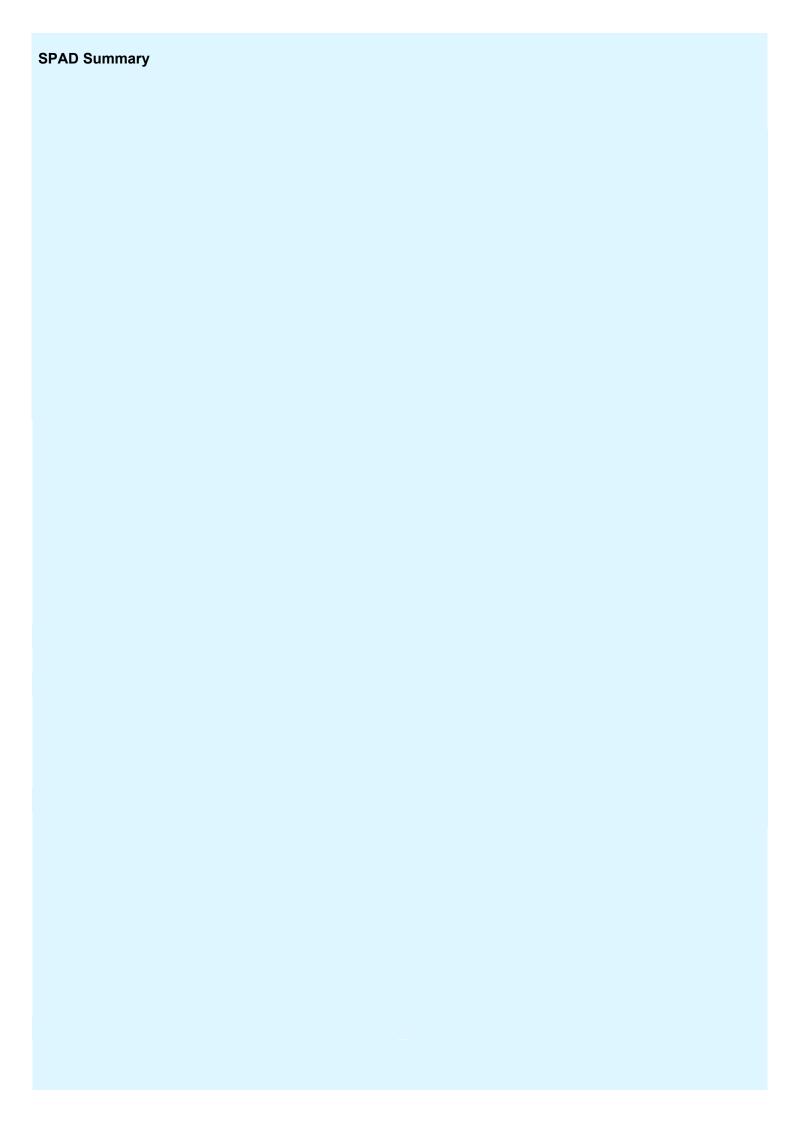
SPAD Investigation Pro Forma Published by RISSB on behalf of the Australasian rail industry



Applicable Incident Reference Number(s):	
Date Opened:	Date Closed:

Check if included, add source, and enter additional attachments if necessary:

HARD DATA / EVIDENCE LIST	SOURCE	Inc
	SOURCE	Inc
Related Safety Alerts / Safety Rules		
Audio / Transcript		
Voice Recording Overview		
Video Footage		
CCTV Footage		
Event Recorder		
UTC Replay		
ATP Logs		
Rail Schematics / Diagrams		
Signal / Interlocking Diagrams		
Damage Diagram		
Signal CCTV Screenshot		
Photographs of the SPAD		
Signal Photograph		
Satellite Photograph		
Records / Logs		
Driver Phone Record / Permission Received		
Signal Log		
Real-Time Performance		
Signaller Report		
RS / INFRA Fault Report		
	_	



1 Signal Details 2 Vehicle Details Signal Location Signal Number **Technical** Unit ID Make of Vehicle **Geographical Location** Direction **Traction Type** Type of Equipment What does the signal protect? Give details Type of Vehicle Speed Limit of Vehicle (if applicable) **Signal Characteristics** km/h Position to running line **Previous Signal** Loco Details (if applicable) Signal aspects normally seen on approach **Service Information** Consist / Configuration Distance to fouling point Sighting Distance m Departure Time Train ID **Signal History** Give details Origin Destination Operation Type Give details **Technical** Illumination Signal Type **Further Information Track Details Track Condition** Speed limit of track km/h Speed restrictions Give details

