



**CODE OF PRACTICE
FOR THE
DEFINED INTERSTATE RAIL NETWORK**

VOLUME 3

**OPERATIONS AND SAFEWORKING
Part 1: Rules**

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Code of Practice for the Defined Interstate Rail Network

This Code does not supersede previous rules and instructions until the Code (in full or in part) is adopted and officially implemented by the network owner. Once implemented the Code will become mandatory. The Code is for application on the routes listed below.

QUEENSLAND

Acacia Ridge-Dutton Park-Fisherman Islands
Dutton Park-Roma Street
Acacia Ridge-NSW border (Border Loop)

NEW SOUTH WALES

Queensland border (Border Loop)-Maitland
Maitland-Broadmeadow
Broadmeadow-Scholey Street Junction-Morandoo Yard (BHP)
Berowra-Hornsby-North Strathfield-Chullora/Enfield (proposed freight route)
Chullora/Enfield-Sefton-Liverpool-Macarthur (proposed freight route)
Lithgow-Orange-Parkes-Broken Hill
Parkes-Stockinbingal-Cootamundra
Macarthur-Moss Vale-Goulburn-Cootamundra-Albury

(Note: this does not include additional emergency diversionary routes that interstate services may use on occasions and for which details will be included in a separate section of the route standards in the Code).

VICTORIA

Albury-Wodonga-Tottenham-West Footscray
West Footscray-South Dynon/North Dynon
South Dynon-Spencer Street
Tottenham-Newport-North Geelong-Gheringhap
Gheringhap-Ararat-Dimboola-Wolseley
South Dynon-Spencer Street-Flinders Street-Frankston-Long Island (broad gauge)

SOUTH AUSTRALIA/NORTHERN TERRITORY

Wolseley-Taillem Bend-Mile End-Islington-Dry Creek
Dry Creek-Gillman Junction-Port Adelaide-Glanville
Glanville-Pelican Point
Gillman Junction-Port Flat
Dry Creek-Crystal Brook-Coonamia-Port Pirie
Crystal Brook-Peterborough-Broken Hill
Coonamia-Port Augusta-Tarcoola-WA border
Tarcoola-Alice Springs
Port Augusta-Whyalla

WESTERN AUSTRALIA

SA border-Kalgoorlie-Avon-Midland
Midland-Forrestfield
Midland-East Perth terminal
Forrestfield-Cockburn-Kwinana
Cockburn-Fremantle.

PREFACE

This Code of Practice for the Defined Interstate Rail Network was developed by the rail industry.

The Australian Transport Council agreed to an Inter-Governmental Agreement (IGA) for Rail Uniformity in November 1999. As a result of this agreement the Australian Rail Operations Unit (AROU) was established from 1 January 2000 to work with industry to finalise and implement a Code of Practice for the Defined Interstate Rail Network. The IGA also provided for the establishment of an Industry Advisory Committee (IAC) to assist the AROU. Prior to the establishment of the AROU an Industry Reference Group working under the auspices of SCOT Rail Group produced the first draft of a set of National Codes of Practice for Railways.

The work has been sponsored by the rail industry, the Australasian Railway Association, State, Northern Territory and Commonwealth Governments.

This Code includes Volumes for each operational and engineering discipline and a Glossary defining the terminology used.

The General Requirements and Interface Management Code is a common document relevant to all railway disciplines. The other Volumes in the Code of Practice address the detailed principles, guidelines and mandatory requirements related to the individual disciplines for the range of railway activities comprising the defined interstate rail network.

The Commonwealth Government through the Commonwealth Department of Transport and Regional Services is responsible for administering issues related to the update and maintenance of the Code based on advice from industry. Code Management procedures for the Code of Practice for the Defined Interstate Rail Network are available from the Department.

The Code of Practice has been developed specifically to meet the uniformity requirements for the Defined Interstate Rail Network (DIRN). This Network excludes any yards, sidings and terminals, which may be associated with the Network by way of access, geographic location or any other reason. The practices detailed provide three (3) levels of information as follows:

- (a) Principles providing guidance and information to railway organisations on issues that should be considered.
- (b) Guidelines that provide guidance on one means of meeting some of the requirements of AS 4292.
- (c) Mandatory requirements necessary to enable the operational objectives of the 1998 report titled "Study of Rail Standards and Operational Requirements" to be reached.

The principles, guidelines and mandatory requirements have not been developed for use by other railway networks and are not relevant to special application railways such as sugarcane and heavy haul railways, which are constructed, operated and maintained in ways that meet the specific needs of those operations. In these cases special operating and technical requirements and standards, not provided for in this Code of Practice, will normally apply to accommodate the particular environments in which they operate.

The mandatory requirements for the DIRN do not require application retrospectively and are generally applicable in the case of significant upgrading and modification, new construction or in the implementation of new systems. Infrastructure and rollingstock built to standards in existence prior to the publication of this Code of Practice may be restricted in their use. Other practices deemed mandatory for the DIRN would require a period of time to provide for implementation, particularly in the case of operational and safeworking systems. The staged implementation of these requirements will be the subject of an industry based implementation plan developed in association with the Australian Rail Operations Unit.

The Code of Practice includes significant sections that are notated as "To Be Determined" or "To Be Inserted", which with amendments to existing clauses will be the subject of continuing development.

CODE OF PRACTICE VOLUMES

The following lists the Code of Practice for the Defined Interstate Rail Network by Volume and Part number:

- Volume 1 General requirements and interface management
- Volume 2 Glossary
- Volume 3 Operations and safeworking
 - Part 1: Rules
 - Part 2: Route standards
- Volume 4 Track, civil and electrical infrastructure (known as Infrastructure Code)
 - Part 1: Infrastructure Management
 - Part 2: Infrastructure Principles
 - Part 3: Infrastructure Guidelines
- Volume 5 Rollingstock
 - Part 1: Interface and general requirements
 - Part 2: Freight rollingstock
 - Part 3: Locomotives
 - Part 4: Passenger cars
 - Part 5: Other on track vehicles

SOURCE DOCUMENTS

During the preparation of this Code of Practice the following principle source documents were used:

Australian Standards

AS

- 4292 Railway safety management
- 4292.1 Part 1: 1995 General and interstate requirements
- 4292.2 Part 2: 1997 Track, civil and electrical infrastructure
- 4292.3 Part 3: 1997 Rollingstock
- 4292.4 Part 4: 1997 Signalling and telecommunications systems and equipment
- 4292.5 Part 5: 1997 Operational systems
- 4292.6 Part 6: 1997 Railway interface with other infrastructure
- 1742 Manual of uniform traffic control devices
- 1742.7 Part 7: 1993 Railway crossings

Australian Code for the Transport of Dangerous Goods by Road and Rail Sixth Edition 1988

CODE CHANGE PROCEDURES

Ongoing change procedures for the Code of Practice for the Defined Interstate Rail Network are available from the Department of Transport and Regional Services.

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1 SECTION 1: SCOPE AND IMPLEMENTATION

1.1 INTRODUCTION

The Foreword to AS 4292 Parts 2 to 5—1997 is as follows:

“FOREWORD

A means of complying with this Standard may be by an organisation entering into a commitment to conform to a code of practice which has been deemed by an appropriate authority to comply in respect of the organisation’s type of operation. It is envisaged that in time, a range of codes of practice applicable to specific railway activities may be developed to address different types of railway operation such as tramways, tourist/heritage, short haul and advanced technology railways, as well as interstate and other main line operations.”

This Code of practice has been developed as a means of complying with parts of AS 4292 in the context of the Defined Interstate Rail Network.

In conformity with AS 4292, before applying the Code to individual railway operations it is always necessary to determine the level of risk the application of the Code imposes on such railway operations. As with AS 4292, in making this determination at least the following matters are to be taken into account:

- (a) The role of the railway.
- (b) The function in the organisation of the person, corporation, contractor or supplier who is applying the Code.
- (c) The commercial agreements between owners, operators and functional areas.
- (d) The promotion of commercial and technological innovation.
- (e) Existing safety procedures and practices.
- (f) The need to determine which life cycle phases are applicable to an organisation.

1.2 APPLICATION FRAMEWORK

- (a) Subject to any relevant legislation, the Code of Practice is only intended to supplement AS 4292. In the event of any inconsistency between—
 - (i) the application of any part of AS 4292 and the Code; or
 - (ii) the interpretation of a provision of AS 4292 with the Code or a provision of the Code;AS 4292 is to prevail.
- (b) Any procedures or training manuals prepared by a railway organisation are to be read subject to the following order of precedence:
 - (i) AS 4292.
 - (ii) The Code.
- (c) The Code of Practice for the Defined Interstate Rail Network (hereafter called the "Code") is aimed at those involved in management and work activities associated with railways on the Defined Interstate Rail Network. In this context the intention of the Code is to provide a more unified, harmonised and efficient operation than that which existed prior to its publication. The Code seeks to facilitate, trains of differing sizes, characteristics, types, and purposes with differing owners and train managers to operate on and between the rail networks that constitute the Defined Interstate

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Rail Network giving one type of rail operation no advantage over that of another whilst at the same time providing capacity for efficiency and innovation.

- (d) The Code sets out principles, guidelines and mandatory requirements aimed at providing a uniform approach to rail operations and supporting the provision of safe and efficient infrastructure, rollingstock and operating systems.
- (e) Where adopted, the principles, guidelines and mandatory requirements described in the Code **shall** be incorporated into the management systems of the owner or operator by implementing standards and procedures based on these practices. It is recommended that a review of the Code precede its adoption to ensure compatibility with the existing systems.
- (f) The Code applies to work activities undertaken in all functional areas of the railway. The uniformity and underlying safety management principles are stated. Uniform requirements for health and fitness, competency, management and associated issues for rail workers are described. Requirements for interface coordination management are also described, including identification of issues for which interface coordination should be implemented.

2 SECTION 2: PRINCIPLES AND REQUIREMENTS

2.1 PURPOSE

The purpose of this document is to define the safety principles and requirements for the operation of safeworking systems and the issue of Occupancy Authorities (Authorities) to ensure the safe movement of trains.

