroLink express mail messages, at the same time registering at Ceefax and with the match editor.

It was a major test of MicroLink's speed and efficiency - the eight competitors in the quarter finals came from places as far apart as Edinburgh, Cardiff, Belfast and London.

Liveonline primary school headmaster John Tonkin, who organised the tournament, said afterwards: "It was a great success. Technically, the MicroLink system was absolutely spot on."

"MicroLink and Ceefax provided a fitting stage for our junior players, to demonstrate why they are second only to the Russian youngsters in the world of chess these days".

## Typesetting on the line

**ONLINE** typesetting is coming into its own as an alternative to traditional methods, and MicroLink is playing its part in this booming growth area of commercial printing.

Many small businesses which require professional-quality printed material but can't afford the cost in time and money of manual typesetting are turning to firms like Wordstream for help.

This Bournemouth-based

company, owned by husband and wife team David and Jackie Pufberger, provides a service via electronic mail with a choice of 150 different typefaces.

Wordstream is online 24 hours a day, seven days a week, offering next day results at only a tenth of the cost of traditional typesetting.

Eighteen months after its launch, Wordstream has chalked up its 1,000th customer, and now the

firm is going international via MicroLink.

Primary targets are Europe, where MicroLink has many subscribers, and the USA.

Specifically designed MicroLink technology will enable the contents of Wordstream's mailbox to be downloaded automatically every 15 minutes of the day or night and transferred directly on to typesetting equipment for processing.

**MICROLINK** enthused Dave Doorne thought he had found himself playing a role in a drama when he logged on to his mailbox late one night.

As he was reading his mail another subscriber broke in with the terse message "Help".

"I lost contact of Tony Hancock" getting the Monday emergency call in

his famous radio sketch". David said later, "But it proved to be a request for help from someone who wanted to send an urgent Telemessage and wasn't sure how to go about it."

"I was pleased to put him on the right track, but a little disappointed it wasn't as dramatic a situation as I imagined it was going to be".

## TRADE LINK

**DESPITE** the difficulties caused because some manufacturers refuse to trade with South Africa, micro users in that country have to soldier on regardless.

One of them, computer consultant Steve Crawford, has joined MicroLink in order to improve his links with hardware and software suppliers in Britain.

"When you have the situation where leading firms have cut their ties with South Africa for political reasons it is essential to explore other avenues of supply", he says.

"MicroLink telex and electronic mail services are the most economical and efficient methods of contact between people like myself and UK suppliers."

"Current circumstances would otherwise make it impossible to obtain new or replacement hardware and software which those in favour of the boycott should remember are just as essential to the opponents of apartheid".

## Messages get a bright new look

**FIVE** new designs have been created for the colourful Telemessage greetings card series which is available through MicroLink and covers a variety of special events including births, weddings and coming of age.

Among them is a reproduction of Rembrandt's famous boating scene *The Sailing at Aspinna*. It replaces the longest serving Telemessage card - a pastoral scene of butterflies and flowers that has been a favourite since 1981.

Telemessage now has

14 different card designs to meet a wide variety of needs like business announcements, birthdays, anniversaries, get-well-wish messages and condolences.

Only 13 are available to the public, however - the other card is exclusive to The Queen who uses it to send her personal greetings to people celebrating their 100th birthday or diamond weddings.

It costs as little as £2.20 to send a Telemessage greeting card via MicroLink.

LAST month we covered the theory behind cassette autoboots, and explained how to write and save machine code programs which will load and run automatically. This month we look at a program which can convert your Basic programs to an autoboot cassette form.

Conversion is actually a three-stage process. First you load a utility program called Creator. Next you load your Basic program and call the Creator routine with a USB command. This makes an entirely new cassette file which has a short machine code routine inserted ahead of your Basic program.

Loading the resulting file is exactly the same as loading commercial autoboot software. Switch the computer on while holding down the Start key, then hit any key when the single beep sounds. Everything else is automatic, and as soon as loading is complete your Basic program will run.

The system works by inserting a new editor handler and putting two commands (DATAFILES and RUN) into Basic's text buffer. When Basic gets control it will assume that you have typed the text line in direct mode, so it executes the commands immediately.

Although this is a little more complex than using direct jumps to the Basic rom itself, it ensures that the converted programs will run with all versions of Basic, and thus on any Atari 8-bit computer.

Back to practical matters. Program 1 makes the Creator file. When run this will make an autoboot machine code cassette—in fact, you might recognise lines 10 to 140 as being identical to last month's Program B. Because the program works with machine code, all DATA statements must be absolutely correct or it will crash.

Watch out for the three most common typing errors—using the letter O instead of zero, typing two commas with no number in between, and typing a comma at the end of a program line. Be sure to save a copy before you're running it.

When you're sure everything is correct, insert a new tape and type RUN. Press Record and Play and then Return after you hear the usual two beeps. Once completed, label the finished cassette as 'Creator', and make a note that it's an autoboot-format file. Once this is safely in your possession, Program 1 can be filed away as it won't be needed again.

Here are the step-by-step instructions for using Creator to convert an existing Basic program into the new cassette autoboot form.

■ Switch power off and insert the Creator cassette.

# Autoboot your cassette files

More on adding that pro touch to your programs from resident guru **LEN GOLDING**

■ Switch power on while holding down the Start key, and hit any key when the beep sounds. After the usual loader delay, you will hear the Creator file loading.

■ CLDND: the Basic program which you want loaded into an autoboot, but don't run it.

■ Insert a blank, fully reformed cassette and type:

**X=USB01040**

■ Press Record and Play, and hit Return after the two beeps. Your Basic program will now be written to tape in autoboot format.

Remember that programs in this format cannot be loaded using any of Basic's commands—you must use the autoboot loading procedure. Once in memory, though, your program will behave just as though you had typed CLDND and RUN.

Now let's leave cassettes for a while and take a look at disc-based programs. There are two different systems available for loading disc software: load and run automatically—disc autoboot or AUTORUN.SYS. Both will work only with machine code, but AUTORUN.SYS can be used to load and run a Basic program, giving the effect of a Basic autoboot.

Let's take disc autoboots first. Since they look and behave almost exactly like the cassette autoboots which we covered last time, we'll skip through the details fairly quickly.

When power is switched on with a disc drive connected, there must be some autoboot information on the disc, otherwise the screen will fill with BOOT ERROR messages. On a normal Dos disc, this autoboot system loads and initialises the DOS.SYS file, but the process can be used for other things. Program 2 shows the correct format. Lines 10 to 500 form a new BASIC routine for disc which isn't part of the autoboot data itself.

The first six bytes in the autoboot

code (starting at line 640) are a header, containing a boot flag (normally zero), the number of sectors to load, the load address and finally the initialisation address. The OS reads this header, and stores the load address in DOSFAD (\$76,\$78), and the initialisation address in DOSINI (\$2,\$3).

It then makes a note that it's using a disc-based program by storing a 1 in the BOOTF location (address 0). Once it has this information available it can load all the boot sectors into the correct addresses in memory.

