

Light Vehicle Inspection Manual

Section 14 Light Trailers & Caravans

Section 14

Light Trailers & Caravans

Australian Design Rules relevant to this section

ADR 1/...	Reversing Lamps
ADR 6/...	Direction Indicators
ADR 13/...	Installation of Lighting and Light-signalling Devices on other than L-Group Vehicles
ADR 23/...	Passenger Car Tyres
ADR 38/...	Trailer Brake Systems
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ADR 44/...	Specific Purpose Vehicle Requirements
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ADR 49/...	Front and Rear Position (Side) Lamps, Stop Lamps and End-outline Marker Lamps
ADR 51/...	Filament Lamps
ADR 61/...	Vehicle Marking
ADR 62/...	Mechanical Connections between Vehicles
ADR 74/...	Side Marker Lamps
More Information	Appendix T Light Trailer Requirements – Compliance with VSB1 Appendix G Mudguards and Mudflap Requirements

OBJECTIVE: To ensure that trailers/caravans and associated components are fitted in accordance with regulations and operate in a safe manner.

CAUTION: Be extremely careful when inspecting uncoupled trailers, particularly if they do not have a parking brake - use wheel chocks if necessary.

Mass Definitions

Aggregate Trailer Mass (ATM)

The total mass of the laden trailer when carrying the maximum load recommended by the manufacturer. This includes any mass imposed onto the drawing vehicle when the combination vehicle is on a level surface.

Gross Trailer Mass (GTM)

The mass transmitted to the ground by the axle or axles of the trailer when coupled to the drawing vehicle and carrying its maximum load approximately uniformly distributed over the load bearing area.

14.1. Inspect the trailer for brake requirements

Reasons for rejection

- a) Trailer manufactured from 1 July 1988 with a GTM exceeding 750kg that is not fitted with brakes.
- b) Trailer manufactured from 1 July 1988 with a GTM exceeding 2000kg that is not fitted with brakes on all wheels and an emergency braking system (break-away system).
- c) Trailer manufactured prior to 1 July 1988 with a GTM exceeding 2000kg that is not fitted with brakes that automatically apply and hold when detached from the towing vehicle.

14.2. Inspect visible brake components

Reason for rejection

- a) Where visible, any brake component is leaking, or is not securely mounted.
- b) Any cable operating a brake is missing, broken or frayed.
- c) Any wiring for electric brakes is disconnected, frayed, bared or insecure.
- d) Where hydraulic brakes are fitted, the level of brake fluid is below the minimum indicated level.
- e) Where hydraulic brakes are fitted the brake fluid reservoir is not appropriately sealed to prevent moisture or contaminants from entering reservoir.
- f) Any hydraulic brake line that is damaged, not secure, bulging, severely corroded or leaking.
- g) Any hydraulic brake line that has been repaired by heating or welding.
- h) Any brake component is seized, severely corroded or inoperative or, where visible, is worn beyond manufacturer's limits.

14.3. Brake testing of trailers fitted with override brakes

Where possible, test any override brake system by compressing the brake-actuating device and attempting to move the trailer (usually this can only be carried out where a parking brake is fitted to the trailer - see **Section 14.5**).

<p>Note: <i>i. A roller brake tester can be used to test override brakes but extreme caution is needed.</i></p>
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Reason for rejection

- a) The brakes do not retard the movement of the trailer.

14.4. Brake testing of trailers fitted with brakes other than override brakes

With the trailer attached to the tow vehicle, apply the trailer service brake and attempt to move the trailer forward.

Reason for rejection

- a) The brakes do not retard the movement of the trailer.

14.5. Where fitted, test the parking brake

Apply the parking brake and attempt to move the trailer. The trailer may be coupled to a hauling vehicle for this test but ensure that the transmission is in neutral and the brakes are off.

Note: ii. *Under the ADRs, most light trailers with override brakes are not required to have a parking brake. However, a suitable device can usually be very easily incorporated into the actuating mechanism and they are highly recommended for improving safety when the trailer is uncoupled from a hauling vehicle.*

Reasons for rejection

- a) Where fitted the trailer park brake does not retard the movement of the trailer or combination.
- b) Any handle or control lever is not fitted with a locking device capable of holding in any position.