2.2 SAFWORKING SYSTEMS

2.2.1 General description of systems and Authorities

Safeworking systems are integrated systems of operating procedures and technology for the safe operation of the railway. Authorities are described as follows:

- (a) Authorities are the means employed by safeworking systems to manage the conditions by which trains, track machines and workers access the track. The Authority types listed in this Clause are defined in the Glossary (Volume 2).
- (b) Safeworking systems may grant Authorities in various ways, depending on the degree of technology provided, for example—
 - (i) by electronic display;
 - (ii) by signal indications erected trackside;
 - (iii) by recording on paper; or
 - (iv) by token.
- (c) Authorities allow trains, track vehicles machines, workers and their equipment to occupy a defined part of track or infrastructure.
- (d) Authorities for use by trains are as follows:
 - (i) Proceed Authority (PA)
 - (ii) Proceed Restricted Authority (PRA)
 - (iii) Work Authority (WA)
 - (iv) Shunt Authority (SHA)
 - (v) Conditional Proceed Authority (CPA)
- (e) Authorities used for track or infrastructure work are as follows:
 - (i) Local Possession (LP)
 - (ii) Track Occupancy Authority (TOA)
 - (iii) Track Work Authority (TWA)
- (f) An Authority may grant exclusive or joint occupancy of a section of track.
- (g) Joint occupancy rules are used within the safeworking system to determine under what conditions an Authority may be granted.

Other arrangements for track work not involving the issue of Authorities may also be used within the safeworking system. These are:-

- Train Running Information (TRI)
- No Authority Required (NAR)

2.2.2 Summary of system requirements

The requirements for safeworking are summarised as follows:

- (a) A safe distance between movements **shall** be maintained (see Clause 2.4).
- (b) The integrity of a route **shall** be maintained once the Authority for a movement has been given (see Clause 2.7).
- (c) The limitations of the types of the safeworking system **shall** be documented and justified for particular applications (see Clause 2.2.5).
- (d) The principles for Authorities **shall** be satisfied before track occupancy is authorised (see Clause 2.5).
- (e) The Authority **shall** be such that it enables the safe control of a movement according to the related rules, track and train traffic conditions (see Clause 2.6).
- (f) Crossing controls **shall** be in place at designated level crossings (see Clause 2.8).

2.2.3 Safeworking system types

The following are types of safeworking systems in common use. The list is not exhaustive.

(a) ELECTRONIC AUTHORITY SYSTEMS (EAS)

EAS is a communications-based system and comprises the issue of a PA, which authorises a train to move between specified points. The train crew is required to comply with the instruction in the Authority in addition to any signal. The route over which a train is authorised to move is verified as clear by train control and the Authority system. The Authority is transmitted direct to the train crew and displayed either electronically or in hard copy form. The setting and verification of points is undertaken by the train crews themselves at unattended block locations, or by workers at attended locations, but they are required to comply with instructions contained in the Authority for that movement or by rules. Crossing and passing information may also be included in the Authority.

(b) TRAIN ORDER WORKING (TOW)

TOW is a communications-based system and comprises the issue of a PA in the form of a Train Authority, which authorises a train to move between specified points and is issued by train control to the train crew or to workers who arrange delivery to the train crew. The train crew is required to comply with the instructions in the train order together with any additional signal indications.

The route over which a train is authorised to move by a Train Authority is verified as clear either through manual procedures or with computer assistance. The setting and verification of points is undertaken by the train crew themselves at unattended block locations or by workers at attended locations and are required to comply with instructions contained with the train order or by rules which include the requirements for crossing or passing of trains.

(c) CENTRALISED TRAFFIC CONTROL (CTC)

CTC is a signalled system and comprises the operation of track side fixed signals and points from a train control location by the train controller with responsibility for one or more sections. Train control may be assisted by signal controllers either at the train control location or at other locations along the route. Each section may be subdivided into a series of separately signalled track sections. Automatic block signalling may be provided for defined blocks within a CTC system where, under normal running, the control of trains by train control is not required. PA is given by fixed signal indication.

(d) AUTOMATIC BLOCK SIGNALLING (ABS)

ABS is a signalled system and comprises the automatic operation of trackside fixed signals at successive locations along the route. Operation of fixed signals by track circuit,

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or other train detection means, may be applied in some or all of each defined length of track. PA is given by signal indication.

(e) ELECTRIC STAFF (ES)

ES is a token system. It comprises the issue of a PA in the form of a token or staff obtained from an electric staff instrument. The PA remains in force for as long as the token or staff is in the possession of the train crew.

An electric staff instrument is provided at each end of the section and each holds a number of tokens/staffs. The two staff instruments are electrically interlocked so that only one token/staff can be removed from either instrument at any one time. The safety of the system depends upon the correct operation of the electric staff instruments.

The Authority to enter the section is the train crew being in possession of the token or staff for that section and by signal indication where provided. The setting and verification of points may be undertaken by the train crew themselves at unattended locations or by workers at attended locations.

(f) STAFF AND TICKET (S&T)

S&T is a token system. It comprises the issue of a PA in the form of a staff, or where there is to be a following train in the same direction, a ticket. The system generally allows for only one train to be in the section at one time. However, on sections where following movements are authorised within the section, tickets are kept in the staff box at each end of the section. The staff box can only be unlocked by the train staff for the particular section.

The safety of the system depends upon the correct handling of the staff, and where required, the tickets.

The Authority to enter the section is the staff or ticket. Each train entering the section is required to be in possession of the staff or ticket for that section and when provided, comply with signal indications. When trains are proceeding on a ticket, the train crew is required to sight the staff for the relevant section prior to departure.

The setting and verification of points is undertaken by the train crews themselves or by workers at unattended locations.

2.2.4 System comparisons

Safeworking systems make use of the PA more frequently than any other Authorities. This is because the PA is used for authorising the normal movement of trains. The way the PA is presented to the train crew and how the route is managed and verified is dependent on the type of safeworking system in use. Notable differences between systems are shown in Table 2.1.

2.2.5 System limitations

The following procedures apply:

- (a) Irrespective of the type of technology used within a safeworking system, there will be some residual risk i.e. there are some hazards that the technology cannot protect against. When conducting risk assessments, these limitations **shall** be documented, together with justification as to why these limitations are acceptable for the particular application. All stakeholders need to be aware and appreciate the significance of the limitations.
- (b) Controls **shall** be provided to address any residual risk to a level that is as low as reasonably practicable and such controls **shall** be documented.

Rules

TABLE 2.1
SAFEWORKING SYSTEMS COMPARISON

SAFEWORKING SYSTEM					
COMMUNICATION SYSTEMS		SIGNALLED SYSTEMS		TOKEN SYSTEMS	
EAS	TOW	CTC	ABS	ES	S&T
The PA is used to authorise the normal movement of trains					
The PA route is determined as clear by train control and verified by computer	The PA route is determined as clear by train control and may be verified by computer	The PA route is determined as clear by train control and verified by the CTC System Train control operates or directs the operation of trackside points and fixed signals	The PA route is automatically verified as clear by the ABS System	The PA route is determined as clear by train control and verified by the release of a staff obtained from the electric staff instrument	The PA route is determined as clear by train control and verified by the release of a staff or ticket obtained from the staff box
Train control issues the PA direct to the train crew	Train Control issues the PA which is recorded by the train crew or by workers who arrange delivery to the train crew	The PA is displayed on the fixed signal erected trackside		The PA is the staff or ticket for the section obtained by the train crew or by workers who arrange delivery to the train crew	
The PA is displayed electronically or as hard copy in the locomotive cabin	The PA is displayed as hard copy in the locomotive cabin	The PA is displayed as signal indications		The PA is the staff or ticket for the section and is retained by the train crew	
Crossing, passing and other operational information may accompany the PA		Other operational information may be issued to the train crew	Crossing, passing and other operational information may be issued to the train crew		
Train crew or workers provided for the purpose set and verify points			Train crew or workers provided for the purpose set and verify points		
As the train proceeds the train crew shall comply with rules for PA, trackside signals, signs and markers and other operational information					

2.3 SAFWORKING SYSTEM—AUTHORITY SAFETY MANAGEMENT PROCESS

2.3.1 Four-step process

Safeworking systems use a common four-step process for managing Authorities. These can be summarised as follows:

- (a) **Information Management** (train and track status)
- (b) **Decision Making** (rules for Authority safety validation)
- (c) **Authority Issue** (transmission process)
- (d) **Execution of the Authority** (implementing the Authority)

An error or failure in any of the four steps may lead to an accident regardless of whether the process for managing the step is dependent on human behaviour, conventional signalling relay technology, computer based or other technologies.

2.3.2 Dependency for safety

The dependency for safety by each type of safeworking system is indicated in Table 2.2.

TABLE 2.2
AUTHORITY SAFETY MANAGEMENT PROCESS

SYSTEM \ PROCESS	Communication Systems		Signalled Systems	Token Systems	
	EAS	TOW	CTC& ABS	ES	S&T
Information Management	See 1,A	See 2,8,A	See 3,A	See 4,A	See 4,A
Decision Making	See 1,A	See 2,8,A	See 3,A	See 4,A	See 4,A
Authority Issue	See 1&5, 6,A	See 6,7,A	See 3&5,A	See 4,A	See 4,A
Execution of the Authority	See 4,9,A	See 4,A	See 4,7,9,A	See 4,A	See 4,A

LEGEND:

Safety Management Process where track workers are not involved (i.e. trains only)

- 1 Process dependent on computer based technologies.
- 2 Process dependent on human behaviour—train control **shall** comply with rules.
- 3 Process dependent on signalling system technologies for example, conventional signalling, solid or computer based interlocking.
- 4 Process dependent on human behaviour—train crew **shall** comply with rules.
- 5 Process dependent on data communication system.
- 6 Process dependent on voice communication system.
- 7 Process dependent on human behaviour—train control and train crew **shall** comply with rules
- 8 Train control **shall** comply with rules but may be assisted by computer based technologies
- 9 Train crew **shall** comply with rules but may be assisted by an intervention system.

Safety Management Process where track workers are involved

- A Process dependent on human behaviour - train control, train crew and track workers **shall** comply with rules.

2.4 TRAIN SEPARATION REQUIREMENTS

2.4.1 Running movements (trains operating on a PA)

The following apply:

- (a) A safe separation **shall** be assured by spacing trains according to their speed, braking capability and the track gradient.
- (b) The safeworking system **shall not** permit the authorisation of a train to enter the route until the route plus any applicable overlap is proved clear and rollingstock gauge and overhang limits are complied with.
- (c) Safe separations distance **shall** consist of—
 - (i) the braking distance from the allowed or attainable safe maximum speed; **and**
 - (ii) a margin for safety that reflects factors such as the maximum train speed, the type of train and its braking ability, and the presence or otherwise of a train protection system.
- (d) A safe separation **shall** be assured by either
 - (i) providing an overlap beyond the limit of Authority; **or**
 - (ii) by controlling the entry speed of the train into a route where a full overlap is not available.

