

Submission to: National Transport Commission

Title: Access to PBS mass limits for truck and trailer combinations

Date: 6 November 2014



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1. Introduction

This ATA submission to the NTC review of access to PBS mass limits for truck and trailer combinations conveys the feedback received from ATA member associations and industry stakeholders including:

- operators, including PBS vehicle operators
- trailer manufacturers
- designers of innovative heavy vehicles, and
- holders of existing PBS design approvals

The NTC paper identifies options under which six and seven-axle truck and trailer vehicle combinations may operate at mass limits currently offered under the PBS scheme without the need for PBS assessment.

From the outset, the ATA notes the NTC paper reports that PBS truck and trailer designs account for some 63 per cent of all PBS vehicle design applications. However, it makes few references to other factors with significant influence on operator decisions in terms of vehicle configuration selections.

PBS seven axle truck and dog trailer combinations are afforded the same General Mass Limits (GML) and CML weights as compliant seven axle B-double vehicle configurations. The ATA believes a broader comparison shows:

- a minor benefit in payload for truck and dog combinations
- a decreased safety performance for truck and dog combinations
- the same pavement wear for same axle group weights
- significant benefit in registration costs for truck and dog combinations. (\$9,327.00 vs. \$13,141.00) and
- better performing alternatives (dynamically speaking) currently pay a registration premium for delivering enhanced vehicle safety.

After years of PBS-related activity, there is also still the outstanding matter of comprehensive, published PBS access level networks. For all levels of PBS access, the broader principle of network maps needs to be addressed. This and other factors mitigating the overall success of the PBS scheme are discussed below.

The ATA's [Technical Advisory Procedure \(TAP\) for Truck and Dog Trailers](#) was released in 2008 to promote good design practices for truck and dog trailer configurations. It aims to do this by identifying important parameters relevant to dynamic performance by providing reliable information. The ATA technical procedure places particular emphasis on good design practice for achieving improved dynamic stability in truck and dog trailer combinations exceeding 42.5 tonnes Gross Combination Mass (GCM).

The ATA recommends that vehicles operating above GML be enrolled in an appropriate mass management accreditation scheme because the average freight customer cannot easily be expected to identify vehicle non-compliance so a key focus should be on operator compliance.

An increase in the use of the seven axle truck and dog (Quad Dog) combination at 57.5 tonnes may present a logical choice for construction material transporters, but as such combinations emerge in other (e.g. tanker) applications the trend will affect operator configuration choices and curtail market demand for what most of industry considers to be the more stable, roll-coupled vehicle - the B-double.

The ATA welcomes any outcome of this mass limits review that resolves the longstanding question of which combination types may be granted access and where. The ATA strongly supports automatic access for PBS-approved truck and trailer combinations on B-double routes.

2. Australian Trucking Association

The Australian Trucking Association (ATA) is the peak body that represents the trucking industry. Its members include state and sector-based trucking associations, some of the nation's largest transport companies, and businesses with leading expertise in truck technology.

3. Recommendations

Recommendation 1

That any heavy vehicle operating above GML be enrolled in an appropriate mass management accreditation scheme.

Recommendation 2

That outcomes of the review lead to a demonstrable increase in PBS applications, in vehicle registrations and in access for safer, dynamically superior roll-coupled heavy vehicle combination alternatives.

Recommendation 3

The ATA supports the NTC review resolving which type of combinations may be operated and where.

Recommendation 4

The PBS Review Panel should be replaced with a more effective, responsive body to drive PBS scheme outcomes.

Recommendation 5

The NTC should develop a design check tool for prescriptive designs of six axle truck and dog combinations and seven axle truck and dog combinations at PBS mass limits.

4. ATA Responses to NTC questions

Q1 How do the improvements to the PBS scheme under the NHVR affect you as a manufacturer or an operator?

Time Saving: The PBS Review Panel (PRP) is an unnecessary body that significantly delays the non-engineering stage of the PBS approval process without value adding (a typical approval process may take several months). It seems to industry that the panel members do not place sufficient weight on the PBS assessment methodology, especially the rounding up or down of assessment values.

