

[2015]

OC6 Trailer Report



Grant Olds
For AOCRA
26th February 2015

OC6 Trailer Report

The purpose of this report was to:

1. Identify any and all current state regulatory restrictions and issues relating to the transportation of OC6 canoes to both Intra State and Interstate regattas
2. Contact organisations in a similar position with a view to finding a common outcome.
3. Make recommendations on ways to rectify current concerns.

Background

Each zone holds approximately 6 zone regattas plus additional to these there are currently at least 4 major interstate and international events requiring canoes to be transported. Therefore all competing clubs are either reliant on transportation of their own canoes on their own trailers, find space on other trailers attending these events or, looking to borrow or hire OC6 canoes at these events.

The regulatory issues which have arisen previously have generally occurred by eagle eyed transport enforcement officers, whilst the vehicles have been in transit and not as a result of any major traffic incidents. The writer is aware of some minor traffic accidents which have generally occurred, either through inexperience of transporting such a specific load, or through lack of concentration at a pivotal moment. The rear overhang on existing loaded trailers making it often difficult to access some regatta sites.

With our society becoming increasingly litigious, it is has become more difficult to find members willing to tow illegal loaded trailers to regattas.

Currently, several states do make available restricted permits allowing the current over length loads to be transported in their issuing State. NSW appears to be the most accessible in this regard, however the towing speed of the load must not exceed 80kph and also there are time of day restrictions on certain city locations. Queensland Police have also issued some over-length permits, however it has been pointed out by Transport Queensland that these permits will soon be much more difficult to source.

Current Regulations

In an attempt to produce a national standard regulation relating to the manufacture and towing of light trailers, the Australian Government Department of Infrastructure, Transport, Regional Development and Local Government drafted a standards bulletin.

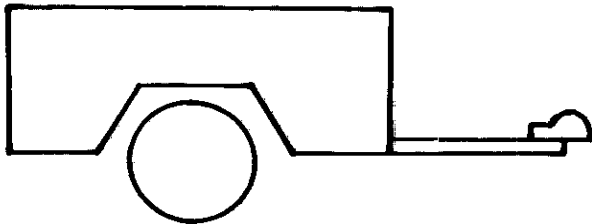
Standards Bulletin 1 (currently version 5.0 June 2009). Building small trailers. Information for manufacturers and importers. Summarised design and testing construction requirements for trailers that do not exceed 4.5 tonnes aggregate trailer mass.

www.infrastructure.gov.au/roads/vehicle_regulation/bulletin/vsb1/pdf/vsb01_june2009.pdf

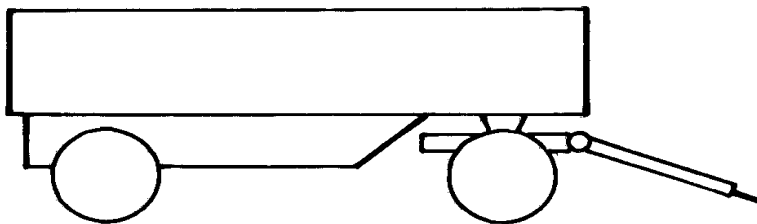
This document has been used by all states to draft their individual state regulations in relation to the manufacturing and towing restrictions of these trailers.

This document, in summary, regulates that there be three basic trailer designs.

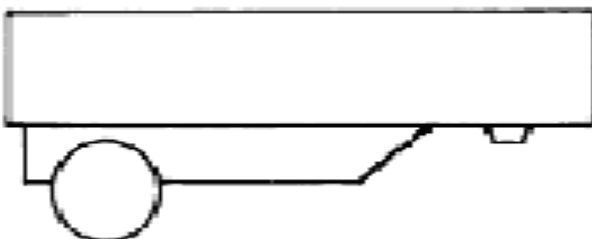
1. Pig Trailer. A trailer having one axle group near the middle of the length of its goods carrying surface.



2. Dog Trailer, A trailer with 2 axle groups of which the front axle group is steered by connection to the drawing vehicle.



3. Semi-Trailer. A trailer having one axle group towards the rear end of the length of its goods carrying surface such that significant load is imposed on the drawing vehicle. Or some of the goods carrying surface is over the towing vehicle.





Current outrigger trailers all appear to come under the heading of Pig Trailer.

The maximum length of these trailers is to be 12.5metres from hitch to the rear of the trailer.

