

# UNDERPINNING SUCCESS

*DANA AUSTRALIA FOCUSES ON ITS EXPANSION INTO  
NEW AREAS OF HEAVY VEHICLE COMPETENCE*

**BACK** in 1904, engineering student Clarence Spicer started his company in New Jersey with the production of his patented invention of the encased universal joint. At that time, auto companies were transmitting drive to the wheels through a conventional chain and sprocket, much the same as with a bicycle. The invention of the universal joint revolutionised drivetrain technology.

After teaming up with financier Charles Dana in 1910, the company proceeded to expand its technological range, crossing from the car industry into trucking and producing axles, steering shafts and drivetrain components for a wide range of vehicle manufacturers.

In 1946 Spicer Manufacturing Corporation was renamed DANA Corporation, and the name of Spicer became the generic brand for the company's range of driveline products.

Now, with a century of heritage, the DANA Corporation is refocusing its activities, and its Australian operation, based in Hallam, Victoria, has undergone considerable change, partly as the result of the pending end of local car manufacturing by Ford, Holden and Toyota.

The end of local manufacturing in the Australian car industry signals a shift in drivetrain activity in the passenger car market, with DANA providing a remanufacturing and refurbishment operation for axles as well as supplying manufacturers such as Ford with sub assemblies for the Falcon and Territory.

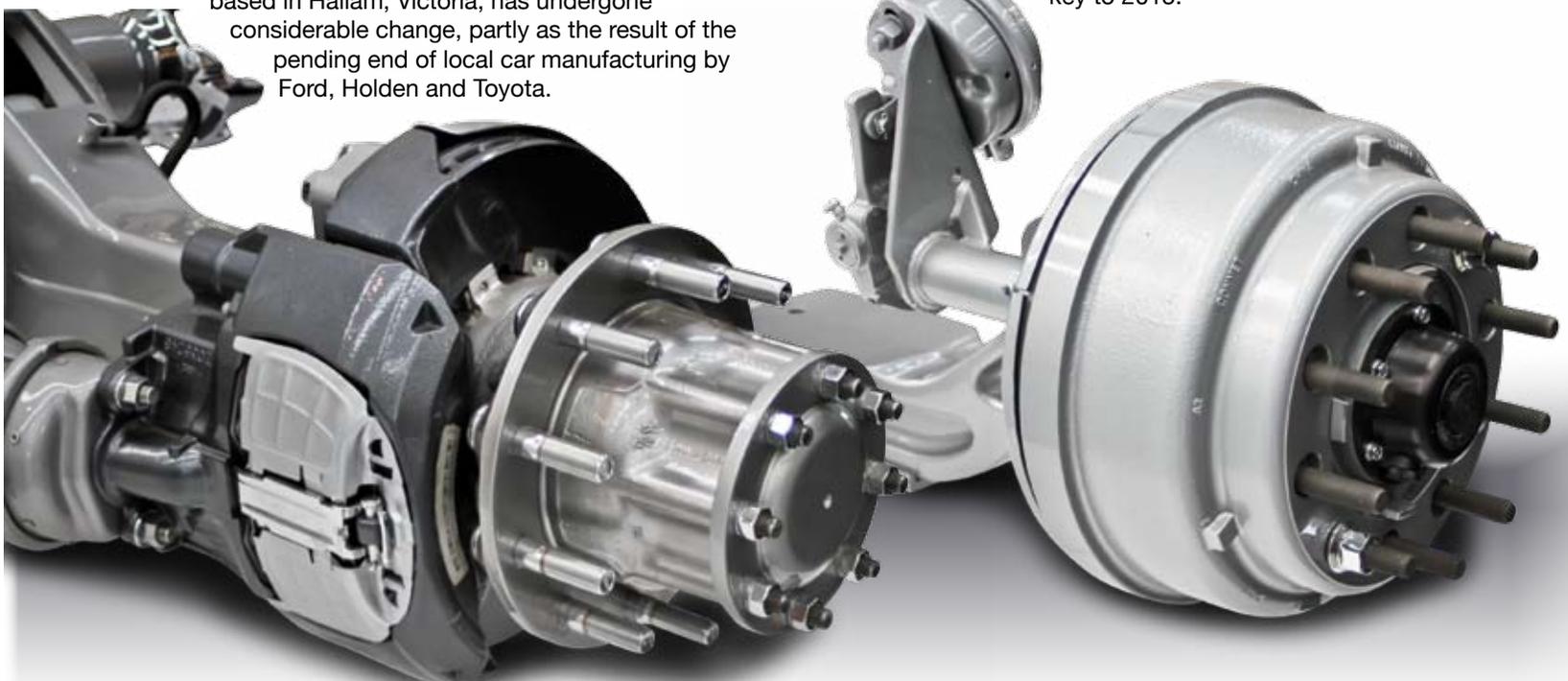
Moving up the weight range, and with the truck industry DANA will continue to supply the major Australian truck manufacturers of PACCAR, Volvo Group Australia and IVECO with drive shafts, steering shafts and steer and drive axles

In addition to this heavy commercial vehicle supply, DANA will continue to provide aftermarket support with a comprehensive remanufacturing and refurbishment service for other products that use DANA supplied drivetrains, such as the Ford Ranger, Land Rover, Nissan, Toyota and Chrysler Jeep.

