

Queensland Manual of Uniform Traffic Control Devices

Part 7: Railway crossings

March 2019

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About this document

The use of signs, markings and other devices at railway level crossings, based on uniform standards and practices, is essential in the interests of safety for both rail traffic and road users.

This Part of the Manual of Uniform Traffic Control Devices sets out the various controls used at railway, cane railway and combined railway/cane railway level crossings and describes the devices and assemblies, their use and location to achieve these controls.

How to use this document

This document is designed to be read and applied together with AS 1742.7-2016 *Manual of Uniform Traffic Control Devices Part 7* (AS 1742.7-2016 / Amdt 1 2019). You must have access to the Australian Standard to understand what applies in Queensland.

This document:

- sets out how AS 1742.7-2016 / Amdt 1-2019 applies in Queensland
- has precedence over AS 1742.7-2016 / Amdt 1-2019 when applied in Queensland
- has the same section and clause numbering and headings as AS 1742.7-2016 / Amdt 1-2019.

The following table summarises the relationship between AS 1742.7-2016 / Amdt 1-2019 and this document:

Applicability	Meaning
Accepted	The Australian Standard section or clause is accepted.
Accepted, with amendments	Part or all of the section or clause has been accepted with additions, deletions or differences.
New	There is no equivalent section or clause in the Australian Standard.
Not accepted	The Australian Standard section or clause is not accepted.

Definitions

The following general amended definitions apply when reading AS 1742.7-2016 / Amdt 1-2019.

Reference to...	Means
AS 1742.7-2016	AS 1742.7-2016 / Amdt 1-2019, as amended by this document For example, a reference to AS 1742.7-2016 / Amdt 1-2019 means you must refer to the Australian Standard Part 7, and Part 7 of the Queensland Manual of Uniform Traffic Control Devices (Queensland MUTCD). Throughout AS 1742.7-2016 / Amdt 1-2019, references are made to other parts of the Australian Standards (for example, when reading Part 7 you may be referred to Part 3 for further information.) In this case, you must refer to the equivalent Part within the Queensland MUTCD first. Check the applicability of the equivalent Part in the Queensland MUTCD before referring to the referenced Australian Standard Part.
ALCAM	Australian Level Crossing Assessment Model

Relationship table

Section	Clause	Description	Applicability
	Preface		Accepted
	Foreword		Accepted with amendments
1	Scope and general		
	1.1	Scope	Accepted
	1.2	Objective	Accepted
	1.3	Application	Accepted
	1.4	Referenced documents	Accepted
	1.5	Definitions	
	1.5.1	<i>Active control</i>	Accepted
	1.5.2	<i>Downstream</i>	Accepted
	1.5.3	<i>Light rail vehicle / tram (light rail network / tramway)</i>	Accepted
	1.5.4	<i>May</i>	Accepted
	1.5.5	<i>Passive control</i>	Accepted
	1.5.6	<i>Pedestrians</i>	Accepted
	1.5.7	<i>Railway</i>	Accepted
	1.5.8	<i>Railway crossing</i>	Accepted
	1.5.9	<i>Shall</i>	Accepted
	1.5.10	<i>Should</i>	Accepted with amendments
	1.5.11	<i>Traffic control device</i>	Accepted
	1.5.12	<i>Upstream</i>	Accepted
	1.5.13	<i>85th percentile speed (V_{85} km/h) (operating speed)</i>	Accepted
1.6	Cooperation between road authorities and rail infrastructure managers	Accepted	
1.7	Restricted access road vehicles	Accepted	
2	Signs, devices and assemblies – description and use		
	2.1	General	Accepted
	2.2	Passive control devices	
	2.2.1	<i>Railway crossing give-way assembly (RX-1)</i>	Accepted
	2.2.2	<i>Railway crossing stop assembly (RX-2)</i>	Accepted
	2.2.3	<i>Railway crossing ahead – Passive control (W7-7, RX-10)</i>	Accepted
	2.2.4	<i>Railway crossing diagrammatic warning assemblies (RX-2-1, RX-3-2 and RX-3-3)</i>	Accepted
	2.2.5	<i>Railway crossing on side road assembly (RX-4)</i>	Accepted

