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The next issue of  
**NEW ATARI USER**  
will be on sale 24th May  
Editorial copy date is 15th April

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Editorial address: P.O. Box 34, Baffins, ST14 1QR, ENGLAND. Tel: 0581 51500; Fax: 0581 54550  
Editor & Publisher: Les Elliott - Advertising: Sandy Elliott  
Printed by: Stephens & George, Marlow, Bucks MK35 5SE - Page layout by: PAGE 4 - Lettering layout by: The Spring Studio 01-252 94-0. Copyright by: Eassy 0574-47000 - Newsprint: Distribution by Diamond Express, Unit 1, Suggs Road, Wycombe Lane, Heston, E. Sussex TN30 4NP. Tel: 0424 420002  
New ATARI USER is published bi-monthly on the last Thursday of the month prior to cover date





# Mailbag

Got a point  
to make?

Got any  
questions  
to ask?

Write to  
Mailbag  
P.O. Box 54  
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ST 16 1DR

## ENJOYING IT!

When, about three years ago, my 1000-drive died on me I decided not to replace it and invested the money in a BT system. The BT is a superb machine which easily overcomes our office PC and I get great enjoyment from using it and I shall continue to do so for a long time to come.

Last August, for no apparent reason, I decided to re-wire my old 1000 and sent off for one of the new XP501 drives and a copy of MYSDOS. When it arrived I set it up and spent half the night getting to grips with the new DOS. Suddenly I had it and I was hooked. The drive is superb with two double density storage but it was not this that got me. It was the sheer joy of using such a brilliantly operating system as the 1000 after battling so long with the notoriously complex TOS and OS/2 on the BT. If only more BT converts would give their old 8-bit a bit an airing, I am sure that they would soon agree that it was a remarkable machine they have.

Peter J. Kelly  
Manchester

That's probably what we have always said, glad we've said it.

## LONG LINES

I have a 8008 with a data recorder and I am having a lot of problems trying to get a game to work. The one in question is in the August/September issue called 'Crazy Day'. I have used TYP3 03 but on lines 404, 424 and 435 the end of the

line does not come up when I hit it. Can you please explain this to me. I have looked at the Atari basic but cannot find a way to go past the loop at the end of line 4 and get the code to match with TYP3 03. I am very impressed with the machine and would like any information that will help me.

I. Wainlin  
Holtick, Leeds

... Please could you give me some advice concerning the coding for 'Wired In Issue 327' since 8008 appears to be too long and is not accepted by the computer. It gives "Error" with a block at the end of the line.

A. Prokes  
New Eltham, London

We have had a lot of queries like this recently from new users. The Atari system editor only allows three physical lines to be typed in on the screen yet the computer can interpret and display lines longer than this. How come? The reason is that the Atari does not store 'logical' like PLOT, SOUND, POSITION etc. so full words but rather as numerical values which it puts up on an internal table and it also has very sophisticated routines checking that words and where spaces should be on a line. Once you know this, you can begin to take advantage of it by using a few tricks when typing in programs. In the majority of cases with lines that end up looking when listed as: the program may have several observations for keywords such as PDS, for POSITION 50, for sound and CR, for CAROLINE. If you type these observations they will be accepted and stored with

the appropriate number code but when you list the line, the Atari will look up the code table and substitute the full keyword. If necessary, I will show more than three lines on the screen.

There are several ways to type in long lines. The first is to use observations on a line, the second is to leave out spaces, for example just type PDS PDS PDS PDS PDS, the Atari will space it out. Another trick is to enter the left margin of the screen by typing PDS 50 0 before you start typing your program. This will allow you to get another six characters per program line on screen. One problem when using these tricks is that the TYP3 codes will not be correct when printing letters. What you have to do is press letters then LIST for the line you have just typed by typing LIST 100 for sub-stroke and then use the Control Delete key to move the cursor up and press letters again. If you have typed the line correctly then the correct code will be shown. But if it is wrong then you have a slight problem because if you try to enter the line you will have the error. The only solution is to use the Control Delete key to delete the keywords back to their observations or take out spaces and type in the end of the line again.

All of the lines in printed listings can be typed in, after all numerical may have typed them in the first place, you just need to know how to do it.

## RESCUE REQUIRED

I have typed in TO THE RESCUE from Issue 40 using TYP3 03 but cannot get line 50 10 to match the 80 code. I have tried everything on the keyboard that could possibly resemble ... but nothing works. Could you please tell me what was used as the game can run perfectly.

Max J. M. Gaskrook  
Newington

Corrected

## A NEW CASSETTE?

I have an Atari 800X and an SX50 data recorder but recently the data recorder hasn't been functioning properly. I have been planning to buy a new one but with a new one but with no success. As I desperately need a new unit, could you recommend anyone who might have some to stock?

Adam Robertson  
Stockport

We don't know of any parties for sale who might have cassette decks in stock but suggest that you give a chap called David Price a ring on 021 303 1730. He has all sorts of weird and wonderful things for all Atari.

## FS2 AND XP551

I read in your magazine that Flight Simulator II is not compatible with the XP551 disk drive. I am keen to buy FS2 but I own the XP551 and so I was wondering whether any solution had been found which would make the simulator run with my disk drive. I have heard how good it is and I would hate to have to miss something special.

Bryan Silverwood,  
Southampton

You certainly are missing something special! The reason that FS2 won't work with the XP551 is due to the copy protection which, we believe, checks the speed of the drive. The older Atari drives ran at 300 rpm but the XP551 runs at 360 rpm. On the 810 and 1050 drives there is a small gap which allows the drive speed code it can easily be adjusted but the XP551 does not appear to have this so you can't slow the drive down. There would appear to be two solutions - either a modification which would allow the XP551 to be slowed down if this is indeed the problem or a software patch that could stop the FS2 disk so that it

does not boot-up after the copy protection fails to verify the drive. Someone must know the solution to this problem. Has anyone produced a patch to modify the copy protection on FS2 to work on the XP551? If so send it to us and we can modify reader's disks for them. Has anyone modified the XP551? Again send us the details. There are hundreds of frustrated users who would benefit.

## DRIVING YOU MAD

I am a complete novice regarding computers, however, I was lucky to acquire an Atari 800X/501 plus several hard discs of RAMDISK. I read the SL/3E manual and thought OK I can handle this but when I tried to type in all the settings and DATA and BIOS I got error after error (17 at line 56 - Syntax ??). Having no idea what a SYNTAX was (and still don't) I decided to tape the settings on an audio tape ("very simple") - please consider it a record (80-90 plug in mine, then read DATA statements about auto tape). They back through headphones, no need to read and type simultaneously, I have become a computer machine overnight! (I blame Atari - the Commodore 64 is in the bin), if you don't reply to my correspondence, don't worry, I will still await the next PAGE 6 with anticipation, trepidation (computer-lation).

R. Hunter  
Chingford

P.S. I am a 33 year old coach driver who works all day and night and play my computer SL/3E on my coach through a 3-inch TV screen and voltage adapter while sitting in my bus awaiting my passengers to board from you (probably next).

Now do you think we could possibly make this up? What damn it will mean? Probably that you should be awarded if creating a bus in Chingford!

## THE BREAK KEY

I am having a few problems with my programming. To protect my programs I might have to disable all of the keys! How might I disable the Break Key and keep the rest of the keyboard? And one more thing how can I disable the Break key so it won't clear the memory but will not respond?

Oily Pope  
Dorking

Disabling the Break key is quite easy. Just add a sub-routine as follows:  
POKE 56,64:POKE 52714,64  
This is next however every time a GRAPHICS command is issued so you need to GOSUB to the sub-routine each time you change graphics modes. Trapping the BREAK key is more difficult and involves a machine code routine. We published a number many years ago but it does not work on the SL/3E machines. This is a relatively easy routine for a machine code programmer to write, how about someone sending us a routine?

## GARRY ... GARRY

Please tell us readers what has happened to Garry Francis. I used to really enjoy reading his expert adventure columns. I see that you dropped his name from the regular contributions and then put it back. Has he sold his Atari? Did it blow up? Was it glitched? I fear the worst.

John B. Llover  
Salisbury

For many readers, Garry Francis wrote some of the best adventure columns ever published in any Atari magazine but has been really missed now for being a long time. However has it that his Atari was eaten by a snake but we did hear from him a while ago saying it will be back. I can only publishing this to make him feel even more guilty!

## ONE MORE THING

I have been an Atari owner for about 7 years and subscribe to New Atari Users. I write my own utility software in machine code and I have recently purchased an SMP Plus. With this came problems ... double density and 1050 density.  
How can I format in machine code using double and 1050 density? How can I format the drive with either drive? How can I read double density and drive format? Do I read 1050 density in the same way as single density? How can I load a machine code file which has an FDS on its sectors? Where can I get 3 ring Masters from? How do the Basic SAVE and LOAD commands work? Where can I get MAC 68 from?

Neil Parker  
Sedburgh

P.S. How can I create a variable from the variable table in Basic or Turbo Basic?

You can get MAC/68 from Frontier Software at P.O. Box 113, Harrogate, N. Yorks YO2 0BL. As for the rest of your questions ... well, it's ... gone. Can anyone else help?

## LOSING TTPO?

Please can you advise me how I can protect TTPO if I am clearing down when BBSIT is accidentally pressed, mostly by my grandchildren's sticky fingers!

R. Edwards  
Haverock

Although it seems to work when BBSIT is pressed, TTPO remains in memory. All you need to do is type: A+1280:1280 and when you get to another line the TTPO code will reappear. Maybe if someone writes a reset routine, on reactivated when it could be incorporated in a new version of TTPO? \*

# GOODBYE, OLD FRIEND

John S Davison takes a last look at one of the best programs ever for the 8-bit Atari

Regular readers will know that Software's Flight Simulator II (FSII) is my all-time favorite computer program. I might say better than when I heard that "Software" had had interest in a new software and had developed all their remaining stocks of the FSII version.

Then the good news arrived - Page 8 had managed to locate a few copies from the jaws of destruction for the reason that what's this? Not only are Page 8 selling this superb flight simulator, but also a whole bunch of accessory disks never before seen in the US. In fact, there are several available which Software hasn't even bothered to announce, including most of those out on the 800 badly, there are only a few of each accessory disk available, so in a case of first come, first served. Copies of the basic FSII simulator are, however, slightly less plentiful, so it's probably still not too late to get one of these.

I owned FSII in issue 21, so don't mind reviewing it all over again, but I would like to remind you what it's all about. Then it's up to you whether to pass up the last opportunity of buying the king of flight simulators for your beloved 8-bit machine.

## SETTING THE STANDARD

Even today FSII still sets the standard by which all flight simulator programs

are judged. In its 8-bit version it simulates a Piper Cherokee Archer II, a popular single engine light aircraft, and does so very, very accurately. In fact, Bruce Artwick, used 47 of the basic flight charts - notes of that aircraft in building the simulation model, and his care and attention to detail shows everywhere. It's so accurate that people who have learned to fly it have often developed the taste for real flying and have gone on to earn their Private Pilot's license. In the next issue I'll be writing about a man who did exactly this, so stay tuned!

FSII's graphics are excellent, particularly the aircraft's instrument panel. This shows all the instruments you'd find in a real light aircraft - and they all work just like the real thing. One of its most fascinating aspects is its full range of radio navigation aids. Again, they all work just as in real life, enabling you to accurately navigate under instrument flight rules (i.e. in bad weather). You can even land the aircraft in poor visibility at airfields equipped with instrument Landing Systems.

You view FSII's world through the cockpit windows, and you see an accurate three dimensional graphic representation of the real world. The basic FSII package provides scenery data for with areas surrounding New York, Chicago, Seattle, and Los Angeles, with over eighty real life airfields to fly from and to. Also, you'll find roads, rivers, lakes, mountains, and other geographic detail equally accurately located - just check them on any map if you don't believe me! Naturally, the graphics have aren't as stunning as on the 800, but this is of secondary importance in a program of this type. The scenery is designed as an irrefutable database, and that's where the scenery disks come in. By keying location parameters into the FSII you can position your self anywhere in FSII's world, and if you've placed the appropriate scenery disk in your disk drive the program will



load it in and use it in place of the standard scenery.

## CLOUD FLYING

The editor also lets you set weather conditions (clouds and wind), time of year, and time of day, so if you want a real challenge you could fly in thick cloud and high winds at 2,000ft on a winter's morning! It also lets you enter the program's "World War One Ace" game mode in which you get to fly a WW1 biplane to shoot down enemy aircraft, and bomb ground targets!

The 8-bit version still stands up well when compared with that on the 800. Admittedly the 800 has much better graphics, additional scenery to download, finely controlled steering facilities, and the option of flying a biplane as well as the light aircraft, but fundamentally it's still basically the same concept. Don't expect whisking around action as that's NOT what it's about. What you will get is accurate representation of aircraft flight that's never been bettered on the 8-bit machines.

I hope that's whetted your appetite. Flight Simulator II is a rare classic, which simulators fans will be proud to own. Page 8 is giving you your last chance ever to acquire it, and is also throwing in a free FSII book to help you get the most out of it. So, you 8-bitners, you know what to do - call Page 8 soon to reserve yourself a piece of legendary 8-bit software before it flies off into the sunset forever.

## HOME BREWED FSII SCENERY?

Richard Martin of Acton, London has asked me a question probably in many people's minds. Has anyone developed the format of scenery disks and produced their own scenery, perhaps using what some they've written themselves? If you know of something please contact the team of Page 8 and I'll publish anything useful that turns up.



drive the program will



# FLIGHT SIMULATOR II

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# DISPLAY LISTS

a tutorial by Andrew Weir

Anyone who has ever written a game in BASIC will know that the visual effects achievable with the standard graphics commands are not particularly spectacular. In this article some of the shortcomings of basic graphics will be revealed - be warned, however, that machine code routines will be lurking in every corner! A reasonable knowledge of BASIC, though, will get you quite a long way.

Atari computers are unusual in that they do not have an ASIC chip, but two custom ICs, called ANTEC and GITA, which together maintain the video display. GITA apparently stands for George's Television Interface Adapter, incidentally. The fact that there are two chips means that the Atari machines have quite extensive graphics facilities. For 8 bit machines and 16 pretty graphics can be difficult to achieve, since there are forty-eight registers to think about. But don't be discouraged yet (there will be time for that later). We'll take one topic at a time. Let's start with the old favourite, Display Lists.

## ATARI'S CUSTOM CHIPS

Before starting any programming, it might be as well to try to define the functions of the two graphics chips, GITA, as far as the programmer is concerned, in more readily to deal with player/missile graphics. ANTEC could almost be described as a microprocessor, it has a variety of functions, the main one being to process a set of display 'instructions' which determine exactly how data to be displayed actually appears on the screen. This program is the Display List, it resides in user memory, length depending on the current graphics mode. Note that the list is in RAM (it's actually copied from ROM by the CPU, so it can be changed with POKEs). Before reading further, take a look at a Display List. Type CR.2, then:

```
DL=PRER(060)+POKE(011)*655
POKE(0-01,TO(01-02,7*PRER(01)*NEXT 8
```

all its immediate mode. Stop the numbers from scrolling too fast with CTRL-C. The numbers you see are instructions, executed consecutively by ANTEC, to produce a screen which we refer to in Chapter 2. Locations 060 and 061, in case you're wondering, point to the start of the Display List (this vector is set up on a mode change, and is user-adjustable).

So when do these instructions occur? The first three numbers in the list (1112) each tell ANTEC to display eight blank scan lines. A scan line is the thinnest horizontal line the computer and the TV can deal with. Since the display is non-interlaced, there are only 212 of these altogether. Of these, 188 are usable.

The next three numbers tell ANTEC that the rest of the display will occur when necessary (more details later), and also that there is to be no Graphics 2 line (that is, stereo scan lines) at the top of the display. There are then a few P's which indicate

more lines of Graphics 1, and finally a jump instruction (the last three bytes which marks the end of the Display List and tells ANTEC to start at the beginning of the list when the next frame is to be displayed.

## CHANGING THE DISPLAY

So what happens when one of the instructions is changed? Try it. Type PRER in to Graphics 2, and with TL still a mode available.

### POKE DL+0.0

Then try printing text at the top of the screen; you should find that, although most of the screen is the usual Graphics 2, the second line down shows text in Graphics 1 size. The POKE replaced a 7 byte instruction to display a line of mode 0 with a 4 byte instruction to display a line of mode 1. Try POKEing other numbers (from 0 to 255) into this location, and observe the effect. You should find that the numbers you POKE bear no relation to the mode number which appears on the screen. For some unfortunate reason, the mode instructions were designated as letters.

### GRAPHICS MODE

### ANTEC MODE

0	2
4	3
12	4
15	5
1	6
1	7
2	8
4	9
5	10
8	11
14	12
7	13
15	14
5,8,10,11	15

(Incidentally if you've understood everything so far, you should be able to do a little more. What's that instruction doing inside ANTEC mode 2? The fact is, Antec mode three has no equivalent BASIC mode - but don't get too excited. Antec mode three must surely be one of the most useless features ever incorporated into a graphics chip (which is probably why Atari didn't bother making it available from BASIC). Anyway, in case you're interested, Listing 1 gives you an ASIC screen. What you get is a Graphics 0 screen with each character ten scan lines in height. Instead of eight - which might at first sound rather useful. Not so. Since every character is defined by eight bytes, so two of those bytes must have ceased to be defined. What actually happens is that the top

```

00 10 REM *** LISTING 1 ***
00 11 REM Sets up basic mode 1, set
00 12 REM such one unless you redefine
00 13 REM the character set, on the
00 14 REM other hand, some important
00 15 REM basic principles are demon-
00 16 REM strated in this program.
00 17 REM
00 18 DATA 112,112,112,67,66,100
00 19 DATA 1,1,1,1,1,1,1,1,1,1,1,1,
1,1,1
00 20 DATA 66,66,100
00 21 GRAPHICS SCREEN 60,60:OPEN SCREEN 1
: SCREEN 60:PRINT SCREEN 60
:GOTO 1,10
00 22 REM 1000 is the usual start add-
00 23 REM -ress of the graphics 0
00 24 REM clearing line screen against
00 25 REM location 1000 of row 1000,
00 27 REM
00 28 REM, low 101000000000000000
00 29 REM low instruction clearing
00 30 REM that video memory starts at
00 31 REM 00000000000000000000, and
00 32 REM also that one line of basic
00 33 REM mode 1 is to be displayed.
00 34 REM Line character sixteen times
00 35 REM of mode 1. Note that the
00 36 REM total 0 of row lines is only
00 37 REM 1000000, but this value
00 38 REM is later changed to 100 to be
00 39 REM available.
00 40 REM pointing to start of list.
00 41 REM notice that since there are
00 42 REM only 10 lines on the display
00 43 REM and not 14 the 05 mode 1 bit
00 44 REM is cleared, and won't occur
00 45 REM the screen clearing.