2.4.2 Other movements (trains operating on a PRA, WA or SHA)

The safeworking system **shall** allow the authorisation of a train to enter a route where one of the following conditions apply:

- (a) The route is proved clear taking into account rollingstock gauge limits and an allowance for overhang.
- (b) The route is occupied by another train that is not moving.
- (c) The route is occupied by another train that has departed and is not returning.

2.4.3 Braking distance requirements

The following apply:

- (a) Braking distance **shall** be the service braking distance and **shall** be derived for each limit of Authority, taking into consideration the following parameters:
 - (i) the characteristics of trains that are normally intended to operate on the line;
 - (ii) the maximum speed, service brake, deceleration rate and brake delay time of the train involved for any specific location;
 - (iii) the gradient of the track; and
 - (iv) the maximum permissible track speed, including location and any track related speed restrictions.
- (b) Where there are trains with different characteristics, the braking distance **shall** be the longest of all the different trains that would normally operate over the route.

2.4.4 Overlap distance requirements

The following apply:

- (a) A distance (overlap) beyond a limit of Authority **shall** be considered as a margin of safety against the train overrunning the limit of Authority due to, for example, slippery rails, or misjudgement by the train crew.
- (b) Factors to be taken into consideration in determining the overlap distance include the following:

Rules

- (i) the characteristics of trains that are normally intended to operate on the line;
- (ii) the warning provided prior to the limit of Authority;
- (iii) the distance the train has to travel between the last warning and the limit of Authority;
- (iv) the maximum speed, deceleration rate and brake delay time of the train involved;
- (v) the average gradient of the track between the last warning and the limit of Authority;
- (vi) the maximum permissible line speed, including location and any speed restrictions;
- (vii) possible distractions to the trains' approach to a limit of Authority e.g. a crew change or a stopping place after the last warning;
- (viii) sighting distance (or time) the train crew has of the limit of Authority;
- (ix) the presence or otherwise of ATP; and
- (x) the provision of any conditional warnings or train speed checking which controls the approach speed of the train.

2.4.5 Sighting distance requirements

The following apply:

- (a) Sighting distance **shall** be sufficient for the train crew to sight an approaching limit of Authority and any prior warning, in time to take action to control the train so as to minimise the likelihood of exceeding the limit of Authority.
- (b) Sighting distance **shall** be determined as not less than the distance calculated to provide a reasonable approach viewing time for the train crew.

2.4.6 Train location requirements and recommendations

To ensure train separation is maintained it is necessary to know the location of all trains, items of rollingstock, other on-track vehicles and worksites. The following apply:

- (a) The level of integrity of the train location system **shall** be consistent with the overall safety integrity of the safeworking system.
- (b) Whatever system is used it **shall not** fail to detect the presence of a train or any other on-track vehicle that it is intended to detect.
- (c) The train location system **shall** have an accuracy that is appropriate to the method of separation of trains i.e. fixed or moving block systems, and the safeworking system.
- (d) There **shall** be compatibility between trains, the track infrastructure, overhead electric traction systems and the train location system where the location system automatically detects the presence of a train.
- (e) The detection system **shall** be sufficiently precise to ensure that the position of the train in relation to the point to be protected, e.g. at a convergence of two tracks, is known with an accuracy necessary to ensure safety.
- (f) Unless it can be shown that the risk of a train unknowingly becoming divided is acceptably low, the train detection system should be capable of identifying and safeguarding against the effects of train division.
- (g) Systems which rely on memory devices, e.g. axle counters, **shall** incorporate a defined means of bringing them back into use following any maintenance or other disruption or failure.
- (h) Train location and detection may be used to—
 - (i) prove that a specific section of track is unoccupied;

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- (ii) detect the presence of a train etc on a specific track section;
 - (iii) detect the arrival of a train etc at a particular location;
 - (iv) detect the departure of a train etc from a particular location;
 - (v) identify the location of the front of the train;
 - (vi) identify the location of the rear of a train;
 - (vii) detect the direction of travel of a train.
- (i) Location and detection systems include direct observation, reporting, track circuits, axle counters, and global positioning systems.

2.5 TRACK OCCUPANCY REQUIREMENTS

Tables 2.3 and 2.4 describe track occupancy requirements for trains and track work respectively in terms of Authority selection and shows how each type of Authority is communicated within the safeworking system.

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TABLE 2.3
TRACK OCCUPANCY REQUIREMENTS FOR TRAINS

Authority Selection		SAFEWORKING SYSTEM				
		Communications Systems		Signalled Systems	Token Systems	
		EAS	TOW	CTC & ABS	ES	S&T
PA #	<i>For through train working under normal operating conditions.</i>	Electronically displayed in-cab identifying limits to which the train is authorised to proceed.	Written Authority identifying limits to which the train is authorised to proceed.	Trackside fixed signal indication prescribed by rules to indicate a PA.	Possession of a staff. The train is authorised to proceed to the end of the section while in possession of a staff or ticket for that section.	
PRA #	<i>To pass fixed signals at stop due to track or electrical fault where track section unoccupied OR to enter limits of preceding train or track worksite.</i>	Electronically displayed in-cab identifying limits to which the train is authorised to proceed and restrictions that apply.	Written Authority identifying limits to which the train is authorised to proceed and restrictions that apply.	Instruction identifying limits to which the train is authorised to proceed and restrictions that apply.		Instruction identifying limits to which the train is authorised to proceed and restrictions that apply AND possession of a staff or ticket.
				OR by rule stating time, speed limitations and conditions.		
WA *	<i>For work in section such as assisting a disabled train or ballast distribution.</i>	Electronically displayed in-cab identifying the limits between which the train is authorised to work and the additional restrictions that apply.	Written Authority identifying limits between which the train is authorised to work and restrictions that apply.	Instruction identifying limits between which the train is authorised to work and restrictions that apply.		
				AND signal indication where possible.	AND possession of a staff.	
SHA *	<i>For shunting where movement shall enter block adjacent to yard where shunt is required.</i>	Electronically displayed in-cab identifying the block into which the train is authorised to shunt.	Written Authority identifying the block into which the train is authorised to shunt.	Instruction identifying the block into which the train is authorised to shunt.		
				AND signal indications where possible.	AND possession of a staff.	
CPA #	<i>To expedite issue of PA subject to obeying instruction to cross or pass one or more trains.</i>	Not applicable.	Written Authority identifying limit to which the train is authorised to proceed subject to a cross or pass with one or more trains	Not applicable.		

Uni-directional Authorities * Bi-directional Authorities

TABLE 2.4
TRACK OCCUPANCY REQUIREMENTS FOR TRACK WORK

AUTHORITY SELECTION #		SAFEWORKING SYSTEM #					
		Communications Systems		Signalled Systems		Token Systems	
		EAS	TOW	CTC	ABS	ES	S&T
LP	For major work where track is occupied by any number of separate track work forces controlled locally by the overall worksite supervisor who may also direct authorised trains to enter the limits of the LP. Other trains are not permitted to enter the section during the currency of the LP.	Authority to the overall worksite supervisor from train control identifying the specified limits and requirements for compliance with LP rules and procedures.					
TOA	For track workers and their equipment, for work and movement within specified limits, the track may be broken and obstructed. Trains are not permitted to enter the section during the currency of the TOA.	Authority to the worksite supervisor from the train control identifying specified limits.					
TWA	For track workers and their equipment for work and movement within specified limits, the track may be broken and obstructed. Trains are permitted to enter the section during the currency of the TWA. The track shall be restored and cleared to allow trains through the section under the direction of the worksite supervisor subject to appropriate restrictions.	Authority to the worksite supervisor from train control identifying specified limits and trains likely to occur during the currency of the TWA.					
TRI *	For track workers and their equipment for work and movement between specified limits, the track shall not be broken. Obstructions shall be removed for normal passage of trains.	Information to the worksite supervisor from train control identifying the specified limits and trains likely to occur during the currency of the TRI *.					
NAR *	For inspection of infrastructure on foot or to cross tracks between the passage of trains. Workers make their own arrangements for the safe occupation of track between the passage of trains. Track may not be broken or obstructed.	Workers may request information from train control about trains likely to occur.					

Range of Authorities available for selection is at the discretion of the network owner.

* TRI and NAR – these arrangements are not Authorities but are included here for convenience.

2.6 AUTHORITIES

2.6.1 General requirements

The following apply:

- (a) The Authority provides the limits and conditions for the safe operation of the train.
- (b) The Authority **shall** be easily understood and unambiguous to the train crew.
- (c) There **shall** be consistency between the Authority and other sources of Authority-related information provided to the train crew e.g. track structure, related speed limits, instructions on track side signs etc.
- (d) Prior to the issue of an Authority the following conditions **shall** be satisfied:
 - (i) the track over which the Authority applies **shall not** be out of service and **shall** be continuous for the limit of Authority and direction of travel subject to the conditions stated in joint occupancy rules in 2.7.2;
 - (ii) all points in the route for which the Authority applies **shall** be correctly positioned and locked, the only exception is where the train crew is provided with an indication as to the status of the points such that the train can be stopped before reaching the points if they are not correctly set and locked;
 - (iii) the route **shall** be appropriate for the train to which the Authority applies;
 - (iv) the route for which the Authority applies **shall** be protected from encroachment by other trains exceeding their limit of Authority with their allocated overlap; and
 - (v) active level crossings warning systems **shall** ensure sufficient warning is given prior to the arrival of the train at the crossing.
- (e) Subsequent to the issue of an Authority the following conditions **shall** be satisfied:
 - (i) The conditions stated in joint occupancy rules **shall** be observed;
 - (ii) For a train authorised by a PA that has commenced or is about to commence fulfilling the Authority—
 - the route ahead including any overlap provided and that presently occupied by the train, **shall** be maintained during the passage of the train; or
 - if the PA is to be revoked or cancelled the route **shall** be maintained until **either** the train has occupied the route and arrived at the limit of the PA **or** the train has stopped **or** can stop prior to the new PA limit; and
 - (iii) For a train authorised by a PRA, WA or SHA that has commenced or is about to commence fulfilling the Authority—
 - the route ahead and that presently occupied by the train **shall** be maintained during the passage of the train; or
 - if the PRA, WA or SHA is revoked prior to the train commencing to fulfil the Authority, then the route **shall** be maintained until **either** the train has arrived at the limit of Authority **or** the train has stopped **or** can stop prior to the new PRA, WA or SHA limit.