Section	Clause	Description	Applicability
	2.2.6	<i>Diagrammatic warning signs, on side road (W7-12, W7-13, W7-17)</i>	Accepted
	2.2.7	<i>Stop sign ahead (W3-1)</i>	Accepted
	2.3	Active control devices	
	2.3.1	<i>Railway crossing flashing signal assembly (RX-5)</i>	Accepted with amendments
	2.3.2	<i>Railway crossing gate position sign assembly (RX-6)</i>	Accepted
	2.3.3	<i>Railway crossing flashing signals ahead sign (W7-4)</i>	Accepted
	2.3.4	<i>Railway gate (W7-15)</i>	Accepted
	2.3.5	<i>Railway crossing flashing signals ahead on side road assembly (RX-7)</i>	Accepted
	2.3.6	<i>Railway crossing gate on side road assembly (RX-8)</i>	Accepted
	2.3.7	<i>Active advance warning assembly (RX-11)</i>	Accepted with amendments
	2.3.8	<i>Boom barrier</i>	
	2.3.8.1	General description and placement	Accepted
	2.3.8.2	Design	Accepted
	2.3.8.3	Preventing misuse	Accepted
	2.3.9	<i>Traffic signals at light rail / tramway crossings</i>	Accepted
	2.4	Devices used at either active or passive control crossings	
	2.4.1	<i>(Distance) m (W8-5)</i>	Accepted
	2.4.2	<i>Railway crossing width marker assembly (RX-9)</i>	Accepted
	2.4.3	<i>Chevron alignment marker (D4-6)</i>	Accepted
	2.4.4	<i>KEEP TRACKS CLEAR (G9-67-1, G9-67-2)</i>	Accepted
2.4.5	<i>TRAMWAY CROSSING position (R6-26)</i>	Accepted	
2.4.6	<i>RAILWAY CROSSING NOT IN USE (G9-74)</i>	Accepted	
3	Pavement markings		
	3.1	General	Accepted
	3.2	Railway crossing pavement marking (Rail X)	Accepted
	3.3	Stop line	Accepted
	3.4	Give-way line	Accepted
	3.5	No-overtaking lines	Accepted
	3.6	Yellow box markings	Accepted

Section	Clause	Description	Applicability
4	Application of signs and markings to railway crossings		
	4.1	General	Accepted
	4.2	Passive control treatments	
	4.2.1	<i>Control by give-way and stop signs</i>	Accepted
	4.2.2	<i>Minimum treatment crossings</i>	Accepted
	4.2.3	<i>Inadequate sight distance for passive control</i>	Accepted
	4.3	Active control treatments	
	4.3.1	<i>Flashing signals</i>	Accepted
	4.3.2	<i>Railway crossing gates</i>	Accepted
	4.4	Modified treatments	
	4.4.1	<i>Railway crossing on side road</i>	Accepted
	4.4.2	<i>Crossings in low speed urban environments</i>	Accepted
	4.4.3	<i>Ports and terminals</i>	Accepted
	4.5	Temporary and emergency control	Accepted
	4.6	Railway line not in use	Accepted
	4.7	Railway line closed	Accepted
4.8	Stop signs at combined road / rail crossings	New	
5	Avoidance of traffic queuing on crossings		
	5.1	Identifying the problem	Accepted
	5.2	Eliminating the problem	Accepted
	5.3	Managing the problem	Accepted
	5.4	Short stacking	Accepted
6	Pedestrian and bicycle treatments at railway crossings		
	6.1	General	Accepted
	6.2	Hierarchy of control	Accepted
	6.3	Crossing elements – design and performance requirements	
	6.3.1	<i>Sight distance at passive control crossings</i>	Accepted
	6.3.2	<i>Provision and alignment of footpaths</i>	Accepted
	6.3.3	<i>Footpath requirements</i>	Accepted
	6.3.4	<i>Pedestrian enclosures – functional requirements</i>	Accepted
6.3.5	<i>Pedestrian enclosures – design elements</i>	Accepted	
6.4	Pedestrian holding markings	Accepted	

