

Traffic Note 23

Date: May 2000
From: Safer Roads
Authorisation: John Edgar, Manager Safer Roads

Signature: _____

No. of pages: 4

Speed Indicator Devices - Guidelines

1 Purpose

A speed indicator device (SID) measures a vehicle's speed and displays the recorded speed to the approaching motorist. This Note aims to get best advantage out of these potentially useful devices while mitigating risks. Current legislation is not clear on the exact status of SID but the LTSA considers they should be treated similarly to traffic signs. Road controlling authorities (RCA) have a responsibility to ensure they are used appropriately within their jurisdictions.

This Note provides interim guidelines for operating SID. These will be amended, if required, on the basis of experience gained over the next 12 months.

2 Background

During the early 1970s SIDs were in use in a number of jurisdictions in the USA. Over the last decade they have been increasingly used in the States and in many European countries. Casey and Lundⁱ conducted a study of SID, which they called mobile roadside speedometers, and concluded:

"The data indicate that, generally, the speedometer's presence reduced average traffic speeds by about 10% alongside the speedometer and about 7% at short distances downstream. The proportion of drivers exceeding the speed limit by at least 10mph (16km/h) fell dramatically...However, the effect of the speedometer was limited to the times when it was actually deployed. Associated police enforcement is a key factor, as the effect of the speedometer decayed over time but could be long lasting with a minimal amount of enforcement activity in the area of the speedometer."

Disclaimer: The Land Transport Safety Authority (LTSA) has endeavoured to ensure the material in this document is technically accurate and reflects legal requirements. However, the document does not override governing legislation. The LTSA does not accept liability for any consequences arising from the use of this document. If the user of this document is unsure whether the material is correct, they should make direct reference to the relevant legislation and contact the LTSA.



3 Operating Policy

There is a need for SID to be used within the overall speed control strategies of an RCA and enforcement by the Police. This should provide the longer-term benefits described by Casey and Lund. SID could supplement, but not be a substitute for Police enforcement activity.

Police enforcement, operating downstream of the SID, should occur on a random basis. At intervals, SIDs should be used at locations where the Police regularly place a speed camera and active Police participation in the application of SID use should be encouraged. RCAs should have an agreed operating policy with the Police.

SIDs could be effective if linked with local community road safety projects occurring in the area. It is important to note, however, LTSA community project funding should not be used to purchase SIDs or associated equipment.

RCA should have a procedure in place to handle requests from local residents or interest groups for the use of SID. A programme of use on a full range of roads and situations within an area improves the effectiveness of SIDs.

4 Operational Procedures

Operational procedures for the use of SID need to be documented for use by the SID operator to ensure consistency of use. The procedures should include:

- a code of safe practice for operating the device and conducting roadside surveys to fulfill occupational health and safety requirements;
- checks required before setting up (eg battery charge);
- set-up procedures including issues relating to the desirable characteristics of the survey sites and traffic factors which might indicate, for safety or other reason, the need to relocate or terminate the operation;
- closing down procedures including traffic factors which might indicate, for safety or other reason, the need to relocate or terminate the operation;;
- instructions on siting, aligning and levelling the equipment and the implications on accuracy of failure to comply with these instructions;
- maintenance requirements including the need for, and the intervals of, periodic calibration of the speed measuring device;
- the frequency of checking the accuracy and operation of the equipment;
- methods used for checking the accuracy of readings and the correct operation of the equipment at the start;
- details which should be recorded for each site (for example date, time, weather and traffic conditions, general observations by recorder, etc); and
- any other operational requirement.

Disclaimer: The Land Transport Safety Authority (LTSA) has endeavoured to ensure the material in this document is technically accurate and reflects legal requirements. However, the document does not override governing legislation. The LTSA does not accept liability for any consequences arising from the use of this document. If the user of this document is unsure whether the material is correct, they should make direct reference to the relevant legislation and contact the LTSA.



Operators should be appropriately trained and fully understand the detailed operational procedures affecting the performance of the SID.

RCAs should carry out checks to ensure SIDs are operating in accordance with operational procedures and in compliance with any specific conditions of use.

