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AS AUSTRALIA'S COMMERCIAL ROAD TRANSPORT INDUSTRY IS TRYING TO GET A GRIP ON THE IMPENDING END OF THE MINING INVESTMENT BOOM, A NEW BUSINESS PHILOSOPHY IS EMERGING THAT IS BASED ON COLLABORATIVE THINKING AND CO-ENGINEERING.

Despite being celebrated for taking on a global leadership role in high productivity vehicle design, Australia's transport equipment industry has had to finish the 2014-15 period on a sour note, with overall sales below the previous season and business confidence notably eroded. But that doesn't mean it's all doom and gloom going into the next sales cycle, as the slowdown proved to be the ideal breeding ground for a new generation of entrepreneurial-minded engineering businesses that are likely to continue disrupting Australian manufacturing for the long run.

One of them is Sydney-based family company, Smedley's Engineers. Following the old 'necessity is the mother of invention' adage, it has found a way to benefit from the nation's economic transition and add value to Australian manufacturing by helping industry outsource complex engineering work and support manufacturing businesses like TCK Australia in becoming more streamlined, lean and adaptive.

"Our industry is not just becoming more complex, but also more unpredictable, which is why a modern-day engineering department has to be run extremely lean to remain economically viable," says Smedley's Chief Executive, Robert Smedley. "It's no doubt a challenge for our profession, but it can also be an incredible opportunity if you are willing to embrace change. By collaborating across industries and with external service providers like us, Australian manufacturing can not only remain economically competitive, but continue to lead the way in the automotive field."

A case in point is Smedley's most recent engineering project, carried out in collaboration with tow coupling specialist TCK Australia and Monash University. With the launch of a new Ringfeder model in May, TCK's Graeme Rowlands was faced with the challenge to include his famed rebuild kit range to suit the coupling model's specifications and have it officially approved, so he called in Robert and his team to provide professional assistance.

"The pin of the new 303 model is rated at 320kN (32 tonnes, ed.), up significantly from the old 285kN rating our kit is based on," says Graeme. "The old kit has earned us a strong reputation for reliability, so before we could bring a rebuild kit for the new model to market, we had to make sure it would be able to go the distance."

Historically, TCK would have involved the University of New South Wales to stress-test the updated kit and make sure it is capable of handling the additional workload in line with the relevant Australian Design Rule – but with Ringfeder's new 303 model breaching the 300kN barrier, he says a new approach was necessary. "We realised that we had to bring someone in who had both the resourcefulness and the experience to make the project a success," he says.

"The University of New South Wales wasn't equipped for the challenge, but Rob Smedley and his team were able to custom-build a jig in co-operation with Monash University in Melbourne to get the job done."

The result, he adds, goes way beyond the original objective of testing and approving a new rebuild kit. "What we created is a world-first tool that will set a new standard for aftermarket component testing in Australia. There's a general issue here with aftermarket or alternate equipment as there is no clear approval framework in place (see breakout box), so this has been an important milestone for the coupling industry as a whole. Together with the Smedley's team, we re-defined best practice and set an example for the rest of the industry."

According to Graeme, Smedley's Engineers has supported TCK Australia all the way from the first draft to the final certification of the new repair kit, with a two million repetition test cycle in between. "Using the specially built jig, we simulated a number of key scenarios the pin and tow eye bushes would face in the field – including sudden gear changes, braking, rough road conditions and shock-loading," he says.

"It's a beautiful example of what we call co-engineering – proactive, result-driven collaboration on an engineering project to jointly create value. It's absolutely fascinating to see a highly specialised

Graeme Rowlands inspecting the TCK manufacturing facility.

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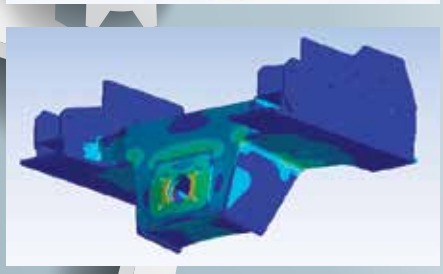
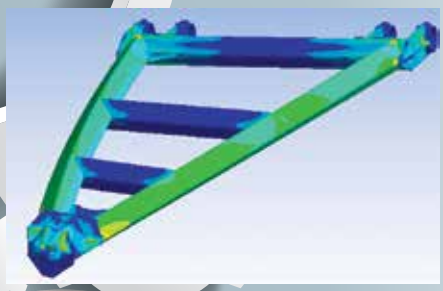
Fast Fact

According to Peter Hart, Chairman of the Australian Road Transport Suppliers Association (ARTSA), there is no coherent system in place for the definition and administration of parts standards in Australia: "In Australia, most truck replacement parts do not need to meet a technical standard, even if an applicable standard exists. There is no supervision of replacement-part quality by state road agencies so it is up to the buyer to beware."





TCK's Graeme Rowlands is proud to be working with local Australian talent on stress-testing his latest product.

component like our coupling repair kit created and certified right here in Australia with the help of local Australian talent."

With ADR-approval for the rebuild kit now pending, Robert Smedley says his company's collaboration with TCK is a prime example of where modern engineering is headed. "The pace of change in today's market is faster than ever before, and a manufacturing business needs to be able to change quickly or risk becoming obsolete. Traditional vertical structures don't always apply anymore, so we try to make additional resources available on demand – albeit with a genuine service attitude behind it."

According to Robert, only businesses that succeed in creating a customer-driven culture of innovation and demonstrate a willingness to adapt will be well positioned to thrive in an uncertain future, and TCK is one of them. "Graeme and his team have embraced the idea of co-engineering wholeheartedly. They understand that we are not just contracting in the traditional sense – we really immerse ourselves in the project and become part of the team," he says. "The coupling example has shown just how far such a collaboration can go – from simple design consultation all the way to the creation of a world-unique testing tool."

Graeme adds that in a time where the outlook in the automotive world is bleak at best, working with the Smedley's team has given TCK the temporary boost needed to stay ahead of the curve. "It's definitely a challenge running a lean organisation with little overhead but still provide a world-class product that is properly certified and tested. Young and dynamic businesses like Smedley's are the perfect solution to overcome short-term resource bottlenecks without over-stretching a business or compromising our own agility."

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Fast Fact
Smedley's Engineers commenced operations in 1931 in Launceston, Tasmania during the years of the Great Depression. The firm was started by Gilbert Arthur Smedley and his father William Arthur Smedley, and is now run by eighth-generation engineer, Robert Smedley.