

# Vehicle inspectors bulletin



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## Over-snow vehicles

### Purpose

To advise RTA Inspector's, Vehicle Regulation and Authorised Inspection Station examiners (light and heavy vehicles) of the inspection requirements for vehicles designed or modified for over-snow use.

### Scope

This Vehicle Inspectors Bulletin (VIB) covers the following vehicles whether they are designed specifically for use on snow or modified for that purpose:

- Motor vehicles and trailers that transport more than two people.
- Motor vehicles and trailers that transport fuel and/or goods.
- Snow ploughs.

This VIB does not cover over-snow vehicles for transporting two or less people, eg skidoos.

### Requirements

As the design and construction of over-snow vehicles is inherently different from that of conventional on-road vehicles, it has been recognised that some requirements of the Rules for Authorised Inspection Stations (AIS) and Rules for Authorised Inspection Stations - Heavy Vehicles (HVAIS) may not be suitable for inspecting them.

Over-snow vehicles must be inspected in accordance with the AIS/HVAIS rules and with this VIB. Where there is a conflict, then the requirements of this VIB take precedence.

|     |                                     |                                 |                                 |
|-----|-------------------------------------|---------------------------------|---------------------------------|
| For | ■ RTA Inspectors Vehicle Regulation | ■ Engineering Signatories       | ■ AIS Proprietors & Examiners   |
|     | ■ RTA Registry Service Managers     | ■ HVAIS Proprietors & Examiners | ■ AUVIS Proprietors & Examiners |

For RTA inspection purposes these vehicles have been grouped into two sections:

## **Section 1: Over-snow vehicles as defined on page 1 used to transport more than two people and fuel or goods**

Category 1: Over-snow buses

Category 2: Over-snow trailers used for transportation of passengers, fuel and/or goods

Category 3: Other vehicles used to transport passengers

## **Section 2: Over-snow vehicles designed or modified for snow clearing operations**

A vehicle that falls into one of the above sections must meet the following requirements as applicable:

- Vehicles in Section 1 must undergo an annual RTA inspection and meet the requirements of this VIB.
- Vehicles in Section 2 must undergo and pass an annual AIS inspection.

Requirements for all other over-snow vehicles (eg skidoo, snow groomer) not covered by this VIB can be obtained from RTA Technical Enquiries or the RTA website - see page 12 for contact details.

Note: Inspections of over-snow vehicles can be arranged by calling the RTA Operations Manager, Southern Region on 02 4220 0610 during normal business hours Monday to Friday.

Vehicles fitted with temporary track systems (eg Mattracks) must have an engineering certificate from an RTA recognised engineering signatory that indicates:

- The track system is been installed in accordance with the module manufacturer's specifications.
- The vehicle is speed limited to 50 km/h.
- An amber rotating beacon is fitted and operates when the vehicle is moving.

Over-snow vehicles included in this VIB are not permitted to operate on un-braked wheels or tracks or solely on skis or runners.

Vehicles fitted with a snow plough attachment must have an engineering certificate from an RTA recognised engineering signatory that indicates:

- The snow plough attachment is secure and will not cause the load specified by the manufacturer or axle/suspension ratings to be exceeded.
- The vehicle does not exceed mandatory dimension or mass limits.
- An amber rotating beacon is fitted and operates when the vehicle is moving.

Overmass/overdimension vehicles must have the required overmass/overdimension permits.

## Section I

Inspection requirements for over-snow vehicles as defined above used to transport more than two passengers.

