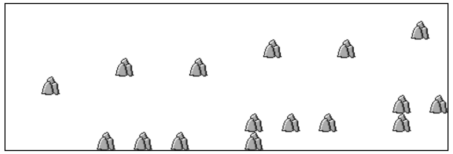
The Small Screen

Damian Walker continues the programming tutorial on screen display programming.

Last month, I introduced this tutorial series and gave you a drawing and some typing to do. Now I'll give you the rest of the code that you should type in and save under the name *Rockfield.opl*.

```
PROC DrawField:
  LOCAL currid%,id%,gridX%,gridY%
  currid%=gIDENTITY
  id%=gLOADBIT("Rock.mbm")
  rockSize%=gWIDTH
  gUSE currid%
  gridWidth%=gWIDTH/rockSize%
  gridHeight%=gHEIGHT/rockSize%
  WHILE gridX%<gridWidth%
    WHILE gridY%<gridHeight%
      IF rocks%(1+gridX%
           ⬀+gridHeight%*gridY%)=1
        gAT gridX%*rockSize%,
                 ⬀gridY%*rockSize%
        gCOPY id%,0,0,
             ⬀rockSize%,rockSize%,3
      ENDIF
      gridY%=gridY%+1
    ENDWH
    gridY%=0
    gridX%=gridX%+1
  ENDWH
  gCLOSE id%
ENDP
```

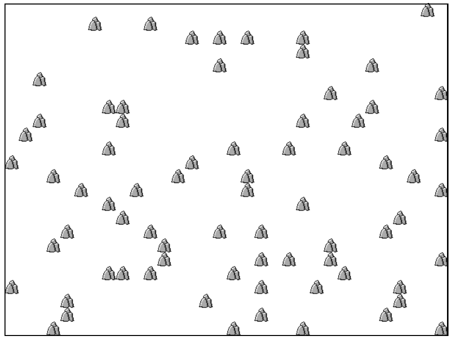
There's quite a hefty bit of code in this project, so now I'll explain what it all does. The *GenerateField* procedure you typed in last month generates the rock field, storing it in an array called *rocks%*. Each element of the array contains a 1 if a rock is present, or a 0 if not. The contents of the WHILE loop do the following: choose a random location; check to see if it contains a rock yet; if not, put a rock there and increase the counter. The loop continues until $^1/_{10}$ of the field is filled with rocks.



The DrawField procedure draws the field onto the current drawable. In the program's current form, the current drawable is the main screen, but the procedure doesn't assume this: it uses *gIDENTITY* to check, and stores the ID of the current drawable into *currid%*. The size of our grid is determined by the size of the current drawable (at the moment, the full screen), which means that the grid size depends on the machine on which the program runs. The procedure uses all 768 positions of the rock field only on a Series 7 or netBook; on an Osaris the grid will be of size 16×10 so only 160 positions are used.

The WHILE loops scan through the grid, looking at the array to see where the rocks are, and drawing a rock using gCOPY as and when appropriate. Notice the formula in the IF line. This converts the gridX%,gridY% co-ordinate into a single number from 1 to 768, as needed to look in the array. Arrays in OPL are always one-dimensional.

This routine works on every machine, rather like the Bouncer program from previous tutorials. But there is a problem from a design point of view: if this field is used for a game, game play will be different on different machines. The Osaris and Revo give you much less room for manoeuvre than, say, a Series 7 or netBook, as shown in the Revo and Series 7 screen shots below. In the coming months we'll see how to rectify this shortcoming.



EPOC ENTERTAINER

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Edited by Damian Walker

This month... Maze3D

Welcome to the first new *EPOC Entertainer* of 2009. I hope you all had a good Christmas and that you're all looking forward to a happy and prosperous new year.