5 SID Display

Design criteria of letter height, words, content; placement, etc. for traffic signs contained in *Austroads Guide to Traffic Engineering Practice Part 8 Traffic Control Devices* (Austroads Part 8) should be complied with.

Characteristics of the display

The speed value (up to three digits) is displayed using light emitting diodes (LED). In addition, words (such as **'YOUR SPEED'** or **'km/h'**) are displayed permanently on the sign area surrounding the LED display. The dimensions and form of the total display area should be consistent with Austroads Part 8.

Permanent lettering should be black on a white background and the variable LED display yellow (rather than red) on a black (unlit) background. Red lettering has connotations of regulatory signage and this display is not regulatory but provides information. Flashing yellow circular lights within the outside outline of the display (particularly at the top corners) can be used for activation when a set speed above the limit is detected.

The LED speed value display should not flash. The speed value displayed is the current 'steady-state' detected speed which may vary during the vehicle's approach. The flashing of this reading would make it more difficult to comprehend.

Content of display

Motorists may use the SID readings to 'calibrate' their speedometers and it is essential this be done as accurately as possible. The measuring device should be capable of measuring, and be set up to measure, speeds accurately to within accepted tolerances - i.e. the error should be less than $\pm 2\%$.

Displaying a speed well in excess of the limit could be counter-productive. For example, motorists might compete for the highest reading by deliberately travelling at excess speed or a perception might arise of 'official' endorsement due to the inability of the SID operator to take action against a speeding driver. SID should therefore not display speeds more than, say, 20km/h above the limit and where higher speeds are recorded the SID should display only flashing yellow lights or a blank screen.

Advertising

No advertising, even road safety messages, should be permitted on the sign or trailer area facing motorists. If advertising of any kind is permitted on the trailer it should be minimal, not directed toward motorists and be compliant with the RCA ordinances.

Disclaimer: The Land Transport Safety Authority (LTSA) has endeavoured to ensure the material in this document is technically accurate and reflects legal requirements. However, the document does not override governing legislation. The LTSA does not accept liability for any consequences arising from the use of this document. If the user of this document is unsure whether the material is correct, they should make direct reference to the relevant legislation and contact the LTSA.

Placement

The SID trailer should be placed off the carriageway and shoulder where possible. The SID should not obscure or distract from other traffic signs nor be placed at a critical decision point for motorists where distraction to the speed sign would increase risk (eg immediately in advance of a curve or signals).

Normal principles of sign placement (as described in Austroads Part 8 or the *Manual of Traffic Signs and Markings*) should be followed.

As a SID will be used where vehicles are not frequently parked care is needed to ensure visibility of and for road users is not obstructed by the device.

6 Evaluation

The effectiveness of SIDs in a range of circumstances should be evaluated. This will assist in identifying the most effective operating regime and in determining appropriate levels of future resource investment in SID.

Speeds at the SID site and down stream from it, before, during and after the SID operates should be periodically measured by independent surveys (i.e. by speed measuring devices and surveyors other than the SID or its operator). Each survey should obtain adequate sample sizes (at least 100 vehicles) and be conducted at approximately the same time of day and day of week as the SID is used. It would also be useful if the effect of any associated Police enforcement could be measured.

The LTSA would be interested in receiving results of evaluations and details of operational experiences during the next 12 months to enable more definitive guidelines to be issued if required. Information should be directed to:

Senior Engineer Traffic Engineering Policy
 Land Transport Safety Authority
 P O Box 2840
 WELLINGTON
 Phone (04) 494 8600, Fax (04) 494 8604

ⁱ Steven M Casey and Adrian K Lund "The Effects of Mobile Roadside Speedometers on Traffic Speeds" in *Accident Analysis and Prevention*, Vol 25, No 5, pp 627-634, Pergamon Press, 1993.

Disclaimer: The Land Transport Safety Authority (LTSA) has endeavoured to ensure the material in this document is technically accurate and reflects legal requirements. However, the document does not override governing legislation. The LTSA does not accept liability for any consequences arising from the use of this document. If the user of this document is unsure whether the material is correct, they should make direct reference to the relevant legislation and contact the LTSA.