14.6. Where fitted, inspect the emergency braking system / break-away braking system

Where possible, test any override brake system by compressing the brake-actuating device and attempting to move the trailer (usually this can only be carried out where a parking brake is fitted to the trailer - see **Section 14.5**).

Reason for rejection

- a) The emergency braking system / break-away braking system does not automatically apply when the trailer is detached from the towing vehicle.

14.7. Visually inspect the trailer coupling, drawbar and mountings on the trailer body

Reasons for rejection

- a) Any coupling component is loose, distorted or is cracked.
- b) The drawbar is not securely mounted, or is cracked.
- c) Any mounting bolts, fasteners or weld beads have advanced corrosion.
- d) The coupling does not display the gross mass rating and the manufacturer's name or trademark.
- e) Any coupling that is marked by the manufacturer DO NOT WELD that displays welding.
- f) Any coupling that is not a positive locking type with provision for a secondary independent locking device.
- g) Where any part of the coupling or drawbar is removable, the bolts, studs, nuts etc. fastening those parts do not have locking device such as U-clip, split pin, spring washer, nylon lock nut.
- h) Safety chain/s or cables (as required) are not securely and permanently attached to the trailer drawbar.
- i) Any 50 mm ball coupling on a trailer manufactured from 1 July 1991 that is not marked in accordance with Australian Standard AS 4177 Caravan and light trailer towing components or ECE R 55.
- j) Any alternative coupling not meeting the requirements of ADR 62/... which requires the following information to be displayed:
 1. The manufacturers name or trademark
 2. The maximum allowable trailer ATM
 3. The words 'Model (model Identifier) use with model (model identifier).

14.8. Visually inspect safety chains or cables

Reasons for rejection

- a) Rigid drawbar trailers and trailers not fitted with emergency braking systems manufactured from 1 July 1991 that are not fitted with safety chains in accordance with the **Table 14.1** and **Table 14.2** below or safety cables that meet the minimum requirement listed below.
- b) Pig trailers or trailers not fitted with break-away brakes manufactured prior to 1 July 1991 that are not fitted with at least one safety chain or flexible cable that is capable of keeping the trailer in tow if the coupling connection fails or becomes detached from the towing vehicle.

Note:	iii. A 'pig trailer' is a typical trailer with one axle group and a rigid drawbar.
	iv. A 'dog trailer' has two axle groups and a hinged drawbar.

- c) Safety chains or cables are stretched, nicked, frayed or cracked.
- d) The length of the safety chain or wire cable prevents any break-away protection device from operating – i.e. too long or too short.

Note: v. *A safety chain or cable should not touch the ground when towing.*

- e) The safety chain(s) or wire cable(s) are not permanently attached to the drawbar.

Note: vi. *Attachment of safety chains or wire cables to the drawbar by shackles is not permitted.*

- f) If a trailer break-away protection system is not fitted, the size of the chain or rope is less than that specified in the following:

- a. **Table 14.1** or **Table 14.2** or

- b. the safety cable does not meet the minimum requirements listed below:

- **Safety cables may only be used on trailers that do not exceed 2500kg ATM.**
- The cable must be certified with a load capacity of the same rating as a safety chain that would be applicable to the specific trailer.
- The cable must display the appropriate markings which match certification.
- The certification must reflect the markings.
- The load capacity must be relevant to the ATM of the trailer.

Table 14.1 - Minimum chain sizes for trailers up to 3500kg ATM

ATM	Minimum Chain Link Diameter	Rating	Number of Chains (minimum)	Chain Marking	Marking Size (minimum)	Minimum Marking Frequency (link)
0 to 1000(kg)	6.3(mm)	1000(kg)	1	4177-10	1.5mm	4th
Up to 1600(kg)	8.0(mm)	1600(kg)	1	4177-16	2.0mm	4th
Up to 2500(kg)	10.0(mm)	2500(kg)	1	4177-25	2.0mm	4th
Up to 3500(kg)	13.0(mm)	3500(kg)	2	4177-35	2.0mm	4th

- g) On rigid drawbar pig trailers over 2500kg ATM there are less than two chains (or cables) of a diameter (or capacity) for the ATM of the trailer.