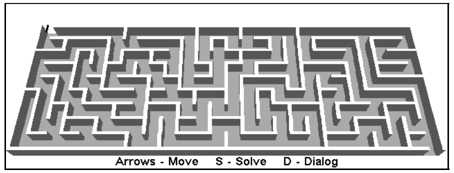
Here it's business as usual. The programming tutorial continues, and this month there are no less than three reviews for you, the first being a mini-review on this very page. I used to be a fan of mazes when I was a young boy. While the attraction of solving them has worn off, as a games programmer the interest in generating them has taken over. For a rest from cerebral activities the reviews on Terra Force and RevoLine should provide some interest.

EPOC Entertainer has settled in well to its new home, alongside the game database, and one advantage to the new site is visitor stats. It's now possible for me to keep an eye on readership figures and for the moment things are looking pretty healthy, more so than I'd imagined. Now don't be shy, drop me an email and say hello!

entertainer@cyningstan.org.uk

It's Amazing

Damian Walker reviews a clever little maze generating and solving program by James L. Dean.



Maze3D is an interesting little maze game by James L. Dean. Well, not much of a game, more of an on-screen maze which you can solve by means of the cursor keys. But there's a little more to it than that.

An interesting gimmick is the 3D graphical presentation, which makes the game look a little more interesting than in might otherwise be. It is limited, though, to the Series 5 screen. On machines with bigger screens the game runs in letter box mode. Sound is limited to beeps.

The user interface is very basic, too. No menus, a few simple key presses shown on screen, and no recognition of EPOC conventions—no button bar, no response to system events. The drawing of the 3D maze is also very slow, even on a Series 7, though maze generation appears to be reasonably quick.

What makes this game most interesting is that it comes with OPL source code. So while it could be interesting to play for a while if you like mazes, it's main attraction is for those interested in programming, and it is for this reason I recommend it.

By	James L. Dean
URL	www.pscience5.net
Licence	Freeware
Compatibility	Series 5
Rating	☆☆

Terra Tactics

Damian Walker reviews Terra Force, a tank battle game by WildPalm and FreEPOC.

Terra Force has to be, graphically, one of the most impressive games on the EPOC32 platform. It is one of the few first person shooters available on this system, though it has little in common with the Doom genre of games. While the graphics are reminiscent of Doom's predecessor, Wolfenstein 3D, the game play is from another genre altogether.

As the player you are put in control of a tank, which occupies a maze. In the maze are other tanks which wander around attempting to shoot each other, and you. Your objective is to survive in this environment for as long as possible by shooting as many of the other tanks as you can. Nothing to collect, no puzzles to solve—it's as simple as that.

Such simple game play married to the impressive graphics gives a very addictive game. Terra Force has that “just one more go” factor that's essential for a good arcade game. Only the addition of some kind of power-up, or the addition of extra maze levels to attain, would have added to the excitement for me.

While the sound doesn't quite live up to the graphics in its ability to impress, it's quite adequate for the job, with shooting and exploding noises at appropriate points. The noise quiet on my Series 7, which is probably a blessing. An option to set the volume would have been nice, though.

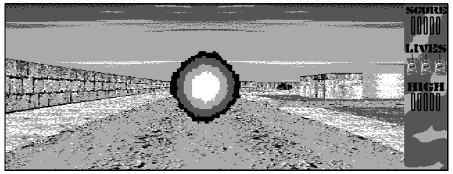
The user interface in general is easy, as one would expect for a simple game. The cursor keys are used to control the tank, with Control to fire, but these can be redefined at any time. The menu key accesses the standard EPOC32 menus to allow you to configure these settings.

There are other options besides the ability to change keys. Difficulty levels can be set. Different vehicles can be selected when certain scores have been attained; these vehicles vary in their speed and ammunition reload times. There are a;also two different types of game, defender and endurance, which can be selected from the options menu. Defender pits you against an increasing army of enemy tanks. You have to defend the combat zone and destroy as many tanks as possible. Endurance challenges you to stay alive for as long as possible. You are given a time limit in which to destroy the enemy tanks, and each tank you destroy increases your time allowance. When you run out of time, you lose the game.