When the NHVR commenced in February 2014 and was made responsible for administering PBS, the PRP became an additional layer of bureaucracy that should be disbanded or, if necessary to meet PBS legislative requirements, be replaced with a more effective body.

Cost Saving: Months of delay are often experienced by applicants especially at the non-engineering approval stage of the PBS approval process and this is extremely frustrating and expensive for the applicants. Many of those consulted were comfortable with a 28 day turnaround time stipulated for access applications but none reported ever achieving such timeliness.

Access Approval: Rights to access with PBS vehicles are overstated in the NTC paper. When the ATA consulted stakeholders for the purpose of drafting this submission, they reported common issues such as:

Access to Information:

- *Questions about access:* Some operators state their relevant state road agencies have found it difficult to answer detailed PBS enquiries. For example, operators have enquired if a PBS vehicle longer than 19m is eligible for General Access, and why 19m B-doubles carrying 57.5 tonnes have General Access through a particular council area yet 19m PBS trucks and quad dogs at 56.5 tonnes with the same number of axles do not.
- *PBS maps:* Maps are not updated regularly enough for participants' business requirements.
- *Last mile access:* Despite NHVR transitional notices, some councils are still failing to grant access easily and quickly at the ends of PBS routes.

Timeliness: An operator reported that an application for an access permit for an approved PBS vehicle was lodged with the NHVR in the first week of September 2014, although any delay is not strictly to be longer than 28 days. The operator has received a number of automatic responses including advice the application is under ‘road manager consideration’ and will be resolved by 4 November. No further response had been received at the time of writing.

Aside from some minor dynamic safety improvements. PBS has only afforded (validated) truck and dog combinations access to what has been the common practice for 25 years in Western Australia; with the exception of 48 tonne six axle truck and dog combinations in NSW (45 tonnes in Victoria); 50 tonne seven axle truck and dog combinations in NSW, and:

- The PBS truck and dog combination will never provide better safety dynamics than an equivalent B-double, until such time as the truck and dog combination is fully roll-coupled; and
- 20 metre PBS truck and dog combinations are afforded prime mover selection benefits over 19 metre B-doubles (EAM¹ compliance).

Q2 What further improvements to the NHVR-led PBS scheme are necessary to improve or expedite the approvals process for truck and dog combinations?

The NTC paper explores the option of delivering PBS efficiencies via a “prescriptive” design. It also explores dimensional envelopes and power requirements.

In 1996, *Roaduser Research* reviewed the dynamic performance of trucks and dogs, identified primary performance influences and expanded this into a reference formula.

The design reference to a formula was then used in the ATA’s Technical Advisory Procedure² (TAP) and this principle results in a highly useful design check tool. The NTC is encouraged to develop a similar design check tool for prescriptive designs for six and seven axle truck and dog combinations at PBS mass limits. This would allow operators to self-certify prescriptive designs and avoid an otherwise lengthy process.

Q3 What aspects of the current PBS scheme have attracted you to participate?

Some operators reported the use of B-double vehicle configurations and that they also held a number of other PBS approvals.

Improved productivity and reduced costs remain the twin motivations for operator participation in the PBS. This scheme is still the only available means (excluding livestock transport options) of increasing dimension (volumetric productivity) and mass (4.6metre high trailers).

With respect to infrastructure, neither road pavement nor bridges respond differently to access by a truck and dog or by a B-double of the same axle configuration. The disparity in registration costs, as noted in section 1 above, between these two types of vehicle combination therefore needs explanation.

As also noted, there is the outstanding matter of comprehensive (published) PBS Access level networks after years of PBS vehicle approvals. For all levels of PBS access, the broader principle of network maps needs to be addressed.

An access table is provided below that indicates stakeholder understanding of current access for PBS vehicles. The ATA believes the NTC paper overstates the level of access.