```

```

01 0 REM *** LISTING 2 ***
02 1 REM 1 line mode 0,100 of mode 0,
03 2 REM and 70 lines mode 10...
04 3 REM all kind of ...
05 4 REM
06 10 GRAPHICS 600
07 20 SCREEN 60:OPEN SCREEN 60:PRINT SCREEN 60:
: OPEN 100
08 30 SCREEN 60:PRINT SCREEN 60:
09 40 FOR I=100 TO 1000:PRINT I:GOTO 10
10 50 SCREEN 60:PRINT SCREEN 60:
11 60 GOTO 1000
12 700 REM 1000000

```

## LISTINGS 1, 2 and 3

```

01 0 REM *** LISTING 3 ***
02 1 REM Linear 011, changes the
03 2 REM background color of a mode
04 3 REM 0 clearing memory down the
05 4 REM screen...
06 5 REM
07 6 DATA 70,107,0,140,00,112,141,00,000,
100,00
08 10 FOR I=100 TO 1000:PRINT I:GOTO 10
09 20 SCREEN 60:OPEN SCREEN 60:PRINT SCREEN 60:
: OPEN 100
10 30 FOR I=100 TO 1000:PRINT I:GOTO 10
11 40 FOR I=100 TO 1000:PRINT I:GOTO 10
12 50 FOR I=100 TO 1000:PRINT I:GOTO 10
13 60 FOR I=100 TO 1000:PRINT I:GOTO 10
14 70 FOR I=100 TO 1000:PRINT I:GOTO 10
15 80 FOR I=100 TO 1000:PRINT I:GOTO 10
16 90 FOR I=100 TO 1000:PRINT I:GOTO 10
17 100 REM
18 110 REM 1000
19 120 REM 1000
20 130 REM 1000
21 140 REM 1000
22 150 REM 1000
23 160 REM 1000
24 170 REM 1000
25 180 REM 1000
26 190 REM 1000
27 200 REM 1000
28 210 REM 1000
29 220 REM 1000
30 230 REM 1000
31 240 REM 1000
32 250 REM 1000
33 260 REM 1000
34 270 REM 1000
35 280 REM 1000
36 290 REM 1000
37 300 REM 1000
38 310 REM 1000
39 320 REM 1000
40 330 REM 1000
41 340 REM 1000
42 350 REM 1000
43 360 REM 1000
44 370 REM 1000
45 380 REM 1000
46 390 REM 1000
47 400 REM 1000
48 410 REM 1000
49 420 REM 1000
50 430 REM 1000
51 440 REM 1000
52 450 REM 1000
53 460 REM 1000
54 470 REM 1000
55 480 REM 1000
56 490 REM 1000
57 500 REM 1000
58 510 REM 1000
59 520 REM 1000
60 530 REM 1000
61 540 REM 1000
62 550 REM 1000
63 560 REM 1000
64 570 REM 1000
65 580 REM 1000
66 590 REM 1000
67 600 REM 1000
68 610 REM 1000
69 620 REM 1000
70 630 REM 1000
71 640 REM 1000
72 650 REM 1000
73 660 REM 1000
74 670 REM 1000
75 680 REM 1000
76 690 REM 1000
77 700 REM 1000
78 710 REM 1000
79 720 REM 1000
80 730 REM 1000
81 740 REM 1000
82 750 REM 1000
83 760 REM 1000
84 770 REM 1000
85 780 REM 1000
86 790 REM 1000
87 800 REM 1000
88 810 REM 1000
89 820 REM 1000
90 830 REM 1000
91 840 REM 1000
92 850 REM 1000
93 860 REM 1000
94 870 REM 1000
95 880 REM 1000
96 890 REM 1000
97 900 REM 1000
98 910 REM 1000
99 920 REM 1000
100 930 REM 1000
101 940 REM 1000
102 950 REM 1000
103 960 REM 1000
104 970 REM 1000
105 980 REM 1000
106 990 REM 1000
107 1000 REM 1000

```

ten bytes of each character is put underneath the rest of the character, as you need to define a new character set to make use of the mode. (Bizarre. I have actually seen the mode used in a word processor, to give true descenders on lower case letters. The mode was no doubt provided for these purposes. But really, if that are going to give us 'imagine' modes, they could at least make them work the effort of accessing them.

## FINDING THE SCREEN DATA

But let's move on to more interesting things. You are no doubt also wondering why basic 10 represents for BASIC modes.

You will have to wonder a little longer but all will be revealed later. For now, we should examine the other instructions in the Display List. Remember the 77 at the top of the Graphics 2 list? This is actually two instructions held in one byte; one is a mode line instruction, held in the lower nybble of the byte, numerical value 7, the other is held in the high nybble, and is known as an LMR-Local Memory Search instruction, value 64. It is always followed by two other bytes (an address, it tells Atari where in memory it will find the image data, which is to be displayed on the screen. Normally the address printed in the same as the address held in locations 60,60 - the start of screen memory - but more later. It is important to note, incidentally, that if the screen memory is ahead in rows a 40











visual effects; it can be used, for instance, to process data from an input device where such processing would be inconvenient to incorporate into the main program. I once used two DLIs to update two co-ordinate registers using input from a trackball.

## MORE ADVANCED TECHNIQUES

Now let's move onto something different. Remember the old LMS instructions? I implied that the address it provides need not be the same as the screen start address, 80,000. This is because the two values have slightly different meanings that arose in 80,000 is used exclusively by the GIs for DRAWING, PLOTTING, and so on. The address stored in the Display List tells AMTC which part of memory will actually appear on the screen. Thus it is possible to place a design in one section of memory while actually displaying another, by altering the pointers appropriately. It is also possible, by the same technique, to flip rapidly between pre-constructed screens to achieve animation, etc.

Program 7 flips between four Graphics 2 screens, to show how it is done in practice. Remember to change the second LMS instruction if you want to flip the screen using this method. This 'page flipping', as it is called, is not really so much of an easy programming make it out to be - mainly because of the huge amounts of memory required to swap a reasonable number of screens. Also the flipping usually needs to be done during the vertical blank to avoid glitches appearing on the screen. In any case, the point of discussing all this was to demonstrate the fact that AMTC can actually display any area of memory you care to direct it to. The reason for this will become clear to a student when we discuss screen refreshing techniques.

## SCROLLING UP

We'll begin with vertical scrolling, since this is the easiest type to understand. On less advanced machines, scrolling is achieved by moving an area of memory through the screen RAM. With the Intel, however, the screen memory is moved through the user memory; a subtle difference in description, but the latter is relatively much simpler to do than the former. Program 8 demonstrates how it is done in practice; here the screen memory is moved through the ROM, 40 bytes at a time. Most of the program is concerned with doing initial calculations; it is the two POKEs in line 50, modifying the address pointed to by the LMS instruction, which actually effect the scrolling.

It isn't very impressive, is it? Part of the problem, of course, is that the display itself isn't exactly inspiring, and secondly, the scrolling is jerky. In addition, the display flickers every so often. This is caused by incorrect timing, and is one of the problems associated with using BASIC for manipulating the screen.

## SMOOTHING IT OUT

To achieve a fine scroll, two things must be done. First, each mode line instruction of the Display List must have the value 25 added; the instructions to enable vertical scrolling. Secondly, the VERTICAL-BLANK register must be altered. This register should be POKE'd with a number from 0 to 15 to tell AMTC how many zero lines to line scroll. This register allows every line on which line scrolling is enabled. In practice, since VERTICAL-BLANK can only be used to move the display through 15 zero lines, the programmer would arrange for his scroll pointer to move the display through eight zero lines for modes such as 0, with 4 zero lines per mode line, then create a scroll

```
00 3 REM *** LISTING 8 ***
01 3 REM Vertical scrolling. 8 rows
02 3 REM screen RAM, 40 bytes 00
03 3 REM memory pointer 50000
04 3 REM address that is used when the
05 3 REM display list is constructed
06 3 REM re-position, and this pointer to
07 3 REM set it out of the way in case 0
08 3 REM and POKE 500,000:PRINT:PRINT
09 3 REM
10 3 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
11 3 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
12 3 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
13 3 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
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97 3 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
98 3 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
99 3 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
100 3 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
```

```
00 20 REM *** LISTING 11 ***
01 20 REM Non-standard mode 2000 4
02 20 REM 20 20 20 20 20 20 20 20 20 20
03 20 REM What happens in 2000 200
04 20 REM screen RAM 2000 200 200 200 200
05 20 REM address of ROM
06 20 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
07 20 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
08 20 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
09 20 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
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97 20 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
98 20 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
99 20 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
100 20 REM:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT
```

## Listings 10 and 11

through one mode line, simultaneously resetting VSCROL. Before we modify program 7 for line scrolling, take a look at program 8, which first scrolls just one mode line, to demonstrate how VSCROL is used. Incidentally, VSCROL is a register in ANTEC, and since ANTEC checks the processor PWR line to check the same way as an address line, the register does not behave like a normal memory location: you can POKE to it, but you can't read meaningful values from it. This is a 'feature' common to most of the I/O chips.

But back to listing 8. You have probably found that there is nothing wrong with the scrolling bar, again, the screen flickers. This gets worse when we start moving the LMS address around as well, and the only solution, unfortunately, is to alter the registers during the vertical blank.

## PUTTING IT TOGETHER

Program 9 is the all-stopping, all-clearing vertical scrolling program. There is an up/down register (DUI) and a speed register (DSD) which you can POKE to achieve the effect you want. As it stands it scrolls through the standard mode 0 screen; that is, from address 40000H, but you can easily adjust it so it scrolls to start through any other area: thus you can use line scrolling in your own programs without even having to know what's going on.

## ... AND DOING IT SIDEWAYS

New for horizontal scrolling - probably one of the most effective shaping manipulation techniques, here you need to add 16 to the Display List mode line instruction, and HSCROL (54280H) is the way to achieve line scrolling. Horizontal scrolling is a little more complicated than vertical scrolling in that the screen has to be effectively split into many separate screens, with an LMS on each line. The reason for this may not be immediately obvious, but imagine shifting a one-dimensional memory array through a two-dimensional screen; you should be able to see that this would result in a wrap-around rather than a scrolling effect. Study listing 10, which shifts two lines, each 64 bytes long. Notice where in memory the LMS instructions are pointing; the two lines are stored as if they are to be printed on a screen 64x12 instead of 256x12. Of course, only twenty of the sixty-four bytes actually appear on the screen at any one time; the few LMS addresses are incremented to produce the scrolling effect. Note that both LMS instructions have to be altered together.

If it is difficult to see quite what's going on, imagine moving a window along several long, printed parallel paper strips; this provides a useful illustration of the process.

Because there are so many different effects based on horizontal scrolling, it is not possible to give a general-purpose program which can deal with all of them, so you are really on your own, that is, if you have a reasonable knowledge of machine code, you should have no real problems. Nevertheless, each line must be defined separately and pointed to by a separate LMS instruction. Also note that the HSCROL register scrolls one 'value clock', the width of TVG mode 0 pixels. This means that to move, say, a Graphics 0 character one space to the left, you change HSCROL by four (not eight).

## BOTH WAYS AT ONCE

And if you can master all that, you can probably master anything. You might like to try scrolling a screen diagonally: this involves adding 16 and 32 to the DL instruction, and arranging your memory diagonally is in rather difficult to visualize a diagonal screen (mapped as a one-dimensional data

set, and even more difficult to put a design on a diagonal chunk of memory). However, if you can get it to work, the effect can be most impressive, as demonstrated by games such as *Zaxxon*.

## MORE TRICKS

That's really all there is to know about Display Lists, but there are still one or two more tricks, which, though not really anything to do with Display Lists, ought to be mentioned. Now, you might think that a lot of irrelevant modes is impressive for a machine as ancient as the Atari, but what is often kept a secret is that you can not only combine different items of each mode, but you can also (to some extent) roll two modes into one.

To explain this, let's go back to the beginning of this series - remember the *Antec* 15 (perhaps? Modes 0-5, 10 and 11) all have the same ANTEC mode number. When you select a GTIA mode (so called because they are only available if the GTIA chip is fitted) - the first Atari had CTIA, a less sophisticated IC, what actually happens is that the OS sets up the Display List for mode 0, then alters location 623. This register is normally associated with player/missile graphics, but the upper two bits are used to select mode 0 (00) (normal), mode 10 (01) (Extended) or mode 11 (10) (normal). The interesting part comes when you start using Display Lists other than the one for mode 0.

This is one of those things best discovered by experiment, since there are 42 possible mode/POKE combinations - most of them completely useless. Listing 11 demonstrates the general technique, with a Graphics 12-type display with seven colours instead of four. Incidentally, the most interesting mode can be 'inverted' by starting with a test mode rather than a graphics mode.

By substituting different mode numbers and POKE different values in 623, and you get a mode you might find useful.

## OTHER INTERRUPTS

To conclude this article, I think a word about Vertical Blank Interrupts is required. There are many machines where it is necessary to manipulate information on the screen without causing flickering or other glitches. A VBI is a short program in which the CPU watches during the period when the display is being effectively 'refreshed'. The screen is re-drawn every 1/50th of a second, and a VBI can occur at the end of each frame.

The OS already uses some of the VBI time for its own purposes (updating hardware registers from shadow registers, updating registers etc). When the interrupt occurs, the OS executes a JMP through 5445/7. Normally this vector points to the OS service routine, but it can be changed to point to your own interrupt routine. Of course, any user routine must terminate with a JMP to the address normally held in 5445/7.

While the screen is being drawn, a second interrupt routine can be executed, the deferred VBI. This is executed during 5445/9, and is executed after an immediate VBI. If the function of the main program is not of a time-critical nature the deferred interrupt would not, for example, be executed during disk I/O.

Program 12 contains an example of a VBI. All it does is slowly increase and decrease the value 2 register to give the 'pulsing' effect often used in game playing screens.

A VBI has a much longer time period than a DLI in which to execute: an immediate VBI gets about 4000 machine cycles (that's about enough time for the 1000-2000 instructions), and a deferred interrupt has about the same that. This means you can execute fairly complex procedures and not cause any reduction in the speed of the main program.



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# MODIFIED HEXSAVER

Having normally used the ASHLONG magazine machine code loader program, I was pleased to see Nick Higge suggest Hexsaver program which can be easily modified to produce boot tapes or binary disk files loaded and run from tape.

Although I have taken the liberty of altering Nick's original line lengths from 40 to 45 I have done this purely to save 20% of the space required to print the data lines. In other respects I have confined amendments to those necessary.

The listing contains the amendments to the Hexsaver program. LIST the lines in disk. LOAD a copy of the original Hexsaver program and EDITED the new listing to produce the compiled program. SAVE accordingly.

The program initially runs like the original Hexsaver but you are also prompted to input the main address of the binary file and the title of the final program. After the boot data program has been listed to disk, the program will produce the disk load and run programs which will also be listed on disk. The listings produced will be similar to those used previously in *How Start Up*. Listing 1 is produce the boot tape/binary disk file and listing 2 to load and run the binary disk file. I have added the extensions .L1 and .L2 which I normally use for work purposes together with .ORG for the final binary file. Insert these as you wish taking care not to overwrite any original files especially your object code file which might have the same extension.

## PROGRAM EXPLANATION

The program loads your original code and writes a 45 byte boot tape header in front of it. The final 5 bytes of the header form a JMP instruction to the main address of your file. The load address (which is calculated from bytes 5 and 4 of your original disk file header) is brought forward to accommodate the boot tape header and write over the original 6 byte disk header, if your file has been SAVESD by the Assembler Editor (copyright © assembled by the Atari-Micro-Assembler or MAC) all the program should work satisfactorily. If for any reason the original file header bytes 5 and 4 do not contain the original load address the program will not work properly.

The only routine at 700 calculates the length of the file and the number of 120 byte records needed for the boot tape load. Hexsaver then generates the number of 45 byte lines needed. The program produced when HEXS loads the machine code into a string which is printed to tape or disk as required. Please note that by adding the amendments to Hexsaver and using a full length string in this way saves up more memory than the original as I have reduced the maximum file length from 20000 to 5K, which should be more than adequate for a type-in program of this type, unless readers are willing to forgo more record pointers like coding and stripping!

If you want longer programs or prefer AUTOCOMMENTS then there simply use Nick's original program to produce Run A400 User with some small needed top class programs.

by Bill Halsall

```

00 0 000 *****
01 0 000 *          RECOVERED *
02 0 000 *          AMOUNTS TO BILL HIGGINS *
03 0 000 *          FROM ORIGINAL BY NICK HIGGINS *
04 0 000 *
05 0 000 *****
06 0 000 *          NEW STATE CODE - 0000 00 *
07 0 000 *****
08 0 000
09 0 000
10 0 000 *****
11 0 000 *****
12 0 000 *****
13 0 000 *****
14 0 000 *****
15 0 000 *****
16 0 000 *****
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18 0 000 *****
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92 0 000 *****
93 0 000 *****
94 0 000 *****
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96 0 000 *****
97 0 000 *****
98 0 000 *****
99 0 000 *****
100 0 000 *****

```





**W**elcome to The Tipster pages. As well as the usual general game help and cheats, from this issue onwards I will be featuring one complete Adventure solution each time (well, okay, seeing as the past from Australia takes so long! LOL). I have a good stock of these solutions - thanks to your generous contributions - but 'new' solutions are always welcome - especially those covering our very own Page 6 adventures or PD adventures. You know, we very rarely hear any more about these games once we send them out!

This issue's prize goes to Kevin Campbell of Livingston, for his comprehensive help on **COSMIC PIRATE**, devoted cheating with the ladies on **STRIP POKER** and a little trick with **PRO MOUNTAIN BIKE SIMULATOR**. Well done Kevin! Without further ado, jump into your cockpit, fasten your safety harness and take off into the murky depths of space with **COSMIC PIRATE!**



You can change the colours of the game screens. Unfortunately, this can only be done once the game has started so play it in 2-player mode. Both players should wait and change colours, then start at the same time. To change the colours press keys 1-3.

## STRIP POKER

Wanna strip the girls with the greatest of ease? Simply load in a normal DOS (say 2.5) then insert your Strip Poker disk.

Press **W** for **WELCOME** then **RETURN** and **RETURN** again. The Strip-Poker files will now be displayed. You will see the files **OP1** to **OP6**.

Unlock the files then re-name **OP6** to **OP1** and **OP1** to **OP6**. Now, when you play the game, the girl will be startled (literally) to write down what you have cheated so you can easily change it back again!

## COSMIC PIRATE

**S**ome really useful guidance on this one where the game packaging omits to compare instructions! First of all, go to the **PLAY** ROM area and play the first simulation file. Instead of

flying around shooting, remain facing in one direction and shoot very carefully. Once there are only a couple of Aliens left, press **ESC** to return to the main menu and play the first simulation once more. Repeat this procedure until your shooting accuracy increases to between 20-25.

Now launch and fly towards the crosshairs. You will arrive at a Space Station and a **MAP** will appear. There are 2 Planes on this map - one is **YOU** and the other is the an enemy. Chase one of these sprites and once it one square closer towards the Space Track, if the enemy doesn't move then you must be the **OTHER**.

You will now be back in space and can, again, enter another Space Station, moving your ship closer to the Space Track again - but **FIRST** you have to shoot a few waves of Aliens otherwise you will be charged 1000 credits when you pass the Space Station. There are also icons which you can collect which replenish Shields, deploy Shields, add to Score and collect Smart Bombs.

### COLOUR OF ICON

**RED**  
**GREEN**  
**YELLOW**  
**PURPLE**

### MEANING

Automatic Smart Bomb  
Bomb  
Extra Points  
Increase Damage

On the game **MAP**, the **BLACK** squares are full-size, but the **GREEN** squares require a hit!

**1000 CREDITS** = 1000 Credits  
**10040-10400** = 5000 Credits

Once you gain access to the Space Station and the **MAP** appears, move another square until you arrive at the Space Track. Then destroy it by shooting at the vital points when your coordinate is over them.

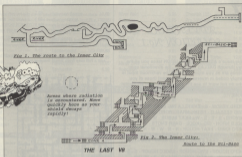
You will then be presented with the message: **MISSION COMPLETED** and you will be awarded money. Now select another mission and repeat the procedure, this time with **MISSION Space Tracks**. If you are lucky enough to win more money, you can buy more shields, etc.

### Further **COSMIC PIRATE** tips from Mike Harris

1. Once you start earning credits, **DO NOT** buy a larger gun as this will tend to hinder you by making the simulation practically impossible!
2. Shoot everything regardless of your shooting accuracy in the actual game (note the recommendation!)
3. You have to accumulate over 6000 points if you want to make a profit.
4. The No.2 simulator is the easiest one to play. **DO NOT** shoot the heads straight away as this reduces the amount of points you can earn.







## ALTERNATE CHEATS!

From P. Zingaleschi of Gamma

### ALTERNATE REALITY: THE CITY

Load the game as usual and select a temporary character. When the loading procedure ends, press RESET. Load a disk copy into memory and using this copy, you can copy DISK 3, SIDE 1 of the CITY to any blank disk.

You are now ready to do the following trick. Load the game using your ORIGINAL disk as usual and create a NEW CHARACTER. As players of this game will know, when you enter ANY Guild for the first time, you are given an increase in one of your STATS.

Know any Guild, then leave and press T to FINISH. Then insert the NEW disk (NOT any of your original disks) and press T to SAVE your character. If you repeat this foregoing procedure, your character will be able to enter Guilds and increase his/her STATS as many times as they require!

