

# PAGE 6

An ATARI™ Users Magazine

75p

## TeleCommunicate!

## ISSUE 6

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# PAGE 6

An ATARI™ Users Magazine

**CONTENTS**

**ISSUE 6**

**NOVEMBER/DECEMBER 1983**

EDITORIAL .....	4	
NEWS/CONTACT .....	5	
LETTERS .....	6	
MEMORIES . . . . . Mark Hutchinson	8	
TELECOMMUNICATE! .....	Jonathon Sanders	10
SCRAMBLE .....	Steve Hutton	12
CYTRON MASTERS .....	Dave Beech	14
1st READERS' POLL .....		17
TIME FOR MUSIC .....	Phil Griffin	18
BITS & PIECES .....	David Harry	20
DODGER .....	Phil Griffin	22
THE SOFTWARE REVIEWS .....	Steve Gould	24
TYP0 TABLES .....		26
BOOK REVIEWS .....	Ken Ward	28
HYPNOSIS .....	Steve Eales	29
AUTOMATIC DRIVE .....	Les Ellingham	30
FIRST STEPS .....	Mark Hutchinson	32
BUG CLUB CALL .....		34

SEE PAGE 29 FOR LISTING CONVENTIONS

# PAGE 6

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## NEWS and VIEWS

At the time of writing (mid-September), the stock position of the new range of machines and peripherals in the U.S. was far from promising. The 600XL, originally scheduled for August was due at the end of September with the 800XL now due in mid-October. The 1400XL is now scheduled for mid-November whilst the 1450XLD is due in early December. The 1050 disk drives were shipped in August but were promptly put on production hold due to an inability to read some third party softwares. The letter quality printer, the 1027, was due at the end of September. Let us hope that similar delays do not occur in the U.K. I understand from several retailers that sales of the 400 and 800 machines have slumped drastically since the new machines were announced, which brings us to . . .

The 400, 800 and 810 Disk Drive have all been discontinued in the U.S. and the only significant stocks are of 800's which can be had for about \$200 after a promotional rebate. The 850 interface is being continued but they are low and far between. Meanwhile in the U.K. some real bargains could be found for 400's and 800's as early as late August. Shop around and you might get a 400 for less than a Spectrum!

Gemini Electronics in Manchester have recently closed their retail shop but will continue to give a Mail Order service for Atari users. This move has been made in order to expand The English Software Company, already Britain's largest producer of software for the Atari. Several new titles were announced some time ago and should be in the shops by now but English Software plan to add to their range and include educational titles. Already in the pipeline is a series of language cassettes for French, German, Italian and Spanish written by Dr. Michael M. Grunberg of University College, Swansea.

At last a full series of 'serious' software has been announced by Synapse. These include SYN-TEXT, SYN-FILE +, SYN-TREND, SYN-CALC, SYN-STOCK, SYN-COMM, SYN-STAT, SYN-TAX and SYN-MAIL. Whilst some of these titles will not be suitable for British use, it is pleasing to find that the range of business software is at last expanding.

## Contact

CONTACT is here for you to use if you want to, but there has been very little response since the last issue. If you have any specific problem with some software that you think others could help you on, or you just want to get in touch with other owners, drop CONTACT a line.

Liz Ahmedtal has come to a grinding halt on Ulysses and The Golden Fleece having sailed past the sirens, killed the cyclops and freed a man from a cage. If you know what to do next, drop Liz a line to 37, Birch Drive, Lordwood, Chatham, Kent.

Are you a ZORK fanatic? You probably had details of the Zork Users Group when you bought your program but they are based in the U.S. Did you know that you can get the InvisiClass and Maps in the U.K.? They are available from GB Microworld of 7, Queens Parade, London Road, Waterlooville, Hants. Drop them a line or ring them on 07014 69911 for details. Stuart Garrett there also tells me that Zork IV, V and VI will be available very soon!

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## Lea Valley User Group

What do User Groups do? Here is a report received from Matthew Tydeman of Lea Valley Atari Users Group.

"Most of our meetings are held at a church hall in Wormley which is big enough for all of our members with four machines set up and running for members to watch until the evening's talk begins. Talks are mostly on Graphics as this seems to be an area that most members are interested in. One of our members will be presenting talks beginning with the word COLOR and, hopefully, working up to machine language. When the talk is finished members are free to look at the screens behind them which are running a variety of games, demos, etc. Many members get the opportunity to see programs they would not otherwise be able to review. Members bring along newly purchased items of software and hardware for the next meeting so that there is always something new to see. We also have a magazine library and a book library."

If you would like more details of where and when the Club meets, send a stamped addressed envelope to Matthew Tydeman, 125, Cadmore Lane, Chessnut, Herts. The Group have also, by the way, produced a poster advertising the Group which is quite superb. Well done.

### FOR SALE

Harvey Kong Tin, who has written some fine reviews for PAGE 6, has now returned home to New Zealand but has left behind some game cartridges that you can snap up for the bargain price of only £18.00 each.

CENTPEDE, MISSILE COMMAND, K-STAR PATROL, K-RAZY SHOOTOUT, SUBMARINE COMMANDER, PAC-MAN and ZAXXON.

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# Memories . . .

Mark Hutchinson, Belfast

When it comes to writing your own programs, a lot more can be done by using POKE statements than can be achieved using BASIC. POKEs can save memory, enable you to write faster and let your programs run a bit faster. Following this introduction there is a list of locations that you can experiment with, many of which are not in the Basic Reference Manual. The experts amongst us can skip the introduction and look at the list to see if they can spot any new ones. I make no apologies if you do not, this article is mainly to help beginners.

What exactly is a memory location? It is the numeric position of a Register—a piece of hardware, that holds a bit (no pun intended) of information. Your Atari is what is termed an eight-bit machine which means that each register can hold eight bits (0 to 7) of information stored in BINARY (0 or 1). As all mathematical geniuses know, this is equal to 2 to the power of 8, or 256. This collection of bits is known as a BYTE and each Byte can hold a number up to 255 (0 is included). Now the

BIT number of register	7	6	5	4	3	2	1	0
Information stored	128	64	32	16	8	4	2	1
Output lead number	8	7	6	5	4	3	2	1

FIGURE 1

complications. A register can be used as a switch or a store. As a store it will hold information in the form 0 to 255, 0 being used for the empty or switch off state. As a switch, you will need to know the output lead that you want to switch. Binary is a representation of decimal numbers in the form 0 or 1 (termed BINARY CODED DECIMAL). This representation starts at 1. The next number is 1\*2, or 2, and the next is 2\*2, or 4, and so on up to 128. If you look at figure 1, you will see a register with eight leads (1 to 8). If you wish to turn on output 8, you need to make the register hold 128. This is done by POKEing [Register No.]128. Similarly, if you wish to turn output 8 off then POKE with 0. You can turn any of the other outputs on by POKEing with the appropriate number but what do you do if you want to turn more than one lead on? Simple, you add together the numbers

of the leads you want on. For instance to turn on leads 4 and 8 POKE with 80. Try the short program listing to see how numbers affect the byte.

Why is lead 1 in figure 1 equal to BIT 0? Well, mathematically, the number stored is equal to 2 to the power of the bit. Any number to the power of 0 is equal to 1 incidentally.

Let's now take a quick look at appendix I of the Basic Manual. In some instances, a number

```

8 REM *****
9 REM # BINARY REPRESENTATION #
10 REM # by Les Eillingham #
11 REM *****
12 REM NOTE (INVERSE SPACES IN LINES 38
13 and 45)
14 DIM BIN$(17),SP$(20)
15 BIN$="11111111" :REM SHIFT
16 EQUALS
17 SP$="" :REM 20 SP
18 ACS
19 ? CHR$(125);:GOSUB 100
20 POKE 752,8:G=2:POSITION 13,18:?"#
21 HOCR (ESC,LEFT)ESC,LEFT)ESC,LEFT)
22 ESC,LEFT)" :INPUT NUM:IF NUM<0 OR N
23 UM<0 THEN 10
24 POKE 752,1:POKE 82,13:POKE 84,9:?"
25 SP$;"ESC,UP)"
26 FOR N=7 TO 0 STEP -1:BIN$=2*N
27 IF INT(NUM/BIN$)=1 THEN BIN$(A,A)="
28 " :NUM=NUM-BIN$:GOTO 40
29 BIN$(A,A)=" "
30 IF BIN$(A,A)="_" THEN ? INT(NUM/8)
31 :?" "
32 A=A+2:NEXT N:IF NUM<0 THEN ? "
33 (ESC,LEFT)" :REM Left arrow/space
34 POKE 84,9:POKE 82,8
35 POSITION 13,11:?" BIN$
36 GOTO 10
37 POSITION 2,3:?" MAKE-UP" :?" OF NUM
38 BER"
39 POSITION 13,18:?"(10)10001
40 0100101001100011000110011
41 0010011"
42 POSITION 2,11:?" ON/OFF | | |
43 | | | | | "
44 POSITION 13,12:?"(11)1010101
45 010101010101010101010101
46 01010101"
47 POSITION 2,9:?" BIT NUMBER 7 6 5
48 4 3 2 1 0"
49 RETURN
  
```



## ... are made of this

greater than 255 needs to be stored and this is done by assigning two memory locations. The first location (LEAST SIGNIFICANT BYTE) will hold a number from 0 to 255 and when 256 is reached, the second location (MOST SIGNIFICANT BYTE) holds 1 and the first location returns to 0. How do you find out what is stored? Easy.

