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BACK ISSUES

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Issue 31	Issue 40
Issue 32	Issue 41
Issue 33	Issue 42
Issue 34	Issue 43
Issue 35	Issue 44
Issue 37	Issue 45
Issue 38	Issue 46
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Mailbag

MIXING THEM UP

I am having problems in typing in your two past listings such as Mouse Party, Miniball, Greenfinger and others. I type in Listing 1 and sure it to disk then I type in Listing 2 and I find that it goes into Listing 1 so I cannot run them. I have tried turning the computer off then loading Listing 1 but it still does not work.

B. Mandala,
Edmonton

The listings in question are two separate listings and should not be combined. After typing the first listing and saving it you should close it from memory by typing MEM and pressing Return or by switching your monitor on and off. Then type in Listing 2 and save it as a totally separate listing. In the case of the programs you have mentioned give them LOGO listing 1 and run it. This then runs the next program you have created on disk. Towards a full computer box it's not just memory but that, unless the article contains specific instructions to the contrary, all listings in the magazine are separate programs and should be typed in separately with any previous listing cleared from memory first.

GOLF

I've just become interested in Golf so I was thinking of trying a golf game. What could you give me a list of all golf games on disk and

also state the prices. Which game would you advise me not to like games with good graphics and an addictive gameplay. I was also wondering about Matchplay Golf. Does it need Pro Golf to run or is it a single game? And is it any good?

James Howarth,
Guelph

What do you mean in one of our Mouse games are good? Of course it is, it's brilliant! Seriously, both Miniball Golf and Pro Golf are excellent games with almost perfect and will provide you with many hours play. They are separate games and for a mere \$2.95 you can't go wrong. There have been very few golf games on the AT but we are usually strongly recommended (and should) if you can find it which is top notch, especially the graphics which give you a behind the player perspective. You can also buy a "Toursman" disk which gives you extra courses. But if you can't find a copy, you won't be disappointed.

PRINTER CONNECTION

Would it be possible to run and my CIBOX to a Star LC10 printer. I know you can buy an interface already built but they are rather expensive. Would I be able to construct my own? Could you please give me the plans if possible. I used the LC10 on my STXM but since my STXM has hit the dust and so I have acquired the 1000E it seemed a shame not to join them together.

J.J. Davies,
Thornhill, Ontario

Yes, you can connect the

LC10 to your CIBOX but not without an interface. The AT has SCSI and Centronics interfaces built in but with the XL-DL, you probably should interface only on an external add-on in the form of the 486 interface. Originally it was not felt that a home computer would need such interfaces which would increase the cost of the machine considerably. This was the days when an Atari-500 cost \$499.95 but when it became apparent that people wanted to add printers and modems, Atari produced the 486. Having made out some of these they were not able to add interfaces in the later 500 models although they could have done quite readily and cheaply. The simplest way to add a printer is to buy an interface cable but you can build your own interface. David Fox has developed several internal interfaces and can supply them in kit form or ready built - check his advert in this issue. Unfortunately you can't find a cable to connect the printer, would that it were that easy!

OOFS TYPO

Making made all the changes to TTPO 3 as printed in issue 47, then checking all the two letter codes and making several copies to be on the safe side I ran the program to be greeted with "TTPO 03 is up and running". Great so far. I typed a few lines of a program and pressed the RETURN key and it locked up. Noising I could do would make the program respond. What a mess. I thought it was now supposed to be error proof?

K. Edwards,
Bancroft

I have a BBOE and SC12 data recorder and find that the TTPO 3 listing in the present format will not work. The problem is that when System Reset is pressed the machine locks up and any listing being typed is lost forever.



in



Most remember to
write to Mailbag

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The fix to this problem is to change line 185 to read
185 POKE 8,8:POKE
2:POKE 8,8
which will now allow the program to run normally.

G. Sumner
Preston

Apologies to everyone who had problems. Our fault for not testing the reader and on a cassette only system. We did check that it worked when loaded from cassette but we had a disk drive hooked up at the same time and with this combination it worked okay.

AN ANSWER

I write in connection with the letter in issue 47 enquiring about a game which inventors 'thinking' between levels. The game in question is called SPACE BOGGY and is available from The Atari Centre, Wood Street, Birmingham. I cannot remember the price but I believe it was under £15.

M. Wilson
Aldby, Leam.

Thanks for the info. Someone else wrote to say that the game was G&W's but didn't know if an Atari version had been written. My own memory for either has of it was in the approval many years ago.

INTERFERENCE

I read an article in a newspaper recently that newsworthy problems with the proposed Channel 5 TV station. As I understand it Channel 5 has been allocated frequencies 5B and 5C and will use both channels simultaneously for sound and vision. There may well be some 'dead over' into channel 5B which is the channel used by the 2B and 2C when connected to a TV. A spokesman for the authorities played down any problems but as an old cynic I've heard assurances like that before.

Can anyone tell me whether there is likely to be any problem and whether there is any possibility of re-tuning my 6-bit to a different frequency?

K. L. Laidlaw
Hickory

This could be quite serious. Imagine being up to level 113 of the hotel when you just about to go into the final telephone and being interrupted by Nightboard 000. If they make it interactive you could change time, lesson Duration instead! This one needs more feedback from some of the smart evening TV engineers out there. Anyone got any comments?

SOUNDING OFF

I am the proud owner of an 8000L which has a great sound chip (POKEY) but why doesn't anyone use its filters and timing registers? Is there any talk out there to explain them. I listen to sound through my 80-PI and it sounds great but when I load up a game the sound dies and turns into Mips and blips. Talk to these my software that explains the use of the POKEY chip in detail like filters, channel sweeping, timing registers and so forth?

Peter Adcock,
Frankston, Australia

I have never understood why so few people have taken advantage of the 80L's 16-bit sound capabilities. We published an article and program in issue 31 which touched on it and I seem to remember that there was a book at one time that had a chapter devoted to this subject. I think it was The 8000L Handbook. Most of the book was pretty disposable but the section on sound was excellent going up to the details you mentioned. Perhaps someone could dig it out and write us an article, maybe even the author could give us permission to re-publish it as I believe that the book is now long out of print.

PROBLEMS

I have an 8000L with a 1B Doublet. Can you help with the following:

1. I can't seem to make a working copy of Mini Office 2.
2. I have DOS 2.0, SuperDisk 2.0 and Copymate 4.0. Part of Mini Office will copy but not all. What am I doing wrong?
3. Who sells the hardware PC DITTO 2 for the ST?
4. How do you interface or cable the 8000L to an Amstrad GT 66 Monochrome VGA which is RGB?
5. Is there any way to capture 6-bit files from Textype and Mini Office 2 into an ST?
6. Same question as above. I can't seem to be able to make a working copy of Textype.

I am sure that I am the weak link. I believe that I am the only Atari 8 bit type up here in Leery. There is nobody to talk to as the Atari never caught on up here.

Dave Timney
Leedsbury

You might have some problems copying Mini Office 2 since we believe there are a couple of bad sectors on the disk designed to stop people making pirate copies. We had our own copies of Mini Office 2 professionally duplicated which contains such protection. You should have no problems in using Mini Office without backing it up, just make sure that you always keep it write protected and of course use a separate disk for your data. As regards Textype, there is no reason why you cannot copy it with Copy-mate other than it will not use its duplicate disk disk. The only problem you may have is if your particular disk has a bad sector. PC DITTO is, we believe, no longer available since the company producing it has, apparently, had their offices without a forwarding address. You might find a retailer somewhere with some stock but it would not be wise to buy since there will be no backup. As for the other

several monitor gears I've ordered you'll have to give up since you can't connect an RGB monitor to the 8-bit which has only composite video output. Finally, regarding 6 bit files to the ST or any other 286 Talk to Jim Page 28. If you do have an RGB monitor or PC Connection then you can transfer files using a real system cable and suitable system software on each machine. We use Format which is available on both machines in the public domain.

CONFUSED

I am 11 years old and I have had the New Atari User magazine since April 1990 and I have noticed that nearly all the type in programs that are for the XL/XC involve putting inverted commas into the lines of the program. I cannot do this since my 8000L has to have inverted commas to show I've started and another pair to show I've finished. Is it "the line". The computer thinks that when the commas appear in that line it should stop the line to move on to another line. Please help me to find another way to type your text programs into my computer.

Lee Black
Northampton

We'll try to help Lee, but can give to being really confused. You can type all of the listings in New Atari User exactly as they are printed without any problem on a 8000L. Either you are doing something that you shouldn't or your computer is faulty. Has anyone had any similar problems or can anyone figure out what Lee is doing wrong?



GETKEY

by L.C. Jeffs

Usually every time I write an application I find that when I needed to input data the INPUT and GET commands did not do the job as I required. Without the use of TRIM and/or evaluate your RETURN checks unwanted data will slipped by. I found I needed to be able to input data and check it character by character to ensure that it was within the parameters I required.

With these requirements in mind I set out to write a Basic routine to do this. I wasy because aware that as all existing routines would be far too large and so a compromise was made. I chose to have six different basic types of input, the alphabetical ones divided into three sub types and the 2 numerical were capable of up to 6-decimal places. These are shown in Table 2.

THE LISTINGS

GETKEY.DEMO is the demonstration routine to show how GETKEY works. It uses the main routine itself for you to enter the parameters you require.

GETKEY.LO1 is the main routine. It starts at line 100 as being a frequently used routine. Basic can find it quicker in the lower numbers. The GETKEY.LO1 routine takes up 5748 bytes of memory (just over 3.5K) but selective deletion of unused routines would of course reduce this.

THE PARAMETERS

The parameters will be set by the programmer and it is up to him/her to ensure that they do not clash, i.e. if MAXLEN is set to 80 and X is greater than 79 then the field will extend beyond the screen edge and cause an error. It is possible for the program to look out some of the para-

TABLE 1
GETKEY PARAMETERS

X	- is the X co-ordinate of the field. i.e. the position along the line where the cursor starts. The field character will be placed. One space should be allowed for each dot or for field.
Y	- is the Y co-ordinate of the field. i.e. the position of lines where the cursor is moving. It could then move down and up. It is the same if you press CLR then it would return to Y.
MAXLEN	- is the maximum length the field can be. The routine checks this could transfer the data and optional period if any characters that is any remaining up to 79 digits.
CHROM	- is a code to allow numeric input. See Table 2 for explanation. When CHROM=0 numeric is allowed and when the variable CH returns a value, the value of the variable is returned.
TYPE	- is a code for the type of input. See Table 2 for explanation.
NUM	- is used for numerical input and gives the maximum value allowed. 0 to 9999.
MAXD	- is used for numerical input and gives the maximum value allowed. 0 to 9999.
TR	- is the default value the return. It is a standard key to allow. This may be set to any other value when CHROM is allowed.
NUMD.DT	- is the final value returned from the GETKEY routine.

meters as does the demo routine for MAXLEN, MIN and MAX, but this can become a little complex. Table 1 describes the parameters. TR should be set to whatever value is required if a CLEAR key is used to skip out of a field. TR should be padded with blanks or zeros to the length of the field required. NUMD,TR is built up by your input and is kept when RETURN is pressed. It is already padded with blanks or zeros. If a CLEAR key is pressed then TR is transferred into NUMD,TR. The rest of the parameters are fairly self-explanatory using Table 1 to see what they do.

TO USE GETKEY

You are required to set the screen up and must allow one character each side of each field for the screen numbers. If you keep a standard open to the keyboard and are using BASIC BASIC screen lines 80,88,100 and 105, and add lines 85 and 117 to reflect your screen chosen.

Set the parameters for each field that you require just before calling GETKEY and move RESULTS into your own variable upon RETURN (see VALUE(RESULTS) for number fields).

If numeric movement was allowed check IF for the value of 1 to 4 in the direction and branch your routine accordingly. IF is 2 when return is pressed.

SEPARATING THE LISTINGS

At the end of the listing from line 2000 onwards are some helpful comments lines to print, save, and separately list the routines in Drive 1. Use GOTO to direct code using the appropriate line number as follows:-

2000 Lists a copy of the whole routine to the printer. The second PRINT statement forces a page split from an EBCDIC printer. Replace this if your printer uses a different control character.

2011 Lists a copy of the whole routine to Drive 1 as a hardcopy copy named GETKEY.BAK.

2022 Lists a copy of the whole routine to Drive 1 named GETKEY.

2048 Lists the main routine to Drive 1 named 'GETKEY.LO1'. This is the routine you will need to ENTER into your own routine. Ensure you do not use lines 100 to 200 and that you work in your routine as DEMONSTR for TRIM and NUMD,TRIM.

2054 Lists the DEMO routine to Drive 1 named GETKEY.DEMO.

2065 Lists the main routine to Drive 1 named GETKEY.TLC.

Whatever line you goto will probably that end of following lines, so if for example you do not want to save a listing of the main Getkey or DEMO and line 2000 below you GOTO.

If you are a cassette based machine then change the Drive name to 'C' and the GOTO's to CHANGE. You will then be required to press return before each line is executed.


```

00 1 GOTO *****
01 0 GOTO 0 GETKEY N, D, A 0
02 0 GOTO 0 GOTO 0 GOTO 0 0
03 0 GOTO 0 GOTO 0 GOTO 0 0
04 0 GOTO 0 GOTO 0 GOTO 0 0
05 0 GOTO 0 GOTO 0 GOTO 0 0
06 0 GOTO 0 GOTO 0 GOTO 0 0
07 0 GOTO 0 GOTO 0 GOTO 0 0
08 0 GOTO 0 GOTO 0 GOTO 0 0
09 0 GOTO 0 GOTO 0 GOTO 0 0
10 0 GOTO 0 GOTO 0 GOTO 0 0
11 0 GOTO 0 GOTO 0 GOTO 0 0
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97 0 GOTO 0 GOTO 0 GOTO 0 0
98 0 GOTO 0 GOTO 0 GOTO 0 0
99 0 GOTO 0 GOTO 0 GOTO 0 0

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00 00 MOVE(000,0000,000)
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```

GETKEY is a routine that allows you to have fully controlled input and positing on screen - it is ideal for database applications

TABLE 2
TWO DIGIT TYPE (n1 n2)

- n1 - the values for n1 are:
 - 1 all keyboard characters
 - 2 alphabetic, punctuation and numbers only
 - 3 alphabetic and punctuation only
 - 4 alphabetic only
 - 5 positive numbers only
 - 6 positive or negative numbers
- n2 - the values for n2 are:
 - where n1 is from 1 to 4:-
 - 1 lower case only
 - 2 upper case only
 - 3 both cases
 - where n1 is 5 or 6:-
 - 0 to 9 the number of decimal places.

GETKEY

Turbo Basic

```

001 1000 *****
002 1000 ***** GETKEY W. 0.0 *****
003 1000 ***** Turbo Basic Location 1 *****
004 1000 ***** Ap 1.0. JEFF *****
005 1000 *****
006 1000 *****
007 1000 *****
008 1000 *****
009 1000 *****
010 1000 *****
011 1000 *****
012 1000 *****
013 1000 *****
014 1000 *****
015 1000 *****
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100 1000 *****

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101 100 *****
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191 100 *****
192 100 *****
193 100 *****
194 100 *****
195 100 *****
196 100 *****
197 100 *****
198 100 *****
199 100 *****
200 100 *****

```

GETKEY

