

THE RAIL SIMULATOR NEWSLETTER

WELCOME!

Hello all and welcome to the 2nd newsletter of the new year!

Until now, we have not mentioned very much about the Signals that will feature in Rail Simulator, so in this month's newsletter we give you a detailed account of how they are to function.

First, a brief update on release dates as a number of people have been asking. The release date will be announced by EA and they will do so sometime after we have delivered an Alpha candidate. When they do announce something, we will let you know immediately. In the interim, please ignore any release dates you see on various sites; they just aren't true.

As we near completion of both content and functionality, the team are spending more time on polishing and tweaking existing content, fixing bugs and optimising performance. The ultimate aim being to make sure Rail Simulator is as pleasing as possible.

We also have several potential add on partners working with versions of our Rail Simulator build, they're managing to keep us busy with their own bug finds as well as our own QA team!

Sabrina

NEXT MONTH!

For the March edition of Rail Times, we hope to give you some visual goodies!

Also we plan to talk about the vegetation in Rail Simulator giving a broad description of how this aspect of real world is integrated into the system.

Watch this space!

Signals in Rail Simulator.

Adrian Hill, a member of our content team, has been scripting the Signals that are to work in Rail Simulator. He is going to talk us through the various Signals available and how they will operate, including a description of how he's managed to script the Signals behind the code!

Signalling, from the age of steam to modern times

Over the years the gradual development of railway networks, with faster trains and a greater number of journeys, has led to the evolution of the signalling systems to deal with the greater risks that this entails. Despite their apparent simplicity, signalling systems nowadays involve a high level of internal complexity. Implementing a faithful emulation of these systems for the variety of routes in Rail Simulator has been a fun and interesting challenge for the team.

As you may be aware, Rail Simulator will comprise a number of routes from different time periods, and across a variety of countries. To give you an idea of the variety of signal types that we have created already, compare the Somerset and Dorset route of the 1950's to the modern day Hagen to Siegen route; the former requires the implementation of Upper-quadrant Semaphore signals, which were used on that route in that time period, and the latter requires a modern, German-specific 'HP' signalling system. In addition to the traditional signalling systems, Rail Simulator also supports a variety of modern-day warning systems, such as AWS and TPWS.

Ensuring complete historical accuracy

Throughout the development of the Rail Simulator signalling system, our imperative has been to create the signals to the highest level of accuracy possible. The artists responsible for modelling the signals have used the highest fidelity engineering reference material that we could find when creating the 3D signal models, and the same strict adherence to our reference material and guidance from our Subject Matter Experts, has been followed when creating the functionality that enables these signals to operate.

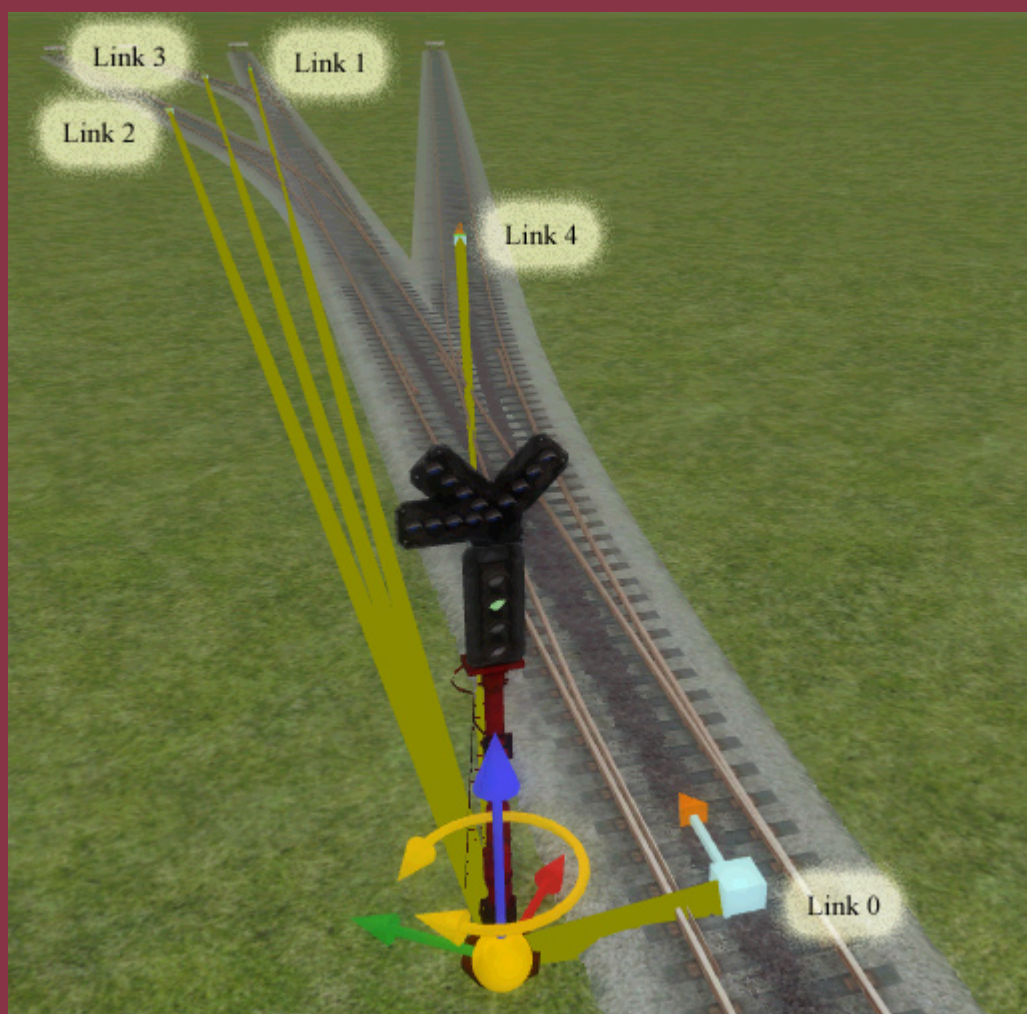
THE RAIL SIMULATOR NEWSLETTER

Signals In Rail Simulator (Con.)

