

Future Highways – Future Vehicles

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Innovative heavy vehicles

2016 Vehicle and Dimension and Mass Rule

- Standard vehicle width increased to 2.55m (from 2.5m)
- New Height of 4.3m (was 4.25m)
- Weight allowances for buses
- New permit type for specialist operations - buses, rubbish truck, concrete truck, ground spreaders



Performance based standards

- Performance Based Standards (PBS) to determine whether non-standard heavy vehicles meet safety performance requirements equivalent to standard vehicles
- Refreshed and released in 2019
- PBS crafted with industry. Tests conducted through TERNZ
- Utilising VDaM permitting regime with PBS testing - a mechanism to bring innovative vehicles into operation.



R23T22 Hiab Testing

29m B Train- Port Napier

- Both trailer axle groups are Trackaxle bogies
- Improved low speed turning
- Reduces pavement scuffing
- Productivity gains
- Specific Route

<https://www.youtube.com/watch?v=TrQ2nfA8zs0>



Designed by Total Transport
Engineers- Craig Gordon

- Skeletal B-train with self-steering bogies keeping the wheels perpendicular to the radius of turn.
- There's no scuffing, reducing large tyre wear and optimising manoeuvrability at low speed.
- The bogies lock at high speed ensuring the combination remains safe - an example of using PBS to design a vehicle that meets low speed turning requirements and high speed safe dynamic handling characteristics.



Disabled combinations recovery

PBS Testing used to determine framework of operation



Figure 14. Northbound in the 35 km/h advisory speed curve at the Otahuhu end of the Mt Wellington Highway.



Ace heavy vehicle recovery truck



Figure 15. 65km/h curve connecting SH1 to SH20.



Figure 16. 45km/h curve on Penrose Rd.



23m Carr & Haslam truck and simple trailer car transporter

Green Trucks



- Heavier vehicles
- Heavier axle loading
- Reduction in deck space/reduced payload
- EV-Extra weight for battery containment frame