Quiet Truck

The Challenge

A GHD client needed to meet stringent noise emissions criteria at one of their mining sites. The mine was at risk of being forced to shut down activity until regulations were met. The client needed to find a solution without impacting on mine productivity. The sound of onsite trucks was identified as the source of a large amount of the noise.

Our Solution

In 2005, GHD smashed world records with its design and development of a noise attenuation package for Caterpillar 789C haul trucks resulting in the world’s quietest Caterpillar truck. The Caterpillar 789C haul truck completed its final certification testing exceeding expectations. The design, which won the 2006 Engineers Australia’s Engineering Excellence Award, and has been hailed an engineering and acoustic attenuation feat.

This solution was the result of multi-disciplinary collaboration involving GHD’s acoustic scientists, mechanical engineers, structural engineers, finite element analysis and material technology specialists, as well as use of modelling software. This invention is applicable to all tracked vehicles, regardless of manufacturer.

Key Benefits & Features

The key benefits and features include:

- Demonstrated reduction of noise on trucks of up to 1/20th of acoustically untreated systems
- Noise reduction achieved without impact on engine cooling performance
- Operational efficiency maintained in high temperature environments
- Attenuation achieved with minimal impact on vehicle mass and load capacity
- Routine maintenance and ease of inspection maintained

Contacts

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About GHD and Innovations

Established in 1928, GHD is one of the world’s leading engineering, architecture and environmental consulting firms. GHD’s award winning innovation program brings together our 6000 people around the globe to create, collaborate on and deliver new ideas.

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