The next thing the OS does is to perform a JMP to DOSFAD+4, skipping over the six bytes of header data to execute the code labelled COLDSF in our example. This section will only be executed once, immediately after the sectors have been loaded, and must end with RTS, or the system will lock up. The load process terminates by branching control to the language or other cartridge, via a JMP to the cartridge start address.

If no cartridge is installed, the final JMP goes to the address stored in DOSVEC (\$10,\$11), which normally points to the self-test or menu-paged routine. You can change DOSVEC during the initialisation routine so that the final JMP will go elsewhere, but only experienced machine code programmers are likely to use this facility as it completely bypasses Basic. The second JMP and final JMP are always repeated whenever System Reset is pressed.

Autoboot code is always stored on the disc starting at sector one, but none of the standard commands avail-

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## Autoboot

able in the Assembler Editor cartridge or Dos utility package will create such a format automatically, so we need a special machine code routine. If you have an Assembler you can use the saver routine given as Program 5. If not, the Basic version - Program III - will do exactly the same job.

The disk you plan to write to must be formatted but should not contain DOS files. In fact, since the completed disk will not be in normal Dos format, you should not have any files on it as you write from some of them.

When you call the save routine, either from the assembler or by running Program 11, the code from START to JUDGE will be written automatically to sector one. Turn power off then on again, and the file will load and run automatically, causing the screen border to change colors.

This is no big deal, but once you've got this simple file working correctly, there's nothing to stop you inserting much more interesting routines at COL087 or /%7. Always retain the code that tests MEMLO, since this assures that you're in a valid code area.

associated with obesity or any other health-related condition.

Now for the bad news - disc autochangers are a pain to use. They must start on sector 1, so you can have only one per disc. They don't appear on disc directories, you can't LOAD them, SAVE them or LIST them in any of the conventional ways, and they won't even RUN except at power-on time.

Worst of all, you can't use paper in conjunction with Disk Access cards.

one boot program can be loaded at a time, and DOS/MS itself needs to boot into memory. So if your software needs to communicate with the disc drive after initial power-up, forget it. Unless, of course, you're prepared to write your own disc management routines.

■ The alternative is to use AUTORUN.BAT, which is a much friendlier system, and better suited to the needs of basic programmers. We'll tell you all about that soon enough.

1999

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**TO ORDER TURN TO THE FORM ON PAGE 59**







**PART** two of the **Advanced Character Editor (ACE)** provides a set of subroutines to be added to the main program which appeared last month. Please note that part two will not work on its own.

When typing in Program 1, make sure to use the line numbers exactly as printed, and include all the REM lines.

Before reassembling and running the combined program it is a good idea to test part two to tape using the LIST "C:" command, or to disc with LIST "D:ACE2".

With part two loaded into memory, enter part one from last month's *Amiga User* by using the command ENTER "C:" or, for disc users, ENTER "D:ACE1". You will then have merged parts one and two which can then be saved to tape using LIST "C:" again or LIST "D:ACEHAND2". The third and final section of ACE will be published next month.

Part two adds the extra commands **COLOUR**, **DATA**, **LOAD** and **SAVE**. **COLOUR** - C

Addresses 700 to 712 are the colour registers that affect the text graphics modes.

The joystick allows you to alter the current colour, Left and right change the shade, while Up increases the brightness and Down decreases it.

To change colour registers press the fire button. The colour registers act differently in Graphics 0 compared with Graphics 1 and 2 as shown in Figure 1 below.

The menu display shows the value of the colour classes. To recreate this colour in your own programs **POKE** the appropriate colour register with the value for example **POKE 700,0** will make the uppercase and number characters in Graphics 1 and 2 come out grey. To exit from Colour press the fire key.

#### **DATA - D**

The eight numbers displayed when you enter the Data option are the bit-mapped numbers used to define the current character shape in memory.

A character consists of 64 pixels

# DATA sets for your own programs

## Part 2 of STEPHEN WILLIAMSON'S series on creating your own custom- built character set

plotted within an 8 x 8 grid. For each row a single number can be used to represent the pattern of pixels. To do this, a pixel plotted within the row is given a value that depends on which column it is in. A pixel in the first column is given a value of 128, the second column 64, the third 32 and so on.

The values of all the pixels in the row are added up to give a single number from 0 (no pixels on a row) to 255 (8 pixels in a row). This can be seen from Table 1 which depicts how the letter A is bit-mapped.



#### **SAVE - S**

A **SAVE** menu appears on the right hand side of the main display. After an option has been chosen the device to which the data is saved must be specified. All disc filenames must be a

maximum of eight letters long with no extenders. The character option will add the extender .CHR to the saved file and the Screen option will add .SCR. The extender is added for the Basic Subroutine. Cassette users must press Record and Play then press Return when prompted.

#### **BASIC SUBROUTINE - B**

This option will save to tape, disc or list to printer the subroutines (up to a maximum of six) that were written during the **DATA** section of ACE. An example of the sort of file that is created is given as Program R.

#### **CHARACTER - C**

This saves the whole redefined character set to cassette or disc.

#### **SCREEN - S**

The Screen option saves PAD screens. The PAD option is included in ACE part three which will appear in next month's *Amiga User*. Until part three is merged with parts one and two then this option is unavailable.

#### **LOAD - L**

Previously saved ACE character sets and PAD screen data can be loaded.

#### **CHARACTER - C**

This loads a character set. Any set loaded will overwrite the current character set display. Disc users must specify the file name (without extender) and cassette users must, after inserting the appropriate character set tape, press Play when prompted.

#### **SCREEN - S**

This option loads PAD screens and will be discussed next month when the PAD and animation modules are added to ACE.

### USING ACE CHARACTERS IN YOUR OWN PROGRAMS

The Basic subroutine that ACE saves is in listed form on lines 36904 to 36980 - so far obvious reasons you

	Register	Basic Equivalent
<b>GRAPHICS 0</b>		
Character Brightness	708	SETCOLOR 1
Background	710	SETCOLOR 2
Border	712	SETCOLOR 4
<b>GRAPHICS 1 AND 2</b>		
Uppercase and numbers	708	SETCOLOR 0
Lowercase characters	709	SETCOLOR 1
Inverse uppercase	710	SETCOLOR 2
Inverse lowercase	711	SETCOLOR 3
Background and Border	712	SETCOLOR 4

Figure 1

should avoid using these program files yourself.

ACE saves the subroutines as a listed file. With your own program in turn add the subroutines to the end of your program with the ENTER "D:" command for cassette users or ENTER "D:FILENAME" from disc.

Access the routine by using GOSUB 30000. In most cases this is best at the beginning of the program during initialization routines.

The ACE Character Set Routine program listing is an example routine written by ACE which redefines six characters. The program stores the new character set at the top of ram. To do this RAMTOP is the pointer to the top of the basic free memory - is lowered. RAMTOP can be found by examining the value held at address 190 (normally 190 on 808 X1's and X2's). This is value is expressed as pages of 256 bytes. This means that RAMTOP is normally address 40960 (160 multiplied by 256).

Line 30030 of the subroutines lowers RAMTOP by five pages and then calculates CHBASE, the address for the character set data to be loaded into. This is set to page 194 (address 38944) - see lines 30030 and 30040.