Level	ACT	NSW	NT	QLD	SA	TAS	VIC
2	x	✓	✓	✓	✓	✓	✓
2B	x	x	✓	Limited	x	x	x
3	x	Limited	✓	✓	✓	x	x

¹ Extreme Axle Measurement.

² The ATA TAP for Truck and Dog Trailers is available at http://www.truck.net.au/system/files/industry-resources/truck%20and%20dog_0.pdf

Q4 Of the options presented here, which do you prefer and why?

a. Are there any options that have not been considered in this paper, but you feel deserve merit? If so, please provide details.

No.

b. Of the options presented here, are there any you feel strongly against? If so, why?

Yes, options 1; 2; & 3 are not supported.

1. *Status quo*: This would not progress the original vision of PBS since it was that PBS vehicles over time would migrate to prescriptive vehicles.
2. *Limit bin and payload heights*: Such requirements are not generally enforceable and do not guarantee superior dynamic performance.
3. *Develop a PBS-compliant blueprint*: This option is too detailed and inflexible and doesn't meet the original goal of a prescriptive vehicle.

4. *Develop a specification envelope*:

This approach removes elements of the PBS process using critical dimensions and the performance formula but it would need to be supported by a "certification" as a template that could be prepared by NTC, thus enabling self-certification as well as a reference for roadside enforcement.

Operators also suggest that application form entries would include (but not be limited to):

Truck make and model

- Vehicle Identification Number (VIN)
- Wheelbase
- Axle group spread
- Coupling offset
- Engine max power/torque

Trailer make and model

- VIN
- Wheelbase
- Axle group/s spread

Vehicle certification records should also be held by the National Heavy Vehicle Regulator (NHVR) with information submitted through secure access to online application forms or templates for pre-registration and registration. The application would complete calculations in accordance with the formula and specifications and the result would be a Pass/Fail.

Q5 Have you used any of the NTC released PBS approved blueprints? If so, which and to what degree of success?

ATA feedback indicates that some operators have attempted and failed to use the 20 metre semi-trailer "blueprint" tool primarily because the input limits are far too conservative.

Q6 What effect do you expect the release of NTC - developed blueprints to have on the industry? Please provide a detailed response.

As per Q5 above, unless these new blueprints are very flexible, the ATA's feedback indicates operators are unlikely to receive significant benefits.

Q7 Does the use of available manufacturer blueprints meet the needs of operators seeking access to PBS mass limits?

Potentially yes, but many stakeholders do not understand the axle spacing requirements (internal groups and EAM³) therefore any tool must include Pass/Fail for all aspects.

Q8 If, as a manufacturer, you do not have your own PBS blueprints, how would the release of government developed blueprints/specification envelopes (An envelope is envisaged as a document that contains a set of requirements in drawings and text form that a vehicle will be required to comply with so it operates with increased mass limits.) influence your decision to pursue the PBS truck and dog market?

Operator feedback indicates that prescriptive dimensions and formulae will result in simplification and that a self-certification process would be of general benefit.

Q10 If the NTC develops these specification envelopes for commercial use, do you think this will affect innovation in the design and manufacture of truck and trailer combinations?

No. Access to PBS for configurations outside the parameter limits of specification envelopes will hopefully remain and thus innovation should continue to emerge where the freight task requires combinations outside envelope limits.

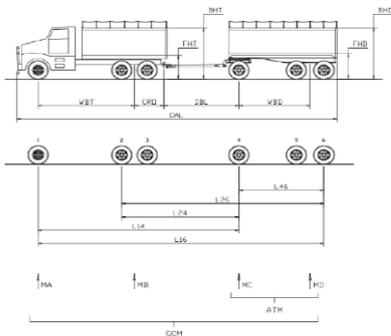
Q11 Are the specification envelopes developed in this discussion paper practical and easy to read and adopt, from a manufacturer/operator as well as a state and territory point of view?

Yes.

Q12 Are the assumptions on which the envelopes are based reasonable? Do any of these assumptions need to be modified before such an envelope can be implemented ?