```

00 1000 *****
01 0000 *****
02 0000 *****
03 0000 *****
04 0000 *****
05 0000 *****
06 0000 *****
07 0000 *****
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92 00 *****
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99 00 *****

```

TABLE 3
CURSOR TYPES

- 0 - no movement
- 1 - vertical movement
- 2 - horizontal movement
- 3 - both horizontal and vertical movement

by L.C. Jeffs

GETKEY

TABLE 4
CURSOR MOVEMENT

Direction	value_of_RP
up	1
down	2
left	3
right	4

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PLUS

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by Chris Guise



Place your bets! The wheel is spinning and the winning number is ... Now you can play a visit to the Casino and take your chance with Lady Luck without risking a penny! There are comprehensive instructions for play within the program and all you need to do is place your bets. How much money will you make?

Roulette is a nicely written game that should give everyone a great deal of pleasure.

READY TO RUN - TURBO BASIC NOT REQUIRED

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EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT

DISKS

How is a floppy disk formatted?

How is formatting used for protecting software?

Why do disks sometimes throw up errors?

Atari 8-bit hacker G.L. Spencer helps provide some clues

One of the many things I like about the 8-bit Atari computers is that they are great machines on which to experiment and learn more about computing. Recently I have been tinkering about with my Atari disk drive and in the process I made a number of interesting observations, which I thought might make for an interesting article.

First of all, let's go back to basics. When you purchase a new floppy disk, it consists of a thin coating of a magnetic material on both sides of a flexible backing. The magnetic particles of a virgin disk are randomly oriented and, if read while in this condition, will produce the equivalent of white noise. The formatting process lays down a series of concentric circles, known as tracks, onto which data can be stored. The tracks on a floppy disk can be located in the grooves of a record so that it is only in the grooves of a record and on the inside of a disk that the music and information is stored. After the formatting has finished there are forty tracks on a standard 5.25" floppy disk, each separated from another by tracks of randomly oriented medium. The tracks on an Atari disk are numbered 0-39, with track 0 being the innermost track, and are spaced equally distant from each other. This last statement may sound rather obvious but on many computers it is possible to lay tracks in unexpected positions, and this is often used as a means of copy protection. For example, imagine the effect on a copy program of a disk that had been formatted in the manner shown in Figure 1.

The incorrectly positioned track 0 is known as a half track since it is a half track away from a standard track position. Luckily for Atari 8-bit owners, disk protection using half tracks is not possible, since the stepper motor, which moves the head of the disk drive, cannot be made to search for half tracks. Although commercial disk copiers can easily create Atari format disks with half tracks, these are unacceptable by a standard Atari disk drive and are hence useless.

DIVIDED INTO SECTORS

Anyway, getting back on track! Each track on a disk is divided up into a series of sectors. On a 1080 disk drive this is either 18 sectors in single density or 36 sectors in enhanced density. Since the 1080 disk drive is "intelligent", each one gives it the command to format a diskette (801 for single density, or 802 for enhanced) the computer and user have to say in either the location of the tracks, the sides of the sectors on the inside or anything else. All are given by the ROM in the disk drive. The reason I stress this rather obvious piece of

information is that since there are a variety of BIOSs available for the Atari 540i drives, there are an equal number of "standard" disk formats. These disk formats all contain the same sectors on a particular track but differ in the sequence of the sectors on the track.

Although the sequence of sectors on a track may sound rather insignificant, it isn't. It greatly affects the speed that data may be extracted from the disk and is occasionally used in disk protection. The standard 10240 disk formats have an interleave of 2. When a BIOS reads a track, it is able to read only 2 nonadjacent consecutive sectors (e.g., sectors 4 and 5 per revolution of the disk). In order to achieve an interleave of 2, consecutive sectors are placed as far apart as possible on the track as shown in Figure 3.

You will notice that sector 1 is as far away from sector 2 as possible and physically adjacent to sector 3. Although this may appear to be a strange way to place the sectors, there is a very good reason for it. It takes the BIOS disk drive approximately 1/1000th of a second to read the data from the disk into the disk drive's memory bus, due to the slow serial interface. It takes almost 1/30th of a second for almost half the revolution of the diskette to transfer the data from the disk drive memory to the computer's memory. Hence any sectors which pass under the head during this period cannot be read until the disk has completed another revolution. An interleave of 2 is ideal for an unmodified Atari disk drive, since it enables the fastest data transfer possible with the standard head rate.

Much higher interleaves are found on disks that have been formatted with high speed disk drives, e.g. DS Double, floppy drives, etc. The highest interleave that I have discovered was an interleave of 8 on some commercial software (not really). Operating with an interleave this high, a high speed disk drive could read or write the disk four and a half times faster than a standard BIOS. One disadvantage of manufacturers using such high interleaves is that when the data is read in a standard BIOS disk drive, it takes twice as long to load. If you listen to the sound of your disks as they load, you can easily

identify those disks by their slower load rate. Painfully slow aren't they?

IMPROVING THE SPEED

When you read or write on a standard disk drive, you are reading or writing 128 byte sectors. A number of the new Atari drive manufacturers have devised interesting ways of improving the speed of their drives. They include a faster head rate between the disk drive and the computer, higher interleave and track buffering. In track buffering, the disk drive reads a whole track into its RAM instead of merely a single sector. This enables a single disk read to access the next 10/25 sectors from the RAM in the disk drive, without having to carry out a further disk access. Since the sectors are now stored in the disk drive's RAM, the speed of the drive is now only limited by the transfer rate between the drive and the computer. One would expect the head for such drives to be about nine times that of a standard Atari disk drive. Track buffering has both its advantages and disadvantages. Since an entire track is read and then searched for the first occurrence of a sector, many protected disks will not work unless the track buffering is disabled.

The manner in which tracks are laid down on a disk is a complex but highly fascinating topic. The correspondence in the 10240 disk drive must result in the floppy disk controller the information shown in Figure 3.

MORE THAN DATA

When we speak about a "sector" we are referring to everything from the Sector ID through to the several CRC Cyclic Redundancy Check. The sequence in Figure 3 makes up only the first

Figure 1 - Non standard tracks

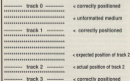


Figure 2 - Placement of sectors with an interleave of 2



sector of a track. Following the inter-record gap will be another 17 sectors (an enhanced density track uses different bit rates from those shown, as well as having 24 sectors per track). Notice here, although the computer considers the sectors to be numbered 1 - 720, the disk controller only knows of sectors 1 - 18. The microprocessor in the disk drive must convert the sector number from the computer into a Track Number and Sector Number before it can be used by the disk controller.

EVEN FASTER

Changing the order of Sector IDs on a track to allow read to produce a higher interface on high speed disk drives. For the standard 814, start times that the order of sectors on a track is 18, 1, 3, 5, 7, 9, 11, 13, 15, 17, 2, 4, 6, 8, 10, 12, 14 and 16 corresponding to an interface of 2. By using the number of giffes it takes to read two sectors, I was able to determine that the sector order on a standard 1850 is 1, 3, 5, 7, 9, 11, 13, 15, 17, 2, 4, 6, 10, 12, 14, 16 and 18; also an interface of two. One commercial disk which I own had the following sector order 1, 7, 13, 3, 9, 14, 5, 9, 15, 4, 10, 16, 5, 11, 17, 8, 13, 19. This corresponds to an interface of 8 which I believe is a common interface on IBM PC's, but it is painfully slow on a standard 1850 disk drive.

One commercially manufactured disk protection technique is the duplicate sector. With custom disk drives there are several ways these may be created. The simplest is to lay down the track with one of the Sector numbers (part of the Sector ID duplicated). Since the Sector ID is not altered by READ or WRITE to a sector, this creates a second copy of the sector e.g. 1, 3, 5, 7, 9, 11, 13, 15, 17, 3, 5, 6, 8, 10, 12, 14, 16, 18. In this example sector 4 has been removed into a duplicate of sector 3. Since Sector 4 is 'missing' and cannot be read, it is considered to be a 'bad' sector.

An alternative method of creating duplicate sectors involves decreasing the size of the inter-record gaps (the gaps between sectors) and repeating an additional sector onto the end of the track e.g.

1, 3, 5, 7, 9, 11, 13, 15, 17, 2, 4, 6, 8, 10, 12, 14, 16 18, 2
This form of duplicate sector is not accompanied by a 'bad' sector on the same track and will divert users of sector copiers into thinking that they have copied an unprotected disk.

SOME BASIC PROTECTION

Do you claim a duplicate sector enable a disk to be protected? Well! There are many reasons to this end. If a sector on a standard disk is read first, the disk must make one complete revolution between the sector being read the first time and being read the second time. This results in the second read taking approximately 12 giffes. When the sector is read the second time the data will be exactly the same and hence the checksums for each read will be identical. A disk with two copies of a particular sector will read the second sector within half a revolution of the disk, therefore taking only 6 giffes for

Figure 3 - information sent to the floppy drive controller

Pre Index Gap	40 bytes of SFF 6 bytes of S80	
Index Mark	1 byte of SFC	
Post Index Gap	28 bytes of SFF 8 bytes of S80	
Sector ID	1 byte of SFE	Address mark
	1 byte	Track Number 0-255
	1 byte	Side Number 0
	1 byte	Sector Number 1-18
	1 byte	Sector length 8 for 128 bytes sectors
	1 byte of SFT	the floppy disk controller writes two bytes of a CRC to the disk instead
ID Gap	11 bytes of SFF 6 bytes of S80	
Data Address Mark	1 byte of SFD	
Data Register	128 bytes of S80	once again the floppy disk controller writes two bytes of the second CRC
Inter-record Gap	27 bytes of SFF 8 bytes of S80	

the second read. It is therefore possible to time the second read and determine whether there are duplicate sectors on the disk. Alternatively, one could compare the checksums for each of the two reads. If the two sectors contain different data, then they will invariably yield different checksums. A standard non-duplicate sector will always return the same checksum no matter how many times it is read.

BAD DISKS

Occasionally one may find an old or physically damaged disk which possesses a sector that appears to be both a duplicate sector and a bad sector. When the sector is read using a disk repair program, a section of data on the sector can be seen to change with each read and the disk drive returns a disk error (Error 144). There are the characteristics of a 'fuzzy' sector. A fuzzy sector is one in which at least a part of the data region of a sector has become unformatted. This unformatted region produces a random signal when it is read and hence gives the appearance of a duplicate sector. The disk error (144) often means that CRC found at the end of the data does not correspond with the CRC calculated by the microprocessor in the disk drive. If you have not guessed, a CRC (Cyclic Redundancy Check) is like a super-accurate 16-bit checksum. Fuzzy sectors cannot be created on a standard 1850 but can be created on custom drives by formatting a track with a 'short' last sector and not laying down a trailing gap.

NOT REALLY A CIRCLE

The common description of a track, as being circular, is misleading. A track is more accurately described as being C-shaped, with a small unformatted region between the first and last sectors on the track. A "short" sector can be created by sending less than 128 bytes to the floppy disk. Contrarily before sending the 140-byte ID#7 which forces the writing of a CRC. Since it's standard, BIOS always expects a sector to be 128 bytes in length. It will read the "short" CRC and unformatted gap regions until it obtains 128 bytes. You can well imagine that if the "short" sector consists of only 8 bytes of data, there is going to be 8 bytes of data, 2 bytes of CRC and 118 bytes of rubbish sent to the computer.

Short sectors are occasionally used by software hackers to create disks with large numbers (e.g. 18 or more) of duplicate sectors on a single track. This is possible because a short sector can be considerably smaller than a standard sector. Duplicate short sectors always produce disk read errors (E044) but the data does not constantly change as does the data in a floppy sector. Hence it is possible to distinguish floppy sectors from duplicate short sectors. I might add that my disk drive is not capable of creating other types of sector but, with the aid of a disk utility, it is possible to identify them both.

DISK ERRORS

Bad sectors occur on disk by design and by accident. It is the latter that I particularly hate. At one stage my disk drive used to have great trouble swapping from enhanced to single density. In my ignorance I used to switch it off and on again and after three out of ten this would put the disk drive into the correct density. Unfortunately on the other nine times out of ten it would randomly add CRC errors and wreck the disk. I may be a slow learner but I don't do it any more.

A CRC error is the most common of the "naturally occurring" disk errors. It results when the data in a sector does not match the CRC stored at the end of the sector. It occurred previously how a CRC can be considered to be a super-accurate form of checksum. It has the advantage over the usual checksums in that it is not so easily tricked by long bursts of errors. Mainframes not only use CRCs for error detection but also for error correction. Unfortunately, the Atari disk drives are not quite that bright. A sector containing a CRC error will produce the usual (ERR ERR08 #144) but can be identified from other disk errors by the following characteristics: data is read into the buffer from the sector, the response time is relatively quick, if a STATUS-B550 command is sent to the disk drive following a bad read the device status-of #F7 is returned in byte #005D. Fanny sectors and short sectors are special forms of CRC error and also display these characteristics.

In theory there are two possible forms of a CRC error; I have only ever encountered a CRC error in the data field, however it is possible to create a CRC error in the Sector ID field, because the Sector ID is considerably smaller than the data field, an error here would be a much more occurrence, but would be of greater significance when it does occur. This form of CRC error would not result in data being stored in the read buffer and would return a Device Status (ERR08) of 0C7.

IDENTIFYING THE DATA

Since the size of the various gap regions on a track can be varied, within restrictions, the disk drive must have some means of knowing when a gap is over and either the Sector ID or the data is about to commence. This is accomplished using the ID-Address Mark to identify the start of the data. When a WRITE sector command is sent to the disk drive, the Floppy Disk Controller searches the track for the correct Sector ID. Once this is found, the controller counts off 13 bytes (in single density) and commences to write the six zero bytes, the Data Address Mark, 138 bytes of data, the two byte CRC and a final byte of 0FE, many of the non-standard disk drives are capable of variations upon this theme which is what enables them to produce deliberate sector errors. For example, if there are less than 128 bytes of data sent from the microprocessor to the disk drive to the floppy disk controller, the controller will fill the rest of the sector with zeros and write an incorrect CRC. This is the floppy disk controller's way of flagging that the sector is in error. Some drives are also capable of recognizing that the sector be written to the disk with a Deleted Data Mark. This is a non-standard data mark, which will produce the usual (ERR ERR08 F114) when read. Characteristic features of Deleted Data Marks are: they do not prevent the data being read into the buffer, the response time is relatively quick and the Device Status byte (ERR08) returns with a value of 00F. It is possible to create a sector with both a Deleted Data Mark and CRC error, those return a Device Status byte of 007.

THAT AWFUL NOISE!

There are two types of disk error that are characterized by painfully long read times and horrible grinding sounds coming from the disk drive. These are the "Missing Sector" and the "Lost Data Buffer", "The Missing Sector", as its name implies, occurs when the desired Sector ID could not be found even after much searching and grinding by the disk drive. It is characterized by a Device Status byte of 00F. "The Lost Data Buffer" also returns a Device Status byte of 00F and occurs when the required Sector ID was found, but this was not followed by a readable data record. This is the standard hardware's bad sector produced by modifying the write speed of the disk drive. Fortunately, for the hackers, these two types of bad sector are not distinguishable by the disk drive.

Well I hope I haven't bored you with some rather heavy concepts but neither gives you some idea into why disks grinding, low disks are protected and perhaps why some drives will read certain disks while others won't. Why don't you play around yourselves and try to learn a little more?

This article first appeared in *PROGRESS*, the journal of the Adelaide Atari Computer Club in Australia and we just thought it would be of interest to many of our readers. Maybe there is enough information here to discover why Flight Simulator II will not run on an AFDD5 drive? If anyone would like to see our cover up with a fix for this program we will publish it for the benefit of hundreds of other Atari owners, soon missing out on a fine program.

THE TIPSTER



Well Christmas has come and gone and the reddest rounds of turkey sandwiches have been assigned to the dustbin and your appetite turns to the more appealing morsel of game tips. The master chief Tipster is therefore here to serve you the very best the Atari world has to offer. This issue I bring you the complete maps of (wait for it) *Star Blade I and II* (Can't be had?) The inner secrets of *Airstrike II* and *Living Daylights* are revealed but what am I wasting all this space for. Are you here —

RAMPAGE

Monster tips for **RAMPAGE** from Kevin Cooke (Hawaii West) if you don't have anyone to play with you then start the game in two player mode and then move player two to the very edge of the screen and flick the stick so that he disappears from it and then continue playing as normal as he is impervious to harm and can be brought on when player one dies.



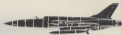
GALACTIC CRESTA

If you've got some spare 20 you'll have got the game **GALACTIC CRESTA** and Jonathan Burroughs has some birds 'n' tips for it. If you stop in the bottom right hand corner you will not be shot. If by some chance one of the alien dies happens to get underneath you, down the bullet, which you are holding, will destroy it. You will only have to move him to the left, shoot him once back again. Also there are 6 waves of aliens before you go to a different level of aliens which are faster but they look the same as the first.

POLE POSITION

A quickie from Paul Norman of Tibury has you racing round Pole Position in brake neck slow motion! If you are having trouble completing the 8 lap race then put a heavy weight on the SPACE bar and the game slows down quite considerably.

SEQUELS



AIRSTRIKE II

Benny Port in South Wales and Coventry must have very busy air traffic controllers as they sort out all the traffic from Michael Jones and Neil Godfrey respectively who send in the following tips for **Airstrike II**. Michael says to press Select or Option when the music plays until you hear a buzz. If it doesn't work first time then do it again until it buzzes twice this time. You should find yourself on the second level. From Fall to the top that if you press the Reset button after loading the game you will notice that the time is now higher. Press Start and the game will begin. Hold down the Reset button and allow your plane to fly in the center of the screen. As soon as the first rocket takes off you must release Reset and you will find yourself back on the opening screen. When you begin the game again you should find that the first rocket has either disappeared or lies helplessly in the rubble of the screen for you to shoot. This works with other rockets as well.

Still Flying!

A couple more tips for you veterans out there, they come from James Wynne from Dublin. **BLUE MAX**'s run and up with infinite bombs if they keep pressing the fire button and in **ACE OF ACES** if you see a bomber on your radar, go either very high or very low to lose him.

MIDNIGHT MAGIC

Jeremy Thomas of Wellingborough gives tonight the pitiful reward a run for his money with this tip for "Terrible Midnight Magic". When the ball goes down the side left or right reangle the paddle left just once and the ball will flick back into play - this will enable you to keep the ball in play if you haven't got a "Magician Maggot" in the game.

**S
O
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Y**

I must apologise for the information that went out in issue 48 about Mando Computers. It appears from Jeremy's comments that the cheat doesn't work on the ZX Spectrum system. This might be because of the fact that the game is on the 128k RAM and has been slightly "modified" to fit in with the Operating System.

JOE BLADE

mapped by
Richard Hunter

⊕ CELL DOOR

↔ WRAPAROUND
SCREEN

ITTY BITS OF WITTY TIPS

Harvey Miller has been very busy getting together what can only be considered as an encyclopedia of game tips. I will bring you just a couple of the many tips sent to me, so here goes. In **REBORN** if you wish to defeat the computer on level 3 then simply place your bat on the far left corner and hit it quickly. After going one point up you will get a column of worms, which again should be hit quickly from the same position. Franny isn't it, because doing this five more times the computer will have been whitewashed, and so the hardest level too!

Lee Nelson from Westbury has the trick of giving bats that solve that little tricky corner that many people, including myself have. In **BOYER BROTHER** is an insect in a tower if you try to step behind a bridge for as long as possible, then set the dog onto the neighbours whilst moving the rest of the game.

Moving really slow in another ball game recently - when playing a human opponent on Hardball, use the changeup pitched at bottom right if the batter is standing left, or bottom left if the batter is standing right. This pitch only results in a ball if tried against the computer. If your pitcher does not have a changeup, substitute him until the pitcher has.

GET OUT THE MAGNIFYING GLASS!

After the famous article in this issue regarding the above feature, there used to always be in the end of the column, appearing just before the computer tips, a small note that said "this tip is only available on the computer version of this game". I'm sure you will be glad to hear that the computer version of this game has been updated to include this feature.

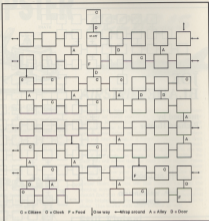
Richard Hunter brings the long sought after and difficult to map Joe Blade I and II. In Joe Blade I the 8 booby traps and all the logs are placed randomly. Use the map to plan your route, logs are scarce and shouldn't be activated. Locate all the booby traps before they're activated, then you've ample time to complete your mission. Joe Blade II is pretty straight forward (if you use the map, but beware of the sub-games as they come up very quickly so stay alert!

SSSHHH! ...

Now for something a bit different from Peter Lane. I've been found that the disk containing JOEBLADE I & II (BY WORTHEN) has an unadvertised secret feature which is the inclusion of the file JOEADVICE. If you enter JOE and go to option L, if you type JOEADVICE for the file name then you get a really good copy of the original Space Invaders game. This is only available on the disk version whilst Peter thought about four years ago. Have any of you found any hidden games?



JOE BLADE 2



APPEALS GALORE

From Lee Nelson comes this plea. He wants to know how do you get past the tower to SPELLMAGED? He has read the solution in issue 42, but this doesn't tell him how to get past it.

Harvey Miller has a question along with his many hints. **SEEDATOR** is proving a problem as he wishes to know how to get the horse across the river once it is over the river.

I would like to make a personal plea to all the letters out there, where are all the maps of the adventures you have completed. (Yes, my dear?)

Well that just about wraps it up for this issue but remember that it is you who makes it what it is so help those that tips coming in. I would like to hear from folks who have had problems with certain games using **TRAVELINK 2 TO TV** because we are compiling a comprehensive list of all the games that have been transferred and I know that some games that have caused some users problems have been successfully transferred by others. Perhaps some of you have got some tips to help others?

Out of space now so, until next time, I will leave you to see out into more tips so keep gaming and don't let your joystick go sleepy!

AND THE WINNER IS ...

The prize this issue goes to "top tipper" Richard Hunter who supplied the maps for Joe Blade. Richard gets the **GAMES COMPENDIUM** which should keep him away from the computer for a few hours.

This issue we have up for grabs **AN ELECTRONIC MEN BACKLASHION GAME** that is great fun once you figure out how to use it! Mind you it becomes an addictive so might decide to keep it just in case you had to see if the hardware worked, didn't we? If you want a chance of winning this neat little bit of electronic kit then you had better get some of these tips. Note and maps in. A few complete solutions to subscribers or others would't go amiss either. Hint, hint!

Send your tips to:
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 New Atari User,
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ST16 1DR

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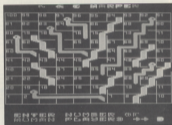
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SLIMES & LADDERS

Kevin Harper presents a machine code version of one of the classic board games for up to four players



Snakes and Ladders is as well known that it seems almost superfluous to include instructions of how to play. You just climb up the ladders and slide down the snakes but in this version the computer takes care of all this so all you need to do is play.

When the game is run it will display the title screen and pressing any key will take you to the game board. Now you can select the number of players (up to four) using the SELECT key. A demo version is also available by selecting 'D'. There will always be four players playing with the 'non human' players controlled by the computer. The demo is just the computer controlling all four players.

Having selected the number of players the fire button will start the game. If you selected the demo then pressing any key will return the game to the title screen and pressing SYSTEM RESET at any time will also take you back to the title screen.

That's about it, just get some friends together and play!

TYPING IT IN

Although the program will check all data lines when it is run we recommend that you use TYPO 3 so that no errors are made in the loading routines.

Type in the listing as shown and SAVE or CSAVE a copy before you run it. Disk users should have a formatted disk ready with DCG written to it. The program will create an AUTORUN.SYS file which will enable the game to be booted straight from disk. Cassette users can create an autoboot tape. In both cases the OPTION key must be held when booting to disable Basic.

SNAKES & LADDERS

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 92 3 224 *****
 93 4 224 *****
 94 5 224 *****
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continued

WRITING ADVENTURES

I love playing adventures, or role-playing fantasy games. There are many available for the Atari 8-bit computer, commencing with Scott Adams' Advent and ending to the recent sophisticated offerings from Level 3, Infocom, and Sierra On-Line.

Adventures permit the player to take the part of a hero, a villain or an explorer, and investigate new worlds, limited only by the imagination of the adventure writer. Adventures have been played between people, with one acting as the referee, or "dungeonmaster", or in books, where the next page you read depends on the answer you give to a posed question. But it is the microcomputer which has made adventures available to all, taking on the role of the dungeonmaster and leaving the player free to concentrate on solving the game.

The major problem for the owner of an Atari 8-bit computer is the sad disappearance of the biggest names from programming adventures for their machines. The original adventures by Scott Adams - formerly a series of Cereb - are now available with difficulty, although New Atari User is still selling some of the disk versions. Level 3 has pulled out of the Atari 8-bit market, while Infocom appears to have been broken up (New Atari User, Issue 48, Oct. 1988). Consequently few new adventures are being written for Atari owners.

My reason for writing this, the first of four articles, is to encourage other readers to take up the programming of adventures so that I may play some of them. Writing adventures is, in outline, quite simple and these articles are intended to encourage wider dissemination of the technique. The most important requirement for the programmer is imagination. It is a great pity that so many adventures seem to involve tedious dialogue by underworld cretins. It is a characteristic ailment to adventure writing that the programmer cannot benefit from his own creation. Having created the puzzle, the programmer can have no interest in solving them since he already knows the answers. It follows that I cannot solve the problems of my own admission to adventures by creating new ones of my own. Yes, dear reader, must make your adventures and try to sell them to people like me!

This last part writes themselves will describe the writing of a complete adventure called "Merlin", and will comprise the following:

Part 1 - Outline of adventure programming. Method of creating rooms.

Part 2 - The Parser, Descriptors and Help text. Moving and catching.

Part 3 - The full listing of the adventure "Merlin", written by me, with a few additional notes. The solution to the adventure is included so-as to be difficult to read accidentally.

Part 4 - Appendments to the program, Screen clipping. Data compression. Discussion of programming aids and other aids and tools.

TYPES OF ADVENTURER

The adventurer typically falls into one of two classes. Firstly, the player may be involved directly as in "You are standing before a waterfall. You see the sun reflecting on a bright stream."

Alternatively, the player may command a puppet: "I am standing before a waterfall. I see the sun reflecting on a bright stream."

It is purely a matter of personal taste as to which approach the programmer adopts. I myself prefer the control of a puppet; disasters don't seem so painful!

THE QUEST

The adventurer always has to fulfil a quest. It may be to find a treasure, to rescue a princess or simply to escape alive. The quest for "Merlin" is given at the end of this article.

TYPES OF ADVENTURE

Three types of adventure can be distinguished.

1. Arcade Adventures

These take place in real time. The adventurer moves a puppet with a joystick through screen representations of different rooms. Periodically the puppet gets chased around by a few moving characters; occasionally the puppet opens a treasure box by inserting coins.

Arcade adventures can be great fun - the best known for the Atari 8-bit machines is probably Quality Software's "All Baba and the Forty Thieves", which sadly is not compatible with the XL models. It is possible to buy a program in ROM called "Adventure-Creator" from Spinmaster Software (available from Data International, who advertise in New Atari User, #12)

by John White

Part 1 of a series which explains everything you need to know to write your own adventures

which greatly simplifies the creation of this type of adventure. Tony Stride's book *Short Adventures* (Shandor Publications) also contains a lengthy tutorial about writing arcade adventures, complete with an illustrative program.

A modern variant of arcade adventures can be seen with some of the high speed, high resolution graphics computers, where a wonderfully animated character traverses beautifully illustrated background scenery, stopping occasionally to read notes. Unfortunately with these games, once you have finished marvelling, what are you left with? A sprite moved by a mouse to click onto a screen location. And you're paid for all these very elaborate graphics.

This series of articles does not address the programming of 'arcade adventures'.

2. Text Adventures

Text adventures are my favourite. The human imagination supplies all the illustration which is required, while descriptions of the rooms which you are in can be, according to the programmer's taste, terse or verbose. The player is given a description of the room and its articles, a list of the ways out and a prompt:

WHAT DO YOU DO NOW?

The player then types in his response, such as 'EXAMINE WATERFALL'.

The manner by which the program handles the player's input is called the Parser, and can be simple or complex. This will be dealt with in the next article.

'The Quill' was a machine code program released many years ago for the Sinclair Spectrum and some other micro-computers. It enabled the user of the program to create text adventures quite readily once the adventures had been designed on paper. Consequently, it enabled the adventures writer

to concentrate on the game itself, rather than on its implementation.

Adventures written with 'The Quill' were at one time commercially very successful for the Spectrum, but similar low-writing programs do not appear to be available for the Atari 8-bit computers.

3. Text Adventures with Graphics

A number of text adventures are enhanced by the addition of graphics at key moments. For example, you enter a room, your view drive slides into life, and a picture of the room with a fire-breathing dragon appears. Adventure programs enhanced in this way include such old standards as the *Secret Adams* adventures and some of Level 9's offerings.

Again, this is very much a matter of personal taste. I don't like having my mental picture ruined by the artist's imagination, I don't like waiting for the picture to download from disk and I don't like the thought of having to pay for the artist's labours. Therefore, this series does not address the problems of adding pictures to an adventure.

TIMER

Adventures can be improved by the introduction of some type of time control, so that part, or all, of the adventure has to be completed within a fixed time period.

Real time clocks can be used for arcade adventures, but these are not suitable for text adventures where the player expects to be able to sit and think about a problem before moving on. In the latter case, time appears to run out after every action that is taken. The classic example of this occurs when an oil lamp, or torch, begins to run out after (say) 50 turns of use. Usually the player will be advised of the impending demise of the lamp.

'Mudball' implements the latter type of time control, and the player has to complete the whole adventure within 100 turns. However, a limited state to increase the number of turns allowed will leave the reader to find out how!

Now let us move on to look at programming requirements in more detail.

THE PROGRAMMING LANGUAGE

Speed is definitely an advantage for a computer adventure program. No player likes to have to wait for a response to an action, so the code should be made as fast as possible. The recent subject for showing an adventure class is the

parser, improvements here will be discussed further in the next article.

It is not surprising that many commercial adventures are written in machine code. This provides the speed, it provides efficient use of computer memory and it provides some protection against prying eyes. However, machine code is not ideal.

Since this section is intended as a tutorial, the "MELMAN" adventure has been written substantially in Atari Basic. A little machine code has been added to help with the parser. This provides a program which runs at an acceptable speed.

The public-domain program "Turbo Basic" (available on disk from New Start Direct) runs about three times faster than Atari Basic, while compiled Turbo Basic programs run about ten times faster than Atari Basic; a gain in speed which is well worth having.

For this reason, "MELMAN" has been written in a way which is compatible with Atari Basic, Turbo Basic and compiled Turbo Basic. The compiled version appears to be almost as fast as a "proper" machine code adventure.

There are some complications in the code caused by the need to accommodate three versions. Differences with the Turbo Basic compiler will be discussed in article 4 of this series, but meanwhile the reader is asked to be patient with what may appear to be some eccentric Basic programming, caused by the need to accommodate the Turbo Basic compiler.

One obvious difference between versions arises from the parser. Turbo Basic and its compiler have a command called `INSTR`, which finds the location of a small string in a larger one. Atari Basic lacks this valuable feature. Therefore, the parser of "MELMAN" contains a machine code routine which almost exactly mimics the `INSTR` command in Turbo Basic.

APPEARANCE AND VERBOSITY OF PROGRAM

For tutorial purposes, the adventure will use a simple scrolling text screen, with each room being re-described after every action taken in it. Similarly, the descriptions of the rooms will be comparatively sparse to save computer memory and a great deal of typing.

Professional ways of improving the appearance of adventure programs, and of making room descriptions as verbose as those of Level 9 using data compression techniques will be described in article 4.

It is important to realize that good adventures do not need hundreds of rooms and pages of room descriptions. Level 9's programmers gave a fascinating interview in New Start User Issues 34, August 1989 where they acknowledged that adventures are getting tired of globe-trotting and map-drawing around huge dungeons. Most people prefer limited movement and puzzle solving.

It is worth recalling that Scott Adams' first masterpiece, "Adventureland" - still my favorite adventure - had only 28 locations and a single power.

GENERAL DESIGN OF AN ADVENTURE

Puzzles must be solvable with common sense or limited knowledge. Hints, too, in the form of a clue, should be given where difficulty may be encountered. All this may sound

obvious, but it is surprising how much knowledge some adventure writers tend to assume. Not everyone knows that garlic keeps vampires at bay.

Users should be warned from all adventures. They appear to have registered with "Colossal Adventure", one of the first adventures ever written for a computer, which had "scary little passages" and "baleful victory passages". Users want the adventure frustrated, but never seem to serve any useful purpose.

TESTING

It is essential to have an outsider test a completed adventure in order to check for unexpected actions or errors.

My wife played through all of "MELMAN" without raising. However, a friend was misled by the statement "Enter two-word commands" and tried unsuccessfully to GO NORTH instead of typing NORTH or N. The "MELMAN" adventure was accordingly modified to take account of this (hitherto unexpected) problem; proof of the necessity for independent testing.

GENERAL STRUCTURE OF AN ADVENTURE

It is very important for anyone considering writing adventure programs that their adventures should fit around a general structure or pattern, which can easily be changed from one adventure to the next.

It is possible to write a single adventure as a series of IF statements, for example:

```
IF you are under the waterfall,
and IF you are carrying an umbrella,
and IF you say the magic word
THEN the waters will part.
```

but this is extremely inefficient to code, slow to implement and impossible to adapt to a new adventure. You tend to see this kind of adventure in program listings in magazines!

Scott Adams wrote a general structure for his adventures, so did Level 9 and countless many others, and so have I for "MELMAN".

PROGRAM STRUCTURING

All computer programs should be structured. "Structured" is a horrible buzz word with no defined meaning - I once read a book about Structured Programming which never even told the reader what "structured" meant - so I shall limit it to my own definition.

"MELMAN" is a structured program because every programmable action, including initialization, is included in its own sub-routine called by a main routine. Conversely to what some people would have you believe, there is no logical reason why GOTOs should not be used within a sub-routine (but not to jump from one sub-routine to another, which may cause problems with the RETURN stack).

"Top-down" programming would mean that I write the main routine first, supplying all the detailed code subsequently in the sub-routines.

"Bottom-up" programming would mean that I write all the detailed code first in different sub-routines reserved for every action. Then I would have written the main, calling routine. "MELMAN" will be discussed as a "bottom-up" program.

A CURTAIN RAISER

Daniel Lea presents an impressive way to start off your programs

The best way to impress others with your programs is to hit them right at the start with something stylish. Here is a little routine that can be added to the start of even the most simple program to give it a really professional look.

You can add your own messages by changing lines 53 to 75 but you must be careful in placing your text as results are unpredictable. It is best to experiment using the existing wording on a basis. The text in lines 53 to 63 will appear when the 'curtain' is opened and the text in line 75 appears over the initial 'curtain'.

The routine will exit to a normal Graphics 3 screen but several necessary locations are not cleared so if you want to use *Player Missile Graphics* or page 6 it is essential that they are cleared first. Check the various locations that were POKEd at the beginning to copy of *Mapping The Atari* as going to be handy here to determine what they should be reset to. One way to do this would be to POKe these locations before you load and run the program so that you can POKe back the original values before running your part of the program. An alternative way of using this routine would be to set opening title which would then load another program from disk.

We would be happy to receive any improvements on this idea or amendments to the program to make it more user friendly.