The GRAPHICS 0 command in line 30050 reallocates the screen memory area to avoid conflict with the character data. If you wish to use the routine in Graphics 1 or 2 then line 30050 must be changed. To calculate the starting address of the new screen area use the formula:

**SCREEN = PEEK(0) + PEEK(0) \* 256**

A short machine code routine copies the standard character set from ram to ram and then the redefined character set is loaded into the appropriate area of the character data.

Address 766 points the operating system to the start of the character set data. Normally a value of 234 is held here to indicate the standard rom character set at address 57344 (234 times 256).

If you want to change the address of the character set, CHBASE should be set to a four page boundary below RAMTOP - that is, RAMTOP-4, RAMTOP-8, RAMTOP-12 and so on.

To place the character data 12 pages below RAMTOP, and leave the screen data area at its normal place in memory (at the top of ram) change line 30030 to read:

**30030 M=PEEK(194)-12**

and delete line 30035. The character set will then be loaded at page 148 (address 37888) and finish at address 38911 - a full character set takes up 16 of memory.

Don't forget to POKE the value 148

into address 766 to turn on the redefined character set.

Each time you use a GRAPHICS command in a program the value in location 766 will be read and you will have to POKE it back in again. This also applies to pressing System Reset.

#### ACE CHARACTER SET LOADER

The ACE Character Set Loader - Program 8 - is a subroutine for use with your own programs. If you are using cassettes then you should delete line 30010 and remove the REM command on line 30060.

The filename for the character set as listed in "D:SET1.CH". Line 30010 may be altered should you want to load an ACE character set with a different filename. All ACE filenames are saved using the extension .CH.

The subroutines can be listed to tape using LIST "C:" or LIST "D:FILENAME" and later merged with your own program using the ENTER command.

This routine sets CHBASE to address 37888 (page 148 - or 12 pages below RAMTOP). To assign another area simply change the MEM address in line 30020 to another four page boundary below RAMTOP. For example, to make CHBASE page 144

address 36864, change line 30020 to **MEM=PEEK(194)-16**.

**CHBASE=MEM\*256**

To access the routine in your own program use the command GOSUB 30000.

Cassette users will find it convenient to record the character data immediately following the main program. When the character set loader is run, make sure that the Play button is pressed and hit Return after the beep.

#### ACE MACHINE CODE LOADER

The ACE Machine Code Character Loader - Program 9 - is an assembly language routine for loading ACE character sets from machine code. The listed source code can be typed in with the Atari Assembler Editor Cartridge, MAC 65 or any other similar assembler program.

To load a file other than "D:SET1.CH" then line 433 must be changed, but make sure to keep the CH loader.

To change the character set data area alter the CHBASE label.

The listing is for Disc users only but can be adapted to cassette (see Andre Willey's articles on accessing CIO from Machine Code - Atari User from January 1987).

#### Program 8: ACE Editor - Part two

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It's our biggest competition ever

# Treasure Hunt

YES, Atari User is two years old this month, and what an exciting life it has had. We've seen - and helped to stimulate - a tremendous growth in the number of Atari users. There's been the headline-creating launch of the ST, with more powerful versions appearing every few months. Initially we devoted just a section of the magazine to this computer - now it's a separate magazine in its own right.

So there's lots to celebrate this birthday. And to help us push the boat out, Atari and some of Britain's leading software houses. Together we've come up with the biggest competition ever, with a massive number of prizes - 200 of them, worth a total of £3,270!

## What you have to do

Scattered around this issue you will find various items of treasure. Your task is to count up how many gold bars, sovereigns and jewels there are and put the numbers down on the entry coupon.

Then tell us the name of your favourite game and, in not more than 35 words, why you like it so much.

With 200 prizes, you stand a good chance of winning something, so sharpen that pencil and go hunting for treasures, me hearties!

Gold bars \_\_\_\_\_  
Sovereigns \_\_\_\_\_  
Jewels \_\_\_\_\_

My favourite game is: \_\_\_\_\_

I keep going back to it because (in not more than 35 words): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Name \_\_\_\_\_ Age \_\_\_\_\_  
Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Postcode \_\_\_\_\_

Send to: Second Birthday Competition, Atari User,  
68 Chester Road, Macclesfield, Stockport SK7 5NP.

## The prizes

TOP of the list is Atari, the company that started it all, offering a complete 1188E system, with data recorder and joystick, as well as two DOS 2800 video games consoles.

But most of the prizes come from the many software houses which continue to support the Atari computer with top-class games. And Rat, a fast-developing software house from Manchester, is offering 100 copies of the new game Space Lobbers, reviewed this issue.

Also from Manchester is English Software, giving away 50 copies of its compilation Smash Hits 7. From UK Gold is the top-class conversion of the arcade smash Gauntlet, with 20 copies up for grabs. And Data-base Software is giving 10 copies of the just-released Mini Office II.

On the budget side there's 10 copies each of five games from Argus: Clash of Death, Savage Pond, Up Up and Away, Quest for Identity and Linger.

Mastertronic, without a doubt the biggest budget house, has offered six copies of each of its releases for the Atari: Action Rider, One Man and His Goid, Vegas Jackpot, Kickstart, Crystal Master, Masterchess, Molecular Man, Gun Law, Demolish Rider, Vegas Jackpot, SWAT and Ninja. And winging all the way from Finland are 10 copies of Warhawk.

From the masters of the simulation, Microprose, come five copies of six of its releases: F-15 Strike Eagle, Silent Service, Solo Flight, Kennedy Assassins, Crusade in Europe and Decision in the Desert.

For the adventure fanatic there's five copies of The Pewee, Jewels of Darkness and Golden Dreams from Activision.

And for the more sedate games player, CDS is donating 10 copies each of Colossus Chess 4.0 and Steve Davis Snooker.

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# unt!

★ 385 prizes

★ And they're  
worth £3,278



FEET S

This month's simple gadget makes it easy to produce freehand drawings on screen. Children will have hours of fun with it, and it has been known to occupy adults for the odd evening or two.

It's very easy to build and program, needs no knowledge of electronics and can be built in a few hours by any DIY enthusiast. In fact, it's an ideal first project for youngsters who are starting to study the ins and outs of computers at secondary school.

It looks rather like an upside-down joystick, but it works by generating analogue rather than digital signals.

Why is that an advantage? Well, a standard digital joystick can produce only nine separate codes, which your software has to interpret as directional commands — up, down and so on.

Because movement is limited to only eight directions, it's very difficult to draw diagonal lines except at 45 degrees, and almost impossible to produce curves.

Also, both the speed and distance have to be programmed separately — speed by using some kind of timing loop and distance by moving one step at a time for as long as the stick is held in one position.

Analogue joysticks work on an entirely different principle. They generate numbers which correspond to the current vertical and horizontal position of the stick itself.

In the Atari's case these numbers can vary from 1 to 255, so it's possible to convert them into actual screen coordinates for any image up to Graphics 2. This means that you can plot a coloured pixel at any position you choose, and it gives you fingertip control over speed, distance and direction.