Note: vii. *Where practicable, at least one chain (or cable) should be positioned such that it prevents the drawbar from touching the ground if the drawbar accidentally detaches from the towing vehicle.*

Table 14.2 - Minimum chain sizes for trailers over 3500kg ATM

ATM (kg)	Minimum Chain Link Diameter	Break Load	Number of Chains (minimum)	Marking	Minimum Marking Frequency
Up to 4500	6.0(mm)	4607(kg)	2	(Manufacturer's Mark), 'T', '8', '80' or '800'	20 th link or 1m

14.9. Visually inspect all suspension components

Reasons for rejection

- Any suspension component is broken, cracked, missing, not secured, excessively corroded or can be seen to have been repaired or modified by heating or welding or is worn beyond manufacturer's limits.
- Any nut, bolt, or locking device is not secured or is missing.
- With the wheels raised, the vertical free play of the wheel exceeds 3mm.
- Nuts do not fully engage U bolt thread.
- Components are not correctly aligned.

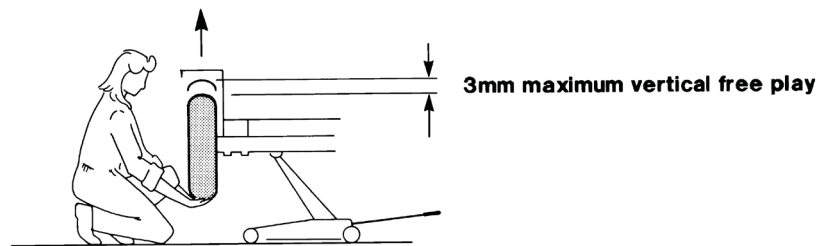


Figure 14.1

- With the wheels raised, the free play of the wheel measured at the rim exceeds 6mm in total or 3mm from any component part.

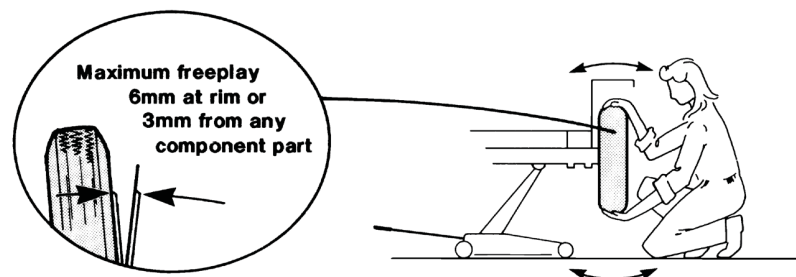


Figure 14.2

Note: viii. *The free play measurement given is a guide only, and manufacturers' tolerances take precedence in all cases when performing these checks.*

14.10. Visually inspect the inside and outside of each road wheel

Reasons for rejection

- a) Any wheel or rim is cracked, has pieces of a casting missing, or is buckled.
- b) The wheel nut does not engage the thread of the wheel stud for the full length of the nut, except where specified by the vehicle manufacturer, or the fitting of the wheel nut does not match the taper of the wheel stud hole.
- c) Any hub has missing or broken wheel mounting nuts, studs or bolts.
- d) Any spoked wheel has missing, loose, cracked, broken or bent spokes.
- e) The tyre or rim fouls any component at any point over its full range of travel.

14.11. Visually inspect each road tyre

Reasons for rejection

- a) The tyre has less than 1.5mm tread depth on the surfaces which normally contact the road.
- b) The tyre has deep cuts, bulges, exposed cords or other signs of carcass failure on either the side wall or tread surface.
- c) The tyre has been re-grooved (except where indicated on the sidewall that the tyres are suitable for re-grooving).
- d) Any re-treaded tyre fitted to the vehicle is not marked with the name or identification of the re-treader and speed rating of the tyre.
- e) Dual tyres contact each other.
- f) Tyre load or speed ratings are less than the minimum rating specified by the vehicle manufacturer.
- g) A tyre that exceeds the maximum width allowed for that trailer.
- h) A tyre (tread area) that protrudes beyond the body line.

