

## AUSTRALIAN RAIL TRACK CORPORATION LTD

**Discipline:** Engineering

# Signal Sighting

# PP-165

#### Applicability

ARTC Network Wide	✓	Western Jurisdiction
New South Wales	4	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	13 Aug 10	All	Superseded by ESC-04-01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**

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# 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.



# 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 <u>PP165F-01 Signal Sighting form</u>. 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.

# 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 cis 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 <u>PP165F-01 Signal Sighting form</u>.

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 <u>PP165F-01 Signal Sighting form</u>.

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.



# 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.

# 5 Appendix 1 - Signal Sighting Form, worked example

SIGNAL SIGHTING FORM					
Serial Number: ARTC 00	1				
Recommendations of Meeting	Held				
Location: Valhalla		Line: Adelaide to	Line: Adelaide to Melbourne		
Signal No.: VA401		Kilometerage Propos	Kilometerage Proposed: 43.900		
Kilometerage Existing: 44.4	44	Kilometerage Agreed: 43.950			
Permissible/Actual Line Spee	ds:	Movement from planned position			
130KPH		Reason: Sighting	Reason: Sighting restricted by embankment		
Plan No.:		Background Interfer	rence:		
File No.:		None		P <sup>−</sup>	
Actual Sighting Distance:				y.	
400m					
Confusion with other signals:		Reading through ris	k:		
None		None			
Obstructions affecting approa	ch view:	Environmental:			
Trees at side of track		No effects			
Distance to signal ahead visib	le:	Hot spot; State clock position:			
N/A		N/A LED signal head			
Re inspection required, reason	n/when:				
None					
Special Requirements/Remar	ks:				
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:		Type of structure:		
Left hand side			t post - LED head	
Changes, exist	ing / proposed:			
Replace semaph	ore with C/L reposition to improve sighting	9		
		Vertica	I stagger on parallel lines:	
		N/A		
Dimensions	Rail to mast centre	Α	3.0m	
	Rail to lower red Aspect	В	3.2m	
	Rail to top red Aspect	с	4.2m	
		Hot sp	ot:	
		N/A		
EXISTING		PROPO	SED	