

## *Rail3D Feature*

# Creating Simple Objects For Rail3d: It's easier than you think!

By Alan Perryman ([rail3d@thistle5.plus.com](mailto:rail3d@thistle5.plus.com))

**A Short Introduction** I've been with the *Rail3D* project for just over 5 years (since August 2000). And it has been a very worthwhile project for me to be part of. I've learnt a lot about computing, game design, and been able to offer ideas. I've also been modifying and creating stock and scenery files for almost as long.

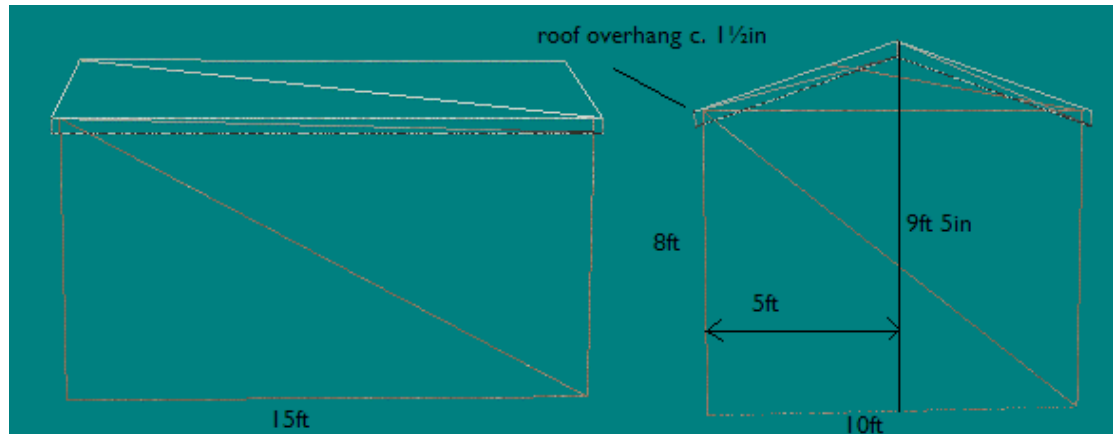
Today I'm going to walk through how to create a small object – my parent's garden shed.

**Building Something** For something simple like a shed you need some source photographs to work from:



These are important for two reasons! Firstly they will form the basis of some textures for the object, and secondly they will help me visualise the shed as I can't put it next to the PC...

Next think about how big you want it to be.



This picture is "cheating" a bit – this is taken using the R3d editor line view after I've created the object. I've planned this out on paper here so I can visualise what numbers I have to work with.

Now we are ready to start the object. There are a few lines that must come at the start of a rail3d scenery object and these are:

**Name** Garden Shed [*This is the name of your object*]

**Credit** Alan P [*This will be displayed to indicate the author*]

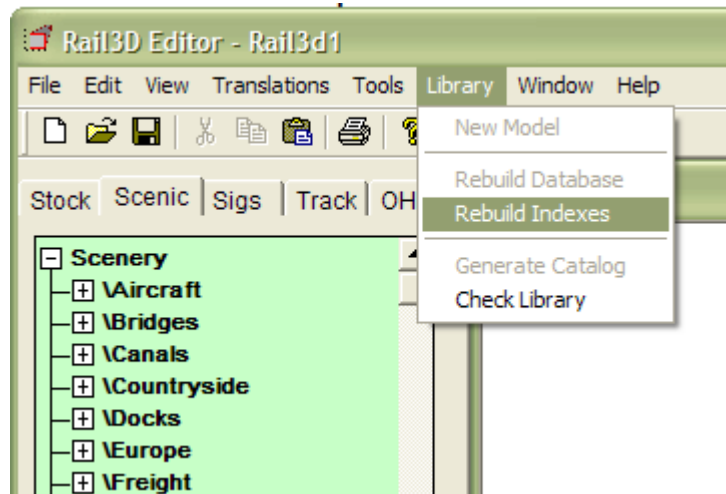
**Description** Simple Wooden Garden Shed [*This description should be short, and describe what the object is*]

//version 1 25.09.05

//based on the shed at my parent's house

The lines beginning // are comments – these have no relevance to *Rail3D* but help any future object editors (including yourself) to understand what you've built. I'm building this model in imperial – in *Rail3D's* "decifeet" unit, which is the default unit. 10 units in *Rail3D* decifeet are the same as 1 foot in real life. If you add the METRIC keyword you can work in centimetres.

Once these lines are in, save the file in the relevant directory as a .stc file. You should now rebuild the scenery index so you can preview the model:



Make sure scenery is selected – then click **Library** → **Rebuild Indexes**. Your item will then be listed in the green area on the left.