No. For example, some drawbar length dimensions do not meet ADR limits. Torque requirements also seem to have been based on 11R22.5 tyres only.

Vehicle Specification Envelope (3-axle dog)



PRIMARY DIMENSION LIMITS (METRES)									
	WBT	CRO	DBL	WBD	FRT	FRD	BRT	BRD	OAL
MIN	4.500	1.500	4.700	3.650	-	-	-	-	-
MAX	5.400	1.650	5.900	5.000	1.400	1.450	3.000	3.000	20.000

AXLE SPACING AND MASS SCHEDULE (METRES & TONNES)											
	MA	MB	MC	MD	GCH	ATH	L46	L26	L24	L14	L16
MIN	6.5	9.0	16.5 (GML)	17.5 (GML/HML)	-	-	-	-	-	-	-
MAX	6.5	9.0	16.5 (GML)	17.5 (GML/HML)	-	-	-	-	-	-	-
RESTRICTED ACCESS (B-DOUBLE NETWORK)											
MIN	48.5	49.5	49.5	25.5	26.0	4.333	9.833	4.333	6.333	12.333	12.333
MAX	48.0	49.0	49.0	25.0	25.5	4.167	9.667	4.273	6.273	12.000	12.000
MIN	47.5	48.5	48.5	24.5	25.0	4.000	9.500	4.213	6.213	11.667	11.667
GENERAL ACCESS											
MIN	48.5	-	-	25.5	-	4.333	9.833	4.333	6.333	15.500	15.500
MAX	48.0	-	-	25.0	-	4.167	9.667	4.273	6.273	15.000	15.000
MIN	47.5	-	-	24.5	-	4.000	9.500	4.213	6.213	14.500	14.500

FOR GENERAL ACCESS the payload height is restricted to 2.000 metres from the ground
FOR RESTRICTED ACCESS (B-DOUBLE NETWORK) the payload height must not exceed top of bin

Peak engine power (in HP) must be not less than 395

Peak engine torque (in Nm) must be not less than 88,000 divided by (LGR x FDR) where LGR equals Lowest Gear Ratio of gearbox and FDR equals Final Drive Ratio of drive axles.

Truck must satisfy technical requirements for 6.5-tonne regulatory steer axle load
Truck and trailer must have ABS or EBS brakes
Drive and trailer axles must have Certified Road Friendly Suspensions

Figure 9 Specification envelope for 6-axle Truck & Trailer (page 22)

CROmax: is design limiting at 1.650metres requires minor increase ≤ 1.800metres.

DBLmax: at 5.900metres is too long – exceeds ADR maximum of 5.00metres

GCM: HML is not applicable for this configuration CML = GML + 1 tonne - this also equals HML option.

Peak Engine Torque:

The formula does not appear to provide a concession (driveline benefit) for the use of low profile tyres.

The formula appears based on 11R22.5 tyres using 315 revolutions per kilometre.

The formula should be modified to:

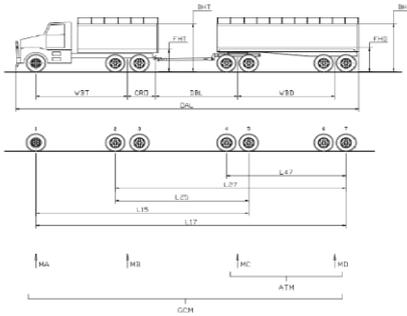
Peak Engine Torque (in Nm) must not be less than 2772000 (nominal) divided by (LGR x FDR x TRK) where LGR equals lowest gear ratio of transmission; FDR equals Final Drive Ratio of driven axles; and, TRK equals Tyre Revolutions per Kilometre:

Further, a table should be prepared (based on Table 1 of ADR 65/00) setting out the tyre revolutions per kilometre ensuring that modern fuel efficient tyre sizes are included:

- 305/70R22.5
- 295/75R22.5

³ Extreme Axle Measurement.