NUMBER STORED=1st LOCATION+2nd LOCATION \*256

Right, that's enough of the introductions, let's get down to some real locations to PEEK and POKE

16 POKE 16,64 to disable BREAK key. Complete keyboard disable is 0. Normal is 192. POKE these numbers into 53774 as well.

66 Input/Output noise flag. Tired of listening to the noise of all those bytes being transferred? Then POKE 66,0.

87 Graphics Mode register. Try 10 GR,16:POKE 87,0 followed by RUN and LIST. The number you poke here refers to the Graphics mode required. It does however depend on DISPLAY LIST pointers and POSITION statements to operate it properly.

106 This location gives the top of RAM in pages. By reducing this amount you can store anything above the new RAMTOP. Basic won't know it's there unless you tell it.

559 Use P=PEEK(559):POKE 559,0 to turn off the screen. POKE 559,P to switch it back on again. This is really Direct Memory Access Control (DMACTL) and is used in PM Graphics. The screen can draw up to 30% faster with the display off.

580 One of the nasties used to protect programs. When you power up, everything in memory is cleared. This

is called COLDSTART. Hitting SYSTEM RESET is called WARMSTART and keeps everything in RAM. POKE 580,1 turns SYSTEM RESET into COLDSTART and when you press SYSTEM RESET, goodbye program. Normal is 0.

632-635 Instead of using S=STICK(0), try PEEKing 632-635 for STICK(0-3).

644-647 Try the same for STRIG(0-3).

656 Text window cursor. POKE with 0 to 3 for placing text on a row.

657 Text window cursor. POKE with 0 to 39 for placing text on a column. POSITION statements relate only to the upper area and not the text window.

842 Lets you write lines into a program without stopping. e.g. 10 POKE 842,13:POS,1,13: ? "100 58,2,2,3": ? "CONT":POS,0,0:STOP: POKE 842,12. Now RUN it and LIST it.

53279 Console switch register. 7=no key pressed. 3=OPTION. 5=SELECT. 6=START. 4=SELECT and START. 2=OPTION and START. 1=OPTION and SELECT. 0=all three pressed. Also controls keyboard speaker by POKing with 0-7 e.g. 10 FOR P=1 TO 50:POKE 53279,0:FOR T=1 TO 40:NEXT T:NEXT P.

53770 Random number generator e.g. 10 ? INT(PEEK(53770)\*100).

54273 Character control hardware register. Changes every 50th of a second. Use shadow location 755. Try this 10 POKE 54273,4:FOR T=1 TO 5:NEXT T:GOTO 10.

You may have noticed a couple of words above which are worth explaining further.

continued on page 15

# TeleCommunicate!

Jonathon Sanders, SYSOP Atari SBBS

In the new film "WARGAMES", a young computer enthusiast links his home computer into one of the Pentagon computers and nearly precipitates a nuclear war. Now, you can do the same thing with your Atari! I am not going to tell you how to access the Pentagon, but explain how you can connect to the growing number of teleprocessing systems in this country which provide special support for Atari.

In the last few weeks, two separate "Bulletin Board Services" have been started up using Atari computers. By calling these BBS, Atari users can send and receive messages, get copies of programs in Basic and Machine Code,

buy and sell, and get several other services. These BBS are entirely free, you only have to pay for the phone call which at cheap rate costs 10p for 10 minutes for a local call, 25p for 10 minutes up to 35 miles, or 64p long distance (only 49p if you are on a 'Low Cost Route').

The hardware needed to start telecommunicating consists of a 'modem', an Atari 850 interface module, and an RS232C interconnecting cable. If you have already purchased the 850 interface to provide a parallel port for your printer, then the extra hardware will cost between £40 and £50. If you need to buy the interface then it will cost a further £125.

The Atari provides an RS232C standard outlet, enabling a Modem to be connected to your Atari. The modem is a device which converts electrical pulses representing bytes or characters in the computer into sound pulses which can be transmitted over the telephone line. The speed that these pulses are transmitted is measured in BAUD. The most common speed used between microcomputers is 300 Baud, which is about 3 characters a second.

There are two types of modem. 'Acoustic-coupled' modems have rubber cups which clip over the telephone console and microphone, provided they are not the modern trimphone shape, whilst 'Direct-coupled' modems are connected directly to the telephone line via a jackplug installed by British Telecom. Direct-coupled modems should be a type approved by British Telecom. Modems are available from several suppliers and a short list is given at the end of this article.

You will also need appropriate software to enable you to send and receive messages and to "download programs" (i.e. get copies of programs over the phone and save to tape, disk or printer). There are many excellent commercial programs available, including TELE-TALK, TELE-TAM, T.H.E. as well as CHAMELEON from APX and TELELINK. These range from £15 to £45. For the beginner, however, there is an excellent public domain

```

10 REM ***** DOWNLOAD PROGRAM ***
15 REM
20 REM RUN -ENTERS TERMINAL MODE
30 REM START -BEGIN DOWNLOAD
40 REM SELECT -SAVE DOWNLOADED TEXT
50 REM OPTION -DISCONNECT AND END
55 REM
60 REM *****XXXXXXXXXXXXXXXXXXXXXXXXXXXX
65 REM=PRE(0)-100:DIM FILEN(5),DATN(1)
80 :DATN(1)=" :GATEOPEN=" :GATE(2)=
:GATE
90 OPEN #1,4,8,"R"
100 TRANSLATION=0
110 DOWN=0:CLOSE #2:XD 24,82,192,0,"R
111:XD 28,82,TRANSLATION,8,"R":OPEN #
2,13,8,"R":XD 48,82,8,8,"R"
120 SETCOLOR 2,7,4:" TERMINAL...."
130 STATUS #2,5:IF PEEK(747) THEN SET
#2,5:" CHR(5):" IF DOWN THEN POKE ADDR
:5+ADDR+ADDR+1:GOTO 130
140 IF PEEK(744)-255 THEN SET #1,5:PUT
#2,5:GOTO 130
150 IF PEEK(53279)=7 THEN 130
160 IF PEEK(53279)=3 THEN CLOSE #2:XD
24,82,192,8,"R":XD 17 17 "DISCONNECTE
D....":END
170 IF PEEK(53279)=4 AND DOWN THEN D
OWN=5+ADDR+ADDR:DATN(5)SETCOLOR 2,2,4:"
" DOWNLOAD MODE":GOTO 130
180 IF PEEK(53279) < 5 OR DOWN THEN 1
30
190 CLOSE #2: 17 "SAVE TO SERVICE (C:
or D:\FILENAME.TXT)":INPUT FILE#
200 TRAP 19:OPEN #2,8,8,"FILE#TRAP 20
0
210 FOR C=1 TO ADDR+ADDR:DATN(1)+1:IN#C:
DATN(C): 17 8:32 THEN NEXT C
220 PUT #2,5:NEXT C:GOTO 110
230 ? 17 "BUFFER EMPTY":GOTO 110

```

program called JTERM, written by Frank C. Jones, published in COMPUTE! January 1983. If you cannot find that copy, a listing of an improved version of JTERM can be obtained by sending a large s.a.e. to GB MICROLAND, 7, QUEENS PARADE, WATERLOOVILLE, HANTS. If you should visit GB MICROLAND, you can get a copy already on diskette. Alternatively, you can "download" a free working copy of JTERM direct onto your own system from my Southern Bulletin Board Service (SBS) by using the short program listing with this article.

To access a Bulletin Board, connect up your 850 interface and Modem using the special RS232 cable. Turn on the 850 before you turn on the computer. If you have a disk system, then the DOS diskette must have a copy of the AUTORUN.SYS file supplied with Atari DOS 2.05 as this boots in the RS232 handler from the 850 as explained in the 850 manual. The modem should be set to 'call' and 'full duplex' modes. Load the terminal program, phone the BBS number and when you hear the high-pitched answer tone, RUN your program. This will activate your direct connect modem. If you have an acoustic modem, quickly place the telephone handset into the rubber cups on the modem. When the handset is in the correct



#### MODEM SUPPLIERS

##### ACOUSTIC COUPLED:

AMBIT, 208, North Service Road, Brierwood, Essex CM14 4SG (DIY kit).

MINOR MIRACLES, P.O. Box 48, Ipswich IP4 2AB.

##### TANDY SHOPS

##### DIRECT COUPLED:

MAPLINS, P.O. Box 3, Rayleigh, Essex SS6 8LR (DIY kit).

DISPLAY ELECTRONICS, 32 Biggin Way, Upper Norwood, London SE19 3XF.

MINOR MIRACLES, P.O. Box 48, Ipswich IP4 2AB.

position, a light is lit indicating that the modem is receiving the high-pitched tone. Now press RETURN a couple of times and you should be communicating . . . follow the instructions given by the BBS.

That's all you need to know to start telecommunicating. If you have any difficulties, call the BBS outside the regular hours and discuss your problem with the System Operator, he should be able to help. Good luck!

#### ATARI BULLETIN BOARDS

SBS—Chichester—0243 611007 running every night from 21.00 to 02.00.

SYOP: Jonathan Sanders.

ECABS—Chippenham—0249 657244 running every night.

SYOP: Matthew Jones.

Another Atari BBS is expected shortly.

Other BBS which have special Atari message sections:

TBS—London—01 348 9400.

SYOP: John Nolan.

MAILBOX 80—Liverpool—051 428 8024.

SYOP: Peter Toothill.

MAPLIN—Southend—0702 552941.