```

50 1 000 *****
51 2 000  a CURTAIN RAISER
52 3 000  by
53 4 000  Daniel Lea
54 5 000  *****
55 6 000  REM STATE OPEN - 100 PI
56 7 000  *****
57 8 000
58 9 000
59 10 GRAPHICS 3:5:PRINT USING #000, @1000:5:PRINT US
59 11:1000:0000, @1000:5:PRINT USING #000, @1000:5
59 12:1000:0000:0000, @1000:5:PRINT USING #000, @1000
59 13:1000:0000:0000:0000:0000, @1000:5:PRINT USING #000, @1000:0000:0000:0000:0000
59 14:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 15:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 16:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 17:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 18:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 19:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 20:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
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59 22:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 23:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 24:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 25:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
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59 27:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
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59 41:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 42:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
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59 70:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 71:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 72:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 73:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 74:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 75:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 76:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 77:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
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59 91:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 92:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 93:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 94:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 95:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 96:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 97:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 98:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 99:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000
59 100:1000:0000:0000:0000:0000:0000:0000:0000:0000:0000:0000

```

AMAZING MAZES

WARNING: This article reveals the solutions to many adventure game mazes!

Mazes have fascinated mankind for millennia - the earliest recorded one being an Egyptian temple with 3,000 chambers, built by Amenemhat III around 2000 BC! The most famous labyrinth of ancient times was of course the Cretan one wherein wandered the Minotaur - really it probably never existed. Mazes were drawn on the floors of French cathedrals in the middle ages and hedge mazes like the one at Hampton Court have been popular for centuries. In more recent times there have been countless puzzle books full of maze and intransoluble plastic puzzles requiring you to roll balls through mazes of coloured plastic.

It is not surprising then, that when Crowther and Woods produced the original *Adventure* in 1976 they incorporated a couple of mazes. These included words. You are in a maze of rocky little passages, all alike, obviously made a major impression on the world of adventure writers. For many years no skill-testing advent game was complete without a maze!

These early mazes are really solved provided you have enough items to drop into each 'room'. (Regardless of whether they are actually rooms or parts of a forest or desert, or whatever, I will call them 'rooms'.) Some mazes you need to understand just the route between two adjacent rooms (see maze as in Fig 1), whilst in others I need going first then West then North take you back to Room 10; some mazes are one-way only (e.g. climbing down a hole).

Mapping these early mazes involves just dropping an item in each room, then trying each route and drawing a map showing how the rooms all link together. This works OK for small mazes, but large

ones which have the rooms joined together randomly can end up looking like spaghetti if you have nine-way routes leading N, S, W, E, NW, SE, NE, SW, W, and Doors (and sometimes even In and Out) from each room.

The technique with more complex mazes is to draw a grid representing the links rather than actually trying to draw the maze. Draw a grid as in Fig 2, marking each room with an item and numbering each room as well. Then fill in the grid to show where each route leads from each room. Figure 2 shows a partially completed grid showing for example that going NW from Room 2, before you have dropped a map, takes you to Room 3 (before you have dropped a key).

Once you have mastered these techniques and solved a couple of mazes the standard maze becomes a little tedious, yet it occurs everywhere: the Desert in *Jards of Egypt*, the *Travellers' Tavern* (just stand still) and the *Waves* (wait for the boat) and *Lost in the Forest* in *AdventureQuest*, the *Footfalls* in *Base* (all that but you don't have to drop items - these are *Footfalls*, *More Footfalls*, *Trillion Footfalls*, *Endless Footfalls*, *Dull Footfalls*...), the *Water Field* (the *Red Wheel* in *COMBAT* (start in *Detours* in *Elden*), the *Hedge Maze* in *Lords of Time*, the *Optics* (see in *Crusader's Maze* (made worse by the fact that some of the connections change randomly), the *Iron Passages* in the *Optics Adventure*, the *Path Forest* in *Assassin*, the *Desert* in the *Amulet*, the *Desert* in the *Wizard* and the *Plains*, aka *Adventure* in *Perseus* (Maze aren't enough items but the problems allow you to differentiate the Maze of *Fire* in *Adventureland*, the *Maze of Caves* in *Prince Adventure*, the *Coal Mine* in *Dark Land* however, the last gets on *Survive!*)

Fortunately most authors soon realised that this was getting a little bit boring and started adding extra twists to their mazes. Some are just jokes like the 'maze of rocky passages' inside your brain in the *Hitchhiker's Guide* to the

Galaxy - you don't have to solve it, just dislodge your Common Sense; or the *Ironwood Maze* in the *Forest* - with a warning sign outside saying 'This maze is totally irrelevant to the adventure', and it really is - this maze of 'existing passages' is completely useless and unsolvable but you can get out very easily just by typing LEAVE MAZE!

Others are twists on the standard maze, for example how do you map the tunnels in *Arden* as a *Badger* when you can't carry anything? Simple, just make claw marks in the mud! Or the *Black Rooms* in *Red Heaven* - these are easy as there are 16 rooms and you only have 13 items - you CAN actually crack it with the grid method if you spend AGES on it, or you could just understand the sign at the entrance which says 'Take 50 *ROBINS* in the *Black Rooms*', 50 *ROBINS* is actually the route through the maze (po@ARTIL.COM.UK)

Some mazes are intentionally insoluble - you need help from someone. In the *Waters* in *Starcross* you must follow the chief, in the *Mountains* in *Minotshadow* you will almost certainly die as the *quintillion* unless you find the map. In *Arden* you cannot cross the *Pool* (big without instructions from the priest). In *Illustration* you need the instructions from the computer to know that you must walk first the number of this *Antagonist* Room then the number of the last one you were in, then double the answer to work out which direction to go in next - how difficult can you get!

Of course there is a completely different kind of maze in many of the graphically oriented games. How if you look real at the screen as the programmer can't tie all the buttons together with spaghetti like the tunnels, and normally if you go North then South you get back to where you started! The whole of *DungeonsMaster* is really just one big maze, and the same applies to most fantasy games - *Amphib*, *Alternate Reality*,

Dragons of Flame, Heroes of the Lance, Knight, Wizard, Bard's Tale, the Dungeons in all the Ultima, and so on. These are made more complicated and interesting by the use of teleports, rate limits, one-way doors, secret doors and other obscure tricks to attempt to confuse you!

Arctic Adventures and The Firm Gates often require you to map areas (e.g., Stone, Pitfall, Cadaver, Back to the Golden Age and countless others), but what interests me is the clever ways people have added mazes to what appear to be standard mazes by text adventures. Magister Scoble do it in the Guild of Thieves which the only way to cross the coloured squares is to realize that the sign 'WORM-AN IS ROSSBOW' backwards - you have to walk on the colours of the mazes in reverse order, and in Fish where which direction you move when in the Dimension affects which rooms come out of the next room - most confusing! Level 9 do it in Worm in Paradise where, to use the Etern Transport System, you need to find the colour code of

your destination, decode it to a number, convert it to letters, and interpret the result as a set of instructions to go E or W in certain times. Even when you understand it you need to write a program to work out the result!

One of the most ideas was in Philogher Quest where you have to find your way out of a whale's stomach - unfortunately the whale tends to bury every few moves and there you stand miserably so mapping is impossible. The solution is to light a torch and see which way the smaller moves - head the other way and you will soon reach the blowhole!

More inventive mazes are Indominat (What? In Indominat? Well! Even on Zork 1 they added the hint of the start picking up or moving your normal. The next 3 Zorks all had interesting mazes.

Back to You will wander forever around the Dobby angled floors unless you realize that the wooden slab marked 'Bake Platform', the wizard's ghost 'You'll never get to first base at this rate' and

the fact that the window on the floor is a diamond are all clues pointing towards the baseball. All you have to do is get a 'base run' by going SE, NE, NW, SW, to make the window glow and a trapdoor open!

Zork 2 - The Royal Palace is not just a maze, it is a maze which you have to rearrange were you realize that it is made up of wondrous blocks which you can push around, though you are not helped by many marble pillars which are intractable.



Zork 4 (Sherbanior) The Sherbanior rooms are very easy to map and don't appear to go anywhere! But that the Magic Portal and the Magic Map and you realize that the tunnels are actually identical to the lines on the map - you can use the pencil to add a line and reach another location - then you need to be very clever with your rubber and pencil in order to tap the doors while getting out yourself!

Zork 5 (Specterlord) This is a superb 3-D maze made of glass so that you can't see which direction you walk or whether the next room has a floor or not! You can use the DYUK (limited) flying spell you learn at the end of Sherbanior to map part of it - but to complete it you will need to find out how to turn yourself into a bat with PREDIC! The beauty of this is that with the bat's radar you can now 'see' the maze in a further twist, you have to return through the maze body pursued by a Deer Beast, and just before you enter it all the paths close to create a new maze!

Zork 6 (Specterlord) The Octagonal

rooms maze is quite small, but the maze problem here is that there are no exits from any of the rooms! You have to use a magical artifact to create them - but you can only create one in any given compass direction - very clever!

Other Indominat The maze in Journey to Nice - an area on you drop an item to indicate that you know how to map it! It never shows you the map and! You don't have to map the enormous Hedge Maze in Hollywood High - just find the two halves of the maze completely

if yourself is completely pointless as you have to have the map to know where to dig! The Lords of Goodness of Phobos provides you with a map of the Catacombs in the game package but you will still never get out unless you also read the cards that comes with the game which tells you how to avoid death at the hands of the Great Devils, Great Crabs, and Great Worms which follow the tunnels!

Perhaps the choice for my all-time favourite maze is the Airport in Bureaucracy - you will wander forever unless you ignore the signs and take the route that DOESN'T claim to lead to your destination!

Well I hope that you have enjoyed this trip through the amazing world of computer mazes and hopefully my adventure writers reading will take it all to heart and try and ensure that their next maze is INTERESTING! Meanwhile how about writing or reviewing your favourite maze? And, in case you are wondering, there is no single machine on which you can play all the games mentioned above!

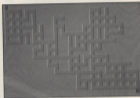
**Explored
by
John
Sweeney**

MONSTER MAZE

Whilst a lot of young people enjoy machine code about 100 years as much as the older Atari owners the youngest are quite happy with simple games that they can cope with easily and which can provide sufficient challenge along with the possibility of actually winning the game.

My children have been playing games on their Atari for several years and Monster Maze is still one of their favourites despite being a relatively simple game to write and play. I am sure that other children, and perhaps users of all ages, will find Monster Maze fun to play. The objective is simply to guide your player, a red dot, out of the maze before the monster, a blue dot, catches him. Simple but great fun.

The program is documented below so that you can understand what is going on and perhaps you will be able to improve the game. The version here is for one player against the computer but the disk for this issue also contains a two player version in which one player controls the monster.



by David Lamont

PROGRAM DESCRIPTION

Lines 10 - 95 - Initialises variables and goes to subroutines which set up and start the game.

Lines 100 - 1000 - The main move routine gets input from the joystick and uses LOCATE to see if a move is possible. The X and Y coordinates of the red and blue dots are compared and the blue dot is moved closer to the red. Line 500 is a delay to slow things down a little.

Lines 1000 - 2170 - The game goes through five mazes, each one a different colour. The variable C% is used to set the colour in the FORE command in line 1050. The screen is filled with a colour then the MOD function determines the direction the maze takes. Half of the maze is played from the top left and half from the bottom right.

Lines 2200 - 2990 - When the maze is complete the blue and red dots are placed in their starting positions. The joystick fire button or the START key start the game. The OPTION key can be used to release the maze if the two halves don't join up.

Lines 3000 - 3000 - Colour and a cheerful sound are used to indicate a win. There is also the option to continue playing or to end.

Lines 3000 - 4000 - Colour and the sound of a gong are indicate a loss. A successful maze is also played. Once again the option is there to continue or end.

Lines 4000 - 5000 - This quiet but colourful subroutine displays the score at the end of the game. The choice of starting signs or ending is also there.

Lines 5000 - 6000 - This rather tedious bit of graphics prints a title for the start of the game. To skip this bit you can start the game by entering COTO 40.

Lines 6000 - 6970 - This part of the starting subroutines prints instructions.

Lines 9000 - 9070 - DATA used to print the starting file.

MUSIC PAINTER

As a long time Atari 8-bit fan, I was delighted to see Page 6 obtaining stocks of classic 8-bit programs and, even better, selling them at bargain prices! There's something for everyone, and even the budding computer music maker hasn't been forgotten. For just £7.95 he can now become the proud owner of *Music Painter*, a computer music package allowing the composition and playback of music using the 8-bit's internal sound chip.

Having to learn standard music notation often puts people off getting started in music making. *Music Painter* is aimed at the complete novice, and easily gets round this problem by using a much simplified notation method. The screen shows you not a full musical stave, one for the treble clef and a partial one for the bass. This gives a note pitch range of three octaves, ample for use with the sound chip. Notes are represented by coloured lines, which may be "pointed" onto the staves under joystick control. Placing a line higher on the staves produces a higher pitch, moving it lower results in a lower pitch. The longer the line, the longer the note plays - you can't get much steeper than that!

Surprisingly, the program is fully chromatic, that is, it can handle all twelve semitones to an octave, making it possible to reproduce virtually any music to any key. Each semitone has its own colour, making visual identification of a note's pitch quite easy. Once again, the program tries to simplify the difficult concepts - sharps, flats, and key signatures again aren't handled in the usual notation, but by modifying the way in which lines representing notes are placed on the staves.

JOYSTICK DRIVEN

The program is almost totally joystick driven. The only exceptions are use of the *Reset* key to clear a musical piece from memory, and the buying of a *discome* when saving a new piece to disk. Everything else is achieved by using the joystick to select an line to choose an option, or to position a note on the staves. The note positioning operation is aided by the program displaying the names of the notes in the cursor passes over their positions on the staves. Here though, it does use standard note names and sharps and flat signs, so you can at least start learning about them.

After positioning the cursor for the required note pitch, a press of the joystick button paints the note into place. A single press results in a note of the shortest duration, longer notes are formed by holding down the button and moving the joystick to the right. This causes the screen to scroll, painting a continuous line for that note, with its duration represented by the line's length. It's also easy to change existing notes, and to delete, insert, and copy one or more notes in an existing piece.

I was disappointed to find the program only handles three voices, rather than the four available as standard on all Atari 8-bit machines. Thus, it can only play three part harmonies instead of four. The disk supplied also carries a Commodore 64 *Hydra* version of the full language version of the code on disk too, so it looks as if *Music Painter* has been designed down to the lowest common denominator. However, the notes

John S Davison discovers a way that anyone can make music even if they know nothing at all about music!

probably won't miss that fourth voice much, so why worry? Each voice can be independently assigned one of four sounds, namely piano, flute, violin, or drums. As these sounds are generated internally by the sound chip rather than being digitally sampled, you wouldn't expect them to sound anything like their names, and indeed they don't. However, they do provide scope for simple experimentation with different sounds.

BACH TO FATS WALLER

Other functions provided allow you to set the bar line to accommodate different time signatures, to alter the tempo of playback, to independently turn on and off each of the voices; to easily play short sections of the piece; and to quickly scroll backwards and forwards through the music. There's also a set of file functions allowing you to load, save, and delete files from disk, and to expand a directory listing. The supplied disk also includes a set of music files, covering styles from Bach to Fats Waller. You can load and listen to these straight away to quickly get a feel for the program's functions and capabilities.

Overall, I like *Music Painter*. It gives the beginner a basic introduction to computer music making, without getting bogged down in musical theory. The corollary, of course, is that it won't teach you much about music theory either, but then that isn't its purpose. Its aim is to turn your computer into an aid to musical creation, in a way that virtually anyone can use - something it achieves admirably, if you've ever thought about getting into music making with your Atari 8-bit machine. *Music Painter* is probably the simplest music available. And at £7.95 you can't really go wrong!



MUSIC PAINTER
Atari/Page 6
£7.95
Reviewed by
John S Davison

PANZER



Michael Ingham takes an in-depth look at a wargame that offers five historic scenarios

A Wargame of German Armoured Infantry on the Eastern Front - made the legend across the top of the large box containing Panzer Grenadier. This is complemented by the illustration of tough-looking characters in improvised rural camouflage leaping from a troop carrier heading grenades and being submachine guns - rather more Hollywood than history!

This is the third in the series of Inger Damon designed wargames for 8-bit PCs. The first was Operation Whirlwind (Reviewed/Reviewed by Field of View), Panzer Grenadier and Vietnam. Finally came a Wargame Construction Set for D-I-Y gamers all after the first published by SDI. All the Damon games share a family resemblance in that they are basically tactical battles involving infantry with support weapons, armoured units and artillery, in which you the player can take only one side against the computer; you cannot play a scenario first from one side and then the other.

Opening the box of Panzer Grenadier, you find a double-sided and one of SDI's handsomely printed booklets, the introduction section setting the scene by putting you in command of the Grenadier regiment of the Grossdeutschland Division. Historical note - the Grossdeutschland came into existence as a motorised infantry regiment formed from the Berlin ceremonial guard unit, later expanded to divisional strength by adding a Panzer and a paratrooper plus divisional anti-

airy, etc. An elite of the very few named rather than numbered units in the Wehrmacht (as distinct from the Waffen SS) it was an elite formation and was equipped and staffed accordingly.

The introduction states, however, "some irony has been taken in commissioning the game to the computer", so this is not a game for the wargaming purist who insists on a historically accurate scenario.

Movement rates and weapon ranges are not strictly in ratio to one another - and you do not have the full range of weapons that such a regiment might have had. There are two scenarios where you will certainly need your anti-tank company and paratrooper platoons some way or leave! On the other hand, after the French battle even the anti-air is useless at anything like establishment strength. Commanders fail to manage well when they lead, too. Moreover this occurs in "Panzer Leader" (Featured one desperate counter-attack against a Russian Infantry division plus tanks by a Grossdeutschland battle group of a paratroop detachment of about twenty tanks, one company of the reconnaissance unit, one battalion of Infantry in half tanks and one troop of self-propelled artillery commanded by a divisional staff officer. Some of the scenarios are not too difficult!

The game side of the disk is loaded first, then the Scenario side which first offers the choice of loading a saved game, choosing another scenario from the file in the game or loading the scenario shown. Pick your battle, choose the difficulty level, then either fast or slow speed which only affects the fire and enemy movement phases, and, unless you can pick out the unit firing, count how many times it fires and load the messages at the bottom of the screen at lightning speed, pick slow by pressing Start.

Up comes the map and you are into the first phase of the first turn. All the Damon-designed games, like most wargames, are split into turns which are subdivided into phases, but in Panzer Grenadier, the first phase of each turn is Observation, which avoids the screen to scan for terrain like enemy units are full-ups, the rest are fairly obvious, and in the lower part of the map you will find your starting map. This varies from scenario to scenario and is made up from infantry, paratroopers, machine guns, mortars, reconnaissance units, assault guns, self-propelled artillery and three types of tank. Place the mouse over a unit and its details are shown in the text window below the map (note the number at the right, this is the number of "half-turns" present and how many times the unit fires per phase. At the beginning most units have two but tanks can be 4 or 5. Most occupying it is drops to 1 - that unit is on the last leg!

Most of the icons are fairly clear but make quite sure that you can pick out the paratrooper companies, the icon is only very slightly different from Infantry but their capabilities are quite different - the number of times I have tried to clear a unit killed with an infantry company. Adjusting the brightness will not

R GRENADIER

help the confusion but it can help in distinguishing the tanks which differ quite a lot in what they can do. The only action

you can take in this phase is to order units on foot to dig-in or get ready to move.

Then follows the 1/1 movement/empty fire 1/1 fire 2/ empty movement/empty fire 2/ victory level (the score) and a new position opportunity, making up one turn. The big difference between these games which have a movement phase followed by an action phase and a homologue procedure like this is that you now have greater control. In the fire phases, each unit fires separately, so you need not waste fire on an enemy that is already eliminated. In the movement phase, each unit is moved with the joystick square by square which can be tricky if trying to keep on a road to get maximum movement - and don't get traffic jams in scenarios 2 and 4 by running out of movement on a bridge or into a field gap so blocking other units.

SCENARIOS

The scenarios are, I think, mainly possible actions rather than detailed reconstructions; detail is usually very difficult to get at the tactical level anyway, even for WW1. They are:

Bridges over the Lacheman - recapture three bridges and then hold off a counter attack. The best suggested in the guidebook works reasonably, but that in 'The Electronic Battlefield' is even better.

Cards on the table - the attack on the Kursk salient. This is "authentic" in that the GD chooses men in the operational of the smaller pieces and is clever in getting the best squares of the designer's mind. My favourite - I've got to get more a closer victory at the Advanced level. One tip, if you break through the first defence line quickly and cheaply, save the positions, then you can try several ways of getting into the town, over the bridge and off the map.

Dredged - stop the tanks breaking through. If the GD were in control how it would have been at that time '45 and, although this is an infantry game, I've got to find that their best plan here in this game. Infantry is quite weak against armour so the choice seems either to tack them away or to dig them in on the front line where they will probably be lost but they draw fire away from your tanks. Tricky!

One more river - move into a town and defend against the counterattack; if it was in Germany, it would have been in

Spring '44 not '45. Lots of possible lines but if you want the front just above the town, practice with the joystick; you need many squares of movement to get dug-in in time. If you have men off the attack, try sending your reserves units up to the map top; you may get a surprise.

Wilkesheim - this time you are part of an attack and there are again many ways of getting about it; only one tip, if you get the entire regiment into the town and still have only a minor victory, head your

order again.

FOR BEGINNERS?

Now the important bit, who should buy the game? Experts would suggest you'll prefer Kampfgruppe 094 for eastern front tactics, but the lighter rules when something is wanted to fill an hour or so, then should fill the bill, unless you build your own with the Construction Set. For beginners it is a good start to tactical small unit wargaming. A good rather than a great game; all the Demos series have an unrealistic amount of reconstruction by the following holes in the handbook to see if an enemy is there! but it shows how to Panzer Grenadier. Also, the scenarios of 12-15 turns are about the right length and all are possible at the first two levels. And you can still get the game when first issued. It was at £24.99 rather expensive, now at £16.95 you should get your money's worth of enjoyment. Now perhaps if I by that other mode in Scenario 2, I might have more tanks left by the time the bridge is up ...

Panzer Grenadier, along with several other wargames, is available from Miles Better Software who kindly supplied the review copy.

PANZER GRENADIER

Publisher: SSI

Price: £16.95

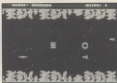
Available from Miles Better Software

MATTA BLATTA

Over the years, British Television produced some excellent software for the Atari, Macintosh and The Entourage were a couple of the best but the crime of the crop was unquestionably *Druid* - a brilliant (and highly underrated, in my opinion) Gauntlet clone that left U.S. Goli's official version destined for the dustbin (see review in issue 30). B.T. subsequently turned their attention to re-releasing some of Activision's highly regarded titles in their in-house Silverbird range, and again found an enthusiastic market. Sadly, you won't see any new games from

B.T. today but most of the existing range can still be found at prices that seem too good to be true!

This seems like a opportune moment to introduce what is probably the most recent original game to be issued with the Silverbird label - *MATTA BLATTA*. There's definitely nothing original about the theme though. It's an old-fashioned, lead-everything-in-sight, horizontal shooter with enough action to keep even the most battle-hardy veterans entertained. A game wouldn't seem the same without a plot (wouldn't it?) and Silverbird have obligingly created you as the pilot of a technologically advancing super fighter, battling to save the Universe from deadly anti-matter aliens. The credits are traversing the corridors of outer-space to break their evil destruction on the hapless and ignorant people of Earthwars - only you can



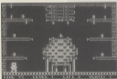
stop them. Don't be, it's a pretty straightforward shoot 'em up!

The alien craft appear at an alarming speed from the right hand edge of the scrolling playfield and you're expected to zap them into microscopic particles before they inflict serious damage on your ship-like it or not there's little you can do except close your eyes, wobble the stick and hit the trigger!

The graphics are generally of a high standard with the traditional spaceship backdrop (bordered by a variety of in-

teresting designs) throughout its levels. There are nice touches elsewhere such as a rainbow graphics demo on the title page and sound, too, is of a reasonable standard. *Druid*, *Matta Blatta* is a competently programmed shoot 'em up which could be improved by a more variable speed restriction on the incoming enemies. It is a worthwhile challenge for those expert players. If you don't fancy this one, look out for other gems bearing the Silverbird/Probird label. They're too good to be missed!

Title: **MATTA BLATTA**
Publisher: **BTWORLD**
Price: **£1.99 CD-ROM**
Players: **1**
Loading: **FAST**
Reviewed by **Paul Rice**



ZOLTAN ESCAPE

Another offering from B.Ware that, to be honest, is not at all dissimilar in nature to their other recent efforts. If you've read the reviews of *Escape*, *Cyber Wars* and *A Zone* in previous issues of *NEW ATARI USER* then you should have a pretty good idea of what this one's all about! This time, B.Ware's traditionally crackle packaging is surprisingly lacking in any hints of incredible explanation - perhaps you should view that as a bonus! You've apparently crash-landed on a strange planet

called Zoltan and your aim is simply to escape (hence the title). To reach safety you must guide your jet-powered avatar through a series of screens, collect Zoltanian fuel pods scattered throughout the levels and avoid contact with walls, floors and other dangerous barriers. If you manage to collect all of the pods and make it to the exit point before the time limit expires, you're triple achievement advanced onto a subsequent screen. It sounds too easy to be true, and naturally it is! The main problem is that to reach the

exit you are forced to travel through pulsating lasers and there's little you can do to prevent them appearing at the worst possible moment. The chances of survival aren't improved by the alchemical collision detection that can result in your character's demise for no obvious reason!

In company with other games from the B.Ware stable, the graphics fall way below the standard that *Atarians* might expect - in particular, the information screens between levels are difficult to read and the design of scenery elsewhere is decidedly uninspiring. In the sound department there are a few blips and swooshes but nothing that certainly any Atari owner couldn't produce in a couple of hours of time! Well, at least it's preferable to the dreadful case in *A-Zone* and *Escape*!

Zoltan Escape is supplied on disk or cassette directly by B.Ware Computers of Henley, although you might have guessed from the comments above that it's not about to recommend you dash off for your cheque book! If you have a big collection of shoot 'em ups and desperately want to add more then *Zoltan Escape* will put your collection out. Alternatively you might want to purchase a copy just to show your support to one of the few remaining companies interested in marketing Atari software. It's a pity that I can't recommend it more strongly.

Title: **ZOLTAN ESCAPE**
Publisher: **B.Ware**
Price: **£1.99 Cass/Disk**
Players: **1/2**
Loading: **N/A**
Reviewed by **Paul Rice**

THE DESIGNER'S PENCIL

How do you wish to program your Atari without touching the keyboard? If so, **THE DESIGNER'S PENCIL** - Activision's audio-visual programming tool for the joy of typing - could be just up your alley!

Inside the box, you should find a detailed instruction guide explaining the concepts of "Prog" - Activision's unique language - and the wider aspects of the Designer's Pencil environment. Unfortunately mine was missing several important pages but hopefully this isn't a common characteristic! Unlike most languages,

Prog allows you to begin creating code almost immediately without learning the exact syntax of commands. This is because user input is carried out exclusively via the joystick - even when entering line numbers. Following an introductory demo you're faced with a screen divided into two main windows. On the left is the program area which initially holds the coding for the demo and on the right is a list of instructions. Both windows can be scrolled vertically to reveal more of the information. Command boxes at the foot of the screen allow you to clear memory, insert and delete lines of code, run the current program, view a frame frame of the output and perform file I/O functions. The software is supplied on ROM but can be used with disk or cassette systems to load and save data. To select an option or scroll a window, just point and click

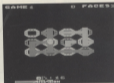


with the joystick!

Creating a program is straightforward - select the required instructions, enter any parameters needed and click on "Run" to observe the results. Prog provides some 90 instructions - if easy and daunting but there's no need to learn them all at once. There are several demonstrations stored in ROM and if you have a suitable printer you can obtain a hard copy for leisurely study. Many commands relate to movement of a "pen" - Prog's equivalent of Logic Builder. It can draw

lines, circles and arcs with up to four selected colours. Ellipses and various keyboard-escape effects. Once the limits have been mastered you can experiment with variables, conditional clauses, class statements, jumps, sub-routines, sound and more. The Designer's Pencil is a totally flexible, easy to use and fully featured tool suitable for all ages and abilities. If you want a painless and enjoyable introduction to programming or just want to improve the talk with some clever sound and graphics, it's ideal!

Title: **THE DESIGNER'S PENCIL**
 Publisher: **Activision**
 Price: **\$9.95 ROM**
 Format: **N/A**
 Loading: **N/A**
 Reviewed by **Paul Mack**



ZENJI

This title from Activision proves the adage that simple often is often more of the best. When **ZENJI** was published back in 1984 it was accompanied by a story outlining your mission as a specially commissioned "Game Knight", to explore the uncharted regions of the Universe. All this seems to have been forgotten and the game and explained by a rather uninformative summary sheet. [You'll be alerted by the game itself to its playable on most. It's based around a maze

constructed from a number of differently shaped joining segments. These can be switched to form various path configurations and the idea is simply to link all the sections together so that there are included from a computer-clarified source. The player has a third eye view of a "face" (of all things) which is manoeuvred around the maze using the joystick. The trigger opens the underlying motion of path so that the necessary connections can be made. When a path has been linked to the source it changes colour to

indicate the location of the remaining sections. A lively tune in the background plays increasingly faster as your time allowance diminishes - a clever touch that (ironically) is not equalled by the music becoming excessively irritating. Zenji incorporates eight alternative playing levels that offer a uniquely wide range of difficulty settings for one or two players. The initial scenes are quite straightforward but provide you with a useful opportunity to experiment with various tactics that are almost essential in the later stages. Note you'll discover "Items of choice", bonuses, quotas and other matters which attempt to slow your progress by disrupting the motion to victory. They must be avoided as you can only sustain a limited number of collisions before the game is brought to a halt. Points are awarded for the

completion of each screen (the less time taken, the more received) and there are bonuses on offer if you land on particular squares when highlighted during the game.

Zenji is a simple, fun concept that seems certain to appeal to players of all ages. Although the graphics aren't any prizes for outstanding quality, they are quite adequate in a game where readability is strength in consistency to increase power of addictive tones.

If your New Year's Resolution was to spend less time with your Atari, DO NOT buy this game!

Title: **ZENJI**
 Publisher: **Activision**
 Price: **\$9.95 ROM**
 Format: **1/3**
 Loading: **N/A**
 Reviewed by **Paul Mack**

STAR RAIDERS II

This game's predecessor needs little introduction - it was the factor that persuaded many people to buy their first home computer and, more a decade later, is still widely regarded as the best game of all time. Atari's follow-up - The Last Starfighter - was apparently its predecessor's introduction before it was finally officially released in 1988, with the more obvious title **STAR RAIDERS II**. In Star Raiders II, you're once again thrust into the role of a Zylon fighter pilot, but your coverage and skill budget is increased, the odds are tougher, and the Prefecture is in jeopardy. Unfortunately,

it seems that a few Zylon warriors who promised good behavior were hood to re-enthrone their home planet, and have now decided to seek revenge. The Zylon Master Force is threatening to overrun the solar system and the Prefecture has called upon the best pilot around you, that's you! to fly the last Starfighter - Liberty Star - into combat. Your mission is to eliminate the entire fleet of Zylon fighters and destroy the enemy's bases.

The battle now extends over two separate systems - Colon II, which you must defend, and Procyon, which you should attack. A colourful system chart displays the positions of the planets, space stations and squadrons of Zylon fighters and allows you to "zoom" to each location. If you're in enemy territory you must carry out ground attacks on Zylon bases to prevent



them manufacturing additional squadrons. A keyboard game toggles your weapons between laser cannons for sniping Zylon fighters into space dust and missile volleys, which are aimed using cross-hair target sights projected onto the scrolling landscape of the planet below.

Starting in the only way to describe the 3-D star-map graphics - they're even better than the original game. However, long term Star Raiders enthusiasts have expressed disappointment in the Liberty Star's sluggish controls

and the fact that Zylon can force to virtually prevent themselves for destruction. Experienced players have also complained that the scoring system doesn't incorporate the time taken to complete a mission. It's good news for legions everywhere though.

While groundbreaking, Star Raiders II is a worthy successor to a much celebrated masterpiece of software craftsmanship and, like the original, should have pride of place in everyone's collection. **FAIR** It may still have some high-priced copies available.

Title: **STAR RAIDERS II**
 Publisher: **Atari Corp.**
 Price: **\$14.95 B&M/16k**
 Format: **I**
 Loading: **N/A**
 Reviewed by **Paul Dixon**



POGOTRON

On lesser 8-bit screens, **POGOTRON** is a game based upon the search for components of a square craft which is needed to escape from an evil Guardian. You might reasonably assume, therefore, that an Atari game with an identical name, released by the same company and supplied with a similar story card could just possibly be a continuation from the other format. Well, I'm sorry to say that it's not! This PogoTron is, in fact, Paul Lay's Spring with some subtle cosmetic surgery having removed all references

to the original title. Although there is a small addendum inside the manual box explaining the revised instructions, there's no reference to the original source of the game. I'm certainly not against re-releases but this appears to be a blatant act of deception on the part of Activision, the firm of which Atari's owners were once kind of members since Edie kind of Atari owns with Blue Thunder instead of its Wolf. Be warned!

Spring was first released during 1985 by Digivox Software but review in **FAIR** it has since been subsequently by

Paul Lay following the demise of Digivox. It was Paul Lay's first commercially published achievement following some top notch contributions to **FAIR** & he and he has indeed produced some excellent work since school, out the wonderful Mandy Machines in issue 243. Your objective in the game is simply to guide a character on a page-walk through 80 action-packed screens, with the ultimate aim of achieving a long lost golden page. Travelling from left to right, you must time jumps in precision in order to leap across the various platforms and avoid a multitude of obstacles - raging fires, lava flows, laser beams, acid rain and lightning to name but a couple.

The graphics have a cheerful cartoon theme with bright and colourful scenery whilst the action is accompanied music-

ally by a large scale rendition of "Turkey Day". Despite first appearances, this is not an easy game. Spring requires instant reflexes, immediate judgment and outstanding perseverance. In short, to the best of your possible challenge that PogoTron and its similar siblings should greet with open arms!

Don't forget, if you already have Spring then buying PogoTron is a complete waste of time and money. However, if these names are new to you and you're looking for something to test your skills of endurance, this game should certainly be on the short list.

Title: **POGOTRON**
 Publisher: **Activision (Atari)**
 Price: **\$14.95**
 Players: **1**
 Loading: **10:30"**
 Reviewed by **Paul Dixon**

TUTORIAL SUBROUTINES

HOMework HELPER

I do not know how many of you who read this magazine have children living at home. I have had letters from readers who have identified themselves as being old age pensioners or ex-anglers, but I have never had a letter from anyone who has admitted to being 'father of five children aged 4 to sixteen' or anything like that. However I assume that at least some of you readers are like me, fathers (and maybe one or two mothers as well). You no doubt have a lot of concerns that the youngsters always seem to be playing games on the computer and never putting a "to-do" list on. This makes life difficult for me (usually - but we feel some sense of failure because after all we enjoy making our computers work for us as well as playing the occasional game, and the reason for getting the machine in the first place was to help the children become familiar with computers - wasn't it? Besides, there is the problem of explaining to some youngster why all that money has been spent on the computer (or software, disks, print ribbons, computer magazines etc.) as it only results in the youngsters playing games when they should be doing their homework! So we have to be a bit smart!**PROLOGUE**

THE PROBLEM

I have had some success in persuading my boys to do a little word processing and to use a graphics program to do drawings for CDT homework, but this is small stuff. However a couple of months ago I had an opportunity which turned out really well. My younger son came home with a piece of homework which went as follows:

'If the letters A in Zare given values 1 to 26, find five words whose letters add up to 100 exactly.'

The concept is not difficult to understand, but the implementation by conventional pencil and paper is very laborious, particularly as most of the words you think of add up to anything but 100. It occurred to me straight away that this problem could be helped by using a short program. What we needed was for the computer to calculate the addition for us. A quick analysis of the problem showed that the program would have to include the following steps: type in a word of

variable length, split that word into its component letters, take the value of each letter, work out the sum of all the letter values and save the word only if the total equals exactly 100. I did also think about the need to check the word for correct spelling, but I do not have a dictionary database or spell checker for my jewel so I did not pursue this thought any further. Anyway I had to keep the programming requirement as simple as possible so the program would take longer to write than solving the problem by hand.

THE SOLUTION

The real result was the short listing printed here, but we give a description of how it works.

- Line 80** - This sets up a DIMension for the word(s) which are to be typed in. I have assumed that we will not need any words longer than 60 letters, but maybe someone can prove me wrong!
- Line 88** - ensures that the string WORD\$(1) and the variable TOTAL are both reset to nothing.
- Line 90** - is where the word is typed in.
- Lines 95 to 100** form a For Next loop which repeats for every letter in WORD\$(1).
- Line 105** gets the value of each letter. It assumes that the word is typed in capitals. For capital letters the ASCII value of A is 65. It is 66 and so on, so to get 1,2,3 instead of 65,66,67 we have to take the ASCII value minus 64. I had originally thought of setting up A=1,B=2,C=3,etc... which would have been rather weirdly, as I was glad I remembered that letters have a sequence of values by which the computer recognizes them, and it is easy to convert to the required values.
- Line 98** adds the value of the current letter to the total of all letters so far.
- Line 99** is the end of the loop.
- Line 108** prints the value of the word on the screen so that you can see how close to 100 it is. This makes it easy to choose other words with different prefixes, suffixes, plurals and so on as an attempt to find the exact 100.
- Line 110** - Checked if the score is exactly 100 this prints the word on your printer so you have a list of the correct words. If you don't have a printer change the PRINT to ? and the word will be printed on screen so you can write it down.
- Line 120** - This returns to line 80 so that the next word can be entered.

Once the program is typed in you can test it with the word "Spiked" which is one of the many words you can find that score exactly 100.

A BIT MORE POLISHED

This little program is quite simple, but it is what you might call "quick and dirty". It did the job, but it was certainly not finished enough to pass to a friend, so since the homework was done I set down to polish it. The longer listing shows the result. You can immediately see how the program has expan-

