

The RiSSB logo consists of the letters 'RiSSB' in a bold, white, sans-serif font. The 'i' is lowercase, while 'R', 'S', 'S', and 'B' are uppercase. The background of the logo is a blue geometric shape with diagonal lines.

RAIL INDUSTRY SAFETY AND STANDARDS BOARD

CODE OF PRACTICE

Risk Management for Driver Only Operation

Notice to users

This Rail Industry Safety and Standards Board (RISSB) product has been developed using input from rail experts from across the Rail Industry. RISSB wishes to acknowledge the positive contribution of all subject matter experts and development group representatives who participated in the development of this product.

The RISSB Development Group for this Code of Practice consisted of representatives from the following organizations:

ARTC Inland Rail
Aurizon, QUBE

Rail Management Australia
Rio Tinto

Rail Tram and Bus Union
TfNSW

Development of this Code of Practice was undertaken in accordance with RISSB's accredited processes. It was approved by the Development Group, endorsed by the Safety and Operations Standing Committee, and approved for publication by the RISSB Board.

I commend this Code of Practice to the Australasian rail industry as it represents industry good practice and has been developed through a rigorous process.



Damien White
Chief Executive Officer
Rail Industry Safety and Standards Board

Notice to users

This RISSB product has been developed using input from rail experts from across the rail industry and represents good practice for the industry. The reliance upon or manner of use of this RISSB product is the sole responsibility of the user who is to assess whether it meets their organization's operational environment and risk profile.

Keeping Codes of Practice up-to-date

To maintain their currency, Codes of Practice developed by RISSB are periodically reviewed, and new editions are published when required. Between editions, amendments can be issued.

It is important that readers assure themselves that they are using a current RISSB Codes of Practice. Information about RISSB Codes of Practice, including amendments, can be found by visiting www.rissb.com.au.

RISSB welcomes suggestions for improvements and asks readers to notify us immediately of any apparent inaccuracies or ambiguities, please contact us via email at info@rissb.com.au or write to Rail Industry Safety and Standards Board, PO Box 518, Spring Hill, QLD 4004, Australia.

RISSB products can be found at: <http://www.rissb.com.au/products/>.

Document history

Publication Version	Effective Date	Reason for and Extent of Change(s)
1.0	10 December 2024	New publication

Approval

Name	Date
Rail Industry Safety and Standards Board	10 December 2024

Copyright

©RISSB

All rights are reserved. No part of this work can be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of RISSB unless otherwise permitted under the Copyright Act 1968.

Published by the Rail Industry Safety and Standards Board, PO Box 518 Spring Hill Qld 4004, Australia.

Background

In Australia, rail traffic can be managed by two crew members in various combinations, or as driver only operations. Two person operations can be a driver and a second person located in the driving cabin or on the rail traffic. The second person may be another driver, an assistant driver, a guard, or other competent workers. While with driver only operation (DOO), the driver is solely responsible for all rail traffic management activities.

Objective

This document aims to provide guidance on how hazards and risks associated with DOO are identified, assessed and considered in the context of the particular Rail Transport Operator (RTO) operations and accreditation to manage the hazards safe so far as is reasonably practicable (SFAIRP).

Table of Contents

Section 1	Scope and general	6
1.1	Scope	6
1.2	References	6
1.3	Defined terms and abbreviations	6
Section 2	Safety concepts	8
2.1	Base case criteria	8
2.2	Removal of the second person in rail traffic operations	8
2.3	Introducing DOO	9
Section 3	The methodology	10
3.1	General	10
3.2	The reverse SFAIRP methodology	11
3.3	Hazard and risk control	12
3.3.1	Identify the hazard	12
3.3.2	Evaluate the risk	13
3.3.3	Identify risk controls	13
3.3.4	Accept and implement	13
3.3.5	Document findings	14
3.3.6	Review and update the risk assessment	14
3.3.7	End state	14
Appendix A	Techniques for determining second person responsibilities	15
Appendix B	Potential risk factors in relation to DOO	17
Appendix C	Potential risk controls in relation to DOO	21
C.1	General	21
C.2	Engineering and technical control examples	22
C.3	Administrative control examples	23
Appendix D	Potential issues for driver only operation	25
D.1	Driver incapacitation	25
D.2	Driver error (in driving task)	26
D.3	Driver cognition (error therein)	27
D.4	Driver fatigue	28
D.5	Communications (error therein)	29
D.6	Rail Traffic recovery	30
D.7	SPADs (increased rate/severity thereof)	30
D.8	Safeworking (breaches therein)	31
Appendix E	Organizational risk management factors	33
E.1	Integration and safety	33
E.2	Role impact	33
E.3	Equipment suitability	34
E.4	Procedure suitability	34