3 Driver	Job Role:
Profile	Present Job Role
Occupational details:	
1 Was the driver registered for secondary employment?	Time in Job Role Time in Industry
Yes explain No	
ightharpoons	Current Medical Restrictions (if applicable)
2 Was the driver on a support / development plan?	
Yes explain No	Driver Roster (Current Shift Details):
	Shift Identifier
	Smit identiner
	Proximity to Annual Leave
	Duration of Driving Shift Hours
3 Was the driver competent?	
	How long since / until crib, the driver changed ends
Yes No explain	or was relieved?
	Shift Rotation
	Driver Roster (Historical Shift Details):
4 Does the driver have the appropriate practical /	
route knowledge?	
Yes No explain	
igtriangledown	
	FAID Score
Multi-SPAD? Incidents in	
previous 2 years	

Driver Testimonial	Timeline Reconstruction:
Contributing Factors	
1 Signal aspect seen in preceding signal?	
2 Describe any other distractions that the	
driver was aware of	
	Fitness for Duty:
	Sleep Prior
3 Explain the nature/detail of the unusual circumstances if any were present	
circumstances if any were present	
	Was the driver taking medications?
	Yes provide details No ▽
	·
	Medical Treatment
	Medical Treatment
	Medical Treatment
Driver's Recollection of Environmental Conditions:	Medical Treatment
Noice Light Track	Medical Treatment
Noise Light Track Gradient	Medical Treatment Personal Issues
Noise Light Track Gradient Vibration Glare Other	
Noise Light Track Gradient Vibration Glare Other	
Noise Light Track Gradient Vibration Glare Other	
Noise Light Track Gradient Vibration Glare Other	
Noise Light Track Gradient Vibration Glare Other	

4 Other Actor(s)	Other Actor(s) Testimonial
Other Actor(s) Profile	Other Actor(s) Sleep Prior to SPAD
Witness Details	
	Witness Statement
Other Rail Personnel: Personal Identifying Information (if applicable)	
T ersonal identifying information (if applicable)	
Job Role	
Time in Job Role Time in Industry	
Madical Catavana Madical Evoir	
Medical Category Medical Expiry	
Current Shift Identifier	
Carrone Crime radinanci	
Current Shift Details	Controller Report
Historical Shift Details	
Nature of Involvement of Other Actor(s)	
Give details	
	Location / Actions of Key Personnel
	No. Persons in Cab / Onboard

6 Incident Details 5 Damage Assessment Location Was there damage? Overrun Distance Line ID Yes continue No Skip to Injury Details m Cargo / Freight Damage Give details Did the SPAD Occur Before or After a Platform? **Property / Other Vehicles Involved** Give details **Equipment Damage** Give details **Service Information** Incident Date **Incident Time** Property / Points Damaged? Yes No **Environmental and Weather Conditions:** Still Operable? Yes No Glare Noise Vibration Light Give details Track Wind Snow Rain Gradient Fallen Sun Rail Vehicle Humidity Visibility Angle Foliage Damaged? Yes No Other (give details) Still Operable? Yes No Give details **Rail Condition** Rail State Motor Vehicle Damage Give details Adhesion **Injury Details** Humidity Injured Persons Name and Role **System State** Was the site frozen / site evidence preserved? No give details Medical Treatment Type Other Important Details Safety Actions Taken Give details

Post Incident Procedure)		Schedule State	
Was the RSWC Removed	d? Yes	No	Reason for Signal Stop	Give details
				·
Was EAP offered?	Yes	No		
What recovery work was i	nvolved?	∵ Give details		
		V 5.75 ustano		
What were the safety issu	es / respon		Time / Supply Constraint	Circo dotoilo
		Give details		Give details
Was a drug / alcohol test	given?			
Yes	No			
Date Given (if applicable)	Time G	iven (if applicable)		
			Notice of the standing of anyther than	
Test Result - Driver			Network (select multiple if applicable):	
Test Result - Other Actor				
Train State				
Loco / Unit being			Other:	
Train was				
ITalii was				
Emergency brake applicat	tion?		Rolling Stock Operator	
Yes	No			
Conflicting move / train?				
Yes	No		Network Operator	
Distance to potential confl	ict point:			
		m		

7 Contributory Factors - Immediate

Driver (select all applicable)

Misjudgement:

Misjudged environment

Misjudged train handling

Intentional Behaviour / Violation of Rules:

Blatant disregard of rules

Management pressure

Unavoidable departure from rules

Short cuts

Horseplay, thrill seeking etc.

