

Category 1: Work Health and Safety

Ground Level Fuelling System

Matt Billings, Stabilisation Manager
Downer EDI Works



2022 AustStab Awards of Excellence

Proudly sponsored by **CATERPILLAR®**



Background

Falls are one of the top four construction hazards

Zero Harm– Incident 2308707

- A Downer apprentice was in the process of fuelling up the stabiliser. The fuel point is at the top of the stabiliser, which requires the operator to climb the stabiliser inbuilt ladder to get to the top. The operator had the fuel nozzle in his hand and went to climb the ladder.
- As he was climbing the ladder (one hand on the handrail and the other on fuel nozzle) his foot slipped, and his body swung and he hit his ribs on the step of the ladder while hanging onto rail with one hand.
- The operator reported to the supervisor what had happened and that his ribs were a little sore from the contact of steps on the ladder.

Proudly sponsored by **CATERPILLAR[®]**

Design and Change

- Factory-optional Wirtgen stabilisers require the operator to climb up a ladder on the side of the stabiliser and use factory railing to hang onto while refuelling. Operators are at risk of falling from heights as 3-points of contact is compromised while the task is being performed.
- Ground Level Fuelling eliminates the Working at Heights risk



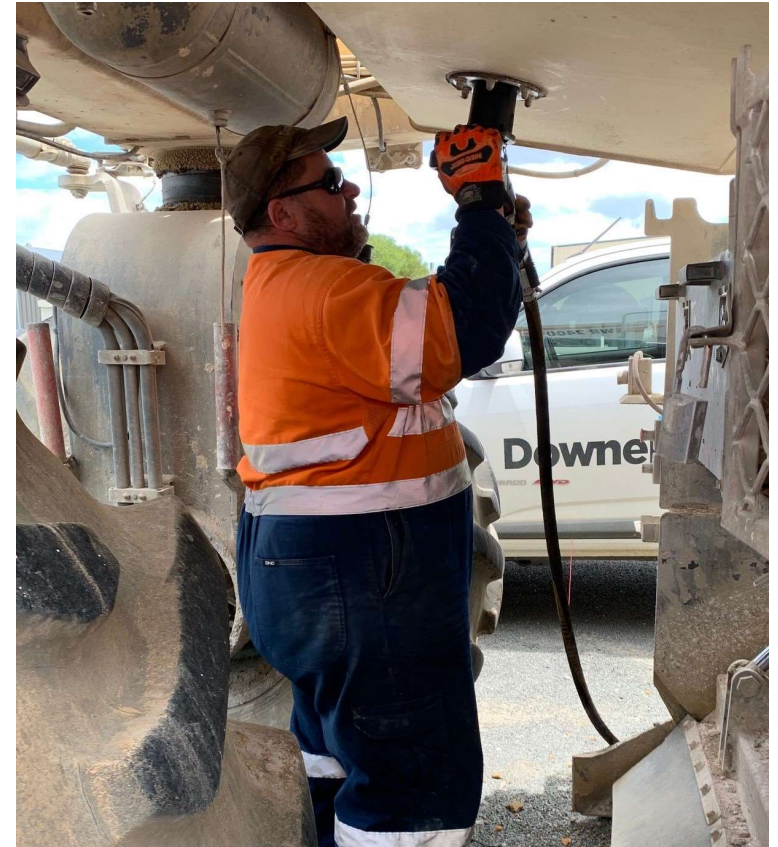
Previous way to fuel

Proudly sponsored by **CATERPILLAR®**

Design and Change

The Ground Level Fuelling System consists of the following:

- Relocating the refuelling point to the bottom of the fuel tank
- Refuelling can be controlled at the ground level
- Refuelling is completed using a 'Pressure-less' system that allows for automatic shutoff without introducing pressure to the tank. This is a positive shut off system, which closes the shut off valve by sensing the fluid level in the tank. Once the fuel level reaches 90-95% capacity, each tank will automatically shut off, eliminating under/over filling.



Innovative solution

Proudly sponsored by **CATERPILLAR®**

Ground Level Fuelling System

Development and installation:

- Extensive modification to the service vehicle was required to run the 24 Volt pump, which had the required flow rate for the system – mainly installation of an inverter, battery, new pump and electrical works.
- Fast-Fill system installed to stabiliser cost \$5,000 and parts and labour to fit out service ute was \$6,000.

Proudly sponsored by **CATERPILLAR®**

Ground Level Fuelling System

Crew feedback:

- *Scott Healy* - How much better is this.
- *Cam Kinghorn* - I never liked climbing up that ladder while trying to hold the fuel hose in hand – appreciate the effort and expense gone to eliminating this hazard.
- *Rob Tarasiewicz* – I have slipped on those steps before this is the best!

Proudly sponsored by **CATERPILLAR**[®]



Pavement Recycling and Stabilisation Association

Ground Level Fuelling System

Benefits:

- Improves Safety
 - Eliminates the requirement for an operator to access the equipment at height to refuel the stabiliser.
- Reduces Environmental Impacts
 - Eliminates the risk of over-refuelling and accidental fuel spills
- Improvement Actions implemented in line with Company Values
 - Increased trust and demonstrated integrity from our operators that acknowledge Downer Roads want to protect their people and the environment
- Increased Cross Business Collaboration
 - Downer Road Services – Pavement Rehabilitation division tapped into the knowledge and expertise of the Plant & Equipment Division to source an effective solution
- Increased Efficiencies
 - Implementing the ground level fuelling system has reduced fuelling times by up to 40%

Proudly sponsored by **CATERPILLAR®**



Pavement Recycling and Stabilisation Association