FREEZE FRAME

A rail track cuts a line right across a desert landscape, disappearing into a tunnel in front of a mountain. Seen, it’s clear that the vehicle powering along the track is no ordinary locomotive. A woman wearing Levi’s jeans, and on horseback, is also on the track, thundering along on a collision course with the otherworldly train. Just before impact, the horse leaps into the air, miraculously clearing every carriage, before landing safely and continuing its journey...
Levi's 'Train' ad spot: Close Up

**MILITARY PRECISION**
"The smoke and dust were generated by Flow Analysis Inc, a company that uses a virtual wind tunnel for military applications," says Smith. "We gave them a more basic model of our train, and their simulation spat out a voxel file. This provided all the information for the smoke curling around the wheel arches and across the top of the train, and was used to drive a custom smoke shader for mental ray."

**SURFACE EFFECTS**
Surface reflections were made less distinct along the top and bottom of the train, to simulate the effect of dirt and dust. "Hitesh [Patel, VFX Supervisor] shot still plates on set, which were stitched into a 360-degree image. We used that for the map and the basis of the lighting."

**HARSH LIGHT OF DAY**
“We used a mixture of traditional lighting and HDRI, giving the Final Gathering 50 per cent influence over the whole ambiance,” explains The Mill’s Ben Smith. “It’s a desert environment with very bright and strong directional lighting, so the look is a very black and white one."

**METAL WORK**
Texturing gives the otherwise sleek train a scarred look. Ben Smith spent three weeks developing textures. "I went to [London’s] King’s Cross area, down to the canal, shooting tarnished, paint-peeled metal, and used that both for inspiration and as digital source material."

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**DIGITAL DETAIL**
Giger also worked with an assistant, Andras Halasz, to produce this digital train image. Here, many of the details used in the final design are visible, including the spine-like detailing at the nose, and the sloping shell across the top section of the carriage.

**DESIGN EVOLUTION**
An early sketch from H R Giger shows how the final design evolved from a few permutations. Unlike his achingly precise painting and sculpture work, Giger formed ideas simply by sketching, erasing, and refining.

**WHEELS IN MOTION**
The Sub-D train model and wheel mechanics, prior to lighting and texturing. "All the wheels move correctly," says Smith. "They vibrate authentically. The brake buffers even move. It's all expression-driven."