



Mr Russell Caller  
HM Assistant Coroner  
Inner West London  
Westminster Coroner's Court  
65, Horseferry Road  
London  
SW1P 2ED

Leon Daniels  
Managing Director  
Surface Transport

Transport for London  
11th Floor, Zone R4  
Palestra  
197 Blackfriars Road  
London SE1 8NJ

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Dear Mr Caller,

## Milan Dokic – Regulation 28 Report

We offer our sincere condolences to Mr Dokic's family following the tragic accident and our thoughts remain with them.

We refer to your Regulation 28 report dated 11 August 2017 following the outcome of the inquest touching on the death of Mr Dokic, and our response is below.

### Matters of concern

#### 1. **There is an inadequate procedure for determining grip levels on CSH8 and on other Cycle Superhighways and on other roads in London**

TfL has well established methods to determine grip levels across Transport for London's Road Network (TLRN) and this is being extended to cover cycle superhighways. TfL implements and follows a comprehensive skid resistance policy which is based on proven industry best practice that is used by major highway authorities such as Highways England, and is supported by the Department for Transport. The policy describes in detail the approach to monitoring roads on the TLRN and identifying areas with a potential lack of grip, prioritising these identified sections for further investigation, and producing a risk rating of identified deficiencies for use in prioritising remedial works.

TfL uses a Sideway-force Coefficient Routine Investigation Machine (SCRIM) to survey the entire network annually and measure the level of grip resistance of roads on the TLRN. The SCRIM operates by measuring the surface friction of a wet road at a constant speed of 30mph. TfL assesses the results to identify areas requiring further investigation. The sites where skid resistance measurements highlight areas of potential concern as well as those with a history of wet weather collisions are prioritised for investigation. This investigation involves a competent assessor visiting the location and undertaking an extensive visual assessment to produce a specific risk assessment for that location. The data from the risk assessment is analysed by a commercial computer system (iRoads which is specifically used to manage SCRIM data and surface friction on the TLRN) which produces a risk ratings. The risk ratings are used to

prioritise treatments for improving skid resistance alongside other maintenance and improvement works on the highway. Treatments include high-friction surface dressing, signage, resurfacing and other maintenance such as vegetation clearing, sight line improvements or drainage repairs.

TfL is committed to providing a safe and reliable transport network and we work closely with our contractors, road safety groups, manufacturers and various London boroughs to champion considerate and safe road use and travel across London. In particular, TfL works with the London Technical Advisory Group which consists of all London boroughs to share best practice in highway maintenance and management of roads in London.

**2. There has been a failure to monitor grip values on Cycle Super Highways in London.**

We have reviewed the approach to monitoring skid resistance on CSHs and our updated policy sets out the testing method and frequency of the regime for immediate application. All carriageway sections of the CSH have been SCRIM surveyed in the last 3 months to ensure TfL has the appropriate data to make decisions around the management of its cycle network. For segregated cycle-ways, a grip tester machine has been purchased by TfL and a testing regime is being implemented. A grip tester machine is a trailer based continuous surface friction measuring machine, which produces measurements that can be related to SCRIM data.

**3. There appears to be a lack of a refined scientific approach to measure the grip of the road surface.**

The measurement and recording of the grip of road surfaces is well established across the civil engineering and highway management sectors. Industry standards have been built on the foundation of research into skidding distances and the identification of higher risk geometries for skidding, for example tight corners and approaches to junctions, which have been incorporated into management standards, material standards, and testing standards all of which govern the installation, maintenance and monitoring of roads and the associated skid resistance (grip). We enclose a summary of the history of the development of national skid management policy and testing systems in the UK.

There are a number of well-established methods of measuring surface friction of roads, which have been developed and refined over decades of practise and continuous research, which includes grip testers, SCRIM and pendulum tests. SCRIM and grip testers enable continuous lengths of road to be measured and are therefore much more practical than pendulum tests which are more suitable for measuring individual sites. Although the measurements produced by SCRIM and grip testers are relatable to each other, the measurements from pendulum tests are not easily relatable to either SCRIM or grip tester measurements. Therefore, TfL tends to only use SCRIM and grip testers across its road network.

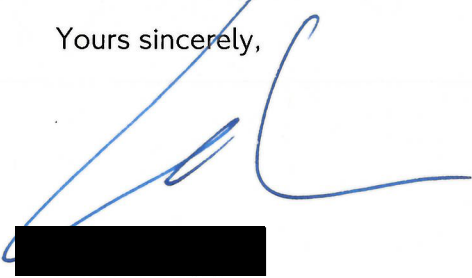
**4. There is a lack of knowledge as to the impact of the adverse effects of having adjacent areas of road with very different grip values.**

Transport Research Laboratory (TRL) has undertaken significant research in the field of road skid resistance assessment and management. TRL has not, to the best of our knowledge, found anything to indicate that differential skid resistance across a lane has a significant impact on vehicles' ability to brake and manoeuvre on roads with appropriate grip at normal London traffic speeds. As materials with different skid resistance properties are routinely laid following repairs and reinstatements on highways across the UK, TfL will be raising this issue with the UK Roads Board (an organisation which brings together national and local government from

across the UK to consider roads infrastructure engineering and operations matters) in order to potentially conduct specific research into this issue.

I hope the above is of assistance.

Yours sincerely,

A handwritten signature in blue ink, consisting of several fluid, connected strokes. The signature is positioned above a black redaction box.

**Managing Director – Surface Transport**