Northern Territory Government

DEPARTMENT OF **TRANSPORT**

Vehicle Inspectors Bulletin No. 13 (i)

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Transport Services Division

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Transport Regulation and Compliance

For: ♦ Transport Inspectors ♦ Authorised Inspectors

Light Trailer Safety Chain Shackles

Purpose

The purpose of this Bulletin is to provide guidance on the selection of suitable shackles to connect a trailer safety chain to the towing vehicle.

Background

Rule 158 "*Drawbar Couplings*" of the Australian Vehicle Standards Rules requires that a trailer is kept in tow by a safety connection device if the tow coupling breaks or accidentally detaches from the towing vehicle.

A safety connection device includes a trailer safety chain or cable as outlined in Australian Design Rule (ADR) 62 "*Mechanical Connection Between Vehicles*". For trailers with an Aggregate Trailer Mass (ATM) up to 3500kg, ADR 62 requires compliance with Australian Standards AS 4177 "*Caravan and light trailer towing components*". For trailers with an ATM over 3500kg, compliance with Australian Standards AS 2321 "*Short-link chain for lifting purposes*" is applicable.

A summary of ADR 62 is contained in the National Code of Practice - Vehicle Standards Bulletin 1 "*Building Small Trailers*".

Policy

A suitable shackle is where:

a) the shackle is rated and complies with Australian Standard AS 2741-2002 "*Shackles*" or other equivalent recognised standard; and

b) the break load limit of the shackle is rated at least 1.5 times greater than the ATM of the trailer.

Example

Trailer ATM	**Shackle Rating** (break load limit at least 1.5 times ATM)
750kg	1125kg
1000kg	1500kg

Darwin
Vehicle Standards Centre
Goyder Road, Parap
Phone: (08) 8999 3127
(08) 8999 3133
Fax: (08) 8999 3187

Katherine
Katherine Weigh Bridge
Stuart Highway
Phone: (08) 8973 8791
Fax: (08) 8973 8762

Alice Springs
Vehicle Standards Centre
North Stuart Highway
Phone: (08) 8951 5297
Fax: (08) 8951 5313

Postal: GPO Box 530, Darwin NT 0801 --- Email: mvr@nt.gov.au --- Website: www.mvr.nt.gov.au

Requirement

Markings complying with AS 2741-2002 "*Shackles*" shall be legibly and permanently marked with the following information:

a) The manufacturer's name or trademark;

b) Quality grade of the shackle, e.g. ("M" or "4", "S" or "6");

c) Working Load Limit (WLL) or Rating; and

d) Identification marking in order to correlate shackle to test certificate.

Note:

i. Generally, the break load limit of a rated shackle will be six times greater than its work load limit.

ii. Pin diameter of shackle will be greater than the diameter of the main shackle body.

iii. Same size shackles of different quality grades will have a different WLL (i.e. 6mm "S" grade shackle has a greater WLL than a 6mm "M" grade shackle).

iv. Stainless steel shackles are unsuitable for trailer use due to the material's general low resistance to bending stresses.

v. "S" or "6" grade "D" Shackles bear similar characteristics to "S" or "6" grade Bow Shackles.

vi. Bow shackles provide for greater angular usage compared with "D" shackles.

vii. Rated bolts, chain shackles or other suitable fittings (i.e. hammerlocks) may be used as devices for connection on safety chains providing the break load limit of the device is at least 1.5 times greater than the ATM of the trailer.

viii. Shackle Matrix – refer **Appendix A**

Action

Where non-compliance of a safety chain connection device (i.e. shackle) has been detected, Transport Inspectors and Authorised Inspectors are to alert the driver of the towing vehicle on the requirement to have a suitably rated device.

References

Australian Design Rule (ADR) 62 "*Mechanical Connection Between Vehicles*"

National Code of Practice - Vehicle Standards Bulletin 1 "*Building Small Trailers*"

NT Vehicle Inspectors Bulletin 13 "*Light Trailer Requirements – Compliance with VSB1*"

Appendix A

Shackle Matrix (Guide Only)			
Nominal Shackle Size (mm)	**Work Load** (kg)	**Break Load** (kg)	**Quality Grade Marking**
5	330	1987	“S” or “6”
6	250	1508	“M” or “4”
6	500	3007	“S” or “6”
8	750	4505	“S” or “6”
10	500	3007	“M” or “4”
10	1000	6004	“S” or “6”
11	1500	9001	“S” or “6”
13	750	4505	“M” or “4”
13	2000	12040	“S” or “6”
16	1500	9010	“M” or “4”
16	3200	19285	“S” or “6”
19	2000	12040	“M” or “4”
19	4700	28265	“S” or “6”