



# GETTING RUBBER ON THE ROAD

Australia's Performance Based Standards project is a global leader in transport innovation, although it hasn't been without its teething problems. This important topic will be the subject of one of the main papers at the HVTT Conference scheduled for March 2010 in Melbourne.

**B**ecause of the sheer size of our continent and our difficult freight task, Australia is a leader in producing innovative vehicles that increase productivity while handling the rigours of distributing freight in a demanding environment. The rest of the world looks to countries such as ourselves and Canada, first world countries with relatively low populations needing freight hauled over vast distances, to see if our innovative technologies can be adapted to their own specific freight tasks. The Heavy Vehicle Transport Technology (HVTT11) event to be held in Melbourne from 11-18 March 2010, leading up to the International Truck, Trailer and Equipment Show at the Melbourne Showgrounds, is a forum in which the engineers and decision-makers of the world get together to discuss the future development of road freight technology.

One of the major topics to be discussed next March will be the development of a Performance Based Standards (PBS) structure that allows the introduction of innovative high productivity vehicles on Australian roads. This has been a long process and the National Transport Commission (NTC) has seen the scheme inching towards acceptance by both state and local authorities and transport operators. The latest NTC discussion paper on the topic was released at the end of 2008 and is an opportunity for further public input and feedback, aiming to confirm areas of concern and identify proposed solutions to these issues. The results of this discussion will inform the NTC's review of the PBS scheme, its effectiveness, and its ability to grow and receive a wider acceptance.

#### A false dawn

It was back in October 2007 when the Australian Transport Council (ATC)

approved the completed package whereby if an operator came up with a vehicle capable of meeting all of the standards listed by the PBS scheme for a particular road classification, it could travel on any road for which it had been designed. The innovation of introducing a set of regulations not stipulating the vehicle's limits but instead asking the operator to be responsible for proving what it could do, marked a philosophical change in the way heavy vehicle technology could be allowed to develop. Allowing vehicle design to move outside the normal prescriptive rules promises major productivity gains for the industry – if the system is allowed to function as initially envisaged. Attendees at the HVTT Conference from around the world will have the opportunity to quiz many of the figures heavily involved in PBS. Marcus Coleman, Manager Engineering and Productivity at the NTC, has been invited to present a paper demonstrating just



Marcus Coleman.



how far the PBS structure has come and where its advantages lie. "With PBS reform you need to keep chipping away at it," says Marcus. "We are here to give operators technical advice and to get the technology through as best we can. At the moment, PBS is in a transitional phase and the PBS review is an important step in helping to get all of the regulations in place." The NTC admits the scheme has not yet delivered to its full potential, the extent of its adoption by the Transport Industry falling well below expectations. When looking at the particular problems of developing a high productivity vehicle, ascertaining its ability to meet the standards and then convincing the government authority on whose roads it will travel, it is obtaining access to the infrastructure that is proving to be the biggest hurdle. The NTC discussion paper identifies the failure to gain any clear certainty of road network access to be one of the issues dictating the success or failure of the PBS scheme. The October 2007 plan called for a clearly defined road classification system, whereby operators could be sure a particular vehicle would be allowed on any route for which it could be proven to be suitable. In practice, the local authorities are approving vehicles on

a case-by-case basis, very similar to the current permit system. The Australian Trucking Association (ATA) has recently delivered its response to the NTC's discussion paper, agreeing that the current PBS system is not delivering results and must be reformed. "The evidence is in plain sight: the maps provided for PBS to date do not reflect even the current networks used by equivalent vehicles. The aim of Performance Based Standards is to allow trucking operators to get approval for safer and more productive vehicle combinations and types to operate on any road with the appropriate PBS classification. But the policy is not working. "PBS is not delivering broad scale additional access to more productive, safer, modular combinations, even though these vehicles are within the existing pavement and bridge loading limits," the ATA says. The NTC accepts transport operators are not likely to invest in expensive custom-designed equipment without a lot more certainty about road network access. In practice, state government inertia, local government ignorance and transport operators' fear of massive engineering consultation fees have seen very few actual PBS vehicles take to the roads of Australia, so far.