### Category I. Over-snow buses

These are rigid, closed vehicles used to transport passengers. They include prime-mover vehicles used to tow trailers specifically constructed to transport passengers (see Category 2 on page 7 for trailer requirements).

| System/Component   | Inspection Required   | Reason for Rejection  |
|--|---|---|
| <p><b>I. Steering</b></p> <p><b>I.1 Hydraulic steering</b></p> | <p>With the engine running, pressurise the hydraulic system, check for any leaks and check steering movement</p> <p>Visual and feel steering wheel.</p> <p>Hydraulic steering max speed warning sign and low oil/pressure warning light.</p> <p>The sign must be visible to the driver and read as follows :</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>WARNING</b></p> <p>This vehicle is fitted with a hydraulic steering system<br/>Fluid leakage may lead to steering failure</p> <p><b>MAXIMUM SPEED LIMIT 45km/h</b></p> </div> <p>The sign must:</p> <ul style="list-style-type: none"> <li>• Be a minimum size 100 mm x 50 mm.</li> <li>• Have red lettering on an amber background.</li> <li>• Made of retroreflective material (Class 2 or better) that conforms to Australian Standard AS 1906 <i>Retroreflective materials and devices for road traffic control purposes – retroreflective materials, as amended.</i></li> </ul> <p>If fitted, the low pressure or low level warning light on the instrument panel must be clearly visible to the driver.</p> | <p>a) Any hydraulic oil leak.</p> <p>b) Any stiffness in movement from lock to lock.</p> <p>c) Any wear or chaffing of hoses.</p> <p>d) No oil level warning device.</p> <p>e) Any cable control has broken strands, is kinked, corroded, seized or otherwise damaged.</p> <p>f) The hydraulic steering maximum speed warning sign is not displayed.</p> <p>g) The low pressure/low oil level warning light is missing, not operational or not clearly visible.</p> |
| <b>I.2 Steering linkages</b>                                   | Visual.   | Excessive free-play in control levers and pivot bushes.   |

| System/Component  | Inspection Required   | Reason for Rejection   |
|---|---|--|
| <b>2. Brakes</b><br>Note: Tail shaft mounted service brakes are permitted in over-snow vehicles |   |  |
| <b>2.1 Tail shaft transmission brake</b>  | Visual and feel (apply brake).  | a) Use HVAIS Rule 501.11   |
| <b>2.2 Hydro-static brakes</b>  | With the engine running pressurise the system and operate through its range of positions. | a) Any hydraulic leak.<br>b) Any wear or chaffing of hoses.  |
| <b>3. Exhaust system</b>  | Visual.   | a) Exhaust leaks.<br>b) System not secure.<br>c) Outlet not rearward of any side opening passenger door, window or ventilation aperture. |
| <b>4. Driveline</b>   | Visual.   | Loose shaft or cracked differential housing mounts.  |
| <b>5. Suspension</b>  | Visual.   | Worn chain links on suspension load sharing device.  |
| <b>6. Snow tracks/ runners/skis</b>   | Visual.   | a) Drive cogs worn/damaged.<br>b) Drive belt split/cracked.<br>c) Broken, loose or damaged cleats.<br>d) Loose, damaged, not aligned.    |
| <b>7. Body</b>  |   |  |
| <b>7.1 Interior linings where fitted</b>  | Visual.   | a) Interior lining missing, torn or otherwise deteriorated.<br>b) Lining absorbent or not made from flame resistant material.            |
| <b>7.2. Floor</b>   | Visual (floor drain holes to 10mm diameter may be provided).                              | a) Is structurally defective.<br>b) Not sealed to prevent ingress of engine exhaust fumes.<br>c) Not covered with non-slip material.     |