The mechanics are quite complex — two potentiometers mounted at right angles as a double axis — but fortunately they can be bought ready made. The type we've chosen is the



Figure 1

# Analogue avenue to producing freehand drawings

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

kind often used for radio control, and it's surprisingly inexpensive.

The resistance of each pot changes as you move the stick around, and the Atari's internal analogue-to-digital converter turns the two outputs into numbers which reflect the stick's vertical and horizontal positions.

As the resistance increases, so the numbers generated by the joystick also increase, starting at 1 — for resistances less than about 100Ω (ohms) (1K) — and rising to 255 when the resistance is around 500K.

Now the joystick we've chosen can vary from a few hundred ohms to

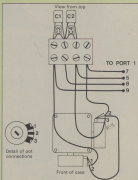


Figure 2





The capacitance needed is around

The gadget's output should now vary from 1 to about 100, and out soft.

They abandoned both party stripes







**MANY** people have described the Atari's graphics as one of its best features. I won't argue, but how many of you have looked away because they looked too difficult to handle from Basic, or you simply weren't satisfied with the execution speeds you could achieve?

Well, no more excuses! Here is a machine language subroutine which you can use from Basic to achieve fast and exciting graphics without a lot of mess and fuss.

As a matter of fact, you make only one setup call to the subroutine and then forget it. Couldn't be simpler, could it? And you need to know nothing about machine language, either - just a couple of POKEs and you'll have your players dancing around the television screen.

One feature of the Atari with which you may not be familiar is its interrupt mechanism, and it is this which can be used to move your players about at machine language speed - all without the overhead of calling it each time from your Basic program.

In fact this interrupt mechanism can be made to do anything - change colour registers, update sound values and much more. But before we explore this useful feature, let's take a quick refresher course on interrupts.

As you know, the Atari keeps itself pretty busy doing its housekeeping chores even while it is running your Basic program. Among other things, it must maintain the steady delivery of information to your television screen, allowing it constantly to update the display.

Multiple, concurrent activities are performed by allowing one particular activity to periodically interrupt another.

The traditional analogy is that of a busy business executive who, while engaged in a meeting with an associate, is interrupted by a telephone call.

# Gear up your Basic for faster graphics

A machine code routine  
by PARESH SOLANKI

The ringing phone signals the interrupt and the executive pauses his meeting and answers the phone. After disposing of the call, the executive then resumes his meeting at the point he left off - hopefully.

A similar, but more controlled, sequence of operations occurs each time a complete picture is shown by your television set. The TV's electron beam paints the picture by sweeping in horizontal rows across the picture tube beginning in the upper left hand corner and ending in the lower right.

The beam is turned off when it reaches the lower right corner and is returned to its upper left starting position. This return trip is essentially a vertical positioning movement, so this period when the beam is turned off is known as the vertical blank period.

The onset of the vertical blank cycle serves as an opportunity for the Atari's ANTIC chip to signal an interrupt - the vertical blank, or VBLANK, interrupt. The operating system uses this occasion to perform some of its internal housekeeping chores such as updating the colour registers, checking the keyboard and operating the real-time clock and timer.

Fortunately, the operating system

design team allowed us to include our own machine language subroutine for execution at one of these tasks.

The machine language vertical blank interrupt player movement subroutine described here is called VBLANKPM and it allows you to POKE the next X and Y coordinates at which your player is to be displayed.

There is no need to repeatedly call the subroutine from Basic via the LOGO function. The subroutine will be executed automatically during the next vertical blank period.

It is theoretically possible to move the players every time a new screen is painted on the television - and that's 50 times every second.

You may recall that an appropriate POKE to location \$D048 to \$D051 permits you to position the four players anywhere along the X-axis. It hasn't been quite so easy to position the players vertically along the Y-axis - until now.

The VBLANKPM subroutine moves players in both directions. Movements along the vertical axis involve moving the data and then registering the player in the new position. VBLANKPM does this for you automatically. However, there are a few things that you must do first.

First you must get the VBLANKPM machine language into memory and notify the operating system that it is to be included as one of the housekeeping tasks to be performed as a part of the vertical blank interrupt.

Next it's up to you to draw your players and tell VBLANKPM how tall they are. After initialization, VBLANKPM continuously looks after the positioning of your players until you press the System Reset key.

Program 1 is an example of the initialization and use of the VBLANKPM subroutine. This program causes VBLANKPM to be loaded and initialised and players zero and one to



Housekeeping keeps your Atari busy



## Graphics

A POK into locations PL+1 and PLY+1 accomplishes the same thing for player one, and so forth for players two and three. PLL and the following three locations are POKed to inform VSLANK/PMS of the height of each player.

Line 1060 initializes the remaining player/missile parameters. A 52 is FORCED into location 550 to set the single line player/missile resolution graphics, and a 1 placed into location 623 establishes the player/playfield priorities - in this case giving all the player objects over the robot(s).

Location 00B8 inside WILLAMUSP is FORCED with the page number of PMBASE, the first page containing player missile data. Locations 00C7 and 04279 are used to switch on the DMA graphics data transfer latency, and to tell the ANTIC chip where in memory to find the player graphics data.

Now you're almost ready to go. A subscription call on line 1108 allows VILAFEM to notify the operator.

system of both its presence and its desire to be invoked automatically as part of the vertical blank interrupt process.

This is the only time in which your Basic program must explicitly call `exit()`.

Finally, let's take a quick look at the controlling demonstration program — lines 100 through 200.

Line 110 sets the players' colours before the VBLANK/PM initialization subprogram is executed. Simply multiply the colour number by 16 and add the desired intensity – the colour and intensity numbers are the same as those used in the SETCOLOR command. Line 120 sets the routine number.

Line 130 illustrates the manner in which you pass instructions to `WBLAMP.M`. Here we are telling it that both players are eight lines tall, though you can change this parameter at any time.

Lines 140 and 153 establish the initial relationship between *subscript* and

relaxation rates and are comparable

Don't forget that the extremes in both directions are not actually visible to the screen. For a player to be seen it must have an X value of between 400 and 200 and a Y value of between 320 and 520. These numbers may vary slightly depending on the adjustment of your screen's VBLANK/PM positions. The top left hand corner of the graphic plane of the coordinates are usually

Line 755 sets up a white-on-black display for the background, and lines 770 and 780 contain the routines to move the players about on the screen.

Line 199 provides a small delay between player movements. Delete the FOR and NEXT statements if you want to see how fast – and easy – it is to move pieces.

Well, who said playerinfinite graphics had to be anything but fun? Give VBLINK/PM a try in one of your current programs to add a little zip. Or just try it out in your next game or graphics project. Happy player movement!



## MILES BETTER SOFTWARE

221 Cannock Road, Chasmore, Cannock,  
Staffs WS11 1 2QB. Tel: 01829 51000

[illegible]

# Driving slow - American style

I WOULD be obliged if you could explain to me an abnormality I have found while using my 1300E.

I have two computers - an 8000, and a 1300E. The A1 and my 1050 drive are American NTSC models which I use on a special TV via a drop down transformer without any problems. When I run my 1300E test (American version) I get the figure 268 - the correct speed.

