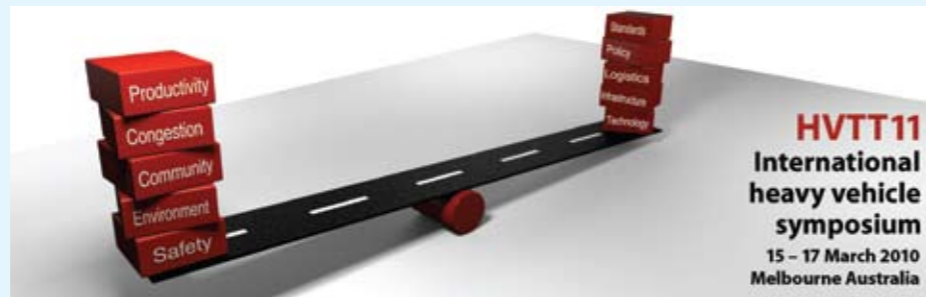


Expanding the envelope

One of the prime movers at next year's HVTT 11 conference has spent many years working to bring higher productivity safe vehicles into the Australian road transport industry.

Q ueensland Department of Transport and Main Roads Principal Engineer, Les Bruzsa, has spent

much of his working life trying to improve the effectiveness of the trucking industry. He has been at the forefront of moving forward the vehicle technology used in road transport, bringing a practical and inclusive approach to the relationship between regulators and the transport industry. In his time, he has been involved in a large number of projects making practical improvements in the types of vehicles used on our roads and also in developing



the knowledge the regulators need to assess which vehicle suits each type of infrastructure. One of the projects closest to Bruzsa's heart is Performance Based Standards in which he has been involved from its inception. This has included a period when he was seconded to the National Transport Commission to try and bring the project from a smart idea to a practical

reality for operators wanting to expand the envelope of vehicle performance and productivity. "I think the HVTT is an absolutely fantastic series of conferences," says Bruzsa. "It's very special because it is bringing together all the different facets of road transport, not just vehicle design, safety and operational issues but also related areas such as infrastructure and logistics. I have

been to six of the previous conferences. The fifth conference was held here in 1998, up on the Sunshine Coast in Queensland. "Not a lot of people would realise how complex these issues are. There's the productivity element, the safety element and the infrastructure element. These conferences are bringing all of these different elements together. This conference also provides an excellent forum to see what other countries are doing, how other areas of the world are managing heavy vehicle operations." Bringing together the latest transport research results from around the world gives a chance to compare the issues being faced by trucking in different countries. Often, it serves to illustrate how similar the problems are, globally, but are often surmounted by different solutions. "We have seen presentations from North America, Europe or South Africa talking about the increased freight task, the figures are very similar, even here in Australia," says Bruzsa. "This conference gives you a chance to find out how people are thinking about these challenges. "Australia has been extremely pro-active in driving these issues. We should be very proud that during the last ten to fifteen years at the HVTT, Australia always presented projects which had international significance. Looking back over the years, we have been trying to look at the problems from a different perspective and developed concepts like PBS, innovative heavy vehicle combinations utilising vehicle technologies and you can see a significant shift in thinking. Before 2000, some of the conference delegates were questioning the ideas we were trying to introduce. They said it was impossible, unpractical and the systems just cannot work. Now, Australia has world-leading practices on our roads, in terms of heavy vehicle concepts and management methods and other countries are looking at our examples. PBS type vehicles are operated in South Africa and a number of European countries are trialing larger and different heavy vehicle combinations " Conference delegates also get a chance to discuss policy proposals being looked at around the world giving legislators an

opportunity to see how other countries think about the problems of the road transport industry. The complexity involved and the variety of subjects covered within the HVTT provides a useful forum for all the areas of interest to directly interact with each other. The conference is at a very high technical level and the latest research is always on display there. "It's a very important element of these conferences when you can see high-level technical or engineering solutions addressing specific problems by developing regulatory options and moving these solutions into regulations," says Bruzsa. "In that sense, for the regulators it's a fantastic opportunity." "The HVTT conferences provide an opportunity for specialists in the infrastructure area to learn directly and

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understand clearly what is happening in vehicle development. They can use the information they have gained in their own work. Unfortunately, in a lot of countries the vehicle regulators and infrastructure regulators are separated, but at the HVTT, they can see each other at work. "The truck manufacturers come along to talk about the innovations they are introducing or planning. They get the chance to interact with the regulators and get involved in discussions about how the new technologies interact with the infrastructure or traffic management. "I also think truck operators can learn a lot. Even that heavy vehicle operators might be limited by regulatory options available in their own country or

jurisdiction, and if they learn about innovative combinations they may not be able to use them. However, they do get an opportunity to see what new technologies are going to become available." The HVTT has some practical demonstrations and presentations, it is not all highflown theory. Speakers talk about using their new technology in the real world, on the ground. Because the HVTT is taking place in the days leading up to the International Truck and Trailer Expo in Melbourne next March, the delegates will get an opportunity to see the best we have to offer here in Australia. Most operators don't have the time to research cutting-edge technology around the world but with the arrival of the HVTT 11 in Melbourne next March people at the forefront of the latest technological developments in road transport will be

demonstrating what may be possible in the future. There has been some significant changes in Queensland as the management of the transport and road systems is now covered under one roof, with the formation of the Queensland Department of Transport and the Main Roads. This has removed the division between those responsible for the vehicles on the road and those responsible for the infrastructure they were using. "I have been working here since 1995 and we have introduced a number of vehicle concepts such as the AB-Triples, B-Triples, the ICON and then different quad combinations including the AAB quads, BAB quads and ABB quads," says Bruzsa. "We are going to continue to be



