



Signalling Principles



Train Control Systems Standard



This Australian Standard® AS 7711 Signalling Principles was prepared by a Rail Industry Safety and Standards Board (RISSB) Development Group consisting of representatives from the following organisations:

Arc Infrastructure	Aurizon	Australian Rail Track Corporation
BHP	KiwiRail	Metro Trains Melbourne
Public Transport Authority of Western Australia		Queensland Rail
Rio Tinto	Transport for NSW	VicTrack
Wabtec		

This Standard was approved by the Development Group and the Train Control Systems Standing Committee in June, 2018. On July 10, 2018 the RISSB Board approved the Standard for release.

This standard was issued for public consultation and was independently validated before being approved.

Development of the Standard was undertaken in accordance with RISSB's accredited process. As part of the approval process, the Standing Committee verified that proper process was followed in developing the Standard.

RISSB wishes to acknowledge the positive contribution of subject matter experts in the development of this Standard. Their efforts ranged from membership of the Development Group through to individuals providing comment on a draft of the Standard during the open review.

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



Paul Daly
Chief Executive Officer
Rail Industry Safety and Standards Board

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Contents

1	Introduction.....	7
1.1	Scope	7
1.2	Objective.....	7
1.3	Application	7
1.4	Compliance.....	8
1.5	Referenced documents.....	8
1.6	Definitions.....	9
2	Signalling systems.....	10
3	Movement authorities	11
3.1	Division of lines into blocks	11
3.2	Limits of movement authority for a block.....	11
3.3	Positions where limits of movement authority should be avoided.....	12
3.4	Warning before limit of movement authority.....	13
3.5	Unique identification of limits of movement authority.....	13
3.6	Communication of movement authority.....	13
3.7	Indications of movement authorities to the network control officer.....	14
3.8	Requesting movement authorities.....	14
3.9	Withdrawal of movement authorities by a network control officer.....	15
3.10	Completing movement authorities by passage of rail traffic.....	16
3.11	Combining blocks into sections.....	16
4	Prevent rail traffic from colliding with other rolling stock.....	18
4.1	Running movement authorities	18
4.2	Shunting movement authorities – conflicting movement authorities	20
4.3	Shunting movement authorities – occupancies	22
4.4	Exceeding the movement authority	25
4.5	Foul track locking of points.....	25
5	Prevent rail traffic from derailing	27
5.1	Unique identification of points and other movable infrastructure.....	27
5.2	Identification of position of points and other movable infrastructure	27
5.3	Preventing rail traffic from passing over points or other movable infrastructure.....	28
5.4	Authorizing rail traffic to pass over points or other movable infrastructure	28
5.5	Communicating the permitted speed.....	29
5.6	Overspeed at points and other movable infrastructure	29
5.7	Overspeed on plain track	30
5.8	Maintaining the route over points or other movable infrastructure	31
5.9	Dead locking the points or other movable infrastructure.....	31
6	Prevent rail traffic from colliding with road users or vehicles at railway crossings	33
6.1	Unique identification of railway crossings.....	33
6.2	Road user stopping sight distance	33

6.3	Warn road users before lowering booms or closing gates	33
6.4	Speed of lowering booms or closing gates	34
6.5	Clearance time for road users	34
6.6	Excessive warning time	35
6.7	Maintenance of minimum warning time	36
6.8	Overrun protection for railway crossings	37
6.9	Minimum Crossing Open Time	37
6.10	Upstream traffic lights	39
6.11	Downstream traffic lights	39
7	Prevent rail traffic from being incompatible with the infrastructure	40
7.1	Track gauge	40
7.2	Traction supply	41
7.3	Other infrastructure	42
8	Prevent rail traffic from colliding with rail safety workers or equipment in the rail corridor	44
8.1	Blocking facilities	44
8.2	Lockout facilities	46
9	Safety in design	49
9.1	Reliability, availability and maintainability	49
9.2	Degraded mode facilities	49
9.3	Network rules and procedures	50
9.4	Human factors	50
9.5	Failure of train detection	50
9.6	Failure of interlocking functions	52
9.7	Failure of points or other movable infrastructure	52
9.8	Failure of signals	53
9.9	Failure of railway crossings	55
9.10	Current taking an unintended path	56
9.11	Transient conditions	57
9.12	Proving	59
9.13	Repeat functions	61
9.14	Interactions with other railway systems and equipment	62
9.15	Resilient to external influences	62
9.16	Maintenance and modification	62
10	Efficiency	64
10.1	One movement authority	64
10.2	Automatic signals	64
10.3	Route stacking/storage	65
10.4	Automatic route setting	65
10.5	Train Operated Route Release	66
10.6	Opposing locking omitted	67
10.7	Pre-set of shunt signals	68

10.8 Oversetting 69

Appendix Contents

Appendix A Hazard Register 70

Appendix B Overlaps 71

 B.1 Overlap distance 71

 B.2 Overlap distances 72

 B.3 Overlap distance single lines 73

 B.4 Conditional overlaps 73

 B.5 Route locking into or within an overlap 74

 B.6 Point setting & locking within overlaps 74

 B.7 Preferential setting of points in the overlap 75

 B.8 Automatic overlap setting of overlap by track circuit occupation 76

 B.9 Overlap swinging 76

 B.10 Overlap maintenance 76

Appendix C Enforcement systems 78

 C.1 General 78

 C.2 Introduction 78

 C.3 Automatic Warning Systems 79

 C.4 Train stop systems 80

 C.5 Train Protection and Warning System 82

 C.6 Automatic train protection 85

 C.7 European Train Control System 86

 C.8 Automatic train operation over ETCS (AoE) 95

1 Introduction

1.1 Scope

This Standard specifies the principles for railway signalling systems.

This Standard is applicable to heavy railways. This Standard is not generally applicable to light railways, monorails, inclined railways, tramways and other railways to which *Rail Safety National Law* does not apply.

Train control systems include people, procedures and technology. The procedures and technology together form the system of safeworking. This Standard is applicable to the technology (i.e. the signalling system) and its interfaces with people and procedures. The signalling system could include components that are infrastructure-based and components that are train-borne.

This Standard is applicable to systems of safeworking that rely upon train detection systems. Train detection systems include track circuits, axle counters, treadles and train-borne positioning systems. This Standard is not generally applicable to systems of safeworking that do not rely upon train detection systems, such as staff and ticket, electric staff and train order working.

This Standard is applicable to power operated signalling systems, including power operated lineside signals and in-cab signals. This Standard is not generally applicable to mechanically operated signalling systems, such as mechanically operated lineside signals, except where the mechanically operated equipment is included as part of a power operated signalling system (for instance, mechanical ground frames that are released by a power operated signalling system).

This Standard does not address the processes and competences for the design, construction and implementation, commissioning, monitoring and maintenance, modification, or decommissioning and disposal of a signalling system.

1.2 Objective

The objective of this Standard is to provide the rail industry with a set of signalling principles that will ensure the safe and efficient operation of a railway.

1.3 Application

The principles specified in this Standard are applicable to all railways within the scope stated in Clause 1.1.

However, different rail lines have different operational requirements – from freight only rail lines with low speeds and low traffic densities through to passenger carrying rail lines with high speeds and/or high traffic densities. These different operational requirements result in different risk profiles.

Rail Safety National Law requires that risks to safety are eliminated so far as is reasonably practicable, and if it is not reasonably practicable to eliminate risks to safety, to minimize those risks so far as is reasonably practicable.

The risk profile of a particular rail line affects what is reasonably practicable.