

WELCOME

Welcome to Rail Times issue 12, the Rail Simulator newsletter! In this month's issue we have an exclusive report on an all new feature in Rail Simulator; Passenger loading! We also include a Q&A with the programmer who developed this feature.

In last month's edition we stated that Rail Simulator was making steady progress and new features were in early stages of testing – however at that stage we wanted to get through some of that testing before we made any announcements – well, we can now start to introduce them to you over the coming weeks!

We have made two other announcements recently; first that we are attending the German games convention in Leipzig next month – and second we have introduced the Turntable/Traverser functionality that is to feature in Rail Simulator. The details about the Turntable/Traverser feature can be found on the Rail Simulator website.

Our newly formed North American forum site has been active over the past month. The community has participated in discussions about their favourite North American routes and railway operations, whilst over in the UK forum we are finding new members joining the discussions.



Passengers feature in Rail Simulator!

Rail Simulator will include passengers. These passengers fade onto the platform at designated spawning points, walk to a waiting point on the platform and fidget a bit whilst waiting for the train.

They will be able to avoid obstacles such as benches and lampposts on the platforms. When the train arrives the doors can be opened and passengers will walk off the train while those on the platform walk towards the doors. Passengers leaving the train will fade in as they leave the train, move to the spawning points and fade out, whilst those entering the train will fade out as they go into the train.

When you go to an interior carriage view, you will see passengers seated and you can also see these seated passengers from outside the carriages.

There will be a variety of data that can be set up for the passengers including:

- Passenger asset definition so you can create and have your own characters appear on a platform
- Passenger densities based on definable time bands so you can create the correct ambience for your route and time of day
- The platform passenger points (for entering and waiting) can be defined to create realistic passenger behaviours on the platform
- Any asset can be set up to have passengers avoid it so you can create complex station arrangements

Passengers feature in Rail Simulator!

We had a chat with Keith, Senior Programmer, and Anatole, Senior Artist, who have been working on the Passenger feature.

Q1) Keith – can you tell us how challenging this feature was to create for Rail Simulator?

It was a huge personal challenge. I'd just moved from developing games for mobile phones, so learning an entirely different technical environment with a much larger scale was hard work, though thoroughly rewarding. The Rail Simulator team is a great team to work with and helped a lot.

The hardest part of the task was trying to keep the passengers from wandering off the platform when it became too densely populated. Quite a while was spent tweaking different parameters to affect the rules controlling passengers avoiding each other, obstacles, buildings and the edge while making their way to where they want to get to.

An early version used to have the passengers wander towards the edge of the platform as a train approached. A digit entered incorrectly had the entire platform take a run and throw themselves in front of the train as it drew into the station. We removed that feature....!

Q2) Keith - Just how far can the user take this feature?

You can control what's happening to quite a detailed level. The mix of people can be controlled, so a busy city station can be mainly city types with some tourists thrown in, while a rural station can have a different spectrum of passengers. Each carriage door has a passenger load rate, so suburban vehicles with large double sliding doors can load and unload a lot faster than express coaches with a single door at each end.

Q3) Keith - How easy will this feature be to edit?

This feature scales very well depending on the users level of experience. Initially it's as simple as placing a platform in the world editor. You can use one of the platforms that will be delivered as part of Rail Simulator routes - which will already be set-up with passenger configurations. From that you can pull a train up to that platform and you will see passengers disembarking/boarding. Alternatively for the more experienced Rail Simulator creators they can change all the elements mentioned above. And for fun there should be no reason this feature couldn't be used to create animals boarding a freight wagon!

Q4) Anatole - What exactly was your involvement in the Passenger feature in Rail Simulator?

I am the 3D artist that has done most of the character work for Rail Simulator, and I have been primarily responsible for rigging, skinning, animating them.

Q5) Anatole - What was the process to create these models?

The process is fairly straight forward for computer game production:

First we decided on the style for your characters, in our case photoreal. We then gathered photographic reference and texture source for the characters, which we used both as a guide for modelling and in the textures.

We then modeled the character based on the photo reference, making sure it was proportionally correct and to the specified level of detail. With ours we are looking at between 2 and 3 thousand triangles depending on what detail the character needs. Next, we unwrap and map the character, this is to layout the mesh for texturing.



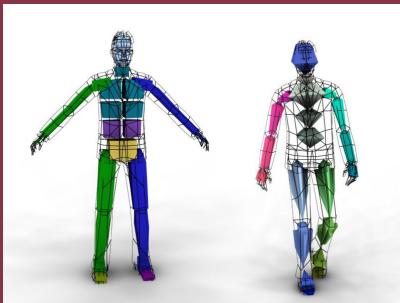
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Then we make 5 levels of detail (LOD) for the character ours LOD down to around 100 - 200 triangles.

Using the texture source material taken previously we work the photo reference into the unwrapped texture space, we keep our characters texture on one sheet, for game performance optimisation, this can be resized from 1024x1024 down to 256x256 depending on the graphics memory of the users computer spec.

We have to create a Character Studio rig and match it to the model, then we create a control rig that is constrained to this, allowing the game engine to work with the Character Studio data.



Finally we skin this rig to our mesh, and weight the mesh vertices so it deforms correctly when it animates. I animate the rig into extreme positions to test this then if it looks good in these poses, it should work fine in more normal animations.



We use a mixture of motion captured data and hand animation for our animation pipeline, this character has a motion captured walk cycle that has been hand edited to make it loop smoothly.

The character and animation are exported using the game engine export plugins, with crossed fingers and a million blessings of the buddha we have more than a warped version of 'The Thing' in the game....although that could be fun too.

Q6) Anatole - From a graphical point of view - how would you say the player/user of Rail Simulator will enjoy these new characters?

This is, as far as I am aware a breakthrough in the simulation genre, just in terms of sheer detail, to have real looking people with this level of detail walking, waiting and no doubt being late for trains is unprecedented and is looking great! We are pushing the boundaries in all areas of art with this game, you ain't seen nothin' yet!

NEXT MONTH

We will have a busy month in August – running up to the Leipzig Games Convention. Announcements will be made during next month introducing all the main features in Rail Simulator – the train simulation community should have a sound knowledge of the simulation by then!

Leipzig is a big opportunity for Rail Simulator to show the public just how ground breaking this release is going to be, Kuju and EA will be working together to ensure substantial exposure and an impressive display is made at this show – it's all very exciting!