2.6.2 Joint occupancy rules

The rules are applied as follows:

- (a) Joint occupancy of a track or block section requires the issue of two or more Authorities to be granted either simultaneously or sequentially according to the

Rules

matrices in Tables 2.5, 2.6 and 2.7, and the numbered joint occupancy rules associated with each table.

- (b) Joint occupancy rules are used within the safeworking system's decision-making process to validate joint occupancy.
- (c) Communications, signal and token based safeworking systems each use the same joint occupancy rules in their occupancy validation process.
- (d) The range of Authorities available for selection is at the discretion of the network owner.
- (e) The granting of occupancies in accordance with the safeworking system Tables 2.5 to 2.7 shall be done using the following steps:
 - (i) select the type of Authority previously issued in the section;
 - (ii) select the type of requested Joint Authority for the section; and
 - (iii) the cell where previously issued and requested Authorities intersect indicates one of the following:
 - No—means the requested joint Authority is denied;
 - Yes—means the requested joint Authority is permitted, but subject to the numbered rule indicated at the base of the table;
 - Blank cell—means the Authority is not used in the system.

2.6.3 Train Authorities

Train Authorities are used to convey Authorities or other instructions to train crews from train control. Requirements for their use are given in Clause 3.9. The circumstances under which Train Authorities are used to convey Authorities or other instructions are given in Table 3.5

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TABLE 2.5
SAFeworking SYSTEM TABLE FOR COMMUNICATIONS SYSTEMS—EAS & TOW

Comm's Systems		Requested Joint Authority for Section										
		PA	PRA	WA	SHA	CPA#	TOA	TWA	LP	TRI*	NAR*	
Authority Previously Issued in the Section	PA	No	No	No	Yes Rule 2	Yes Rule 8	Yes Rule 3	Yes Rule 4	No	Yes Rule 5	Yes Rule 10	
	PRA	No	No	No	Yes Rule 2	Yes Rule 8	Yes Rule 3	Yes Rule 4	No	Yes Rule 5	Yes Rule 10	
	WA	No	No	No	Yes Rule 2	Yes Rule 8	Yes Rule 3	Yes Rule 4	No	Yes Rule 5	Yes Rule 10	
	SHA	No	No	No	Yes Rule 6	No	Yes Rule 6	Yes Rule 4	No	Yes Rule 5	Yes Rule 10	
	CPA#	Yes Rule 8	No	No	No	No	Yes Rule 3	Yes Rule 4	No	Yes Rule 5	Yes Rule 10	
	TOA	No	No	No	Yes Rule 6	No	Yes Rule 6	Yes Rule 6	No	Yes Rule 5	Yes Rule 10	
	TWA	Yes Rule 7	Yes Rule 7	Yes Rule 7	Yes Rule 7	Yes Rule 7	Yes Rule 6	Yes Rule 6	No	Yes Rule 5	Yes Rule 10	
	LP	No	No	No	No	No	No	No	No	No	Yes Rule 10	
	TRI*	Yes Rule 9	Yes Rule 9	Yes Rule 9	Yes Rule 9	Yes Rule 9	Yes Rule 9	Yes Rule 9	Yes Rule 9	No	Yes Rule 5	Yes Rule 10
	NAR*	Yes Rule 10	Yes Rule 10	Yes Rule 10	Yes Rule 10	Yes Rule 10	Yes Rule 10	Yes Rule 10	Yes Rule 10	Yes Rule 10	Yes Rule 10	Yes Rule 10

* TRI and NAR are not Authorities but are included for convenience.

A CPA may be used in TOW and is not used in EAS.

Rule 1. Not applicable in Communications Systems.

Rule 2. The requested Authority is permitted provided the preceding train is running in the same direction as the shunting movement and has already cleared the shunting limit location and is not returning.

Rule 3. The requested Authority is permitted provided it is issued after the train has passed the proposed worksite and is not returning.

Rule 4. The requested Authority is permitted provided the worksite supervisor is advised of all train movements likely to occur during the currency of the Authority.

Rule 5. Information **shall** contain advice as to the movement of all relevant trains and other track workers.

Rule 6. The requested Authority is permitted provided the specified limits do not overlap.

Rule 7. The requested Authority is permitted provided the worksite supervisor is advised of all train movements likely to occur during the currency of the Authority in accordance with Rule 4. If the worksite supervisor cannot be advised of the train, the train crew **shall** be warned of the location of the track work and advised of the circumstances.

Rule 8. The requested Authority is permitted provided crossing and passing instructions are included on the train authority for each train.

Rule 9. The requested Authority is permitted provided the worksite supervisor receives advice about all relevant train or other track work force movements likely to occur.

Rule 10. Workers make their own arrangements for safe occupation of the track between the passage of trains.

Rules

TABLE 2.6
SAFeworking SYSTEM TABLE FOR SIGNALLED SYSTEMS—CTC & ABS

Signalled Systems	Requested Joint Authority for Section										
	PA	PRA	WA	SHA	CPA#	TOA	TWA	LP	TRI*	NAR*	
Authority Previously Issued in the Section	PA	No	Yes Rule 1	No	Yes Rule 2		Yes Rule 3	Yes Rule 4	No	Yes Rule 5	Yes Rule 10
	PRA	No	Yes Rule 1	No	Yes Rule 2		Yes Rule 3	Yes Rule 4	No	Yes Rule 5	Yes Rule 10
	WA	No	No	No	No		Yes Rule 3	Yes Rule 4	No	Yes Rule 5	Yes Rule 10
	SHA	No	No	No	Yes Rule 6		Yes Rule 6	Yes Rule 4	No	Yes Rule 5	Yes Rule 10
	CPA#										
	TOA	No	No	No	Yes Rule 6		Yes Rule 6	Yes Rule 6	No	Yes Rule 5	Yes Rule 10
	TWA	Yes Rule 7	Yes Rule 7	Yes Rule 7	Yes Rule 7		Yes Rule 6	Yes Rule 6	No	Yes Rule 5	Yes Rule 10
	LP	No	No	No	No		No	No	No	No	Yes Rule 10
	TRI*	Yes Rule 9	Yes Rule 9	Yes Rule 9	Yes Rule 9		Yes Rule 9	Yes Rule 9	No	Yes Rule 5	Yes Rule 10
	NAR*	Yes Rule 10	Yes Rule 10	Yes Rule 10	Yes Rule 10		Yes Rule 10				

* TRI and NAR are not Authorities but are included for convenience.

A CPA is not used in CTC or ABS.

- Rule 1. The requested Authority is permitted provided speed or time interval restrictions, or both are placed on the following train.
- Rule 2. The requested Authority is permitted provided the preceding train is running in the same direction as the shunting movement and has already cleared the shunting limit location and is not returning.
- Rule 3. The requested Authority is permitted provided it is issued after the train has passed the proposed worksite and is not returning.
- Rule 4. The requested Authority is permitted provided the worksite supervisor is advised of all train movements likely to occur during the currency of the Authority.
- Rule 5. Information **shall** contain advice as to the movement of all relevant trains and other track workers.
- Rule 6. The requested Authority is permitted provided the specified limits do not overlap.
- Rule 7. The requested Authority is permitted provided the worksite supervisor is advised of all train movements likely to occur during the currency of the Authority in accordance with Rule 4. If the worksite supervisor cannot be advised of the train movement, the train crew **shall** be warned of the location of the track work and advised of the circumstances.
- Rule 8. Not applicable in Centralised Traffic Control or Automatic Block Signalling.
- Rule 9. The requested Authority is permitted provided the worksite supervisor receives advice about all relevant train or other track work force movements likely to occur.
- Rule 10. Workers make their own arrangements for safe occupation of the track between the passage of trains.

Rules

TABLE 2.7
SAFeworking SYSTEM TABLE FOR TOKEN SYSTEMS—ES & S&T

Token Systems		Requested Joint Authority for Section									
		PA	PRA	WA	SHA	CPA#	TOA	TWA	LP	TRI*	NAR*
Authority Previously Issued in the Section	PA	No	Yes Rule 1	No	Yes Rule 2		Yes Rule 3	Yes Rule 4	No	Yes Rule 5	Yes Rule 10
	PRA	No	Yes Rule 1	No	Yes Rule 2		Yes Rule 3	Yes Rule 4	No	Yes Rule 5	Yes Rule 10
	WA	No	No	No	No		Yes Rule 3	Yes Rule 4	No	Yes Rule 5	Yes Rule 10
	SHA	No	No	No	No		Yes Rule 6	Yes Rule 4	No	Yes Rule 5	Yes Rule 10
	CPA#										
	TOA	No	No	No	Yes Rule 6		Yes Rule 6	Yes Rule 6	No	Yes Rule 5	Yes Rule 10
	TWA	Yes Rule 7	Yes Rule 7	Yes Rule 7	Yes Rule 7		Yes Rule 6	Yes Rule 6	No	Yes Rule 5	Yes Rule 10
	LP	No	No	No	No		No	No	No	No	Yes Rule 10
	TRI*	Yes Rule 9	Yes Rule 9	Yes Rule 9	Yes Rule 9		Yes Rule 9	Yes Rule 9	No	Yes Rule 5	Yes Rule 10
	NAR*	Yes Rule 10	Yes Rule 10	Yes Rule 10	Yes Rule 10		Yes Rule 10				

* TRI and NAR are not Authorities but are included for convenience.

A CPA is not used in ES or S&T.

- Rule 1. The requested Authority is permitted provided speed or time interval restrictions, or both are placed on the following train.
- Rule 2. The requested Authority is permitted provided the preceding train is running in the same direction as the shunting movement and has already cleared the shunting limit location and is not returning.
- Rule 3. The requested Authority is permitted provided it is issued after the train has passed the proposed worksite and is not returning.
- Rule 4. The requested Authority is permitted provided the worksite supervisor is advised of all train movements likely to occur during the currency of the Authority.
- Rule 5. Information **shall** contain advice as to the movement of all relevant trains and other track workers.
- Rule 6. The requested Authority is permitted provided the specified limits do not overlap.
- Rule 7. The requested Authority is permitted provided the worksite supervisor is advised of all train movements likely to occur during the currency of the Authority in accordance with Rule 4. If the worksite supervisor cannot be advised of the train movement, the train crew **shall** be warned of the location of the track work and advised of the circumstances.
- Rule 8. Not applicable in Electric Staff.
- Rule 9. The requested Authority is permitted provided the worksite supervisor receives advice about all relevant train or other track work force movements likely to occur.
- Rule 10. Workers make their own arrangements for safe occupation of the track between the passage of trains.