Vehicle Specification Envelope (4-axle dog "low")



PRIMARY DIMENSION LIMITS (METRES)									
	WBT	CRD	DBL	WBD	FBT	FBD	BBT	BBD	DAL
MIN	4.500	1.500	3.300	4.500	-	-	-	-	-
MAX	5.800	1.650	5.000	6.950	1.400	1.450	3.000	3.000	20.000

AXLE SPACING AND MASS SCHEDULE (METRES & TONNES)										
MA	GCM									
	MB/MC/MD	16.5 (OHL)	17.0 (CHL/HML)	ATH		L47	L27	L25	L15	L17
	GCM	CHL	HML	OHL	CHL/HML	MIN	MIN	MIN	MIN	MIN
RESTRICTED ACCESS (B-DOUBLE NETWORK)										
56.0	57.5	57.5	33.0	34.0	6.833	13.333	6.833	8.833	17.333	17.333
55.5	56.5	57.0	32.5	33.5	6.667	13.000	6.750	8.750	17.000	17.000
55.0	56.0	56.5	32.0	33.0	6.500	12.667	6.667	8.667	16.667	16.667
54.5	55.5	56.0	31.5	32.5	6.333	12.333	6.583	8.583	16.333	16.333
54.0	55.0	55.5	31.0	32.0	6.167	12.000	6.500	8.500	16.000	16.000
53.5	54.5	55.0	30.5	31.5	6.000	11.667	6.417	8.417	15.667	15.667
53.0	54.0	54.5	30.0	31.0	5.833	11.333	6.333	8.333	15.333	15.333
GENERAL ACCESS										
50.5	-	-	27.5	-	5.000	11.500	5.917	7.917	17.500	17.500
50.0	-	-	27.0	-	4.833	11.000	5.833	7.833	17.000	17.000
49.5	-	-	26.5	-	4.667	10.500	5.750	7.750	16.500	16.500
49.0	-	-	26.0	-	4.500	10.000	5.667	7.667	16.000	16.000

Peak engine power (in HP) must be not less than 405
 Peak engine torque (in Nm) must be not less than 92,000 divided by (LGR x FDR) where LGR equals Lowest Gear Ratio of gearbox and FDR equals Final Drive Ratio of drive axles.
 Truck must satisfy technical requirements for 6.5-tonne regulatory steer axle load
 Truck and trailer must have ABS or EBS brakes
 Drive and trailer axles must have Certified Road Friendly Suspensions

Figure 10 - Specification envelope for 7-axle Truck & Trailer with low bins (page 23)

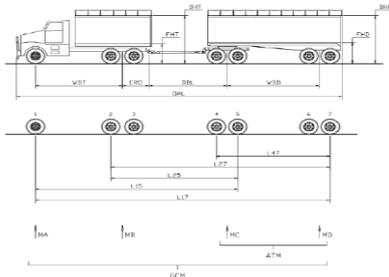
CROmax: is design limiting at 1.650metres requires minor increase ≤ 1.800metres.
 DBLmax: at 5.600metres is too long – exceeds ADR maximum of 5.00metres
 WBD: The minimum reported wheelbase is potentially confusing. The maximum axle spacing (by the ADR) for tandem axle groups is 2.0metres.

However, for gross mass dimension L47min is 6.833 metres; therefore the minimum wheelbase (WBD) should be 4.833 metres.

GCM: The GCM table seems to treat a truck and dog combination as a B-double for CML considerations although this may not be the intent of the paper. Again, if CML is reported correctly then HML is a redundant option.

Peak Engine Torque: The constant should be 28980000 (nominal).

