

## THE RAIL SIMULATOR NEWSLETTER

### WELCOME

Hello all!

This month's Rail Times newsletter comes with an exclusive feature on recording the sounds of the Black 5 and we give you the latest in news in Rail Simulator!

*Sabrina*

### COMING SOON

Next month we will be introducing an extension to our website [railsimulator.com](http://railsimulator.com)!

We will also be digging deep into our second train and route that features in Rail Simulator and with the support gained from our partners First Great Western!

### RECORDING THE SOUNDS OF THE BLACK 5

It's not just the visual graphics that make a train as realistic as possible in a simulation – but the sound has to be accurate too! The KRS team have a sound engineering team to record, sample and format for Rail Simulator. The first train to get the once over with our Boom Stick is the Black 5 where our team went to the East Lancashire Railway (ELR) which runs from Bury to Rawtenstall in Greater Manchester/Lancashire. So here we feature an exclusive interview with our Sound Recordist Simon Close and our Sound Engineer Tim Hayward.



• **How long does it take to record a steam engine and what exactly is it that you're after? (want to say it takes a long time to accurately record steam engine sounds) And what exactly did you record from the Black 5 engine?**

Ideally to record a steam locomotive you would plan to record over a two day period. On the first day, the locomotive would be cold, and all the cab controls would be individually recorded for movement sounds. You do this in a quiet environment so you can make discrete recordings of each control. When the locomotive is hot, the ambient noise is too loud to record the cab controls. Once all the controls have been recorded, you would record the locomotive prepping, fuelling, and the process of getting the engine warm. You would also position any cabling required for the following day, using plastic ties.



The following day, once the engine is in steam, you would place microphone clamps to the engine as required, and also setup the recording devices. Some microphones would be placed near wheels to record the locomotive movement, and a unit would be hand held to get some very specific sounds. Ideally, attaching carriages to the front of the locomotive is useful, because the carriage end can be opened, and a sound engineer can safely stand within the carriage with the carriage end door open facing the chimney stack.

From this position you can record the fantastic chuff noise, very clearly with minimal wind noise, and maximum safety to the engineer. The locomotive would go through speed stages, with the regulator open at different posi-

tions to get different chuff intensities.

But its not just the chuff we are after, we are also after the whistle, the wheel movement, the ambient noise of the cab area at speed and stationary, and also reactions to using the cab controls, like the brakes, the injectors, and any other active cab control.

• **What equipment did you use and why? (basically say you used sophisticated equipment cos specialist and particular sounds that u're after)**

To record the Black 5 I used 2 Forstex FR2 field recording units, using a VP88 Shure Microphone attached to a mono pod, covered with a wind shield, and a Shure Shotgun Microphone attached to the locomotive bogie using a clamp, with wind shield and wind jammer (the fluffy kitten on a stick look). These systems again and again prove they are brilliant



## THE RAIL SIMULATOR NEWSLETTER

### RECORDING THE SOUNDS OF THE BLACK 5

- **What do you do with these sound recordings to prepare them for final output in Rail Simulator?**

The raw recordings are initially backed up to several sources, including the Kuju network, DVD, and 2 hard drives offsite, considering the cost in recording locomotives, it is imperative to store the raw recordings in multiple locations for safety reasons. The next step is to create a workable library of material from the raw data. This isn't game ready material, but a referenced archive of sound similar to what someone would find if you were to buy a "Sound ideas"



sound effects CD, essentially a sound library. This process depending on the data can take a few days to prepare as there maybe a certain amount of unwanted dialogue from the engineer, or the people operating the train, and also the recording might require cleaning up if any unwanted sounds are unexpected recorded. Once the library is ready, then the planned game sounds can be created from the library resources. This again depends on the complexity of the locomotive as to how long the process would take. Some locomotives are actually almost impossible to record without random noise pollution coming from other noise parts of the locomotive (like the compressor for example), so there might be a lot of work to do, to single out the right elements from the wall of sound recorded.

Once the game sounds have been crafted, and put into a suitable file format for the program to use, then a process called "Implementation" takes place; implementation can take many forms, but essentially it's a process of how the code decides which sounds to trigger, and how the code manipulates them. This process can be as creative as the recording and editing, because without good implementation and sound code the sounds may not react realistically to how we would hear them in the real world.

- **How different is it recording steam engine sounds to say, a diesel engine like the HST? (want to say you need to get the steam engine moving in order to record sounds as opposed to a diesel where you merely need the engine revved etc.)**

The main difference between recording a steam engine and a Diesel engine is that a steam engine actually has to move in order for it to be recorded. With a diesel engine, you can push through the power levels but not actually apply power to the wheels (in most cases but not in all), so you can actually record a diesel in a yard without having to run up and down 20 miles of track. With a steam engine, and also an electric locomotive, you really do have to drive the train up and down to get the sounds required. While recording the Chuffs of the Black 5, we went up and down the same stretch of track many times.

- **How useful was the day and who at ERL helped you?**

Our day at ERL was brilliant, it is the 2nd time I have recorded there, and they are professional, adaptive, understanding of our requirements, and above all friendly and funny. We'd like to thank, Dave Wright, Ian Riley, and all who helped on the day to make the recording session a great success.