There are, in addition, many other general BBS in the U.K., details of which can be found on any of the above BBS. \*

## ⊙ THE TOP TEN ⊙

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8	DARK CRYSTAL	Serra On-Line	48K D
9	HOME FINANCIAL MANAGEMENT	Thorn EM	16K C
10	EASTERN FRONT	Atari	16K ROM

This chart represents sales up to 23/9/82

Figures supplied by

The Atari Center 021 643 8100

# Scramble

Steve Hutton, West Midlands

Scramble contains instructions for play in the listing and is a fairly simple game of logic that nevertheless is quite challenging. To see if you can improve, or to challenge an opponent, there is a counter on the bottom right of the screen. The best time is transferred to the bottom left and will be updated until System Reset is pressed.

The program is interesting in that it uses inverse characters in Graphics 2, something which you cannot normally get. This is achieved by transferring the character set to RAM and redefining the characters in lines 200-260. Rather than writing data for each of the characters, the inverse is achieved by POKing the difference between 255 and the data of the original character at the time the characters are transferred. Some characters cause problems due to the fact that they do not have 'borders' and these need to be specially defined. The letter 'M' is a case in point and is redefined in line 260 with Data from line 260. Try this technique in your own programs, the result is quite pleasing and gives much more impact.

**A WORD OF WARNING.** The program contains a routine which re-runs the program on System Reset (courtesy of Norwich User Group) and the Break key is disabled. **SAVE A COPY OF THE LISTING BEFORE YOU RUN IT.** If you don't, there is no way to LIST the program once it has been RUN. If you use TYPO to check the listing, the table given is for the listing as printed and TYPO should be used before the program is first RUN. If you wish to check the listing otherwise, it is suggested that line 6 is deleted and then reinstated once the program is running correctly.

## ATARI 400/800 CENTRONICS PARALLEL PRINTER INTERFACE

Similar to the Atari 850 interface but without the 4 serial ports. Plugs into serial I/O socket. Requires no additional software. Includes all cables plus extension I/O socket. £74.95 inc. VAT and postage. Send s.a.s. for more information.

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```

1  REM #####XXXXXXXXXXXXXXXXXXXX
2  REM 8          SCRAMBLE          8
3  REM 8          BY STEVE HUTTON    8
4  REM 8          2/8/83              8
5  REM #####XXXXXXXXXXXXXXXXXXXX
6  POK 2,44:POKE 3,105:POKE 7,2:TRAP 1
7  999
8  DIM A(14),B(14),C(14),D(14),T(14),D#
9  (A)=99999
10 ? CHR$(125):POKE 752,1
11 DIM#PDS(3:14):POKE 16,44:POKE 53774
12 ,44:SETCOLOR 2,8,8
13 DL=PEEK(548)+PEEK(549):K256+4
14 POKE DL+5,2:POKE DL+6,2:POKE DL+8,2
15 :POKE DL+9,2
16 POKE DL+13,45:POKE DL+14,PEEK(548):
17 POKE DL+15,PEEK(549)
18 POSITION 4,3:?"#####"
19 POKE 87,8:T=PEEK(80)+PEEK(89):K256
20 T=T+81:POKE 88,T:INT(T/256):K256
21 POKE 89,INT(T/256)
22 POKE 753,1:POSITION 13,1:?"#:"BY
23 STEVE HUTTON"
24 T=T+105:POKE 88,T:INT(T/256):K256
25 POKE 89,INT(T/256):IF NOT# THEN 75
26 POSITION 16,1:?"#####INITIAL:2386...
27 .":GOSUB 288
28 POSITION 6,1:?"###INSTRUCTION
29  (Y,80)"
30 P=PEEK(764):IF P=255 THEN 88
31 IF P=43 THEN 188
32 IF P=25 THEN 388
33 GOTO 99
34 GRAPHICS 8:POKE 16,44:POKE 53774,4
35 SETCOLOR 2,8,8:POKE 752,1
36 ? " "          SCRAMBLE"
37 ? " "          (XXXXXXXXXX)
38 ? " "          (XXXXXXXXXX)
39 ? :? " " Scramble is a game of logic
40 " for one person."
41 ? " " All that you have got to do is
42 rearrange the square so that the
43 LETTERS are in order."
44 ? " ? " To do this, you must press
45 the keys which correspond with the Le
46 tters and Numbers that surround the"
47 168 ? " square."
48 ? :? "Press ESC to escape from the
49 game."
50 ? " "          (XXXXXXXXXX)
51 ? :? :? " " When you press the ST
52 ART KEY          The square will automa
53 tically          SCRAMBLE"
54 IF PEEK(53279):C3 THEN 175
55 GOTO 388

```



# CYTRON MASTERS

Dave Beach, Hull

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... and now for something completely different. How many of you are becoming a bit jaded with arcade games and other run of the mill Atari software? For those who are, CYTRON MASTERS may well be the answer. It offers a good blend of strategy and arcade-type action that does not finish after a frantic, monster-blasting couple of minutes.

The game is produced by SSI who are renowned for their historically accurate war games and tactical space games. These are better left to dedicated war-gamers however as they require a good understanding of strategic movement and elements of war.

Originally written for the Apple computer, CYTRON MASTERS was to be a straightforward conversion for the Atari, however when the author, Dan Burten, began the work, he was pleasantly surprised at how much better the Atari was against the Apple! In his own words—'not just a conversion, but a definite upgrade'.

CYTRON MASTERS can be played by one player against the computer or by two players against each other. There are three difficulty levels—novice, master and grand master.

The object of the game is to destroy your opponent's command centre. To enable you to do this, you have at your disposal CYbernetic electRONic devices. These are mines, bunkers, shooters and commanders. Also available are missiles and anti-missiles. The action takes place on a battlefield of 36 by 18 spaces. Located in each half is the player's command centre and four power centres. Each Cytron is beamed down onto the battlefield from the command centre and once down begins advancing towards the enemy half. It will move three spaces on its own initially but will then wait for further orders to be moved left, right, back or forward. All commands are input via

the joystick from menus displayed below the battlefield.

There are two ways to move your Cytrons—individually or as a group. The latter is by far the most effective. The number of Cytrons you can make is governed by the power you have available. This is shown on a gauge below the battlefield and itself is governed by how many power centres you have. Capture of your opponent's power centres is therefore very useful.

Shooter Cytrons automatically fire at any enemy unit within 3 spaces and each Cytron requires a varying number of hits before it is destroyed. Mine Cytrons explode on impact and are the only unit capable of destroying a command centre. Bunkers are mobile defensive units. To move a group of Cytrons needs the presence of a commander. Missiles should be used wisely as they use up the most power. Once launched they are directly controlled by the joystick and when detonated will destroy anything within 4 spaces. The only defence is an anti-missile.

This game is not a frenzy of colour and sound but contains some very neat graphics and effects like the scaled-down explosions and laser blasts. It also requires a bit more brain power than the average arcade game but nonetheless is very playable. I have not seen anything else quite like it for the Atari and in that respect it is unique. Definitely one of my top ten Atari games. As I said in the beginning .



ISSUE 7

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### Memories . . . contd.

**PAGE.** When talking about RAM, it means 256 bytes. 266\*6=1536, the location of free RAM that you can write to for your own use (just like this magazine). Would you believe that's why they are both called PAGE 6? Page 6 RAM is for storing your own data. It is supposed to be a safe area but this is not 100% correct so be careful.

**SHADOW LOCATION.** Hardware registers are updated every screen cycle (every 50th of a second). If you were to PORE these registers directly the information would change after just one cycle. The answer is to write to a location which will store data and pass it to the Hardware register on every pass. This is called the SHADOW. 54273 is a hardware register and if you run the program above you will see it being updated. The FOR . . . NEXT loop slows it down for your benefit.

If you study these locations and the locations given in your Basic Manual, then begin to experiment, you should end up with some pretty good programs. Remember, the professionals use these tricks of the trade. One final tip, if you RUN a program and you can BREAK it and LIST it, then do so and study the PEEKs and POREs that are used. If the writer has used a form such as PORE HM,UO then just go to a free area on your screen and ask your computer to work it out, e.g. ? HM,UO and your ever friendly Atari will tell you what these variables are. PORE a new number into the location, RUN it again and see what happens. You can't damage the computer, at worst you may 'lock-up' and will have to switch off and on again but for this small price you may learn a lot.

## Step Forward

Someone passed a cassette of three programs to me via Mike Reynolds-Jones of the Birmingham Atari Centre but I do not know who it was. Could the author please get in touch as I would like to put some of the programs in the magazine and wish to give proper credit. The programs are BEETLE, BLACKJACK and a PLAYER-MISSILE DEMO.

Editor.

## THANK YOU!

As we complete our first year, I would like to thank all those people who have contributed to the magazine with articles, programs, help or encouragement. Thank you to:

Alan Oliver  
 Jeff Woodward  
 Stan Ockers  
 Colin Boswell  
 Geoff Brown  
 Phil Griffin  
 Mike Reynolds-Jones  
 Mike Aston  
 Colin Friston  
 W. H. Staff  
 Harvey Kong Tin  
 Michael Jackson  
 Paul Stevens  
 Steve Hutton  
 David Harry  
 Jamie Athas  
 Peter Franay  
 John Dimmer  
 Mark Hutchinson  
 Ken Woodward  
 John Messara  
 Andrew Jones  
 L. A. Lawson  
 Ken Ward  
 Steve Gould  
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 of S.P.A.C.E., Pennsylvania  
 Dave Mentley  
 of ABACUS, California

It is always dangerous to name names for fear of offending those left out. My apologies to anyone omitted. Thanks also to all the readers and advertisers without whom . . .

Finally, how about a vote of thanks to the Editor—no, I can't really do that, that's up to you.

Les Ellingham

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Dealer enquiries welcomed

## Times Tables..

Eddie Wilson