I purchased the 1300E last month ago and when I run the same test I get a figure of 348 returned - but all my programs seem to run with no problems except for a minor colour change as all my programs and games were purchased in the States.

What I would like to know is should I alter my drive speed to obtain 368 or just continue using it at 348 RPM? - **R.D. Karl, Ruislip, Scotland.**

■ There is no fault with any of your equipment, you'll be glad to know. The answer to your speed problems lies not with the drive but with the two computers.

Most disc drive timing programs work by counting the number of revolutions of the disc in a given period. The vertical blank period happens at set regular intervals, so this is often used to keep track of time.

On a UK machine this ver-

tical blank interrupt happens 50 times a second, but on an American NTSC machine it occurs 60 times a second. This means that a clock written on an American machine will run slow on a British one.

The speed difference is 5%, thus your value of 348 must be multiplied by 1.05025 to give an accurate reading - which works out to 365, which is quite accurate enough to run all your discs.

## Pascal compiler

I HAVE owned an Atari 800 computer for two years and have recently purchased an Atari 1300E.

For two years I have been doing a little in Computer Studies at the Polytechnic of Wales. During this time my primary coding language has been Pascal and consequently I have done very little Basic programming. In fact, I mostly use my Atari for word processing my assignments for college.

I imagine my surprise (and pleasure) when reading a

copy of last month's Atari User magazine (Vol 2, Issue 1) - March 1987 - to discover a favourable review of a standard Pascal compiler for the Atari 8-bit series. The review was made by John Alderson about Ryan Pascal.

However, the details about how to obtain this package were very sketchy, as only the price and an address in California were given. I am extremely interested in obtaining Ryan Pascal and would appreciate any further details. - **R.D. Day, Walsworth, Cardiff.**

■ As far as we know there are no UK dealers planning to import the product, which means that you will have to order direct to America. You should order from: Ryan Software, 1990 Union Street, 183, San Francisco, CA 94123, USA.

## Choosing the right Dos

I HAVE not had my Atari 800X for long and have just started buying Atari User.

In the April issue you printed the Profs game, and

I'd be grateful if you could tell me if it's alright to format my disc with Dos 3.0 and then type in the program and save it to this format. - **Elizabeth Harty, Wiltshire, Salisbury.**

■ You can save the program to a disc formatted with Dos 3.0, but you are advised to use another type of Dos such as Dos 2.5. The only reason for not using Dos 3 is that it is not especially efficient or easy to use. You will find that Dos 2.5 is a more friendly system.

## Comms problems

CAN you please give me some help concerning communications software?

I use a 130 XF and a WD2000 modem, with the Comm interface. The software is the Multisystem package. When I logon to Protel, I find plenty of interesting information but the buffer only allows me a very short time before I have to break away and point what I have got.

I also can't find any software available for Atari 8-bit machines to download. When I logon to Telecom Gold, I find plenty of public domain programs but I cannot find any way to download them!

Can you tell me of any program that will allow me to use the full capacity of my 1300E? I have one from the American magazine Computer that allows me to open up the 1300E to a greater extent than the normal Atanetbook suggests. Do you know of any program that does not have to be auto-loaded, so that I can use

I RECENTLY brought Mapping the Atari by Comput! books. I don't think that it's as good as everyone makes out. Instead of giving examples of programs it constantly refers back to past magazines or books for example, which of course I haven't got as some are as far back as 1982. I find this very unhelpful.

For example, one of the main reasons why I bought the book was so I could find

out how to GRAB a line in machine code using a routine in open. But when I looked it up, all it gave was the start address for the GRAB routine, giving no explanation on how to use them. - **Matthew Stevens, Worcester, Worcestershire.**

■ Mapping the Atari is not a tutorial book, but a memory map - as the cover indicates. It has to cover every single location within the machine, and to help

you out gives references to more comprehensive reference works on that particular subject.

The machine code drawing techniques that will allow you to plot and draw are explained in greater detail within the Operating System manuals, but Mapping the Atari does cover them within its CIO description.

You could also look at our CIO tutorial series.

# Machine code drawing

the *CompuLink* program with it before I go on-line.

I also have a comma program from AppleSoft called *Homework*. The trouble is that it gives "modem error" as soon as I try to load it. Clearly there is something wrong with the readers, as what am I doing wrong please?

Also, what am I doing wrong with the *Telecom Gold* system that stops me from downloading? The information comes up on my screen but I cannot get anything on to disc.

I rang *Atari HelpLine* in London only to be told that there was nothing else available that was the *Dis Atari* set-up. If there is no other program on the market, could you advise me of someone I can contact who can put me on to something larger, that better suits my needs? I find it hard to believe that the only program available for *Atari 8-bit* users is so limited.

Great link to *Atari ST User*. How are 8-bit users can enjoy a full catalogue of software. That brings me to another small query. What is *Page 8*?

I know it is a magazine, and I know that it is a *Prattal* page, but I think from my reading of the April issue of

## ATARI USER Mailbag

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

The address to write to is:

Mailbag Editor  
Atari User  
Europe House  
68 Chester Road  
Hazel Grove  
Stockport SK7 5NT

✉

your mag that it is also something inside my computer. If this question sounds silly, please forgive a learner.

As a grandfather, I'm rather old to be learning anything so perhaps this is something the youngsters learn in their first lessons but I seem to have missed its significance somewhere along the way. - **Peter A.J. Mirsky, Luton, Bedfordshire.**

❖ Communications always seem to provide many problems for users, experienced or not. However, you do seem to have had more than your fair share of them.

All of your problems stem from the fact that the MultiSystem software doesn't

work very well, but no other software will recognise *Mirsky Technology's* *MultiSystem* interface. Thus *Homework* can't access the modem because it can't find the correct interface (the *Atari 8051*).

However, at last help is at hand, in the form of *Mini Office II*. This package contains six modules, one of which is a comma package which will support the *Dis Atari* table.

When using *Mini Office II* with *MicroLink/Telecom Gold* you will be able to send your downloaded programs straight on to disc, or use a 16 internal buffer if you prefer. It also supports the 12000 sending so you can store up to 64k of text into the ramdisk before needing to save it back on to floppy.

While this software doesn't support *Prattal* you will find it very much more powerful for general communications than *MultiSystem*.

As to your final query, page 8 is an area of memory inside the *Atari*. One "page" of memory is 256 bytes, and so the sixth page of memory starts at address 16384 (hex 0000 Decimal). This area is special because no part of the Operating System, Basic or Dos uses it for storage.

This means that it is left free for the programmer to use, and it is often used as a safe area for machine code programs or player missile graphics data.

## Monthly discs

I read with interest two letters in your April issue which referred to *Atari User* monthly tapes and discs. As I have recently acquired a disc drive I would be very interested in obtaining your monthly disc if this facility were reintroduced.

In fact I would also like all of the earlier copies, a couple at a time, and I catch up. If not I would indeed like to see compilation tapes/discs. Perhaps these could be split into two types: Games and Utilities. I sincerely hope that enough readers respond to make this worthwhile. - **B.McMurray, Leamington, Warwick.**

## Vital statistics

I own an *Atari 800XL* and being a student studying for a psychology degree, I would like to know if there are any programs available dealing with statistics, preferably on disc as I have a 1050 disc drive. - **Robert Robinson, Southampton, Hants.**

❖ Synapse Software has released a product called *Syn-Trend* which may be of some use to you. It is more applicable to business trend analysis, but you will almost certainly be able to adapt it.