Section	Clause	Description	Applicability
	6.5	Signs and signals	
	6.5.1	<i>Look for trains (number) tracks, (W7-14-4); Look for trains (W7-14-5)</i>	Accepted
	6.5.2	<i>Do not cross while lights are displayed or alarm sounding, (number) tracks (W7-14-6)</i>	Accepted
	6.5.3	<i>Red symbolic standing pedestrian signal assembly (RX-12)</i>	Accepted
	6.5.4	<i>Cyclists dismount (G9-58)</i>	Accepted with amendments
	6.5.5	<i>Audible signals</i>	Accepted
	6.5.6	<i>Emergency escape gate signs</i>	Accepted
	6.6	Facilities for bicycles	Accepted
7	Cane railway crossings		
	7.1	General	New
	7.2	Signs and devices	
	7.2.1	<i>Cane railway crossings for ... km (G9-32- Q01)</i>	New
	7.2.2	<i>End of cane railway crossings (G9-32-Q02)</i>	New
	7.2.3	<i>Cane railway flashing signals</i>	New
	7.2.4	<i>Cane railway level crossing pavement marking (barrier lines and RAIL X)</i>	New
	7.2.5	<i>Combined railway and cane railway crossings</i>	New
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A	Illumination and reflectorization of signs (normative)		
	A1	<i>Scope</i>	Accepted
	A2	<i>General</i>	Accepted
	A3	<i>Means of illumination</i>	Accepted
	A4	<i>Means of reflectorization</i>	Accepted
	A5	<i>Special requirements for signs at crossings</i>	Accepted
B	Installation and location of signs (normative)		
	B1	<i>Scope</i>	Accepted
	B2	<i>Uniformity of location</i>	
	B2.1	General	Accepted
	B2.2	Longitudinal placement	Accepted

Section	Clause	Description	Applicability
	B2.3	Lateral placement and height	
	<i>B2.3.1</i>	<i>General</i>	Accepted
	<i>B2.3.2</i>	<i>Lateral placement – rural</i>	Accepted
	<i>B2.3.3</i>	<i>Lateral placement – urban</i>	Accepted
	<i>B2.3.4</i>	<i>Height – rural</i>	Accepted
	<i>B2.3.5</i>	<i>Height – urban</i>	Accepted
	<i>B2.3.6</i>	<i>Overhead mounting</i>	Accepted
	<i>B2.3.7</i>	<i>Signs at pedestrian facilities</i>	Accepted
	B2.4	Tolerances on positioning	Accepted
	B3	Installation	Accepted
C	Selection of appropriate sign size (informative)		
	C1	Scope	Accepted
	C2	Size of signs	Accepted
	C3	General principles for size selection	Accepted
D	Sight distance provision at railway crossings		
	D1	General	Accepted
	D2	Control device visibility requirement – all crossing types	Accepted
	D3	Stopping and safe start-up at a passive control crossing	Accepted
	D4	Passive control crossings controlled by give way signs – approach visibility	Accepted
	D5	Sighting angles	Accepted
	D6	Vehicle deceleration factors	Accepted
E	Active advance warning assembly – guides for use, installation and operation (informative)		
	E1	General	Accepted
	E2	Guides for use	Accepted
	E3	Location and operational timing	Accepted
	<i>E3.1</i>	<i>General</i>	Accepted
	<i>E3.2</i>	<i>Sight distance to stopped queues</i>	Accepted
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Foreword

Addition

Guidance on when a crossing should progress from one hierarchical step in the type of control to the next can be found in risk assessment models such as ALCAM (Australian Level Crossing Assessment Model).

1 Scope and general

1.5 Definitions

1.5.10 Should

Addition

Indicates a recommendation. Where the word 'should' is used, it is considered to be recommended usage, but not mandatory. Any recommendation that is not applied must be based on sound traffic engineering judgement and documented.

2 Signs, Devices and Assemblies – Description and Use

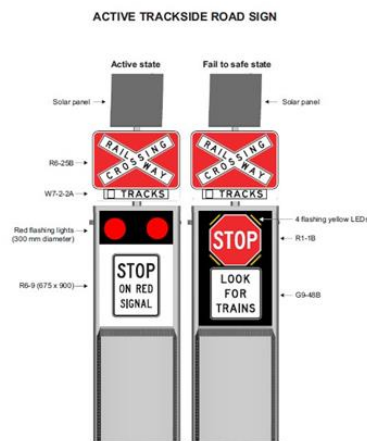
2.3.1 Railway crossing flashing signal assembly (RX-5)

Difference

The RX-5-Q01 assembly may be used at crossings that require flashing signal control instead of the RX-5 assembly.