| System/Component   | Inspection Required | Reason for Rejection  |
|--|---------------------|---|
| <b>7.3 Passenger access</b>  | Visual.             | <ul style="list-style-type: none"> <li>a) Steps or frame not secure at mountings.</li> <li>b) Edging does not have anti slip surface.</li> </ul>  |
| <b>7.4 Ceiling mounted hand grips or handrails</b>   | Visual.             | <ul style="list-style-type: none"> <li>a) Missing or not suitably located for affording passenger assistance.</li> <li>b) Rigid grips in areas where passengers are likely to hit their heads.</li> </ul>                               |
| <b>7.5 Interior luggage racks</b>  | Visual.             | <ul style="list-style-type: none"> <li>a) The rack is not secure and has sharp edges or protrusions.</li> <li>b) Where luggage is to be carried in the interior, no effective means provided for securing luggage.</li> </ul>           |
| <b>7.6 Seating capacity sign</b><br>Note: Perimeter seating is permitted in over-snow vehicles. Seating capacity is determined in accordance with Australian Design Rule (ADR) 58/-- <i>Requirements for Omnibuses Designed for Hire and Reward.</i> | Visual.             | <ul style="list-style-type: none"> <li>a) 'Seating capacity' sign not fitted or visible to passengers</li> <li>b) Seating capacity notice in characters at least 50 mm high not clearly displayed (preferably on dashboard).</li> </ul> |
| <b>7.7 No Smoking signs</b>  | Visual.             | 'No Smoking' sign not clearly displayed.  |
| <b>7.8 Registration Number</b>   | Visual.             | Registration number in characters at least 50 mm high not clearly displayed. Use HVAIS Rule 530.16  |
| <b>7.9 Seats</b>   | Visual.             | <ul style="list-style-type: none"> <li>a) Not securely attached to vehicle.</li> <li>b) Suitable backrest not fitted.</li> </ul>  |
| <b>8. Fire extinguisher</b>  | Visual.             | Use HVAIS Rule 512.01 clauses l) – p)   |

| System/Component   | Inspection Required | Reason for Rejection   |
|--|---------------------|--|
| <p><b>9. Emergency exit</b></p> <p>Note: Emergency exits are not required if the vehicle is fitted with one or more doors on each side of the passenger compartment and,</p> <ul style="list-style-type: none"> <li>• The seating capacity does not exceed 12 persons including the driver, or</li> <li>• The vehicle does not exceed 2 m in overall width.</li> </ul> | Visual.             | No passenger doors on both sides or other exits.   |
| <b>10. Emergency exit marking</b>  | Visual.             | Not displayed where emergency exit fitted. Use HVAIS Rule 512.01 (clause a).   |
| <b>11. Fuel filling point</b>  | Visual.             | <p>a) Filling point is within passenger or engine compartment.</p> <p>b) Fuel filler points enclosed by the fitment of a hard top or vinyl canopy.</p>   |
| <b>12. Windscreen</b>  | Visual.             | Use HVAIS Rule 509.03  |
| <b>13. Horn</b>  | Audible.            | <p>a) Use HVAIS Rule 509.04</p> <p>b) Not clearly audible.</p>   |
| <p><b>14. Lights and reflectors</b></p> <p>Note: A system must be fitted to vehicles with hydrostatic drive which will activate brake lights when the accelerator is released.</p>   | Visual.             | <p>a) Use HVAIS Rule 507.01</p> <p>b) No amber rotating beacon fitted or clearly visible.</p> <p>c) Reflectors not fitted.</p> <p>d) Brake lights not fitted or not operational when accelerator released.</p> <p>e) Side reflector tape not fitted.</p> |
| <b>15. Mirrors</b>   | Visual,             | Use HVAIS Rule 508.  |
| <b>16. Communications</b>  | Audible/visual,     | No means of driver/passenger communication eg buzzer.  |

## Category 2. Over-snow trailers used for transportation of passengers, fuel and/or goods

These are trailers towed behind over-snow vehicles and which are designed to carry passengers, fuel or goods. The towing vehicle is to be inspected according to Category 1 as appropriate. The trailer must be inspected in accordance with this category.