E.5	Platform, terminal and yard compatibility.....	36
E.6	Business readiness	36
E.7	Ongoing reviews.....	37
Appendix F	ARRM Hazard register	38
Bibliography		39

Tables

Appendix Table D.1-1 Health Episode	25
Appendix Table D.1-2 Cabin Environment Not Suitable (Too Hot/Cold or Noxious/Toxic Fumes)	25
Appendix Table D.1-3 Physical Attack.....	25
Appendix Table D.1-4 Gross Fatigue.....	26
Appendix Table D.2-5 Distraction	26
Appendix Table D.2-6 Loss of Situational Awareness.....	26
Appendix Table D.2-7 Unfamiliarity with the Handling Characteristics of the Rail Traffic.....	26
Appendix Table D.2-8 Rollingstock Not Suitable for DOO	27
Appendix Table D.2-9 Stress	27
Appendix Table D.3-10 Misreading in-cab Indications	27
Appendix Table D.3-11 Loss of Situational Awareness.....	27
Appendix Table D.3-12 General Competence Deficiency	27
Appendix Table D.4-13 Insufficient Rest between Shifts.....	28
Appendix Table D.4-14 Environment Too Hot/Cold	28
Appendix Table D.4-15 Dehydration/Hypoglycaemia	28
Appendix Table D.4-16 Shift Duration Too Long.....	28
Appendix Table D.4-17 Shift starting and finishing time	28
Appendix Table D.4-18 Stale Air (Insufficient O2, Excess CO2)	28
Appendix Table D.4-19 Eyestrain.....	29
Appendix Table D.4-20 Excess Workload.....	29
Appendix Table D.4-21 Monotony Workload	29
Appendix Table D.5-22 Overload	29
Appendix Table D.5-23 Misunderstood	29
Appendix Table D.5-24 Unintended Recipient	30
Appendix Table D.6-205 Poor Rollingstock Reliability	30
Appendix Table D.6-216 Rail Traffic Faults	30
Appendix Table D.7-227 Driver Underestimates Rail Traffic Braking Distance	30
Appendix Table D.7-28 Driver Misreads Signal.....	31
Appendix Table D.8-239 Rail Traffic Not Properly Secured when Required.....	31
Appendix Table D.8-30 Rail Traffic Departs Platform when Not Safe to Do So.....	31
Appendix Table D.8-31 Driver Fails to Sound Horn on Approach to Level Crossing.....	31
Appendix Table D.8-32 Driver Fails to Perform Brake Test before Commencement of Operation	32
Appendix Table D.8-33 Driver Fails to Sound Horn on Approach to Trackside Workers.....	32

Section 1 Scope and general

1.1 Scope

The scope of this Code of Practice includes the requirement for an RTO to demonstrate due diligence in developing and applying a risk methodology that confirms DOO is safe SFAIRP. The risk methodology shall be applied before the introduction of driver only operations or before the removal of the second person on freight, heavy and light rail passenger services and infrastructure maintenance vehicles operating on the network.

This document does not specifically cover, autonomous train operations (GoA3 and GoA4), or heritage railways on private or isolated tracks. However, relevant items from this Code of Practice may be applied by the RTO as appropriate.

Similarly, while infrastructure maintenance vehicles operating in multiple with the competent worker managing safeworking on a remote or other vehicle, the RTO should apply aspects of this code as applicable.

This document does not address technical steps/aspects of achieving DOO; The actual quantification of risk (assuming any accredited Australian railway will have a satisfactory method and schema for the determination of risk, be it qualitative or quantitative), or the assumption of any specific risk philosophy such as those espoused by ISO 31000, *Risk Management – Guidelines*.

1.2 References

Documents for informative purposes are listed in a Bibliography at the back of the Standard.

1.3 Defined terms and abbreviations

For the purposes of this document, the following terms and definitions apply:

1.3.1

ATP

automatic train protection

1.3.2

assistant driver

authorized assistant (not a driver) who is within the rail traffic cab and has associated responsibilities and duties

1.3.3

driver only operations (DOO)

operation of a rail traffic by a driver without another driver or other person in the driver's cabin or rail traffic who is qualified in, and has suitable experience in, the operation of the rollingstock and the safe working system that form part of the network rules

1.3.4

ETCS

European Train Control System

1.3.5

guard

qualified worker on a passenger train who carries out safeworking duties and is responsible for the safety and supervision of passengers

1.3.6

second person

qualified worker on the rail traffic to assist the driver in operational tasks