14.12. Check wheel bearings

Note: ix. <i>Using safe work practices, check the wheel bearings by lifting the trailer wheels off the ground- disassembly of wheel bearings is not required.</i>
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Reasons for rejection

- a) Are incorrectly adjusted, rough, noisy, loose on stub axle, do not rotate freely or are leaking.
- b) Movement between disc brake rotor/brake drum and backing plate exceeds manufacturer's specifications.

14.13. Inspect mudguards and mudflaps

Reasons for rejection

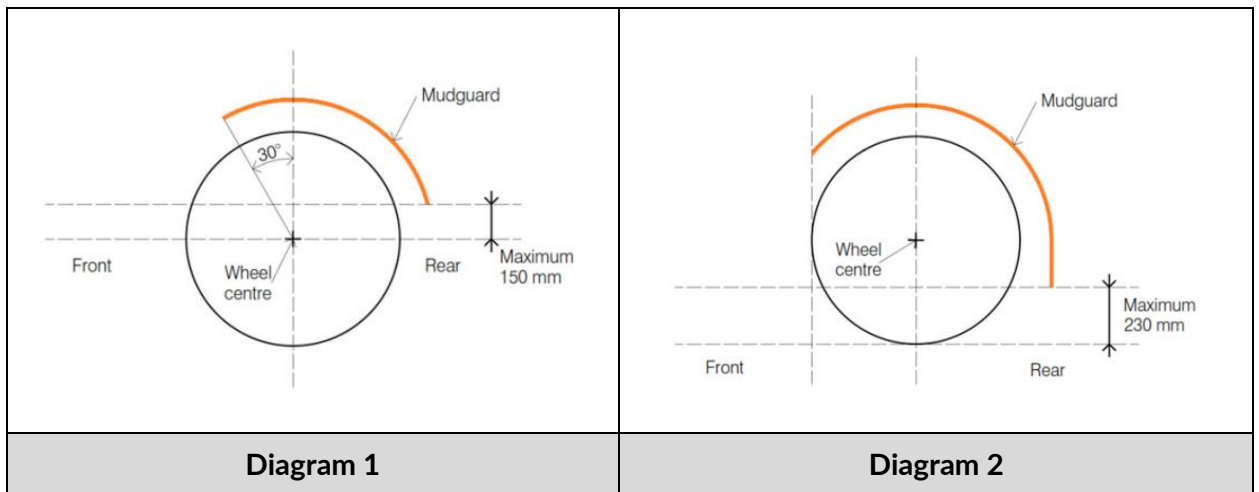


Figure 14.3

- Mudguards are not fitted to all wheels.
- The mudguard/mudflap and/or bodywork covering any wheel does not cover the section width of the tyre outlined in **Diagram 1** or **Diagram 2** in **Figure 14.3**.

Note:

- In **Diagram 2**, for a vehicle with off road capabilities, the lower edge of the mudflap maybe up to 300mm above ground level when parked on level ground.
- For further information on mudguard requirements, refer to Appendix G 'Mudguard and Mudflap Requirements'.

14.14. Check the operation of access equipment (doors/gates/tail gate/ramps)

Reasons for rejection:

- Any access equipment cannot be fastened securely in the closed position.
- A trailer equipped with fuel burning cooking facilities or living or sleeping accommodation must have only outward opening or sliding doors. At least one such door must be located on the left-hand side or at the rear.

14.15. Visually inspect body panels, chassis and frame

Reason for rejection

- a) Exterior body work and fittings have sharp edges due to rusted panels or body damage, or protrusions that could cause injury to a person coming into contact with the trailer.
- b) Body componentry (including rear under run protection, where applicable) or chassis frame are cracked, broken, distorted, corroded or otherwise weakened to the point where structural failure of any component is likely to occur.
- c) The body is not securely mounted to the frame or chassis.
- d) Any repairs carried out do not retain the original strength of the component/section.

14.16. Visually inspect the number plate

Reason for rejection

- a) Number plate is obscured.
- b) Number plate covers are tinted, reflective, rounded, or bubble like.
- c) Number plate has a substance applied to the reflective surface that would prevent the production of a clear photograph.
- d) The number plate is damaged or faded to the extent that the registration number is not legible from a distance of 20 metres.
- e) The number plate is not issued or approved by the State or Territory Road Transport Authority.
- f) The number plate does not face the rear of the trailer in an upright position parallel to the axle/s.
- g) The number plate is not fitted to the rear, is mounted less than 300mm or more than 1300mm from the ground.
- h) The characters on the number plate are not clearly legible and visible from a distance of 20 metres at any point within an arc of:
 - 1. 15 degrees above from the surface of the number plate in the horizontal plane and
 - 2. 45 degrees to either side from the surface of the number plate in the vertical plane.
- i) The number plate is not illuminated by at least one number plate light.