Decision Error:

Interpretation of instructions

Mindset

Decision Freeze

Insufficient knowledge / learning

Information Integration

Memory Error:

Mental block

Insufficient knowledge, learning or retention

Information overload

Distraction / Preoccupation

Confusion

Sensory Error:

Situational awareness / Risk perception

Expectation / Anticipation /

Assumption Confusion

Distraction / Preoccupation

Visual perception

Information overload

Action Error (Failure):

to react to caution signal

to locate signal

monitor for signal

to check signal aspect

to maintain correct operating

speed

Action Error:

Confusion

Work method error

PPE / Equipment misuse /

Tampering

Operating authority error

Additional:

Intrusive thoughts

Unintentional behaviour

Completely missed in

running

Other (explain):

Influence of Other Actor(s), the Organisation or the Operation on the Driver

Team Actions:

Supervisory error

Work method error

Confusion

Miscommunication with

the driver

Additional:

Outside factor

Peer pressure / Poor supervisory example

Signal sighting issue

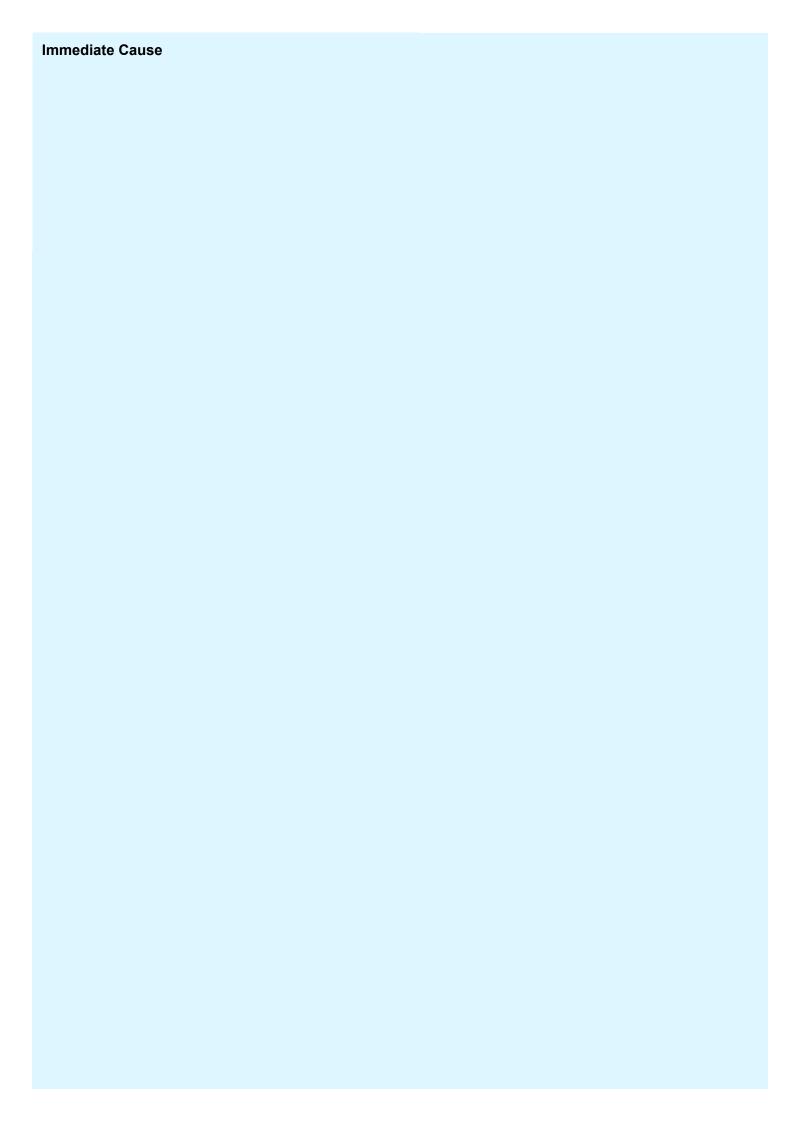
Other (explain):

Has a Safety Briefing associated with Immediate Actions been conducted?

