

BIC Proposal for Steerable Tag Axle Use on 13.5metre to 14.5metre Vehicles

Submission by the Bus Industry Confederation



February 2009

Aim:

For the Bus Industry Confederation (BIC) to work with NTC to develop a bus specific PBS process to develop a blueprint for 13.5 to 14.5 metres (6x2) vehicles utilising a steerable tag rear axle. By creating a single standard it is BIC's intention to:

- Eliminate inconsistencies between state regulations for buses and coaches.
- Reduce the cost of certification and approval for supplier members.
- Allow for higher capacity vehicles to be utilised in the transport task, reducing the fleet required.
- Reduce road use and damage caused by these vehicle types.

Background:

With the introduction of the above mentioned chassis by a number of industry suppliers the chassis now being offered in Australia have in a number of cases increased the axle spread between the drive axle and tag axle from 1350 mm to 1500 mm and added a steerable tag axle. In doing so, the tag axle can no longer be used in the $\frac{1}{3} - \frac{2}{3}$ calculation for the rear overhang as stipulated under the Australian Design Rules. Based on the current legislation, the rear overhang on these vehicles must be measured from the centre of the drive axle to the rear most body component.

This new chassis, once bodied and complete, **is no longer or heavier than vehicles already sold in Australia using a fixed tag axle with lengths already up to 14.5 metres.** These buses/coaches currently operate under a permit throughout Australia for controlled access (same as PBS level 2).

The advantage of the steerable tag axle is that it reduces tag tyre drag, resulting in less tyre wear, less road damage and a reduction in the overall operating carbon footprint of such a vehicle.

Once a chassis is bodied the rear overhang is greater than the allowable 4.3 m or 60% of the wheel base in Victoria, SA. (In the state of Victoria and NSW, a Maximum rear overhang of 4.9 m is permitted for a trailer carrying vehicles i.e. car carriers). This has required a number of suppliers in Australia to submit a PBS submission to the NTC to gain approval to operate these units in Victoria, as the rear overhang on the 13.5 and 14.5 m bus/coach, range from 4,405mm to 4,500mm or greater but less than 4,700mm.

The legislation in the states of NSW and Qld allow Controlled Access Buses of up to 14.5 metres in length with a rear overhang of 4.7m > 4.9m or 70% of the wheelbase whichever is the lesser. This in itself places Victorian operators at a disadvantage due to the additional costs involved in having the PBS approval and certification. The reduction in the steer tag operation to meet the PBS 350 mm rear tail swing will increase the tyre wear on the tag axle compared to the NSW and Queensland operators.

Where does this leave those operators in NSW and QLD who operate these controlled access vehicles (tour coaches, government operated rail services) down the East coast into Victoria or SA.

These coaches don't meet the Victorian or SA rear overhang restrictions/tail swing and by entering the states of Vic or SA would do so illegally.

In 2008 suppliers utilised the PBS system widely with Iveco, Scania and Volvo submitting applications. The cost of such an application can cost \$17,500 per vehicle per, vehicle types. This is a large cost for suppliers to meet. In addition the PBS system is currently written in such a way that a new PBS must be submitted if.

- Another body builder other than the current body builders is used.
- Approved body builders build a bus/coach body with a different length or body design than what has been approved
- If the measurements, wheel base and overhangs change.

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- The curvature on the front and rear headers change.
- If a different type of front or rear suspension is used.
- If a larger engine plant than approved is used.
- If a different type of transmission/gearbox is used.
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Future Development:

The suppliers represented by BIC are united in their desire to create a blueprint for the vehicles outlined in this paper. In doing so, the supplier base suggest an approach that recognises that:

Drive train combinations have little effect on critical measurements and dimensions as outlined in the PBS standards (turning circle and tail swing) and should be eliminated based on the ability to satisfy existing ADR's pertaining to those items.

The European Directive 97/27/EC for tail swing of .600mm is adopted as the maximum level for use in Australia.

Existing road networks and their use be considered specifically for bus allowing vehicles in the commuter, tourism, school and charter sectors to operate on Category 1 and 2 roads as is allowed in NSW and Queensland.

BIC seeks guidance by the panel as to the most appropriate way to proceed. Industry fully supports the PBS process and is eager to assist the NTC in developing a process for blueprint development specific to the bus and coach industry. Based on existing permits granted in NSW and Queensland, European standards and PBS applications submitted by member companies, BIC is confident that if required, a "standard" vehicle specification can be proposed to NTC and an industry approval granted.

Ownership of such a blueprint would remain the property of BIC for use by its members only controlled via the supplier sub-committee in the BIC forum.