```

38 GRAPHICS 2:POSITION 8,3,7 84)* Times Tables' 03
8 0=1 TO 100:GOTO 8
22 AND 100:GOTO 121=129:GOTO 100:GOTO 121=1
28 GRAPHICS 2:POSITION 8,3,7 84)* *20* 8 *20*
*)
38 INPUT C
39 IF 84:GOTO THEN GOTO 47
39 IF 84=C THEN GRAPHICS 2:POSITION 8,3,7 84)*
P20 JULIA GET 17:GOTO 2
44 FOR T=1 TO 4:FOR S=1 TO 12:GETCOLOR 8,3,12:T
45 SOUND 8,200,1,8,10:GETCOLOR 4,3,1=5,7:GOTO 1,200,
1,8,8
43 NEXT S:GOTO 1:GOTO 8,3,8:GOTO 1,8,8:GOTO 12
47 GRAPHICS 8:FOR D=1 TO 255 STEP 4:GOTO 8,1,8:GOTO
8 8=1 TO 250:GOTO 1
49 FOR T=1 TO 10:GETCOLOR 2,4,1:FOR D=1 TO 25:GOTO D:
GETCOLOR 2,4,1:FOR D=1 TO 25:GOTO 2:G
51 T:GOTO 8,3,8,8
58 GRAPHICS 1:10:GETCOLOR 1,4,4:GETCOLOR 1,8,8:GOTO
1
51 FOR D=1 TO 20: 84:GOTO 111: 10: 84:G
48 FOR S=1 TO 5:GOTO 8,10:100:112:250,10,1:GOTO 8:
NEXT T:GOTO 8,3,8:GOTO 2

```

... For Julia

## WANTED

### PROGRAMS, ARTICLES REVIEWS

That program you have written may be of interest to someone else. Don't hide it away, send it in to PAGE 6 for others to share.

What about those things you have now learned? Why not try to help other users understand? Write an article—on any Atari related subject.

Got a favourite game? Review it. Let others know how good (or bad) it is.

## REWARD

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# 1st Readers Poll



With this issue we complete our first year of publication and it is time for our first readers' poll. This is your chance to show your appreciation to all your fellow users who have contributed some fine articles and programs over the past six issues. We want to hear from as many of you as possible (including overseas readers), so that we know that you do read the magazine and so that the contributors can have some encouragement to keep on writing. Believe me, writing articles and programs for publication, especially as they are written for love and not money, can be pretty frustrating if you think no-one reads them. This is your chance to say thank you and give encouragement to the authors and spur them on to produce some more good work for forthcoming issues of PAGE 6.

To refresh your mind, these are the articles, programs and bits and pieces that you have to vote on. Do not worry if you did not read them all, just vote for the ones you did see.

## Issue 1

Secret Code  
Line Lister  
Accessmate . . . America  
Vultures II  
More Graphics Modes  
Atari Abstracts  
Software Reviews  
Banner  
First Steps

## Issue 3

Calendar  
Cricket Maths  
Arcade Action  
Character Redefinition  
Character Generation Utility  
Keyboard Techniques  
Character Designer  
Software Reviews  
Master Directory  
First Steps

## Issue 5

What's Wrong with Fame?  
Target  
Memory Mapped Screens  
Across the Pond  
Squares  
Arcade Action—Minor 200th  
Vertical FIM Movement  
Software Reviews  
First Steps  
Colour Selector  
Line Lister

## Issue 2

Four in a Row  
Jyoticks  
GTIA Modes  
Astro Chase—Review  
Silly Circles  
Play Your Cards  
GTIA Test Window  
Disk Directory  
Tay Text  
Software Reviews  
First Steps

## Issue 4

Lunar V  
Arcade Action  
Moria's Magic Square  
Memory Mapped Screens  
Basic Timing  
Grab an Apple  
Software Reviews  
Disk Sort  
First Steps

## Issue 6

Memories . . .  
TeleCommunicate  
Scramble  
Cytoson Masters  
Time for Music  
Bits & Pieces  
Dodger  
The Software Reviews  
Book Reviews  
Hypnosis  
Automatic Drive  
First Steps

**WHAT TO DO.** Pick out the **THREE** articles, programs or whatever that have given you the most pleasure, or which you have found most useful, and put them in 1-2-3 order on a plain sheet of paper. Add your name and address and send it off to PAGE 6. That's all there is to it. Do it as soon as you have finished reading this issue (articles from this issue are included in the poll).

The winner will receive £50 worth of software of their choice and we will sort something out for the runners-up. What is more important, everyone who receives a vote will be encouraged to try their hand at something else and that can only be to your benefit.

**THE NEXT SIX ISSUES.** What sort of articles and programs would you like to see? Add a couple of lines to your voting form so that we know which direction you would like the magazine to go.

*We have thousands of readers — let's have thousands of votes*

# Time for Music

Phil Griffin, West Midlands

The first long program that I wrote for the ATARI included an opening tune which was written as a separate program to be merged in at the end. Everything went reasonably well with the main program and, at long last the great day came when I slotted in my 'musical masterpiece'. I eagerly ran the completed program and, horror of horrors, found that my original composition had ended up as something of a death march. It was quite easy to speed things up by reducing the length of the FOR...NEXT delay loop that I had used, but it set me wondering as to why the problem had arisen in the first place.

It appears that the longer a program gets, the longer it takes for a FOR...NEXT loop to be executed. The problem can be eased by placing the delay loop as a subroutine early on in the program but the resultant benefit is minimal. Programs which contain music normally store the 'notes' to be played in DATA statements and use the READ command to place the required values in the variables included in the SOUND statements. You will find that placing the DATA statements early on within the program will normally prevent any 'arkness' from the sound when the notes are changed.

Luckily, you don't have to rely wholly on FOR...NEXT loops for your timing requirements as the ATARI has an extremely versatile set of internal counters held in the Operating System at locations 18, 19 & 20. These counters are ideal where a precisely timed delay or routine is required. As with any Basic program however, the length of the program will still have an effect, but the timing provided by these locations will be constant and any slowing down will normally be negligible.

The three locations are inter-related and on power-up of the computer, the contents of each location is set to 0. Location 20 then starts to count until it reaches 255. On the next increment, location 20 falls to 0, while location 19 increases by 1. This sequence continues until both locations 20 and 19 contain 255. On the next increment of location 20, location 18

increases by 1 while locations 20 and 19 fall to 0. When all three locations contain 255, the next increment of location 20 causes them all to fall back to 0, so starting the whole cycle again. You can see from this that location 20 is the 'trigger' for location 19 which is in turn the 'trigger' for location 18.

The rate of increase of the value held in location 20 is related to the frequency of the mains electricity system. In America, the system is at 60Hz, while in Britain a frequency of 50Hz is used. This means that, in this country, after an initial reset to 0, a value of 50 would be held in location 20 after one second, a value of 100 after two seconds and so on. In America, the values held after the same intervals would be 60 and 120 respectively.

```

18 REM #   TIMER FOR ONE MINUTE   #
20 ? CHR$(125)+POKE 752,0:REM OLD#
   SCREEN 440: SUPPRESS CURSOR
30 MINUTE=60:REM (CONVERT 1 MINUTE
   TO SECS) OF A SECOND
40 A=254:B=484:REM THIS SPEEDS UP THE
   CALCULATION IN LINE 50
50 FOR I=1 TO 60:NEXT I:REM THESE ARE
   STILL USEFUL FOR DELAYS
48 POKE 18,B:POKE 19,B:POKE 20,B:REM #
   SET INTERNAL COUNTERS TO 0
70 ? CHR$(252)+REM SOUND KEYBOARD
   BUZZER
80 ? "TIME STARTS NOW"
90 IF PEEK(18)+PEEK(19)+A+PEEK(20) <= 60:GOTO
   TIME THEN 90
100 ? CHR$(253)+? "TIME UP!"
110 END

```

A timing in excess of 5 seconds or so will involve location 19 and possibly location 18. Probably the easiest way to time say, 1 minute, is to convert these locations to 150ths of a second (1/60ths in the U.S.A.) and compare the resultant figure with the one required. The Timer program shows how this could be done.

The program contains lots of REM statements which should make it easier to follow what is happening. Line 90 contains three PEEKs which read the contents of the

counters. The values contained in locations 18 and 19 have to be converted to 50ths of a second (as in location 20) and this is done in the program by multiplying the values by B and A respectively. The buzzer soundings and the delay are included in case you want to check the timing with a stopwatch. You will find that the routine's timing comes out at just over the minute, but don't forget that the program is written in Basic and there is bound to be an element of 'human error' in operating the stopwatch.

I have included a program containing the tune which started this all off in the first place and it now contains the improved delay routine. The main melody and harmony (voices 0 and 1) consist of a sequence of notes which remain the same throughout. The variation is produced by altering the accompanying 'chords' produced by voices 2 and 3.