In the case of axle or axel sets, the measure from the centre of the axel, or, in the case of an axel set, the centre point between both axels to the rear of the trailer cannot exceed 3.7 metres. Axel sets can be up to 2 metres apart, however anything over 1 metre apart must have a load sharing suspension.

The maximum combination of vehicle and load must not exceed 19 metres in length.

Below is a simplified table outlining State by State variations, showing slight variations.

State	Maximum trailer Length	Max trailer Lgth inc load	Overall length	Max lgth hitch to axle	Max Trailer ROH	Max Canoe ROH	Max tow speed	Max width
Qld	12.5m		19m		3.7m	5.5m	100kph	2.5m
NSW			19m		3.7m	5m	100kph	2.5m
Vic			19m		3.7m	5m	100kph	2.5m
ACT			19m		3.7m	5m	100kph	2.5m
SA	12.2m	13.5m	19m	8.5m	3.7m	5m	100kph	2.5m
NT			19m				100kph	2.5m
WA			19m				100kph	2.5m
Tas			19m				100kph	2.5m

Queensland Transport has published a guide as per attachment:

Guideline

for Over-dimensional Light Vehicle:

Special Use Trailers carrying

- Dragon Boats
- Gliders
- Rowing Sculls
- Yachts &

Transportation of Over Width Boats from 2.50 metres wide up to 2.90 metres wide

in Queensland



Form Number 26

Version 2

August 2013

Trailing

In an attempt to seek exemption from some non-compliant areas of the current Queensland State laws, a series of discussions were held with administrators and engineers from Queensland Transport. The conclusion from these meetings was that, in most cases, our current trailers are compliant. It is only once the load has been placed on the trailers, do they become non-compliant. They were emphatic that the loads would have to be re-engineered in order to comply. A list of suitably qualified trailer engineers supplied by Queensland Transport is attached.

Department of Transport and Main Roads

Approved Person (Engineers)

Queensland			
Clinton Harry 38 Blackwood Road Geebung Qld 4034 0438 738 454	Alan Marburg P O Box 9385, Wynnum Plaza Qld 4178 0410 669 075	Len Emerick c/- Bozmac Pty Ltd. 96 Lower Mountain Road Hervey Bay Qld 4655 4124 5425	Richard Larsen 101 Lochinvar Road, Upper Kedron Qld 4055 3851 1066
Werner Ihle 6/28 Activity Cres Ashmore Qld 4214 0418 551 331	Garry Bow PO Box 120, Strathpine Qld 4500 3881 1355	Timothy Bartrop 2 Treacher Street Upper Mt Gravatt Qld 4122 0416 273 582	Kevin Walsh Walsh Engineering Solutions Pty Ltd 478 Boundary Street Toowoomba Qld 4350 4634 3344
Bruce Hartwig Sapid Pty Ltd 24 Bailey Street, West End Qld 4101 3255 1621	Graeme Presley Unit 20 49 Gannon Avenue Manly West Qld 4179 3348 2211	Bruce Johnson 4 Colworth Street, Sunnybank Hills Qld 4109 0413 137 201 Sunnybank 3344 1803; Cairns 4097 6731	David Blythe DB Autotech 26 Nicholson Avenue Salisbury Qld 4107 0407 756 870 www.dbautotech.com.au
Willem Saarberg 24 Slatter Court, Brendale Qld 4500 3396 6033	Trent McMahon OS Imports, 2 Solander Street, Carina Qld 4152 0437 126 853	Earl Gilchrist Autotechnica Qld 4/70 Redland Bay Rd Capalaba Qld 4157 0417 229 723	John Allen P O Box 80, Thuringowa Central Qld 4810 4788 8864
Phillip Harris Pipers Glen 315-331 Hein Road, Buccan Qld 4207 5546 3126	Timothy Gregg 813 Upper Ormeau Road, Kingsholme Qld 4208 5547 5879	David Turner Vehicle Safety Certifications & Heavy Vehicle Certifications PO Box 2353 Qld 4002 0434 523 282	Raymond Miller 6 Cloghan Street The Gap Qld 4061 3300 4700
Benjamin Doolan Coastwide Engineering Solutions 0448 899 568 Caloundra West ben@coastwideengsol.com.au www.coastwideengsol.com.au	Christian Arendt 4 Progress Road Rupertswood Qld 4817 4788 7412	Joseph Butterworth Butterworth Automotive Ind 2/13 Focal Avenue Coolum Beach Qld 4573 5471 7296	Vili Masibilo Gladstone Regional Council Vallis Street Calliope Qld 4680 0408 883 080
Henryk Jarzab Automech Design & Testing Services Unit 2, 11 Timms Court Woodridge Qld 4114 3299 3044	Luke Anderson Transmod PO Box 2031 Maryborough Qld 4650 0499 333 911 www.transmod.com.au		

Great state. Great opportunity.