### ALTERNATE REALITY: THE DUNGEON

When you pick up the GOLDEN APPLE it adds 10 to your Hit Points. Unfortunately, it then disappears so when you first pick it up immediately drop it, pick it up again then drop it again. You can do this as many times as you like, but you have to be quick and SAVE regularly (only AFTER you have dropped it).

### ADK & PCDD from Tom McCann

Do you want more than the FINAL VERSION of this game? We have it! We have the source of this great game and the talent to modify it. We can do what you think, here is a great cheat to get you better items and make you able to beat the game:

1. Make a disk copy of your original game and work on the bank up.  
2. Using a sector editor, load the following changes to bytes 01, we can do it on the 01 disk.

BYTE No.	ORIGINAL	CHANGE TO
01	00	01
02	00	01

## ZORRO

Thanks to Stephen Clarke for the following solution. Collect the BONES level it at the Forge and found the CO... after this you can collect the items sent to a... collect the BELLS from the Hotel and put them at the top of the Church... when both bells have been put in place, a game will open... DO NOT enter it yet... collect the FBI MONEY from the Hotel and stand on the air you then gives the FBI location... a GUARD will appear and fall onto the wet saw, then outgassing you into the air... cross along the path, go UP and collect the BONE... collect the BANNY then go down the Well and get the COINSET... now enter the game and collect the BUNCH-UP MONEY... when you reach the room with the floating bones, go to the END LEFT and push the handle into the Yellow where you obtained the golden... return to the Hotel and collect the PROSELYT... re-enter the room by the cellar and go UP via the Jail... now the PROSELYT should awaken the Buddha... the prisoners will form a platform to jump on to the low road... enter the road room and then back your way across it... enter the other room and make your way to the SERRORIA at the top... you will automatically get her the PLEASERS and the BANNY... she will kiss you and thank will play... and you have just completed ZORRO!!!

## FREEBIE TIME

The Zipter has already given the game away about who received last issue's prize of

TEN BUDGET CASSETTES so now it just remains to tell you what's on offer this time for all those MINTS.

TIPS and CHEATS that you need in the next issue. We have a CADU 84-3 ELECTRONIC KEYBOARD with 25 keys, 4 preset sounds, 30 auto-rhythms and 100 note memory. Complete with batteries. Amaze everyone in the family for the price of a few hints and tips!



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Atari 1000	1.99	1000	1.99
Atari 1300	1.99	1000	1.99
Atari 1600	1.99	1000	1.99
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Atari 7800	1.99	1000	1.99
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# Dungeons & Dragons

**John Sweeney looks back to the origins of today's top role-playing games and asks whether games on computer can compete with the real thing**

“ONCE UPON A TIME, long, long ago, there was a little group living in the Castle and Unicorn Society. Their first mag rules were published next, in this writer's knowledge, brought about much of the current interest in fantasy campaigning. For a time the group grew and prospered, and Dave Arneson decided to begin a medieval fantasy campaign game for his active Twin Cities club. From the wisp of the ‘loaf’ of the ‘Great Kingdom’ and various - the writings of the C & C Society - Dave located a nice bag of stuff to run the world empire of ‘Blackmoor’, a spot between the ‘Great Kingdom’ and the former ‘Egg of Cool’. From the CHAMPION, fantasy rules for these ideas for a far more complex and exciting game, and first began a campaign which still starts on - of this writing! In due course the rules reached my ears, and I'm glad to admit you later in your hands of this moment. While the C & C Society is no longer, its spirit lives on, and we believe that all campaigns who are interested in the medieval period, not just fantasy buffs, will enjoy playing DUNGEONS and DRAGONS. Its possibilities go far beyond any previous offerings anywhere!”

(In fact, Gary Gygax's introduction to the original DUNGEONS & DRAGONS on November 1st 1973. Prophetic words, eh?)

I think that in his wildest fantasies Mr. Gygax could have dreamt just how far his Dungeons & Dragons would get. D&D and Chivalry (a set of rules by Gary Gygax and Jeff Perren for playing a wargame using medieval situations) were published by an American company called Tactical Studies Rules - you have probably only ever heard them called TSR.

Unfortunately, those first editions of D&D were written for wargame fans who already understood all the concepts of tabletop miniature warfare. To the average person they were completely incomprehensible! Those of you who have grown up with D&D may have difficulty understanding how difficult it was to get into it back in the Seventies.

Apart from the D&D manuals having been completely rewritten a couple of times since then to make it much easier to get started, the line of the game has also changed since those early days - the original D&D was subtitled ‘Rules for Fantasy Medieval Wargames Campaign Playable with Paper and Pencil and Miniature Figures’. Now it is simply a ‘Fantasy Role Playing Game’. The first D&D bookies don't mention RPGs at all - the name itself) been invented then! The 1980 version states ‘A group game is best with 3-6 players.’ In 1975 it said ‘At least one referee (Dungeon Master) and from four to fifty players can be handled in any single campaign, but the referee to player ratio should be about 1:20 or thereabouts.’

So somewhere over those first ten years D&D became an RPG. But, what is an RPG? One definition I have seen is ‘A Role-Playing Game is a game system that will enable you to construct an alter-ego. You create a character, perhaps quite unlike yourself, to enter a world strangely different from your own.’

Assuming you have a good group of friends to play with and a good Dungeon Master who has set up an interesting Dungeon, your fun at playing has-to-fun is further enhanced by the interaction between the characters and the fact that you really can try ANYTHING! The DM, being a human being (presumably) is capable of understanding ANYTHING you want to try, and deciding how he is going to handle it.

So, this is where computer games come



in. Over the years many, many games have come out based in some way on D&D, but they all have two major failings. Inherent in the fact that they are computer programs. First, since they are all finite in their programming and their resources, you are always limited to being allowed to try only those things that the program has been written to handle. Second, you can never really make your character behave just as you want, you have to play the character in a way that has been pre-determined by the programmer in order to win.

Countless computer games come out these days labelled as RPGs. In fact, until we have computers like The Hitchhiker's Guide to the Galaxy's Deep Thought or Andrew's postmodern brains, none of them will ever give you enough freedom in your character development to really be RPGs. The only real way to achieve the kind of interaction you get when you play face to face with real people is, not surprisingly, to use real people! This is exactly what happens when you indulge in one of the many Multi-User Dungeons that are springing up all over the place. You use a modem and telephone line to link into a remote computer which plays the part of the DM and allows you to interact with all the other people who are linked in and exploring this fantasy world. I have never played one of these - have any of YOU played them? How about writing an article on about D&D?

So, if we can't have the full RPG aspect of D&D what can we have? What else is there in D&D that we can replicate on today's computers? Some of the ingredients of a good Dungeon are really literature to begin with, interesting NPCs to interact with (in NPC is a Non-Player Character - i.e. any other individual, who may help or hinder you, but that you don't necessarily have to destroy), Magic and Combat Systems that work. Treasures and artifacts (some of which should be usable - possibly magical and relevant to the game in some way), places to explore and map (with maps myself), puzzles to solve, and sub-plots, the completion of which will in some way help you towards your final objective. And normally, as your character proceeds through the game, there is some stimulation for increasing his or her progress and rewarding him or her multi-



ply with enhanced capabilities - strength, hit points, etc.

Dungeon Master was so successful because it achieved all this apart from NPC's and had superb graphics AND had the best mouse interface I have ever seen for controlling your character. It was cut, however, as RPG in the sense defined above - you have no say in your character's personality development nor in his interaction with other denizens of this world - you just kill them!

The first widely available D&D related computer game was the text adventure which grew up alongside D&D in the late seventies: *Adventure*, *Zork*, *Adventureland*, etc. By the early Eighties the power of the main: had grown sufficiently to allow crude graphics. D&D fans are quickly took advantage of this and by 1982 we had *Sir Tech's Wizardry*, *Origin's Ultima*, and *Epoch's Dungeons of the Temple of Apokal*. They all used crude bit drawings, used the keyboard as the main interface, and provided long, difficult games with quite a lot of depth to them. They all had multiple quests, which grew in sophistication as the machines grew in power and the programmers and game designers learnt to

use that power.

The Ultima series is one of the best. *Ultima IV* covers all the aspects of D&D mentioned above, including NPC interaction. You have to converse with countless characters using single word groups to glean information. It also goes further than any game I have yet seen in providing an element of RPG. If you want to win you have to play a good guy and achieve perfection in eight virtues, so everything you do is affected by these personality requirements. *Ultima V* has finally been released on the ST and should be another winner.

Recently another player had entered the arena. Strategic Simulations Inc., better known as SSI, for years a specialist in wargames, started producing some excellent D&D titles - *The Wizard's Crown*, for the keyholders, with no much detail that a single light could last half an hour and *Phantasia* for those who preferred to use a mouse, have fancy graphics and have the computer to draw the map on the screen for them!

By the late Eighties TSR had decided to enter the Computer Era Race and were looking for a partner with the right computer skills. They chose SSI and launched the very first TSR-approved D&D computer game in 1989. Packs of *Raiders* has still not reached the ST, so initially we had only *Heroes of the Lance*. This was basically an arcade game in a D&D setting - you just hack your way round a fairly simple maze against some pretty dumb monsters then zap a dragon. Part II - *Dungeons of Plains* - is out now and promises to be a lot better. We also have *Hillstar* - A Forgotten Realm Action Adventure - see the review in this issue.

As with so much mass media these days, you have to look hard to find the gems amongst all the dross on the shelves, but, basically D&Ders have never had it so good - and the best will surely continue to get better!



# BIORHYTHM MONITOR

**E**very wondered why it is that on some days you seem to be on top of the world, able to accomplish the house-hold chores with ease, complete the Times crossword over breakfast and generally be in command of things whilst on other days you're inevitably making mistakes and such seem to get your brain into gear? Well, although many factors contribute and interact to affect one's well-being, it may be that biorhythms are fundamental requirements.

## WHAT ARE THEY?

Biorhythms literally the rhythms of life are biological clocks which function as regularly as digital timepieces from the day we are born to the day we die. We all possess internal clocks which regulate our highs and lows on a daily basis. Jet-setters are made aware of this since high speed travel into another world time zone doesn't allow the clock sufficient time to reset so resulting in jet-lag. Jet-lag works rather similar effects.

The program presented here is concerned with three cycles operating on an approximately monthly basis and which affect our physical, emotional and intellectual or mental states. Each cycle can be considered as a sine wave rising and falling continuously and it is the position of this curve on which we find ourselves which affects the way we feel. If we happen to be on the rising part of the curve we experience a feeling of well being but if we are on the declining section we don't feel so good. Between these two regions are the so-called critical phases when the wave is changing direction. During these three levels lasting couple of days we are prone to making mistakes either through over-confidence at the end of our 'good' phase or pure concentration at the end of our 'bad' or 'poor' phase. Such decisions can be made at these times - indeed if all three waves happen to bottom out simultaneously, then watch out!

## HOW BIORHYTHMS ARE CALCULATED

The calculations are very simple to make but become tedious and time prone if a series are to be made - just the job for a computer which, so far as I know, does not experience the electronic equivalents of the effects we are looking at. All you do is work out the number of days you have been alive, making any year corrections as necessary, then divide that number by 28 for physical, 29 for emotional or 33 for the intellectual cycles. Ignore the resulting whole number, which only informs us of the number of complete cycles which have elapsed since birth. If the decimal portion of the result lies between 0.1 and 0.4 we are into the 'good' phase of the corresponding cycle; if between 0.4 and 0.6 we are into the period where things don't go so well. The two intervening areas are the critical ones, between 0.4 and 0.6 indicating a 'high' and between 0.6 through zero to 0.1 marking a 'low'. Both periods require additional care to be taken when making decisions.

## USING THE PROGRAM

A short pause will follow the IBM presented. When the display appears, simply input your birthdate and the present date via the keyboard. Error-free entries will be trapped and immediately but if you want to correct a mistake, just press the backspace key (no shift required) to erase an entry, press it twice to erase both dates. There is no need to use the 'Return' key since the entry logic will recognise completed fields and blank an entry if impossible date/month combinations are input. The program now calculates the three cycles and displays them in different colours over a three month period around the current date. To make a further entry, clear the graphs with the **START** key. Providing you enter dates at least one year apart the program will correctly calculate and display both past and forecasted information.

## HOW IT WORKS

For those of you who like following things the IBM statements should prove adequate. In following the calculation, note that variable L which holds the total of days between birth and present is adjusted at the start of the previous month in order to ease the graphing process for the three month period. Mode 7.3 is used here interlaced with text, while simple PEEK and DIB techniques enhance the presentation. The use of variables as frequently used constants is not primarily a memory saver here but to reduce loading time which becomes of value to cassette users.

## SOME PARTING THOUGHTS

On a final point, it should be stressed that the different cycles we've been analysing interact to a degree. For example, one's emotional state may affect the other two and this should be taken into account when trying to correlate the information. Examining the biorhythms may be, articles as there are hard to come by and perhaps some of you may be able to throw additional light on the subject. I have found that they are used by aircrew pilots to determine flying schedules and by athletes to optimize performance during training - very obvious points to look at in this case? What happens these clocks in the first instance and why do cycle lengths correspond to a precise number of days? Is there a solar or lunar influence which links the frequencies into this 28-29-33 sequence?

by Dave Hitchens







# DOUBLE DISK BONUS

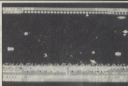
## ASTROWARP

A 2 PLAYER SPACE FIGHT  
in 100% machine code  
by Peter Caddock

**ASTROWARP** is a two player game and two joysticks are required. Start up side 2 of this issue's disk and away you go! Once at the title screen press either of the joystick buttons or press **START** to "activate" the warp drive which will send you and your opponent to your battle ground. The two ships (an "Eagle" class fighter and a "Lancer" I am guessing and are controlled by remote via the players using joysticks. The game is a "tag-on-war" in space but in this case you push your opponent backwards towards his back markers instead of pulling him towards yours. This is achieved by hitting your opponent with a blast from your magnetic beam. Each hit against your opponent's armor 1 for you and pushes him backwards, the background scrolls away from him. The object is for you to hit your opponent as many times as possible without being hit yourself. (armorless) (armorless). Eventually successive hits will make your opponent pass the boundary markers and he cannot be pushed any further; at this point one of two things may happen. The game may end or he may fly right back in time and push you backwards towards your boundary markers. A sup will occasionally appear showing who has the advantage and at the end of the game it will show who had the last advantage. The score will show the winner. At the end of the game both rescue credits will fall and explode on the planet surface.

On corner the game is over either as it is first appears, or in a storage war system, the game is played over the planet surface in one of five sectors: ALPHA, BETA, GAMMA, DELTA, Epsilon. Fuel is magnetically charged and loses its charge at different rates depending upon which sector you are in. ALPHA discharges your fuel very quickly and as a result the time you have to beat your opponent is shortened. BETA discharges fuel at a slower rate, game time is lengthened and so different tactics have to be applied. The fuel level is shown at the top of the screen and is identical for each craft as only one display is necessary. As a back-up, a SYSTEM guide is displayed at the bottom left of the screen showing three levels of urgency. GREEN is fuel at optimum charge, YELLOW means fuel is discharging, and RED indicates that fuel is almost completely discharged.

As both players have an unlimited stock of rescue credits at their disposal no display is required. Magnetic-beam on the other hand can only be recharged, to a maximum of 5 blasts, when both craft reach zero. Therefore an element of strategic combat



into being. If you deplete your magnetic beam charge in one but your opponent still has some charge left he is likely to take advantage of the situation and "unload" his remaining blasts of his beam, putting undue stress on you! Each player's beam charge is displayed at the bottom of the screen, when both reach zero they are automatically recharged to 5.

Occasionally gravity effects play by pulling both players towards the planet surface. Below a certain specific height the players will lose control as gravity becomes too strong for their engines to cope. This will result in crashing and exploding on the surface below and scoring 1 for the opponent.

As the game progresses it will become apparent that the players are not alone in space. Instead there are various forms of avoid collision with rotating space rubble, meteors, satellites, and an offensive storm cloud which is attracted by the magnetic fuel on board each craft. The cloud unleashes lightning towards an unsuspecting player as it orbits about him. These occurrences may appear at any time and often cause trouble when you are least expecting it.

As the game progresses it is a deliberate weighting in the game and players who tend to be better at games are asked to add the factor 0.85. The weighting is slight but it exists.

Other items of interest include a special ONOFF facility via the space bar that enables players to do just anything as desired. Flying your craft directly in front of any of the background planets is likely to be fatal for your health - a correction is put for your health (well I did say it was a strange order system). The final scores are displayed during the time and the highest score of the day is also displayed.

The game was originally devised by my cousin Gary F. Finley who had a couple of B&B's games listed in the old AFAS 1988. It was originally written in BASIC and still exists in that form. This machine code version takes the original ideas a lot further. For best results turn the lights off, the colour and the contrast up, and the brightness down so that black is black and white for the subtle two level parallax scrolling! I hope you enjoy it!

## SOUTH SEAS TRADER 1906 by Mike Blenkinson



**South Seas Trader** is a trading simulation set in the South China Seas at the turn of the century. You begin the game using 5000-gig tons and have 12 years (one month of a time) to repay this, and end up in the bank. The trade at various ports in the commodities, each subject to inflation or deflation. Additionally, at each port there is one other option among them being money to make or lose. The game is a lot more than a simple trading game. The game has and is one of many ways which include using yourself at Russian Roulette and imprisonment for opium dealing. Each ending has its appropriate music - either "Happy days are here again" or the obligatory "Death march".

### THE DISPLAY

The screen display consists of a multi-colored CRT screen divided into three parts - two for display graphics and one for multi-messages. All control is via the keyboard. The BREAK key is disabled though RESET should stop the program in its tracks. The data for the SUTS used is produced by two extra columns, can be found at the B&B, with the new Display List data in 1988. While I'm on the subject, the "Wider" caused by keyboard input is eliminated on SUTS owners by the P&W 111.20 at the 4070 which turns off the keyboard speaker. SUTS owners will just have to persuade me about.

My thanks to Muley for his constant support and encouragement, and also thanks to Donald for the Photos and P&W's assistance.

ORDER THE ISSUE 43 DISK WITH  
THE ORDER FORM ON PAGE 49

# Ian Finlayson's TUTORIAL SUBROUTINES

## ADDRESS BOOK REVISITED

### INTRODUCTION, CORRECTION AND APOLOGY!

It seems from the amount of correspondence I have received that you prefer the master programs to the short tutorial subroutines and so I have written an addition to the master database that will allow you to search for a particular item, that before we get into that I must make a big apology to those of you who have had some difficulty with the program so far. As first when I had one or two letters from readers who could not make the database work, I thought it was all Tiger's fault. But I got several more letters which all seemed to have problems in the same area. I went back to my archives and rebuilt the total program from the separate parts and it all worked OK, so I went to the revisions that came back from New Ascan Users with my disk subscriptions and built it up again from that. This time it did not work, and a close comparison of the two versions revealed the problem. In the first part of the series I set up a framework for the program, and there in later parts found that one or two lines had to be deleted so I put in program lines like this:

#### 1004 REM DELETE THIS LINE

These should have overwritten the unwanted program lines, thus effectively deleting them. What happened next is pure wonder, but I think that our very thorough and hardworking Editor did a very comprehensive job of proof reading my subroutines. When he got part way through my listing he saw a few lines which said "REM DELETE THIS LINE" and thought to himself: "You old lad, wanting to get his work in on these again. He's forgotten to get rid of those lines he marked for deletion." So he helped out by inserting them before they were published! Good job, I'm sure, but the Golden Rule is never to mess around with the listings. (4) Thus there are some few unwanted lines which could be lurking in your version of the program causing problems. All you have to do is ensure that lines 0000, 7000, 8000, 12000 and 120000 are removed from your typed in versions of the programs and it will work!

### SEARCH SUBROUTINE

One or two of you have indicated in your letters that it would be handy to be able to search for a particular record. One way of doing this fairly quickly on a small database would be to sort the database on the field you wish to search by, and then go to VIEW record 1 and step through with the + key to find the one you want. Because of the similarities between sorting and searching I have chosen to combine them under one heading in the main menu. This would be particularly appropriate if search routines were always provided by a sort. I had originally intended to do this, but decided to go for the simplest possible search which should be adequate for this application where the total number of records will not normally be very high.