The easiest way to draw something in *Rail3D* is a “Fill” statement, e.g.

```
//sides
Fill -50/-75/0 -50/75/0 -50/75/80 -50/-75/80 92:0:0
"shedside.bmp"
```

This is simply a command that says to the program, “Create a filled rectangle”. We give the program the four corners (or vertices) of the rectangle in the format *x/z/y*. This doesn’t seem like it makes sense when written in the form *x/z/y*, but if you think about it as width / length / height it does. So, my rectangle is -5ft from the ‘centre’, 15ft long (-7.5ft on either side of centre), and 8ft tall from ground (at 0) to 8ft.

The next part of the statement is 92:0:0 – which is a colour. The colour is based on the RGB scale and the numbers can range from 0:0:0 (Black) to 255:255:255 (White). Notice the change of symbol between the characters. The convention for *Rail3D* is to use R:G:B for the colours and *x/z/y* for the co-ordinates so it’s easy to tell them apart.

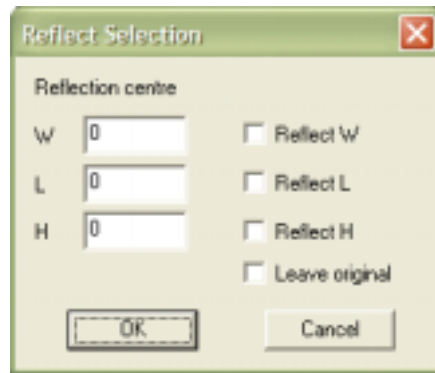
Finally we give it a texture – “shedside.bmp” refers to

```
...\Rail3d\Textures\shedside.bmp or
...\Rail3d\Stock\ModelFolder\shedside.bmp
```

Textures can either be 256 colour bitmap, 24bit colour bitmap or a 24 bit colour TGA and should be a sized around powers of 2 – e.g.

512x1024. When I'm building a model I often use smaller textures just so I can get the look and feel of what I'm building, rather than detail. In a later article I will look at skinning – a method of texturing which improves performance.

The fill we have drawn so far, would draw one side. *Rail3D* provides some powerful tools for Fill statements – one of these is the reflection tool available on the translations menu.

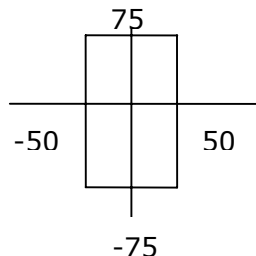


Using the reflect menu I can then get the other side very quickly and easily.

A bit more effort and I should get a box shape like this:

```
//sides
Fill -50/-75/0 -50/75/0 -50/75/80 -50/-75/80 92:0:0
"shedside.bmp"
fill 50/75/0 50/-75/0 50/-75/80 50/75/80 92:0:0
"shedside.bmp"

//Front & Rear
fill 50/-75/0 -50/-75/0 -50/-75/98 50/-75/98 92:0:0
"shed-front.bmp"
fill 50/75/0 -50/75/0 -50/75/98 50/75/98 92:0:0
"shed-rear.bmp"
```



The front and rear are only temporary but they allow me to try out some texturing ideas, which is usually very helpful as the textures tend to be the trickiest bits to get right. The front is a more complicated shape – so I will model that with a “STRIP”. This is a new kind of statement available for *Rail3D 2KD* – Strips will form the basis of Part II, which will be published in due course.

Finally I’m going to add a roof:

```
//roof
Fill -52/-77/80 -52/77/80 0/77/98 0/-77/98
190:190:190 "shed-roof.bmp"
fill 52/77/80 52/-77/80 0/-77/98 0/77/98 190:190:190
"shed-roof.bmp"
```

Simple apex – for now I’ve drawn this using two fills. I could also draw this using a Strip as well but a fill will suffice.

You could create a house using these methods very easily, and so on. For more complicated creations there are other statements and tools to help – but I shall look at these one by one in this series of articles.

## Getting More Help

You can get help from any of these sources:

The Rail3D program  
<http://www.rail3d.net>

The Rail3D Documentation  
<http://www.markhodson.nl/index.php?n=Main.Rail3dDocumentation>

The Rail3D eGroup  
<http://groups.yahoo.com/groups/railway3d>

The Rail3D board on the UKTrainSim Forums  
<http://forums.uktrainsim.com/viewforum.php?f=82>

If you have any questions regarding this tutorial you can email me, at [rail3d@thistle5.plus.com](mailto:rail3d@thistle5.plus.com)

Have fun modelling!

*Alan*

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