



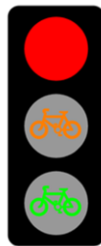
High Level Cycle Signals Trial

Background

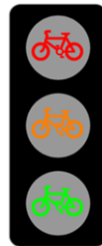
Transport for London (TfL) commissioned TRL to test a wide variety of innovative cycle signals and layouts at TRL's test track. This project involved undertaking a range of trials with cyclists and other road users.

One such trial investigated the use of high level signals with a red cycle logo, this being a signal variation not permitted by the UK regulations. The trial on TRL's urban road network facility utilised the existing "Full Red" signal and a new "Cycle Red" signal, as shown in the diagram below.

'Full Red'
signal



'Cycle Red'
signal



Objective of the trial

The objective of the trial was to assess if cyclists responded differently to the Cycle Red signal compared to the Full Red signal.

The trial studied whether participants adapted their behaviour in response to the Cycle Red signal and considered the implications for cyclists if the new signal were to be introduced on the street. The trial was also required as a pre-requisite for later trials on Low Level Cycle Signals which are designed to use the Cycle Red signal.



Trial objectives

The trial was designed to investigate:

- **Cyclists' compliance with the signals** – to what extent did the Cycle Red affect the compliance of cyclists with the signals and also to the stop line, in comparison with the Full Red?
- **Cyclists' perception and understanding of the signals** - to what extent did the participants correctly understand the Cycle Red in comparison with the Full Red?
- **Direction of cyclists' vision on approach to the junction** – to what extent was the Cycle Red signal noticeable to the cyclists, in comparison with the Full Red?



Trial design

The trial used a mix of video analysis and both in-trial and post-trial questionnaires in order to help answer these questions.

The trial was undertaken at a cross-roads junction with standard (“Full Red”) traffic signals for the motorised traffic movements and both bicycle and standard signals (“Cycle Red” and “Full Red”) on the cycle approaches.

Cyclist participants were released at controlled times so that they experienced a range of signal phase scenarios with both the “Full Red” and “Cycle Red” signals in place at the junction.

Initial findings

The findings from this study were that:

- The cyclists responded the same to the Cycle Red signals as to the Full Red signals;
- The Cycle Red signal did not introduce any confusion over interpretation of signals;
- There was a good level of understanding of the Cycle Red signal with no significant differences from their understanding of the Full Red signal; and
- There was a marginal preference from participants for the Cycle Red signal over the Full Red signal.

Those who preferred the Cycle Red symbol mainly preferred it because it is clearer that it applies specifically to cyclists and it demonstrates a willingness to differentiate cyclists.

Those who said they preferred the Full Red symbol mainly did so because it is easier to see and more conspicuous.

Some concerns were expressed by participants about the visibility/brightness of the Cycle Logo signal (when compared to the Full Red); and the way in which the signal might be interpreted, particularly by other road users. However, respondents were not aware that the signals would only be installed where all the traffic would be made up of cyclists and therefore mis-interpretation would not be an issue.

Responses about the configuration of the signals were also received; some (9%) commented that the signals were too high, or that an additional lower signal would be useful.



HLS at Princess Street

Implications of findings

The trial provided evidence to support on-street trials of the Cycle Red signal. In addition the trial findings provided sufficient confidence that the trials of Low Level Cycle Signals could progress safely.

Further Information

TfL - Better Junctions for Cyclists

www.tfl.gov.uk/betterjunctions

TRL - Safer Cycling Innovations

www.trl.co.uk/cyclinginnovationtrials/