### PROGRAM ANALYSIS

**Line 0000** - This amends the old menu lines to include the SEARCH function.

**Lines 0005 to 0010** - change the old sort subroutines to include selections for searching. I have chosen to search the same three fields as were used for the SORT function.

**Lines 0005 to 0008** - these extend the functions that result from the keypresses. Depending on which key is pressed the variable CRT is set and the string SEARCHED. The former is the same effect value as was previously used in the SORT sub-routine, that is the number of characters from the start of the record to the start of the field to be searched. SEARCHED contains the name of the field being searched.

**Lines 0009-0020** - Prompt for an input of a string to be searched for (FN04). It is not necessary to input the whole item, and this can help by making searches more general. For instance inputting "JO" would find JOHNS, JONES or JOHN SOON if they were in the data (but not JOHN as the search is case sensitive). The input is left very general, with no error trapping, so an incorrect entry does no harm. It just fails to find a match in the data. The variable R (record number) is initialised to zero.

**Line 0010** finds the position in DATA file database of the start of the field which is being compared to FN04.

**Line 0015** is where the comparison is made. If there is no match we jump to 0040. Otherwise the program continues to 0020.

**Lines 0020 to 0050** - First print the record number where the match was found on screen, then prompt for a Y/n or N/n to search the Database further.

**Line 0030** - If no further search is required the program RETURN to the main menu, otherwise it continues.

**Lines 0040 - 0050** increment R by one to take the search into the next record, then checks, and if the end of the data has been reached prompts for a keypress and returns to the main menu. If there are still more records to go line 0050 jumps back to 0010 and the search continues.

**Line 120000** is an extra line in the setup part of the program which is used to initialise the two main variables SEARCHED and FN04.

# PROTECT IT!

## BUILD A SWITCH FOR YOUR 1050 DISK DRIVE

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### FURTHER DEVELOPMENT

The search I have listed here is, as I said, very simple, but it should be adequate for a small data set. There are quite a few different ways of doing a search which you can find in some of the more readable books on programming, and some use clever algorithms which are difficult to follow. One way of spending things up if you are doing a search in a large data pool is to sort the data into order first. Once the sort is carried out it is no longer necessary to search through every item of data. You can jump straight to the middle record of the database for the first search comparison. If it equals the search criteria the search is complete straight away. If it is less than the required value then the first half of the list can be discarded and the search continues with a jump to the middle of the remaining data (that is, the end point of the second half of the data). Similarly if the middle data set is greater than the required set the second half of the data cannot contain a match and the search continues in the first half.

You can see that in this method the amount of data left to be searched is halved after each iteration, so the search focuses in on the required record very quickly. This method is effective when the data set is large and an efficient set routine is available, as if the records are always kept in a sorted order.

The power of this type of sort is shown by the fact that 2,000 records can be comparatively searched with only 12 comparisons. 10,000 records with 14 comparisons! The search can therefore be very fast, but the time taken to sort the database before searching is an overhead that must not be forgotten.

As always, I am prepared to help if you get into difficulties and if there is something you would like to see in future articles please write. Send a SAE if you want a reply - send a cassette if the problem is complex, it will return it. Please be patient if you don't hear from me immediately (my work keeps me away from home more than it used to) but I will get round to you eventually.

Write to: Ian Finlayson  
60 Sandstone Crescent  
East Preston  
West Sussex  
BN16 1 DG



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# PROTECT IT!

## BUILD A SWITCH FOR YOUR 1050 DISK DRIVE

**B**efore you read any further, please bear in mind that any modification or alteration to your Atari equipment, other than that completed by authorized service agents, renders any guarantee null and void. And if your equipment is more than 12 months old or you want to modify and "risk" it, then read on.

This modification to your 1050-disk drive will allow you to write to both sides of a disk, without having to remove the write protect tabs - just think, no more sticky gear marks on your disks, and you can forget about notchers, hole punches and tape blades. It makes writing to the disk easy as pie, but beware - as with all good things, there is always a catch! It is so easy to use you can forget to check the LED colour and overwrite your master disk! Disaster!

For those dedicated klugeers who are still with us and who haven't checked out, I can say that I have used this printed switch set up for the last two years without losing a single disk of data.

### TOOLS YOU WILL REQUIRE

Small 15-watt soldering iron and solder  
Printed case plate  
Small crosshead screw driver  
and, most importantly, a clean work bench. ...

### CONSTRUCTION

A parts list is shown at the end of this article, describing how all pieces together with the case numbers of each item, which can be found in the current 1050 HighRes electronic component catalog.

The first task is to construct the switch and LED wiring harness and then to fit it into the drive. Take the length of 10 mm ribbon cable and separate 2 wires from it, cut from this a three inch length, trim the 3 wires for about half an inch at

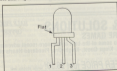


FIGURE 1

each end of the 3-wire piece. Strip the insulation back about 5 mm on each wire (at both ends) and tin the wires with solder ready to be soldered in position.

Cut eight quarter inch pieces of heat shrink sleeving, and put 3 of them onto each wire, (at one end only), well back down the wire so that the (unused part) still shows.

FIGURE 2 shows the re-dimensioned LED with its pins marked 1, 2 and 3. Note also the position of the flat on the LED's case. Solder one end of the wires to the flat on the LED's case, (solder one end of the wires to leg 2 and the remaining wire to leg 1, another wire to leg 2 and the remaining wire to leg 3). Slide the heat shrink sleeving over the joints, apply a little heat and the sleeving will shrink and protect and insulate each joint. Each leg of the LED must be isolated from the others.

Take the remaining length of three wires and cut off 14 inches of which each LED set to be fixed externally or 12 inches for internal fitting. Strip and tin the wire ends as before, both ends. On one end solder the three Minicon terminals and insert them into the Minicon housing. Figure 3 shows the correct positions for the 3-wire to the 4-way housing. You should now have an LED with 3 wires attached and a Minicon connector with 3 wires attached.

Now you must connect these to the switch. Referring to Figure 3 you can see where the six wires should connect to the switch. First though, locate the wire designated 3 on the LED and the wire designated 3 on the Minicon and first, the two (used) ends together, solder them into one connection. Now you only have 5 wires to connect to the switch which can be seen in Figure 3. Take the remaining 3 sleeves and push them over the 5 wires, (soldering, for paired wires).

Now solder each wire to the switch in its designated place. Be very careful here, make sure you get it right. As you solder each wire in place, pull down the sleeving and heat shrink in position. You should end up with a completed assembly as shown in Figure 4.

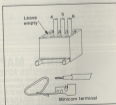


FIGURE 3

## FITTING

At this stage you can either fit the assembly inside the 1090 case or fit it into a box that can be attached to the side of the drive with double sided pads.

To fit internally, turn your drive upside down and remove the 4 cross head screws located on each corner of the base. While holding case together turn the case right way up and remove the top cover by lifting from the rear.

Looking into the drive from the front, you will see 4 screws connecting blocks at the left rear (they have lots of wire going to them from the top mechanism). Locate plug J11, its the one nearest the front.

Carefully remove plug J11 with a pair of long, wood pliers - do not pull it out by the wires, they are very delicate. Once unplugged you can just leave it disconnected, it should not interfere with the operation of the drive. You could tape it to the side if you are worried. Insert the Minicon plug you have just made into J11, ensure the pegs on the base of the Minicon housing are pointing inwards towards the centre of the drive.

Remove the black grey front surround plate and try to see side. Using Figure 5 as a guide, decide on the best positions for the LED and the switch (drill a 1/16 inch hole for the switch and a 3/16 inch hole for the LED holder, insert the switch into it's hole and fix with the nuts supplied, insert the LED holder into its hole in the front plate and fix with the washer and nut from the rear. Place the front surround back in position and reassemble the drive case.

If fitting the case externally, feed the cable from the switch around the case and enter via the drive select switch at the rear, then insert the plug as described earlier.

## TESTING

Power up the drive, the LED should either be RED or GREEN. If red your connection may be correct. Move the switch until the LED shows RED. Insert a DOS disk and try to format, if all is well it won't be able to do this, and will error out! Now set the LED to GREEN, now when you format all should be correct.

**Remember RED IS PROTECTED, GREEN IS UNPROTECTED**

Page 6 acknowledges Derek Fern as an 'expert' on Atari hard-ware and has no hesitation in recommending this modification. However we can accept no responsibility for any damage caused if any reader should attempt this modification.

## PARTS LIST

MAPLINE code numbers as shown in their 1090 catalogue

MULTICOLOUR LED	YH755
LED HOLDER	YF40T
ULTRAMIN DPDT SWITCH	FH99H
MINICON HOUSING 4 WAY	HD56H
MINICON TERMINALS 3 OFF	YW35C
RIBBON CABLE 16 WAY 1 METRE	XR06G
HEAT SHRINK SLEEVE	BF87U

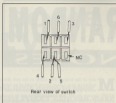


FIGURE 3

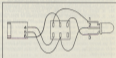


FIGURE 4

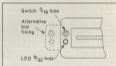


FIGURE 5

## Article by Derek Fern

### BUILD IT OR BUY IT?

All the components used are readily available from your local electronics, or you can try Mapline. I have quoted their part numbers to assist identification. If however you are not the type to build your own kit, contact me and for £6.95 plus £1.00 postage and packaging, I will supply you with a ready built and tested kit.

Telephone 021-282-8730 for further details.

# RANDOM NOTES

**M**any of the letters that come to me ask about software that I have never heard of or have never tried out. I always recommend that READI readers do not ask me but try to get in touch with local AT&T user groups but this is easier said than done. I know that some do exist; I have a list of about fifty groups, but this is an old list. It would be nice if the organisers would get in touch with us and let us know if they are still active. For instance, Mr. R. Leth of Brighton; Mr. R. Payne of Coventry; Mr. R. Kahn of Cardiff; Mr. R. Matthews of Kent and Tony Cox of Thames Television, where are you now? At the same time we would like an up to date list of any UK bulletin boards for AT&T (8-bit or 16-bit). It would be nice if you have tried the boards and could let us know what they are like. Some boards have only a skeleton service as they are free for printing operations.

I must say sorry to anyone waiting a reply this month. I have been very busy, but oh so busy and tired. Nevertheless on a training course. Also an apology to Colin Hunt. I did not have the time to find your house in Widdowsea Road.

Some time ago I received a letter from D.C. Hill from South Malinda (what a friendly town). I love to holiday in that area. He spoke about add ons for the 8-bit computers. I am sure that PAGE 8 Publishing would be willing to help out in any matters that are workable. I will send a copy of your letter to the Editor. If you read this then please get in touch with Les as soon as possible.

Did you notice the Silicon Shop advert in the last edition of the magazine? Did you spot the item about the mailing list? I have sent away several times for their price list and have been promised money, money times that I would be put on their mailing list, both 8T and 8-bit, and then I would receive a list of my time a new one sent printed. So have more I have to keep asking for this list? Does Silicon Shop owe up their mailing list money as often? Has anyone tried their free professional helpdesk? If so, please let us know how you found. Again, if you have had recourse to the Advertising Standards Authority for any reason, please let us know the outcome. I am sure that many readers would be interested.

So far I have had no tips about word processors from the readers so I have advised this project for the time being. Maybe next issue - hint, hint! Recently I helped a friend out with Word Perfect on a Commodore PC. This brought back memories of using a similar product on the 400. Anyone remember Model WP Nation Letter Perfect, 80 columns,

## Got any interesting gossip? Write to Mark at 1, Hollymount, Erinvale, Finaghy, Belfast BT10 0GL

Daisywriter and amber printer? Laser Writer, Text Wizard or They Text? Many people believe that the 8-bit computers can only handle basic or essential. WRITERS? How about Techt (evenly types in 1983 including Big-Font), LRP, PASCAL (ISO draft standard), PLOT in LOGO type language or an obscure turtle type called WRIT? Whether they can be obtained new or not is another matter.

Now for some recent 16-bits gleaned from all these computer magazines I have received this month. ...

It looks as though there might yet be an ANSI standard for the C language and it could well be totally international, as opposed to American. Great for all those C programmers. If this has interested you then have about a course of ten 30 minute videos on CP-C-8. If you can afford £2500 better still, have about version 4 of Flight Simulator for only £450! With this one you can design your own plane dimensions and propulsion system and a dynamic weather generator which helps you crash more easily! Unfortunately, this will be for the PC. However, we do hope the 8T will not be forgotten. Again for the PC at the moment is LatView C development system V5.0.

If you are a LISP programmer, have about the European 80 LISP conference on the 27-28th March in Cambridge? Call Applied Workstations Ltd - 0206 899485.

Two recent books in come out are 'Out Of The Inner Circle', by Bill Randolph (more known as 'The Creeker') who was one of the most well known hackers a few years ago. This second edition from Microsoft Press £25.00 tells about data, computer and network security as well as viruses. The other side of the coin is a book called 'Preventing Pevoy' by Ernest Kern (Addison Wesley, 0252-984. Probably more for a firm or data manager, but very cheap if you can find it in the local library!

Believe it or not, I will do not know one thing about music, graphs, separators etc. etc. So please send any essential enquiries to John Denton who may be able to help you. We do I know anything about control and wonderful disk drives, printers, monitors and such. All I can suggest is that if you buy something for your system make sure you see it working first on an AT&T computer system and make the shop send a written guarantee that it is compatible or that you will get your money back.

I have always wondered why people suddenly stop computing. During the past year I have suffered from a wicket of keyboard banging and my spare time I get the moment is spent away from the computers. I think the best thing would be a good long holiday away somewhere so if you don't see me around for a while, you will know that I am off on a long earned rest. Any idea where recharged Atari owners go to regenerate? ■





## FANTASTIC SOCCER

**N**o prizes for guessing what FANTASTIC SOCCER is about? Zappella Games are well and truly geared up for the World Cup and to prove it they've produced a graphical simulation of a soccer match in progress. Most such simulations in the past have rendered an on angled '3-D' view of the proceedings, but Zappella have broken away from tradition and opted for a direct overhead perspective of the stadium. To watch many players, viewing events or advertising boards - just a window from above providing you with an approximately one-level

scrolling view of the entire pitch. The inherent problem with computerized football is that, as everybody knows, it's a game for two teams of eleven players each, no matter how hard you try, it's just impossible to have them all controlled by two joysticked. To overcome this problem, you have to rely on the computer to decide which team you have command of at any particular time, and it's not always the one that you hoped for. In Fantastic Soccer, the 'active' player is highlighted by a transparent arrow and the computer keeps your other team members on their toes as you try and keep up with the action. Fortunately, it seems reasonably helpful in positioning the other players and also supplies you with a suitably gifted goalie.

First thing to do is select the number of human players and



the length of the match - from a quick moment over ten minutes to a full eleven ninety minute slog. Then, choose a team from the eight alternatives, decide on a formation, hit the trigger and you're off. You have full control over tactics, three-in and corner kicks. The joystick button is used to alter the strength of shot. The controls are quite easy to manage although, like other football simulations, the overall concept does not lend itself to a single player game. Find some opposition of the

human variety and the whole exercise becomes much more exciting.

Fantastic Soccer is probably the nearest you can get to the real thing on your Atari (and that's not very near at all). Zappella have, yet again, come up with a novel approach to an age-old theme and done so with the high standard of presentation that we have almost come to expect from them. I'm pleased to say that Fantastic Soccer does live up to its less than modest title!

**Use:** FANTASTIC SOCCER  
**Publisher:** Zappella Games  
**Price:** \$2.99 cassette  
**Players:** 1/2  
**Loading:** 15 minutes  
**Reviewed by Paul Dixon**



## AFFAIRS OF THE HEART

ped before being ripped with the compressed gas. The pod then shoots off at a speed roughly corresponding to the strength of the gas and, misfire excepted, you're all set for another blast. Each screen has a nine time limit applied so you can't afford to hang around!

Some of Atari's recent releases in the 'Action Games' series - Speed Hawk and Tiger Attack, for example - have been nothing less than superb. Although by no means a disaster, Hearts has a quite in the same league. For instance, the main character, whose movements do not seem at all natural, is poorly defined and coloured. As a result, jolts quite well played rationally than play continuously throughout the game and the fact that you can't turn it off has a negative effect on the all-important playability factor.

It seems to me on though Atari may have ignored the author's original intentions and released Hearts with out any consultation. Frequent references to screens called 'lines' during the game suggest the intended story was perhaps more of a romantic nature. This could explain the table plot and the inconsistency between program and packaging.

Not one of Atari's best - but not in itself! The company apparently have several new games in the pipeline and if their recent output as a whole is anything to judge by, these should be well worth waiting for. Start saving today!

**Use:** HEARTS  
**Publisher:** Atari Corp.  
**Price:** \$7.99 cassette  
**Players:** 1  
**Loading:** 15 minutes  
**Reviewed by Paul Dixon**

**A** remote gas is research laboratory suffers a catastrophic accident - and to ensure by means of uncontrollable organic mutations. Crisis looms as a failure develops in the air circulation system and the lives of resident scientists are endangered. Armed with a compressed gas gun, you bravely dash to the rescue. Merely the most credible of plots, and when I add that this is a game called HEARTS on the Atari card and 'Heart Hawk' when you load it in, you'll appreciate that Atari haven't

exactly done a terrific job on the documentation! Overlooking the rather obvious reason for it all, the aim of Hearts is to guide a heart-shaped 'clearance pod' through a mine of corridors which are supposedly infested by the dreaded mutants. To clear each corridor you have to accurately 'line' the pod from one side of the screen to the other, ensuring that it doesn't come into contact with any walls or mines. To achieve this aim, one jet-powered hero must position himself exactly behind the clearance

# GREEN BERET

**I**magine Software are better remembered for the games that they didn't release on the Atari than those that they did. Despite charming old games for the lesser brands of systems, they only ever managed to produce a couple of titles for the best machine of the lot.

One of these was **GREEN BERT**, a reversion of the Soviet arcade game to which you commanded a highly trained combat soldier with a simple yet challenging mission - to infiltrate a series of strategic defence installations. Your objective is to control the Green

Beret through each military base avoiding bullets, mines, landmines and obstacles as you go. The biggest obstacle is the sheer number of enemy soldiers who diehly attack the screen and even follow you up soldiers should you random-plate escape. One way out is to perform an enormous leap via a stick of the joystick, but more often than not you'll end up landing in a dangerous situation with no time to react. Alternatively, you can eliminate the opposition with your many field tools - but this requires perfect timing and the success rate isn't high. Get it wrong and the game gets to a disturbingly modern fast. Bullets are best avoided by a ducking tactic, but again this leaves you open to attack from all four quarters. Fouruplicate lives don't last for long.

The background scenery isn't

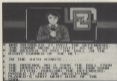


but as all, consisting of lots of interesting objects for you to climb, jump and take feedback as you explore the various levels. Unfortunately, the scrolling is a little on the jerky side and the joystick response is less than perfect. Sound? Well, apart from an atmospheric drum beat all the way through and a siren at the start of each level, there isn't a lot of it to speak of.

When Green Beret was released as a full priced game, I stored it as a big disappointment. Aside from the unex-

pected graphics and sound, it is ridiculously difficult to master the first screen, let alone progress to the second level. However, like all challenging games it's possible to beat with patience, determination and, especially, practice. So, if you're a patient, determined person with a good deal of time to spare, Green Beret could be the game you really, if not, keep an eye open for Imagine's Arkadium on the same label. Check out the review in Page 8 issue 31.

**Title:** GREEN BERT  
**Publisher:** The Hit Squad (Imagine)  
**Price:** £2.99 cassette  
**Play:** 1  
**Loading:** 15-20 minutes  
**Reviewed By:** Paul Dixon



**Y**ou've another football managerial game if you didn't fancy shuffling out nine pounds for Zappella's Soccer Desktop Soccer Manager ROM - reviewed last issue - there's now a budget alternative from the same company - and to me it looks every bit as good! **WORLD SOCCER** has you managing a British football club you can choose your favourite team from a list of fifteen through the progress of the ultimate World Soccer competition. Like ROMM, the game is graphically orientated

with all player interaction taking place via a joystick 'pointer' - there is no keyboard input. There are ten principal options to choose from, which are represented by carefully etched icons surrounding an equally artistic drawing of the cup. Making a selection couldn't be easier - just point, click, and you're away!