```

0 REM ***** MUSIC *****
1 REM BY Phil Griffin
2 REM *****
3 REM
4 DATA 144,121,128,180,121,96,128,180
5 DATA 144,121,96,72,121,96,128,180
6 DATA 91,72,96,81,180,91,121,94,120,
7 DATA 180,144,91,162,96,120,128
8 GOTO 7895
9 POKE 28,8
10 IF PEEK(28) < 2 THEN 40
11 RETURN
7895 Z=18:FOR F=1 TO 5:GOTO 7906+F*18
7906 R=144:G=96:GOTO 7898
7908 R=152:GOTO 7898
7918 R=142:GOTO 7898
7928 R=172:G=180:GOTO 7898
7938 R=182:G=121
7948 SOUND 2,R,18,G:GOTO 3,3,18,G:FOR
F=1 TO 5:G=80,G,C:GOTO 4,0,18,14:G0
AND 1,C,18,G
7955 IF R=5 AND F=1 THEN Z=282
7968 SOUND 58:IF R=5 AND F=4 THEN SOU
ND 2,182,18,G:GOTO 3,180,18,G
7978 NEXT F:IF P=4 THEN RESTORE 58
7988 NEXT F:GOTO 8,144,18,18:GOTO 5,
121,18,G:GOTO 2,72,18,G:GOTO 3,96,18
,G:G=402:GOTO 58
7998 FOR J=0 TO 3:GOTO 3,8,8,8:NEXT J
:END

```

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# Bits and Pieces

David Harry, West Midlands

Here are a few bits and pieces which I hope you will find useful or interesting.

**BRIEF IS BEAUTIFUL**—If you learned your Basic from the book that came with your Atari and all the listings you have typed in from magazines have been printed by the error-free method of **LOADING** the program into the computer and **LISTING** it straight out to the printer, then you are probably still using **PRINT**, **LIST**, **INPUT**, etc., in your own programming. Most of the Basic Keywords have abbreviations which can save you time and effort when writing your own programs or typing in listings. Type in the following demo exactly as shown, don't change a single space or character, and then **RUN** it.

```
1000,23+C,1+PL,3,1+DR,100,70+C,0+1000
+50,1,X,14,8+NL,3+OR,8+POS,15,7+T INPUT
4+*+1,4+7+NA+005,20+L,+7,50+0,999+,1
2000,1,8,8,8+RET.
300 :T 'BYE'
```

See what has happened? Your three lines have changed into five lines of program with only half the typing. Some points may not be immediately obvious. **GR23** is the same as **GRAPHICS 7+16** and **7** is the abbreviation for **PRINT**. In line 30 the Editor fills in the final quotation mark.

Line 10 shows a 50% saving in space, useful sometimes if you are trying to squeeze a lot of code into one **FOR . . . NEXT** loop or trying to **PLOT** and **DRAWTO** several points on one line. There is a snag with abbreviations. If the **LISTED** line exceeds three physical lines on the screen, you can't edit the line and if you want to change it, you will have to type it all again. Try changing line 10 when you have **LISTED** it.

Abbreviations can be overdone but they are well worth learning. All the abbreviations are shown in Appendix A of your manual.

**FOUR IN A ROW**—Four in A Row from issue 2 is an excellent program, but when you wish to replay your opponent, you have to enter both names in all over again. The following changes will make this unnecessary

Renumber line 35 as 306 and line 50 as 307, then delete lines 30, 50 and 80. Change line 1540 to **IF NAMES="Y" THEN 7000** and add the following:

```
7000 CT=0:7 '400 PLAYS FIRST?'*? * 0
*'NAME 10?'*? * 2) *NAME 20?'*? * 3
) NEW PLAYERS?', "ENTER 1/2/3":
7010 TRAP 7000:INPUT 50:ON 50 GOTO 300
,300,7020
7020 RUN
```

If you want the computer to play a stronger game then also change line 4400 to

```
4400 COLNO=INT(RND*(1+80)+INT(RND*(1+80)
*1)
```

This biases its moves towards the more tactically valuable central columns.

**TINY TIP**—If you are writing a game for two players and wish to transfer the turn from one player to another, you could use

```
10 IF PLAYER=1 THEN PLAYER=2:GOTO 30
20 PLAYER=1
30 REM PLAYER NOW OWNED
```

To save time and memory try using the following instead

```
10 PLAYER=3-PLAYER
20 REM PLAYER NOW OWNED
```

This will work on all games which have two players.

Has anyone else got any little Hints and Tips?

David Harry

## WHOOOPS! ... ERROR 17

A couple of errors seem to have crept into the Line Lister on page 29 of issue 6. The reference to 5669 in line 32500 should read 5000. Also after you type 1=xxxx, you should type **GOTO 32510** to resume the checking.





```

1825 GOSUB 48:POKE 8,8:GOSUB 78:POKE 7
58,C32+256:POKE A,STEP(STICK<80)+66666
288
1835 GOSUB 48:POKE 8,8: POKE 86666 178:
GOSUB 78:POKE A,STEP(STICK<80)+50+50+1:
GOTO 1828
1845 POKE 88 GAME OVER XX
1855 IF SC&S THEN 85=5C
1818 GRAPHICS 18:POSITION 5,1: POKE 88
me over:POSITION 4,4: POKE SCORE
"5C
1828 POSITION 4,4: POKE HL=SCORE "5C:
OL=PEEK(568)+PEEK(564)+256:POKE DL+13,
6:POKE DL+14,6
1825 FOR J=25 TO 8 STEP -8:FOR I=8 TO
0 STEP -8:J STEP 24-J: SOUND 8,1,14,8:HC
NT I:NEXT J:SOUND 8,8,8,8
1838 POSITION 2,18: POKE 88:GRAPHICS start
pg:POSITION 4,11: POKE 88:stop:game"
:POKE 53279,8
1848 IF PEEK(53279)<5 THEN 1848
1855 POKE 88 OPENING CREDITS XX
1868 GRAPHICS 1:SETCOLOR 2,8,8:POKE 82
,8:POKE 732,1:POKE 736,C32+256:OL=PEEK
(568)+PEEK(564)+256:POKE DL+3,71
1885 POKE OL+25,68:POKE OL+28,4:POKE D
L+29,4:POKE DL+38,4
1818 POSITION 4,8: POKE 88:(" dodger ")
POSITION 3,2: POKE 88:(" POSITION 8,4:
POKE " P.L.GRIFFIN "
1828 POSITION 7,4: POKE 88:(" POSITI
ON 8,8: POKE 88:(" top difficulty level" POS
ITION 3,8: POKE 88:(" select "
1838 POSITION 3,12: POKE 88:(" LEAST" POS
ITION 3,13: POKE 88:(" (MODERATE)" POSITIO
N 3,14: POKE 88:(" HARD"
1848 POSITION 8,17: POKE 88:(" start
to play" OL=PEEK(88)+PEEK(87)+256:HL=28
1845 POKE 88 OPTION ROUTINE XX
1858 POKE TL+294,8:POKE TL+254,74:HL=7
5:GOSUB 285: POKE 88:HL=75:LU=1:POKE 53279,
8
1868 IF PEEK(53279)<5 THEN GOSUB 28:5
OTO 1858
1875 FOR I=1 TO 15:SOUND 8,255,18,18:HC
XT I:SOUND 8,8,8,8
1878 POKE TL+254,8:POKE TL+276,74:HL=3
5:GOSUB 285: POKE 88:HL=35:LU=2:POKE 53279,
8
1888 IF PEEK(53279)<5 THEN GOSUB 28:5
OTO 1878
1895 FOR I=1 TO 15:SOUND 8,255,18,18:HC
XT I:SOUND 8,8,8,8
1898 POKE TL+276,8:POKE TL+298,74:HL=1
8:GOSUB 285: POKE 88:HL=18:LU=3:POKE 53279,8

```