"The future relevance in Australia is not so much the original equipment (OEM) side for the passenger car market but the aftermarket side, which becomes an increasing area of focus for us," said Peter Langworthy, managing director of DANA Australia.

"Our growth for the passenger car segment is for the aftermarket. On the truck side, it's that, plus increasing the product range and portfolio for the new truck market.

"Last year DANA launched the T78-190 tri-drive axle for heavy-duty applications, in conjunction with the D2000 7.5-tonne steer axle, which is compatible with the recently released Bendix ADB22X air disc brake from DANA Australia. As we go forward we see more growth in those products as the key to 2015.



“The next horizon for us will take place from 2016 and follows on from the recent launch in Europe and North America of the 18,000 kg AdvanTEK drive axle. It’s more fuel efficient, more compact, lighter in weight and requires less oil,” said Peter.

DANA previewed its new global family of single-reduction drive axles at last year’s IAA Show in Hanover. Engineered on a flexible platform that supports production in North America, Western Europe, and emerging markets, this customisable family of axles will leverage DANA’s industry-leading AdvanTEK technology, a common head-assembly architecture, and other proven Spicer axle technologies to reduce weight, improve efficiency, and enhance durability.

This series of global axles for vehicles with gross combination weight ratings of 32 to 41 tonnes will meet accelerating demand for the most popular axle segment in the world. The global axle family will be locally assembled to meet market needs and decrease time to market.

Worldwide demand for the single-reduction axle in this weight class that reduces the cost of ownership is expected to grow significantly through 2020 as the commercial-vehicle market expands, especially in emerging markets.

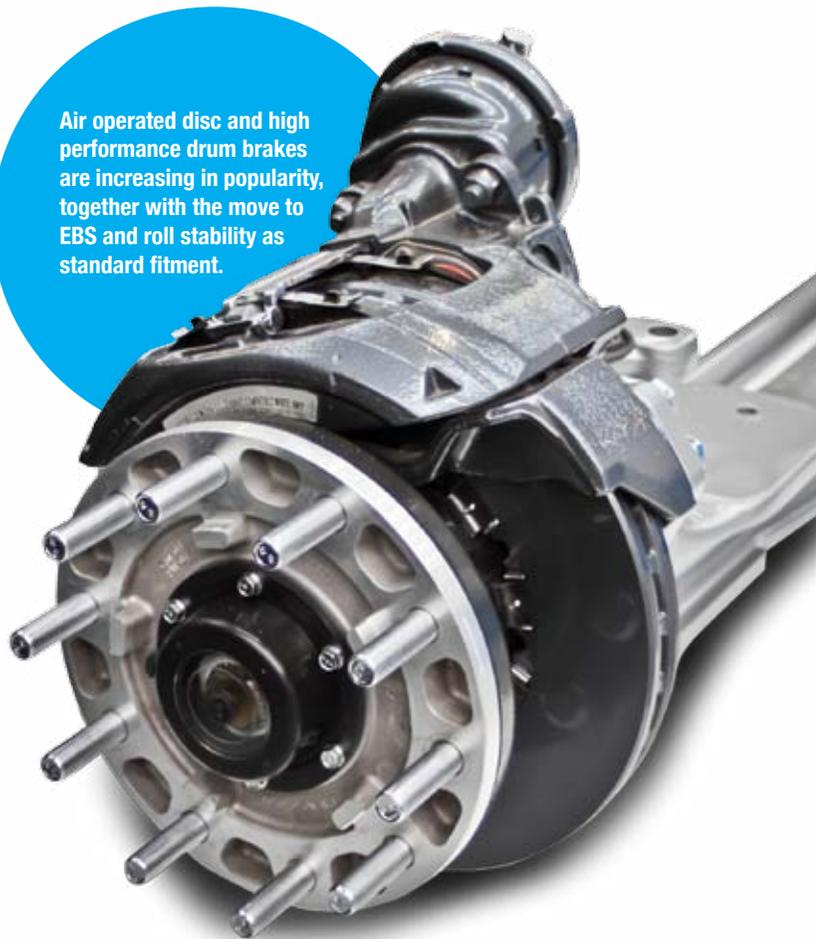
The new global family of single-reduction drive axles will offer a wide selection of ratios from 2.05:1 to 6.50:1 across a full application range. With a lighter weight than competing axles on the market today, these axles will enable engine downspeeding to support ongoing fuel economy initiatives in North America and Europe.