**Staying flexible**  
Through talking to a customer focus group the NTC realised that the basic standards set for all previous vehicles can be too rigid. Safer and more productive vehicles have to be rejected if they do not meet all of the standards set for PBS vehicles. Applicants are frustrated by the fact that such trucks, even though they don't quite meet the standards, will have better stability and handling than vehicles currently allowed under the prescriptive regulations. The NTC's discussion paper introduced the idea of what it calls 'generic high productivity vehicles' sitting somewhere between current vehicles built to comply with prescriptive regulations and highly innovative one-off designs used to make large productivity gains in specialist areas. In the past, blueprints of standard PBS vehicles, like B-Triples and quad-axle semis, have been produced for the NTC by the ARRB Group but were found to be impractical in terms of ease of manufacture and use. The NTC realised the need to develop more flexible blueprints, something easier to manufacture and fit into a large fleet. "We're working on a framework, so it is possible to develop blueprints for innovative vehicles. I started talking to various people in the industry and in government and they all appear to be



## There should be some useful examples out on the road for the delegates at the HVTT conference next March to examine in the metal.

supportive of our approach. The best way is for industry to design what it is they want and then to make sure they can be built. I have contacted several of the trailer manufacturers who are looking at various blueprints. They are key to this process, as well as the truck manufacturers.

"Any blueprint has to meet the standards, they have to go through the process. Then we can ask the question as to whether it does fulfil the requirements of the PBS system. I have found that there is a lot of interest in B-Triples and some truck and trailer combinations," Marcus says.

According to Marcus the PBS scheme is in fact achieving success in meeting some of the targets set by the Coalition of Australian Governments and he is seeing some truly innovative vehicles, boasting considerable productivity gains, coming into the system. As they do the NTC is learning what practical steps can be taken to improve the process. With some of the more innovative vehicles

it is necessary to implement actual verification testing after the vehicles are built.

### Relationship problems

The NTC is finding that the system has very tight tolerances on dimensions and particular components, especially those involved with the interface between truck and trailer, which can be critical. Work is being done to try and develop a modular approach to solve some of the relationship problems between truck and trailer.

"It's all about creating an envelope that covers all the bases. Trucks can have different wheelbases and we need to develop a new blueprint to suit all permutations and combinations. We need to go through the exercise of varying truck and trailer and work out the parameters of performance," says Marcus.

As a result of the experience so far, the NTC proposed amendments to the business rules governing those who can

and cannot apply for permission to use a PBS vehicle, approaching the ATC at the end of 2008. The most significant of these amendments was the wish to make it possible for the Implementation Panel to use some discretion in the application of the performance standards.

"It allows the panel to use some common sense when looking at an application," says Marcus. "For example, we looked at the design of a bus requiring a wheelchair access system. With this system installed the overhang was, in fact, too long, but it was decided to pass the vehicle and allow an exemption."

If any exemptions are made by the panel the process will be entirely transparent and the NTC will publish any exemptions it allows. As a result of this, other operators with a similar design will be allowed a similar exemption on the same grounds. However, the Implementation Panel is likely to be extremely cautious in allowing exemptions, if they are published, as this opens the door to a particular amendment for everyone.

"We are looking to change things in the sense of developing blueprints which can apply to new vehicle concepts, creating a blueprint envelope available to anyone. At least then there would be a process for putting your ideas forward and it could be worthwhile, especially if you have a number of vehicles in your fleet.

"We really are leading the world in this area. We are now laying the foundation



stones for an increased level of productivity in the future. But there is no easy way forward. We are going through the difficult process of appointing assessors, accreditors to help in getting the process working. We are looking at everything: What's the alternative? Could it be done better? Others will learn from what we've done."

Even though the spotlight has so far been focused on the larger high productivity vehicles, the majority of applications coming into the system are for trucks to run on roads classified as level one, general access. These are vehicles that give operators a little bit more flexibility at the smaller end of the transport task.

"If you gain another metre on a level one road, that can do quite a lot of good. It is possible to add both volume and weight; incremental gains over a large number of trucks will add up," Marcus says.

As Marcus explains, for anyone going through the PBS process, there have to be productivity gains to make it worthwhile. Those gains can only be achieved by an increase in mass or volume carried. The major stumbling block for any development like this is the axle load limits that result from the limitations of the Australian road infrastructure.

"The state governments have legitimate concerns that heavier actual weights may have an impact on bridges. I don't think there's a way around it. Incremental pricing may be one possible solution, where the operator will pay extra to compensate for the damage done to the pavement or infrastructure."

### There's life in this yet

The current network of different classifications of roads available to PBS vehicles was published in October

2008 but proved to be inadequate as a stimulus to operators. The difference between networks available to prescriptive vehicles and those to PBS vehicles was not enough to compensate operators for the costly process of guiding a PBS vehicle through the very complex and difficult system. PBS has proved to be quite a challenging system for operators to get involved with and some have already thrown the whole idea into the 'too hard basket'. However, others are persisting and Marcus is expecting several useful examples of what can be achieved with PBS to hit the roads in the next 12 months. If this is the case, there should be some useful examples for the delegates at the HVTT Conference next March to examine in the metal, as opposed to the computer simulations they monitor as they develop the vehicles that will handle the massive freight task of the future.