```

1788 IF PEEK(53279)<5 THEN GOSUB 28:5
OTO 1878
1795 FOR I=1 TO 15:SOUND 8,255,18,18:HC
XT I:SOUND 8,8,8,8
1798 GOTO 1858
1799 POKE CHANGE SCREEN TO WAIT 4
2888 OL=PEEK(568)+256:PEEK(564)+GRAPHI
CS 8
2898 POKE OL+3,68
2828 FOR I=OL+4 TO OL+28:POKE I,4:HCXT
I
2838 RETURN
4777 POKE MOVE CHARACTER SET AND CHANGE
CHARACTERS
5888 POKE 188,PEEK(188)-11:GRAPHICS 8
5918 C32=(PEEK(188)+3)+256
5828 C32=(PEEK(188)+7)+256
5825 DIM 28(32):FOR I=1 TO 32:READ 2:2
8(I)=CHR$(2):NEXT I:USRADR(28),5794
4,C32: A=USRADR(28),57944,C32)
5835 DATA 184,184,133,284,184,133,283,
184,133,285,184,133,285,182,4
5835 DATA 188,8,177,283,145,283,136,28
8,249,238,284,238,283,282,288,248,74
5848 READ X:IF X=1 THEN 5888
5858 FOR Y=0 TO 7:READ 2:POKE C32+(8+
Y,2):POKE C32+(8+Y,2):NEXT Y:GOTO 5848
5868 DATA 3,63,63,185,28,93,28,93,63
5842 DATA 15,293,68,68,195,293,28,293,
195
5844 DATA 11,295,68,68,192,292,28,292,
284
5846 DATA 7,293,68,68,1,63,28,63,31
5848 DATA -1
5888 FOR Y=0 TO 7:READ 2:POKE C32+58+
Y,2:NEXT Y:RETURN
5878 DATA 8,63,185,28,28,28,85,63

```

*Coming next issue . . .*

Three great games

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*all in time for Christmas*

## THE SOFTWARE REVIEWS

<b>KRAZY KOPTER</b>	1 PLAYER	16K CASS.
<b>FIREFLEET</b>	1 PLAYER	32K CASS.
<b>DIAMONDS</b>	1/2 PLAYERS	16K CASS.
ENGLISH SOFTWARE CO.		

Since the famous *Airstrike*, English Software Company have not been idle. These 3 latest releases are the first of a whole gamut of new titles lined up for release very shortly.

**KRAZY KOPTER** is well-titled, it is a crazy game. If you like getting blown up and losing all your reserve helicopters within the space of one minute, this game is for you. It is a one player game and, if you have not already guessed it, you play the part of the helicopter.

There are 3 levels, level 1 consisting of a barrage of Navy missiles, level 2 has anti-aircraft rockets and level 3 has zig-zagging UFO's. The screen display is of three bridges, which span a river and two sheer canyon sides. Collision with either of these loses a life. When the game begins, a ship sails across the river and a selection of trucks and cars cross the bridges in a random order. If so much as ONE car gets from one side of the bridge to the other, a rocket comes shooting onto the screen and destroys your helicopter. There is no way you can avoid this, as your helicopter's movement is frozen. To destroy a car, you position the 'opter above the car you want to obliterate and press the fire button on joystick 1. This releases a bomb, but you must be fast, and I mean FAST!

To sum up, if you let a car cross the bridge from left to right or vice-versa, you lose a life. To progress to the next level, you must destroy 75 cars!!! Definitely one only for masochists.

Of the three games **DIAMONDS** is the best and it has the added bonus of a competition to win a REAL diamond!

The game consists of 16 levels with 4 screens to each level, giving a total of 64 screens! To reach the Great White Diamond—the object of the game and the competition—you must reach

screen 64. As far as comparisons go, this game is another digging game very similar to *Dig-Dug*, however in September's Computer & Video Games, *Diamonds* was voted the best of three digging games, including *Dig-Dug*. At £14.95, it represents excellent value for money with sound and graphics on a par with American software. The characters you have to contend with are Phillip The Filler, The Fireflies, The Eyes and Simon The Snake. You play the part of Digger Dan and, as in *Dig-Dug*, you move Dan through the layers of earth collecting the pockets of diamonds which are randomly distributed. There are rocks which you can burrow under which will then drop on your enemies if they are in hot pursuit, or on you if you are not quick enough!

While you are burrowing away like mad, Brian the Blob is also after the diamonds. If you encounter Brian or any of the previously mentioned 'nasties' or another creature called The Demon, you lose a life. You start with 3 lives and don't get a bonus life at all. You can pause the game by pressing the joystick button.

In conclusion, an excellent game which goes to prove that there are some English programmers who will give those Americans a run for their money!

Whereas the other games can be enjoyed by anyone with an Atari 400/800, you will need an upgrade to run **FIREFLEET** as it is 32K.

**FIREFLEET** is basically the English answer to *Caverns of Mars* but the way everything explodes is quite original. If you hit anything with your bombs, a column of horizontal lines comes shooting up. The ship itself could be taken straight out of *Caverns*.

The game is for one player with a joystick and the object is to navigate through 34 vertically scrolling screens divided into 4 equal sectors. A free ship is awarded every 10,000 points, unlike *Caverns of Mars* where you don't get any.

Taking into consideration that this game is half the price of *Caverns*, it represents very good value for money with excellent vertical scrolling. Although the graphics are superb, the



## Reviewed by STEVE GOULD

sound effects could do with some improvement, especially when the ship gets hit or collides with a wall. The effect is somewhat flat. If the sound effects were better and the ship exploded when hit, this would be a top class game but it still represents very good value for money and is a must for your collection.

### DONKEY KONG

16K ROM

ATARI

1/2 PLAYERS

Arcade fanatics will be quite familiar with this one and have been waiting some time for it to appear. For the uninitiated, the game consists of 4 screens of entirely different action, the object being to reach the top of a network of ladders, ramps, elevators, conveyor belts, etc., in order to reach a platform where 'Kong' is holding your girl-friend hostage. You play the part of Mario the Carpenter—complete with bib and brace overalls, cap and moustache—and to be re-united with your lost girl-friend, you must negotiate all the levels of action which start with the ramps on level 1. Kong is on the right hand side of the screen and is rolling or throwing barrels down at you. Don't worry, provided that you are alert, you can jump barrels coming down the ramp by pressing the trigger which causes Mario to leap into the air and, hopefully, avoid the obstacle. When you reach the top of the ramps and ladders, Kong steals your prize from under your nose and runs off to the top of the next screen while you have to start over at the bottom. So the chase goes on.

Having seen and played the original arcade game, I was most eager to see how the Atari ROM version compared. Atari bought the rights from Nintendo and I was hoping therefore that their version would be identical but sadly I was disappointed. There is no opening sequence

**FOOTNOTE TO KRAZY KOPTER.** English Software have now changed the program so that you can avoid the killer robot and the game is much more playable. If you were unlucky enough to buy the first version of the game, English Software will exchange it for you.

where Kong climbs up the ladders and jumps to the left of the screen thus destroying the orderly nature of the ramps. The music and sound effects are entirely different and also the order of the screens is different. For the seasoned player, the order is: 1 Ramps, 2 Rivets, 3 Ramps, 4 Elevators, 5 Rivets, 6 Ramps, 7 Res, 8 Elevators. As you can see, there is quite an array to get through before you can rescue your betrothed.

Although the game is disappointing when compared with the original, the graphics and sound are very good indeed and after seeing versions of Kong on other machines, the Atari version is the best (if you disregard the price), and that includes the well-publicised Coleco version!

Ever wondered why this has such a crazy title? Well, the game originated in Japan and DON-KAI in Japanese means 'Crazy'. Does it make more sense now?

### PHAROAH'S CURSE

32K DISK

SYNAPSE

32K CASS.

1 PLAYER

Yet another instant hit from the Synapse people. The theme of the game is influenced by the latest arcade craze. You have seen the Space Invader clones and the Pacman clones, now it's the turn of Donkey Kong. It seems that, just lately, if a game features ladders and elevators it has a good chance of success.

Pharaoh's Curse has the lot—lifts, mummies, pharaohs, jumping, man-traps and 16 treasures to collect. There are 4 skill levels with the first level being level 0! To access the other 3 levels, you must complete the previous one to find a password that will enable you to proceed. To start level 0, you simply press the joystick button.

At the start of the 'mission', the character you control, a sort of Indiana Jones, is standing outside the pyramid. On entering, you are immediately dropped into one of 15 rooms, each of which contains a treasure. How come only 15 rooms but 16 treasures? You are

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Check with PAGE 6 for references



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## Typo Tables

### DOXER

### SCRWBLE

HD4J

Variable checks = 31258

Variable checks = 29921

Variable checks = 328271

Line num range	Code	Length	Line num range	Code	Length
1 - 27	27	477	1 - 25	00	575
28 - 96	02	552	26 - 75	05	533
97 - 178	61	521	76 - 158	6C	516
179 - 206	25	508	159 - 208	6D	518
207 - 301	88	542	209 - 322	77	512
302 - 335	6C	578	323 - 378	6B	454
336 - 348	78	534	379 - 432	64	507
349 - 359	62	584	433 - 462	6B	514
360 - 378	87	588	463 - 471	6F	549
379 - 408	93	571	472 - 508	6C	527
409 - 472	68	594	509 - 541	65	515
473 - 508	03	541	542 - 588	1C	399
509 - 599	18	57			

### BINARY REPRESENTATION

AUTDRUN.SYS PAGE 28

Variable checks = 10294

### FULL DETAILS OF TYPO APPEAR IN ISSUE 5

Variable checks = 7985

Line num range	Code	Length	Line num range	Code	Length
1 - 25	00	587	26 - 136	0V	475
26 - 128	66	343	137 - 178	6L	37
129 - 178	6F	363			

generously 'given' a treasure as soon as you enter the door! Across the top of the screen there are 16 'blobs', each of which represents a treasure and which disappear when you collect each treasure. You can always see how many you have left to collect. In the various rooms there are glowing keys which, when touched, disappear. The character then begins to flash, to show that you are in possession of a key, and you can then unlock the numerous secret doors. You will need a key to get out once you have collected all the treasures as the exit is through a secret door.

To make things harder, there is a Mummy and a Pharaoh who chase you and shoot at you but you can return the fire although it is not as easy as it sounds. Also wandering around the pyramid is the 'Winged Avenger' who can, if you happen to be in the wrong place at the wrong time, carry you away to another location in the complex. Sometimes this can be an advantage, but most of the time—well, the less said, the better. On the helpful side, you do get a bonus life every time you collect a treasure.

Graphics and sound are up to the usual Synapse standard and if you like 'jumping' games, this one is highly recommended.

## GRIDRUNNER

16K CASS.

### LLAMASOFT

#### 1/2 PLAYERS

With the average price of Atari software in the £20-£30 area, it is very pleasing to hear of a 100% machine code game for the Atari 400/800 which costs less than £10. In fact this costs only £7.50. With a certain amount of misgiving, I sent off my cheque, expecting nothing more than a glorified magazine listing, but was very pleasantly surprised when I loaded the game. Delivery, by the way, was approximately one week.

After being assured that 'the power of the grid was going to preserve me' I pressed start to be confronted by a fast and furious game. The closest comparison I can think of is Centipede, but instead of centipedes and spiders, the player is presented with an all-out

onslaught from X-Y zappers, pods, droids and other alien devices. The graphics are not the clearest I have seen and at times the action gets quite confusing but the sound effects are extremely good. The ship's entrance onto the grid is most original and seems rather like coming out of hyperspace in Defender. Game play is very fast to say the least and it would be advisable for the would-be Gridrunner to develop two more pairs of eyes and an extra pair of hands!

Many people stay away from cheap Atari software for fear of being ripped off but Gridrunner is well worth the money and sets a good standard for Atari Software at a reasonable price.

## CAVERNS

16K CASS.

### TITAN PROGRAMS

#### 1 PLAYER

If Gridrunner typifies good value for money, then this game shows why I am always wary of cheap software. If you believe the adverts, you would expect something similar to Scramble or Caverns of Mars. What you get couldn't be further away.

All of the action takes place on one screen and the game itself is a two-part BASIC program. The overall quality is that of a poor magazine listing. The spaceship consists of three dots and the caverns are formed by filling in the left hand side of the screen and then randomly `PLoTing` and `DRAWingTO` in the background colour. You just have to reach the right hand side of the screen and get back past several 'gates'. The only good part about the game is the sound effects which I must admit are rather original.

This might be worth a try at £3.00 but is not worth its £6.00 price. Above all, as a commercial program, it is an insult to the Atari's capabilities. Take a look at `A.C.E.`, `MAGIC WINDOW` or `GRIDRUNNER` if you want value for money in low priced software. ■

# Book Reviews

Ken Ward, Norwich

## MAKING THE MOST OF YOUR ATARI

by Paul Bunn

Interface Publications ..... £3.95

The first thing that struck me about this book was the appalling waste. At least 20% of the book is blank paper! Mr. Bunn is very presumptuous when in Chapter One he says that he will teach you your machine inside out and a little bit extra! He also says "the book is aimed at the computer user who has had his Atari computer for one or two months". He then takes several pages of the next chapter to teach you how to use the commands—GRAPHICS, SETCOLOR, COLOR, PLOT & DRAWTO which are explained in your manual. Presumably Atari owners are only supposed to know how to play Star Raiders! LOCATE is very briefly mentioned, as are the file commands. GTIA modes are covered with demo's and the GR.10 demo is worth the effort of typing in all that data. The display list and display list interrupts are described—badly. There is, however, a useful error reporting routine that can be loaded when typing in your own programs or listings. It saves you diving for the reference manual to find out what Error xx is.

Chapter 6 gives a lengthy description of Player-Missile graphics (lengthy for this book anyway). This is followed by the shortest article on redefining characters I've seen. Chapter 9 takes six pages to tell you about Joystick and Paddles. It's all in the reference manual anyway.

Finally we come to the games, which range from a couple of games that date back to the early days of personal computing, through to versions of some of the popular games of today. Some of the listings have silly errors but they won't stop the games running and can be ignored, except for the last one which is the best game in the book. (Actually, it's Frog Jump—a version of Frogger—not Dodge 'Em as stated on the back cover.) The game is full of data statements, and not a RESTORE anywhere!

Considering it is supposed to be an

instructional book there is a great lack of REM statements in the listings. Most of the games are nicely finished off, and some contain good routines. Overall my impression is it's a hastily prepared book and it's only value is in the games.

## GAMES FOR THE ATARI

by S. Roberts

Hofacker ..... £4.95

This book starts on page zero with a list of the graphic and sound commands, and on pages 1 and 2 gives a quick demo of PLOT and DRAWTO. It then jumps straight into Player-Missiles, taking you through step by step, then giving you a demo program to put your little man on the screen, and some POKE's to try to change his position, size and colour. This is followed by a demo of horizontal movement and priority.

The next section uses a demo to illustrate the problem of vertical movement in Basic, before giving you a machine language program to do the same thing. The P/M section of the book then ends with demo's and explanations on alternating shapes, missiles and collision detection.

Sound is covered by short demo's, as is reading the joystick, then it's on to the games. Not a really great selection. Two of them are based on the Mastermind game—one with numbers and letters, the other with colours. The latter is the first game I've seen that uses GR.11. Many of the games can do with tidying up graphically, which is a good way to learn. This section ends with a game for anyone that has an Assembler.

Next it's back to the learning with articles and demo's on Antic, DLI's, CIA/GTIA and character redefining. All these articles could have been very good were it not for the printing and English errors (the book is actually produced in Germany). The reader is also confused by the constant cross referencing of DECHEX numbering. To a beginner it is all too

continued on page 29

# HYPNOSIS

Steve Eales, Essex

This short demo program introduces 'page flipping', a technique that is fairly easy to do on the Atari. A number of images are drawn in different parts of memory and by manipulating two bytes in the Display List, you can switch instantly to another display. The technique can be used for a number of purposes but is most often used for animation. An article on page flipping will be featured shortly in PAGE 6.