The Bank Manager is a generous fellow and will cheerfully give you an enormous loan to pay for those much needed extra team members, when offered by the Boss. If the bank balance gets too low, you

# WORLD SOCCER

can easily well associated players. The Boss will assign your team a rating for defence, mid-field and attack, and suggest ways of improving its performance. The Media will keep you up to date with the progress of injured players and decide when they can return to work. You can choose to have detailed textual commentaries during each match from Joe MacDonald, ZEP TV'S sports reporter (good graphics here), or you opt for an instant display of the match results. Substitutions can be made at half time should a player be injured - providing you have previously closely noted an appropriate man in the team selection.

Further options allow you to store unfinished games on cassette for later re-loading, view the league tables and current team formations, and select players for the forthcoming match based on their

age, ability, speed and fitness. Before you proceed with the match, you are advised of the strengths and weaknesses of the opposition and can therefore divide attention or not to go back and revise your formation. After the match, there's a round up of the other results for the day.

Having compared **WORLD SOCCER** with ROMM I have to say that apart from the good highlights of the latter, there's not really an awful lot to choose between the two - apart from the price, that is. I've little doubt that this deserves to be another winner for Zappella.

**Title:** WORLD SOCCER  
**Publisher:** Zappella Games  
**Price:** £2.99  
**Play:** 1  
**Loading:** 15 minutes  
**Reviewed By:** Paul Dixon

## MOUNTAIN BIKE RACER

**A** fast game from Zappella that has nothing to do with football! MOUNTAIN BIKER RACER is a simulation of all-terrain cycling in a similar mood to the recent release from Alternative Software. No split screens in this one though - it's strictly for the solo cyclist.

A jump button (and kicks off the proceedings) takes you to a screen where you select the terrain (and a genre of the big gear takes you straight to the action) - a horizontally scrolling, side-on view of the terrain around a lake. The cycle is cleverly animated and the

scenery slowly draws, with digital read-outs at the base of the screen indicating the current speed, cash balance and time remaining for the section. Joystick controls are relatively simple - push forward to speed up, pull back to slow down and press the trigger to perform a jump (who said anything about realism?). To prevent the bike from coming up in a heap, you have to negotiate such obstacles at precisely the correct speed - dead slow for walls, big speed going up hill, and slower coming down. In addition there are swamps, rocks and spikes requiring skill and accurate timing to avoid a disaster. Get it wrong and you'll lose a lot of time recovering from the mistake - and still be forced into a second attempt. At the end of a section you're awarded with a cash bonus based on the time outstanding. You can use

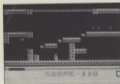
the money to buy various goodies which can hopefully assist you in the following stages. These include a pro-ctor repair kit, which seems to protect you against one particularly debilitating problem (growth), and a time boost needed for the later, more difficult sections.

That's essentially all there is to Mountain Bike Racer. It's a straightforward race against the clock for one player and can't really be compared with Alternative's release which has many more options and more complex controls. The game

relies heavily on the visual effects for its appeal, but the most of Zappella's software, it succeeds on this front with style. Once you start to progress through the initial stages, the game becomes surprisingly addictive.

It's good to see Zappella Games not only continuing to produce a steady flow of 8-bit software, but also maintaining the exceptional standards that have become a trademark of the company. Zappella's programming has Copeland to be congratulated for yet another super game.

Title: MOUNTAIN BIKE RACER  
 Publisher: Zappella Games  
 Price: £2.99  
 Players: 1  
 Loading: 16.5 minutes  
 Reviewed by Paul Dixon



**A** rather game from B.N.Ware by the 'Eag' programmers who seems to write most of the in-house software released by Finley's based computer dealer B.N.Ware. Like other programs in the range, ESCAPER is supplied in a disk wallet with a nicely produced manual and bearing a freshly minted B.N.Ware logo for the game. Every expense spared, you might say.

It transpires that the Earth is about to be captured into a silver pulsating cosmic micro-silicic particles for rocks, coral

but you've been granted a chance to escape by the evil Zargoid, who seems to think that anyone intelligent enough to own an 8-bit, isn't obviously worth possessing! Zargoid has transported you to the long lost city of Atlantis and challenged you to defeat his elaborate defenses. Trapped in the mazes and you can escape through an optical tube to a safe galaxy. Simple eh? Unfortunately, what isn't mentioned in the plot is the atrocious (rather) which accompanies every second of the game, enough to make even

## ESCAPER

the simplest objective a painful experience! When I tell you that the sound is bad, I really mean BAD!

Escaper is basically a platform game, the idea being for you to manoeuvre your character through various screens, opening 'lock boxes' as you go, which permit your progression onto subsequent levels. Ensuring that the task isn't too straightforward, there are fire pits, mid-air explosions and an extremely annoying 'ball' which chases you around each screen, sapping energy from your limited quota. All of these nasties are clearly well avoided!

As a criticism speaking there's not a lot to get excited about but most of the graphics are quite well done and some thought has gone into the design of the two different locations. On the negative side there are signs of sloppy programming, such as 'blatant

blatant' colour cycling and fading levels double after joystick input. It's also possible to crash the computer by pressing certain keys on the keyboard.

Although this is obviously a relatively unambitious program, I have to say that if it were not for the ridiculous sound effects I would almost consider it a recommended purchase. B.N.Ware deserve thanks for their 8-bit support, but I do hope they won't neglect the quality control aspects of the business in order to get a mass of products on the market. Yet more from B.N.Ware and mine.

Title: ESCAPER  
 Publisher: B.N.Ware Software  
 Price: £5.99 cover/disk  
 Players: 1  
 Loading: 1.25 mins (disk)  
 Reviewed by Paul Dixon

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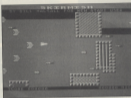
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**ATARI**



# SKIRMISH!



*Only one player but six planes to control  
in Bill Halsall's new game!*

**I**n a strange, distant land a rival power is secretly amassing an invasion force. Your leaders have discovered this and think that a small pre-emptive strike will give them second thoughts. You are in command of the squadron detailed to carry out this attack. Your 3 bombers must destroy as many tanks, rockets and buildings as possible while your fighter defends the bombers from the dangers of aerial mines, missiles and enemy fighters.

All your planes are controlled simultaneously using a joystick, the plane under control being highlighted in white. The bombers fly in strict formation but the fighter can be moved vertically. Move the joystick left then vertically to select the required bomber and press the button to drop a bomb. Move the joystick right then vertically to control the fighter, pressing the button to fire an air-to-air missile.

To pause the game press SELECT then press the joystick button to continue. The game ends when all your planes are gone. Press the button to play again.

## SCORING

Aerial mines, missiles and fighters	10 pts
Buildings	20 pts
Tanks and rockets on the ground	100 pts

## TYPING IT IN

Each cassette and disk cover should type in Listing 1, SAVE or CHANGE a copy, then RUN the program. The program will check each line of data and inform you of any errors. Correct any errors and RETURN the program again until all errors are eliminated. When this is clear insert the cassette/disk according to create a boot tape or floppy disk file.

Cassettes users should load the boot tape created by firstly removing all earbuds and then turning on the computer while holding down the RESET key (CL and RL cassettes should hold down (P) key as well, press (M) key and the tape will load and run automatically.

Disk users should also type in Listing 2 and save it on the same disk as the binary file created by Listing 1. RUN the Listing 2 program with the disk in drive 1 and the game will load and run automatically.

# MADE TO FIT

```

00 0 000 *****
00 1 000 *          SKIRMISH          *
00 2 000 *          by Bill Maland     *
00 3 000 *          LISTING 1         *
00 4 000 *****
00 5 000 *****
00 6 000 * NEW STREET OPER - APRIL 80 *
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# SKIRMISH!

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# THE TAPESTER Mk II

Mauro Maestromzi updates last issue's program with cheats for even more games!

**T**his utility follows on from the TAPESTER program presented last issue and is actually an enhanced version of that program.

What the original TAPESTER works fine on the games it was intended for there are one or two problems in using it for other games. For example the program uses page 6 in memory so that any game which uses this area, such as NINJA COMMANDO, will not work with it. Fortunately it left BASIC enabled so that games which need to run without BASIC shouldn't work correctly. This enhanced version will switch off BASIC and move itself from page 6 to the end of memory thus leaving page 6 free for those games that need it.

The instructions for use are the same as the original list. To escape, you should type in the listing and CRANK it then remove the BASIC from the line relating to the game you wish to play leaving only the word DAVID and the numbers following. Note that the THUNDERFOX you will have to do this to two times. Now place your tape in the cassette deck, press PLAY and RUN the TAPESTER program. Your game will be loaded, modified and run.

One peculiarity with THUNDERFOX is that the display will indicate when you have lost your first life but, after that, you will have infinite lives and the display will not change.

Finally thank you to David Welch for the original programs on which this version is based.

## TAPESTER Mk II CHEATS

NINJA COMMANDO	Infinite lives!
THUNDERFOX	Infinite lives!
TRANSMUTER	255 lives!
AIRSTRIKE 2	255 lives!
OLLIES FOLLIES	255 lives!
SCOOTER	255 lives!

```

00 0 000 *****
01 1 000 # THE TAPESTER Mk II #
02 2 000 #
03 3 000 #
04 4 000 #
05 5 000 *****
06 6 000 # NEW START DATE - APRIL 76 #
07 7 000 *****
08 8 000
09 9 000
10 10 GRAPHICS BIT PLEASANT WAIT ...
11 11 RESTORE 00
12 12 STOP 000000 0000 0000 0000 0000 0000 0000
13 13 00 *****
14 14 00-1 THEN RESTORE 00000 00000
15 15 0000000 00000 00000 00000 00000 00000
16 16 00000000
17 17 00000000
18 18 00 00000000
19 19 00000000
20 20 000 000,000,100,0,0,0,100,0,0,00,00
21 21 100,100,100,000,000,00,000,000,000,0
22 22 000,000,000,0,000,0,100,000,100,000
23 23 000 100,000,000,000,000,000,000,100
24 24 000,000,00,0,100,100,00,00,00,00,000
25 25 0,0,00,000,000,0,100,00,0,000
26 26 000 000 00,000,000,000,000,000,000
27 27 000,000,00,0,000,0,000,00,0,000,0,100
28 28 0,100,000,000,00,0,0,000,00
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# contact extra

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# ST FILE



A number of small companies seem to be catching on once again with utilities and games for the ST. MICROSOFT, ENDS have an educational program called TEACH ME TO READ consisting of seven programs that take a child through the various stages of learning to read. Mica is a ST-RE with additional characters available for £1.99 each. Further details from: MicroBooks, a Steve Perry street, Cottingham, South Gloucesters, G17 7BJ. (0474 553097) I have launched a new puzzle program (I've been told one of those for a long time) called PAN-PAN at £19.95 which works in either of mono- or 16-bit (as detailed in .MIG files as well as other popular formats). They also produce THE LIMPET (0474 553097) for £19.95 to swim between animals and join. DS. (Details from: Newhouse, Brookline, Portsmouth, Hants - by Charles, Durn, 2713 BIC, B-9888, already contacted more established, have SUPERCARD which they claim is a completely fresh approach to home and small business problems, as easy to use as a word table file and priced at £29.95. B-9888) they have many more games, WARRIOR at £19.95 and BULLY BOMBING and JAWY BOWL for just £8.99. More details from: B. Bates Computer Systems, 19, Southsea Road, Haslemere, Lincs. Tel. 8420 442257. One in the top leagues and the shaggy game, POLO, we have KICKAR from Denmark at £19.99, a 60-in with a new colour and released simultaneously. It will be interesting to see whether this has as much success as other colour up launches which have not in the conditions (especially of the small version CYBERBALL is another from Denmark, American Football played by robots for (over the size of human being) but at the year 2027 after the last human player has been eliminated from the game. This award is awarded for the longest time now in Denmark for either Friday the 13th (DAD) or the ROBOT BOMBERS, a color-up computer training course, etc. will appear on a strange planet. Electronics also have a strategy role playing game called STARGATE set in an enormous galaxy of 370 star systems and 800 planets with a vibrant 3-D colour realistic localised Picture at £29.99.

Another strategy game from EA is IMPERIAL which is based in the year 1926 and involves the next 2000 years of human development. In the shaggy game, 18-BOLT meet HUNTER-KILLER a WW2 submarine combat game plus 6000. PACT, a flexible 3D political simulation and GUILTY GUN a quiz simulator, all at just £8.99. Integrates continue to hit our eye with THE TWITTIES, a visual race of people who after one era become of a new world after the apocalypse. We control the rat hordes (starting through an underground network) also from 18-BOLT. FULL SCALE PLANT, a wargame played on the familiar hex system. More changes from ENDS. I include the 40th Anniversary titles, WARZONE (computer), HAZARDOUS and CRASH GAMBIT as well as MC FROM BARRAGE and read for it. CAPTAIN BLOOD at an incredible £4.99 (also in Danish) and the 64BIT BROTHER and 18-BOLT Century England where you choose a captain Prince or Princess (over equalities) where many named and unnamed team. This one is produced in association with Incubator and features their latest Prince and 2-D with graphics 3-D. GOOD, through its many labels, have always interesting titles including (Continuation of) STARGATE part of the Renaissance series, BLACK FLIGHT, an exciting follow-up to STARGATE and PREHISTORIC, FROM LIMBO, to start up, one of a new thread (later included by Virgin called CRYO which sends out great releases in digital format) rather - nothing to do with my software, just a brilliant story about CRYO - set up in a well support computer simulation. This is exciting through me (this is her pet who is another egg. What does her destiny hold in store? Can she safely be taken from her shadowy abode? What is the mysterious fascination she exercises on all those who approach her? Remember this is not a game, this is just the brief. Tell the software to go good!



ESCAPE FROM THE PLANET OF THE ROBOT MONSTERS from Denmark; how do they expect us to fit that into their little review board?

CYBERBALL - exciting Danish robot play American football



KLAX - a simultaneous color-up and computer tic tag version

STARLIGHT - a massive intergalactic simulation from Electronic Arts



# HILLSFAR!

**A** rather nicely imitated game from the powerful TSR/SSI team. Lots of excellent graphics, an screen maps, five arcade sequences, parallel doors (although I prefer the cursor keys in some of the arcade sequences), choice of character class, multiple sub-quests - lots of fun, but not a lot of depth.

You choose to be a fighter, thief, mage-war or cleric (or combination - if you are of a suitable race), then set off from your computer to seek adventures in the city of Hillsfar. You only get to play one character at a time, but if you get stuck you can save that character and start a new one - each class has three quests to complete, so you can have three different games running at once.

A full screen map of the countryside allows you to select your route to Hillsfar - there is only one, but once you get to Hillsfar you can choose other routes to exotic locations such as the Wizard's Laboratory and the Great Dragon. The first arcade sequence in the title is Hillsfar - you must control the speed of your horse and leap all the obstacles along the way - you may be able to buy a better horse at the Trading Post later if you don't like this one!

First you must enter Hillsfar and locate your guild in order to get your first quest. Hillsfar is shown as an on-screen map, with nearly all places of interest already marked in the accompanying booklet. Once you have found your guild, the

Guild Master will set you a little task. Each quest requires you to visit between 8 and 18 locations, to gather information and work out where to go next. You will have to visit the various pubs and shops (all more diverse and obvious the right actions, or prove yourself in the arena (quarter-stall fighting, arcade-style - with a variety of opponents - listen in the pubs for hints on how to beat each one) or the archery range (another arcade game with various moving targets - how many where you get a perfect score you still don't win) - have a long chat with a stone-lorper) or head into various places where they are chased (R.E. the Minister of a location is COMPLETELY different depending on whether it is during opening hours or not), or search the various locations outside the city.

Each journey outside the city involves you in horse-riding - some of the routes have some nasty obstacles (helps if you have found a blasting rolf), plus levelling trials and various arenas to visit. Once you reach the Statue, Hermit's Place, Shipwreck or whatever you enter another arcade game. All these locations are similar in style, as are the interiors of all the city locations you 'break into'. You get an occasional view of a Golem's side game, with a limited time to make several opening shots to find your next clue or a 30% gold, avoiding guards and leaving the cut.

The fifth arcade sequence is Lock-Picking - necessary as certain buildings and items chests. You are presented with a lock with 1 to 8 numbers, and must pick the right end of the right lockpick for each number, often in a very short time if you are a thief! You get a set of 10 double-ended picks, or, because you have to hire an NPC in the city to help you (even without picks you can still get by using Knock Knaps. Chance of Opening, or just Force Strength - but be careful you don't set off



is that!

You don't need to draw maps or make many notes, just the hints you pick up, plus details of how the money field in the arena. You don't even need to remember what you are doing in your current quest - the computer will remind you if you press R, P, F, Esc, E, F and Z all do useful things in various circumstances - make sure you check the manual!

The only real criticism is that there is no WALT command, and that occasionally you have to do things (e.g. CHARM 1000-M000) which look like you tried them and you to the arena, but are not the right thing to do!

There is lots of local colour - sit in the pub and you may be told 'You look like the old of the person next to you and retire a dead rolf' in the bottom of the glass' - and it is easy and fun to play. If you want something sophisticated save up your pointers for Ultima V, but as an introduction to an computerised D&D you'll find it hard to beat!

- **GAMEPLAY** - Well implemented Arcade-style D&D
- **GRAPHICS** - Excellent
- **SOUND** - Lots of nice sounds
- **VERDICT** - Great beginner's game. Fun for everyone. Don't expect too much depth and you won't be disappointed. Good value for money



**Title:** HILLSFAR  
**Publisher:** TSR/SSI  
**Price:** £24.99  
**Reviewed:** John Davenny

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# STOS GAMES MAKERS MANUAL

**D**espite the claim's of many reviewers, and indeed Mandrake themselves (the main criticism of STOS is that the package does not teach the basics of games programming. This is perhaps the only point to which STOS lives out to dedicated games writers like *The Blood-Suck-Up Construction Kit* and *STAC*. Not any more though because Stephen Hill (author of the original STOS manual) has written a book entitled *The Game Maker's Manual - About ST and STOS* (Dor).

The book is a pretty 282 pages, containing eleven chapters suitable for STOS users from beginners to Assembly Language programmers. The structure of the book is laid-out in such a way that total beginners will enjoy reading from the very first page and people who already have some knowledge of software creation can start from Chapter seven where some of the more advanced techniques are discussed.

The first chapter introduces new programmers to established programming techniques such as pseudo-code, module construction and optimisation by discussing the popular FI-Intercede variant - Megaedit. Stephen uses possible criticisms of Megaedit to construct a game called 'Puzzlebar' which could easily be implemented in STOS. One of the more interesting points in this chapter is the fact that details about memory usage in STOS are revealed, so no longer do you have to guess how much room a sprite or an array is going to consume, you can work it out!

At the start of Chapter Two things get really interesting, from here specific game types are examined in depth, Chapter Two is all about Space Invaders, Chapter Three covers Breakout, Chapter Four is simulations, Chapter Five features role playing games and Chapter Six is all about adventures. I don't want to ruin the book for all you prospective readers so I will not reveal much about the content in these parts, but each Chapter contains a brief history of the game type under discussion, and Chapters Two and Three contain detailed histories of Zaxxon and Drift, so you can all see how brilliant Francis Loner's programming techniques are!

Chapter seven starts to deal with more advanced topics by offering a thirty page introduction to drawing 3D wire frame graphics. Some of the things contained in this chapter are very advanced and I must admit to getting a bit lost amongst some of the listings, but then as Stephen rightly says: "Thankfully you don't really need to understand any of these operations in order to use them in your own programs."

Chapter eight takes a look at all of the different ways that animation can be achieved using STOS, colour cycling, screen flipping etc. Although the other chapters all contain some listings this is the first in which there are lots of examples which can be entered in order a minute each, so you can have some real fun without having to work too hard! For those of you with the STOS Master cartridge Chapter Nine contains some interesting new things for you to do with your samples. If you have ever wanted to produce alien speech (Captain Blood style) then check out this book!