proactive in supporting innovative road transport solutions. We have a really complex environment in Queensland, we have a mixture within the fleet you probably wouldn't see anywhere else. We have a busy, heavily populated and growing urban environment in the South-East corner of the state and then we have road trains running large distances in the West and up to north. We have to cater for the different needs and this is why Queensland has always been a bit different than other jurisdictions. "We need a proper technical understanding of the issues so when an innovative idea comes along we have got the expertise and the ability to assess it. Our approach has been to do the computer simulation and assessments of these new vehicle concepts and then we always tested these

under the Guidelines Multi-combination vehicles and are permitted to run on any Type 2 road train route. The Sunshine State has also allowed some vehicles to run on permit on specific routes if they were shown to perform better than the existing vehicles they replace. The Department of Transport can monitor the situation to ensure safety and infrastructure are not compromised. Special conditions can be attached to these permits such as mass and maintenance management, vehicle monitoring or speed limits. There is a BAB-quad, at 47m long, running on a Type 1 road train route, for example. This is because it performs better than the double road trains being used before. The increased vehicle length does raise some issues but any potential issues have

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vehicles on road. We haven't allowed the operation of innovative combinations without establishing their on road performance first. We have a lot of expertise in our department and we have been helping other jurisdictions as well as the National Transport Commission in the development of PBS and innovative vehicles. "PBS is now available and gives operators a regulatory framework for the assessment and approval of non-standard configurations. Some of the PBS standards and values will have to be reviewed and that is happening right now. That's important, especially for some of the more remote type of operations, and it's not a coincidence that we haven't had any PBS Level 4 vehicles going through the system." Some road trains had been running in Queensland as BAB and ABB quads under permit but they have now been included

been addressed by the operator and the Department. Local drivers have been surveyed and they are comfortable with overtaking the new quads due to their excellent on-road performance. In fact, they are more comfortable overtaking a BAB-quad than they are overtaking a double road train. There is an additional advantage with the number of trucks on the road being significantly reduced. Queensland's regulators are beginning to develop the processes involved in working with PBS. Queensland has already migrated all of its previous road classifications into the PBS classification system. This means when an operator gets their final approval by the PBS PRP panel it is automatically allowed to use the relevant road network, as classified. This has taken another stage out of the system as it was previously used. "We are developing assessment methods of

verifying which routes would suit different lengths of vehicle," says Bruzsa. "There is one particular route we are looking at from Toowoomba to Brisbane Port for the operation of 30m long PBS approved (PBS Level 2B) combinations. It is being assessed at the moment as a desktop exercise using the available infrastructure information to develop a toolset which could be used by other jurisdictions or by local councils for the assessment of PBS Level 2 B networks. "Access to roads controlled by local government is critical and unfortunately, in some cases, they don't have the necessary expertise or resources available to actively assess their networks for the operation of freight efficient vehicles. If an operator was to approach a local council telling them they had a 30m long vehicle, most of them would have significant difficulty to assess suitability of routes. "Some of the issues will be related to mass, these are mainly bridge related issues. Then we have to look at dimensions, mainly geometrical considerations plus traffic safety factors. We want to use the capabilities of our infrastructure as efficiently as we can. It's a new sort of thinking and we have to push and identify what the acceptable limits are for a particular bridge or a particular intersection." Other Australian states are interested in the work Queensland is doing, especially to establish what the limitations are on vehicles between 26m and 30m overall length, as this appears to be the area where new developments may be possible in the next few years. The prospect of combinations capable of carrying two 40ft containers has the potential to vastly improve utilisation of existing equipment. "We are also looking into the issue of tri-drive prime movers and tandem drives with lazy axles," says Bruzsa. "A lot of questions have been raised with the performance of some of these combinations because they are thought to be more road damaging. Currently, there are limits to how transport operators are allowed to use these vehicles as tri-drive units in certain combinations and not in others.

"We are doing a project to assess the performance of these tri-drive prime movers in all sorts of different combinations to see what sort of pavement wear you will get, especially in tight turns or on grades. The Department of Transport and Main Roads is examining the area in and around the Port of Brisbane. They are planning to allow the operation of larger combinations on suitable and restricted networks and they are looking at the extended operation of Super B-doubles and other PBS type combinations capable of carrying four TEUs. Within the Port they are just about to introduce a six TEU combination. This combination is a Super B-triple which can be used in two different configurations. One is to carry empty containers around the port but some will be utilising the four axle A trailers, enabling them to run with fully loaded containers. After the original concept was discussed, the Department of Transport and the Port of Brisbane Corporation went through an exercise using computer simulation of candidate vehicle options. Possible problems on the routes to be used were identified for improvement and then a practical on road test was carried out to ensure the feasibility of the new combinations. "We are approving new vehicle combinations based on solid technical data which we are convinced is sound," says Bruzsa. "These new trucks are going to be very interesting and might change the layout of existing heavy vehicles. We are also examining our existing quad axle policy as well as the existing Super B-double rules." Moving forward the regulatory environment is starting to appear more flexible and taking a more pragmatic and inclusive approach to the relationship between high productivity vehicles and the rules set up to control them. Bruzsa's work in this area has been one of the influences bringing the legislators and trucking industry into this new regulatory atmosphere for road freight.