Interstate

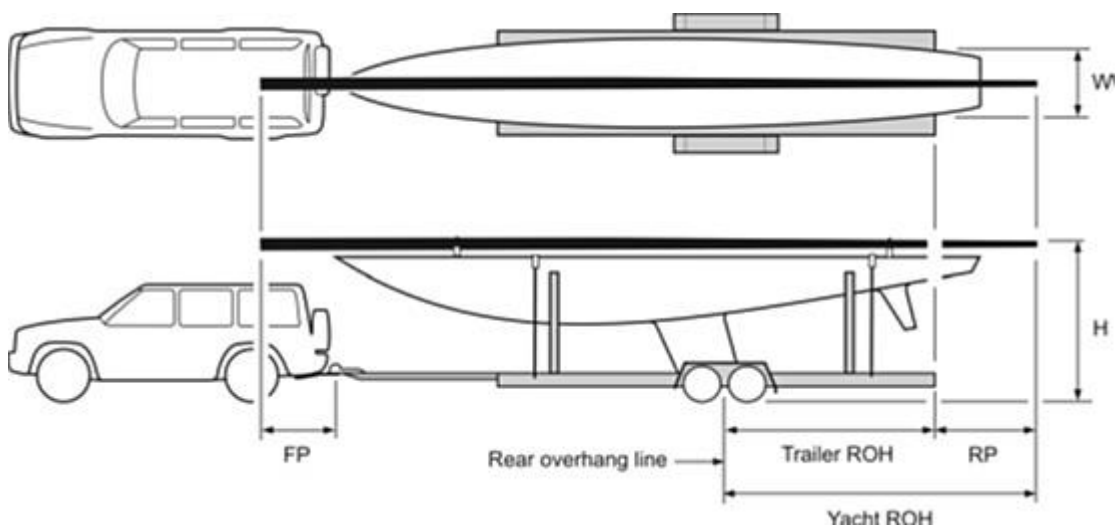
<p>Robert Edwards Transport Engineering & Management, 58 Alpha Road, Prospect SA 5090 (08) 8342 5999</p>	<p>Graeme Burton Tonkin Consulting, Level 2, 66 Rundle Street Kent Town SA 5067 (08) 8273 3100</p>	<p>Ray Cross 83 McKenzie Road Eltham NSW 2480 (02) 6629 1439</p>	<p>Russell Findlay PO Box 1052, Campbelltown NSW 2560 (02) 9824 5140</p>
<p>Phillip Woods P O Box 35, Winston Hills NSW 2153 0402 981 313</p>	<p>Andrew Enkelman Enkelman & Associates, 1/5 Braeside Drive, Braeside VIC 3195 (03) 9580 3024</p>	<p>Ian Prain Prain Consulting, 74 Ahern Road, Pakenham VIC 3810 (03) 5941 4766</p>	<p>Morry Akbarian Mobility Engineering 3/28 Leighton Place Hornsby NSW 2077 (02) 9482 4572</p>
<p>Peter Smith Peter L Smith Engineering Pty Ltd 14 Little Street Camden NSW 2570 (02) 4655 9440</p>	<p>John Wilson John Wilson Professional Engineering 10 Brassey Street Deakin ACT 2600 (02) 6236 3009 0417 230 074</p>		

Other Sporting Bodies transporting similar loads

Contact was made with representatives of the following sporting groups in an attempt to gauge their success/failure to comply with current regulations. It would appear that all have been successfully been able to find compliance with their loads.

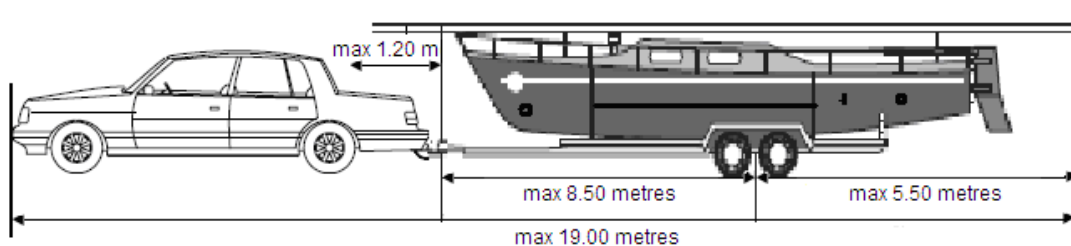
Etchell Class Sailing craft.

