

# “ PPP ”

## People for Proper Policing in North Wales

### TRL-548 Vehicle Activated Signs ----- a large scale Evaluation

This bulletin should be considered with the PPP bulletin entitled.

#### ‘Road Accidents: Prevent or Punish’

This valuable report has been given little publicity as the VAS raises no revenue and the report’s conclusions do not support **the current road safety policy and attitude that aims to persecute drivers.**

#### Conclusions

- Clearly, drivers can be influenced to reduce speed when they are specifically targeted, with fixed signs alone likely to have less effect.
- Vehicle-activated signs appear to be very effective in reducing speeds; in particular, they are capable of reducing the number of drivers who exceed the speed limit and who contribute disproportionately to the accident risk, without the need for enforcement such as speed cameras.
- Vehicle-activated signs can be operated at thresholds well below normal police enforcement levels.
- There is no evidence that in time, drivers become less responsive to the signs, even over three years.
- Operating costs are also low.
- In this study, a substantial accident reduction has been demonstrated.

A range of rural road safety engineering measures has been developed to encourage drivers to adopt a safe speed on the approach to hazards such as bends and junctions. Ideal safety measures are likely to:

- Be of low cost with low maintenance requirements.
- Be self-enforcing with high compliance.
- Have no long-term diminution in effect, making them less effective.

Vehicle-activated signing corresponds closely to these requirements, and following early trials, a significant number have been installed in the United Kingdom since 1990. The signs display a simple message relating to road conditions (presence of bends, junctions or speed requirements) to specific drivers, i.e. those exceeding a particular threshold speed. Four types of sign have been studied:

- Speed limit roundel (just inside the speed limit terminal signs) - mainly village sites.
- Bend warning.
- Junction warning.
- Speed camera repeater sign (displaying camera logo).

The bend and junction warning signs were normally set up so that vehicles exceeding what was considered a safe speed to negotiate the hazard triggered them.

Following trials of individual sign installations with promising results, a full-scale study of the effectiveness of over 60 installations has been conducted by TRL for the Department for Transport (DfT), and is the subject of this report. The signs are mainly on rural single carriageway roads, and are situated in Norfolk, Kent, West Sussex and Wiltshire.

The main aims of the trial were to assess the effect of the signs on speed and injury accidents, and drivers’ understanding of the signs. This information will be used to develop best practice for sign installation.

Monitoring of the signs involved:

- Before and After collection of speed data - the After data collected typically one month and at least one year after sign installation (also after three years at early installations).

- Obtaining accident data (for locations that had been in operation for more than one year) for sections of road appropriate to the type of sign or hazard.

Speed was used as an indicator of the expected changes in accident frequency, because of the long time taken for accident data to accumulate. In general, as the average speed of traffic reduces, there is a corresponding reduction in the number and severity of casualties. Also, the highest speeds contribute most towards the number and severity of casualties; therefore, the ability to identify and analyse the speed distribution in some detail is very important. Using automatic data loggers connected to loop or tube detectors, 1-3 months’ data were collected Before and After installation where possible, with 7 days as a minimum requirement.

For Norfolk, where the majority of signs have so far been installed, accident data were also obtained for all urban and rural roads in the county, to compare numbers at the treated sites with the general accident trend in the county.

#### Results

##### *Effect on speeds and accidents*

At the speed limit roundel signs, mean speeds of the traffic as a whole were reduced by between 1mph and 14mph, the higher reductions being where the speed limit had also been reduced by 10mph. The average reduction in mean speed where there had been no change in the speed limit was 4mph (range 1mph to 7mph).

The junction and bend warning signs reduced mean speeds by up to 7mph, and the Speed camera repeater signs yielded a reduction of up to 4mph. Speeds exceeding the limit were also reduced, with the reductions tending to be greater at the roundel signs.

There has been a statistically significant one-third reduction in accidents across all of the Norfolk sites combined when compared with the number of accidents that would have been expected without the signs. Speed camera repeater signs appear to give small additional accident reductions over safety cameras alone.

##### *Public opinions*

Nearly 450 drivers took part in opinion surveys at three locations in Norfolk and one in Wiltshire. Two locations had a speed limit roundel (20mph and 40mph) and two had a junction sign. Most of these drivers drove regularly past the relevant sign. Opinions were sought about the four sign types, some of which might be thought to be associated with enforcement, by showing photographs of each type of sign. (The roundel signs were pictured with and without a microwave detector head, which could be thought to be a speed enforcement camera.)

There was overwhelming approval of the signs. Most drivers had made the connection between their own speed and the signs being triggered; exceeding the speed limit was thought much more likely to trigger the roundel sign than the other signs.