```

01 1 000 *****
02 2 000 * PONTIAC SUBSTITUTION IS *
03 3 000 * ***** *
04 4 000 * * *
05 5 000 * Ian Finlayson *
06 6 000 * *****
07 7 000 * NEW ATARI BASIC - February 81*
08 8 000 *****
09 9 000
10 10 000 *****
11 11 000 *****
12 12 000 *****
13 13 000 *****
14 14 000 *****
15 15 000 *****
16 16 000 *****
17 17 000 *****
18 18 000 *****
19 19 000 *****
20 20 000 *****
21 21 000 *****
22 22 000 *****
23 23 000 *****
24 24 000 *****
25 25 000 *****
26 26 000 *****
27 27 000 *****
28 28 000 *****
29 29 000 *****
30 30 000 *****

```

del - This is typical of the expansion you get when you take a simple program that you have produced for your own use and try to make it helpful for use by others. Children in particular will find a way of crashing your carefully constructed program if they can.

I will not go through this version line by line as I have included plenty of BASIC statements to indicate what is going on, but in general terms what I did was make the program more "user friendly". For instance I have made it accept upper or lower case letters and give them the same value (ASCII) and so on, and it will not accept other keystrokes such as numbers and punctuation marks. I have also tried to make it crash proof - the first thing will come up with an error if you hit RETURN without entering any letters and this has been trapped, so that the error which would occur at line 100 if there is no printer on line, I have set and trapped the BREAK key to stop it crashing the program so this is the only way to exit from the program without crashing the computer off.

TRAPPING ERRORS

Perhaps I had better explain how errors are trapped as I don't think it has come up in these tutorials before. A Trap is a means of protecting against events that would cause the computer to display an error message thus aborting the program that is currently running. The trap is set by a statement like that in line 100. TRAP 210 means "if an error occurs jump to line 210". So in this case if the printer is not switched on the LPRINT in line 100 causes an error, the program jumps to line 210 which displays a message on the screen, waits for a key press and then jumps back to line 100 for another try. If there is no error the program executes line 310 correctly and then in line 110 the trap is cancelled. Line numbers above 52787 are illegal in Atari Basic and will turn the trap off. This allows different traps to be set in different places in the program depending on what errors are likely to occur.

As I write this article I am about to give the framework problem to a friend of mine who is a teacher at Windlestone House School so he can pass it to the boys in the computer club as a competition. We will see who can write the best program to help solve the framework - answers to be submitted before New Atari User is published in January!

If you have experience of using your Atari to help with homework I would be most interested to hear about it.

**Ian Finlayson, 80, Roundstone Crescent,
East Preston, West Sussex, BN16 1JQ**

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Listing 1 top left Listing 2 above

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THE PERFECT PRINTER?

**Dennis Fogerty weighs
up cost and features
and selects a low cost
printer that seems to
have everything**

In Issue 40 Ian Plattner's stated that, in his opinion, a printer is even more important than a disk drive in increasing the usefulness of a computer. Now, after owning a printer for several months, I can refer his words (although a disk drive certainly speeds things up). I also wonder why I hesitated so long pondering over the specifications of this and that model. The area of my indecision was one question — is the cheapest machine inferior to the middle-priced ones or is my way more variable? After all, I only wanted it to print a few words, some figures and perhaps some graphics. I knew how much I could afford to spend but which printer should it be? With so many makes and types on the market the problem of making the right choice seemed unresolvable. Owing to the amount of hard paragraphs/pockets searching, I went through I decided to write this article and hopefully help others who are also undecided.

My printer was required solely for home use. A vintage 80081, cassette recorder and IBM Disk Drive has given sterling service but, expanding into databases, spreadsheets and graphics, it became obvious a printed record was necessary. I took the plunge and ordered the cheapest machine on the present day market: a 9-pin Citizen 120 D, but I do admit to wondering if I was being overly wise, pound foolish. Points in its favor were a 2-year maker's guarantee and it was made in Britain.

I had already purchased the necessary, or so I thought, serial interface. And that was my only mistake. When the 120-D arrived the Owner's Manual informed me that an optional slot-in serial interface is available. Curious since then I have seen this model advertised as a standard parallel for £109.95, with serial interface, for £124, both plus VAT of course. So I could

have saved at least £15 by not buying what was the cheapest third-party interface!

The manual in English, of course, very comprehensive and pleasantly free of the usual Japanese/English mixture. The illustration showing locations of the ribbon in the print head is the only obscure item. It took me two attempts to get that correct.

Two printer self-tests are built into the machine and set up in dependent on selection of the Epson FX character set or the IBM Graphics Printer Character set. Either can be produced by dip-switches. One test prints all the 120-D characters and, at 120 characters per second (Epson), it doesn't take long! Generally, there is a maintenance well test which prints rows of the letter H as an alignment check. The Epson FX configuration was my obvious choice and both trials ran beautifully.

Dip switches also select international characters of 9 different countries. The English set I found especially useful for financial papers because the blank key becomes the pound sterling symbol on printed. Switches are under a sliding cover in front of the ribbon cartridge, but the manual only mentions that the interface pulls out for access to the switches. This can be done of course, but the cover provides quicker access and must save wear on the interface contacts. I assume provision of the slide cover to be more recent than the manual publication.

For the beginner there are numerous short listings in Microsoft BASIC which, luckily for me, requires little alteration to run in most BASIC. Some 25 pages on printing text covers at least 25 fonts ranging from Letter Quality to Heavy Print. Listings are also given for Underline, Subscripts and Superscripts. I experimented with at least eight fonts and all worked as planned. Page format including variable line spacing and margins follows, and tabulation to deal with

in detail. For the quick printout Letter Quality, Pica, Ratio, Emphasized and Reduced can each be selected with touch switches on the front panel.

Graphics, and creation of processed characters, really puts the machine through its paces, but requires advanced programming knowledge. Personally I take the easy way out by using commercial and Public Domain software. However, if you are into scientific symbols or even foreign language characters the information in there, all you need in practice. A dot-matrix HX Dump facility only requires two key-presses during switch-on. Not only does it print the HX value of every code but also the character, or control code, for each value and, in addition, prints an abbreviation of each control code.

Does a printer need to sprayer-fool fan-fold paper and a single-sheet platform with adjustable end stops is supplied. Unfortunately the tractor has to be removed every time you use single sheets, but it is such a hassle it prevents no problem. Citicore claims a print head life of some 100 million characters and replacement without the use of tools. I should be sure this before I put that in the test.

I believe in giving my own machine a hard initial life. My theory being that this would show up any faults. Unwillingly I added to this theory by inserting some paper too far to the left resulting in the sheet catching on the casing and almost screwing up into a ball before I could switch-off. As it often is, because I programmed in excess control codes, the print head and platen, like cylinder which took the paper, went blank. Such things happened more than once but, once corrected, the machine functioned perfectly so even though disappointed it is obviously quite idiot-proof!

By this time you may be asking just what is the final printed like? Admittedly Draft (120-c.p.i.) is rather busy but more than adequate for copies. Letter Quality (24-c.p.i.) is excellent, and if used in conjunction with Page Six Public Domain software, such as Daisy List II, it can equal any top quality commercial printing.

So, if you are contemplating buying a cheap, first-time printer don't hesitate!



Despite being one of the cheapest printers around the Citizen 120-D is a top class performer and has been highly recommended by almost everyone who has used it.

THE ACCESSORY SHOP

ISSUE 48

BARGAIN BOOKS

Books for the Atari 8-bit computers are now becoming very difficult to obtain with almost all the Computer titles now out of print so we are very pleased to have been able to secure a copy of some of the early British books covering the 8-bit range. Don't be put off by the low prices, we are only passing along the discounts savings we have been able to obtain. All these books are brand new and most are shrink wrapped so you will find them of top quality. If you are interested in programming with your Atari almost all of these books will help in some way and at these prices you can afford to experiment!

Please note that because of the high cost of printing books orders will only be accepted if the £1.00 postage charge shown on our order form is included.



THE 130XE HANDBOOK

A programming book which covers not only the machine referenced in the title but also the 130E, 1300XE and other models. The book will take you from the first steps in programming up to writing your own software programs. You should also read the second capabilities of the 130XE with details of the second - they will help you to create more capable programs on your own. This book covers the basic concepts of programming including Atari's 130E programming language and including chapters on graphics, sound and networking operations. There are extensive appendices covering the various Atari models, sound and graphics hardware, and much more. An ideal companion for novice and intermediate programmers.

Published price £1.99
OUR PRICE £3.00

EASY PROGRAMMING FOR YOUR ATARI MICRO

This book went out of print a year ago and we have been waiting for a replacement version. We are extremely delighted to have found some stock of one of the best authors' books ever published on the Atari range. All your programming problems are solved for a beginner's book on programming on the Atari system. It's a real find and a second hand copy of this book - even one can buy it soon again. Don't miss it! The cost of this book isn't to be written over your program, including those with full graphics and sound.



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ATARI GAMES & RECREATIONS

An Atari 8-bit book aimed at the novice programmer that takes you through from the first steps in getting acquainted with the system to writing your own programs with the emphasis on bringing your Atari 8-bit (Atari) to life. There is good coverage of graphics and sound, and a chapter on networking involving the Atari 8-bit and what to do when they appear. A complete guide to all the Atari 8-bit hardware. A good book for children to learn with as it shows you how to take the first steps in programming. It's the first book you can buy that gives you a complete guide to the Atari 8-bit system.

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INSIDE ATARI BASIC

What again has only for a short time? This book is a different but useful reference guide to writing your Atari 8-bit programs. It's not only a quick and easy to read manual but also a book you can use as a reference. It's a real find and a second hand copy of this book - even one can buy it soon again. Don't miss it! The cost of this book isn't to be written over your program, including those with full graphics and sound.



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WRITING STRATEGY GAMES

If you are fed up with simple arcade style games that are out of the market replaced by 'boring' 'boring' games like these then it's time to try your hand at writing your own strategy games. This book is packed with all the information you need to get started. It's a complete guide to all the Atari 8-bit hardware. A good book for children to learn with as it shows you how to take the first steps in programming. It's the first book you can buy that gives you a complete guide to the Atari 8-bit system.

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STAR RAIDERS



ROM
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Nothing needs to be said - voted the best computer game of all time and still more played than almost every game that has followed. One of Atari's greats throughout the galaxy, think long range space, look at windows for shooting, wrap it different weapons and all the time check the galactic charts for X-Files ahead. Very few have made it to Commander Ford. The charts, original on a green grid, requires keyboard.

Normally £9.95
OUR PRICE £5.95

MISSILE COMMAND



ROM
CARTRIDGE

One of the all-time classic arcade games that for you defending either from outside attack. Command the defence guns at various positions rain down those guns to attack your ships. Later missile missiles and fighters will appear making the action more and more frantic. For one or two players.

Normally £14.95
OUR PRICE £5.95

CAVERNS OF MARS



ROM
CARTRIDGE

Winner of one of the first Atari programming contests, this was one of the first vertical shooters and created a much sought after original game. Descend through the caverns avoiding mines and picking up fuel, highly playable and addictive, only one of two have made it to the bottom of the cavern to discover the secret that awaits there.

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STAR RAIDERS II



ROM
VERSION

This version of the follow up to the greatest computer game. Your mission is to join the battle fighter in the galaxy - the Liberty One - to destroy the enemy Star Destroyer Force. Your weapons are: Pulse Lasers for 1 mission and the Ion Beam. Watch against two systems, providing friendly beam width dropping Star Destroyer the enemy. Many great action times where Star Raiders left off.

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OUR PRICE £5.95

SUPER BREAKOUT



ROM
CARTRIDGE

Breakout was the original single yet really addictive game and this enhanced version will provide you more tables to play. The great explosion in the future there are tables for use in three players up to 8 on the 400 board. ACEE that this game requires paddle controller.

Normally £9.95
OUR PRICE £3.95

TENNIS



ROM
CARTRIDGE

Great sports the effort against the computer or another player, single or double. Hardball and backhand, 40 in the opponent's court, angled volleys, or a fast smash and back lob - they are all here. You control your position on the court and when you want to hit the ball. The electronic scoreboard will play the results. All the action without the usual

Normally £12.95
OUR PRICE £6.95

PENGO™



ATARI

ROM
CARTRIDGE

PENGO

You're just loaded in Asteroids. Your mission is to help PENGU, the penguin, fight killer UFOs and EVIL as a member of the Mafia. Just so in the arcade game, PENGU never ends or loses the deadly creatures before they destroy him. The faster he clears them, the more points you win. In original game that requires a little more thought than the standard "blast 'n' go" one or two players.

Normally £12.95
OUR PRICE £6.95

MILLIPEDE



ATARI
ROM
CARTRIDGE

Centipede was the original, this is the million of and faster version to attack the bug under the floor! 3 stage version like jumping spiders, floating ferns, floating turtles, mushrooms, dragons, and more and more add to the fun. You're not to let the bug get out of them. You, you, or two!

Normally £12.95
OUR PRICE £6.95

MOON PATROL™



ATARI

ROM
CARTRIDGE

MOON PATROL

You have faster than those of the toughest, toughest things in the galaxy. You have the finest ground car on the face of computers with anti-gravity jump feature and laser shields. You won't need more than a fast car in the rough for lots of faster than the UFOs. Long over boundaries, beautiful looks and jump high cars, cars and more cars - just to survive, faster hit graphics and good music add to the enjoyment of this addictive arcade sensation.

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MUSIC PAINTER



ROM
CARTRIDGE

An exciting educational program that helps to teach music by using colorful notes. Change the letters supplied (using in letters) different instruments, make the notes longer or shorter to increase your own range. An easy to learn help (optional) to make your own great music. Children or adults alike will get great satisfaction from being able to create their very own music.

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SKY WRITER™



ATARI

ROM
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SKYWRITER

A learning game for children from 4 to 10 that helps to expand confidence by teaching computer words. While flying through the clouds the player has to select two cross words that can be linked together to make the definition given. Sky Writer teaches basic word structure and shows of new definitions as well as spelling and reading skills.

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MS-DOS™



ATARI

ROM
CARTRIDGE

MICROSOFT BASIC II

Now you can use the industry standard Basic on your Atari. An ideal package for owners who have been to programs on other machines. Includes 140 page manual and extended features for disk drive owners. It can be used with cassette.

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TYP0 ATTACK



ROM
CARTRIDGE

A typing trainer based on the Space Invaders concept in which you have to use typing skills by shooting falling letters. An enjoyable way to learn that will quickly enable you to transcribe the keys without being back at the keyboard.

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SILENT BUTLER



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The all round personal Butler game that keeps track of three bank accounts, manages letters, records, reminds you of birthdays, anniversaries and important dates and generally keeps you up to date on your financial state.

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VISICALC

The world famous Visicalc spreadsheet available for your Atari, Visicalc will take care of all of your spreadsheet requirements with all the standard functions you could need in a spreadsheet that is 64 columns wide by 124 rows deep. All major spreadsheet functions are supported and the program even allows split viewing windows. Priced at £19.95 when first released.

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The Macro Assembler will allow you to create your own machine language programs and applications for your Atari from the assembly tables cartridge and it can assemble as many as eight separate definitions with as little as 64K memory. You can compile only, optionally available code and make better your programs. A Program Test Editor is included.

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The Coast of Miami Castle opens in a castle to be ready again, awaiting an able guide those you to overcome the enemy that stands face to face. In the Coast of Miami Castle you can play? Under your control's bested program to say through the portal of Voodoo castle. *Voodoo Castle* (Adam Douglas Adventure 42) is a Madhouse level adventure that for those who love fast & furious experiences.

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STRANGE ODYSSEY

At the galaxy's rim, there are worlds upon to be harvested from a long and alien civilization. *Strange Odyssey* - advanced technology for beyond human time... All this and more await the brave galactic adventurer. But will you be able to survive the trials and tribulations? Prepare yourself for a strange galaxy! *Strange Odyssey* (Adam Douglas Adventure 43) is a Madhouse level adventure.

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What do you want? Start an electronic diary? *Timewise* allows you to keep track of all your appointments and important dates on a daily, monthly or yearly basis. You can integrate with your diary and by your hand do the work. If you have a printer, *Timewise* allows you to print out the information in a variety of ways.

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Years of hardwork will be delighted with this. The long but spelling checker for the Australian (and/or) Proofreader may be loaded alongside. *Proofreader* is given you instant access to a dictionary of 50,000 words. If that is not enough you can add your own words as you go. Errors are highlighted on screen for correction, unusual words can be searched and you can look up spellings.

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ARCHON

A chessboard game with the force of Light and Dark being battle on each square. Cast spells and minister to gods appear and dominate your opponent's plans. Cast spells that interfere with the board's hexagonal cycle. As the light changes, so does your game. You need your spiritual skills and you need strategic abilities. A truly original game that is difficult to explain, this is for players.

FROM
CARTRIDGE

Normally £14.95
OUR PRICE £7.95

BASIC CARTRIDGE

Why would you need a Basic Cartridge when Basic is already built in to your computer? Well, you need programs, especially some early public domain programs won't run on the 5.25 inch floppy disk if you play in the old version of Basic. Much more convenient than having to load in the old Basic from this unit, at the price, worth being just in a floppy!

FROM
CARTRIDGE

OUR PRICE £3.95

POLE POSITION

The ultra-realistic graphics and sounds of the Grand Prix episode take your driving action to the computer version of this classic arcade hit. Complete a lap in qualifying time, then take on the 1000 horsepower and competing drivers in a high speed race. One of the all-time classics.

ROM
CARTRIDGE

Normally £12.95
OUR PRICE £6.95

PACMAN

Search out all the four known ghosts! Guide your happy little Pacman through the maze gobbling up dots and ghosts while avoiding the ghosts. Take a bonus PacMan every 10000 points or you rack up the score. Simple, colorful, addictive and compelling. A classic game.

ROM
CARTRIDGE

SOLD OUT

JOUST

Use your talents and take your horse and shield around an obstacle in this medieval arena game! Go heroic with the old Norman Riders in deep space. Manoeuvre to the right of you, allow gaps to the left, you must learn to fly so that you can't be so very far from home. All the classic details for you or two players.

ROM
CARTRIDGE

Normally £12.95
OUR PRICE £6.95

BALLBLAZER

Another from Lucasfilm, this top quality sports game takes place in a games arena of the future. You are equipped with a Ballblazer arenaball that enables the player over the surface of the playfield as the arena goes around. You control a simple, fun referee your Blazeroth through your opponent's goal. Two player simultaneous play with three person perspective for both players.

ROM
CARTRIDGE

Normally £14.95
OUR PRICE £6.95

STAR RAIDERS 2

The original Star Raiders is updated with better graphics and sound. Your job is to shoot each enemy while avoiding their fire. You can do this on your own or in another part of the galaxy. It will take skill in shooting which never in a way is, you are offered to shoot a meteor or will you have to learn to defend a planet and return later! A great follow up to an all-time classic.

ROM
CARTRIDGE

Normally £14.95
OUR PRICE £6.95

MIDNIGHT MAGIC

Placed on your Atari can become totally addictive as thousands on others in the famous Midnight Magic. All the bits of the magical table on your screen. There are Wizards, Wizards, drop targets and you can even "steal" the machines. All of the excitement and events played off up to two players.

ROM
CARTRIDGE

Normal price £14.95
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FIGHT NIGHT

Fight Night brings you all the thrills of the boxing ring as you face five of the most brutal fighters ever. In this separate battle, you face out with various styles. The Boxing Construction first allows you and your opponent to create your own perfect boxer, including statistics, height and weight. Step into the ring to get your perfect boxer against the computer or another opponent. 8-10 players.

ROM
CARTRIDGE

Normally £14.95
OUR PRICE £6.95

GALAXIAN

Another arcade conversion that makes all of the adjustments of the original and still stands as one of the all-time classics. Blast the galaxians as they advance in formation and get off to attack. With one or two players, use a skill level you'll be entertained for a long time. Includes an easy option for beginners.

ROM
CARTRIDGE

Normally £12.95
OUR PRICE £6.95

U.S. FOOTBALL

American Football is now a big name in this country and you can now play it too. Obtain the defense, pass with amazing accuracy, run with speed and agility, make tackles, shoot offensive and defensive plays and more. You can take on the computer in a practice game or challenge a friend in a dramatic video level game of your own in a practice session. All the details of the profession.

ROM
CARTRIDGE

Normally £12.95
OUR PRICE £6.95

RESCUE ON FRACTALUS

Set out to find out what you are one of the first games ever for the Atari and a great proportion of them will see Rescue on Fractalus. This game from Lucasfilm set the standards in computer games combining a space flight simulation with a rescue mission. Tapes, over-shooting, 100 enemies or you fly through the simulation in hand on the ground and never intended pilot.

ROM
CARTRIDGE

Normally £14.95
OUR PRICE £6.95

BATTLEZONE

Another exciting arcade conversion that set new standards. You command a tank on the battlefield under attack from enemy tanks and flying enemies. You can maneuver through 100 degrees in the enemy attack from all directions. Watch your radar, turn and shoot in the enemy direction of speed. It takes some of the best of the player, the battlefield.

ROM
CARTRIDGE

Normally £14.95
OUR PRICE £6.95

LODE RUNNER

Another classic, perhaps the best of all platform games. You are a highly trained Galactic commando steep in enemy territory. Your mission is to infiltrate all 25 of the enemy's subterranean levels to recover money, lost pieces of gold. You are equipped with a laser drill plant but you'll need running, speed and agility. Lode Runner includes a unique score that allows you to create your own levels.

ROM
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ST FILE



Let's get away from games for a while and move away from the PC. Many computer users have become interested in fractals following television series (including the BBC's *Life* (2003)) and now a concern has been set up that deals exclusively in fractal-related material. The company is Fractalus and they have produced a catalogue of products available entitled *The Catalogue of Chaos* which includes many goodies not previously available in the UK. The main one is the beautiful computer artist and teacher in Computer Graphics. John Fractalus who says "Most of the Fractalus program is a sample of games you know but done in a rapidly growing interest in fractals and chaos, not only in mathematics and the sciences, but also in entertainment and fiction. Unfortunately it's been hard to get hold of the best products in the UK and that's why we've set up Fractalus". The company aims to cater for the beginner and enthusiasts alike with a compilation of videos, books, CDs and software. The art prints as well as educational software. They will also provide a "fractal development" series of products suitable for education and enthusiasts. If you want a copy of the catalogue, it's yours for the asking. Just drop them a line at Fractalus, Higher Tringham, Consett, Durham, Coesal 7411. 50p or give them a ring on 01202 40973 (24 hour answering).