## Printing graphics

Could you tell me how to make graphics work on the 1050 printer? I typed both letters from your September 1985 issue and it only printed to screen, not to the printer. I fiddled around with it and it still

## Proofreading problems

I own an *Atari 800XL*, and I frequently use *AtariWriter*. When I discovered that *Proofreader* is a spelling corrector I decided I bought a copy from *Silicon Shop*.

According to the package I had all the requirements, but it is only when you read the instructions (inserted inside) that it becomes clear that the *AtariWriter* cartridge is also necessary - three times you are prepared to spend £30 to downgrade from the disc version, your money is wasted.

I wrote to *Silicon Shop* but never received a reply. Can

you offer any advice as I'm sure I'm not the only person caught in this trap? - **Norm Clarkson, Birmingham Spa, Warwickshire.**

❖ We contacted *Atari* and mentioned this problem. The reason *Atari Proofreader* does not work on disc is because the *Proofreader* itself requires to be on disc 1. This conflicts with *AtariWriter*, which should also be located on disc 1, so there is no way to run both modules.

I suggest that you try and get a refund or trade-in from *Silicon Shop*.



would not work. — **Michael Simms, Crowscough, East Sussex.**

■ The programme you printed worked fine to the best of our knowledge, so perhaps you are not using them correctly. Program 1 was the subroutine for the actual screen dump. The second program was simply a program that set up the screen with something to be printed out. Linking the two should produce the required output.

If this still does not help you make sure that the programs are typed in correctly.

The bit-image graphics on your 1020 are described in detail within the 1020 manual, but to help you out here is a brief outline. When the 1020 is in bit image mode (graphical) any bytes sent are not converted to an ASCII character but are printed as a 7 bit vertical bar.

Each bit can be 0 (no dot) or 1 (dot). By sending combinations of bytes you can make up a matrix of dots. Printing more lines extends this matrix down the page, thereby building up a large picture.

The problem is in working

out the correct bytes to send to the printer. This is what the screen dump in this magazine has to do.

## Computing by post

I WAS interested to read in the March edition of *Atari User* about Roy Gering and the computer correspondence course he is offering. However, you forgot to publish any details of how to contact Mr Gering, so could you please tell me his address? — **S. Slater, Croydon.**

■ Roy Gering can be contacted by writing to him at R.G. Programming, Brookhampton Road, Havant PO9 1NT. Tel 0705 464234.

## Games shortage

PLEASE could you tell me who many good games are not being brought out for the Atari? Games like PDS Trading Company, Space

Hunter, The Last Ninja, Hyper Sports and the long awaited Elite.

Also, could you tell me why we faithful Atari users are getting brushed aside? Atari keeps bringing out excellent games — like Paperboy and so on — for machines such as the Spectrum, Amstrad and Commodore. Why do we feel out on all these Atari arcade games that every other home computer owner can play — except us Atari fans? — **Paul Isidore, Sheffield.**

■ If you take a good look at the market, there are lots of new companies releasing games for the Atari. They obviously want to test the water first, so when a company does make Atari software available, write and say what a wise move it was. That way it will be interested in producing more.

As for the "Atari" arcade titles you mention, these are actually developed and owned by Atari Coin-Op, not by Jack Tramiel's Atari Corp. These are now two completely separate companies, and Atari Coin-Op will sell the rights to its games to whoever pays the

## PEN PALS

Mr George Jackson, 23 Hoxley Road, Barnham, Worthington, Tyne and Wear NE26 6WQ.

Julienne Moutart, Val Des 4 Ormes, Font D'Audoubert, 67000 Audoubert, France.

Cyril Maréchal, Schipbeek 13, 0320-106 Lathoud, Holland.

most for them.

It then becomes a decision for the software house that buys the rights as to which formats it wants to convert the game to.

Thus, as we said before, the more you let them know that there is a demand for Atari products, the more likely it is that such classics will soon become available.

## Tape mangler

WHEN I load games into my computer I get a strange noise — and it often shows up my tapes. Can anyone tell me what is wrong with my 800/10? — **Donald Sigsworth, Liss, Hants.**

■ It sounds as if your tape recorder's motor or tape-guide and capstan are at fault — certainly chewing up tapes is not a feature that most recorders boast about. I suggest that you return your recorder to your dealer for fixing.

## Cassette or disc?

I RECENTLY read your review of Action! and was wondering whether it is possible to use it with a cassette rather than a disc drive. I am impressed by your review and I'm very interested in buying it. If it

## Disc formatting options

I RECENTLY purchased an Atari 800XL computer with 1050 disc drive as a pack from Compys. This also contained some software which I was very pleased with.

However, after buying a pack of 10 double sided double density discs from a mail order company advertising in your magazine, it became rather weird as I could not format any of them.

I first thought that the discs were at fault, and so sent them back to the company which had supplied them, asking for an exchange. The same discs were later returned with a letter assuring me that they were error free. They had been rechecked,

and one had even been left formatted with Dos 2. When I tried to format the remaining discs with Dos 2, Dos 3, Memo Filing Manager or AtariWriter, error messages seemed to indicate that there was something wrong with the discs. Could you please tell me if there is a fault in my drive or controller.

I think your magazine is excellent, it is my main source of information about the Atari range.

I'm especially interested in the gadgets series by Len Goffing, and would like to know if he will be including an article on speech synthesizers. — **S. Ballerfield, Nicos, Essex.**

■ It is possible that your

disc drive is at fault. The 1050 should be able to format any normal 5.25in disc you give it, especially in single density mode.

Try using the P option on Dos 2.6 to do a single density format. If this still doesn't work, take it back to your dealer for service.

Thanks for your comments about the Gadgets series. You may be interested to note that RM Design, the company which handles the PCB manufacture for us, has had such a good response that it is now able to supply the completed gadgets. For a price list, write to R.M. Design, 120 Stonefield Avenue, Harringay, North Yorkshire HG2 7NS.

won't work, could you please tell me the name of another computer and where I could get it from? — **Matthew Croft, Derby.**

■ You'll be glad to know that Action! can be used with a cassette recorder as it is cartridge based and all I/O operations may be transferred via tape rather than disc. You will obviously find that loading and saving take a lot longer, and making up a library of INCLUDE sub-routines might be a little harder due to the nature of tape.

The only major problem you will find is if you want to use the RunTime package or Programmers Aid Toolkit because they both come on disc and would need to be transferred before you can use them.

Also, if you want to make save-time machine code files, Action! isn't designed to generate cassette autoboot files. You could convert the binary load format into an autoboot form, or use a little Basic loader routine. This only applies if you want to save a free-standing

machine code program, as Action! source code can be loaded from cassette, compiled and then run with no problems.