Attention is drawn to the need for meaningful cooperation on maintenance and safety issues at railway crossings between the relevant road authorities (also known as road managers) and rail infrastructure managers (for example, via level crossing interface agreements where they exist, as per Rail Safety National Law). The safety of railway users is heavily dependent among other things, on the successful control and guidance of road users approaching a crossing. Equally, the safety of road users is dependent on their ability to detect the approach of a train. Although the responsibility for provision and maintenance of various traffic control devices may be split between multiple parties, there needs to be coordination of risk assessment, maintenance and safety audit activities. Any changes in infrastructure or operation contemplated by one party that may increase the risk should be done in consultation with the other.

Figure 2.3.1 – (RX-5-Q01) Active Trackside Road Sign



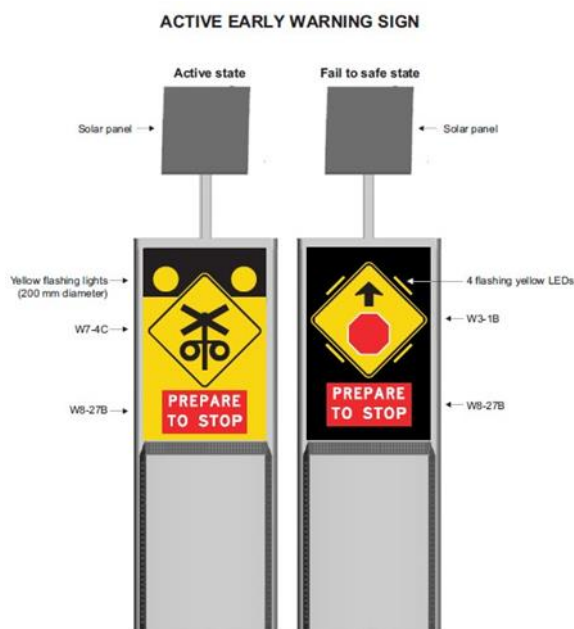
2.3.7 Active advance warning assembly (RX-11)

Difference

The RX-11-Q01 assembly may be used at crossings that require active advance warning assemblies instead of the RX-11 assembly.

Attention is drawn to the need for meaningful cooperation on maintenance and safety issues at railway crossings between the relevant road authorities (also known as road managers) and rail infrastructure managers (e.g. via level crossing interface agreements where they exist, as per Rail Safety National Law). The safety of railway users is heavily dependent among other things, on the successful control and guidance of road users approaching a crossing. Equally the safety of road users is dependent on their ability to detect the approach of a train. Although the responsibility for provision and maintenance of various traffic control devices may be split between multiple parties, there needs to be coordination of risk assessment, maintenance and safety audit activities. Any changes in infrastructure or operation contemplated by one party that may increase the risk should be done in consultation with the other.

Figure 2.3.7 (RX-11-Q01) Active Early Warning Sign



4 Application of signs and markings to railway crossings

4.8 Stop signs at combined road / rail crossings

New

A combined road/rail crossing is where a road crosses another road and a railway line. If stop control is justified as a result of inadequate sight distance, the following combination of signs is required (refer Figure 4.2). This particular set-out is required to convey the message that motorists approaching the intersection shall give way to both trains and motor vehicles crossing the intersection.