2.7 ROUTE INTEGRITY REQUIREMENTS

2.7.1 General requirements

The following apply:

- (a) A safeworking system **shall** authorise a train to proceed only when it is safe to do so, and it **shall** maintain the integrity of the route once the Authority to proceed has been given.
- (b) An Authority **shall not** be issued for the movement of a train unless the points over which the train is to proceed are set and locked in the proper position. The only exception is where the train crew is provided with an indication as to the status of the points such that the train can be stopped before reaching the points if they are not correctly set and locked.
- (c) A safeworking system **shall** be designed to eliminate the possibility of issuing an Authority that could lead to a collision between trains.
- (d) Once a route has been set and locked, it **shall not** be possible for any points on the route to be moved or conflicting authorities issued until the train has passed through it, or until it has been established that the train will not pass through it. The only exception is where the train crew is provided with an indication as to the status of the points such that the train can be stopped before reaching the points if they are not correctly set and locked.
- (e) Points **shall** be set to avoid the risk of collision. A PA for a route **shall** only exist for so long as the conditions which allowed it to be issued are maintained. The only exception is where the train crew is provided with an indication as to the status of the points such that the train can be stopped before reaching the points if they are not correctly set and locked.
- (f) All the conditions necessary for the setting, maintaining and releasing of a route **shall** be documented in a form which is understandable by signal designers, railway operators, and testing and maintenance staff.

2.7.2 Position of points

The following requirements apply:

- (a) For all running movements (trains operating on a PA) the position of each points blade **shall** be correct and for facing movements, unless the points are capable of being trailed, the locking mechanism engaged.
- (b) For other than running movements (trains operating on a PRA, WA or SHA) the position of each points blade **shall** be correct and, where provided, the locking mechanism engaged.
- (c) For signalled movements where train detection is used for track locking, the movement of points **shall** be prevented when the section of track approaching and through the points is occupied. In areas where there is no train detection, other means for controlling the movement of points **shall** be provided.
- (d) A PA **shall not** be issued for any route for which the conditions for the position, detection and locking of points have not been met. The only exception is where the train crew is provided with an indication as to the status of the points such that the train can be stopped before reaching the points if they are not correctly set and locked.

2.7.3 Route occupancy requirements

The following apply:

- (a) For other than emergency or shunting movements, the signalled system **shall** prevent a train from being given Authority to enter an already occupied route until the route is no longer occupied.
- (b) Where train detection systems are used, the locking and releasing of the route **shall** take into consideration transient conditions or faults in the train detection system so as to prevent conflicting routes being set or routes being prematurely released.
- (c) The locking a route **shall not** be released until safe to do so. To improve operational flexibility, progressive release of the locking with the passage of the train may be employed. This may be achieved by the correct sequential occupation and clearance of the train detection system through the route or by the elapse of time under defined conditions to provide an assurance that the train is stationary.

2.8 ROAD/PEDESTRIAN CROSSING REQUIREMENTS

The following apply:

- (a) Crossing controls **shall** be provided at designated level crossings.
- (b) The selection of the crossing control for a particular level crossing **shall** consider the risks to all users of the crossing.
- (c) Crossing controls **shall** comply with AS 1742.7, *Manual of uniform traffic control devices, Part 7: Railway crossings*.
- (d) Crossing controls **shall** be either—
 - (i) passive controls—for example signs, manual gates, mazes or combination thereof; or
 - (ii) active controls—for example flashing lights, boom gates, pedestrian gates, walk/don't walk signals, audible alarms in conjunction with signs, and mazes if required.
- (e) Warning of approaching trains **shall** be provided to those about to cross the railway so that they can either stop prior to the crossing or clear the crossing before the train arrives. This warning **shall** be achieved either by:
 - (i) providing direct viewing of the approaching train at passive controlled crossings; or
 - (ii) providing a timely warning at active controlled crossings.
- (f) Where active controls are used, the warning provided **shall** clearly indicate to the user when the crossing is not safe to cross.

If the warning time could be unduly long (failure and maintenance situations aside), the crossing **shall not** be closed for a time that is likely to test the patience of the crossing user prior to and following the passage of a train.
- (g) When determining the crossing control measures to be applied the possibility of other train(s) occupying the crossing in either direction immediately after a previous train needs to be considered.

3 SECTION 3: INTERFACE RULES

3.1 TRACKSIDE SIGNS

3.1.1 Application

This Section addresses proposed uniform trackside signs for the Defined Interstate Rail Network and may vary from the actual trackside signs in use. Until or unless these proposals are formally implemented operational and safeworking rules and other information about the actual signs in use **shall** be obtained directly from the relevant network owner's documentation.

3.1.2 General

General requirements and recommendations are as follows:

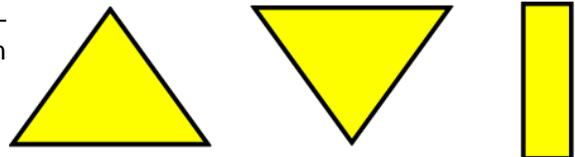
- (a) Trackside signs—
 - (i) **shall** be positioned to be clearly visible to the train crew of an approaching movement during the day and at night;
 - (ii) where practicable, **shall** be erected on the left side of the track;
 - (iii) **shall** use retroreflective material;
 - (iv) may be erected independently or be fixed to other appropriate infrastructure; and
 - (v) **shall** be placed in positions of low hazard.
- (b) The reverse sides of trackside signs **shall** be neutral in appearance.
- (c) The meaning of trackside signs may be qualified by the attachment of qualification plates.
- (d) Distances shown on signs and qualification plates may vary from those shown in the examples but **shall** be appropriate for the area and application.
- (e) Additional trackside signs designed for specific local conditions may be erected.
- (f) Trackside signs may be modified in shape to meet clearance limitations.
- (g) Trackside signs should have a border around their perimeter to improve their visibility.

The general purpose and appearance of trackside signs, in terms of shape and colour, is as shown in Clauses 3.1.3 and 3.1.4 below. The permissible range of sign shapes is limited to the signs shown on the right in each case.

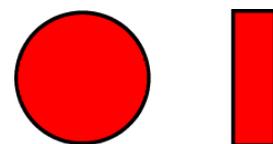
3.1.3 Sign shape and colour

Shape and colours are as follows:

- (a) Trackside signs indicating **Caution**—black letters, numerals or symbols on a yellow retroreflective background.



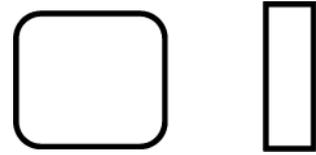
- (b) Trackside signs indicating **Stop**—A red retroreflective disc, or white letters or symbols on a red retroreflective background.



Rules

- (c) Trackside **Advice Signs** signs indicating **other than Caution or Stop**—black letters or symbols on a white retroreflective background.

NOTE: See exception in 3.1.4(k)



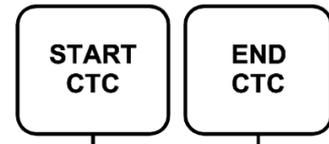
3.1.4 Description and meaning

The description and meaning of individual signs are as follows:

- (a) Start / End Safeworking System Sign

An advice sign indicating the start or end of a safeworking system.

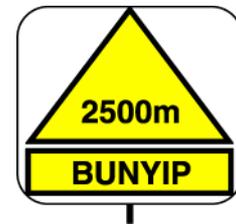
Meaning—Marks the entrance to or exit from a particular safeworking system. Authority to proceed **shall** be in accordance with the safeworking system indicated on the sign.



- (b) Location Ahead Sign

A caution sign with a plate indicating the name of a location in EAS or TOW and the distance to the location's Yard Limit Sign or Block Point Sign.

Meaning—Provides warning of approach and distance to a location and recognition by its designated name.



NOTES:

[1] A Location Ahead Sign may be placed in advance of a fixed signal in CTC or ABS to compensate for limited signal sighting distances.

[2] 2500 m is the standard advance warning distance for the Defined Interstate Rail Network and is shown as an example.

- (c) Yard Limit Sign

An advice sign indicating the limits of a yard at a location in EAS and TOW, erected at a variable distance from the outermost points.

Meaning—Marks the entrance to the yard and the limit of movement within the yard.

NOTE: In some locations, movement within the yard is limited by a Limit of Shunt Sign.



- (d) Limit of Shunt Sign

An advice sign defining the limit of shunting operations.

Meaning—Marks the point beyond which a movement within a yard may not proceed without an Authority.



- (e) Clearance Point Sign

An advice sign or a marker indicating the Clearance Point between converging tracks.

Meaning—Marks the point where rollingstock will not foul other rollingstock on a converging line.



Rules

(f) Block Point Sign

An advice sign indicating a location where trains are unable to cross or pass but where "train clear of section" can be achieved.

Meaning—Marks the end of the section from which the train has arrived and **shall** clear before "train clear of section" may be reported, if required.



(g) Stop Ahead Sign

A caution sign with a plate indicating the distance ahead where a Stop Sign is erected.

Meaning—Warning of approach and distance to a Stop Sign ahead. Prepare to stop.



NOTES:

[1] If necessary a second caution sign may be erected at a reduced distance before the Stop Sign. 500 m is shown as an example.

[2] 2500 m is the standard for the Defined Interstate Rail Network and is shown as an example.

[3] When circumstances dictate a caution sign may be erected closer or further from the stop sign and displayed at the corresponding distance.

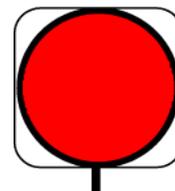


(h) Stop Sign

A sign indicating where an approaching movement is required to stop.

Meaning—The movement **shall** stop before reaching the sign, and remain stationary until authorised to proceed.

NOTE: The use of the word "STOP" on a Stop Sign is not mandatory.

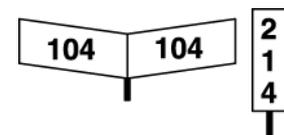


(i) Kilometre Sign

Advice signs located every kilometre on the left-hand side of the track in the direction of increasing kilometres.

Meaning—Indicates the distance from a set point or used to identify a specific location on the section of line.

NOTE: In some areas half kilometre markers may also be erected.



(j) Whistle Sign

An advice sign requiring the train crew member to sound the warning device.

Meaning—Sound the warning device.



Rules

(k) Permanent Speed Sign

An advice sign to indicate the maximum speed allowable.

A single set of numerals indicates maximum speed for all trains.

More than one set of numerals may be displayed to distinguish the maximum speed applicable to specific types or classes of trains.

