

## THE RAIL SIMULATOR NEWSLETTER

### WELCOME

Hi all, and welcome to the latest edition of Rail Times! Well, what a month it's been! In this issue we talk about Rail Simulator at Leipzig, and introduce you to the Dynamic Weather system we have in place for Rail Simulator, a very important part of a simulated world!

Last week Rail Simulator got its very first outing at the Leipzig Games Convention, and the community, as well as the general public, were able to play a demo version of Rail Simulator for the first time! The response has been overwhelmingly positive, not only has worldwide press demanded interviews and demos of Rail Simulator, but the attendees at the show were queuing up to have a play! The community forums have even managed to capture screenshots off the demo monitor screen, and as you can imagine, the forums were finally happy to see in-game images and reports on the finer details of Rail Simulator.

The Leipzig Demo revealed the German train, in-game screenshots and key features like Turntables, Cargo Loading and Passenger Loading. Whilst some of these have already been announced on the Rail Simulator website, some of these have not! We'll be focusing on some of the previously unreleased material later on to give you an up close and personal view!

*Sabrina*

### NEXT MONTH

We have a couple more events next month to show Rail Simulator! More details on these to follow!

We will have more news articles about how the simulation is progressing, including a few announcements on the underlying system of Rail Simulator, and maybe we will have a few exclusive images and videos coming your way too!

There's lots more to show you!

### Dynamic Weather in Rail Simulator!

Rail Simulator will have dynamic weather to provide visual atmosphere and additional challenges within the simulation. As you are driving along the weather can change from a nice sunny afternoon to a torrential downpour! The skies will start to darken as the clouds move overhead, the atmosphere will change, the mist will close in and then the rain will start to fall. You will need to be careful if you get caught in a downpour as you are going up a hill, the simulation will react according to the weather.

As with most things in Rail Simulator you will be able to define your own weather patterns to suit a routes location or a specific scenario. You will be able to set a variety of weather types and how long you want them to last for and the simulation will blend between them during run time. Cloud density and texture, precipitation type, fog distance and colour, wind speed and many more factors can all be defined to allow you to create the perfect weather for your Rail Simulator creations.



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### ***Dynamic Weather in Rail Simulator!***

We spoke with Dave Bliss, the programmer behind the system, to find out more!

#### **1) How is Dynamic Weather simulated?**

The dynamic weather is closely tied in with the sky dome, and time of day systems. The time of day system smoothly blends the colours of the sky dome to show sun rises, day time, sunsets and nighttime. The weather system further modifies these colours to simulate good or bad weather at these different times. The lighting of the whole scene is affected by the time of day and weather, so we can darken everything when a storm is coming overhead. There are also three cloud layers, which can be blended between depending on the current weather. Precipitation is a customised particle system that holds raindrops/snowflakes around the current viewer, which can be controlled for particle falling speeds and wind speed etc. The player can then trigger customised weather events at different times, and the sky colours, clouds and precipitation will blend from one weather type to another.

#### **2) Just how difficult is this compared to other aspects of KRS features?**

The actual system itself is not as complicated as something like the terrain tessellation, or procedural flora popping up when you paint terrain textures. Getting the colours and settings right is tough, but I leave that to the artists!



#### **3) Obviously recreating weather systems is going to be a hard task, what resources did you base your work on?**

I read some articles from graphical effect books, found more articles online, and then looked at other games to see what they had done for their weather, for some ideas. Then after some discussion with an artist, decided on the best approach. It sometimes takes a little trial and error, because you can't be sure exactly what something will look like until you do it, so we tested a couple of ideas until we got what we wanted.

#### **4) How does this feature affect the rest of KRS?**

Increased wheel slip when it's raining is the most noticeable impact of the weather system. The motion of the train is implemented using the PhysX system from Ageia, which allows us to tweak real-world parameters such as friction. During or after rain, the friction can be adjusted, to make the wheels more likely to slip when using excessive braking and acceleration.