

Industry Alert

Bike racks on buses at night

Public transport bus operators should check their visibility when using bike racks at night.

On some bus models fitted with a bike rack, carrying bikes at night can partially obscure the headlamps. If the headlamps can't provide enough illumination to drive safely, the bus won't comply with the Land Transport Rule: Vehicle Lighting 2004.



Figure 1: Poor illumination and dark shadows from bikes

What bus operators need to do

Check if your buses are affected

For each bus model, confirm driver visibility of the road ahead and the sides where pedestrians would be.

- We recommend driving the bus at night in an area without street lighting, with and without bikes on the rack. We recommend testing a variety of bike sizes. Check if there's sufficient illumination to drive the bus safely.
- You can also do a static test in a dark, unlit area. Make sure that there is no danger from other vehicles. With and without bikes on the rack, assess the visibility of pedestrians and the area ahead over a range of distances.

If your buses are affected

If there isn't sufficient illumination to drive safely, you need to take steps to comply with the lighting rule. This alert gives possible solutions to consider.

Restrict using bike racks to daytime hours until resolved. We encourage operators to achieve compliance as soon as practicable.

Possible solutions to consider

Confirm the root cause of the lack of illumination. In the case of the bus NZTA tested, the low-beam headlamps were:

- relatively dull
- immediately behind the bike tyres
- a smaller diameter.

You must confirm any possible solution is effective and compliant by repeating the tests under *What bus operators need to do*.

Relocating the low-beam headlamp

From investigations to date, illumination is compliant if the low-beam headlamps are positioned either low down, below the bike rack, or toward the edges of the bus rather than more centrally.

Moving low-beam headlamps below the bike rack can prevent bikes obscuring them. The headlamps are aimed downward to prevent glare to other road users.

Moving the low-beam headlamps further outboard ensures that the sides of the road are still illuminated.

Any relocated headlamp will need to meet all requirements of the lighting rule.

Replacing the headlamp with a brighter one

Fitting brighter headlamps (for example, LED low-beam headlamps) could increase the illumination sufficiently, as long as any area in shadow created by one lamp is sufficiently illuminated by the other for good driver visibility.

Auxiliary low-beam headlamps

NZTA will consider issuing exemptions to allow you to fit auxiliary headlamps to the bike rack that switch on when the bike rack is deployed. The existing low-beam headlamps must remain unaffected.

You'll need to test this solution is effective at illuminating the road ahead and sides of the road, and that glare doesn't affect other road users. Include a test for any bounce of the bike rack over uneven surfaces.



Figure 2: Pedestrians clearly visible, road illuminated.
Although there are shadows from a headlamp, the road is sufficiently illuminated by the other headlamp.

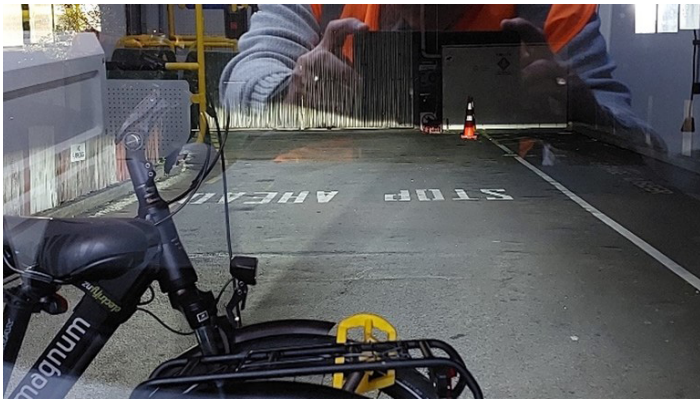


Figure 3: The road is sufficiently illuminated.
Signage on the road is clearly read, there are slight shadows from the bike.

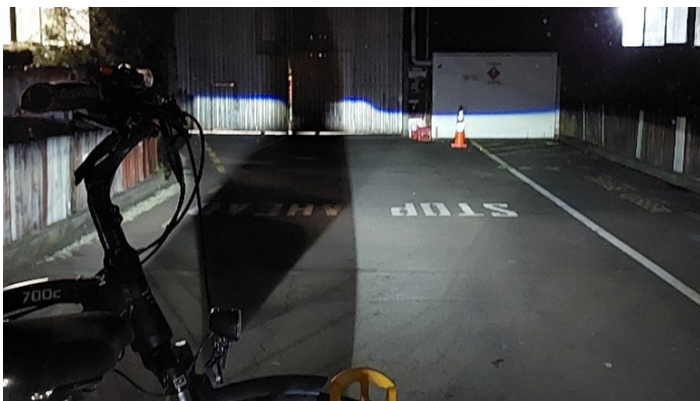


Figure 4: Dark shadows create non-compliance.
Dark shadowing creates an area where there is insufficient illumination of the road ahead.

How this was discovered

This concern was brought to our attention by various sources, including bus drivers who had difficulty seeing the road ahead when carrying large-tired bikes at night. We haven't been alerted to any crashes related to this problem.

NZTA has carried out testing to assess the situation. We tested two Optare models, one with halogen headlamps and one with LED headlamps. When using the bike rack at night, there wasn't sufficient illumination to comply with the lighting rule.

Investigations concluded that on many bus models there is still enough light to comply with the lighting rule when bikes are carried at night. However, it's important to check all models for non-compliance. We've issued this alert as a result.

All buses must comply

It's important that all buses are compliant with the lighting rule – this includes all existing buses in the fleet, and all future buses added to it. Police could carry out in-service checks at any time, and any non-compliant buses would need to be brought into compliance.

More information

For further information and support email info@nzta.govt.nz