Vehicle Specification Envelope (4-axle dog "high")



PRIMARY DIMENSION LIMITS (METRES)									
	WBT	CRD	DBL	WBD	FBT	FBD	BBT	BBD	DAL
MIN	4.500	1.500	3.300	5.500	-	-	-	-	-
MAX	5.800	1.650	5.000	6.950	1.400	1.450	3.000	3.000	20.000

AXLE SPACING AND MASS SCHEDULE (METRES & TONNES)										
MA	GCM									
	MB/MC/MD	16.5 (OHL)	17.0 (CHL/HML)	ATH		L47	L27	L25	L15	L17
	GCM	CHL	HML	OHL	CHL/HML	MIN	MIN	MIN	MIN	MIN
RESTRICTED ACCESS (B-DOUBLE NETWORK)										
56.0	57.5	57.5	33.0	34.0	6.833	13.333	6.833	8.833	17.333	17.333
55.5	56.5	57.0	32.5	33.5	6.667	13.000	6.750	8.750	17.000	17.000
55.0	56.0	56.5	32.0	33.0	6.500	12.667	6.667	8.667	16.667	16.667
54.5	55.5	56.0	31.5	32.5	6.333	12.333	6.583	8.583	16.333	16.333
54.0	55.0	55.5	31.0	32.0	6.167	12.000	6.500	8.500	16.000	16.000
53.5	54.5	55.0	30.5	31.5	6.000	11.667	6.417	8.417	15.667	15.667
53.0	54.0	54.5	30.0	31.0	5.833	11.333	6.333	8.333	15.333	15.333
GENERAL ACCESS										
50.5	-	-	27.5	-	5.000	11.500	5.917	7.917	17.500	17.500
50.0	-	-	27.0	-	4.833	11.000	5.833	7.833	17.000	17.000
49.5	-	-	26.5	-	4.667	10.500	5.750	7.750	16.500	16.500

Peak engine power (in HP) must be not less than 405
 Peak engine torque (in Nm) must be not less than 92,000 divided by (LGR x FDR) where LGR equals Lowest Gear Ratio of gearbox and FDR equals Final Drive Ratio of drive axles.
 Truck must satisfy technical requirements for 6.5-tonne regulatory steer axle load
 Truck and trailer must have ABS or EBS brakes
 Drive and trailer axles must have Certified Road Friendly Suspensions

Figure 11: Specification envelope for 7-axle Truck & Trailer with high bins (page 24)

CROmax: is design limiting at 1.650metres requires minor increase ≤ 1.800metres.

If CML reported correctly, HML is a redundant option.

Peak Engine Torque: See comment above constant should be 28980000 (nominal).

Q13 The complexity of PBS blueprints means they can be difficult to add to regulations. Do you expect any of the options presented in this paper to improve access to higher mass limits for heavy vehicles? What is your preferred option to advance this project?

The NHVR describes CML like this:

Mass limits for CML are set at 5% above the General Mass Limit (GML), subject to:

- a maximum of 1 tonne for a vehicle or vehicle combination with an allowable gross mass not exceeding 55 tonnes; and,

- *a maximum of 2 tonnes for vehicle combinations with an allowable gross mass exceeding 55 tonnes an upper limit on axle and axle group mass as described in the table of Concessional Mass Limits as per following Table 1.0 (not included here)*

Thus, for comparison:

A six (6) axle truck and dog trailer:

- $GML = 6.5 + 16.5 + 9 + 16.5 = 48.5$ tonnes
- $CML = 6.5 + 17 + 9 + 17 = 49.5$ tonnes (≤ 55 tonnes GML + 1 tonne – OK)
- $HML = 6.5 + 17 + 9 + 17 = 49.5$ tonnes (no benefit over CML)

And seven (7) axle truck and dog trailer:

- $GML = 6.5 + 16.5 + 16.5 + 16.5 = 56.0$ tonnes
- $CML = 6.5 + 17 + 17 + 17 = 57.5$ tonnes (≤ 55 tonnes GML + 2 tonnes – OK)
- $HML = 6.5 + 17 + 17 + 17 = 57.5$ tonnes (no benefit over CML)

There seem to be issues with processing additional vehicles into existing PBS approvals. This scheme has inherent complexities when adding vehicles to existing approvals or updating access approvals.

For vehicles operating under CML, the axle groups are treated as operating at GML. PBS references to CML and HML are most confusing and the NHVR could simply remove references to HML since it is only an increase in mass limits in comparison with the statutory limits for the prescriptive combination.