The penultimate chapter is all about scrolling and shows how to use those

incredibly advanced Scroll commands with much more know than you ever thought possible. Also in this chapter is a breakdown (and a bit of a re-write) of the STOS map editor, included are routines to speed up the plotting of the maps to your instantaneous speeds and code to demonstrate scrolling maps.

The final chapter (what else could be suggested into this book?) is for really advanced users who wish to add their own commands to STOS. It contains essential information on the construction of extensions for both the STOS interpreter and compiler, also revealed here are facts about 'unimplemented features' in STOS (things as you and I call) that could neither the potential extension writer.

This book is really fabulous, Stephen's writing style throughout is interesting and witty and, perhaps more importantly, he does not ramble on about one thing for too long. Although not a replacement for the STOS manual *The Game Maker's Manual* supplements it superbly, it's just a shame that Mandrake did not have the thought to include in the original manual information similar to that contained in this book.

My only real criticism is that the book is not ring bound, this makes flipping to the relevant a real one-handed function. If anybody at Sigma Press is reading this perhaps they could rectify this fault for the second edition?

**Reviewed by  
Peter Hickman**

**THE GAME MAKER'S MANUAL**  
About ST and STOS BASIC  
by Stephen Hill  
Published by Sigma Press  
Price £11.95  
ISBN 1-85228-128-4



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# PD Paul Rixon's WORLD

## A WANDER THROUGH DEMOLAND

Here, and welcome to a new page in the feature of the magazine dedicated to Public Domain software on the ST. Each issue I intend to focus on a particular topic and produce a round up and, where applicable, detailed reviews of the related programs available from the extensive PAGE 6 library (and maybe elsewhere). There are currently almost 200 disks in the library with subjects as far ranging as programming languages, arcade games, art programs and desk accessories and I have already identified enough categories to take us up to issue 252 if I am interested to hear, however, what you would like to read in these pages. If you want to suggest a topic for discussion, to comment on a particular program or have any comments at all relating to the Public Domain then please do drop me a line via the PAGE 6 address. Don't forget to enclose a stamp if you would like a personal reply and please note that I CAN'T supply you with the software - see the end of this article for details of how you can obtain the disks from the PAGE 6 Accessory Shop.

### START THE BALL ROLLING

To launch the proverbial ball on its meandering voyage I've been sifting through the library files and sorting out those programs belonging to not only the largest and most exciting category of uncopyrighted software, but that which

most surely convince anyone who hasn't yet experienced the Public Domain to think again and join in the fun. The reviewing, of course, is demonstrated, which have evolved from spectacular beginnings to an almost unbearable height of quality and yet, still are getting better! There are literally hundreds of disks in the Public Domain and they fall roughly into three main areas. Commercial software and sampled music disks will be covered in future articles, so that leaves the huge range of specialized graphics and sound disks, specifically designed to impress and amuse onlookers with the awesome power of the ST.



Stockholm - Immovable covering balls

### MORE BALLS!

Despite the increasingly sophisticated disks arriving regularly from the Continent, there are many programs here in the early days of the ST that remain as satisfying to watch run as they were all those years ago. **COLOR DEMO**, one of the first disks added to the library, contains a wide range of early work, including the famous 'ball' demo - a bouncing, spinning, ringed ball resting a shadow on a grid in the background. If you have a more casual, chuck and **SILVER BALL**, for a great ball demo guaranteed to put your friends (or at least, those who don't own an ST). If you enjoy this sort of thing, **STREET-BOUNCE** is quite impressive with ball a dozen bobbles moving along in a line and reflecting the surrounding message. **BALL & BIRD DEMO** features a glass marble bouncing on a mirrored surface

with superb shading, and also includes a magnificent animated form of a bird flying past a coastal landscape. You won't believe how realistic it is! If your head is spinning after all this, try moving disks to rest with **THE SWARMAN** is a stimulating and enchanting sequence featuring the delightful story with some brilliant digitized pictures and 'Walking in the Air' music captured using Microsoft's 3-2T floppy system. In my opinion, it's one of the most professional looking demos there is.

### MINE'S BETTER THAN YOURS!

Several groups around the world are continuously striving to out-do each other and produce the 'balls made' ST demo. Probably most revered of all the recent demos is **THE UNION DEMO** which is a remarkable achievement by the lead of Europe's talented hackers. It won't run on a GEMTEC but will, with a few glitches, run on a LOROTEK and on every other ST made so far. It comprises ten fabulous demos with crazy scrolls, excellent digitized music and even a copy machine enabling you to digitize the disk - with this step made throughout! Then there's the amazing **CARBONARA CUBOIDS DEMO**, which impresses on many of the disks used in **THE UNION DEMO** with fancy scrolls, great music and the best graphics around. Also from the Caribians is **THE WHATEVER DEMO**, a masterpiece of sight and sound that will surely take some beating.

### AND THE MUSIC IS REALLY GREAT!

If you enjoy listening to tunes from the top ST games there are now four and a half hours worth in the amazing **B.I.O. SCROLLERS** plus, of course, some really stunning symphonic graphics, melodies and more digitized music. Another great one is **THE LOFT BOYS (BEP BRAD)** from this country which has six different

draws combined into one, including some great interactive spider manipulation. All these draws are becoming ever more complex and I would love to dedicate more space to these incredible feats of software engineering in a future issue.

## A FEW SURPRISES

Things aren't always what they seem. Take the **COMEDIA DEMO**, for example. This was described as a "pretty standard graphics demo" and at first, this did seem a reasonable assessment. However, the Swedish creators had incorporated an unexpected bonus - which was in itself hidden that it slipped past many people unnoticed! In the main feature during the "winking character" graphics display and some peculiar things begin to occur... a strange picture... flashes... but wait! They moved... and finally, the main screen for another of those great scrolling message demos. There's a crucial accompaniment from another bonus and the opportunity to select from seven different demos (using the cursor keys with Help and Unhelp). One of these features what must be one of the funniest screen ever. There's even a two-player game which is very similar to Atari's *Master of the Disk*. Some "standard" demo!

There are quite possibly many more surprises lurking undiscovered amongst the library disks and it's always a good idea to try pressing every key before deciding you've seen and heard it all. Most traps are quite common (try the **TEX DEMO** and **THE ULTIMATE DEMO** for example) but also check the function keys and cursor keys - in fact any key you can think of! You may well stumble on the unexpected and, if so, why not write to and share your knowledge with everyone!

## E FOR EXCEPT?

If you've recently bought a new ST the chances are that you opened up the box to find a mysterious "E" above the "TM" next to the Atari enhanced machines (most **SDM** releases, stereo sound, plug-in memory boards and a built-in battery - not to mention the latest releases of **90%** great stuff in theory, but unfortunately **10%** if it introduces something of a computer-fairy nightmare! Many commercial games have been giving problems and some Public Domain software has been similarly affected. A few programs will not work at all, and others - such as **THE ULTIMATE DEMO** - will run but do not operate correctly. The affected disks are marked up on the latest *Accessory Shop* bulletin so if you have an **SDM** check carefully before making your selection. Also, if you haven't yet picked up Atari's patch for the hardware resolutions bug then bear in mind that some disks may not load up in the way they were intended.



**THE SNOWMAN**  
The perfect combination of sound and graphics - beautiful pictures and an excellent scripted tale make this one of the most interesting demos around

Enough of the depressing news, now for the good stuff! Joining the library this issue is **THE STE DEMO** which will definitely have no problems running on the ST! The machine is equipped with an 8-bit pulse code modulation stereo sound system and this first demo, it's sure one of many, combines graphics with an excellent example of its use. Of course, you'll need to hook up some twin speakers to achieve the desired effect.

If you have a Philips CM8000 receiver (with a suitable stereo SCART lead) and the standard type supplied by many dealers will do the trick nicely. Otherwise, you'll have to run some phone leads from the ST's output ports to your hi-fi. Then, pump up the volume, and listen to possibly the best music yet emanating from an Atari source!



**SPACE ACE** - the most impressive demo of all!

graphics almost indistinguishable from a real television cartoon, they're accompanied by a great digitized vocal track (resembling the late Space Ace, "defender of justice, truth and man of Earth") and his valiant quest to rid the Earth of the Evil Commander! What I understand the real prize for this game may be something like 545-55, if the demo is a realistic representation then it must be worth every penny. Why not try the **SPACE ACE** demo and see for yourself!

## A REAL STUNNER!

I said earlier that I wouldn't mention any commercial games demos but I have just loaded one of the new disks in the library and I simply can't believe how good it is! **SPACE ACE** is an achievement for a game written by Eric Heits and published by Readysoft Inc. of Canada. It has already caused quite a stir on the design (the what?) and is evidently now lined up for release on the ST. I have to say that it contains the most incredible animated cartoon sequence that I have ever seen on a personal computer! Not only are the

## WHAT A CHOICE!

That's it, it's out of space! There are lots of great demos that I haven't had room to mention so they will have to wait for a future column. I hope you have enjoyed reading this article as much as I have enjoyed exploring the **TMEM** 8 library and, if so, I'll be back and issue to discuss a completely different subject! I haven't decided which one yet, but I hope to write with your suggestions! ✪

## HOW TO GET THEM

All the disks ordered by in this article are available from the TMEM 8 CD Store. Don't lose a prime reference number when you should use when ordering or enquiring about the contents. Please remember that you don't have to buy a copy of the *Accessory Shop* bulletin and check the system requirements for each disk. The programs referred to in this article are:

ST1 - POLAROID DEMO	ST24 - ATARI STE DEMO
ST12 - BALL & BUMP DEMO	ST25 - THE 10 THOUSAND DEMO
ST17 - THE SEARCH	ST26 - BRACK BCB
ST20 - EGG, SCHOLLER	ST27 - STEVE VIDCOM
ST23 - THE BRON DEMO	ST28 - ALL FOR BALL
ST25 - THE LOST BOY DEMO	ST29 - THE SNOWMAN
ST26 - THE RAIN TAPPOCK DEMO	ST30 - ORBITA DEMO
ST28 - THE CARIBBEAN CLON P DEMO	

Order any 500 units disk or 1000 units disk (100 units) from TMEM 8, P.O. BOX 84, Baffins, ST16 1JH. Telephone 0182 254040 or Fax with bank card 0182 254040.

# GAMES GALORE

Over the past few months many software companies have released compilations, hoping to dig out more money out of the public by digging all what would previously have been considered "dead" titles. Games Galore is different though, it cost less than four brand new games, but can't compare to the tough world of the compilation? The pack contains two single-sided disks, each one holding two games. The first game of the pack is **HYPERTRIX**, a horizontal/vertical shoot 'em up set in space. This game is an eight level version of *Hypertrix* that which was reviewed in issue 4 in *SOFT* column, and if you have read that then you will know how interestingly addictive this game is. The concept is so simple all you have to do to play on old spaces around a flip-screen landscape and complete each mission that you are assigned to, these range from blowing down enemy aircraft, and going on bombing runs to doing low level sweeps under a bridge. Your aircraft is viewed from the side and is extremely maneuverable with it's nine different throttle settings and through five useful control methods. If you are short on lives by the money you have an alternative but to fail out, and it can be quite interesting trying this on different heights just to see how low you can go without going **DEAD!** The game includes extra weapons and lots of other little features that I'm not going to tell you about, because it will

spell for fun. On that same disk is **TYMO** which comes from the same stable as *Hypertrix* and is described as an arcade strategy, yet in a future controlled by tyrannical robot brain Yano is similar in many ways to *Hypertrix* but adds a strategic element, with a very intelligent

computer opponent. The idea behind the game is to destroy the TEO (Tyrannical Earth Orbital) bases on Earth, the Moon and Mars by dropping marker flags behind enemy lines and calling in bombers, tanks and demolition squads, while trying to complete a sub-mission that is given to you at the beginning of the level. This could range from collecting lost nuclear bombs (and these robots are supposed to be intelligent) to rescuing hostages. You have a choice of different ships, a goal which is a slow bombing/ gathering around vehicle and also drives as a Star Wars type walker at the press of a button, and there is the silverfish which is incredibly fast, can carry eight load working vehicles but is almost impossible to land in a confined space.

Like *Hypertrix*, some alien craft weapons to be collected such as a nuclear bomb, extra missiles, turbo speed and greater responses. Each one brings a new dimension of strategy into the game as the choice between weapons can sometimes be a cause during hectic attack/bombing runs. This game takes a while to get into but once you do you are going to love Yano, it's like a cross between Defender, *Champion* and *Captain The Flag*. On the second disk is a vertical scrolling game called **SHOOT-TRIX**, this little gem is control around getting a little evil space large octahedron Starboarder through nine levels to touch an outpost with which communication has been lost. The screen scrolls from bottom to top and in quite smooth, all of the graphics are very large and give the game a very impressive feel but the overwhelming feature of this

game (besides the control) is the high quality of the music it contains, twenty five tunes each of which fits perfectly with it's associated level from very hard hitting beats during the game to charming city's when bonus points are awarded. As you work your way through the levels enhancements are added to your starboarder which give it turbo speed, high torque laser pliers and other such unusual accessories. This is a really nice game and includes the best graphics in this compilation but is a bit hard for this humble reviewer. I'm going to have to guarantee at this cost!

The last game on Games Galore is called **SHOOTING** and is so simple even my mum and eight year old cousin wanted to play it. The characteristics give the usual astronomically silly story about a giant



smooth being far lower in the largest food store in the land but don't let this lead you into thinking that *Shooting* is a Pacman clone. You control a mouse that has to go around munching up fruit (not in a mousey whine avoiding the green that patrol each corner, the background changes for every level as do the fruit, so you find yourself munching things as diverse as cherries and milk cartons. Now this may sound like Pacman to you but it's not. The mouse you control moves with momentum so when you release the joystick it does not stop straight away and so if that was not enough, the mouse also moves slightly from side to side in a very smooth manner so getting full control over it would be worth a Nobel prize for sheer brilliance. There are many bits of other features such as the mandatory bonuses like a big POW symbol which makes your mouse grow and allows you to eat the greens, and an apple



Title: **GAMES GALORE**  
 Publisher: **Mandelor Software**  
 Price: **£19.95**  
 Reviewer: **Peter Hickman**

that appears occasionally which is used to build up an extra life. This game is one the whole family will enjoy (time shift without becoming bored as too frustrated). Richard Yarnor of Manchester United has managed to get a massive 2.7 million point high score, are if you can beat that I wonder?

If you have not already guessed I was interested in reviewing this compilation because all of the games were written in STOS, but believe me if they did not advertise that fact you would be none the wiser. Each game within this compilation contains that certain something that seems to be missing from 99% of others in the games at the moment, I cannot quite put my finger on what it is perhaps it's playability, or perhaps it's the fact that all of these games are actually fun to play and don't demand too much from your trigger finger (great for everybody suffering from Parkinson's, or who, like me, suffer from 'the button finger' after a five hour James II session).

As a James Manchester have included a new STOS extension with these games called STOS Keyboard, this allows users to compact (and decompress) any type of memory bank from within STOS, thus saving disk space on any programs you may write, it takes a while to compact things but decompresses in almost instantaneous. As if that was not enough on side two of the disks (accessible by double sided drives only) is the source code for the games so you can see how they work, you can also change the graphics to suit your own tastes, or use the existing graphics and source from within your own programs.

To sum up I would recommend you buy this compilation even if you do not own STOS, the games on it are really fun to play and offer good value for money when you consider that it works out to about 10 pounds for each program.

● **SOUND** - all the games have some really nice music, the best being present on Skreeter's. Several effects are ok, with some of the games using pretty clear samples.

● **GRAPHICS** - the graphics are Skreeter's are a bit blurry but well drawn. All of the other games contain the standard of colourful graphics that are expected of all present day software releases.

● **GAMEPLAY** - the most outstanding point of this compilation is that you (and the rest of your family) will still be playing the games long into 1992.

● **VERSITY** - if Manchester keeps releasing products on good on this they will never get a bad review.

# SPORTING TRIANGLES

You don't have to be Emyln Hughes to have a go at a television quiz game  
John Barnsley tests his knowledge

This is the computer game based upon Central Television's quiz game of the same name. As with the television programme, three players compete with each other (or the computer) in seven rounds of sport-orientated questions, each contestant specialising in one particular sport - and the program lets out the player in the appropriate gear!

You initially select one of twelve different sporting categories as your specialist subject and you are given the option to set any length of time limit for the answers. There are seven different rounds and these are in line with the television show. The first two rounds are standard question rounds, with each player receiving a single question in any of the three players' specialist subjects (or general sporting knowledge).

Two points are awarded for a correct answer - but the wrong thing about this game is that you are not given the option to type in the answer but find the answer displayed on the screen and are asked if it is right or wrong! This obviously makes it very easy to cheat and win every time - so what's the point? Well it is only a game and good fun nonetheless.

The next round is 10/10 for this where the player has six attempts to answer according to the gradually helpful clues. The quicker you answer, the more points you earn. Next standard questions then the Agony Picture round where a graphic is gradually formed on the screen. The final round is a little better where you hit your allocated 'buzzer' key to have the opportunity of answering the question. These 'buzzer' keys are only active when the question is completely displayed on the screen. Again, it seems rather silly when the answer is displayed and you are asked if you were right - now what did he (or she) in his right mind in games press '0000'!

Once you have completed the questions, fairly or otherwise, the end of the game is reached and the winner is duly congratulated. You then have the option to play again - although you must choose different sports than those selected for the previous game.

Sporting Triangles is, to be fair, reasonably fun to play but I feel there is little going for it in terms of excitement. Although the program is reported to contain 2500 questions, the same question is repeated all too often and they soon become well known to all players. It's just too easy to cheat but, if you're into sports in any other level, then I don't think you'll be too disappointed.

I must mention the unnecessary copy protection 'barrier' - a sheet of 700 dithered coloured squares which retains its colour regard from the program upon first loading of the game. The need for this kind of software security is appreciated but do these colours really need to be so hard to define? Is artificial light - when most games are played - it can be almost difficult to tell 'dark blue' from 'black'.

Overall, an enjoyable few hours of sporting fun (and cheating!), but I don't expect that I'll be playing it again for some time, unless more question modules become available (how about it, CDROM).

● **SMART & SOUND** - Nothing special but adapts for this type of game

● **GAMEPLAY** - More fun with 2 or 3 'humans' players than solo against two computer contestants

● **VERSITY** - Initial curiosity soon disappears once all the answers are known. An option to create home-made questions would be useful

SPORTING TRIANGLES - CDS Software - £19.99

# MAKING MUSIC WITH YOUR ATARI

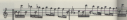
*John S Davison's  
regular guide to  
all the ways  
of making music  
on your favourite  
computer*

## SEQUENCING

**I**n the last issue I discussed what you can expect when moving upwards from a basic 'home keyboard' to a more sophisticated synthesiser. This time I'd like to do the same with software, in particular looking at the sequencer. To save space I'll assume you all read my 'MIDI's Guide' section in issue 37 in 87 last year, so you already know the basic concepts and jargon of MIDI sequencers. If you missed the series and want to learn more, back issues are still available so call Page 4 for details.

The sequencer is the heart of any MIDI based system, so it's this which enables you to record and playback music with your MIDI equipped synthesiser. Most people start with something fairly simple and inexpensive, such as Music Construction Set, or Music Studio. They may be simple, but they're capable of good results and are ideal for beginners. They're both 'step-time' sequencers, which means you enter musical notes into them one at a time, a rather laborious operation. Virtually all other MIDI based sequencers operate in 'real time', i.e. you actually play the music in from the synthesiser's keyboard, although step-time input is often included as an option.

After using several different real-time sequencers I finally found happiness with Twelve by Steinberg. This is a real-time version of the legendary Steinberg Pro-24, a



paper's 24 track sequencer now in use by professional musicians the world over. Twelve is often known by the nickname of 'Pro-17', as it's very similar in looks, facilities, and operation to its big brother. At £129 it's not exactly low priced, but you can get it much cheaper by shopping around.

So, what makes Twelve so good? Well, I find it very easy to use; it seems to have virtually all the facilities I need; and everything works exactly as expected—give or take the odd bug. Naturally, having used it for a while I can now think of things that could usefully be added, but then I could always upgrade to Pro-24 that doesn't tell my wife.