## Manual labour

I HAVE recently bought an Atari 8800, plus 1050 disc drive, and also a copy of your helpful magazine. I am sure that I'm suffering like all new owners due to lack of information. The manuals I received with my computer were not terribly good and don't explain the Atari commands or give any technical information whatsoever.

I am therefore left to believe that there must be a much better text available, and I hope you can give me its title. Also are there any other versions of Dos and Basic available, and which are the best?

I have so far bought only one copy of your mag but have already found it very

helpful and have used some of the excellent RunTime. Keep up the good work — **C. Skjone, Birley, Co. Durham.**

■ There are many books that uncover the hidden qualities of your Atari, but they can be very technical and hard to understand at first — we normally recommend a combination of the best books available.

Be patient when learning — it can be a long and confusing task. With that in mind, start off by getting a copy of the 1300X Home book or Your Atari Computer (Revised Edition) from your dealer.

When you want to dig a little deeper, Mapping the Atari tells you what all the locations in memory do, and is an indispensable reference guide. Do-Be-Atari is another great source of information on applying the power of the Atari to its fullest.

These two books cover all the ground rules needed, but they are heavy going. You can also buy various other books which skip lightly over complex matters and these would be fine for a beginner.

There are many alternatives to Atari's Dos and Basic, including: Dos 1.0, Dos 1.0, Dos 2.0, Dos 3.0, SportsDos, Dos-XL, My-Dos, E-Dos, Microsoft Basic, BasicXL, BasicC, and various compiled versions of Basic.

Ask your dealer for his recommendations, but the combination of BasicC with either Dos-XL or SportsDos would be very powerful indeed.

And keep looking at Atari User. Helping users get the best out of their computer is what we're here for!

## User friendly

I WANT to tell fellow Atari users of the good, friendly and fast service that Computer UK has provided me.

Four months ago I bought

a 1050 disc drive with the free games, but on January 16 it would not boot properly so I rang them up and they gave me a freepost address to send the drive to.

I sent it off and four days later I got the disc drive back. Well done Computer UK for the fast service.

## Dutch dilemma

I RECENTLY bought an Atari 1300X. I live in Holland and I was therefore supplied with a manual in Dutch. It is impossible to obtain a manual in English, so until I do, I can't use my computer fully.

I would therefore be grateful if anyone can help me. — **E. De Schar, The Hague, The Netherlands.**

■ Why not write to Atari UK, as we're sure that they'd be able to help you with an English version of the manual.

Failing that, try to get hold of a copy of a book called The Atari 1300X Handbook, or another entitled Your Atari Computer. Either will give you lots more information than the original does.

## Computer support

Following advertisements in your magazine by Computer Support UK Ltd, on the 10/11/86 I asked them to supply a 64K upgrade for a

### MicroLink

All program listings in Atari User are now available for free downloading on MicroLink, the UK's fastest growing electronic mail service. They join hundreds of programs already available on Britain's national on-line database.

## Spellbound help

I HAVE a few tips for Spellbound. To get the left working take the Mithril from Strand the Witches. Summon Thor to the left using the Elf Horn.

Give the Mithril to her and then command her to help with the Wand of Command from the roof. Thor will now hit the control box with the Mithril enabling you to go to the basement.

The Elf horn can be obtained from Sweeney The Strong on the 2nd level.

To get past the gas room on the first floor collect the Red Herring from the 2nd floor and Repeat Pony Place from the basement. This will enable you to cast a

Flammar Protection spell.

To get past the dark room on the 2nd floor you must collect the glowing bottle from the 1 shaped room on that floor.

To get extra energy collect the Bottle of Liquid from the roof and give it to Florin, then take it back again and you will now have full energy.

To close up the wall on the 4th floor collect the pocket laser from the ground floor. Summon Lady Rosemar to the 4th floor and give her the laser.

Now command her to help and she will blow up the wall using her pocket laser box to fix the laser. — **Mail Richardson, Canterbury, Surrey.**

66841, the cheque being cashed on 20/1/88.

Several letters followed requesting the reason for delay in delivery without reply, until recently my latest letter was returned by the Post Office indicating that this letter was not delivered and that they had gone away.

In desperation I am writing to you in the hope that you know the whereabouts of the company, so that I can try and receive my £20.00. It is disappointing that this firm has not answered my letters especially when another firm - Rompage - was still advertising in your magazine as a dealer for Computer Support as recently as February. — R. Frodip, Harrogate, York.

■ Computer Support has moved to a new address and should be able to sort out your problems at Computer Support, 155 Farnock street, Garswood, Kent.

## Compatible modems

I am interested in knowing the difference between modems offered in the UK and modems offered in the United States. Are they compatible? And if not, could you provide some information on these differences. It would be greatly appreciated. — William R. Thompson, Huntington, Cambridge.

■ There are differences between the UK and American telephone systems so the lines which the modems use are not the same. Unless you have a modem that can produce both tones they cannot communicate with each other. The American system is called Bell and the UK standard is CDT.

Another point to remember is that American modems are not approved by BT and thus you are unable to use them here.

## YOUR HINTS AND TIPS

### PROLONG YOUR ACTIVE LIFE

**Brace Lee:** On the eleven-screen you will see two orange masks. Run into these and you will be awarded an extra life. Go off the screen, then go back and collect them again! You may do this several times, but if you complete the game the masks will not be there on your second play.

On the last screen the one with the chained worktop spitting at you! you must run straight across without stopping.

**Bookish:** On the first screen, go behind the water tank and jump at it. It will fall, opening a trap door.

**Thrust!** Here is a new screen stopping method. Simply shoot the reactor until the countdown has begun, then thrust upwards until you warp. The mission will have failed, but you skip on to the next screen without losing a life.

This will work for the first few screens, but as the reactor gets deeper and deeper into the complex it will become harder to pull this stunt off — so just shoot the reactor and wait. This time you will lose a life but will still skip on to the next screen.

When you thrust upwards, do not shoot as the shots will fly back into you. Also, when you first warp on to a screen it is possible to shoot before your ship actually appears — this may help if you warp in somewhere inside the complex.

**Montezuma's Revenge:** The following set of operations will solve all levels except two. U and D

stand for Up and Down, and L and R are Left and Right. U and M refer to Top and Middle, and K and P mean collect Key or Torch.

DM/K RT/DM/K LM/LT/LT/DM/RT/DM/K LM/LT/K RT/DM/LT/RT/RT/RT/K LM/LT/LT/DM/LT/K DM/RT/RT/DM/LT/LT/T DM/RT/RT/RT/DM/LT/DM/LT/DM/RT/K RT/DM/DM/LT/DM/RT/RT.

### FINDING THE DRAGON IN ZAXXON

I'm writing in response to the recent plea for help in getting past the third level of Super Zaxxon.

Having spent many hours myself trying to crack it, just do the following: Look at the height indicator on the left of your screen. At the first wall, it should read two-and-a-half squares, at the second three-and-a-half, at the third one-and-three-quarters and at the fourth and final wall two-and-a-half again.

All of this work is worthwhile, though — the dragon is the next stage. Use some excellent graphics. — Lee Hoelge, Chigpenham, Wilt.