Q14 For existing combinations, significant modification may be required to take the vehicle from being prescriptive to meeting the requirements of the blueprint. This would likely involve modifications being certified by approved engineers. Given the monetary and time costs associated with getting the vehicle modified, certified and exempted, are you more likely to:

a. Modify your vehicle? If so, why?

Vehicles will only be modified after a cost/benefit analysis by the operator, thus decisions will not be the same for all operators.

b. Replace your vehicle with an 'off the shelf' model constructed to the blueprint specification? If so, why?

This is unlikely since replacement considerations are always subject to an operator's cost/benefit analysis.

c. Replace your vehicle with another PBS approved design? If so, why?

This option appears in effect the same as option (b).

d. Continue to use the prescriptive vehicle? If so, why?

As noted, configuration decisions by operators are the result of their respective cost/benefit analyses.

[See Appendix 1 overleaf]

Appendix 1

Truck and dog combinations > 20 metres OAL and/or > 56 tonnes GML – Full PBS assessment:

INPUTS:										NHVR - On-Line Assessment Tool					
TRUCK															
Make/Model	VIN:	Wheelbase	FOH	Maximum Power kW	Maximum Torque Nm	Coupling Offset	Suspension RFS	Drive Tyre Size	Transmission Lowest Gear Ratio	Rear Axle Ratio	No: Axles	Axle Group Spread	Manufacturers GVM	Manufacturers GCM	Operating GCM (GML)
Volvo FM		4800	1532	332	2150	1650	RF 2010	11R22.5	14.41	3.09	3	1370	24500	70000	56000
TRAILER															
Make/Model	VIN's: (can be multiple)	Wheelbase	No Axles	#1 Axle Group Spread	#2 Axle Group Spread	Drawbar Length	#1 Axle Group GGALR	#1 Axle Group Statutory Mass Limit GML	#1 Axle Group Suspension RFS	#2 Axle Group GGALR	#1 Axle Group Suspension RFS	#2 Axle Group Suspension RFS	Trailer ATM	Trailer Rear Overhang	
ATA DOG		6000	4	1250	1250	4450	20000	16500	RF 2008	20000	16500	RF 2008	34000	1500	
RESULTS															
Overall Length	19932	PASS		Truck Wheelbase	PASS		Truck RFS	PASS		EAM	17525	PASS			
Minimum Torque	2066.1667	PASS		Coupling Offset	PASS		Trailer #1 Axle Group RFS	PASS		Axles 1-5	11525	PASS		NHVR RCN:	123456
				Trailer Drawbar	PASS		Trailer #2 Axle Group RFS	PASS		Axles 2-5	7410	PASS		Date:	15-Oct-14
				Trailer Wheelbase	PASS		GCM (CML)	PASS		Axles 4-5	7250	PASS		NHVR Reference:	Auto File No:

Prescriptive dimensions for truck and trailer combinations > 42.5tonnes GCM & ≤ 20 metres OAL:

- Six (6) axle (high CoG) ≤ 48.5 tonnes GCM – General (PBS Level 1) Access
- Six (6) axle (low CoG) ≤ 48.5 tonnes GCM – General (PBS Level 1) Access
- Seven (7) axle (high CoG) ≤ 50.5 tonnes GCM – General (PBS Level 1) Access
- Seven (7) axle (low CoG) ≤ 50.5 tonnes GCM – General (PBS Level 1) Access
- Seven (7) axle (high CoG) ≤ 57.5 tonnes GCM – RAV (B-double routes and/or PBS Level 2) Access

- Seven (7) axle (low CoG) \leq 57.5 tonnes GCM – RAV (B-double routes and/or PBS Level 2) Access

Process for compliance to requirements:

1. Self-certification by on-line assessment tool using an NTC/NHVR developed formula:
2. Includes truck and dog VIN:
3. User is registered with NHVR and has a unique user number with secure access
4. Hardcopy of data and PASS/FAIL output
5. Auto generated NHVR File Reference