Yes

No

Give details



8 Contributory Factors - Underlying

Organisational / Operational Factors

Management:

Management of change / Abnormal situations

Compliance management

Maintenance / Hygiene management

Contractor management

Systems management

Workload / Shift management

Vehicle management

Risk management

Failures:

Infrastructure failures

Network failures

Equipment failures

Hazard analysis failures / Job safety analysis / Take 5

Signal failures

Hardware failures

<u>Culture / Normalised Deviance:</u>

Perceived license to bend rules

Passive tolerance of violation

Additional:

Conflicting goals

Perceived pressure from other actor(s)

Organisational learning

Communication

Other (explain):

Describe Underlying Organisational / Operational Factors

Workload Factors

<u>Mental:</u>	<u>Task Demands:</u>	Other (explain):	
Mental stress	Emergency / Degraded / Abnormal conditions		
Physical:	Demands due to high risk		
Physical stress	High / Low cognitive demand		
<u>Task:</u>	Insufficient resources		
Time / Productivity / Pressure	Improper supervision		
Monotonous / Boring			

Describe Underlying Workload Factors

Absent / Failed Defences

Controls / Recovery:	<u>Detection:</u>	<u>Awareness:</u>
Procedure	of speed and movement	Awareness of supervision
Engineering / Secondary / Backup	of Vigilance / Fatigue	Hazard awareness
	of Visual / Aural warnings	Awareness of communication
		Awareness of knowledge, skills and experience
		Awareness of procedures

Other (explain):

Describe Underlying Absent / Failed Defences Factors

Workplace Factors

Design (Visibility):	Environmental:	Environmental (cont.):
Viewing / Sighting distance	Lighting	Temperature inside cab
Obstructed by structure / Sunlight / Glare	Noise	Temperature outside cab
Design (Condition):	Weather / Humidity	Ventilation
Weather affected	Vegetation	Restricted space
Equipment / Infrastructure Inadequately repaired	Temperature	Gas / Dust / Fumes etc.

Other (explain):

Describe Underlying Workplace Factors

Procedural Factors

Procedure Misuse (Nature of): Documentation: Procedure Misuse (Reason for): Conflicting activities Wrong sequence Ambiguous unclear Not complete / Not available Complete disregard of Procedure not applicable procedure Inadequate supervision Too little information Procedure not followed Inattention Not accurate Procedure implementation delay Difficult to read Misunderstanding Use of unauthorised procedure Procedure too complex Out of date Insufficient briefing Additional: Insufficient training initial / refresher Compliance Task familiarity (over/under)

Other (explain):

Describe Underlying **Procedural** Factors

Knowledge, Skills and Experience Factors

Driver Knowledge, Skills / Exp.:	<u>Additional:</u>
Task familiarity	Controller
Change of routine / Non- routine tasks	
Other (explain):	
	Task familiarity Change of routine / Non-

Describe Underlying Knowledge, Skills and Experience Factors

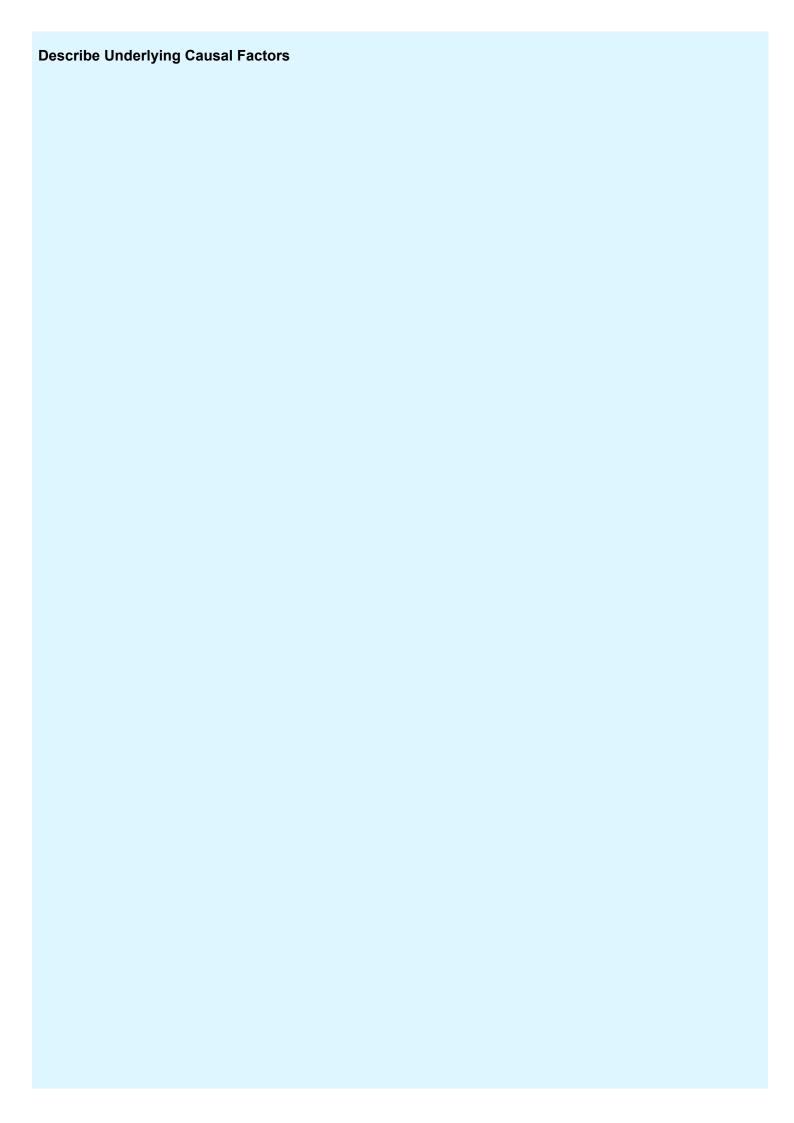
Supervision Factors Conflicting role Inadequate knowledge, skills and experience Other (explain): Poor example Lack of supervision