Anyone got a Palm Organizer or will it be PDA? Whigot Software have a software (Organizer) for the PDA. It's a software that runs on a handheld quickly and easily between the Palm Organizer 2 and the 37. They claim this is the only program available that uses the special protocol which Palm developed to allow the Organizer to communicate with the Mac and PC. The price is £49.95 and you can get more information from Whigot Software Ltd, 121 London Road, Borehamwood, Herts, SG9 8EG. Telephone number is 0439 815044.

OK, it's back to games now. Domark are now giving you the chance to stop buying their games and create your own with the 3-D CONSTRUCTION KIT with which you can create arcade, adventure or simulation games based around the Freespace engine used in games such as Castle Master. It's a very exciting but you'll have to wait a while. Domark are trying to get the software into the hands of some of their games in 2001/02 boxes which look really nice and will be £25.95. You'll need a Pentium III processor (600 MHz), 64MB RAM, Windows 95/98/NT4 and 100MB free space. Domark are also releasing the game *Castle Master* with 2001/02 MB-CD. Features: Full 3D graphics and 3D sound. Lots of software you come out of receiving with the name that *Masterpiece* of all genres. Some include the rights to other games and have release materials. *Planet Ark II*, *Whispering* and *Castle Master* (Photos of up to 100 £3.99 each). That's good news. Maybe they'll release some of the games that didn't make it into the '97. Slightly, but at least there's now a slim possibility of seeing some more interesting. Let's close with some news from M.C. Games. I'm not in any way saying with a whole lot of enthusiasm for the 1991. It's a challenge in a wordy article game to read this week. It's become a member of an exclusive computer club by opening everything in mind. Once for a career in an adventure and on board a 1920s 3-masted yacht, a sort of *James and the Giant Peach* or *Sea of Cortez* or *Lulu (Keweenaw)* (1991) then you can read more at it right now which is not in a way that you'll find it interesting. Company follow up. They're *Planet Ark II*, *Whispering* and *Castle Master* they can't let you believe that the British was the star of it. The Secret of the Island of the Labyrinth you'll discover how the island takes the Air Force came really the more responsible for stopping Germany. Another one from M. Games is *The Secret of the Island of the Labyrinth* a tale of pirates in the Caribbean set in the late 1700s. And there's a lot more promised from M.C. Games but we'll have to wait for it. See you next time.



THE
MANDELBROT SET
available from
Fractal Chaos

3D
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KIT - design
your own programs with
Domark's help



FUTURE
EUROPE - one of
the enhancements to Sim
City mentioned
last issue

MURDER IN
SPACE -
another from
the prolific
Infogrames



APPLICATIONS

SUPERCARD 2



A few months ago I reviewed a great little database program called Super-Card Index, from B.Ware Software, which was a development of an earlier B.Ware database product called B.Base 2. B.Ware have now taken things another step forward with the release of Super-Card 2 (SC2), an updated version of Super-Card Index incorporating improvements suggested by users of the previous version. There's a whole host of these, but the main changes are in the areas of "data filtering" for record selection, data sorting, report printing, and disk relinking. This last item allows disk directories to be read directly into SC2 records, automatically building a database of the contents of all your disks!

The program is supplied complete with a number of example files. Not only do these give you something to play with straight away for familiarisation purposes, but they can also act as models for your own applications. They include such subjects as names and addresses, customer details, company data, references, etc. One of these can even be used as it stands - it's a complete list of British Telecom STD codes and exchange names, allowing you to search, say, a code to find its exchange name, or vice versa.

Like its predecessor, SC2 is designed to look like a card index system, something everyone can easily understand and use. The ease of use (these pervade the whole program in fact, with virtually everything accessible via friendly selection buttons or keypad menu items,

strings to each of the ET's Function Keys and later input lines with just a single keypress). Also, these Function Keys can now be used anywhere in the program rather than just for data input. The program will now also read and write ASCII files and files produced with Super-Card Index or B.Base 2 - without the need for the separate utility program supplied previously. Merging and splitting of files is easily achieved too.

Theoretically SC2 can handle files of up to 32000 records, each one up to 32768 characters long. However, any file worked on in full completely in memory, which means the practical limit is dependent on how much memory your ST has. SC2 should be adequate for most home and small business users though, and one might say certainly so.

Once you've created a file you can then use all the usual database functions on it. Selection of records to work with may be achieved manually by paging through them, or automatically via SC2's so-called "filtering" facilities. These allow you to find all records matching certain specified search criteria, consisting of strings of characters connected by logical operators, for instance to find all records containing the words "hair" OR "BEE".

Up to nine strings each of up to 30 characters may be specified, with each string qualified by AND or NOT operators. This permits the selection of records NOT containing the specified string in addition to the normal selection method. The nine strings are split into two groups, of five and four strings respectively. Within each group the filter

FREE FORMAT DATA

As before, SC2 uses free format data records, so you can enter new data by simply keying it onto the screen, and can browse you wish. To help with data input you can assign frequently used characters

right for each line may be specified to use AND or OR, in case the logical relationship between the two groups. If required, the search can be restricted to a chosen range of records, e.g. records 57 to 100 in the file, and a case sensitivity option allows differentiations between upper and lower case text. Once again, these facilities should be adequate to cope with most requirements intended users are likely to have.

AUTO BROWSE

The filtering process produces a subset of records matching the search criteria, which you can then step through and display, change, delete, add to, copy, save to disk, or print as required. There's even a three column browse facility, which automatically pages through the record subset without the user having to search any longer!

Because of the free format data, report printing facilities are fairly limited. You can print single records or a subset defined by the search criteria. Within a record, print formatting is restricted to specifying the subset of lines you want printed. However, the overall appearance of the report layout can be specified, in terms of characters per print line, print lines per page, spacing between records, and type of heading required. Also, SC2 can has the facility for sending reports to your printer before printing begins, allowing you to specify fonts, spacing, margins, and so on.

The original Super-Card Index was an excellent program, but this latest incarnation is even better! It's very easy to use, fast, reliable, and great value for money. If you're looking for a program to handle those small database applications needed for home, school, club, or small business use, then make sure you check it out. You'll probably find it's perfectly adequate for your needs.

Title	SUPER-CARD 2
Publisher	B.Ware Software
Price	£29.95
Reviewer	John J. Davies

CADAVER

BEST GAME OF 1990!

Cadaver is probably the first IBM-Graphics Adventure Project Series with their cute animation, and slow looking pictures. Forget Magister Scrolls with their elegant but abstract arts with the irrelevant add-on graphics. This is where it is really happening! (No, I haven't played Wonderland yet, and I'm sure it will be wonderful - but this is very different!).

Cadaver is a joystick driven arcade adventure which just uses quality at every turn. Apparently the amazing lit-wrap. Brothers decided that they would like to cross-over the different styles of adventure and arcade games and Cadaver is the result.

You control Karlos the dwarf in his quest to destroy the evil Necromancer (what? another one?). You start empty-handed in the depths of the under-dungeons and must fight and puzzle your way through hundreds of rooms across five levels to reach the final confrontation.

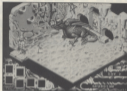
It takes a few minutes to get used to the movement as the rooms are viewed in 3-D from an angle so that the dwarf moves diagonally, and you also need a little time to get used to the buttons (normally it means JUMP, but if you are Working a Weapon it means ATTACK, for THROW it is not a Weapon, and if you touch something or bring up your inventory then the button is used to select an action from the items which appear in

the bottom left. Don't worry - you get used to it very quickly and the system is actually very easy to use and very efficient in allowing you to get around, fight, and use objects.

The item interaction is well designed in that only items which are relevant to the item you are looking or holding appear - depending on these objects you may get to choose from SEARCH, TAKE, DROP, OPEN, READ, HOLD, CLIMB, SWITCH, PRESS, OPEN, INSERT, PULL, BAT and GIVE. And believe me, this turns out to be quite an adequate set of verbs to generate LOTS of interesting and challenging puzzles. You only need to touch the keyboard to use an item from your inventory or to the World a weapon.

Most levels have 80 or 90 rooms to explore, and movement between them is instantaneous. Fortunately the game shows an overview map for you - press F1 to see all the rooms you have visited - so you don't need to draw detailed maps. There are scores of different items to find, most of which have a use, plus dozens of magic spells and potions. Some problems you need to fight your way through, some you need real arcade skills to jump and dodge around deadly obstacles, others you can only solve by using magic, pulling the right lever, finding the right key, or performing some obscure arcane rite or throwing things at enemy targets or pushing broken tiles around the floor!

To fight something you can either walk into it (losing some hit points as for personal), attack it with weapons such as bags of stones, stinkbombs or magic missiles, or cast spells such as Massacre or Blind Blast. Some of the stumps are stationary so you can stand out of range and work out how best to attack, others chase you round the rooms so you have to dodge as well. Fortunately you can HAVE to distract yourself you have enough money to pay the goblin (this is quite cheap and the coin is the ground) in the first room (worth 7 gold to rough



to make your first save) saving on the last level can cost you over 1000 gold! Look out for the chest on the second level with infinite gold in it! You can LEAD an enemy there so you walk from any saved position so you get plenty of chances to try the amazing variety of problems whether they are riddles, logic or violence based!

Cadaver is not an endless test of blasting, it is a game of exploration and experimentation with a little mapping and occasional short bursts of magic.

If you like arcade games with a challenge then you will love Cadaver. If you like text adventures and have always believed that graphics were just a gimmick then Cadaver could change your mind! - this is every bit as challenging as most adventures I have played and you will be amazed at the variety of puzzles which they crammed into it. My solution takes up 800000 pages of text!

Most people are highly likely to get stuck at least a couple of times, but never fear the Darling Light game GEMINI has a full solution (and many thanks to John and Darren for the couple of lines that I got stuck). Doubtless I'd be able to solve it myself - if you have been looking for a reason to buy one then this could be it!

- ◆ **AGENT & RECORD** - The graphics are amazingly detailed and vary considerably between levels - how they come it will be to 91 (95) it don't know!
- ◆ **GAMEPLAY** - Excellent - a great arcade game - a great adventure!
- ◆ **VERDICT** - You'll never forget your self if you ever play this one!



The **CADAVR**
 Publisher: **Image Works**
 Price: **\$24.99**
 Reviewer: **John Swainey**

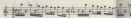
MAKING MUSIC WITH YOUR ATARI

**John S Davison's
regular guide to
all the ways
of making music
on your favourite
computer**

I must tell you about a real fun piece of music software I recently got my hands on! It's called Band-In-A-Box, by PG Music of Buffalo, USA, and its purpose is to help you rapidly produce a professional sounding accompaniment for virtually any song. The principle behind it is very simple - you tell it the chords in a song, where the chord changes occur, and the musical style in which you want the song played. In a few seconds it generates a complete three part arrangement for drums, bass, and piano for whatever other sounds you wish to assign, and plays it via a MIDI attached synthesizer.

The program produces an incredibly good sound - so good you would almost believe there's a professional backing band in the room with you! All you have to do is play or sing the main melody line of the song to complete the musical performance. It's a simple idea, but it opens up all sorts of possibilities, as we'll see later.

The full version of Band-In-A-Box runs in medium or high resolution and needs 1MB memory, but there's a simple 512K version provided which handles lower styles and shorter song lengths. Even so, it's still very usable. Obviously, to play the sounds it also needs a MIDI synthesizer keyboard or 'response' module, preferably one which can also play drum sounds. However, it will happily drive a separate drum machine if required. The program can be rarely reinstated to work with virtually any synthesizer and mapped onto any



BAND-IN-A-BOX

speech driven notation or drum machine. It worked perfectly with my Yamaha PS5-600 after a few minutes customisation.

MUSIC SPREADSHEET?

To create a song arrangement you just type chord names into cells on the program's spreadsheet like data input screen. This uses standard chord naming conventions, e.g. C for C major, C# for C minor sixth, etc. It handles a very wide range of chord types, including some 'tricky' ones such like those called (11bass9sus4), for instance? It also handles chords with alternate bass notes, for example F#11B (F sharp major with an B bass). Up to four chord changes per bar may be specified, more than adequate for most songs.

To add further interest to the arrangement the program can switch between two contrasting variations on the chosen style. You flip them one to the other by placing markers at appropriate points in the music. Each transition is preceded by a drum fill, thus contributing even more variety to the basic rhythm.

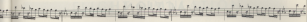
Finally, you specify miscellaneous 'song' data, such as song title, tempo, key, looping information for handling multiple verses/choruses, and the musical style required. The full version of the program handles 24 different styles, with 14 in the MIDI version, including various flavours of country, Latin, rock, blues, reggae, jazz, and pop. The accompaniment parts are regenerated each time you play the song, as between playings you can change the style, transpose into a new key, edit the chord sequence, and alter the tempo if required, giving scope for easy experimentation.

Song files you've created may be saved to disk in their native format or as a Format 1 standard MIDI file. This means you can then load them into a sequencer or other software package which supports MIDI files and further modify or augment them in any way you wish.

MIDI FAKEBOOKS

The program is extremely easy to use. Once you've learned how to customise and operate it (all of 15 minutes effort) you can enter a song and have it playing to you in less than 100 seconds! In fact you can be up and starting even quicker than that, as it comes complete with a set of sample song files you can just load and play. What's more, you can buy ten 'MIDI Fakebooks' disks, between them holding over 800 ready to use jazz and pop song accompaniment files.

This program could be thought of as a software version of the advanced auto-arrangement features found on some MIDI keyboards, such as 'Style Play' on Yamaha's PS5 instruments. In fact, it's not quite as advanced as those are, as a few features seem to be absent. The ones I missed most are: nice drum beats and rolling phrases for each of the styles - Band-In-A-Box songs currently terminate too abruptly for my taste. It would also be nice to have one or more additional instruments playing optional 'solo/break' parts, again as on the PS5 keyboards. Finally, being able to define your own styles would add enormously to the program's flexibility. PG Music are



already planning improvements to the program, so perhaps we'll see these features in a later release.

Hand-in-A-Line has a far wider range of applications than you might at first imagine. It's obvious one is to enable anyone interested in quickly producing an accompaniment for any song, which they can then sing or sing along with. It could even be used in live performance, for instance a singer could use this program plus a MIDI synth instead of a live backing band! You take a computerized karaoke machine! Music teachers will love it too, as it's great for practicing ensemble playing. It's also a useful personal learning aid, so during playback an onscreen piano keyboard shows you exactly what the bass and piano parts are playing - in real time.

I believe Hand-in-A-Line is destined to become a classic piece of music software. It's literally, genuinely useful in all sorts of ways, and tremendous fun to use. It's reasonably priced too, at £45 for the basic program and £25 each for the MIDI FileMaker, with special deals if you buy more than one item at once. UK suppliers are Core Distributors, 5 Stokelyville Road, London SW4 (phone 081-756-8594).

THE MUSIC STUDIO UK

Wouldn't it be nice to find a place where computer musicians could meet 24 hours a day, seven days a week, to swap ideas, information, public domain music software, MIDI files, voice patches, develop concepts, and generally discuss anything to do with computer music making? And what if all this were available for FREE? You need to be free, you say? Well it's not - all this and more is now available through a new service offered by computer music enthusiast Paul Lyman of Manchester.

Paul is the System Operator of The Music Studio UK, a computer based bulletin board service available live to anyone equipped with a computer, telephone, and communication facilities. Although no access or usage charges are levied you do have to pay for phone calls. But these are at normal moderate BT rates - NOT those ultra-international 0800 extortionate rates. The service runs on a high powered IBM PS/2 model 80 PC with a massive 480 megabyte of hard disk storage, communicating with the outside world via a 240000 Courier 195 modem at speeds up to 9600 bps. DMZ, so it's not Atari based, but that doesn't matter - it communicates with any type of computer using standard communication protocols.

For those unfamiliar with such things a bulletin board system is like an electronic notice board. You contact it by dialling in via the phone system, then use your computer as a terminal to read or post public messages, receive and send private electronic mail from/to other users, and transfer programs and data files between the two computers.

AROUND THE WORLD!

TMS has separate message areas for different topics, such as news, Music, Buy and Sell, and yes, Atari. Anyone dialling into TMS may view any public messages you leave and reply to them, and the replies are also available for all to read and respond to. It's possible for a message to spark off a multi-way conversation between many different users, and is a great way swap ideas or obtain help with music related problems. TMS is network connected to other bulletin board systems in the UK, Europe, and elsewhere, and exchanges messages with them on a daily basis, so your messages could reach a wide audience!

FREE SOFTWARE!

TMS also has file download and upload facilities. These allow you to access any of the music software or data files stored on TMS - and all for free! Well, there's no cash charge, but you are eventually expected to do the decent thing and upload something in return! And please note: only those file public domain, shareware, and share material is accepted - NOT pirated commercial products!

So, how do you participate? Well, basic requirements are a modem to connect your computer to the telephone system plus suitable software to handle the communications. To minimize your phone bills (if concerned) you use the latest modem you can afford, with 1200 baud as a minimum if you want to do much downloading/uploading of files. Expect to pay at least £150 for this, less if you buy secondhand. It may seem a bit, but you CAN also use the system to explore the hundreds of other bulletin boards now operating in the UK.

A modem plugs directly into an ST's RS-232 port, but 8-bit users will additionally need a separate RS-232 interface box. The only suitable device I know of are the Data 850 interface and ETE's PANConnection, neither exactly easy to find these days. Write for secondhand items or try Cetus International, 11 Shillington Road, Parkstone, Poole, Dorset BH12 5BN, who sometimes advertise them. Expect to pay around £50 for either. Incidentally, both devices also provide a parallel printer interface, allowing your 8-bit machine to use virtually any type of printer instead of being tied to Atari only models.

The software side needs no cash, as you can use public domain communications programs. On the ST there's VAM-70000, while 8-bit users could consider ARCADEM - both are available from the Page 6 PC Library for just £2.95 each. 8-bit users could also use Micro Office II, now available from Page 6 for just £14.95, although its upload/download features aren't exactly state of the art.

To try TMS just dial 903-723-7164, and when connected, simply follow the onscreen prompts to register yourself as a user. If you do, please remember that a free service such as this only survives through ACTIVE participation of its users. Make sure you leave a relevant message or upload something useful to help TMS become a service worth using - and to thank Paul Lyman for the voluntary effort (and money) he's put into getting TMS on the air.

SNIPPETS

...Have come to be plenty of Cetus synthesizer bargains around as I write this, particularly MIDI expander modules. Examples are the CSM-EXP (Price and CSM-1 sports expander modules at well under £100 each. Check the current music technology magazines for details.

...Another good buy, but more expensive, is the new Evolution Synthesizer EXS1. It's a 100 sound, 16 voice polyphonic, eight way multitimbral expander module, with built in sampled drum sounds. It's supplied complete with patch editing software for the ST, and looks great value for £250.

...Something's new! 4850 EXS13 drum machine looks perfect for the home MIDI setup. Its specification includes 256 preset rhythms, 25 sampled drum sounds (MID IN and OUT) and, unusually, eight real, velocity sensitive drum pads which you can kick with real drumsticks to actually play the drum part!

...News from the USA: Charles W. Proter tells me that his report to issue 45 of a new stereo version of AMS (Advanced Music System) for the 8-bit machines was incorrect. It should have read AMP (the Audio Music Processor) rather than AMS. More details read here, if Charles can obtain them! ■

GOLD OF THE AZTECS

For 400 years no one has dared to take up the toughest challenge man has ever known - to find Quetzlcoatl's Gold of the Aztecs. You are Bert Conzard, a man trained by special forces, a man who knows danger as a way of life. All he has to do is find the quest to find the mythical gold of the Aztecs is a 400-year-old Spanish map of the area, showing the location of a temple. The map also tells of numerous dangers which must be faced, of how 3000 Conquistadors died in the previous attempt to enter the tomb.

The game begins as you parachute deep into the middle of the jungles of Mexico, hundreds of miles away from civilization, or even the nearest road. As you land your parachute becomes caught amongst some trees and you must cut yourself free and then move on into the deep jungle to do battle with all that snags into your path. As you move through the jungle you soon come across areas throwing obstacles and hostile wild animals, which must be avoided in order to keep on and reach the temple. The deeper you go, the stronger your adversaries become, glands and monsters attack you at regular intervals as you get closer and closer to your goal.

Gold of the Aztecs has been severely lagged as an enormous game which took three man years of development, with staggering numbers of hours of anima-

tion and even more gigantic numbers of little graphical bits and bobs but what does this quite extraordinary, super-five-steps game have to offer for the average gamer/player? Well, it's a fairly mediocre arcade adventure which is far too difficult to play due to the dreadful control response, but it has got some reasonable

graphics. Now maybe I'm missing something, but the bugs on the box, and the game itself only seem to have a few things to comment. The graphics are all right, but if this is the best they can do with "megabytes of code and data" then I'm glad they haven't done anything smaller!

You must fight with the joystick, as you would expect. He is a large character who is well animated and you can, reasonably to run, jump, pick things up, shoot a gun, use a knife, and other such things. You have to move him around the screen screens trying to get past the things in his way. Eventually you must get into the temple to search for the treasure. Now, normally an arcade adventure of this type, with only around eight screens or so would be a challenge to get reasonably far into. However, do not expect to get anywhere the first time you play! It is very difficult at first to get past the first two or three screens, simply because 'Yay' in his incredible workhorse is an absolute pig to control! I tried with a number of different joysticks and the response is simply terrible. If you have quick reactions, this game will infuriate you as it starts about three seconds after you die.

In terms of presentation, the game is quite good, the graphics are of a fairly high quality and they are suitably varied from screen to screen. In places the animation is worthy of note, such as the lumbering elephants which crushes you if you spend too much time on the first screen! The sound effects are very good



trained and are possibly the best feature of the whole game. The tracks of the pistol shots in the form of a smoke are all very realistic. However, great sound effects alone do not make a great game.

What is more infuriating than anything is that this could be such a good game, if only it was easier to control it would be simply superb. However, it would appear that not much game has been raised by far too much attention being focused on the cosmetic features and not enough on the actual gameplay. I found that all it managed to do was irritate me. A game should not really do that, it should be a form of entertainment or escapism, not something that makes you want to hurt your joystick through the monitor screen!

Overall then, as you can probably tell, I was not really impressed with Gold of the Aztecs. The graphics and sound are quite good, but the game is far from original and it is practically unplayable. I don't particularly like it, but you may well think it's brilliant. It is definitely not worth all the hype which has been spread about it.