Terra Force runs on a range of different EPOC32 machines: the Revo, the Series 5 Classic and 5mx, and the Series 7/netBook. These machines are catered for by providing separate versions for each machine (including distinct versions for the Series 5 and 5mx), so make sure you obtain the correct version for your machine. Sadly the Osaris is not catered for, though the Geofox will presumably run the Series 5 Classic version of the game.

The program is well-behaved and allows itself to be closed when making a backup from PsiWin. As you would expect from a program specifically tailored to a number of machines, it runs at a good speed on each of those machines, and the amount of disk space taken up on the Psion for a game with such graphics as this is surprisingly small.

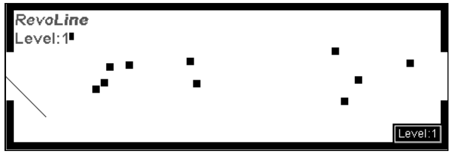
I would certainly recommend Terra Force to fans of action games on the Psion. It looks stunning, it plays well, and for the enjoyment it gives you it asks for relatively little space on your pocket computer. Oh, and it's free.



By	WildPalm/FreEPOC
URL	www.freepoc.org
Licence	Freeware
Compatibility	Revo S5 S5mx S7 netBook
Rating	☆☆☆☆

Lining Up

A review of Ali Afshar's RevoLine, by Damian Walker.



One of the simplest games available for EPOC32 is RevoLine, by Ali Afshar. It's the sort of game that a competent EPOC32 programmer could write in OPL in an afternoon. It's an action game, which takes place on a playing field full of randomly placed rocks. You control a line which is to weave through this field of rocks, left to right, always at a 45° angle up or down. You change direction by pressing the space bar. If you hit a rock, you lose. If you get to the right-hand edge of the screen, you progress to a higher level, with more random rocks.

One thing that always impresses me is compatibility, and this author has achieved it with the minimum of effort. The game re-sizes itself to use the full extent of any screen. Game play can suffer, however. While the game is quite tense on the small Revo display, on the spacious screen of the Series 7 it is easy to the point of being dull. Unfortunately, while the game re-sizes itself, it doesn't take the screen size into account when deciding the number of rocks to scatter on the playing field, so there's more open space to move around in on the Series 7. The same counts to a lesser extent on the Series 5, and on the Osaris, the taller and narrower screen means that you have a shorter course to steer and more lateral room to move around in. So while the game runs on everything, it really is optimal only on the Revo.

The graphics are extremely basic. The line is just a line. The rocks are black squares. The edges of the screen are equally featureless. In my opinion, it wouldn't have hurt to have rocks that looked like rocks, and walls looking like walls. There is no sound in the game, either. The user interface is virtually non-existent, though there is that little to the game that the few keys used are sufficient to play and control the game. A standard menu would have been nice, though.

In keeping with the impression of a program that was written in an afternoon, there is no acknowledgement of any EPOC conventions. The program doesn't respond to system events; in all probability it was written with the *KEY* method of keyboard control, as discussed in a recent article in the *Taking Control* tutorial. However, the program makes up for this in other quality-related issues. Speed is good on all machines. The program takes up only a few kilobytes of disk space, though a few hundred kilobytes of memory are added to this when the program runs. And indeed there could be few reliability issues in such a simple program; it runs flawlessly.

Despite its simplicity the game is quite entertaining. On the Revo things start off quite tense, and gets more so as time goes on. As mentioned before, on other machines things are a bit more pedestrian. It seems slower on larger machines, but this is because the line makes its way across the screen at the same rate, no matter how big the screen is. In the author's defence, it may well be that the Revo was the only machine he had available for development and testing.

With the tiny amount of disk space that the game takes up, there's little reason not to give it a try. If a reason to install it is needed, apart from its quality as a light bit of fun, it shows what you can do with a little practice at OPL programming and some spare time.

By	Ali Afshar
URL	psion.cyningstan.org.uk
Licence	Freeware
Compatibility	Osaris Revo S5 S5mx Geofox S7 netBook
Rating	☆☆☆