



AUSTRALIAN RAIL TRACK CORPORATION LTD

Discipline: Engineering

Category: Procedure

Signal Sighting

PP-165

Applicability

ARTC Network Wide	✓	Western Jurisdiction	
New South Wales		Victoria	

Document Status

Version	Date Reviewed	Prepared by	Reviewed by	Endorsed	Approved
1.2	01 Aug 06	Standards & Systems	GM Operations & Customer Service	GM Infrastructure Strategy & Performance	Safety Committee

Amendment Record

Version	Date Reviewed	Clause	Description of Amendment
1.2	01 Aug 06	Form	Signal Sighting form removed from procedure, reformatted and published separately as PP165F-01.
	13 Aug 10	All	Superseded by ESC-04-01

Document Distribution List

Copy #	Position Title	Location
N/A	N/A	ARTC Intranet

© ARTC. This document is the confidential property of Australian Rail Track Corporation.

Disclaimer

This document is for internal use by the Australian Rail Track Corporation LTD (ARTC) only and may not be relied upon by any other party.
ARTC: 1. does not accept any liability or responsibility whatsoever for this document in respect to any use or reliance upon it by any other party;
and 2. does not provide any warranty as to the accuracy or reliability of this document.

This document is uncontrolled when printed. See ARTC Intranet for latest version.

Contents

1	Introduction	3
1.1	Purpose	3
1.2	Scope	3
1.3	Responsibilities	3
2	Signal Sighting Group	4
2.1	Requirement	4
2.2	Composition	4
2.3	Decisions and Records	4
3	Arrangements for Position of Signals.....	5
3.1	Sighting Distance	5
3.2	Positioning of Signals.....	5
3.3	Parallel Positioning of Signals.....	5
3.4	Background, Interference and Distraction	5
3.5	Structural Clearances	5
3.6	Interface with Existing Signals	5
3.7	Safety and Environment.....	5
3.8	Position	6
3.9	Hoods	6
3.10	Close Viewing Segments (Hot Spots)	6
4	Agreement by Stakeholders.....	7
5	Appendix 1 - Signal Sighting Form, worked example	8

1 Introduction

1.1 Purpose

This procedure provides guidelines to facilitate the positioning of all new and altered signals and point indicators so that they afford train drivers adequate advance sighting and convey a clear and unambiguous message.

1.2 Scope

This procedure applies to all signals and point indicators on the ARTC network in addition to earthworks etc. which may interfere with the sighting of existing signals.

1.3 Responsibilities

The Project/Contract Manager is responsible for arranging the signal sighting group and ensuring that the recommendations are incorporated into the scope of work.

SUPERSEDED

2 Signal Sighting Group

2.1 Requirement

The position of all new and altered signals and point indicators will be considered by a Signal Sighting group convened for the purpose.

The signal sighting group allows for input from driver representatives into signal locations. The driver's approach view must be the prime consideration, but regard must also be given to the signalling arrangements.

2.2 Composition

A Signal Sighting group shall consist of persons who have the competence to meet the engineering and train driver requirements in the sighting of signals and should include representatives from Operations and Safety and customer representation.

2.3 Decisions and Records

The decisions of the Signal Sighting group will be recorded on [PP165F-01 Signal Sighting form](#). Each Signal Sighting form when complete in all respects will be signed by all members of the Signal Sighting group.

The Signal Sighting forms shall be retained in the project file and a copy distributed to the Manager Standards and Systems.

SUPERSEDED

3 Arrangements for Position of Signals

3.1 Sighting Distance

Signals should be normally positioned to give drivers an approach view for a minimum of 6 seconds and be clear of interruptions for at least 4 seconds. Where these timing guidelines cannot be achieved, but the sighting group is satisfied that an adequate approach view is achieved (ie the signal is viewed for long enough for the driver to assimilate the aspect and indications displayed by the signal), the sighting group shall record their decision and reasoning on [PP165F-01 Signal Sighting form](#).

Sighting distance must be considered with respect to the view of all aspects of the whole signal.

3.2 Positioning of Signals

Signals shall, where reasonably practicable, be positioned on the left hand side of the line as seen in the direction of approach.