- Each set of numeral applies to a specific train type or class.
- The specific train type or class is further specified.

Meaning—When approaching or passing a Permanent Speed Sign, the track speed indicated remains in force until the next change of speed is indicated. When the Speed Sign changes—

- a decrease means train crew is required to reduce to the indicated speed *before* passing the sign;
- an increase means the train crew may increase to the indicated speed *after* the whole train has passed the sign.

Exception—*Permanent Speed Signs may be composed of black letters, numerals or symbols on a yellow retroreflective background.*

(l) Temporary Speed Restriction (TSR) Ahead Sign

A caution sign indicating the distance ahead where a TSR Start Sign is erected and the speed restriction required. A single set of numerals indicates maximum speed for all trains.

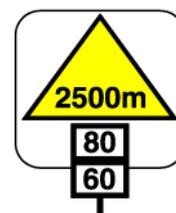
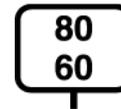
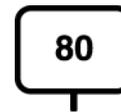
More than one set of numerals may be displayed to distinguish the maximum speed applicable to specific types or classes of trains.

An arrow indicates the TSR for the track beyond a turnout situated in the direction indicated (for example a crossing loop).

- Each set of numerals applies to a specific train type or class.
- The specific train type or class is further specified.

Meaning—Warning of approach and distance to a TSR. Prepare to slow down and regulate the speed of the train to pass the TSR Start Sign not exceeding the speed indicated.

NOTE: 2500 m is the standard for the Defined Interstate Rail Network and is shown as an example.



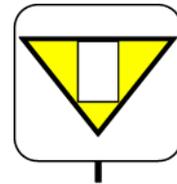
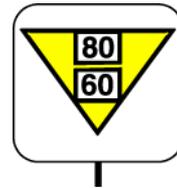
Rules

(m) TSR Start Sign

A caution sign apex pointing down to indicate the start of a TSR placed 50 m before the restriction.

Meaning—Comply with the speed indicated until the next TSR Start or TSR End sign.

Unless confirmation of the correct speed can be assured, a 15 km/h maximum speed **shall** be observed where qualification plates are not displayed.



(n) TSR End Sign

An advice sign to indicate the end of a TSR placed 50 m after the "restriction".

Meaning—Normal speed may be resumed after the whole train has passed the TSR End Sign.

NOTE: One or more sets of numerals may be displayed indicating the maximum track speed that applies, see Clause 3.1.4(k).



(o) Other Advice Signs—Examples

- An advice sign to indicate changed Radio Frequency and/or Channel requirements.
- An advice sign to indicate derail device is installed and needs to be attended.
- An advice sign to indicate current speed needs to be maintained due to level crossing predictor in use.



3.2 TSR SIGN ARRANGEMENTS

This Section addresses proposed uniform Temporary Speed Restriction (TSR) sign arrangements for the Defined Interstate Rail Network. Until or unless these proposals are formally implemented, operational and safeworking rules and other information about the actual signs in use **shall** be obtained directly from the relevant Network Owner's documentation.

In Figures 3.1 to 3.4, 2500 metres is the standard advance warning distance for the Defined Interstate Rail Network and is shown in the diagrams as an example.

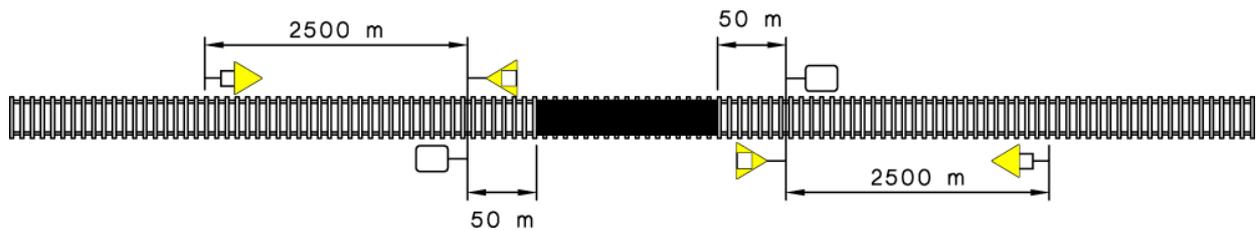


FIGURE 3.1 SINGLE TSR—BI-DIRECTIONAL TRACK

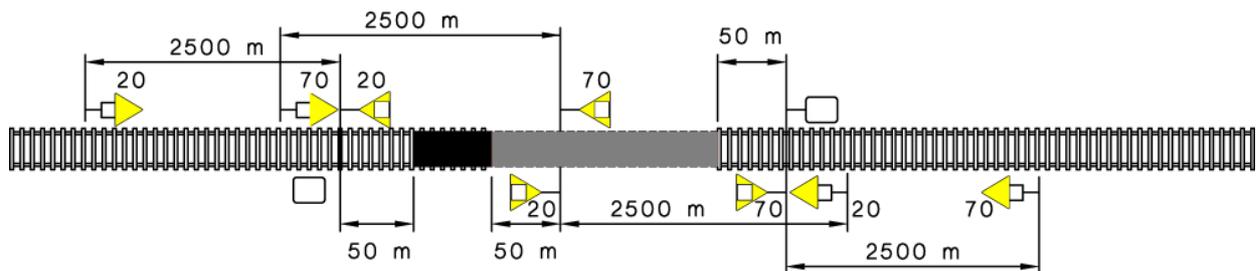


FIGURE 3.2 CONSECUTIVE TSR'S—BI-DIRECTIONAL TRACK

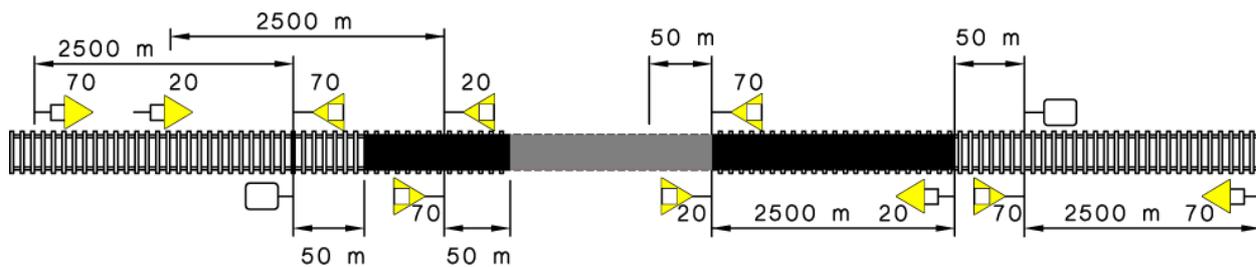


FIGURE 3.3 ONE TSR WITHIN ANOTHER TSR—BI-DIRECTIONAL TRACK

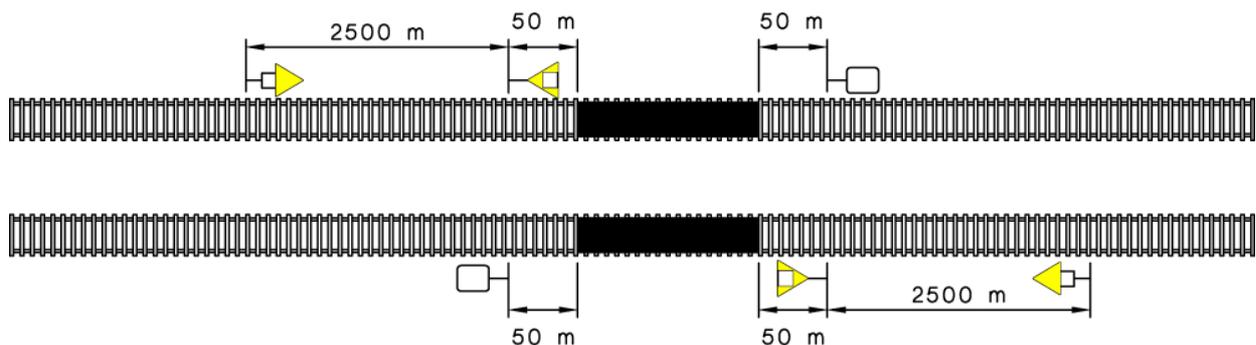


FIGURE 3.4 TSR SIGN ARRANGEMENTS—DOUBLE-DIRECTIONAL TRACK

3.3 FIXED SIGNALS

3.3.1 General

This Section addresses fixed signals governing access to, and operations on, the running lines in signalled areas. Additional fixed signals to those described here may be erected to control operations within terminals and yards, and access from the running lines.

3.3.2 Description and use

Fixed signals are described and used as follows:

- (a) Fixed signals separate and regulate the movement of trains.
- (b) Fixed signals, as far as is practicable, are erected—
 - (i) on the left side adjacent to; or
 - (ii) directly over;the track to which they apply.
- (c) The type of fixed signal and the indication displayed, as viewed from an approaching train, is achieved in various ways and in various combinations of ways. These include the following:
 - (i) **lights** which vary as to colour, whether single or multiple lights and whether steady or flashing;
 - (ii) **semaphore arms** which vary as to shape and whether positioned in the upper or lower quadrant; and
 - (iii) **qualification mechanism** which may comprise marker plates, marker lights, letter plates or number plates.
- (d) Fixed signals may convey one or more of the following meanings:
 - (i) Authority—
Stop;
PA;
PRA; or
SHA.
 - (ii) Train speed—
normal speed;
medium speed;
low speed; or
specified speed.
 - (iii) Condition of subsequent blocks—
clear;
occupied;
obstructed; or
fault.
 - (iv) Route—
turnout;
junction; or
straight.
- (e) Fixed Signals may be an—
 - (i) Absolute signal—operated by a person; or
 - (ii) Permissive signal—operated by the passage of trains.

- (f) Fixed signals called repeaters co-act with the (main) fixed signal and repeat the indication or in some cases may display a more restrictive indication. Repeaters are used in the following cases:
- (i) where a fixed signal displaying a "Stop" indication will be seen too late to enable the train to stop at the signal;
 - (ii) where a fixed signal displaying a "Caution" indication will be seen too late to avoid the train slowing down;
 - (iii) where a fixed signal is obstructed from view by infrastructure or by other trains;
 - (iv) where there is a transition from lower to upper quadrant signalled areas.

3.3.3 Typical distribution, types and placement

The typical distribution and the positioning of fixed signal types on single, double and multiple line track together with the type and purpose of signals, are given in general terms in Figure 3.5.