| System/Component   | Inspection Required | Reason for Rejection   |
|--|---------------------|--|
| <b>1. Drawbars</b>   | Visual.             | <ul style="list-style-type: none"> <li>a) Use HVAIS Rule 530.04</li> <li>b) Bent or cracked.</li> <li>c) Absence of drain holes in structural members where water can accumulate.</li> </ul>   |
| <b>2. Tow couplings</b><br>Note: Couplings/safety chains must comply with the requirements of Australian Design Rule 62/-- <i>Mechanical Connections Between Vehicles.</i> | Visual.             | <ul style="list-style-type: none"> <li>a) Use HVAIS Rules 530.05</li> </ul>  |
| <b>3. Safety chains</b><br>Note: Couplings/safety chains must comply with the requirements of ADR 62/-- <i>Mechanical Connections Between Vehicles</i>                     | Visual.             | <ul style="list-style-type: none"> <li>a) Use HVAIS Rule 530.07</li> <li>b) Mounting points inadequate or not secure.</li> <li>c) Safety chains are not fitted.</li> </ul>   |
| <b>4. Braking system</b>   | Visual.             | Use HVAIS Rules 530.01 and 530.03  |
| <b>5. Lights and reflectors</b>  | Visual.             | <ul style="list-style-type: none"> <li>a) Brake lamps are not fitted or do not work</li> <li>b) Front and rear end outline marker lamps are not fitted or do not work</li> <li>c) Side and rear reflectors are not fitted.</li> <li>d) Tail and clearance lights not fitted or do not work.</li> <li>e) Amber rotating beacon not fitted or does not operate when the engine of the towing vehicle is running.</li> <li>f) Side reflective tape not fitted.</li> </ul> |
| <b>6. Interior fittings</b>  | Visual.             | <ul style="list-style-type: none"> <li>a) For passenger carrying trailers, use HVAIS Rules 506.01 and 512.01</li> </ul>  |
| <b>7. Communications</b>   | Audible/visual.     | No means of driver/passenger communication eg buzzer.  |

### Category 3. Other over-snow vehicles used to transport passengers

While these vehicles vary in style, generally their braking/steering system consists of two discs attached to the gearbox output shafts fitted with either mechanical or hydraulic callipers operated by the driver via two levers.

The accelerator is a motorcycle type twist grip device fitted to one of these levers.

A lighting system is supplied by way of two single beam headlamps which can only be operated while the engine is running.

| System/Component                                 | Inspection Required  | Reason for Rejection   |
|--|----------------------|--|
| <b>1. Steering/brakes</b>                        | Visual, static test. | <ul style="list-style-type: none"> <li>a) Callipers are seized or adjusted incorrectly.</li> <li>b) Hydraulic leaks.</li> <li>c) Levers loose or worn at pivot bushes.</li> <li>d) Hand grips missing or loose.</li> </ul>   |
| <b>2. Engine, gearbox and related components</b> | Visual, static test. | <ul style="list-style-type: none"> <li>a) Broken or loose engine and/or gearbox mounts.</li> <li>b) Damaged or sticking accelerator.</li> </ul>  |
| <b>3. Exhaust</b>                                | Visual.              | <ul style="list-style-type: none"> <li>a) Exhaust leaks.</li> <li>b) System not secure.</li> </ul>   |
| <b>4. Snow tracks/ runners/skis</b>              | Visual.              | <ul style="list-style-type: none"> <li>a) Drive cogs worn/damaged.</li> <li>b) Drive belt split/cracked.</li> <li>c) Broken, loose or damaged cleats.</li> <li>d) Loose, damaged, not aligned.</li> </ul>  |
| <b>5. Electrical system</b>                      | Visual.              | <ul style="list-style-type: none"> <li>a) Battery not secure, leaks or has loose terminals.</li> <li>b) Regulator not secure (mounting bolt loose or missing).</li> </ul>  |
| <b>6. Lights and reflectors</b>                  | Visual.              | <ul style="list-style-type: none"> <li>a) Use HVAIS Rule 507.01</li> <li>b) Any light or reflector required by vehicle specification sheets not fitted or not operational.</li> <li>c) Amber rotating beacon not fitted or does not operate when the engine of the towing vehicle is running.</li> </ul> |

| System/Component   | Inspection Required | Reason for Rejection  |
|--|---------------------|---|
| <b>7. Fire extinguisher</b>  | Visual.             | Use HVAIS Rule 512.01 clauses l) – p)                         |
| <b>8. Emergency exit</b><br>Note: Emergency exits are not required if the vehicle is fitted with one or more doors on each side of the passenger compartment and: <ul style="list-style-type: none"> <li>• The seating capacity does not exceed 12 persons including the driver, or</li> <li>• The vehicle does not exceed 2m in overall width.</li> </ul> | Visual.             | No passenger doors on either side or other alternative exits. |
| <b>9. Emergency exit marking</b>   | Visual.             | Not displayed where emergency exit fitted.                    |
| <b>10. Horn</b>  | Audible.            | a) Use HVAIS Rule 509.04<br>b) Not clearly audible.           |

## Section 2

### Inspection requirements for over-snow vehicles used for snow clearing operations.

#### Trucks modified as snow ploughs

This requirement is for vehicles modified to operate as snow ploughs by being fitted with a blade at the front and/or between the axles. The blade is used to push snow off the road.