- **HITS AND SCORES** - Graphics are colourful and well chosen and the sound is superb, but these alone do not make a good game.
- **GAMEPLAY** - When I died a reasonable degree of playability I will let you off once.
- **PERIOD** - All hype and no substance. The potential is definitely there, but if a game is so unplayable why bother with it?



Title: GOLD OF THE AZTECS
Publisher: US Gold
Price: \$19.95
Reviewer: John Bonson jr

THEIR FINEST HOUR

Want to change the course of history? This new flight simulation from Lucasfilm gives you the chance to do exactly that. As you'd expect this involves rather more than simply flying a computer model of an aircraft. Its contents with most recent programs of this type it's a flight combat simulator, but this time the scenario is the Battle of Britain.

The package includes two double-sided disks interchangeable for four single-sided disks if you need them; an ST specific reference booklet; an anti-piracy device (slightly disguised as a "radio frequency capture wheel"); and a superbly produced 182 page ring-bound book. This book is even more full of historical facts and photographs about the Battle itself and the aircraft taking part, as well as detailed program operating instructions. The program runs on a 512K machine, but additional graphics are available if you have more memory.

You start by learning to fly the aircraft and there are eight different types to choose from! The fighters is piloted by the Hurricanes, Messerschmitt 109, Messerschmitt 110, Junkers 87 Stuka, Junkers 88, Heinkel 111, and Dornier 17. And what's more, you can take the part of the pilot, the air-organiser, or the bomb aimer if the chosen aircraft has them, of course.

Once you've got the hang of things you can progress to combat flights. Here you choose an aircraft type and the program then presents you with a choice of eight historically based missions appropriate to the aircraft you've selected. These are arranged in increasing order of difficulty, so you just work your way up through them, with success rewarded by medals and promotions and tracked in the program's Combat Record.



DESIGNER MISSIONS

Before starting a mission you can also modify some of the mission parameters. This allows you to select the skill level of the opposing forces, start on the ground or in the air; give yourself unlimited fuel or ammunition; or fix things so you can't be damaged, shot down, or crash! And if you tire of the basic-voiced missions you can design your own using the supplied Mission Builder utility. This is quite a complex operation, but the manual covers its use comprehensively.

If you want to try something more than individual missions you can elect to fight a campaign, which runs the program into an action based sequence. You command either the British or the German side and fly a number of missions, starting on July 10 1940, the accepted start date of the Battle of Britain. You fly a mission every few days, and your success (or lack of it) in fighting your own battles is reflected in the overall success or failure of your chosen side. Also, the effects of a mission are carried forward into subsequent ones, until your opponents can repair the damage you caused. The British side wins if it survives until 18 September - Hitler's deadline for launching the invasion of Britain. The German side wins if it destroys enough RAF aircraft before that date, and gains the air superiority needed for the invasion to proceed in relative safety. Yes, YOU can change the course of history - if you're an ace German pilot or an ace British one!

The cockpit graphics are generally quite good, with different layouts for each aircraft type. However, there are one or two odd looking instruments, such as the

strange "bank indicator" installed in place of an artificial horizon. The 3-D "through the windshield" graphics are quite well done too, although I think they might be a little dulled if viewed on a TV rather than a monitor.

SMOKE AND FLAMES

Animation of the battle sequences is well handled, particularly during a successful attack.

You see tracer fire streaking towards the enemy, then his flying off his aircraft in all directions if you hit it. If you're a hot shot his aircraft will stream smoke and flames and you may see him parachute out before it smashes into the ground.

Keep your guard and you'll soon find yourself under attack, and to help you keep it good instead the program gives you plenty of viewing controls. You can look forwards, left, right, straight down, and backwards in the rear view mirror (single monitors only), plus a scan view option. The views are odd though, as you see them all through the HUD of the cockpit! There's also a camera you can switch on to film the action for later viewing - but while viewing, you can change the camera's apparent zooming point. Closer cameras they had to, 1940!

Overall, this is an excellent flight combat simulator, with enough action and strategy elements to keep you occupied for months. With its wealth of historical detail it could even claim to be educational (and!) The only criticism I have even the slightly sluggish aircraft control response, and the disappointingly inadequate sound. However, there are minor niggles, and I rate the program as an excellent buy for all flight and combat simulation fans!



Title: THEIR FINEST HOUR - THE BATTLE OF BRITAIN
Publisher: Lucasfilm Games
Price: \$29.95
Reviewer: John S. Davison

RED LIGHT ... GREEN

I would seem that as in the world of fashion there are distinct trends in software availability. Currently one of the largest trends seems to be more cars and driving games. Here I am going to look at three pieces of software competing across games which would keep even the most avid driving fanatic at his or her keyboard.

Historically the competition from Domark's **WHEELS OF STEEL** contains the roots of the other two games. Hardlands and Nitro. *Wheels* has four famous arcade conversions within it's confines and they are listed as Turbo



BADLANDS—a good conversion

Games, *Power Drift*, *Hard Drive*, and *Chase HQ*. Sadly the disk I received had *Power Drift* on three of them thereby eliminating the famous Turbo Games, still three out of four isn't bad. At first glance *Power Drift* and *Pegasus*'

NITRO seem related. Both have a choice of drivers in a series of races around different courses, both offer first hand driving views of the road. After that though the games begin to differ. *Power Drift* is an arcade clone of good quality that provides all the interest found in the slot machine and offers a running view of the player's position in a race and plenty of statistics on a theme. Nitro has all the superb first and graphic capability that

the populace has come to expect from Pegasus and does not present itself as an arcade transfer. Both games attempt to bring about the same end product, that of a season long race, although *Power Drift* does not allow for the progression that Nitro does. For example in Nitro's almost *Death Race 2000* clone-plate there is a choice of vehicle for each race together with opportunities to fuel or maintain the vehicle whereas in *Drift* the car remains the same as the tracks because more serious is a arcade track type of scenario.

I found *Power Drift* to be a simple race from the grave that was occupied but I felt that Nitro with its similar joystick/keyboard control was a better developed with far better handling attributes and a sense of tactical skill about it. The game even allows for the occasional pole-position crashing as a bonus but in other areas it is a distinct disadvantage. If you like

your driving hard and tough with dirty tricks and shortcuts including their Nitro provides possibilities for the imaginative cyber-punk. The other obvious difference is that Nitro provides an overhead view of the action across city scenery thereby allowing the players, at which there can be up to three, to judge their road position and the bonus ends and petrol squares far more accurately whereas *Power Drift* is an in-cab perspective giving less awareness of other cars in relation to the driver.

The other offering in the first person driving stakes also resides on the *Wheels* disk, and for that matter on at least one other compilation going the rounds, that

is the gut-churning **Hard Drive**.

When I first reviewed this stark driving simulation I was leechy with my praise and very little has happened to detract from my earlier feelings. The essence of this game is nothing other than skill at graduated levels, the game maintains good arcade converted graphics and scrolling and while not using the tactical season fare of the earlier pair provides a very exciting race environment. That is players compete against themselves and first random occurring drivers a limited to avoid. This is still my favourite first person driving game. I still feel distinctly nervous during the loop the loop session and firmly believe that the game is the backbone of the compilation disk. No other driving game comes close in it's standards of maneuverability or adaptiveness, and certainly nothing can compare to the skill competition available in this. This game cannot be properly compared with any other and as such deserves a high place on most software libraries as a fairly unique game. **Chase HQ** on the other hand does not present much a wonderful feeling being a behind the car point of view similar to Outrun, which remains some wild, against the clock, driving to evade the police to race wrong down cars. The game does not flow well and represents the poor side of arcade conversions. The graphics are usual as acceptable and the concept is fairly novel but, unfortunately, the gameplay is disappointing and this is one race that could well have stayed in its grave. It is a shame this was included because the other two games and my memories of Outrun lead me to believe that *Wheels* was all be a good collection without it.

The final Game in this bumper bundle is again from Domark and is a straight conversion of the current arcade game **BADLANDS**. This features two player action and some very interesting scenery. In many ways this is the game that Nitro tries to be but despite a great deal of show comes just short of. *Badlands* has the same overhead view of the cars and is very reminiscent of those early arcade

EEN LIGHT!

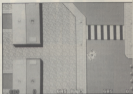
race games with tracks that changed each level and had little of sticks and chances in them. *Badlands* offers two different forms of joystick control to accommodate various ladies. This is appropriate to customize your vehicle after each race. As in *Nitro* they include fuel, speed abilities and desaturator capabilities as well as defensive shields. In comparison to *Nitro* the screens are less attractive and the leader with the multiplicity of amber and overpasses, but the overall standard of layout design gives *Badlands* a distinct edge in novelty and addictiveness. *Badlands* plays over eight different and varied circuits which include exploding volcanoes, army camps and high security prisons. The drive cars play strong ladies and improve at a

legitimate rate. Unlike *Nitro* where running out of fuel disqualifies a racer, *Badlands* uses the Power Shift formula of needing to win the race to qualify for the next course. You know its permissible before the game ever sets up. Various useful objects appear in the *Badlands* courses such as spawners to buy new accessories or missiles to remove unwanted obstacles such as other cars or scenery. There seems to be more point to the individualistic courses in *Badlands* than in the somewhat repetitive city scenes from *Nitro*.

In the sound effects department *Nitro* has the more interesting noises although *Badlands* runs more pleasant chimes during races. As with all Polygram games the leading screen music is strong and

has a heavy mental touch that makes watching the lead acceptable. It is with such touches that Polygram's screens over its opponents although I still feel that this may be at the expense of protected gameplay.

In conclusion I think it is fair to comment that each of these games has something different to offer the prospective buyer. The compilation that offers a good basic grounding to some classic car games. For its price it seems excellent value to the consumer trying to create a library of different experiences for their hungry Race chips. On the other hand if certain players have several of the games the box becomes an expensive luxury and either type of player will find that some of the games in the compilation are slightly dated. *Nitro* provides a challenge for up to three players and may well provide a little nostalgia for those who enjoyed David Gooden's



NITRO - Polygram's entry in the motor racing slot

Death Race 2000. It will also appeal to sound and graphics buffs. The play is quite abrupt even if a little lacking in control at times. *Badlands* provides an interesting challenge and an excellent example of the art of arcade conversion, if you enjoyed the arcade style then it is more than likely this will be your taste.

If it came to a choice I would probably come down on the side of *Badlands* as my personal favourite of these various packages if only for the fun customizable way portions of are presented. I could indeed be tempted to spend money on buying that particular game.

- **GAMEPLAY** - In all of these you need but really only one of them gives mouse control as an option for driving
- **SCORE & GRAPHICS** - Each (except game) had good conversion from the arcade. The Polygram's score is rather excellent.
- **VELOCITY** - Each offers good value and playability, choice depends on user taste!



POWER SHIFT (above) and **HAARD DRIVEN** from Domark's Wheels of Fire Collection



SOFTWARE REVIEWED

WHEELS OF FIRE
Domark - Price £29.99

NITRO
Polygram - Price £24.99

BADLANDS
Domark - Price £24.99

IMPERIUM

Imporium is the game I always wanted to write! It is of galactic scope, involving politics and conquest, trading and trade wars, planetary management and development, fleet development and ordering. It is just enormous.

You are the dominantly elected leader of your empire. Your objective is to stay that way for a thousand years, or to conquer all the other computer directed empires first. To make it interesting you have a few challenges - you get old and die in a normal human lifetime unless supplied with copious quantities of "bio-train", which is found on only a few planets. You must fight and win elections every fifty years, or sooner if you choose. Your submarines will rebel, enemy empires will strike at your home planet and natural disasters will disrupt your plans.

At the start of the game you have the planets of your home solar system, and submarines to run these planets for you. Other submarines must be appointed to be ambassadors to the other empires, and in due course to be fleet commanders. It is they who will negotiate trade deals, embargoes and military alliances on your direction. To motivate your people you can award them with military or civilian offices, pay them money and give them freedom when you have found none! Also you can improve your planets by spending money on them. To start with you have only two

spaceships and one of your first actions must be to build more - and to start designing improvements. These early craft will be used to explore the other solar systems in your galaxy, and to order for any promising planets. In due course you will be able to build better ships, and then you can start planning invasions of the other empires.

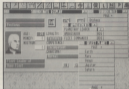
This game sounds really great, doesn't it?

GAMEPLAY

To expect anyone to handle a game as complex as this when they first look at it up would be stupid. However the game is well equipped to help the casual empire developer learn skills as you won't have to learn it all at once. You can select the standard of play of your opponents, and you can appoint submarines to run key parts of your own empire - and they will do so fairly competently.

Unfortunately, the implementation does not live up to the game concept. Play is achieved by manipulating windowed lists of people, planets, fleets etc. That wouldn't be too bad if there *were* lists, but it isn't. For example, one of the most frequent actions I found myself doing was going one by one through a list of my planets specifying troop developments. The list of planets was quite long (about 7 screens) - and every time I specified a troop development the planet window was closed, so for the next planet in the list I had to open it again and scroll and scroll and scroll and scroll and ... years. Doing this for every planet for every year of a thousand years is extremely tedious.

The developers of the game have designed their own windowing system. This has several nice usability concepts - however, my guess is that the developers were being pushed by a deadline and so did not have time to check out the user-friendliness of their design. The difficulty described above is typical of the type of



problems they have overlooked.

There is an interesting feature of the game first intended by the developers in that if a large number of troops are garrisoned on a planet, then that planet's population is set equal to the number of troops. Also when carrying 1000 (100000) troops of a given class on one ship, sailing one more results the total is zero, which throws out the whole population-accounting system for that ship (and any planet it is on).

In summary, playing the game after the first hundred hours or so, becomes a boring and repetitive slog - which your reviewer persisted with only because he felt obliged to see it through.

Not much can be made of graphics - one quite excellent display of the galaxy (which can be rotated so that you can focus in on the area of space you are interested in) is the only one of either colour or of graphics in the whole game. Yes, there *are* boring lists as in grey and black and white only, but much to get excited about here.

There are a few nice visual effects used to introduce the various reports you receive each game year. My screen copy of the game crashed after a time if this feature was activated! So if you must, leave sound effects on for a year or so - but then disable them. Otherwise, make sure you make frequent saves. There is no other use made of sound in the game.

VERDICT

Imperium is a good game concept, very poorly implemented. Unless you are heavily into grey and white, poorly designed lists with no sound to relieve the monotony - don't buy it.



Title: **IMPERIUM**
 Publisher: **Electronic Arts**
 Price: **£24.99**
 Developer: **Mohr Docs**

SPACE ROGUE

Dropping out of hyperspace, you fly a course for the Lagrange Station. Suddenly the kinetic sensors start warning. Two Dante and a Corvus are heading right towards you. What? You roll hard to avoid the incoming enemy fire, one of their shots hits and takes out your rear shield. Splitting in panic, your ship is launched in a head-on collision. It smashes into the Corvus and destroys it totally, vaporizing it into space dust. Skinned the remaining pirates (five for deep space). Thus begins your life as a space pilot in Space Rogue—a good pilot, apparently you have just seriously annoyed some of the most notorious pirates in the whole quadrant that never mind, they'll soon get over it, you hope.

In Space Rogue you can become an interstellar trader, pirate or bounty hunter. You pilot a highly advanced scout ship which you take over star systems to star system, buying and selling cargo and fighting off the enemy pirate ships. As you play (it boasts on the packaging) you become entangled in a web of interstellar intrigue.

On superficial inspection Space Rogue appears to be yet another variant on the theme of games initiated by Elite all these years ago. As the game manual says: "Space Rogue is not just a space-flight combat simulator, it's a role playing game". As you take on your 'role' as a space pilot you do other things besides

just piloting your ship. In order to generate the funds to keep your ship in working order you must develop a career for yourself to generate income. On your travels you will meet many different people and talking to them can lead you to performing missions which could be very lucrative for you. Alternatively, the various folk dwelling in the outposts of civilization may just have some information which you need.

Just as in games such as Elite, everything you do will have an effect on future events. In effect, you develop a reputation which you carry with you, something which most of the games characters will have heard of. So, for example, if you encounter a conflict between a pirate and a simple trader while patrolling the star system, whoever you opt to 'side' with will have a direct influence on your reputation. This in turn will effect the way in which people react to you in the future.

Space Rogue is a vast game which incorporates many different types of gameplay. Firstly there is the 'Elite' type space conflict sequences with their intense

three dimensional graphics. Along with this, there is the exploration of star lanes and mining installations which take on the simpler form seen in other Origin products such as the Ultima series of role playing games. It is within these parts that you have the opportunity to communicate and interact with other characters. Also in these sections you have the opportunity to play 'line', an arcade game you'll find dotted throughout the galaxy. Dubbed as the 'most popular game in the universe', it adds a pleasant and different 'twist' into a game which is full of surprises.

In terms of presentation, my view of the game varies. In some sections the graphics are of a very high quality. The most notable 'section' being the space combat sequences, which is really slickly done. The animation is smooth and the response of the game to fast joystick ac-



tion is more than satisfactory. On the other hand the more 'attractive' sections of the game, where you find yourself exploring the various space stations and complexes, are very simple in appearance. Despite this, I do not believe that presentation is intended to be a selling point of Space Rogue. The market obviously aimed at is the 'role playing' genre of computer games—a sort of Dungeons and Dragons in space. It's obvious that the depth of gameplay is by far the most important factor in a game of this type. I don't know how many of you can remember an old 8-bit game from around five years ago called 'Ultara'—and's Ultimate', but those who do will know what to expect from Space Rogue. It's an open world, colored, interactive 'life simulator' where everything is dependent upon your actions.

In terms of gameplay, Space Rogue is a very time consuming game requiring the investment of a great deal of time to make it fully worthwhile. When you begin the game you have absolutely no objectives or goals, apart from earning some money to survive. All your goals must be set by you. They work down most first to found, and your reputation can only be built by your actions.

■ **SAVIT AND SOUND**—the presentation varies from good to bad, but overall it's more than adequate for a game of this type.

■ **GAMEPLAY**—very much a game you have to 'get into'.

■ **OVERALL**—if you like role playing games you'll love this.



And who wants to meet. Before you can do that, you must first find out who the hell you are. The hell you are is a state of confusion.

Title: **SPACE ROGUE**
 Publisher: **Origin**
 Price: **\$24.99**
 Developer: **John Davison jr**

PD Paul Rixon's WORLD

THE WONDERFUL WORLD OF MUSIC ... CREATE IT, PLAY IT OR JUST LISTEN TO IT

When Atari first announced the arrival of the SE and ST ranges, at the Las Vegas Computer Entertainment Show in January 1985, they sold the competing hardware with details of an exciting new machine designed especially for the budding musician. The 6-bit 6502M was reportedly based on Atari's revolutionary 6-bit chip, undistorted 16-bit sound chip and capable of emulating speech and singing with unprecedented accuracy. Also, in common with so many of Atari's most genetically bred & bred projects, the prototype XEM being with a portable SE, 128K and several other peripherals was never made publicly available. All hopes rested in the ST computers which were certain to appear in one form or another and, as Jack Tramiel promised, would offer previously unthinkable power without the price.

The ST arrived in Britain 'too' to an enthusiastic reception. Those who had called for a computer aimed at the business market were impressed with the machine's large memory and 'Mac-like' GEM environment. Games players could look forward to the prospect of some amazing graphics, programmers couldn't wait to start tinkering with the all-powerful 6502M microprocessor and serious musicians could now buy a complete MIDI-compatible system for the smallest

outlay cost. Perhaps the only disappointed audience were those who had urged Atari to equip the ST with a direct in-built sound source - instead the machine's Yamaha YM2149F sound chip offered little better performance than its 8-bit predecessors.

Fortunately Atari enthusiasts are a remarkably loyal and, over the years, have succeeded in creating music and sound on the ST that most would not have thought possible. I wonder through the ever-expanding ProMidi 6 ST library has convinced me that the ST's sound chip really can't be that bad after all.



SOFTY SAMPLES... excellent MIDI tunes

MUSIC STUDIO

Atari's Music Studio is a relatively cheap and consequently popular composition tool that can be used to create tunes for play-back through a MIDI instrument or the ST's internal sound chip. If you're musically minded it's possible to produce some excellent results but if you can't, tell D. Miles from a Atari's Music Studio a small amount of assistance would be needed. In the Public Domain there are dozens of ready-made tunes and the great advantage is that you don't need MIDI hardware or even the Music Studio software to play them. On **MUSIC STUDIO SONOS 3** you will find around fifty titles including Charms of Fire, classical pieces from Händel and Bach plus a collection of tunes from the 'Children's Corner'. There's also a convenient utility that will take Music Studio files from the

Atari and transfer them into ST format.

If you don't have Music Studio you will need a program to play the songs - a good one is The Record Player on a disk owned, appropriately, **MUSIC STUDIO PLAYERS**. The Record Player will let you place any number of song files into an 'album' which it subsequently loads and plays in the specified order. Control key options enable you to interrupt the sequence to jump songs or stop altogether if you need to, and albums can be saved for future use. The disk contains several other players for MIDI tunes (see

John Davidson's column for the latest MIDI info) and another collection of great tunes such as '50 Transformations', La Bambola and Bridge over Troubled Water. As if that's not enough to keep your ear drums occupied there are PVII and/or song disks in the library! Unlike the first compilation there is a player on each disk so you can listen to the tunes straight away. **MUSIC STUDIO SONOS 3** also offers a neat utility for porting MIDI files from the 8-bit Atari to Music Studio on the ST. All you need is Start Talk from PAGE 6 (plus an 8-bit Atari, of course!) to transfer all those great tunes from the 8-bit PD disks. At a rough estimate there are almost four hundred songs on the seven disks I've mentioned above but there are hundreds of more in the 8-bit library - so whatever your musical taste, there has got to be something here of interest.

MUSIC CONSTRUCTION SET SONGS

Similar in nature but different in style are three songs produced using the Music Construction Set. **MUSIC CONSTRUCTION SET SONGS 1** is a collection of 35 tunes which can again be played through MIDI or your monitor. A menu-based player is supplied on the disk so there's no need to own the commercial application. Some of the best tunes include Neil F. Ficht of the Shambles and Michelle Ann Bollet. Another good song collection is **MUSIC 1**, the

