

Traffic Note 34

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From: Safer Roads
Authorisation: Peter Croft, Manager Safer Roads

Signature: _____

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Signing of Steep Grades – Guidelines

1 Purpose

On 13 December 2001 the Land Transport Safety Authority (LTSA) approved, by notice in the *NZ Gazette*¹ the use of a steep grade sign. This provides an alternative form for an existing sign (P-24 of the *Traffic Regulations 1976* and PW-27 of the *Manual of Traffic Signs and Markings* [MOTSAM]).

This note provides background information on the development of this sign and guidelines for using it.

2 Background

Transit New Zealand (Transit) was asked to erect warning signs for the long steep grade on Arthurs Pass (approximately 2 km of 16% grade). Included in the request was a suggestion the steepness of the grade be shown on the warning signs. Two proposals to meet this request were considered – a percentage (16%) and a ratio (1:6).

The LTSA evaluated three options – a car with no value given, a percentage and a ratio. People had difficulty making sense of either of the two value formats (percentage and ratio). Importantly, however, no one misinterpreted the main message of any of the signs (i.e. steep grade).

A study of overseas standards (Australia, North America and Europe) showed that all these countries use a percentage and not a ratio. The road at Arthurs Pass (and many others where steep grades are signed) is a fairly important tourist route and everyone with experience of driving overseas would be familiar with the percentage because it's used so much overseas.

The steep grade sign often has a supplementary plate "Trucks Use Low Gear." Many car drivers assume the sign has little relevance to them. With a grade value on the sign a driver, with experience, will be better able to adjust their speed appropriately.

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Additional supplementary plates with the alternative messages “USE LOW GEAR” and “ALL VEHICLES USE LOW GEAR” may be used instead of the “TRUCKS USE LOW GEAR”, when considered necessary.

3 Guidelines for use

Transit has decided to adopt the Australian standard² regarding the signing of steep grades. In due course, it will be reflected in MOTSAM. The LTSA endorses this policy.

To gain the most benefit from the new sign it:

- should accurately reflect the grade (to the nearest percentage, rounded upward)
- be erected in enough locations that drivers gain a good understanding of the sign’s implications for the vehicle they are driving.

Tourists will benefit, and local drivers won’t lose any information, if any new or replacement signs conform to the new design and guidelines for its use. The LTSA recommends adoption of this practice, but can’t justify making replacement of the existing signs mandatory yet.

¹ *NewZealand Gazette*, 13 December 2001, No 170, page 4184

² *AS1742.2-1994 Manual of uniform traffic control devices Part 2: Traffic control devices for general use: Section 3.9.2 Signs for Steep Grades*