Signalling - a route creator's perspective

Creating and using pre-made signals on your own custom routes in Rail Simulator has been made as simple as possible for the end-user. Placing a single link signal just involves placing the signal scenery object, and then adding a link from the signal to the track. When a train passes over that link, it will send an event to the signal script for that signal, which will then handle the event accordingly.

For signals with multiple links, things become only a little more complicated. For instance, the UK Modern Light Feather signals show which, if any, diverging link is currently active by illuminating an appropriate 'feather' light. As long as the signal links are placed so that link 0 is by the signal, link 1 is the link straight down the track, and then the diverging links are entered from left to right (in this case, links 2, 3 and 4), then the signal will function in the same way as its real-world counterpart.



THE RAIL SIMULATOR NEWSLETTER

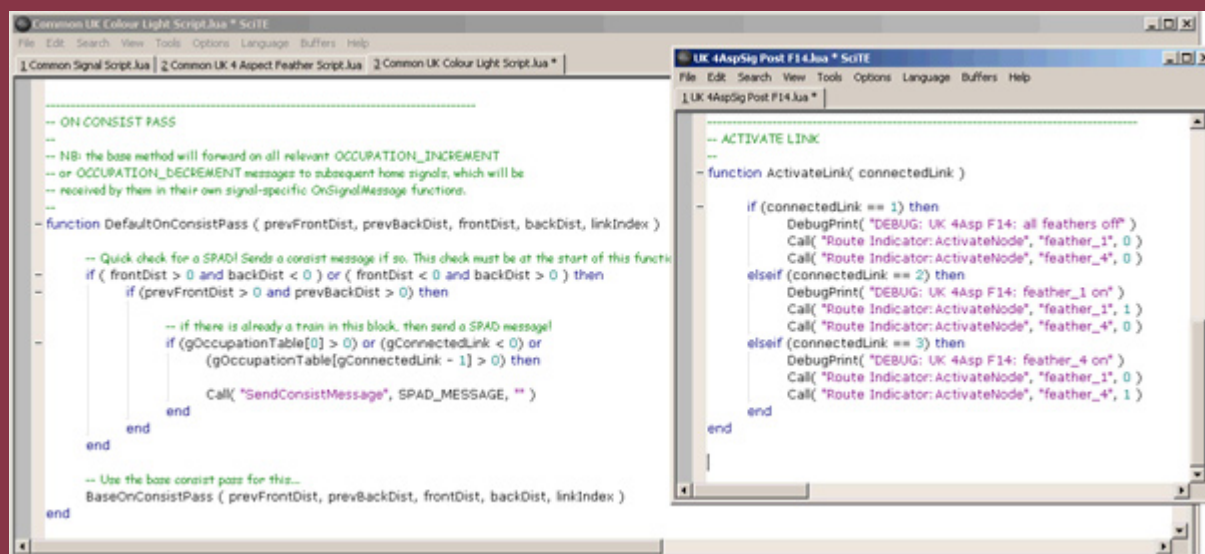
Signals In Rail Simulator (Con.)

Developing new signalling systems

In addition to the variety of signals present on the standard Rail Simulator routes, there is also the challenge of supporting the development of new routes by fellow train enthusiasts and third party developers. Depending on their geographical location, and the historical time period in which their services will have operated, the route may require the creation of any conceivable signalling system. Fortunately for those who are hoping to create new content, our signalling systems have been implemented with extensibility and openness in-mind. As a result of this requirement, the signal scripts will be made openly available to end-users.

Anyone who wishes to create their own custom signals will be happy to hear that although a lot of complex functionality is handled within the game itself, helpful utility functions allow the scripts to control that complexity in a very open manner (such as finding the current path through a junction). The handling of events is therefore key to the signal scripts. Each signal can support events like a train passing the signal, a junction changing in its vicinity, and may also send messages to and receive messages from other signals (this is useful for distance and multi-aspect signals that display various sequences). With the ability to pass knowledge between each other, signals can be added to or removed from a route at will, catering for huge flexibility.

For completely new signals, new 3D models can be created and imported, and then the appropriate signal scripts can be produced to handle the specific signalling system's functionality.



Signal Scripting with Lua

The signals in Rail Simulator have been scripted using a language known as Lua.

There are many reasons as to why we selected Lua, the foremost being its simple procedural syntax (which will mean that developers of well-known languages, such as Java or C, will experience very little difficulty in adjusting to Lua syntax) and also the way that Lua has been designed from the ground up to extend existing applications (thereby making it the obvious choice for add-on developers to extend Rail Simulator).

Lua is free open source software. The official Lua site is www.lua.org, and on this site you can find a great deal of support including the Lua 5.1 Reference Manual (available online at: <http://www.lua.org/manual/5.1/>) and the first edition of Programming in Lua (available online at: <http://www.lua.org/pil/>). There are also many unofficial discussion and help groups available for people who would like to learn to program in Lua.