

# FIT FOR PURPOSE

***With 130+ tonnes GCW and up to 100 tonnes payload on all runs, Townsville Logistics has a business model that would be the envy of many operators – Words by Chris Mullett – Images by Jonathan Wood***

In the heavy haul road train business the economies of scale are quite outstanding. High weights, long distances and very specialised equipment are exactly the opposite of what Europe and North America are currently pursuing with their quest for autonomous trucks and the platooning of vehicles.

Australia already enjoys the efficiencies of road train operations hauling three or four trailers with one prime mover that can't be matched by four prime movers each hauling one semitrailer and travelling frighteningly close to each other on a European freeway.

But there are differences in the way that road train operations are handled, with many in the mining industry running only one way fully laden, returning empty.

*PowerTorque* recently travelled to Townsville to meet Mark Pope, operations director of Townsville Logistics, for a personal introduction into one of the most professionally planned road train operations we've yet encountered. Interestingly, some of the parameters of the operation are set by the limited availability of suitable vehicles, while other benefits are attributed to the ingenuity and creativeness of Australian trailer manufacturers such as Jamieson Trailers of South Australia and Mick Murray of Mick Murray Welding of

Currajong, Qld, being able to deliver on trailer design ideas coming out of Townsville Logistics.

Townsville Logistics has been in operation for just one year, providing the transport requirements for Sun Metal Corporation, a South Korean owned zinc refinery. Both operations are fully owned divisions of Korea Zinc.

Before delving deeply into the transport operations, it's worth setting the scene about how Sun Metals has synchronised its business activities with the population of Townsville.

Sun Metals, established in 1996, produces 225,000 tonnes of zinc each year and has initiated infrastructure programmes such as a 124-megawatt solar farm, the first large scale solar farm to be built by a major energy user in Australia. It provides one third of the refinery's power requirements and is capable of adding its excess capacity in off-peak periods to the requirements of Townsville itself.



And now to Townsville Logistics. The company operates over 160 pieces of ancillary equipment and in its first 12 months of operation the division has grown to be the largest road train operator from the Townsville area, with 24 triple-trailer road trains operating a 24/7 operation. Nine of these triple road trains run each day heading for Mount Isa and Cloncurry, with the longest run being from Townsville to the Tanami, a return distance of 5400 km.

With each triple road train fully laden on both the outbound and return runs, vehicle and trailer combinations gross 130 tonnes GCW with payload capability of 100 tonnes. Because the weight of the load can be consolidated into shorter than normal dimension trailers, the overall length is determined by the weight displacement, resulting in shorter overall lengths. Loads vary from zinc concentrate to lead and cement or acid, and this equates to average weights of 22.5 tonnes over each of the five tri-axle sets, plus the additional weight over the steer axles and drive axles.

For Mark Pope, the shorter overall lengths of 46 metres are an important safety feature because the combinations have to cross road intersections and rail lines in various locations, and it's important to have road crossing times kept to a minimum.

"Our vehicle and equipment specification has always been selected in order to do our job better," said Mark. "Our operation is unusual in that we run fully laden on both outbound and return runs. This two-way laden running affects service and maintenance recommendations as some suppliers are only used to vehicles being laden one way.

"Because of the weights, distances and road conditions, we required conventional bonneted trucks for maximum resistance to animal impacts and settled on Mack Titan prime movers running at 685 hp with the MP10 engine and mDrive transmission. There is really no other alternative, and we are having an excellent run out of them.

"We purchase our Mack's through Rex Ross, the Mack specialist salesman at VCV Townsville, as our policy is to support local business wherever possible. We base our operation on a four-year vehicle turnover after a total distance of up to 1.1 million kilometres. Additional features include an ICEPAK and interior fridge/freezers for added driver comfort.

"Our policy is to deal with a company that is responsible for the entire vehicle, front to back, and that's what we get with Mack. VCV Townsville looks after all service requirements with a vehicle pick up and return service.

