

## UNIQUE SCANIA RAIL TRUCK DESIGN

**HMA Materials Handling designs and builds a unique package for Scania. The rail truck is to be deployed by the rail infrastructure unit within the Department of Planning Transport and Infrastructure (DPTI) in South Australia.**

During the tender selection process, the DPTI examined all submissions carefully before deciding on what would suit it best as an overall package, Matt Pike, Fleet Management Officer (Rail), in the Field Services, Asset Management Directorate of the DPTI in South Australia, explains.

Scania was selected, as the tender called for a truck to cater for a variety of requirements, including specific payload and crew numbers, and the availability of airbag suspension. Hence the build package submitted by HMA Materials Handling included the Scania P 310 6x4 CrewCab chassis. "It ticked all the boxes, so they were actually the ones that did the homework and found what they thought to be the best fit-for-purpose for our requirements," Pike explains.

The state-of-the-art robust road rail kit (rail wheel assembly) on the truck was designed by HMA Materials Handling. "It is all touch-pad control from the cab, and incorporates many safety features," Pike notes. The truck is capable of carrying 10 m lengths of rail overhead and 6 m lengths of rail on the tray-bed, together with 500 l of water storage, a fire pump, a generator, and 24 V LED work lights.

Pike elaborates that the specification was a collaboration between DPTI Fleet, Shannon Fuller (Manager, Track,



Civil and Infrastructure Maintenance), and the work crew that needed to use the truck. The fleet section within DPTI has many years' experience with truck and heavy plant, and hence the crew and their supervisors contributed valuable information surrounding practical use and work methods.

"The truck body was then methodically designed by HMA Materials Handling in conjunction with our collaborative advice. It has a high level of rail expertise, along with vast collective experience in mechanical and electrical engineering," Pike highlights.

The Scania P 310 rail truck is a remodelled and updated version of its Hino predecessor. "There have been changes within the Adelaide metropolitan rail network over the past ten years that require a truck with different capabilities, and this truck – with a different configuration crane and higher GVM – will meet our current and future needs," Pike adds. The DPTI typically has a turnover period of ten years for trucks, depending on budget, the collective repair and maintenance costs over the truck's life, and anticipated resale value.

It is also fitted with a Railtech hydraulic manifold at the rear of the truck, mounted at easy reach for 'plug-and-go' hydraulic rail maintenance tools. The Unic winch crane was selected due to its ease in manoeuvring under overhead wire when required.



# Case Study



The Scania P 310 is raised up using the PTO to drive a hydraulic pump that pushes the rail guidance system (train wheels) into contact with the track. The front end of the truck is raised relative to the rear, as the rear drive tyres remain partially in contact with the rails to provide forward motion, even though the rear rail guidance wheels are in touch with the track. That way the truck can use its powertrain to move, Pike explains.

The Scania P 310 rail truck will travel the metropolitan area of Adelaide on a nightly basis. It is unknown at this stage what mileage it will undertake. However, it wasn't procured for distance work, but rather for its robust construction, ability to carry a work crew, and its GVM capability.

The night crew that will use the truck comprise specially-trained personnel that have undertaken training for both rail safety and specialised welding. "Rail safety is taken very seriously in South Australia, so it is critical that we have the best personnel to undertake this work in order to have the rail network safe and ready for use before the first train of the morning starts," Pike notes.

The HMA Group is a leading global supplier of hi-rail equipment for trucks and vehicles in the rail industry.

It has fitted numerous hi-rail kits and carried out many road-rail conversions to a variety of trucks and industrial vehicles.

It provides rail guidance systems for the full scope of rail network requirements, from broad, standard, and narrow gauge, in addition to tri, dual and single gauge configuration. It also supplies multiple configurations of hi-rail vehicle traction systems.

Designs are carried out in-house by two registered professional engineers (RPEQ/NPER). All new equipment and vehicle modifications are provided with a certificate of design, construction, and testing conformance. All design is in accordance with the applicable standards and specifications, and is ADR compliant. Rail-mounted equipment is tested extensively during the construction stage.