Signals may also be located on the right hand side of the line (wrong sided) if there is no other viable alternative. When the Signal Sighting group considers a proposal to site a signal on the right hand side of the running line, full consideration must be given to the likelihood that the driver will view the signal as not being applicable to his line (or that a driver on an adjacent line will view the signal as being applicable to his line). The likelihood of any such misreading must be minimal before the proposal is agreed.

In all cases, and particularly when signals are mounted on gantries or on the right hand side of the line, care must be taken to ensure that confusion does not arise as to which line the signal applies.

3.3 Parallel Positioning of Signals

Where lines running parallel are signalled in the same direction, the signals for each line shall generally be placed opposite each other.

3.4 Background, Interference and Distraction

In all cases the background against which the signal is to be viewed must be considered.

When sighting any signal or indicator the Signal Sighting group must consider the possibility of it being misinterpreted by drivers or interfering with the signalling on other lines.

3.5 Structural Clearances

Signals must be positioned to afford structural clearance between all parts of the signal and adjacent lines.

3.6 Interface with Existing Signals

Consideration must be given to the implications of mixing signals of higher light intensity aspects with signals of lower light intensity aspects to avoid the possibility of confusion.

3.7 Safety and Environment

Where it is reasonably practicable to adopt an alternative location, signals will not be positioned where they will cause trains to be stopped on bridges or steep gradients, in tunnels or across level crossings (including pedestrian crossings).

3.8 Position

When on a straight mast, colour light signals will be positioned with the A arm (top) red aspect as near as practical to the driver's eye level, and the centre line of the most restrictive aspect will normally be at 4.2 m above the rail level

Signals should be as near as possible to the running edge with the centre line of the post no closer than 3.0m to the nearest rails. When mounted on a gantry, cantilever or bracket structure, the most restrictive aspect shall be sited at a height above the rail level determined by the ARTC.

3.9 Hoods

The proposed position of the signal in relation to the sun must be considered and the use of extended hoods should be considered where necessary to reduce the possibility of phantom indications and improved sighting.

3.10 Close Viewing Segments (Hot Spots)

The required orientation of close viewing segments to maximize the sighting of the signal from trains standing in close proximity must be indicated on [PP165F-01 Signal Sighting form](#).

Note: ARTC shall hold talks with Stakeholder Management, and invite representatives to attend if the stakeholder deems necessary, to avoid conflict with Union or State Signal Sighting Committees.

SUPERSEDED

4 Agreement by Stakeholders

If agreement by attendees of the signal sighting cannot be obtained, then the matter should be referred to the General Managers ISP and O&CS for a decision with advice to stakeholders of the decision.

SUPERSEDED

5 Appendix 1 - Signal Sighting Form, worked example

SIGNAL SIGHTING FORM				
Serial Number: ARTC 001				
Recommendations of Meeting Held				
Location: Valhalla		Line: Adelaide to Melbourne		
Signal No.: VA401		Kilometrage Proposed: 43.900		
Kilometrage Existing: 44.444		Kilometrage Agreed: 43.950		
Permissible/Actual Line Speeds: 130KPH		Movement from planned position Reason: Sighting restricted by embankment		
Plan No.:		Background Interference: None		
File No.:				
Actual Sighting Distance: 400m				
Confusion with other signals: None		Reading through risk: None		
Obstructions affecting approach view: Trees at side of track		Environmental: No effects		
Distance to signal ahead visible: N/A		Hot spot; State clock position: N/A LED signal head		
Re inspection required, reason/when: None				
Special Requirements/Remarks: LED signal head Trees to be cut back on approach to signal				
Attendance				
Name	Signature	Representing	Tel No.	Fax No.
B Fittler		ARTC	12345678	
L Daley		RSA	32967423	
W Lewis		NR	55598769	
A Langer		ASR	09876543	

Show the following information of the dimensioned drawing below:			
Position of signal in relation to lines: Left hand side		Type of structure: Straight post - LED head	
Changes, existing / proposed: Replace semaphore with C/L reposition to improve sighting			
		Vertical stagger on parallel lines: N/A	
Dimensions	Rail to mast centre	A	3.0m
	Rail to lower red Aspect	B	3.2m
	Rail to top red Aspect	C	4.2m
		Hot spot: N/A	
EXISTING		PROPOSED	
			