



# Investigation tool

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## SPAD data collection tool for rail infrastructure managers – tool C

### Instructions

- Completed forms can be forwarded to ITSR either by **email**: occurrences@transportregulator.nsw.gov.au or **fax**: 02 8263 7200.
- It is recommended that a copy of this form be provided to the rail safety worker involved.
- Prior to completion of this form, review tool B to identify any highlighted potential infrastructure-based contributory factors.

### Part 1 - SPAD reference details

SPAD reference number:	<input type="text"/>	Date:	<input type="text"/> / <input type="text"/> / <input type="text"/>
Time:	<input type="text"/>	Signal number(s):	<input type="text"/>
Location of SPAD:	<input type="text"/>		

### Part 2 - Infrastructure factors

#### 2.1 Is it possible that factors associated with the design of the route may have contributed to the SPAD?

Consider the following questions:

- 2.1.1 Is the signal in rear of the SPADed signal always encountered at a caution or low speed aspect? yes  no
- 2.1.2 Relative to previous signals, does the signal have a different aspect configuration or signal type? (e.g. a change from light to semaphore or vice versa, or a significant change in horizontal offset from the rail) yes  no
- 2.1.3 Is the height inconsistent with other signals on the route? yes  no
- 2.1.4 Is the spacing between the SPADed signal and its immediate predecessor inconsistent with the spacing between preceding signals on the line? yes  no

#### 2.2 Is it possible that factors associated with the approach to the SPADed signal may have contributed to the SPAD?

Consider the following questions:

- 2.2.1 Is there complex track layout on the approach to the SPADed signal? yes  no
- 2.2.2 Is the signal beyond a bridge or tunnel that restricts continuous and uninterrupted view of the signal on approach? yes  no
- 2.2.3 Is the visibility of the signal restricted by station structures? yes  no
- 2.2.4 Is the signal obscured by overhead wiring structures? yes  no
- 2.2.5 Could stanchions or vertical posts repeatedly occlude the signal on approach and cause a pulsating illusion? yes  no
- 2.2.6 Could lineside clutter prevent continuous and uninterrupted view of the signal on approach? yes  no
- 2.2.7 On a curved approach, could the driver mistake a parallel signal as his/her own? yes  no
- 2.2.8 Is the signal on a curved approach that restricts continuous and uninterrupted view of the signal? yes  no
- 2.2.9 Is the signal viewed against a dark surrounding environment that may hide the signal backplate? yes  no

- 2.2.10 Is the signal viewed against a visually complex surrounding environment that may hide the signal aspect? yes  no
- 2.2.11 Is the signal significantly less bright than adjacent parallel signals or signals ahead that can be seen on approach? yes  no
- 2.2.12 Does the number of signals visible differ from number of lines visible to the driver (including sidings)? yes  no
- 2.2.13 On a curved approach, are post mounted signals on adjacent lines not positioned in parallel so that they may appear to swap position? yes  no
- 2.2.14 Is the signal obscured by foliage? yes  no
- 2.2.15 Is there a rising gradient between the caution signal and the SPADed signal? (that meant the driver needed to increase power after encountering the cautionary aspect) yes  no
- 2.2.16 Does the speed limit increase on the approach to the signal? yes  no
- 2.2.17 Could the signal's visibility be adversely affected by sun glare shining off the signal lens? yes  no
- 2.2.18 Is there evidence that a signal-like light would be in the driver's field of vision on approach to the signal? yes  no
- 2.2.19 Is the signal backplate/background (or cage) too small to be able to easily distinguish the signal from the surrounding environment? yes  no
- 2.2.20 Did unusual routing on a parallel track prompt read across to a more familiar (regularly encountered) signal? yes  no

### 2.3 Is it possible that factors associated with the signal itself may have contributed to the SPAD?

Consider the following questions:

- 2.3.1 Is the signal located within 10 metres of a tunnel exit? yes  no
- 2.3.2 Is the signal in a tunnel? (where there may be insufficient lineside visual cues to support judgement of train speed) yes  no
- 2.3.3 Is the signal a departure signal at the end of a platform? If so, when stopped at the car marker or normal stopping position (which may be affected by short platform length), is the signal obscured or hard to see? yes  no
- 2.3.4 If the signal is post mounted is it set at a non-standard height? yes  no
- 2.3.5 Is the signal located on the 'wrong side' of the track or positioned in an otherwise unusual location? yes  no
- 2.3.6 Is the signal beam improperly aligned for the approach route? yes  no
- 2.3.7 Was the signal lens dirty or fogged, so reducing the beam intensity? yes  no
- 2.3.8 Is there strong ambient or background lighting, such as station lighting - which diminishes the apparent brightness of the signal light? yes  no
- 2.3.9 Could the driver's view of the signal be obscured by the presence of another train? yes  no

Note: Potential mitigating measures for each item in this tool can be found in the guide *Mitigating measures for tool C SPAD data collection tool for infrastructure managers*.