```

1  REM *****HYPNOSIS*****
2  REM #          BY          #
3  REM *****STEVE EALES*****
4  REM
5  L=0:W=PEEK(560)
6  DM=D+130:DH=130
7  X=5:Y=8:K=75:Y=39

```

```

8  FOR J=1 TO 13
9  POKE 165,A=L
10 GRAPHICS 28
11 COLOR 1:PLLOT X,Y:DRAWTO X1,Y:DRAWTO
12 X1,Y1:DRAWTO X,Y:Y1:DRAWTO X,Y
13 DL(D)=PEEK(560)+DH:DH=PEEK(541)
14 L=L+6:W=W+3:Y=Y+3:K=K+1-Y:Y=Y+1-3
15 NEXT J
16 FOR J=1 TO 13
17 GOSUB 300
18 NEXT J
19 FOR J=13 TO 1 STEP -1
20 GOSUB 300
21 NEXT J
22 SETG 200
23 POKE 560,DL:J=PEEK(541)+DH:J
24 FOR W=1 TO 25:NEXT W
25 RETURN

```

## Listing Conventions

As far as possible, the listings will be 38 characters wide to allow you to match up to the screen, but where control characters are explained in a line this will not be possible.

Three types of characters are difficult to reproduce in a listing—Inverse, Control and Inverse Control.

**INVERSE**—all characters to be typed in inverse are underlined.

**CONTROL**—characters which require the CTRL key to be pressed are shown in square brackets [ ]. Press CTRL and the key shown in the bracket. Characters which require the ESC key to be pressed first will show ESC,CTRL followed by a word or words to describe the key to be pressed. You may have to refer to your Basic Reference Manual if you do not understand some of the keys.

**INVERSE CONTROL**—characters will be shown in pointed brackets <>. Follow the instructions for control characters but press the Atari key first.

The listings should be typed as accurately as possible and **MUST** be typed exactly if TYPO is used to check them.

All programs featured in PAGE 6 will run in 16K unless otherwise stated.

## Book Reviews contd.

jumbled to make a lot of sense, and needs an understanding of HEX numbers and machine language to make sense, which is a shame, because the book starts off so well.

### ATARI SOUND AND GRAPHICS

by Moore, Lower & Albrecht

Wiley ..... £6.75

From the same stable as Atari Basic, this book follows the same format—teaching everything in the slowest possible way, ending each chapter with tests.

I was in middle-age when, completely ignorant of everything computing, I placed hands on a computer for the first time. The Atari Basic book annoyed me, this one annoyed me even more.

The Graphic side of the book is basic to the point of being silly. It doesn't get past PLOT & DRAWTO! The bulk of the book is taken up by Sound creation, taking you from the simple beep through to complicated tunes. There are some useful pieces on Attack and Decay, and Phase Shift, giving some idea of how to get quite advanced sounds even from Basic. But it is not enough to raise this book out of the mire.

# Automatic Drive

Les Ellingham

When you boot-up a commercial disk, it normally goes straight to a title sequence to give you something to look at while the main program loads. You might consider that the programming that goes into the boot-up process too complicated to attempt but you can in fact create your own AUTORUN.SYS file quite easily which is a program that causes the computer to automatically boot-up a program of your choice.

Let's look first at what happens when you boot-up DOS. When you switch on the computer, it is pre-programmed to run through an initialisation process which sets various parameters to enable proper operation of the system. One of the things it tries to do is load the Disk Operating System into memory, providing of course a disk drive is connected and is switched on. If it is successful in loading DOS, one of the next steps in the initialisation is to search the disk used for a file named AUTORUN.SYS and then load bytes from that file into memory culminating with some bytes loaded into addresses \$2E9 and \$2E1 (736,737). These bytes will give the starting address of the routine contained in the AUTORUN.SYS file. Normally control is passed to Basic, if a Basic Cartridge is present, otherwise to DOS, but you can specify any address in these locations and control will automatically pass to that address. If the address is that of the routine in your AUTORUN.SYS file, then your instructions will be automatically executed. It's as simple as that.

So, all you have to do is write a short Basic program, name it AUTORUN.SYS and put it on your disk! Unfortunately it is not as simple as that, for the AUTORUN.SYS file must be a binary file to be loaded. All is not lost however for those of you who do not understand machine language, for Listing 1 is a Basic program which will create a binary AUTORUN.SYS file for you.

Once you have typed in the program, insert a disk into your drive with DOS.SYS on it and RUN the program. You will be asked for the command you wish to have executed when the disk is booted. Just type RUN"D:MENU" or RUN 'whatever you wish' and press return. The

AUTORUN.SYS file will be written on the disk in drive 1 and the next time you boot-up using this disk, the program you have chosen will RUN automatically (provided of course it is on the disk!).

So, what can you use it for? Well, you can have a disk with just one program on it and RUN that program, or a title screen that will then RUN another program, but the most common use is to RUN a Menu which allows