If the blade is fitted at the front it can significantly increase the mass on the front axle. The projection forward of the blade may also present a danger to other road users and obstruct the vision of the driver of the plough.

As these vehicles can be used at night, they must comply with the special lighting requirements specified.

#### Requirements are as follows:

##### Driving position

The vehicle should either be right-hand drive or have dual control steering. If the vehicle is left-hand drive only, written approval for its use must be obtained from the Manager, Vehicle Operations and Investigation, Roads and Traffic Authority, PO Box 1120, Parramatta 2124.

If an approval is given, the vehicle's use will be subject to special conditions. Part of these conditions will be the fitting of the following items:

- a) Flat external rear vision mirrors fitted to both sides of the vehicle that provide a clear view to the rear for the driver at all times.
- b) A sign or marking at the rear of the vehicle in at least 50 mm high letters stating 'Caution Left-Hand Drive'.
- c) Headlights that dip to the left, and
- d) The windscreen wipers and demister must provide the driver adequate view to the right-hand side.

Approval to operate a left-hand drive snow plough will only be for the duration of the snow season. Approval can be sought by completing RTA Form No. 335 *Application to Register a Special Purpose Vehicle Which Does Not Comply with Construction Regulations*. This form is available on the RTA website as an attachment to VSI No. 46 *Registration of non-conforming special purpose vehicles*, or can be obtained from RTA Technical Enquiries - see page 12 for contact details. The completed form should be sent by registered mail to the Manager, Vehicle Operations and Investigation, Roads and Traffic Authority, PO Box 1120, Parramatta 2124.

##### Vehicle dimensions and obtaining an oversize permit, if required

- a) When the blade is attached to the vehicle, the combined dimensions should be within the maximum dimension limits for a standard vehicle. These limits are specified in VSI No. 5 *Vehicle dimension limits*. When the blade is fitted, the foremost part of the blade should be not more than 1200 mm in front of the vehicle.
- b) If it is not possible to remain within the dimension limits for a standard vehicle, approval must be obtained from the Manager, Vehicle Operations and Investigation, Roads and Traffic Authority, PO Box 1120, Parramatta 2124. This approval is in addition to the oversize permit.
- c) When measuring the length and width of the vehicle with the blade fitted, the measurements must be taken at all angles or elevations of the blade if it can be adjusted or offset to throw snow to the side of the road.

- d) To obtain a permit, operators must follow the procedure specified in RTA publication *Operating conditions: Specific permits for oversize and overmass vehicles and loads*. This document is available on the RTA website, or you may request a copy from your nearest motor registry – see page 12 for contact details.

### Vehicle mass, axle masses and obtaining an overmass permit, if required

- a) All snow ploughs should be within the maximum permitted axle masses that apply to standard road vehicles. These axle masses are specified in RTA brochure *Heavy Vehicle Mass, Loading and Access*, which is available on the RTA website - see page 12 for contact details.
- b) In some cases, the axle masses on a snow plough might be above the legal permitted axle masses. This can be caused by the additional mass of the blade and its long projection forward, or where counter-weights are used to adjust the axle masses. Where the normal axle masses are exceeded, an overmass permit must be obtained from the RTA.
- c) To obtain a permit, operators must follow the procedure specified in RTA publication *Operating conditions: Specific permits for oversize and overmass vehicles and loads*. This document is available on the RTA website, or you may request a copy from your nearest motor registry - see page 12 for contact details. A permit will not be issued if the vehicle manufacturer's maximum axle mass rating or the tyre manufacturer's rating is exceeded.