Note: xii. For more information on number plates, refer to *Information Bulletin V24 Vehicle Number Plates* at <https://nt.gov.au/driving/industry/vehicle-information-bulletins-and-forms>

14.17. Visually inspect mandatory reflectors

Reasons for rejection

- a) Trailer not fitted with 2 red non triangular rearward facing rear reflectors that are:
 - 1. more than 400 mm in from the outer edge rear reflectors or
 - 2. lower than 250 mm above the ground or
 - 3. more than 900mm above the ground (900mm may be increased to 1500mm if impractical).
- b) Trailer not fitted with 2 white non triangular forward facing front reflectors that are:
 - 1. more than 150 mm in from the outer edge or
 - 2. lower than 250 mm above the ground or
 - 3. more than 900 mm above the ground (900mm may be increased to 1500mm if impractical).
- c) Trailer is not fitted with amber/orange/yellow non triangular side facing reflectors to each side:
 - 1. in the middle third of the trailer's length and positioned in accordance with Note xi.

Note: <i>xiii. Position of side reflector From 250mm above the ground to 900 mm (900mm may be increased to 1500mm if impractical).</i>
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- d) Where the side reflector in the middle third of the trailer's length is more than 3.0m from the front, the trailer is not fitted with -
 - 1. one additional side reflector on each side of the trailer not more than 3.0m from the front and positioned in accordance with Note xi.

Note: <i>xiv. The distance between reflectors on each side of the trailer is not to exceed 3.0m (permitted to 4.0m when 3.0m distance is impracticable).</i>
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- e) Where side reflectors are spaced more than 3.0m apart, the trailer is not fitted with -
 - 1. a side reflector on each side of the trailer not more than 1.0m from the rear and positioned in accordance with Note xi.

Visually inspect and check the operation of all lights fitted to the trailer

Reasons for rejection

- a) Any of the following lights do not work or has incorrect colour:
 1. Tail lights (red).
 2. Brake light(s) (red).
 3. Turn signal indicator lights (yellow).
 4. Clearance lights (white/red).
 5. Side marker lights (yellow).
 6. Number plate light (white).
- b) Any of the above lights is damaged or deteriorated to the extent that white light shows to the rear of the vehicle, or in the case of any side marker lights, any white light shows to the front of the vehicle.
- c) Any lights or reflectors fitted to a vehicle that is not operational and not located in positions as required by prescribed standards.
- d) Any light that is not clearly visible under all normal conditions and of a consistent intensity, or are affected by dirty lenses or poor electrical contact.
- e) Lenses and light reflectors are not securely mounted, are faded or discoloured and are not free from cracks, holes, or other damage which would allow the entry of moisture or dirt to impair the efficiency of the light or reflector.
- f) The number plate light is not directing light on to the surface of the rear number plate.
- g) Any wiring for compulsory lights is frayed or bared or is insecure to the extent that it is likely to be damaged.
- h) Lights as follows are not fitted.

At front of trailer

- A trailer built prior to July 1988 may be fitted with optional, white or yellow/amber clearance/end-outline marker lights (if trailer more than 1800mm wide)
- For a trailer built from July 1988, Front Position Lamps (showing a white light to the front) are required:
 - if a trailer is more than 1600mm wide and over 4000mm long; or
 - if a trailer is over 1800mm wide.
 - Side Marker Lamps (showing amber light to the front and red light to the rear) may be fitted in lieu of front position lamps.