## MAKING TRACKS

As you might guess Twelve has twelve tracks, allowing you to record up to twelve independent polyphonic musical parts, which can then be played back simultaneously. Each track can be assigned to a different MIDI channel, permitting each to produce a completely different sound.

A track may be built up from sections (called patterns) of any chosen length, and each pattern recorded independently. When recording you can loop the pattern, allowing the same part of the song to be recorded repeatedly without stopping, and you've played a version you're happy with, you can record at any speed too, permitting difficult bits to be recorded slowly then be speeded up to the correct tempo as playback—great if your keyboard skills aren't too good! If your rhythmic timing's a bit out there's a quantise facility to pull notes back onto the beat (UNDOable if you don't like the effect). Unwanted MIDI data (e.g. pitchbend, aftertouch, etc.) may be filtered from the incoming MIDI stream as you play, to reduce data storage requirements.

After recording, each pattern can be modified in several ways. This includes applying MIDI velocity changes to alter the volume and timbre (overall level) of the sound, shifting the timing of playback forward or backward to create special effects; transposing note pitch up or down; and setting the rate the synthesiser uses to play the pattern. Patterns may be saved (loaded to/from disk, copied within a track or from one track to another), and strung together in any sequence required to make up a complete song. Files produced by Twelve can also be read by Pro-24, so if you upgrade you can still use your old files. Twelve will also read the first twelve tracks from a Pro-24 song file.

When recording a new track you can simultaneously play back previously recorded tracks, so hearing the new recording 'in context'. You can also turn tracks on and off independently, and quickly 'solo' any track to hear it in isolation. As you record or play back tracks, Twelve's recording level meters (expressively drawn around to indicate the passage of MIDI data to/from each track.

My favourite feature of Twelve is its graphical score editor, which shows you what you've played—in normal music notation! What's more, you can then edit the music in this form, permitting the removal of wrong notes, addition of new ones, lengthening or shortening notes, and changing a note's dynamics by changing its MIDI velocity. In fact, you can start with a blank pattern and enter every note singly if you wish—just like in Music Studio or Music Construction Set, only

with full score control.

You can set an overall tempo and time signature for your song, but the more complex pieces you can change either within a song using a 'master track'. Another facility lets you mechanize the sequencer with a separate automatic drum machine or even a multitrack tape recorder via a spare track on tape. So what's missing? Well, it only has twelve tracks, and naturally you can't merge several tracks into one important when you have so few available. There's no drum pattern grid editor, no drum patterns have to be recorded live or indirectly entered via the score editor. You can't print out the resultant musical score either, as Steinberg expect you to buy their companion Masterwork product to do this. Overall though, I find Twelve a delight to use. It runs happily on my 5205136, and works perfectly with my Yamaha PS5-600 and PS-300 keyboards. I can highly recommend it.

## EXPLORING THE PSS

Have you ever listened to those fantastic automatic accompaniments on home keyboards like the Yamaha PSS series and wondered how on earth they're done? For those who haven't heard them, the PS5-600 and 600 have a set of incredible automatic accompaniments in 100 different styles. Even a single one-finger melody can sound really professional when played along with one of these! The accompaniment consists of bassline, drum rhythms, chord backing, and orchestral embellishments, each using different instrumental sounds. Each part may be turned on and off independently of the others, allowing you to set them in any combination. As well as playing over the PSS's speakers, each part is also transmitted on its own MIDI channel, allowing it to be played by other MIDI instruments in your setup.

That's just a moment - if they're transmitted over MIDI you should be able to record them into a real-time sequencer if you connect the PSS to the ST with MIDI cables in the usual way, put your sequencer into record mode, and switch on the PSS's auto accompaniment, you'll find that you can record them. You may then use the sequencer's editing facilities to examine what the PSS has been playing.

Using Twelve it's easy, as you can use the score editor to view it in normal music notation. There's one small problem though. Twelve only records one track at a time, so all incoming data for ALL the parts ends up on one track. Where you view it you see all the parts at once, and on playback everything plays in the same rate. It looks and sounds extremely odd, to say the least.

But there's a way round it - you can record each part separately on a different track in separate recording runs. Then give each track its own channel and route to recreate the original sound. However, this creates a new song - if you're making four separate recordings, how do you synchronize the four parts so they all play back exactly in time? The answer is to lock Twelve to the PSS's timing clock by switching Twelve into the MIDI sync mode before recording each track. The two will then start together, run at exactly the same speed, and stop together. Not bad!

Now, having captured the PSS's MIDI data you can treat it like any other MIDI data. You can edit it,

rearrange it, incorporate it into your own music, and play it back in any way you want. OK, so this is cheating, but it can be helpful if you need some ideas to help you along.

## SNIPPETS

... **Don't forget** the MIDI Master Show being held at the Royal Albert Hall, London on 7-8 April at 10-11 O'Clock. Many of the major hardware and software suppliers will be there, and special seminars covering all manner of MIDI related subjects will run throughout the show. It's a great idea, attended only by the show entrance price - they want £10 (yes, ten quid!) at the door. However if you please Westminster Exhibitions on 01-549-3444 you can buy advance tickets at £2 each.

... **If you're looking** for new MIDI equipment make sure you check out Cadiz's current special offers. Like Yamaha, they've recently been slashing prices on MIDI keyboards and expander modules, with some selling at less than half price.

... **I've already received** enquiries about supplementary software for MIDI Master for the SL/386. It's probably too early to ask, but has anyone out there yet written anything - such as MIDI Master sequencer file editing software, or a program to translate sequencer files into Advanced Music Systems format? If you know of anything, please write and let me know.

... **Although** I've had several letters from readers, I've not yet received any new PSS voice patches from anyone. Come on, you guys - lots of you now have Dave Gutter's PSS voice patch editor, so what are you doing with it? Paying your debt to the Great Public Domain by creating your own patches would be nice. Do on, make the effort NOW - just send your patches to me (see Page 6), and with SAE please, if you want a reply) and I'll publish the good ones in this column starting in the next issue.

## GET PSEDED!

To make building those PSS patches even easier try getting PSEDED. Sorry, it couldn't read it, PSEDED is a brilliant new voice patch editor by Hymas Recently, now available as PSS Disk 2 from the Page 6 FI Library. Its documentation includes an explanation of what all those PSS-voice parameters mean - at last you'll be able to understand what you're doing!

For sequencing using those new voice patches try the Cash Sequencer, a superb new real-time sequencer named after its author Henry Cash. Its design was heavily influenced by the specifications for an 'Ideal Sequencer' published a while back in Sound On Sound magazine. Again, the program is now available on Page 6 PD disk.

First impressions of these programs are that they're the best Public Domain music software I've yet seen. In fact, I can hardly believe they're PD programs, as both have the look and feel of good quality commercial products! They're real bargains at just £2.95 each from Page 6. FI'll give you a full report on both programs in the next issue.

# DAILY DOUBLE

## HORSE RACING

**F**ancy a little flutter on the greens, but don't want to lose your shirt? There take a look at this new horse racing simulation from CDiS - it could be just what the poor punter needs.

The program's colourful packaging seems to be full of old newspaper at first sight, but after unfolding it you find it's the program's instruction manual - in the form of a racing newspaper. The front page of this contains the program's operating instructions, plus detailed explanations of the five points of betting. These include how to read the racing form, the track horse and the ability of each horse, descriptions of different types of bet, how to place a bet, and how the odds work. The rest of the paper is dedicated to page after page of racing form for the 180 horses in the program's database.

The first thing that strikes you is that the program isn't modelled on racing as we know it in the UK. In fact, it was written by the USA, by *betwars*, so has a decidedly American flavour. All financial aspects are quoted in dollars and some very peculiar terms are used to describe the betting. Have YOU ever heard of an exacta, quinella, or parlay bet? I certainly haven't, but perhaps my ignorance can be forgiven as I've not really got into the sport of kings.

One to four players can take part, each starting with up to \$100 stake money. A game consists of two flat races (there's no

jumping involved), and you can place from \$2 to \$200 on the bets of your choice, of which you can have up to 100 at any one time. Bets can be straight wagers for win (horse comes first), place (horse comes first or second), or show (horse comes first, second, or third). These are similar to win and each-way bets in UK racing terms.

Alternatively, you can try the strange sounding bets mentioned above. In the exacta you have to name the winner and the second to finish in a given race. The quinella is similar, except it doesn't matter which of the two horses finishes first. A parlay bet is one where you pick two horses from any of the two races, which you can then bet to win, place, or show. Any winnings from the first horse are used as the stake money for the second one. There's also the Daily Double, from which the program takes its name. In this you have to pick the winners of the first two races in each game, with odds being calculated from the combined odds of the two horses. It sounds complicated, but you soon get the hang of it.

Once all bets are placed, your share involvement is over - you just watch as the horses line your money the pool. After a brief musical fanfare a voice which sounds like Paul Jones says "and they're off" as the horses start galloping across the screen. I expected to hear the clatter of hooves, but was disappointed to hear just a tiny clattering sound. It's a pity the author couldn't have used sampled sound effects for this - it would have been much more effective.

The galloping horses don't make much progress across the screen, as your view is like that from a camera mounted on a track running alongside the track. The background scrolls by, but the horses stay on the left side of the screen, with their relative positions changing as different horses try to take the lead. Performance is affected by



track conditions, which can be turf, dry, or muddy (Americanos again?). Eventually the winning post scrolls into view and that too announces the winner, as the horses finally slide off to the right.

The graphics of the horses are rather good, and the detail even extends to racing silhouettes on the track below them, however the effect is spoiled somewhat by the slow screen update rate which is only about four frames per second making both the animation and scrolling a little on the jerky side.

If you're fed up with football, winter sports, and motor racing games Daily Double could make a welcome change. It doesn't, however, offer the same level of player involvement as most other sports simulations and this, coupled with its lack of overall polish, could result in its novelty value soon wearing off.

- ◆ **GAMEPLAY** - not enough variation or direct player involvement to hold your interest for long periods. Perhaps a "train gun" option would help!
- ◆ **SIGHT AND SOUND** - animation and scrolling is rather too jerky. Sound is sparse and generally crude, although the digitized speech is clear.
- ◆ **INTERACT** - I found the game quickly became boring, but playing it with a few friends makes it much more interesting.



Title: **DAILY DOUBLE HORSE RACING**  
 Publisher: **CDiS Software**  
 Price: **£19.95**  
 Reviewer: **John S. Denton**



## BEVERLY HILLS COP

**T**his game springs from the highly successful 1986 starring Eddie Murphy and once more demonstrates the profitability of the horror-fantasy film. The game is split into four parts. The first is a **STOCK** through a warehouse full of administrators who desire to take away your Axel (the cop of the title) while he attempts his way through them. The graphics and effects are adequate for this but there is nothing especially outstanding about them. The whole score is competent with only slight performance noticable. There follows a driving game which allows the user to choose music or joystick as the steering wheel. It is also necessary to shoot the criminals' main chests in order to survive the chase to section three. Again the controls and effects are fair and workable but still not outstanding. The next two

screens are variants on the first three although the final game's music the footage format makes for slightly better reference being needed. All of them are perfectly adequate but not particularly eye catching games.

I felt that this whole experience lacked any real feel of the movie and missed much of the inter-play between Murphy and the two local cops. The overriding impression is of four games that would feel difficult on their own being sold under the cover of a large name licence. The packaging of the game is good showing pictures from the film both on the box and between levels and the reproduction of the theme is more than adequate but unfortunately this does not make up for some fairly



imaginative gameplay and a plot line that is only vaguely related to the original story. It lacks the wit and panache that Murphy offered in the film and it does not afford the player any chance to interact with other major characters. My own feelings are that buyers who either purchase on impulse or do not have the option to play first games are going to find themselves most disappointed with this offering from a firm that can do much better. I would find this hard to recommend without the proviso that the prospective buyer should take a good long look at it first, really not a good advertisement for the film either!

### FACTS

Title: BEVERLY HILLS COP  
Publisher: Tynesoft  
Price: £19.95  
Reviewer: Simon Howarth

### SIGHT & SOUND

Good reproduction of the theme and/or special effects, graphically average with no real problems evident

### GAMEPLAY

Smooth and responsive controls make play acceptable although the action games do not show any distinctive features

### VERDICT

Not a good advertisement for the film or the starring business. Slightly average at most!

## ASIAN JEWEL

### FACTS

Title: SOLDIER 2000  
Publisher: Activision  
Price: £19.99  
Reviewer: John Davison, jr

### SIGHT & SOUND

The game doesn't stand out to you in terms of presentation, but it is a lot more than your average quality

### GAMEPLAY

Very addictive, detailed action game which would keep you quite happily involved for hours on end

### VERDICT

Certainly worth checking out due to its highly addictive quality



**T**his game has you playing the part of a future combat soldier in the future whose mission is to recover hostages from ruthless and deadly terrorists.

The game begins with you taking out your combat soldier with heavy armour and any number of heavy weapons, ranging from pump action shotguns to grenade launchers or experimental pulse laser weapons. Once you have finished in the cinema, your soldier is transported to the first zone where the most intense the first batch of hostages, by shooting terrorists in order to gain access to the imprisoned ones.

The action takes place in two

## SOLDIER 2000

different ways. The first is a two dimensional view of the proceedings

as you guide your soldier along the corridors of the building looking for rooms where you may find the hostages. Once a room has been located, you may enter and the view is then transferred into a three dimensional 'eye view' of the room as you look around for hostages to collect and terrorists to shoot. The view which scrolls by in this portion of the game is very impressive, as it uses incredibly smooth parallax scrolling to bring the foreground scrolling faster than the background.

Apart from the extremely smooth scrolling, the game is of average graphical quality. The sound is fairly good with some passable sampled sound

effects and speech samples. The one thing that makes this game stand out from many others on the market at the moment is that it is actually very playable. The three may be simple in concept and the three dimensional sequence may resemble one of any of the best favourite games - *Protektor* - but overall it is incredibly addictive. It would be quite easy to find that the best part of an evening could disappear while playing this game!

**'overall it is  
incredibly  
addictive'**

# FOOTBALL CRAZY

**T**his management game is sold by mail by the above company and the packaging is straightforward and simple. This comprises the game within, which is also very straight forward although less than that to be used at. The game is, basically, a more detailed version of the classic Football Manager without the graphics. In it the player(s), of which there may be up to four at any one time, compete as managers in the English Football League both selecting their fixtures and player abilities against the form of other players and the computer team. There are plenty of opportunities to buy and sell players and constantly at the early stages an almost 24-hour, wherever desire attracts is needed. The game matches each player's progress and moderates the difficulty level as you improve or fail. Should

either of these possibilities occur in cases that the player will be either offered new contracts by better clubs or fired and can only hope to pick up clubs desperate for any sort of help.

The game is entirely menu driven with no graphics at all. The results sequence shows up as the classified check in any classified type print manner with not even any other report of the game available. Discovering who scored is a matter of examining the team to see whose goals scored column have green. The possibility of error checking is gone since I discovered it was quite possible to play two goalkeepers in one team at the same time in order to improve my shooting skills. Subsequent results did show I scored more than my self.



James Clough would be in possession I managed to take myself the four different teams to the top of the first division and domestic cup games and three second titles I could do to either help or hinder my team at times, though appeared with little explanation as to what statistics were helping or otherwise.

I was also perturbed when at the start of my seventh season the game crashed telling me this was a review copy and I had had enough time to re-perform. I had this experience also since I started guessing that the game reviewed to the full game or that it will wind up to prolonged play.

## FACTS

**Title:** FOOTBALL CRAZY  
**Developer:** TOP Software  
**Price:** \$19.95  
**Distributor:** Damon Howard

## SIGHT & SOUND

Almost not applicable, there are no audio effects and the only music and graphics are on the loading screen but the game doesn't need them.

## GAMEPLAY

So much a fiddler that there is already in creating decisions beyond anything other than gut feeling did the game is nevertheless interesting to play.

## VERDICT

A long old general sports proposition that it would have been considered much better if people the games promised improve on its general appearance.

## FACTS

**Title:** SPACE HARRIER  
**Publisher:** Sega  
**Price:** \$19.99  
**Distributor:** Damon Howard

## SIGHT & SOUND

Good graphics, bright colors and loud noise - everything in the right.

## GAMEPLAY

Fast and fun with plenty of additional bonus in a system to play.

## VERDICT

I don't usually like commentaries but this one is excellent, colorful if it were to be possible.



# SPACE HARRIER

the land, but which is attempting to blow away the ferns in the shortest time.

**S**pace Harrier was a big hit in many countries last year. I have about one up that had speed, color, noise and a little style to it. It has been taken this and created a highly creditable two disk version for the ST, in the game the player takes the part of a Space Harrier, a form of Dirty Harry in jet boots which is a most powerful laser rifle. The copy of the game I received had no instructions sheet with it and no instructions or story on screen and so it was just as well that the game is simple to play. The whole idea is to dodge various obstacles like rocks or trees and the odd volcano or giant mushroom while shooting at

possible. The control seems to be by mouse only and so each should be tested by the makers of space rater as a definite asset to their business. A great deal of fun is pressing left the little grey level looking for a rest. It is though the perfect way to control a game of such pace since the control is accurate and most precise. The sound and color are not shared by the original at all and the small effect is most interesting. The only quibble I can find with the game is that stability is somewhat a little cracked when many explosions fill the screen and the next enemy appears without the player seeing it. This

seems like a very good example of the tag of war, but it does seem that the cost of level creation can wind up and shoot you full of those without the player having much chance of avoidance. This trailing problem aside I was pleased to note that a continue feature was available and the three credits allowed kept interest going into the game. The second disk was for playing alone although it seems that multi entry practice would benefit the shooter since this level is very fast and exceedingly furious.

I enjoyed this game and found it suitably addictive and happily accurate to its intentions. My mouse on the other hand is complaining that it would rather be tied to the cat or play Dungeons Master. This game is one I can happily recommend to all arcade freaks.

# S.E.U.C.K.

**T**he banner headline on the box proclaims:

"Now everyone can create their own computer games!" Possibly true, but only should your desire to create translate as a desire to create *within* a virtual world. The package contains several useful parts including sprite designer, background creator, music generator, sound creator and animation editor. Unfortunately they all only really work within the confines of the constructor and thus the overall power is limited.

To create a game is relatively simple, given an ability to create sprites and a great deal of patience in using the very tedious editing equipment. The three things to do are load the sprite editor and draw the various pictures you wish to use, or alternatively choose those included with the set. The system then allows you to

change their palette and identify them for subsequent animation. Sprites can be contained to create

static sprite spectacular large monsters and indeed each of the other functions that follow allows construction of similar ease. Editing the three sample virtual games can give a taste of different types of use of these games and this is in fact my main worry. The software itself is excellent and allows the use of imagination in a very limited way, but if you want a platform and leaders game then the creator will not work, if you want a driving game then you would have numerous problems, in fact you can only make games in the Substrator or Simson mode. As such the utility is very limited but what it does it does very well indeed.



I must admit that I kept comparing it to STOS and bit that the two packages were capable of producing a three-in-one up of comparable standards, although to obtain the stark scrolling of S.E.U.C.K. the STOS compiler would be necessary. Both can make stand alone games but STOS would allow any variant as a theme or a completely original idea to come from the user if they had the skill and thus represents a far more versatile utility. For someone with little or no skill in programming though S.E.U.C.K. is a godsend. With imagination some very entertaining creations are possible but do not expect a wide variety from the package.

## FACTS

Title: S.E.U.C.K.  
 Publisher: Culliver (Peters)  
 Price: £29.95  
 Reviewer: Damon Howarth

## SIGHT & SOUND

Basically what you make them. Suggested games are unusual and novel. Loads of potential.

## GAMEPLAY

Must use tedious, painful games can be altered and changed with or wit, the utility is easy and intuitive.

## VERDICT

Although limited in scope it does the job very well. Good for the less technical but imaginative types.

## FACTS

Title: NEVERMIND  
 Publisher: Psygnosis  
 Price: £19.95  
 Reviewer: John Barnham jr

## SIGHT & SOUND

As with all Psygnosis products the presentation of this game is absolutely superb, the graphics are well defined and the sound is in good quality.