time presented as accompaniment to a continuous slide show. The follow-up, **MUSIC 3 - SYNTH SAMPLES** features many more tunes and loads of patterns in the same format, and so if that wasn't enough, **MUSIC 3 - SYNTH SAMPLES II** has over thirty more! These disks demonstrate quite clearly that with the right music the ST's beautiful sound chip - coupled with some nice art work - is capable of generating excellent entertainment!

DIGITISED MUSIC

Digitised music devices are always impressive but they often demand large amounts of memory. For example, **SEEK-TRACKER** is a superb continuous sample capturing and manipulation and is relatively simple to produce. If you've access to the necessary hardware, to stand out from the crowd, the discs have to be **REALLY** good! Some that fall into this most exclusive category are **MEDIA-BANG**, **THE PRISONER** (a great soundtrack from the weird science world) and **PUMP UP THE VOLUME**. My personal favourite is the sampled music section of the **TRILION SOUND DEMO** which features an amazing version of 'Ain't It' as well as three other brilliant tunes. Elsewhere there is sound-chip music galore from well-known computer games and some stunning graphics. Get this disk if you want to show people how good the ST really is!

STEREO SOUND

Atari's answer to criticism of the ST's internal Yamaha sound chip is the 5-bit stereo pulse code modulation system fitted to the STE. If you have an STE and a stereo monitor (Philips have recently introduced an updated version of the CM900) so it's likely that remaining stocks of the old model will be available more cheaply as a convenience oriented Hi-Fi with video inputs you can now experience CD quality stereo music. At last, you can if you have the all important software that's needed to drive it! At present there are only a handful of discs across the various CD libraries and a few commercial programs boasting STE support. The **ATARI STE DEMO** has some reasonable graphics and a fairly decent base of excellent stereo music, but hopefully there will be more to offer soon when Atari begins to phase out the drive hardware. Incidentally, problems with the initial supply of STE's - arising from TOS bugs in service difficulties with the DMA port - should almost certainly be eradicated with the latest hardware. There are now plans for a Mega-STE and a new 'stacked' TOS providing many of the features of Nextstep, so the STE's future looks promising. Unfortunately,



The player on **MUSIC 3 - SYNTH SAMPLES** that enables you to create your own albums and play them through the monitor or a MIDI synth.

time is generally away for re-cooperation after a severe bout of parositalism (perhaps I caught something off Peter Dickinson - if only everything in life was as reliable as an 80000).

SOUND TRACKER

One application that does have an option to make use of the STE's stereo sound is 'Trackstar' Anders Nilsson's 'TOS Soundtracker', which made its debut at last year's CES at Earte Court. The Soundtracker can take your ST into a four channel music synthesiser, drum machine and mixing studio without any special hardware and works by playing digitally sampled sounds which you can either create using Microbial's KeyMap Card (not supplied) or obtain ready-made on disk from the publishers, MPV. A review of the commercial product appeared in the last issue of **NEW ATARI USER** but if you still haven't decided whether or not to shell out forty pounds, the **TOS SOUNDTRACKER** demo-disk must be an essential acquisition! The demo is an early development version and is missing some of the features such as MIDI and stereo modes at the final release - but it's still surprisingly functional. Unlike copies which have found their way into the cover disks of certain ST magazines, the disk in the **MUSIC 3** library is packed in the last issue with



RECORDARI - one of the first and finest digital samples with good graphics.

samples, songs and ready built modules. There are also separate versions for both and one megabyte machines (it will run on the 1040STX) but apparently not the 500. You can test the Soundtracker as a brilliant sampled music demo using the modules supplied or you can load in the samples and use the STE's keyboard to compose and record your own music. Either way, it's a whole load of fun!

SIGNING OFF

Anyway, that'll be about! Keep you posted for a while! Don't forget to check the box below if you want to obtain any of the disks I've mentioned in this article. Next issue's topic has yet to be decided so if you would like to see something in particular, all you have to do is write and let us know...

HOW TO GET THEM

All prices stated include postage and packing costs. The Atari STE library does not have a unique reference code which you should use when ordering or writing enquiries. Please contact Atari if you do not receive a copy of this directory. Keep details and check the system requirements for each disk. VAT REG. 1-0476124-0000. Companies in the UK are liable for VAT and amounts are exclusive from the statutory price of 14%. The disks are available in the UK through:

STX - MUSIC 1	STX - RECORDARI
STX - MUSIC 2 SYNTH SAMPLES	STX - MUSIC 3 SYNTH SAMPLES
STX - MUSIC 3 SYNTH SAMPLES II	STX - MUSIC 3 SOUND 2
STX - MUSIC 3 SOUND 1	STX - MUSIC 3 SOUND 2
STX - MUSIC 3 SOUND 3	STX - THE PRISONER
STX - MUSIC 3 SOUND 4	STX - TOS SOUNDTRACKER
STX - PUMP UP THE VOLUME	STX - THE TREASURES DEMO
STX - MUSIC 3 SYNTH SAMPLES II	STX - SEEK TRACKER

Prices for standard disks are £22.95 each or £25.95 each for two or more. Write to order at P.O. Box 84, Chalfont, STX Ltd, Telephone 0763 213828 or FAX 0763 243211 with credit card orders.

NIGHTBREED

THE INTERACTIVE MOVIE

This game from Ocean Software is based upon the recent film of the same name, which in turn was an adaptation of Clive Barker's excellent horror story 'Cabal'. The game is very different from other film based games in two major respects. Firstly, it is not simply a hidden-and-platforms game which happens to have the film's characters in it. Secondly, it is distinctly very good.

You will notice that the game's title is 'Nightbreed - The Interactive Movie', and it is the way in which the game represents the story which is quite original. In terms of style the game is very similar to such classics as 'Defender of the Crown' in that you take part in an ongoing story which is represented graphically throughout. However, in this case the 'story' is the story of the film. The game begins as

the film itself begins, with the hero, Aaron Hanson, being told of a series of brutal murders by his analyst, Doctor Denton. These murders were allegedly committed by our hero and he is advised to turn himself in to the police. From here on all of the major events of the story are covered, from Denton's encounter with the evil 'Mask', to his acceptance into the 'Nightbreed'. This is an unbridled gathering of madmen and, in his journey on foot, who share in their own consciousness away from humanity.

Your aim is to control the events of the story by simple interaction. Control is mainly by mouse and you can 'click' on various choices throughout the game. At intervals there are opportunities to enter into a more 'action' oriented in-



terventional scene, you have a more 'hands on' type control of events. Such instances are your encounter with the female throwing evil 'Mask', and when you enter the laboratory of Madam, the underground domain of the Nightbreed.

In terms of presentation, the game is superb. The pictures are well drawn and recognisably based on the film. Usually, the sound consists of some superbly sampled sound effects and music - very impressive. Overall, 'Nightbreed' is first rate, however, it does come on three disks, and if you do not have two drives, the process of disk swapping is a pain and can slow the game down considerably.

FACTS

Title: NIGHTBREED
Publisher: OCEAN
Price: £24.95
Developer: JOHN BARTON (jr)

SIGHT & SOUND

The graphics are fantastic - well drawn, moody, and moving. Unlike from the film, the sound is also of a very high standard.

GAMEPLAY

I thoroughly enjoyed playing it. It's easy to control and quite simply stated. On a single drive system gameplay is spoilt by disk swapping, though.

VERDICT

I am a big fan of both the book and film, and was pleasantly surprised by the quality of this game. It takes the film and makes a superb original in style.

FACTS

Title: SKYSTRIKE +
Publisher: Atlantic
Price: £4.95
Developer: Barton Howard

SIGHT & SOUND

Deliberately simple, smooth looking and highly entertaining.

GAMEPLAY

Very simple, sounds and graphics are also very strong.

VERDICT

Excellent! If you enjoyed the original go out and buy this package.



SKYSTRIKE +

into letters.

As a fan of the original I was most pleased to see that many re-

lease elements have been made to this version. There are many more screens and missions to take part in and the fast guys seem somewhat scarier and a lot more deadly. For some reason the fast screen is more away from, obviously this new model does not have the 'great' presentation of earlier models. Mr. Pothergill's sense of humour shows through both in the instructions on and off the disk as well as in the new features that appear in the form of approach that gives useful additions to high floors and of course in the shape of dead enemy planes.

The graphics are still as good as they ever were but now

there are more backgrounds. Screens are now to be found within the game folders, it is perhaps not wise to refer to using more screens of this game since there are so many surprises it is rather like reading an Agatha Christie novel.

The packaging even has a New Adult User guide on the back by my colleague Peter Hebban which actually refers to the original but applies to this ranged up version even more so. My feelings would be that it is rare not just 'inherently addictive' but that it gives an almost unstoppable urge to play and is a combination of fast letters and good humour rarely found in an arcade game at this price level.

I do not hesitate in suggesting you get out there and buy it now.

I do not hesitate in suggesting you get out there and buy it now.

THE CURSE OF RA

You have been turned into a beetle because you didn't make enough sacrifices to the deities scattered across the screen, are numerous small tiles marked with Egyptian symbols some are fixed, some you can take or with your joystick-controlled beetle. If two similar tiles are in line you can destroy them by pressing the button clear all the tiles and you get the password to the next level. Extra features: complex mazes for tiles, Teleports, crawling Traps, those must all be destroyed. Moves which glide across the screen when unlocked, and Targets - only destroyed by Moves. The Curse of Ra is two games in one. The Logic Game consists of 100 levels where your main challenge is finding the correct tile making sure you don't strand yourself or get blocked by the Movers;

and getting back to the starting tile to complete the level. Once you have mastered the concepts you can have a go at the Arcade Game. Now you have all the problems of the Logic Game PLUS limited time, limited number of lives, and the ability to walk off the edge of a tile and die in the void. Fortunately you can grab coins which fly across the screen and using them to the end-of-level shop to buy goodies like: 30 seconds flight, a minute extra time and a timer a pair of tiles which are not in line. You can also share your position at certain stages. You have to survive five levels (randomly chosen from another 75) to win. On top of all that you get an Editor so that you can design another thirty levels of your own as well!



I enjoyed the Logic Game, although I did find most levels to be relatively easy once you have mastered the basic concepts and it got a bit repetitive - I think it needs a few more variations or clever traps to using the existing features to make it as good as 'The Wizard of Wor' or 'Tetris'. I also found the choice of colours to be very poor - all the symbols are yellow including the Traps and Targets so that it is quite hard to see what is going on. The Arcade Game is an interesting challenge but I found it very frustrating that you could die so easily just by the slightest move of the joystick off the edge of a tile or by the slightest hesitation.

FACTS

Title: THE CURSE OF RA
Publisher: Robinson Arts
Developer: Intelligent
Price: £24.95
Developer: John Seawary

SIGHT & SOUND

Good graphics - spoiled by a few choice colours - nice sound whenever you break a line!

GAMEPLAY

Some excellent puzzle levels and a very challenging arcade game.

VERDICT

Logic, Arcade variants make it good value for money if you like the concept - not necessarily a cut of the

FACTS

Title: SPELLBOUND
Publisher: Psygnosis/
Playgroup
Price: £19.95
Developer: John Davidson (jr)

SIGHT & SOUND

The graphics are impressive indeed and colorful, although they are not typical of Psygnosis style. The sound is really poor by comparison.

GAMEPLAY

Two great as a two player game, but a touch on the dull side for a single player.

VERDICT

Not that bad value, but it does not do!



Just as you are about to advance a grade in the school of magic, your tutor manages to go and get himself kidnapped! Your task is to rescue him or else you will never be able to graduate. To reach him you must journey through eight different, dangerous levels, each containing many hazards. On your journey you must collect objects and spells which will help you in your dilemma. Along the way you will encounter a vast number of cunningly adversative and you have to choose just to use your limited magical powers to try and fight them off.

I have for a number of years now been a big fan of Psygnosis!

SPELLBOUND

Psygnosis software does to its exceptional quality. The games have always been well presented and expertly produced and Spellbound is no exception to this. The packaging is, as ever, of the highest quality - you actually get an instruction book, something which not many software companies bother with. The game itself is, however, not up to the usual standard in my opinion. The concept, for a start, is far from original. The game is basically a multi-screen arcade adventure where you guide your little character around a series of platforms avoiding the various obstacles. It's not exactly a new idea is it? The only saving grace is terms of originality is that you can actually play a two player game

where a pair of you can do battle with the hordes of evil. Graphically the game is very bright and colorful but definitely a very different style from previous Psygnosis releases. In the past we have been presented with large, bold, and beautifully shaded sprites which became almost a trademark of the company. The characters in Spellbound, however, are small and fairly detailed. They are still very good, but they certainly do not look as professional as its games such as the famous or almost famous Monkey. The backgrounds though are really excellent. They are colorful and a great deal of attention has been paid to detail. The sound on the other hand is no great shakes, just about adequate. The two player option is the best feature and adds considerably to the game's attractiveness.

WINGS OF DEATH

I picked up my joystick and grabbed my keys for a mighty shove and up of the proportions only fantasy can offer. The opening music and leading screens kept my expectations high. A German firm I had not come across before and all the best leading features - this could be good!

As the drive changed I read the background that I rate Rage the Rururer transported to a land by evil Castellan's baby on all villainous terms to begin with an X1 ally now-defeat. It is my quest to regain my lost shape by flying along and tapping for windows instead on hot buttons for me.

At last the game was loaded, the screen was very colorful with excellent art work. I was ready to begin. Joystick conveniently turned to full size, save the instructions point out this game is for shooting

everything that does or does not move. Oh I sped. My early success was marvellous as I hit and launch darts that gave me flame breath at high power, the speed and smoothness had me enthralled, then just as I was getting into all this mystery the game stopped. I restarted a hot crashed. I cursed the rat and tried again. This kept happening, the cat had left the accustomed position atop the monitor and I turned off the machine.

The game did not crash. I managed to keep past the crash point but without the recommended button I did not proceed past the second level. This is a difficult and fast shoot-em-up and I loved it.

The fact is of a fantasy dream with all the bonus features to



shoot, there would even appear to be small problems to solve in flight. The game has everything except subtle compatibility. Surely this pleases me since I have seen too many of these good games ruined by continuous blasting. Truly my own joystick has convinced itself to get another pile of action plastic from over use and my thanks is undergoing long term rest from button pushing.

I can thoroughly recommend this game to any shoot 'em up lover as a strong test of their devotion to the art. Remember to keep your controls off and pleasure will be yours, get out there and point your supplier to get this for you. I loved it.

FACTS

Title: WINGS OF DEATH
Publisher: Epsilon GmbH
Price: £24.99
Reviewer: Damon Howarth

SIGHT & SOUND

Lead and initially strong, graphics and well made smooth sprites

GAMEPLAY

Fast action, entertaining, enjoyable and a little problematic

VERDICT

One of the years best shoot 'em ups, best priced to fit

FACTS

Title: PLOTTING
Publisher: Ocean
Price: £19.99
Developer: John Davidson jr

SIGHT & SOUND

The graphics are very good, with sprites and backgrounds being nice draws, the sound is not so hot, mainly adequate

GAMEPLAY

This is a very addictive game which involves both a bit of skill and a lot of concentration

VERDICT

A great release from Ocean, highly commendable



and now for something which is certainly a bit different. The object of this truly simple game is to reduce the number of blocks on the screen to less than a pre-defined target number within a given time limit. This target number begins at nine and changes as you progress through the levels. The blocks can be eliminated by hitting them with the same type of block, either from in front or from above. When you manage to eliminate a block, the next block in the same direction will be thrown out. If you hit a few of the same type of block, the line will be eliminated.

There are four basic types of block - green, red, black, and blue, and they are laid out on the screen in a predetermined pattern for each level.

In many ways it is possible to find many similarities between Plotting and the ancient classic Frogg. Both games involve the movement of blocks and are equally as enjoyable. Plotting however does involve some degree of complexity as, after the first couple of levels, the process of knocking out the blocks becomes more and more of a challenge. You control your little 'blob' shaped character up and down the left hand side of the screen and you can throw the blocks across the screen however, in some instances, you will need to throw them in such a way that you hit other blocks from above. You do this by throwing them off angled parts of

PLOTTING

the background, then causing them to change direction.

The playing screen is split into two halves, enabling you to play a simultaneous two player game where you can race each other through the various levels. Not only this, but there is also a construction kit, where you can build and save your own levels.

The graphics are very good indeed. They are colourful, and detailed in appearance. The 'blob' which you control are amusingly animated and the backgrounds are beautifully drawn, giving each level a unique style. The sound is of moderate quality but is quite adequate for the game and does not spoil the fun at all.

Plotting is an excellent game which is both enjoyable and addictive. So shooting balls, an idea picked from films, just old fashioned fun.

GREMLINS 2



Most of you will have seen the film, so it was a major success everywhere earlier this year, however, for those of you who don't know what it is all about, here is a brief history. The raw script is set a number of years after the original 'demolish' night of damage. The cute and cuddly Gnomes in new look with his original master. However a number of incidents find both Gnomes and the hero of the story, Billy, in the vast building complex of the 'Clamp Place'. Here due to a number of accidental occurrences the Gnomes problem begins again, however this time new horrors abound due to the Gnomes discovery of a science lab within the complex. In these labs they concoct themselves with strange experimental liquids which change both their form and their level of intellect.

Your task, as Billy, is to journey through the vast Clamp Place combating the strange horde of Gremlins, in search of various parts which are necessary to destroy the little green guys. Occasionally you will find assistance in the form of the Hunchy Hunchy Gnomes as he means around knocking out the occasional Gremlin. However you are mostly alone in your task, thus you welcome any weapons you can find. This starting arsenal ranges from generally modified tools to tools which 'fire' three enormous beams of light.

Basically the game is little more than a multi-screen arcade adventure type game where you walk and in small bits to help your quest. Every now and then you will have the opportunity

to purchase a weapon from a shop which then becomes your 'default' weapon.

The graphics vary considerably in quality. There are a number of single pictures which are truly incredible, of particular note is a picture of Gnomes after the game has loaded which is superb, however the game screens themselves are quite primitive in appearance, most of the graphics being blocks of color which are far from inspired. The sound effects are superb due to the quality of the samples used, and it is these which give the game a certain degree of realism.

Overall Gremlins 2 isn't bad, but it is far from original.

FACTS

Title: GREMLINS 2
Publisher: Eidos
Price: £79.99
Reviewer: John Graham jr

SIGHT & SOUND

The sound effects are very good indeed, however the graphics are not the best in this couple of 3D home pictures.

GAMEPLAY

It is very much like a newer 'Moulton' other games in the market - a bit tedious, but not to the point of frustration.

VERDICT

Just another average 3D spin off.

© 1992 Eidos Interactive Ltd.

FACTS

Title: TORVAK THE WARRIOR
Publisher: Code Design
Price: £24.99
Reviewer: John Graham jr

SIGHT & SOUND

Acceptable music which wouldn't get off you too early as the sound effects were quite muted.

GAMEPLAY

Challenging both are up with plenty of variety and features.

VERDICT

Well worth buying if you want another high quality look to look to add to your collection.



TORVAK THE WARRIOR

will try to stop you from fulfilling your quest. You can also find various Energy Orbs to

replenish your ailing health. Speed Up to improve your combat reactions. Extracts to increase your stamina (hit points). Armour (temporary) and Magic Potions which give you a few high power blasts from your weapon. The Magic Potions are especially useful against the end of level monsters - King, Ironheart, Crystal, Dragon, Serpent and, of course, the Nemesis are there!! The action and reactions are well animated against a smoothly scrolling background and the game has a very good 'visual' feel to it.

Along the way you can find better weapons - Bloodsuck, Wandersword and Mending Star - plus Power Ups to make them do more damage - all of which you will need to destroy the evil and horde of Killer Wasps, Rockhorns, Zombies, Scorpions, Barbarians, Winged Dragon Bats, etc. which

make your ailing health. Speed Up to improve your combat reactions. Extracts to increase your stamina (hit points). Armour (temporary) and Magic Potions which give you a few high power blasts from your weapon. The Magic Potions are especially useful against the end of level monsters - King, Ironheart, Crystal, Dragon, Serpent and, of course, the Nemesis are there!! The action and reactions are well animated against a smoothly scrolling background and the game has a very good 'visual' feel to it.

Each of the five levels is broken down into a number of sections so that if you do you don't have to start the level

again - as long as you have a life left - but there is no facility for saving your game positions or for embarking anywhere other than the beginning of level one.

Initially you will probably find it difficult to avoid getting hit by the enemy in between the multiple blows you need to make to kill them, but you will soon learn how to loop back after each blow so that you can remain unscathed while reducing the enemy to health levels. Although most of the action is horizontally-oriented, there are numerous detours down wells or pits and back up via ladders so that the game offers more than the average look and feel.

If you don't mind starting again every time you lose a life then you should get many happy hours of enjoyment out of Torvak the Warrior.

STOS

COLUMN

In which Peter Hickman brings you ...

the winners of the STOS competition ...

another review of SKYSTRIKE + plus ...

a great colour palette routine

Well what an issue we have this month, only one program but it is probably the most versatile listing we have published! But better all of that here in the news (and reviews).

THE WINNERS

The STOS competition which we launched a while ago is now well and truly over. The winners should all have received the prize by now (the fact they should have dropped through the door just in time for Christmas). Of course what everybody wants to know is who won and what games they wrote. Well I'm not going to tell you!! No, no only looking. The overall winner is Fraser Nicholson from Glasgow who wrote an astonishingly addictive version of Hunt-a-Hack. Second prize went to Luke Skinner by Colin Cooper which is a very accurate version of the old 8-bit game and third prize went to Charles Orscoe-Smith who wrote a STOS version of Mines 2048er (it was slightly slow but could easily pass for the original). My thanks must go to everybody who entered, especially those who didn't win a prize and of course I must thank Richard Yaxley at Mandarin and Aaron Fothergill at Shadow Software for donating the prizes. Oh yes, you may be wondering what is going to happen now that STOS Mountain seems to have done a dramatic disappearing act. Mandarin have kindly replaced the prize with the complete set of Play School 5 packages (Kicker '84, 8-7s and Over '84).



Chris Payne from Mandarin, Francois Lissac (right), author of STOS, and Peter Hickman at the Computer Shopper Show (Peter Hickman is behind the camera)

AMIGA SOUND QUALITY!

Things are looking up for STOS, remember I told you about Francois Lissac writing an extension which incorporated all of the AMOS music commands in STOS? It works! In fact not only does it work but it sounds nearly as good as the original! Basically the extension allows you to play AMOS music loads, or you can convert Amiga Soundtracker modules. It includes loads of new commands including VU METER which allows you to read the volume of a sound channel (all FOUR of them!) and even incorporates variable playback rates.

AND GREAT PIZZIES!

STOS Vidi looks better and better, if you came along to the Computer Shopper Show in December this you could have actually seen me playing with both STOS and AMOS Vidi. The STOS version is the most complete and allows the user to do everything which the original ROBBER software allows you to do and more! Some of the nice features include the ability to load and save to ST1, ST2, PC1, BT, ST0, S&D (STOS expanded format), PAC (STOS-compatible format), and SCORING all of which are automatically handled by a new extension. You can sequence your pictures into short films using a comprehensive 'Graphics Tracker' and perhaps more importantly you can drive everything using icons/Mouse bars or keyboard shortcuts! Although almost finished no firm release date has been set, but I'm sure you may see it appear around February/March.

Talking of the Shopper Show, did you go? Did you meet Francois Lissac? He was there, and strangely very few people wanted to speak to him! Poor old Francois. Still he is committed to adding a few new features to STOS over the coming months and as usual I will keep you informed.