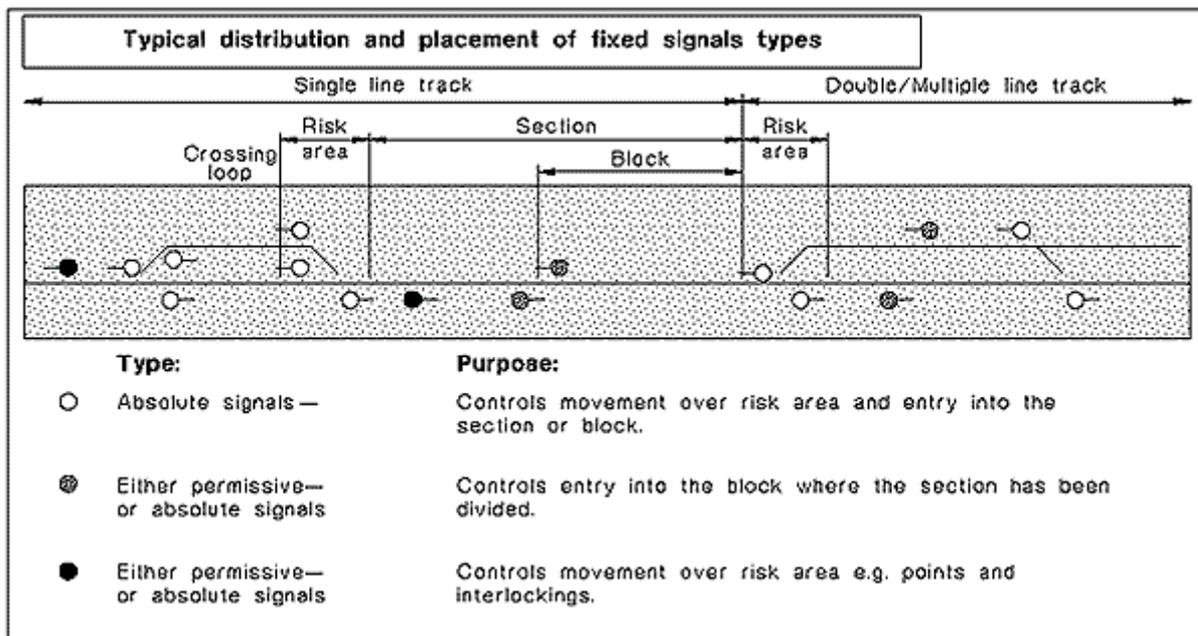


FIGURE 3.5 TYPICAL DISTRIBUTION AND PLACEMENT OF FIXED SIGNAL TYPES

3.3.4 Signal indications and their meaning

Table 3.1 describes the principles, fixed signal indications and their meanings together with their application to—

- (a) Speed signalling.
- (b) Double coloured light route signalling.
- (c) Single coloured light route signalling.

Rules

TABLE 3.1
SIGNALLING SYSTEMS—FIXED SIGNAL INDICATIONS, MEANINGS AND APPLICATION

Symbol Used	Description	Semaphore Arm Position		Recognising Absolute Signals	Recognising Permissive Signals	
		Upper Quadrant	Lower Quadrant			
	- Red light			- Coloured lights arranged vertically.	- Coloured lights arranged diagonally.	
	- Yellow light			- Coloured light and qualification plate.	- Coloured light and qualification plate.	
	- Green light			- Square end semaphore arm(s)	- Point end semaphore arm(s)	
	- Flashing light	Not applicable	Not applicable			
()	- Where Indication Name is in brackets the Signal may be either an Absolute or a Permissive signal.					
SYSTEM	SPEED SIGNALING			DOUBLE COLOUR LIGHT ROUTE SIGNALING	SINGLE COLOUR LIGHT SIGNALING	
PRINCIPLES	<i>Top light</i>	Indicates route, condition of block ahead for normal speed and likely condition of the subsequent block.			<i>Top light</i>	Indicates route, and Authority for next block
Indication Name	<i>2nd light</i>	Indicates route, condition of block ahead for medium speed and likely condition of the subsequent block.			<i>2nd light</i>	Indicates condition of the subsequent block.
	<i>3rd light</i>	Where a <i>3rd light</i> is displayed indicates block ahead may be occupied, proceed at low speed prepare to stop.				
	Normal Speed	Medium Speed	Low Speed			
(CLEAR)	1. PA -Block is clear 2. Normal speed 3. Next signal at caution or clear for normal speed	1. PRA -Block is clear 2. Medium speed only 3. Next signal at caution or clear for medium or normal speed	Not applicable	1. PA -Block is clear 2. Next block is clear 3. Subsequent block is clear	1. PA -Block is clear 2. Next signals at caution or clear	
(MEDIUM CAUTION)	Not applicable	Not applicable	Not applicable	1. PA -Block is clear 2. Next block is clear 3. Subsequent signal at stop	1. PA -Block is clear 2. Next block is clear 3. Subsequent signal at stop	
(CAUTION)	1. PA -Block is clear 2. Normal speed 3. Next signal at stop	1. PRA -Block is clear 2. Medium speed only 3. Next signal at stop	Not applicable	1. PA -Block is clear 2. Next signal at stop	1. PA -Block is clear 2. Next signal at stop	
(STOP)	Stop	Stop	Stop	Stop	Stop	

Rules

Table 3.1 (continued)

Indication Name (cont.)	SPEED SIGNALING (cont.)			DOUBLE COLOUR LIGHT ROUTE SIGNALING (cont.)	SINGLE COLOUR LIGHT SIGNALING (cont.)
	Normal Speed	Medium Speed	Low Speed		
(REDUCE TO MEDIUM)	<ul style="list-style-type: none"> 1. PA - Block is clear 2. Prepare to pass next signal at medium speed. 3. Next signal at Caution or Clear for medium speed 	Not applicable	Not applicable	Not applicable	Not applicable
TURN OUT	Not applicable	<ul style="list-style-type: none"> 1. #PRA - Block is clear 2. Medium speed only 3. Next signal at caution or clear for medium or normal speed 	Not applicable	<ul style="list-style-type: none"> 1. #PRA - Block is clear 2. Next signal on turnout route displaying PA or PRA. 3. Proceed on the turnout route at normal turnout speed. 	<ul style="list-style-type: none"> 1. #PRA - Block is clear 2. Next signal on turnout route displaying PA or PRA. 3. Proceed on the turnout route at normal turnout speed.
		<ul style="list-style-type: none"> 1. #PRA - Block is clear 2. Medium speed only 3. Next signal is at stop 		<ul style="list-style-type: none"> 1. #PRA - Block is clear 2. Next signal on the turnout route may be at stop. 3. Proceed on turnout route prepared to stop at next signal 	<ul style="list-style-type: none"> 1. #PRA - Block is clear 2. Next signal on the turnout route may be at stop. 3. Proceed on turnout route prepared to stop at next signal
LOW SPEED	Not applicable	Not applicable	Not applicable	<ul style="list-style-type: none"> 1. PRA - Block is clear 2. Proceed at low speed to the next signal 	<ul style="list-style-type: none"> 1. #PRA - Block is clear 2. Proceed at low speed to the next signal
CALLING ON/LOW SPEED	Not applicable	Not applicable	<ul style="list-style-type: none"> 1. PRA - Block may be occupied or obstructed. 2. Proceed at low speed 3. Prepare to stop short of obstruction 	<ul style="list-style-type: none"> 1. PRA - Block may be occupied or obstructed. 2. Proceed at low speed 3. Prepare to stop short of obstruction. 	<ul style="list-style-type: none"> 1. PRA - Block may be occupied or obstructed. 2. Proceed at low speed 3. Prepare to stop short of obstruction.
LOW SPEED - Shunting signals	Not applicable	Not applicable	<ul style="list-style-type: none"> 1. PRA - Block is clear 2. Low speed only 3. Next signal at clear or caution for medium or normal speed 	Not applicable	Not applicable
			<ul style="list-style-type: none"> 1. #PRA - Block may be occupied or obstructed. 2. Proceed at low speed 3. Prepare to stop short of obstruction. 	<ul style="list-style-type: none"> 1. PRA - Block may be occupied or obstructed. 2. Proceed at low speed 3. Prepare to stop short of obstruction. 	<ul style="list-style-type: none"> 1. PRA - Block may be occupied or obstructed. 2. Proceed at low speed 3. Prepare to stop short of obstruction.

These signals may also display a local route or junction indicator. + Small red light is a marker light that is illuminated only when main light is failed or at stop

3.3.5 Typical signal sequences

Table 3.2 shows typical signal indication sequences within each of the signalling systems described in Table 3.1.

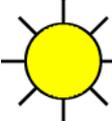
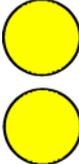
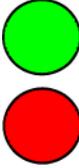
**TABLE 3.2
TYPICAL SIGNAL SEQUENCES—EXAMPLES**

	Speed Signaling	Double Colour Route Signaling	Single Colour Signaling
Typical Signal Sequence Clear to Stop			
Typical Signal Sequence Approaching a Turnout	<p># These signals may also display a local route or junction indicator</p>	<p># These signals may also display a local route or junction indicator</p>	<p>* The PRA may be either a Yellow or Red light equipped with a local route indicator</p>

3.3.6 Variations in signalling indications

Table 3.3 shows variations in signal meaning variations that exist between and within signalling systems in the jurisdictions of different railway organisations.

TABLE 3.3
VARIATIONS IN SIGNALLING INDICATIONS

Indication	Variation 1	Variation 2	Variation 3
	<p>Speed signalling</p> <p>Indication meaning—TransAdelaide(SA)</p> <p>PA—Reduce to Medium</p> <ol style="list-style-type: none"> Block is clear. Prepare to pass next signal at medium speed. Next signal at Caution or Clear for medium speed. 	<p>Single colour light route signalling</p> <p>Indication meaning in RIC (NSW)</p> <p>PA—Medium Caution</p> <ol style="list-style-type: none"> Block is clear. Next block is clear. Subsequent signal is at stop. 	<p>Single colour light route signalling</p> <p>Indication meaning in QR (QLD)</p> <p>PRA—Caution</p> <ol style="list-style-type: none"> Block is clear. Restricted to 40 km/h maximum speed. Next signal at stop with no overlap protection.
	<p>Speed signalling</p> <p>Indication meaning—VIC</p> <p>PRA—</p> <ol style="list-style-type: none"> Block is clear. Next signal is at stop. <p><i>Note: This signal may also be displayed green over yellow</i></p> <p>Indication meaning—VIC</p> <ol style="list-style-type: none"> Block is clear. Next signal is clear, maybe a PA or a PRA. 	<p>Double colour light route signalling</p> <p>Indication meaning—RIC (NSW)</p> <p>PRA—Turnout</p> <ol style="list-style-type: none"> Block is clear. Next signal on turnout route displaying PA or PRA. Proceed on the turnout route at normal turnout speed. 	<p>Single colour light route signalling</p> <p>Indication meaning—QLD</p> <p>PRA—Caution</p> <ol style="list-style-type: none"> Block is clear. Proceed with caution prepared to find next signal at caution. Subsequent signal at stop.
	<p>Speed signalling</p> <p>Indication meaning—(ARTC & VIC)</p> <p>PA—Clear</p> <ol style="list-style-type: none"> Block is clear. Normal Speed. Next signal at caution or clear for normal speed. 	<p>Double colour light route signalling</p> <p>Indication meaning—RIC (NSW)</p> <p>PA—Caution</p> <ol style="list-style-type: none"> Block is clear. Next signal at stop. 	