DANA has also recently unveiled the Spicer Compact Plus Series driveshaft for trucks from 8 to 60 tonnes. This all-new driveshaft weighs 10 percent less than competing driveshafts, contributing to better overall vehicle fuel economy.

Through a new innovative sealing design and improved bearing life, this pioneering driveshaft is designed to last 25 percent longer than traditional driveshafts, significantly decreasing total ownership costs over the life of the vehicle. The Spicer Compact Plus Series driveshaft provides torque capacity up to 35,000 Nm in a more lightweight package than its predecessor. It reduces axial sliding forces by 18 percent over previous models, which improves component life by decreasing stress on the bearings and the heads. The tubeseat diameter of the Spicer Compact Plus Series driveshaft remains the same as the current Spicer Compact Series Model 2000 driveshaft, but modified tubeseat and welding features enable a reduction in wall thickness, further decreasing weight.

The recent upgrading of brake application requirements for new vehicles and trailers in Australia manufactured from January 1st this year to include ABS or EBS has also sparked an increase of interest in high-performance brake systems.

Air operated disc and high performance drum brakes are increasing in popularity, together with the move to EBS and roll stability as standard fitment.



“We are noticing a significant increase of interest and uptake in the Bendix ADB22X air disc brake for this year from Paccar and others. This increase has been partially aided by the Europeans, which are all now standard these days with disc brakes. Rotors have increased in size, together with braking force, and this removes the complaint that drivers were braking late and wearing out rotors and brake pads,” said Peter Langworthy.

“The other product we have been developing and growing is our tyre pressure control system, not only for off-highway work application but also for on-highway. People are interested in what effect tyre pressure has on fuel economy, and we have been evaluating its performance in selected on-highway linehaul application.

“Developed by DANA, the Spicer Tyre Pressure Control System (TPCS) is the first internal axle system of its kind for prime movers and rigid truck application. It has been engineered to automatically maintain proper inflation for drive and steer axles, significantly increasing vehicle fuel efficiency and reducing maintenance.

“The tyre pressure control system both inflates and deflates tyres and compensates for punctures. It is more of an OE type fitment as it uses drillings through axle housings and is available on a DANA axle,” said Peter Langworthy.

“It has been interesting as a recent development for purely on-highway application interest. Whether it becomes a growth market remains to be seen, and we are currently working with selected customers as they complete a cost benefit scenario comparing the cost of the system with the extension of tyre life.”

Early reports from Europe suggest that fuel economy improvements can result from each tyre being properly inflated to a pressure equalised with the other tyres on the steer and drive axles.

“From a customer service perspective we have been growing our customer service group with the creation of a 1300 helpline and offering more online interactive customer service options to improve the way we interact with our customers. These days people want quick answers. We have substantially increased our personnel, and that has led to better customer service and support.

“Our future growth at DANA Australia will result from enhancing customer service but also by broadening and deepening our product portfolio with aftermarket, in particular growing our share of the truck market.

“Our remanufacturing and refurbishing services for heavy-duty truck and passenger car axles will all be handled from Hallam. We started purely with DANA product but we will be expanding that aftermarket service to include non-DANA product as well. These will be branded as a DANA remanufactured brand called SVL and marketed as a second tier brand.

“An important part of this aftermarket service includes the refurbishment or replacement of differential drive heads. The trend in the US is to move to taller ratios, even down to high 2’s as well as low 3’s from the traditional 4.1:1 ratios. Being able to swap a drive head ratio by supplying the old head also substantially reduces the associated cost.



An important part of DANA’s aftermarket service includes the refurbishment or replacement of differential drive heads.



“By swapping a differential ratio it is possible to improve vehicle productivity and reduce TCO (Total Cost of Operation). The incentive to change axle ratios as a cost advantage over three to four years also comes from changing a vehicle to a second-life scenario, such as when a truck moves from B-double to local single trailer work.

“We need to create a market awareness of the benefits associated with a diff’ change that can be reflected as a benefit to performance and fuel economy. We are continuing our research on that second-life scenario, looking at what we can offer where fleets move the truck into a different application,” added Mr. Langworthy. 



Peter Langworthy,  
managing director of  
DANA Australia.