<p>Note: xv. <i>From August 2013, all trailers presented for first registration in the NT must be fitted with front position lamps, as required. Trailers previously registered in the NT prior to August 2013 without compliance with front position lamp requirements may continue to be accepted for NT registration without modification however, all other trailer requirements will continue to apply.</i></p>

At side of trailer

- For a trailer built prior to July 1988, minimum of 2 yellow/amber to front, red to rear side marker lights (where trailer is more than 2.2m wide and/or 7.5m long), min 500mm and max 1500mm off ground, max 150 inboard, max 300 mm from rear of trailer (in middle if trailer over 7.5m long);
- For a trailer built from July 1988, side marker lamps are required:
 - if a trailer is more than 2100mm wide; or
 - if a trailer is over 7500mm long.

At rear of trailer

- 2 Red tail lights (or 1 red tail light prior to 7/73), max 1500mm off ground, min 600mm apart, max 400mm inboard of side of trailer (single light located in centre or right side of trailer) and be visible from 200m from the rear;
- 2 Red reflectors, max 1500mm off ground, max 400mm (250mm if trailer more than 2200mm wide) inboard of side of trailer;
- White registration plate lamp/s, to illuminate registration plate so that the registration plate characters are legible within 20m from the rear;
- 2 Red stop lights (or 1 red stop light prior to 7/88), min 300mm and max 1500mm off ground (single light to be in centre or on right side of trailer);
- 2 Yellow/amber turn signal indicators (or 2 red turn signal indicators permitted prior to 1/73), min 400mm and max 1500mm off ground, min 600mm separation.

14.18. Dimensions

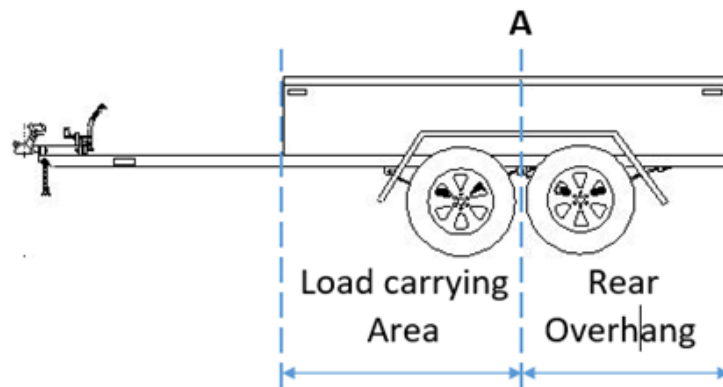
Reason for rejection

- a) The width of the trailer exceeds 2.5 metres.
- b) The height of the trailer exceeds 4.3 metres.
- c) The length of the trailer exceeds 12.5 metres.
- d) The drawbar length exceeds 8.5m (see drawing above measured from rear overhang line).

14.19. Rear overhang

Reason for rejection

- a) The rear overhang of a trailer exceeds the lesser of the following measurements:
 1. the length of the load- carrying area forward of the rear overhang line or
 2. 3.7 metres.



Note: xvi. *The rear overhang line "A" is to be taken from the centre of the axle for a single axle trailer or the centre of the axle group for a multi axle trailer.*

14.20. Caravan living quarters

Reason for rejection

- a) Any caravan manufactured from 1 July 1988 equipped with fuel burning cooking facilities, or living, or sleeping accommodation that does not have at least one outward opening, or sliding door on the left side or rear of the caravan.

Note: xvii. *LP Gas compliance, electrical installation and plumbing requirements are regulated by other authorities.*

14.21. Visually inspect fire extinguisher (where required)

Reasons for rejection

- a) Fire extinguisher not fitted.
- b) Fire extinguisher is not filled, charged or under current inspection.
- c) Handle, nozzle or hose of fire extinguisher is missing or damaged.
- d) The extinguisher is not securely mounted in the vehicle.

Note:	xviii.	<i>Fire extinguishers can become ineffective even though they appear properly charged. For example powder type extinguishers subject to vibration can fail due to compacting of the powder</i>
	xix.	<i>Australian Standards AS or AS/NZS 1851 Routine service of fire protection systems and equipment contains suitable procedures for inspecting and testing fire extinguishers</i>
	xx.	<i>Australian Standards AS 2444 Portable fire extinguishers and fire blankets - Selection and location outlines the appropriate type, size and location of fire extinguishers for vehicles</i>
	xxi.	<i>Fire authorities strongly recommend that caravans or trailers equipped with cooking facilities, or living or sleeping accommodation, be fitted with approved fire blankets and smoke detectors.</i>