6 Pedestrian and bicycle treatments at railway crossings

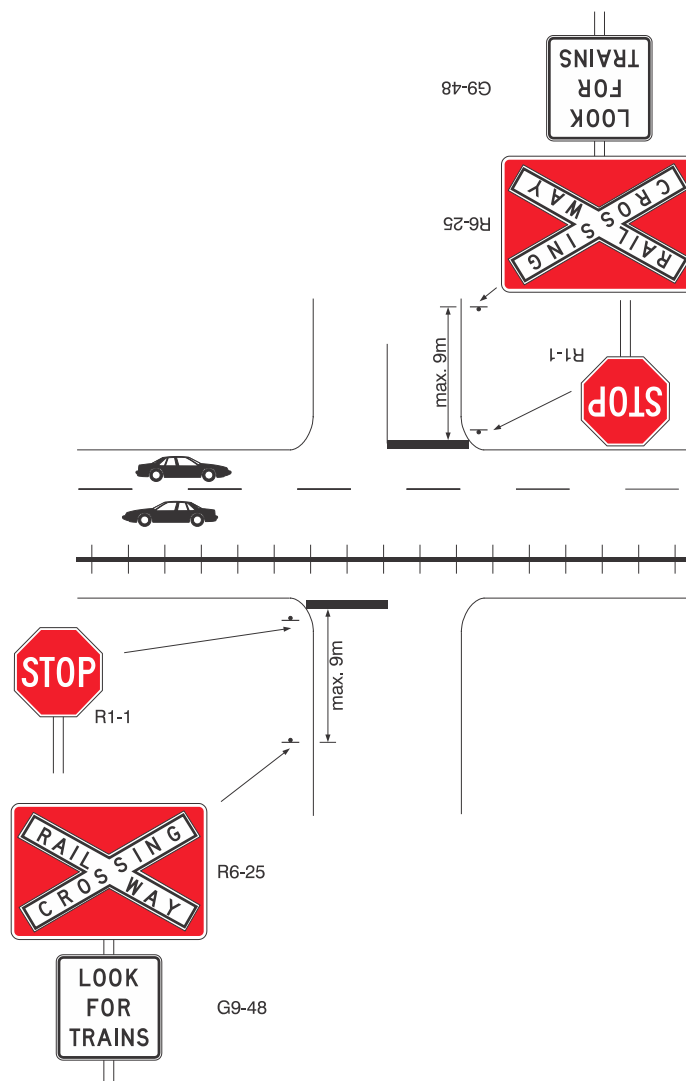
6.5.4 Cyclists dismount (G9-58)

Difference

This sign may be used at crossings that are primarily used by pedestrians, i.e., that are not part of a shared path, but may be used by cyclists. If used, it shall be located at the entry to each enclosure on the non-track approach.

Note: This sign is intended to emphasize to cyclists that it would be safer for both pedestrians and cyclists if they were to dismount and not ride across the crossing.

Figure 4.8 – Stop signs at combined road/rail crossings



7 Cane railway crossings

7.1 General

New

Cane railway crossings used in sugar growing areas are treated in a similar manner to railway level crossings.

7.2 Signs and devices

New

The signs, pavement markings and devices used in conjunction with cane railway crossings are those used for railway level crossings except for the following signs and devices.

7.2.1 Cane railway crossings for ... km (G9-32-Q01)

New

The CANE RAILWAY CROSSINGS FOR ... km sign is used to advise drivers of the presence of a number of cane railway crossings along a given length of road.

Three or more cane railway crossings may constitute a group, provided that the distance between any two successive crossings in the group is not more than five kilometres.

Figure 7.2.1 – (G9-32-Q01)



7.2.2 End of cane railway crossings (G9-32-Q02)

New

The END OF CANE RAILWAY CROSSINGS (G9-32-Q02) sign shall be erected so as to face departing traffic at the termination of a group of cane railway crossings.

The sign is only to be used in conjunction with the CANE RAILWAY CROSSINGS FOR ... km sign (G9-32-Q02).

Figure 7.2.2 – (G9-32-Q02)



7.2.3 Cane railway flashing signals

New

Flashing red signals at a cane railway crossing shall consist of twin red aspects arranged horizontally. These signals are used in lieu of railway level crossing flashing signals, at cane railway crossings. A white T-signal aspect may be displayed to drivers of cane trains where cane railway flashing signals are used (see AS1742.14).

7.2.4 Cane railway level crossing pavement marking (barrier lines and RAIL X)

New

On undivided two-way roads, which have separation line markings, barrier lines shall be provided on the approaches to, and where necessary across, passive control cane railway level crossings. The need for barrier lines at active control crossings should be determined in accordance with the requirements of Part 2 of this Manual, excepting that they shall be provided where the flashing signals are not readily visible by overtaking motorists.

As cane railway crossings are used on a seasonal basis, pavement messages are not normally installed in advance of these crossings unless treating an existing safety issue.

7.2.5 Combined railway and cane railway crossings

New

Combined crossings are where a railway level crossing and a cane railway level crossing are adjacent to each other.

The signs and devices used at combined crossings are those used for railway level crossings.