### MEDIATOR

In reply to the letter from C.P. Slater who needed help with Mediator. After collecting all six bones, the horse appears from the jail. You then have to guide the horse over the river by pulling on the

line to the far right hand side of the screen.

The horse has to be directly behind you when walking over the line. This is how to complete this short — but you've got a lot more problems ahead of you! — Robert Taylor, Pinner, Middle.

### BOUNTY BOB EXTRAS

**Bounty Bob Strikes Back:** Go to the menu screen and move the cursor to the Special Code register. Set this to \$1000. Now hold down the F key and press Option. Then press Start.

You will now be able to use the following keys: F Bob can fly anywhere on the screen. Press F again to stop. O Go to next screen. A Go back a screen. S Bob goes back to his original position.

2 Reset Screen.  
— Michael James Clurworthy, Lichfield, Staffs.

### PASSWORDS, NETS AND DITTIES

**Starquake:** Passwords are Arct, Trax, Kexu, Mhonn, Crash, Arari, Pexia, Goxen, Delta, Saxon, Quark, Argon and Zap.

**Markus:** On the higher levels, a glowing net appears: if you reach it you can fire twice as fast.

**AnalArtist:** On the main menu, position the cursor over the centre line of the dead logo. Press the and a little musical jolly is played. — Nicholas Linphan, Tickwood, Derbyshire.



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*"The program took three man years of programming time to produce – and it shows. The Pawn is the stuff from which cults are made."*

– Anthony Ginn, writing about the Atari ST version in the May 1986 issue of the Atari User

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**TO ORDER TURN TO THE FORM ON PAGE 59**



HELLO, it's your old pal Brillig here again, but this time I feel a bit odd. My adventuring mind is still as sharp as ever — no ... sharper in fact. Looking in the mirror I can see no changes; looking outside tells me everything is the same — but I am somehow different, somehow rejuvenated in both mind and spirit.

A truly amazing thing has happened my friends, and Brillig is now consumed with solving every adventure known to man and beast. My three hearts pined in unison as frantically I rush to my computer console and without a moment's hesitation load up the software, reach into the mailbox and attach upon my own spiritual quest — to help adventurers out and all containing the fiendish tricks and traps that have befuddled so many others in the past.

Some news comes to the cave this very morn of a bunch of role playing games soon to be available from ESI, called *The Wizard's Crown*, *The Rings of Zille* and *The Shards of Spring*. Also coming out soon are *Phantasia II* and *III*.

Level Nine is about to release its first totally new adventure for many years. Entitled *Night Orc*, it puts you, the adventurer, into the guise of an actual orc who has been wrangled by humans. The game contains some startling new ideas from the Austin brothers whose best compression techniques are famed throughout the known universe.

Not content to stand still, they have developed a new coding system — a way to dispense with map-making; type in the name of the location you want to go to and the character will head off in that direction. You can also tell other characters to run other errands at your behest. They have at

# Exit maps, courtesy of Night Orc

## By Brillig

last done away with those awful graphics that used to dominate their stories and instead are using digitized pictures. It all sounds bliss to me, and not assumed as soon as *Night Orc* is in my hands I will give you the full run down.

A tip to the offices of Magnetic Scrolls is something of an adventure in itself since it is tucked away in a tiny corner of early South London, not a stone's throw from London Bridge. I received a warm greeting from the programming team and was quickly provided with a cup of coffee (which, I am reliably informed, is a ritual — you will never see them without one).

"So you've come to play *Guild of Thieves*, have you?", they all enquired as they gave each other those "he doesn't know what he's letting himself in for" looks. Taking no notice of this idle banter, your features here sat down at the keyboard and began to type.

The adventure is set once again in Karsevnia and revolves around your attempts to become a better thief and to join the infamous Guild of Thieves of the title. The game opens with you and the Master Thief in a small boat adjacent to an old jetty. He gives you your instructions, which are to relieve a nearby castle of its treasures and return them to him in his boat. You start with just a sacking bag to your name, and a great deal of hope.

The pictures in *Thieves* — and there are around 30 of them — are possibly even better than those in *The Pawn*. After some wandering around the wilderness you will come across the castle, complete with its splendid moat, and it's here that most of the action takes place.

There was some talk of *Thieves* being easier than *The Pawn*, but you can put all notions of that out of your mind. Some of the puzzles are pretty tricky to say the least. *Thieves* also has the same ability as the new Level 5 offering in that it too has the excellent new GO TO command which will let you revisit a location automatically. You can even type GO TO SWORD if you can't quite remember where you left it!

The room descriptions are good and meaty, and there are lots of little clues hidden in the text that could easily be overlooked. The humour that ran through *The Pawn* (remember the Pawn is *Heidi*) is very apparent. I found one lovely sequence while in the library that involves over 25 differ-

### HEUTE'S TIPS

#### SPELLSPEAKER

Can't open the vault?  
LUP SWR ZER HTER AMNE HTON  
ABRU CER HTTU

Want to avoid the lava?  
XUDD LOGE HTIS UOTW QHTU  
ORRU OF

#### THE PAWN

Can't get into Hall?  
1. WYER CAMP ORN HIR  
2. WOOD THOR FASST ETIL QYVR  
3. WOOD  
4. SWWE USOS YTSR HTS NET RUP  
ENT



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1050	2115	SA1125	2135

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains.

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

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68. *Staphylococcus aureus* is a large, spherical, Gram-positive bacterium. It is a common cause of skin infections, such as abscesses and boils. It is also a common cause of food poisoning. *Staphylococcus aureus* is a facultative anaerobe, meaning it can grow with or without oxygen. It is also a fastidious organism, meaning it has specific nutritional requirements. *Staphylococcus aureus* is a pathogen, meaning it can cause disease. It is a common cause of skin infections, such as abscesses and boils. It is also a common cause of food poisoning. *Staphylococcus aureus* is a facultative anaerobe, meaning it can grow with or without oxygen. It is also a fastidious organism, meaning it has specific nutritional requirements. *Staphylococcus aureus* is a pathogen, meaning it can cause disease.

	2010	2011	2012	2013	2014	2015
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2012-2013	100	100	100	100	100	100
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2014-2015	100	100	100	100	100	100
2015-2016	100	100	100	100	100	100
2016-2017	100	100	100	100	100	100
2017-2018	100	100	100	100	100	100
2018-2019	100	100	100	100	100	100
2019-2020	100	100	100	100	100	100
2020-2021	100	100	100	100	100	100
2021-2022	100	100	100	100	100	100
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Flavonol (Quercetin) (100 mg) (100 mg)

1997

[illegible]

Source: *Journal of the American Statistical Association*, 1997, 92, 1039-1052.

77. *Journal of the American Medical Association*, 277, 1996, 1033-1034.

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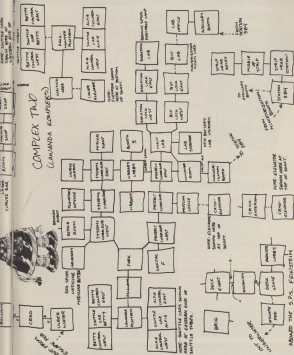
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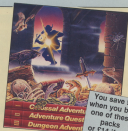
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