## GAMEPLAY

Its a very addictive once you do come to the novel methods of control employed.

## VERDICT

Excellent. A different game which combines both strategy and arcade action into one package.



picture are sometimes animated, making them more interesting than they

**N**evermind is the latest release from the Psygnosis label Psygnosis. The packaging describes the game as a "...referencing to create game that will have you juggling your pixels and spinning over its mind maddening problems until the early hours of the morning."

Your task within the game is to make your way through over 250 screens, each of which contains a picture puzzle which must be completed in a set time. You must rotate picture tiles from around the three dimensional playfield and fit them into the gaps in the picture picture to complete it. However, to make life more complicated for you the

# NEVERMIND

really are. On higher levels you will find picture tiles which dissolve, along with chess pieces which have an annoying habit of wandering away with vital parts of the puzzle.

In very simple terms the puzzle of each screen could be likened to the old plastic 'Mole' puzzles where you have to juggle around the individual square tiles making up the picture in order to make it complete. However, in Nevermind, you must juggle the pieces around by walking your character around the screen picking up and setting out the various pieces of the puzzle. The game is graphically superb, with some beautifully

drawn backdrops and very well defined and animated sprites. The sound is also highly commendable.

The game is very challenging, and once you have got used to the methods of controlling your character to perform the required actions the game becomes very addictive indeed. The idea is quite original, which makes a change to today's game market and I certainly enjoyed trying to get through the various levels. One thing which I must mention is the way in which you can 'jump' past levels you have completed. Each screen has its own 'password' and if this is typed in on the options screen you will be automatically transported to the level whose code you have entered. This is a nice touch which more games should employ. Top class stuff from Psygnosis.

# DEMON'S TOMB

**A** recent reference to twin parents ... The Forbidden God ... Ideas of Summoning failed by the good twins ... the evil one waiting patiently for the right time to try again ... strange deaths on the twins ... The heart wasn't so much damaged as torn to pieces ... and our father has mysteriously disappeared while exploring an ancient burial mound!

It is down to you, Richard Lynton, to save the world from the final touch of Demogorgon! Once you realize that something is wrong you must solve many puzzles, puzzles and visit countless dungeons in order to find the lost buried treasure of that so that he can stop his evil quest!

First you get to play a short prologue as your father, Richard to die by fire in the burial mound, you must discover enough clues so that

Richard will be able to understand the clues and set out on his deadly quest.

Demon's Tomb can be played as a traditional text adventure (with pictures), or its Menu Mode. This displays all the verbs in a scrolling window at the bottom of the screen. Select one with the mouse to get a list of all the relevant nouns, point at one of those and your command is executed. Larger sentences can be made by selecting "verbs" such as **TRIP** and **WALK** and you can skip around the list of over 100 verbs by typing the first letter of the one you want. With a little practice you get to play a full text adventure without typing any words!

The game features lots of other goodies - powerful power, bonuses, hints, user-defined abbreviations, scroll

and edit, large text, etc. Menu Mode doesn't work with large text, but by choosing the right colours you should be able to read it all on a TV! There are lots of hints in the on-screen text, and the manual provides extra clues as well.

**EVERYTHING** in the prologue has a use later on (though they are NOT all necessary to win), but even when you have worked out how to save the twins from the fire there is only **JUST** time to do it if you are very careful not to waste any turns. Some of the responses and idiosyncrasies of the game are a **LITTLE** annoying in a few places, but overall Demon's Tomb is an very enjoyable experience.

## FACTS

**Title:** DEMON'S TOMB - THE AWAKENING  
**Publisher:** Virgin Interactive Ltd  
**Price:** £24.99  
**Developer:** John Swainey

## SIGHT & SOUND

Some really atmospheric pictures can be displayed at various points in the game.

## GAMEPLAY

A nice implementation of a text adventure with a reasonable vocabulary, but where you DON'T have to type!

## VERDICT

An excellent adventure to be enjoyed, but with enough hints to keep the experienced player entertained.

## FACTS

**Title:** GHOULS AND GHOSTS  
**Publisher:** U.S. Gold  
**Price:** \$19.99  
**Developer:** John Dorken Jr

## SIGHT & SOUND

Not the graphics and sounds are of a high quality. The music shows what can be done with the ST's hardware sound chip.

## GAMEPLAY

This is a very addictive game, so it's enough of a challenge to make you want to go back to more (though the frustration when the mouse

## VERDICT

What can be said that hasn't been already? Ghouls and Ghosts is truly superb. However, it could've just a little less time as the Ghouls and Ghosts



# GHOULS AND GHOSTS

this rescue job is not the easiest task you could undertake! You must fight your

**T**his is yet another game which is a development from an old arcade machine.

In this case the game is based on the old classic 'Ghouls and Ghosts'. The original conversion from the highly successful arcade machine was made available on several IBM compatible machines a number of years ago and was a tremendous success. Several years later, a sequel has been written in the form of 'Ghouls and Ghosts' - almost identical in form but taking advantage of today's improved graphics and sound. You play the part of the evil and brave knight Arctus, who has to rescue a beautiful princess. However,

way through a variety of ghouls, ghosts, vampires, and various other nasties using a number of weapons which you can find lying around. The game is basically a two dimensional scrolling affair where you view the proceedings from the side as you move your 'sticky' little knight through the dark and sinister land.

The graphics in 'Ghouls and Ghosts' are of a very high quality and compare very well to the original arcade game. The sprites and backdrops are all beautifully detailed and the screen message to compare with the sort of 'monster' atmosphere which the game needs. The game is full of nice little ideas, such as the first view

you are treated by a creature you do not automatically kill in life. Before this occurs you first lose your armor and carry on through the game wearing nothing but a pair of boxer shorts! The sound is also of a very high quality, the tone which plays throughout the game and goes to show that if the sound chip in the ST is used properly some beautiful effects can be obtained.

One of the one thing which you notice while playing is just how incredibly playable and addictive it is.

One feature in the system of 'Ghouls' where you can begin where you died at the end of the last game. This however depends on whether or not you have enough credits left. You begin with five, so effectively you have five lives of time to play with!

# TOWER OF BABEL

**W**hew! I have just finished 117 mind-boggling levels of 3-D puzzle! This has to be one of the best games of its type ever! Tower of Babel is a mouse-driven strategy game with solid 3-D shaded graphics. You control three spider-like robots. Zapper says things, Paster pushes things, and Grabber (apart from grabbing things) can operate a number of special items.

The 'robots' are 3-D land-crawlers, each one up to 80 squares by 8 squares and up to 4 levels deep. Life moves you between the levels, which are populated by a variety of enemy robots: zappers and pushers, worms and waterfers, bugs and hoppers... Insects, fire bombs and proximity bombs, obstructive blocks, prizes to help you about around corners, conventional traps etcetera.

pushes and sees remote. Wanderer, and remote 800 activations, money levers, floor squares and teleport stations for Grabber to operate! Not surprisingly this wide array of game elements makes for some pretty complex puzzles as you try to achieve the objective for each tower - either a body count or a number of Minerals to collect.

From various angles you can viewed either from the eyes of your robots, or from camera screens which can pan and zoom to help you work out how best to construct your robots. You can click on the control panel to control your robots directly (walk, turn, use lift, or zap/push/grab). Do you see how your robots up to eight commands each in advance and then sit back and watch through the camera.



This programming of the robots is critical to some levels - to save time, to open otherwise actions (e.g. Grabber activates a lever to give Zapper time to walk past a zapper and blow it up), or because some actions are carried out at different speeds under 'program' control.

An excellent tutorial helps to get you started, and two out of each group of nine towers can be skipped, so you don't get stuck just because you can't solve them all.

Some of the higher levels are pretty fiendish, but if you get really frustrated you can always resort to using the excellent Tower Designer to build your own tower!

## FACTS

Title: Tower of Babel  
 Publisher: Bantam Micro-  
 1000  
 Price: \$24.95  
 Reviewed: John Greenway

## SIGHT & SOUND

Excellent 3-D graphics, lots of nice effects

## GAMEPLAY

Excellent mouse interface, lots of options, lots of secondary puzzles

## VERDICT

Excellent value if you like 3-D puzzle/maze. Absolutely excellent!

## FACTS

Title: Double Dragon II  
 Publisher: Virgin  
 Price: \$29.95  
 Reviewed: John Darman (jr)

## SIGHT & SOUND

The graphics are absolutely gorgeous and colorful although they do seem a bit 'blocky'. The sound effects, with only a few effects being present.

## GAMEPLAY

Quite good compared to other fighting games as it actually has a goal for you to aim at.

## VERDICT

I was quite surprised as to how much I enjoyed playing it. I can highly recommend it for fans of the genre.



# DOUBLE DRAGON II

surprise, you play the part of this dynamic duo as you fight your way past a variety of

bad guys each of whom have their own particular brand of 'Vig' fighting.

Unlike many fighting games this is much more based around street fighting rather than karate and it gives your characters the ability to fight as they want. They can pick up objects and throw them at their assailants, throw bricks, use their spiky whip type things or other items the names of which I haven't the foggiest notion. No doubt in real life these items are used to inflict as much pain as possible. Not ideal!

Originally the game is one of the many which fall into the category of 'average'. The sprites are all bold and colour-

ful and the backdrops which scroll by smoothly are equally colourful, although they do seem to be quite 'blocky' in appearance. The sound appears to consist of some 'very sparse sound effects, making the wonder whether the review copy is a development version, as there seems to be far too little of it.

I have never been a great fan of three gang fighting games and I tend to find that they get just a little on the boring side. However, Double Dragon II is considerably more playable than other games of this type I've encountered.

**'use those spiky whip type things'**

PeterHickman's

# STOS

## COLUMN

*A superb new large sprite creator from Francois Lionet*

*A mini sprite scrolling demo*

*Don't forget that games competition with £200 worth of prizes!*

**O**kay, what a hectic time the past couple of weeks have been. The new STOS products which I reported back in November have finally taken a series of unaccountable delays started to appear.

Games Gaiders, the compilation of best routines from the TOS6/OS STOS competition is brilliant, and comes with a new extension called STOS Squasher which gives you commands to compact any piece of data (pictures, sounds, even program). TOMM the TOS4 Map Editor has been released by Shadon Software, this is yet another new extension for STOS that allows you to manipulate giant maps, useful if you want to create games like *Ultimate 8 Queens* or *Starbase Islands*. I have even used it to write a nice scrollable demo involving the obligatory scrolling message and a giant loading (un)til's last but not least is an excellent book by the author of the STOS manual, Stephen Hill. The book contains something for everyone, from basic paradigms and structuring techniques to information on the creation of your very own STOS extensions. There are lots of example listings and each one has it's own introduction, the book even mentions the techniques used by Francois Lionet when he wrote *Galax* and *Orbis*. I understand the book and Games Gaiders are being sold by Page 8 Publishing so check out their catalogue if you have trouble finding the bits and pieces at your local retail outlet. TOMM is, unfortunately, only being sold by mail order directly from Shadon Software although I have heard rumours that Mandrake were so impressed with it that they may decide to take it on, so it may appear in your shops by the summer. But if you cannot wait drop Shadon Software a line to find out more about TOMM, their address is at the end of this article.

STOS like *Angie* - *apt*, *apt* - version of STOS has been delayed even again and won't be making an appearance until APRIL, although there is a demo floating about the B3 libraries which should in-

terests a few people. The demo is fantastic and even lets you look at the source code so you can see how easy STOS is to use. The creator of this demo is a well known STOS user and journalist, and writes for a brilliant magazine called *New Atari User*. Oh it's me, but don't worry I won't be abandoning STOS 'cos the ST is about five hundred times more friendly than the *Angie* and I'm looking forward to STOS Plus version, judging from what Francois has heard in recent months, STOS Plus should be mindboggling. Until that time STOS (which is still by far the best language on the ST) will continue to teach me things that I never thought possible in BASIC! Anyway if you are an *Angie* as well as an ST hacker thing! it's worth checking out the demo just to see what sort of things could appear in STOS Plus.

## HELLO FROM FRANCOIS LIONET!

Hiya news, Francois Lionet has contacted me and would like to say hello to all the STOS users who read this column. He writes a STOS column for a French magazine and is very interested in getting a sort of program-exchange going. So from this issue the occasional wonder program will be presented together with the usual breakdown on one out of four or five things about STOS from a master programmer (that's you Francois!). In return I will send Francois all of the programs which appear in this STOS column so that he can see what sort of amazing things you have been doing with his creation.

## COMPETITION TIME

Competition news - there isn't any! No seriously. I'm writing this before the last issue has appeared so nobody knows about the competition yet. In this making sense is your! Anyway, in case you missed the last issue (and if so, WHY?) Mandrake and Shadon Software have put up some really fantastic prizes for a small programming competition, all you have to do is write a version of a game which

you considered to be an 8-bit class, it could be Asterix, Luke Skywalker, Jetpac, Choplifter just about anything as long as it appeared on an 8-bit machine.

Prizes are really good, a list of which can be found in the last issue, but if any of the games are good enough both Mandrake and Madrox Software have expressed an interest in marketing them (here at last). You can find a list of the **Competition Rules** in the last issue but in case you cannot find a copy here are the main ones:

1. The game must be written in STOS.
2. A similar game must have appeared on an 8-bit computer.
3. Closing date is the 31st of APRIL 1988.
4. Any entries which are not considered to be of marketable quality (they might still win a prize!) will be placed into the Page 8 public domain library for all STOS users to enjoy and learn from.
5. The entries will be judged by myself and representatives from the companies supplying the prizes and our decisions are final (no dissent).

If you do decide to enter (and I hope lots of you do) please remember to include with your entry the name of the game (and the name of its affiliated 8-bit computer, your name and address (and phone number if you have one), and finally any special requirements the game may need. I'm really looking forward to seeing your STOS creations, my game Treasure Search has been in the public domain for quite a while now and a few people have actually written to me saying how nice it is, so thanks STOSers, your comments and suggestions are always welcome.

## ANY QUESTIONS?

Before the programming bit here I had a few letters, questions and answers. I have just received a letter from Mike Taylor of Surrey, it was about August the 30th, sooty this has taken so long Mike but your letter was obviously lost in the piles of mail. New Atari Units gets every

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## Francois Lionet's Big Sprite maker

day... saying Mike writes:

Some time ago I purchased a copy of STOS. I am having great fun learning how to use it to the best advantage, however I have come across a minor problem, which is I would like to use two sprites. I am only a beginner in the art of programming when it comes to writing a simple shoot them up game for two players using joystick. I have studied the manual and cannot find any way in which a joystick can be used from the manuscript. Does anyone know if it is possible, if so can any one tell me what I

would need to do?

Well Mike, there is no simple answer to your question, STOS has no direct facility for reading a second joystick and the only routine I have seen that would be of help are flag calls to the operating system, this has the disadvantage of making them incompatible with different versions of DOS. Help is at hand though in the form of Custom Capets which was the winning entry in the STOS-competition of 1987/88. Capets uses a special extension to STOS which allows you to

continued >>

read a joystick in the mouse port, this routine will be given away with Cartoon Capers when it is released (sometimes in Worlds I am amazed). Unfortunately I have not had the chance to try it and yet but I have seen it in action and it seems to work very well.

## THE PROGRAMS

**Programming Note.** The first of this month's programs (see previous page) comes from Francois Lionet himself, the best writer's a more program that takes your sprites and joins them together to make even bigger sprites, he says the size of the joined sprites is unlimited but STOS will do strange things if they are larger than 128K/128 pixels because that is the maximum size of the 5000 sprite buffer. Type in LISTING 1 for some big sprites.

## HOW IT WORKS

**LISTING 10 -** Set's up the variables needed by the program.

**LISTING 10A-10E -** Clear any sprite bank that may be in memory and then present you with a file selector.

**LISTING 10F-10G -** Clear the screen and change the palette to that of the sprite bank.

**LISTING 10H-10I -** Allow you to draw with the sprites.

**LISTING 11A-11B -** Control the whole program, jumping to various routines when a particular key is pressed.

**LISTING 10JH-10JL -** Mark a box around the area of the screen you want to turn into a sprite.

**LISTING 10JN-10JO -** Grab the block of screen and store it in the variable @BLOCK using the SCREEN function.

**LISTING 10JP-10JQ -** Performs the complex task of converting the SCREEN000 data into a sprite, although this may be incredibly complicated it's easy to tell we are dealing with sprites here because of the sprite bank identity number #1000100 contained in line 415. This is LISTING 10JQ is the version of MOVE that repeatedly or 'R' bit transferred into the beginning of the new bank.

**LISTING 10JR-10JS -** Display a file selector over the new bank.

Now if the listing seems a little bit messy and not too well structured don't worry about it, all you need to know is that it does the job. It was written for (although

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101 REM *** SCREEN000 TO SPRITE ***
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Above - screen effects demo by Francois Lionet

Right - Peter Hickman's moving sprite demo

don't ask me how?!

Once you have typed the program in, run it and you will be faced with a file selector. Use this file selector to load a previously saved sprite bank and you will now be able to paint with a sprite from your bank. Use the + and - keys on the numeric keypad to change the sprite, press Escape to end the program and press 'C' to create the new sprite bank. But remember to grab the new sprites on blocks first. When you press Return, a large flashing square will cover the screen. You can change the size of this by pressing the left and right mouse buttons to move the corners of the square. At this point pressing Return again will grab that area as a block ready to be turned into a sprite. Pressing Escape will end the program, pressing the + or - keys changes the block number, pressing 'C' clears that block and pressing space allows you to go back and paint with some more sprites. As you can see the

program is a little tricky to get the hang of, but stick with it and you will soon be producing lovely big sprites.

## SCREEN EFFECTS

The next program this month is an effects demo written by Francois once again to make screens disappear. Type in PROGRAMS 2 and have some fun. The listing is so incredibly simple it's not even worth me doing a breakdown, but lets go through it anyway.

**LISTING 10-00 -** Clear the screen and load the picture contained on your STOS boot disk.

**LISTING 10-01 -** Jump to the first effect, which set of makes the screen vanish one line at a time.

**LISTING 10-02 -** Copies the background screen (which still has a copy of the picture) onto the physical screen (which has just



been smooth. **LINE 400** - Jumps to the next effect. And that's about it, the rest of the program consists of more jumps and the sub-routines themselves, don't you just love simplicity?

## SPRITE EFFECTS

Last program this month uses some sprites from your STOS accessories disk to produce a short demo containing that really nice effect that you often see in big Assembly Language demos, that is a whole bunch of sprites following each other in wavy patterns around the screen. My program is less than 1k in size and allows you to move the pattern of sprites around with your mouse.

## HOW IT WORKS

- LINE 90** - Clears the screen.
- LINE 95** - Loads the sprite bank from drive B, you can change the drive and the bank to suit yourself, for this program I have used the ANIMALS1.SPR file from the STOS accessory disk, if you do decide to use a different one please remember to use small sprites otherwise the program will slow down to a crawl.
- LINE 100** - Jumps to a sub-routine which gets the colour palette from the sprite bank.
- LINE 120** - Sets the variable WUM to 7, this is the number of sprites the program will use.
- LINE 130** - Moves to mouse to 0,100.
- LINE 135** - Switches the sprite update off.
- LINE 140-145** - Plot the Sprites in their

original positions and updates the screen display. **LINE 150** - Draws Sprite WUM at the current mouse position. **LINE 200-205** - Do most of the work, the movement of the sprites is achieved by each sprite (starting from the first moving to the position of the next sprite, so sprite 1 moves to sprite 2's position and sprite 2 moves to sprite 3's position etc. By using this method you can get some really nice effects, but don't move the mouse too fast or it will spoil the smoothness of the whole demo.

## BYE FOR NOW

Oh well, another issue comes to an end, next time I will have lots more goodies for you to get your teeth into, hopefully some more masterpieces from Francis, a stand-out one some of the programs entered in the competition, some more news and loads of other stuff. Before I give you my address I'd just like to wish Francis Linux good luck, because he should just about now be starting the French equivalent of National Service, we will all see you in a year Francis, but until then stay in touch and have fun. I can be found at the following address, please remember that if you do write with any questions an SAE will guarantee an instant response.

PETER BECKMAN  
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from PAGE 5

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