```

0000 movemv ax,word 14,1400
0100 mov ax,word 14,1414 ; start 1400+1400 step 2
0200 mov ax,word 14,1400
0300 mov ax,word 14,1400
0400 mov ax,word 14,1400
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0600 mov ax,word 14,1400
0700 mov ax,word 14,1400
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0900 mov ax,word 14,1400
0A00 mov ax,word 14,1400
0B00 mov ax,word 14,1400
0C00 mov ax,word 14,1400
0D00 mov ax,word 14,1400
0E00 mov ax,word 14,1400
0F00 mov ax,word 14,1400
1000 mov ax,word 14,1400
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1400 mov ax,word 14,1400
1500 mov ax,word 14,1400
1600 mov ax,word 14,1400
1700 mov ax,word 14,1400
1800 mov ax,word 14,1400
1900 mov ax,word 14,1400
1A00 mov ax,word 14,1400
1B00 mov ax,word 14,1400
1C00 mov ax,word 14,1400
1D00 mov ax,word 14,1400
1E00 mov ax,word 14,1400
1F00 mov ax,word 14,1400

```

ORIGINAL FILENAME : ST00_002_000
 OWNER: MATHIAS : 10
 GROUP: LAMBERT : 360

Address	Disasm	Comment
0000	mov ax,word 14,1400	
0100	mov ax,word 14,1414	; start 1400+1400 step 2
0200	mov ax,word 14,1400	
0300	mov ax,word 14,1400	
0400	mov ax,word 14,1400	
0500	mov ax,word 14,1400	
0600	mov ax,word 14,1400	
0700	mov ax,word 14,1400	
0800	mov ax,word 14,1400	
0900	mov ax,word 14,1400	
0A00	mov ax,word 14,1400	
0B00	mov ax,word 14,1400	
0C00	mov ax,word 14,1400	
0D00	mov ax,word 14,1400	
0E00	mov ax,word 14,1400	
0F00	mov ax,word 14,1400	
1000	mov ax,word 14,1400	
1100	mov ax,word 14,1400	
1200	mov ax,word 14,1400	
1300	mov ax,word 14,1400	
1400	mov ax,word 14,1400	
1500	mov ax,word 14,1400	
1600	mov ax,word 14,1400	
1700	mov ax,word 14,1400	
1800	mov ax,word 14,1400	
1900	mov ax,word 14,1400	
1A00	mov ax,word 14,1400	
1B00	mov ax,word 14,1400	
1C00	mov ax,word 14,1400	
1D00	mov ax,word 14,1400	
1E00	mov ax,word 14,1400	
1F00	mov ax,word 14,1400	

END OF PAGE

MORE REVIEWS

Review time. Remember a while back I reviewed a game by Midway Software which was written as ST00? Now the game DISCONTINUED I have been re-released by Atlantic Software at a slight price of \$8.99. The game is based around a flip screen horizontal and vertical shoot 'em up and entails controlling a M4 JET fighter over 50 different missions. Each mission involves completing a certain task such as bombing enemy runways, breaking off attacks from enemy planes and even performing stunts such as flying through rolling barrels!

The game has some excellent features which I cannot really reveal without spoiling the game for you all (but - fly as high as you can to trigger an extended and very luxurious sequence of events). The graphics follow a bit but this is a minor point, basically it's a very nice game and well worth the money. Most of its value lies in the utterly engrossing gameplay although the racing times decrease a section. For \$8.99 you cannot go wrong, rush out, buy it, play it and send me some hints via it gets quite hard after about level 200 if you really want to try before you buy a PD clone of Midway's is available from the Page 6 PD library on the ST00 COLUMN Disk 2.

Another short review comes from a new software company called AMERICAN DESIGN. I have it, sounds like a dodgy offer where that Amiga file always sends you for Christmas but it is in fact an aim of Windows PC. The first release from this company is a budget priced art package which has been written in ST00. The package I reviewed was in the middle of undergoing a few changes, so I had a nice printed manual and disk but no book. I am assisted by Alvin Craig that by the time you read this all copies of the program will be available in new issues.

The disk contains two copies of the program, a compiled version for non-ST00 owners and an assembly for everybody else. For £14.99 you get an art package which doesn't have the nice launch manipulation features of Deluxe Paint but does contain lots of other cir-

cles like a routine to give access to the 512 colour palette. This routine is put to use providing a Deluxe Elite type colour selection screen where all 512 colours are displayed for you to click on.

It's quite hard trying to sum up all of the functions available from the art package as it is so comprehensive, all of the usual functions are there including block cut/paste, spray can, stretch/rotate. You can even use standard ST00 fonts.

What can I say about this package, it's like that light ad they keep running, it's good but not that good! For ST00 owners who wish to obtain the integrated environment of ST00s when developing a piece of software the program is perfect. For £14.99 it's an ideal art package for those with a limited budget (it also includes a version in PPT & PCL as an added bonus).

The main rival to this genre of art package has to be Design Elite which I am glad to say doesn't look too well up against ST Paint Master but when compared with a more expensive package like Tekart Paint you begin to realize that you get what you pay for - a fully featured art package which is just a little lacking in some areas.

LET'S HAVE A PROGRAM

Only program time. The routine published here has been written by Terry Murray who also wrote ST PRINT MASTER. It's actually similar to the ST00 routine which comes with the art pack-

age that incorporates some more advanced features and is actually available. To run the routine you must first create a bank from the data in TABLE 1. This data must be typed into the INPUT-A-CH program which comes on your STOS accessories disk, alternatively you can use the enhanced version which comes on the PAGE 6 STOS DISK 1 available from the PAGE 6 PD library. Save this data onto a new blank disk (just in case something terrible happens) and then enter PROGRAM 3.

Before I give you a line by line breakdown of the demo let me just give you some information about using the routine (which can be downloaded). The basic idea is to construct a new series of palette for each screen, each screen can be split into up to 300 palette each one lines deep. Each palette is made up of 16 colours and each colour value takes up two bytes in memory. So to store a set of 300 colour palettes you would need to reserve a bank 9600 bytes long (180 cols * 160 palette * 3 bytes per colour plus another 2 bytes to store a stop value for the machine code to recognise. For this demo I am going to split the palette into every four lines which means I only need to reserve a bank 3600 bytes long (180 cols * 50 palette * 2 bytes * 2).

HOW IT WORKS

LINE 840 Sets up a temporary bank to store our colour palettes.

LINE 850 Starts a loop to fill the bank with colour data.

LINE 861 Chooses a random number for each possible colour. Incidentally you can actually go up as far as \$FFFF for users of the STC (lots of late colours off).

LINE 862 Jumps back.

LINE 870 Prints a number at the end of the palette data for the machine code to recognise that the bank has ended.

LINE 880 This line sets up the routine, you must pass some variables to the machine code for it to function properly.

Arg00 must always hold the start address of the bank where the palette data is stored.

Arg01 tells the routine how often to

wrap palette for the screen. In fact, you must always add 1 to this number. For example if I want to wrap the palette every four lines I must pass five into Arg01.

Arg02 lets you start the changes to the screen at any line from 1 to 1020.

Arg03 is a control register for the routine, as you pass 0 into it, and then call the routine it starts, if you pass 0 into Arg03 the routine stops wrapping palettes!

LINE 940 Calls the routine, waits for a key and calls it again in order to stop it.

Well what do you think of that? Need help? I do have STOS.

THE STOS CLUB

Right now, before I get off let me just tell you about the STOS club. If you are interested in receiving a bi-monthly newsletter (which by a strict coincidence is published in between issues of New Atari World) then give Aaron Pottinger a ring on 0271-20544, tell him where you found out about the STOS club from and join up!

STINTIME-
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DRAGONFLIGHT

There are four of you, all about, mage and fighter. The fate of the world rests on your shoulders. Only YOU can search the dungeons of this strange world to find the magical scrolls which will enable magic to flourish again. And only YOU can discover the fate of the missing Dragon!

You start in the town of Pegasus with a little food and gold, a few weapons and one small fragment of a map of the world - one of your prime objectives is to find the other eleven pieces so that you can understand various strange geographical references. The map builds up to form a superb full screen display of the world.

The game is completely mouse driven, though you can use the numeric keypad for movement most of the time. In Pegasus you will find pubs, blacksmiths, grocers, bakers, university, town hall and about 25 houses, at about 13 of which someone will answer the door and talk to you. You will also find about a dozen people wandering around the town. Conversations are a little limited - they say what they want and the only options you have are Show and Get. The blacksmiths and pubs in the twelve towns will provide all the information you need so that you know what to Show/Get to allow in order to progress.

Near Pegasus you will find two dungeons to explore. If you feel ready for a fight! But first you might visit the nearby town of Dronedon (D) to buy some cheap torches or look for secret passages in the Tunnel

(T) to give yourself a good start in the game (the password for the Tunnel is in Pegasus).

You flip between action scenes and inventory screens with the right button. The main part of the screen is used for a number of different functions: overhead view of wilderness or town, view ahead of dungeons corridors, side view of fights and dragon rooms, text during conversations, messages and lists for buying, accessing your inventory, preparing spells, etc. - all done with lots of lovely graphics.

The Dungeons are enormous - there are over 50000 levels in explore in the ten main dungeons! Particularly there are no wandering monsters - they only have to fight in Dragon Rooms - so some of the Dungeons are VERY difficult to map. There are 3-5 rooms of small rooms and staircases, wizard towers, pits, and Little Things which will not let you pass until you answer their question!

You will also have to fight your way through hundreds of rooms inhabited by various Undead, Frodo, Goblins, Groggy Gulls, Redrums, seemingly invulnerable Statues, and Crystal Guardians which

instantly obliterate those who enter unprepared! The fights are done with a side view of your party on the left and up to four enemies on the right. You use your movement points to move, bark, fire or cast prepared spells - a small window in the corner showing a hero's eye view helps you aim - then your actions and the reactions are shown in animation on the main screen - quite impressive when you have a barrage of magic weapons and spells flying about, and each of the Monsters dies graphically in a different way!

Assuming you survive your first couple of dungeons you should end up with enough gold and treasure to improve your weapons and armour, and some mounts and potions so that you can start practicing magic! Experience points allow you to build your initial 50 hit points up into the thousands!



Dance you have got to grips with the mechanics of the game and learnt how to survive, you will find an enormous world to explore and a number of subplots to complete in order to get all the power and artifacts which you will need to survive the last couple of dungeons and gain the means to find the secret of the missing dragon!

The Germans who put this together obviously had a lot of fun doing so - you can meet lots of interesting people in the towns such as Thomas Gernert and his tale that he had from Ulminal plus thanks to people like Tolkien and Gary Cooper!

Dragonflight is not perfect - there you get pretty powerful most of the fights can be won very easily, but you have to keep fighting to explore the dungeons once you have won the fight sometimes a couple of hundred times you start thinking you could speed it up a little, and the people wandering the towns are a bit hard to find sometimes. But if you accept these limitations you will get endless value for your money as it will take you many, many hours to discover all the secrets of this excellent fantasy and really like super animated sequences which completes the game. (Note one BUG - Rader Kerknaps a Lignator of Nazdun - you'll need to know that)

- **GRAPHICS IS SOUND** - Great variety of graphics; atmospheric music which is also to be released on CD.
- **GAMEPLAY** - A little tedious in places, but mostly an excellent, atmospheric, well paced AD&D with lots of depth.
- **VERSATILE** - Excellent value for money, especially if you get the limited edition with the free booklets and badge!



Title: DRAGONFLIGHT
Publisher: Thalion
Price: £24.99
Developer: John Sweeney

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