#### Notes:

- 1) Some heavy-duty vehicles can exceed the legal axle limits without the plough fitted. These vehicles are made for off-road use and are not designed for normal road operation but their heavy duty construction can suit the shunting of heavy loads such as snow. If a permit is issued to this type of vehicle, it will not allow any operation for other purposes and use outside of the snow season.
- 2) The design of some snow ploughs can produce a downward force on the front axle when the snow is being pushed. This force must be taken into account when assessing the load imposed on an axle. If the static axle mass is at or near the axle or tyre manufacturer's limit, the vehicle may not be suitable when under load moving snow. In such cases where the limits are approached, operators should consider fitting on-board load weighing cells and adjust the vehicle's speed or angle of the blade to reduce the load imposed on the axle.
- 3) If the blade is fitted with 'dolly wheels' to relieve the load on the front axle and if at any time it can be driven with those wheels raised above the ground, the assessments made above must be done without the wheels being in contact with the ground.

### Lights

- a) All standard lighting systems must be fitted to the vehicle. These are specified in VSI No. 12 *Guidelines for lights and light signalling devices for heavy vehicles*. An amber rotating beacon must be fitted to the highest point of the vehicle so that it is visible in all directions to other road users. It must be turned on at all times when the vehicle is being driven. Information on amber rotating beacons is contained in VSI No. 8 *Flashing lights and sirens*.

The amber rotating beacon must meet the following criteria:

- 1) Emit a rotating, flashing amber light.
  - 2) Flash between 120 and 200 times per minute.
  - 3) Have a power of at least 55 watts.
  - 4) Not be a strobe light.
  - 5) The emitted light must be clearly visible at a distance of 500 metres in daylight.
- b) Where the blade projects forward more than 1200 mm or is wider than the vehicle, a yellow coloured outline marker light must be fitted to the topmost and outermost extremities of the blade.
- c) Where the height of the blade obstructs the forward throw of the standard headlight beams, a second set of headlights must be fitted at a height that permits an adequate night time view of the road ahead for the driver. These high mounted lights must not produce any undue glare to other road users. These additional headlights will require specific written approval from the RTA.

- d) Where the height of the blade obstructs the view of the turn signal indicators to other road users, additional indicators must be fitted.

### Reflection of headlights at night off the back of the blade

Some snow ploughs are fitted with tall blades. If the back of the blade can reflect the light beam from the standard headlights and affect the driver's vision, they must not be used and an alternative set of lights as described above must be fitted.

### Reflectors

Reflectors must be fitted to the topmost and outermost points of the blade. They must be coloured white to the front, amber to the side and red to the rear.

### Flags

Flags may be fitted to the blade or other parts of the vehicle.

### Protrusions

All components with sharp corners or edges that a person could come into contact with must be protected in some way or rounded edges. Information on protrusions is detailed in VIB No. 5 *Protrusions on the front of vehicles*.

### Driver visibility

Some blades and/or their associated fittings can obscure the driver's forward view of the road. In all cases, the driver must have a clear view forward and to the side. Where the forward view is obscured RTA Form No. 335 *Application to Register a Special Purpose Vehicle Which Does Not Comply with Construction Regulations* must be completed. This form is available on the RTA website as an attachment to VSI No. 46 *Registration of non-conforming special purpose vehicles*, or can be obtained from RTA Technical Enquiries - see below for contact details. The completed form should be sent by registered mail to the Manager, Vehicle Operations and Investigation, Roads and Traffic Authority, PO Box 1120, Parramatta 2124.

### Plough attachments

All attachments of the blade to the vehicle must be designed to withstand the loads imposed on them. Quick release blade attachments must have a positive locking device incorporated in their design.

### General requirements

The vehicle must satisfy all other registration requirements in all respects.

Other information is detailed in VSI No. 46 *Registration of non-conforming special purpose vehicles*. All modifications eg fitting of any type of snow clearing device to a vehicle must be certified by an RTA recognised engineering signatory.



For further enquiries:



RTA Technical Enquiries, PO Box 1120, Parramatta NSW 2124



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