"Service intervals are maintained at 32,000-litre fuel burn periods or 30,000 km periods, and with the maintenance completed by VCV the oil drains use Volvo/Mack branded semi-synthetic lubricants. Rear axle ratios are 4.3:1 and all combinations are speed limited to 90 km/h.

"Our tyre preference is for Kumho in all positions with 315s on the steer and 11R22.5s on drive and trailer application, unless we are looking for a lower overall ride height of some trailer combinations in which case we use 275R22.5s, which are running well compared to 11R22.5s.

"We trialed a selection of tyre makes and found the Kumho KMA04 to return the lowest c/km TCO. This is an all position tyre for mixed service application. Our tyre pressure checking and monitoring programme is administered by Twin City Tyres of Townsville, and this activity is completed in a 24/7 operation on our site at Stuart.

"We achieve a regular fuel economy return of 1.1 km/litre on the Townsville to Mount Isa run at full weight of 130 tonnes. We also run bottom gravity discharge or pressurised top discharge acid trailers that average 90 tonnes payload, and these return 1.4:1 km/litre.

"Our drivers work to Basic Fatigue Management of a maximum of 12.5 hours per day and our trips are planned around a maximum of one overnight stop. Our drivers benefit from the same series of work entitlements



provided for those working at the refinery. They can select a salary sacrifice component with their wages that can include a range of benefits, from private health funds, to novated leasing of motor vehicles or private school fees for children etc.

“Health and fitness is also an important focus for our company and we provide subsidised health centre and gymnasium memberships at clubs in Townsville, plus counselling on health, fitness, lifestyle and personal issues. We also feature regular training programmes using the Mack driver trainers as well as our own in-house training staff.

“Vehicle monitoring is centred on Dynafleet with satellite tracking systems, and we use Pinpoint for electronic work diaries. Driver identity is confirmed through each driver tabbing on or off duty in the truck. This is important, as we do not run a one-driver/one-truck operation. As soon as a truck returns it is unloaded and reloaded and a new driver takes the wheel for the next run,” added Mark.

“We found the major suppliers prefer to build standard dimension trailers, and this led us to look at specialist suppliers. We have standardised our trailer manufacturing with Mick Murray Welding of Townsville and Jamieson Trailers of Adelaide, through Sean Gilmore.

“As with all our suppliers we aim to work with those that provide the best product and the best product support. Everything is bespoke. The lead trailers are not interchangeable and remain permanently connected to ensure we can maximise trailer payload.

“We have just ordered a further four triples of high-tensile steel skel trailers taring 7.5 tonnes each, including 100 tonnes payload. These have perfect displacement for

centre loading. For side tippers we use AZMEB trailers from MaxiTRANS.

“All our trailers are very high-end designs, featuring JOST Forged Wheels with either BPW OM or Hendrickson HXL7s running gear as we run on really rough roads. The Hendrickson warranty is 1.2 million km and BPW comes in with a 1 million km warranty. All our combinations are fitted with disc brakes with WABCO electronic braking systems and roll stability throughout every combination using the Smartboard system. Disc brakes have proved to be safer and more efficient, and when compared to drum brakes they are not only more effective, but also cheaper to maintain.

We select JOST for all our landing legs, greaseless 5<sup>th</sup> wheels and couplings and are now ordering Rockinger couplings from JOST as well. They have a really good product with a really good backup and service. Our suppliers are selected because they are all very good to deal with,” added Mark.

“We also run Seeing Machines that cover the on-road driver fatigue detection with blink detection, a vibrating seat and audible alarm, while also sending a message to the control centre if there is an issue. Our inclusion of all safety systems has resulted in us creating further substantial savings in areas such as insurance costs.

“The future holds lots of exciting opportunities and we are even looking at the option of using trailer axles that provide regenerative braking into batteries in order to run electric vehicles in certain urban operations that we are considering. There are opportunities that are yet untapped for those prepared to think outside the square and develop equipment designed to do the job and not to simply match existing designs and specifications,” said Mark. 