Describe Underlying **Supervision** Factors

Personal Factors

Communication (Receiving):	Communication (Sending):	Attention:
Checking understanding	Checking understanding	Anticipation
Complex message received	Taking lead responsibility	Autopilot
Taking lead responsibility	Repeating back	Preoccupation with personal issues
Repeating back	Inadequate communication equipment	Preoccupation with work duties/workplace
Identifying person / location	Identifying person / location	Other (explain):
<u>Lifestyle:</u>	Poor communication skills	
Personal issue	Additional:	
Influence of drugs / alcohol / medication	Personal goals	
Fatigue / Fatigue management		
Physical / Mental health		

Describe Underlying **Personal** Factors



9 Incident Timeline	10 Conclusions and Recommendations
Timeline of Events	Corrective Actions
	Immediate Corrective Actons
	Change to Procedure
	Change to Working Practices
	Change to Incident Management
	Safety Management Plan / System
	Is a change to training documents required?
	Yes No <i> → Give details</i>
	Lessons Learnt
	Give details
	Recommendations
	Further Investigation Give details
	· ·
	Safety Actions Required Give details
	Cive details

Organisations / Individuals Impacted Notifie		
Follow-up Assignees		Follow-up Date
		- CHOIL OF DAILS
Investigator Sign Off		
Full Name	Mobile Number	
Job Title	Location	
Signature	Date	
Deviewed Dev (if anythogh la)		
Reviewed By (if applicable)		
Full Name	Mobile Number	
Job Title	Location	
Signature	Date	

Additional Information

Terms / Acronyms

TERM / ACRONYM	DEFINITION - EXPLANATION

How you use this SPAD Investigation Pro Forma

This pro forma is a tool designed to help and guide SPAD investigators into gathering and arranging the information they may need to draw evidence-based conclusions and recommendations for their investigation. Depending on the existing processes of a heavy rail operator and their requirements, this pro forma may be used to replace equivalent pro formas, or to supplement them. It is additive to any and all tools a heavy rail operator currently uses. The pro forma intentionally omits information on how to analyse SPAD incidents, but contains sections that support such analyses.

Open fields and checkboxes have been featured to afford the user with flexibility. While many of these are self-explanatory, "tooltips" have been used all the way through in the most pertinent places to guide the investigator. Where available, these appear when the mouse cursor is hovered above a title or label. The proforma is structured in a way that can facilitate a deeper understanding of the causes of a SPAD, and encourage the investigator to think more about factors and influences higher up in the system.

How this SPAD Investigation Pro Forma was developed

This pro forma was developed using principles of design from participatory ergonomics. Its content was developed by evaluating the pro formas of more than 10 organisations, and seeking consensus through a structured communication process designed to obtain agreement (the Delphi method). Its development was driven with the aim to capture the "right" information, ensuring involvement of end-users, achieving desirable goals, and attaining consensus.

Acknowledgments

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