The illustration below shows how the load has been adapted to comply with current regulations.



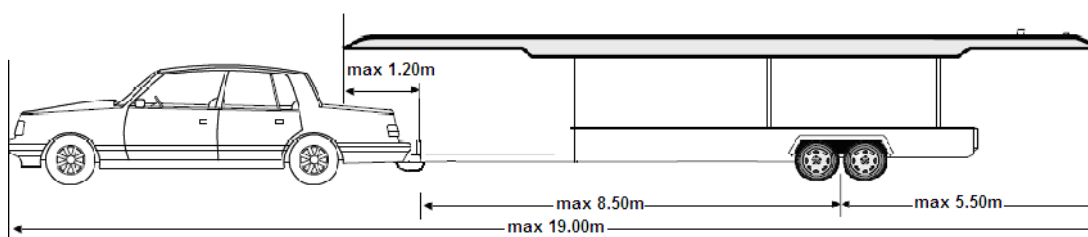
Trailer Sailing Craft

This illustration shows compliance with current Queensland State laws.



Rowing craft

Similarly, the carrying of rowing sculls has been engineered to comply with local State laws.



Observations and Recommendations

Towing Vehicles

It would appear that the first, and one of the most important criteria to consider in order to satisfy current legislations, would be the style of towing vehicle.

Using a number of vehicle specifications, it would appear that the most unsuitable of all towing vehicles would appear to be the SUV design. Any of these vehicles which measure 5.15 metres, or above, to the tow ball, when combined with any style of OC6 Trailer has only an overall allowable available length for load, of 13.85 metres.

When deducting a 13.71 metres mirage, this would leave only a margin of 140mm from the rear of the vehicle to the front of the canoe. Obviously, this would provide insufficient space in which to turn the vehicle.

Other suitable vehicles which satisfy such towing loads, such as flat deck, well-side utility vehicles, or sedans may be suitable with trailer modification

Suitability of adaption of each trailer types

Semi-Trailer or 5th wheel

Although this type of trailer would be the easiest to adapt in order to gain compliance, it does use a specifically modified tow vehicle. The economics of having such a specific towing vehicle make this option the least desirable.

Dog Trailer

In discussion with a trailer design engineer, it was first thought that this might be the most suitable style of trailer to adapt. We believed there to be an upgrade path whereby the current fixed drawbar could be replaced by a self-steering drawbar, sitting on a turntable. The rear axle could be relocated nearer to the rear of the trailer, thus spreading the load over both axle groups.

However, after some discussions, it became apparent that the tracking of the rear axle would make it much more difficult to negotiate roundabouts etc. The reversing of such a trailer would also be extremely difficult.

Pig Trailer

The current pig trailer presents us with the most opportunity to modify to comply with all current states and territories. In principal, it would mean that all current canoe trailers would want to make use of the current maximum width tolerance of 2.5m in order to gain maximum stability. All canoes would need to be lifted slightly, in order to clear the rear of the towing vehicle. They would need to be brought forward in order to comply with the current overall 19m length. In order to negate the additional downforce now created by moving the weight forward, the loads would have to be ballasted to the rear of the axle sets. Perhaps through some design work when housing Ama and Aiko sets.

Since starting this report, Mooloolaba Outrigger Canoe Club has worked to make their trailer and loads compliant Interstate and Intrastate. In achieving this, they have converted their 6 canoe trailer to a 4 canoe trailer with an overall vehicle and load length of 18.02 metres. At the time of completing this report, their trailer has just embarked on its inaugural trip, being a modest 2200km journey to Sydney and back. The modifications to the trailer have been well engineered and the driver found no difficulties with the characteristics of the trailer. There was some additional 80kg of ballast being located at the rear of the trailer to negate some of the forward load and this appears to have been sufficient.



Shortening of Canoes

The writer has spoken briefly to the Brad Martin from Honuray Industries, manufacturer of the Force 5, Mirage and Kamanu OC6 canoes. He believes that these craft could be successfully modularised retrospectively at an approximate cost of \$2500 per canoe. Such an option has been available on the new Mirage for some time, and I believe the number of approximately 7 of these craft have been distributed, all with very good feedback.