```

10 DIM A(10)
20 ? CHR$(123) ? " BASIC COMMAND TO ISSUE " ? :INPUT A
30 (A+1)A=0-1
40 IF A=1,2,3, "CALLDOS.BAS"
50 FOR I=1 TO 4:GOTO A+I:IF A=4:GOTO 1
60 FOR I=1 TO A:IF A=1
70 FOR I=1 TO 4
80 IF I=1 THEN FOR I=1,2:GOTO 1:GOTO 1:GOTO 1:GOTO 1
90 IF I=2
100 NEXT I
110 NEXT I
120 FOR I=1 TO 1:GOTO 1:GOTO 1:GOTO 1:GOTO 1
130 CLOSE #1:END
140 DATA 255,255,1
150 DATA 16,16,16,33,3,167,1,11,34,3
160 DATA 16,16,16,128,1,74,165,243,251,243
170 DATA 31,246,33,1,163,246,31,246,66,246
180 DATA 76,238,246,1,17,128,1,246,1,165
190 DATA 6,1,264,128,1,16,1,24,148,33
200 DATA 3,167,228,161,24,3,167,128,168,1,76
210 DATA 237,1,246,1,255,1

```

you to look through several programs on a disk and RUN the one of your choice by pressing just one key. There are several Menu programs around but most of these use Graphics 0 and some have trouble in squeezing several programs onto the screen. The Menu program presented with this article, uses Graphics 2 for a very pleasing display and is one of the best Menu programs I have seen. It is rather long for a simple Menu, but if you type it in, you will not be disappointed and can upgrade your disks to "automatic drive".

One final tip. If you make the first line of each program on the disk POKE 560,1, the Menu will be booted-up each time you press System Reset.



## FIRST STEPS

Mark Hutchinson, Belfast

*(Following the threatened disappearance of First Steps last month we now have an offer from Mark Hutchinson to write the column but he needs some reader response. It's up to you.)*

It is a wonderful sensation when you rip open the wrapping paper to reveal your ATARI computer. You cannot wait to plug into the mains, turn on your TV and get stuck in. Then comes the big problem—'What do I do next?' Well, to be honest, just play about first and get to know the layout of the keyboard. Don't be afraid of doing any damage—you can't. If something peculiar happens just switch off and start again. When your little heart has stopped pounding, sit down with the manual and a cuppa and soak up a little knowledge. You really need to learn the basics before you start anything intricate. Let us suppose you have had your computer for about a week and you are now looking for some help. If you decide to purchase ANALOG or a similar magazine, you will find them good but perhaps a little over your head at this stage. The solution is to send an immediate subscription to PAGE 6 and look out each issue for FIRST STEPS. I hope in this column to write articles to aid beginners to computing and the ATARI, based on my own frustrations from three years ago when I purchased my 400 and could find no help.

Where can I start with this column? Probably by getting some reader response sent either to the Editor or to myself. I will not publish your letters, so do not feel embarrassed about asking questions you feel are too silly to print. You may see you questions in print, but not your name. I will even answer enquiries sent directly to me, but you will need to enclose a stamped addressed envelope. Do not worry if it seems ages for an answer, I am honour-bound to reply to an s.a.e.

Now that the preamble is over, let's find something to say for this month.

### ECONOMIES—REAL OR FALSE?

If you insist on saving more than one program per tape, then the best way is to save just one program on each side. If you want

more than this, then try to get a tape with a short leader and zero the tape counter at the start of the tape and make your first CSAVE. At the end of the first program leave a good gap, say twenty digits, and note the counter setting, then save your next program. Always, but always, keep a backup. Use a thick non-chrome tape to avoid stretching and always release the play button to avoid links in the tape. Keep your tape heads scrupulously clean but use only a cleaner designed for the job, never use anything abrasive. If you cannot find the start of a program at a later date, play the tape on your stereo. When a constant whistle starts, that is the start of the program. Economy is easy with a 410 and a cheap C90 tape but when you start getting load problems . . .

A disk drive gives greater flexibility and speed. For common routines or unimportant programs you can economise by using both sides of a single sided disk. Unlike many other inferior machines, the ATARI does not need the timing hole, it writes its own timing marks during format. All you need to do is to carefully cut out a write notch on the other side of the disk. I recommend that you format both sides at the same time as I would not trust the print through resistance of some disks unless guaranteed double sided. Again, always keep backup copies and always write protect your completed disks.

In general, buy yourself a good store for your recording media and keep everything away from dust, dirt, direct sunlight, dirty fingers, magnetic fields and harsh temperatures. Buy dust covers for your machines and peripherals, you will find the expense well worth it in the long run. I keep all my manuals and magazines in four-hole plastic envelopes in a ring binder and after some three years they are as good as new.

That's it for my first column. Let me know what sort of things you want to know, and look out for some answers to those problems in forthcoming issues.

Write to Mark at BAUG Software, P.O. Box 123, Belfast, N. Ireland BT10 6DB. ■



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### Menu Program continued

```

1040 SUB=PODD(177) OF 0075 IN 007407
THEN 1048
1070 RETURN
1080 FOR 548,24
1090 G=PEEK(548):IF 5:GOTO 1040 G=0
1,201-01,02,0+01:GOTO 1090
1100 SOUND 02,01,02,03:RETURN
1110 SOUND 03,01,01,02:SOUND 01,01,12
,00:FOR 0275,01:SOUND 02,01,01,001
NO 07,01,01,00:FOR 0175,01
1120 FOR 1040 TO 07:GOTO 1,02,01,02:04
END:RETURN
1130 GRAPHICS 17:0000 170:7 000:7 000
:7 FILE:07:007-00:00:RETURN
1140 GRAPHICS 00:7 :7 " THIS PROGRAM
REQUIRES THAT BASIC:7:7 :7 " PROGRAMS
HAVE NO FILE EXTENSIONS."
1150 :7 :7 " NO BASIC PROGRAMS WERE TO
END:07:7 :7 " THIS MESSAGE:7:7 :7 :000
1160 GRAPHICS 18:0000 170:7 000:7 000
:7 000:" I WAS UNABLE:7:7 000:7 000:
" TO LOAD:7:7 000:7 000:" :7:00
178
1170 FOR 24-04 TO 255:GOTO 01,24,14,
00:GOTO 01,24-01,14,00:GOTO 24:GOTO
02,01,01,00:GOTO 01,02,01,01:FOR 400
00:GOTO 000

```

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## Bug Club Call

**A.**

**G.**

**M.**

The A.G.M. of Birmingham User Group, an independent Atari Computer Club, will be on Thursday, 24th November, 1983, at 8 p.m., at The Matador, Bull Ring, Birmingham City Centre.

Nominations are called for the following posts: Chairman, Vice-Chairman, Secretary, Treasurer and SIX ordinary committee members. Nominations shall be signed by two ordinary members of the Club and endorsed by the nominee. They must be received by the Honorary Secretary BEFORE 17th November, 1983.

Proposals for amendments to the Club Rules must be signed by TWO ordinary members and submitted to the Honorary Secretary BEFORE 31st October, 1983.

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► For those who did not go, we actually arranged a coach trip down to London for the Personal Computer World Show on 2nd October. The show was one of the few to have quite a lot of interest for Atari folks and the people who went on the trip had a great time but there were spare seats on the coach. We have over 180 members and couldn't get 52 to go on a trip to the best computer show in the U.K. even with the promise of Atari's new range on show and at a cost barely more than the admission price. Those who went had a good time, but where were the rest of you?

► We now have a magnificent notice Board for YOU to use. You can use it to swap public domain programs, find others with similar interests, start self-help groups or sell hardware but we do ask that you do not use it to sell software. Why? Because, as a Club, we are wary of piracy. Facilities exist to sell your software, have a word with Steve Gould.

Talking of piracy, did you know that Atari employ a full-time private investigator in the States, known to the community at large as Mad Dog! Once he sniffs you out he won't let go! Over here we are more civilised and hopefully Atari won't need to spend their

## ► CHRISTMAS!

► PARTY TIME. This will be the last magazine before our last meeting of the year and as Christmas time is party time, we hereby announce our Grand Christmas Party to be held on 7th December. Prizes, competitions, etc., but let's have some help from you. Put forward your ideas and offer some assistance. Meanwhile, here is a competition for the night. A grand prize to the writer of the best program of a Christmas Carol for the Atari. Get writing.

money (thus keeping up prices) on private eyes. Or will they? One or two members have been seen with long lists of software for 'trade' and some have brought copies of commercial programs to the Club on blank disks. Let's repeat our position—it's in the constitution—**BUG will not tolerate piracy in any form** and we ask members not to put themselves in a position to risk expulsion from the Club. Do you know why Atari won't let User Groups have software for demonstration? They are worried about pirating. BUG, as a Club, does not support piracy and the committee asks each and every member to use their common sense and help stamp it out.



1. Program Recorder



2. 64K Memory Module



3. Touch Tablet



4. Track Ball Controller



5. Super Joysticks



6. Colour Printer



7. Disk Drive



8. 80 Column Dot Matrix Printer



9. Letter Quality Printer

These peripherals will be available only to ATARI 800 Program Recorder for fast cost storage and retrieval capability. Data transmission 480 baud. Storage capacity 100K bytes—up to 60 minute cassette. Track configuration 4 track, 2 channels (digital and analog). Auto record/playback/pause control.

2. ATARI 64K Memory Module gives the 8000K a massive 64K RAM.

3. ATARI Touch Tablet enables you to paint pictures and draw diagrams, with the touch of a stylus.

4. ATARI Track Ball Controller enables

cursor movement in any direction, adds to the pleasure of Atari games.

5. ATARI Super Joysticks. Gives you a greater competitive edge over your games.

6. ATARI 800 Colour Printer (dotted). Four colour graphic print capability: 80 columns, 80 characters per second, 5, 10 and 60 characters per inch.

7. ATARI 800 Dual Density Disk Drive. 5 1/4 inch disks holding 127K, randomly accessible bytes per side, leather expansion and flexibility for your 8000 L system or 8000 XL.

8. ATARI 800 80 Column Dot Matrix Printer prints 80 characters per inch, 80 characters per second. Ideal for program listings, financial reports, etc.

9. ATARI Letter Quality Printer for word processing letters in professional type.

If you'd like to know more about the ATARI 8000, write to Atari International (UK) Inc., P.O. Box 907, Blandford Road, London SW6 3JH and we'll send you all the details.



The new Atari XL home computer system.

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