3.4 PASSING FIXED SIGNALS AT STOP

This section applies to passing absolute and permissive signals on the Defined Interstate Rail Network. The only exception is where additional local safeguards, rules and procedures have been implemented to pass permissive signals at stop.

3.4.1 General Requirements

- (a) A fixed signal may indicate “Stop” due to one or more reasons that affect track circuits, points or the signal.
- (b) The train **shall not** be permitted to pass a fixed signal at “Stop” until the appropriate Train Authority is formally issued by train control to the train crew and **shall** state the conditions that **shall** apply.
- (c) In addition to standard “Stop” indications a fixed signal **shall** be considered at “Stop” where the signal—
 - (i) is not understood; or
 - (ii) is not normally expected; or
 - (iii) is blacked out (absence of light); or
 - (iv) displays a white light where a coloured light should be or it is improperly or irregularly displayed.

Exception—*Where the position of a fixed semaphore arm is plainly seen and the meaning can be taken from the position of the arm.*

3.4.2 Procedures

- (a) At a “Stop” indication the train crew **shall**—
 - (i) stop the train before any part of the train passes the fixed signal at “Stop”;
 - (ii) report to train control and advise:
the signal number;
train location and identity; and
train’s origin and destination and train crew names (if required).

Exception—*If communication with train control cannot be established the train crew shall hold the train at stop until a proceed indication is displayed by the signal.*
- (b) Train control and the train crew **shall** jointly assess the situation including:
 - (i) why the signal is at stop;
 - (ii) if the section is clear or occupied;
 - (iii) if the track is safe or unsafe; and
 - (iv) the conditions to be included in the Train Authority to authorise the train to pass the signal at stop.
- (c) Train control **shall** apply blocking as follows:
 - (i) in EAS, CTC and ABS, apply the appropriate mechanical or electrical blocking facilities at the panel, workstation or levers to prevent inadvertent operation;
 - (ii) in ABS where a blocking facility is not provided, issue formal instructions to each affected train not to enter the affected section; and
 - (iii) where a train graph is used, apply a formal process to indicate blocking to protect against decision-making errors.

Rules

TEXT WITH STRIKETHROUGH NOT APPLICABLE ON THE ARTC NETWORK
REFER TO ARTC ADDENDUM FOR DETAILS

- (d) The Train Authority **shall** include the following information and conditions:
- (i) the number of the signal to be passed at stop; **and**
 - (ii) where the cause of the signal being at stop **has not been established**, an instruction to proceed anticipating an obstruction at a speed that will allow stopping the train within half the distance the line ahead is seen to be clear; **and**
 - (iii) any other instruction that **shall** apply for example:
 - a maximum or capped speed through the section;
 - to stop and inspect points;
 - ~~Temporary Speed Restrictions~~; and
 - level crossing warnings.

See example TA Examples 1, 2 and 3.

- (e) The train crew **shall** act as follows:
- (i) proceed in accordance with the TA;
 - (ii) stop and inspect affected points and interlockings and ensure they are correctly set and locked or the points clipped or clamped before continuing;
Exception—*The stop is not required where the points have been tested and correct detection and position have been verified and the train crew have been issued a Train Authority to traverse the points.*
 - (iii) agree with train control on points position (route) and mode (motor or manual) before traversing points that **shall** be operated manually. This agreement will allow any subsequent movement to be managed;
 - (iv) proceed but be prepared to stop when approaching a crossing equipped with an active level crossing warning system. The train **shall** be stopped before the crossing and the train crew (or qualified worker) **shall**—
 - operate the manual switch (if provided and able to be accessed) to activate the crossing, wait for road traffic and pedestrians to stop before proceeding; or
 - if the warning system cannot be activated manually stop all road and pedestrian traffic before proceeding;
 - (v) obey any further fixed signal indications when proceeding on the Train Authority and increase train speed as appropriate in accordance with the indication of any further signal encountered. The increase in speed **shall not** be made until the whole train has passed the signal displaying the indication;
 - (vi) stop in accordance with this Clause before passing any further signals at “Stop”.
- (f) After repair, testing and formal reinstatement, train control **shall**:
- (i) ensure each Train Authority issued has been fulfilled or cancelled;
 - (ii) ensure the section is clear;
 - (iii) remove blocking or instruct blocking to be removed; and
 - (iv) resume normal working.

Authority

Pass Signal No xx at Stop
Proceed anticipating an obstruction at a speed that will allow stopping the train within half the distance the line ahead is seen to be clear
Stop and inspect points

TA Example 1—Pass signal at stop where the cause has not been established, points require inspection.

Authority

Pass Signal No xx at Stop
Proceed anticipating an obstruction at a speed that will allow stopping the train within half the distance the line ahead is seen to be clear
Do not exceed 30km/h
Stop and inspect points

TA Example 2—Pass signal at stop where the cause has not been established, a maximum speed cap has been imposed, points require inspection.

Authority

Pass Signal No xx at Stop
Proceed at normal speed
TSR 20km/h 50.000km to 50.100 km signs erected

TA Example 3—Pass signal at stop where the cause has been established, points require inspection and a Temporary Speed Restriction has been imposed.

Note: Where a TSR has been imposed and the information has been included on the Train Authority and is required to be altered, either a new Train Authority or a CAN form must be issued.

3.5 DETONATING SIGNALS

3.5.1 General

Detonating signals are used to attract the attention of the train crew and to indicate that a stop is required due to track obstruction.

Upon exploding of one or more detonating signals the train crew **shall** immediately sound the whistle to warn of their approach and immediately reduce to low speed.

Low speed is a speed which will enable a train movement to be stopped within half the distance that the line is seen to be clear ahead, but which does not exceed 25 km/h.

3.5.2 Detonating signal meanings

Detonating signals have the following meanings:

- (a) Exploding three detonating signals—

Meaning—Stop and report to train control if the train is not otherwise signalled to proceed. 500 metres ahead there is a TWA worksite, track is obstructed or is out of service.

- (b) Exploding two detonating signals—

Meaning—Stop ahead is required at the distance indicated on the accompanying Stop Ahead Sign.

- (c) Exploding one detonating signal—

Meaning—Additional detonating signals should be expected. Reduce to low speed.

3.6 ELECTRONIC AUTHORITY SYSTEMS (EAS)

This Section addresses access to, and operations on, the running lines where EAS is the safeworking system in operation.

3.6.1 System characteristics

Characteristics are as follows:

- (a) EAS systems comprise—
 - (i) computer aided Authority formulation by train control;
 - (ii) a secure means to transmit data between train control and locomotives; and
 - (iii) Authority electronically displayed in the locomotive.
- (b) EAS systems may also include additional facilities that enable—
 - (i) permanent and temporary speed restriction to be electronically displayed in the locomotive;
 - (ii) warnings and notices to be electronically displayed in the locomotive;
 - (iii) track data to be electronically displayed in the locomotive;
 - (iv) points to be operated remotely by the train crew from the locomotive;
 - (v) train location reporting by data transmission from locomotive to train control; and
 - (vi) Authority overrun protection.
- (c) EAS systems rely on voice communications for the following:
 - (i) location reporting;
 - (ii) exchanging operational information;
 - (iii) issuing Authorities in the event of failure of electronic systems; and
 - (iv) issuing Authorities where locomotives are not equipped with an electronic display facility.
- (d) Fixed signals may be used within EAS to protect risk areas.

3.6.2 Minimum capability of EAS

The following minimum capabilities apply:

- (a) The minimum operational capability required by EAS is to electronically display a PA in the locomotive.
- (b) Where other Authorities (PRA, WA and SHA) are required they may be managed by either voice transmission or by fixed signals.

3.6.3 Locomotive display characteristics

The characteristics are as follows:

- (a) The EAS locomotive display is designed to provide safe and comfortable operation and be readable from the driving position of the train crew.
- (b) Information may be displayed as text, graphics or a combination of the two.
- (c) The EAS locomotive may display the following operational information:
 - (i) type of Authority;
 - (ii) Authority limits;
 - (iii) crossing / passing instructions;
 - (iv) reporting instructions;

Rules

- (v) TWA advice;
- (vi) warnings and notices;
- (vii) permanent speed restrictions;
- (viii) track configuration;
- (ix) track grades;
- (x) status of points ahead;
- (xi) train location head end;
- (xii) train location rear end;
- (xiii) extent of current Authority; and
- (xiv) predictive intervention.

3.6.4 EAS display requirements

The level of facility being provided by the system determines the information displayed in the locomotive.

Table 3.4 shows how adding functions to the EAS translates into information electronically displayed in the locomotive. The Table also shows if the information is to be displayed continuously, on request, by exception or if there is an option.

TABLE 3.4

ADDING FUNCTIONS TO THE ELECTRONIC AUTHORITY SYSTEM

	Facility	Information Displayed	Type of Authority			
			PA	PRA	WA	SHA
Minimum requirement	Computer Aided Authority Formulation* and Data Transmission to Locomotive and Loco Display	Authority Limits	C	C	C	C
		Crossing/passing instructions	C	C	C	C
		Reporting instructions	C	C	C	C
		Temporary speed restrictions	C	C	C	C
		TWA Advice	C	C	C	N/A
		Warnings and Notices	E	E	E	E
Progressively added functions	Track Data Base (on locomotive)	Permanent speed restrictions	R	R	R	R
		Track configuration	O	O	O	O
		Track grades	O	O	O	O
	Authority Overrun Protection	Predictive Intervention	E	E	E	E
	Data Transmission to Train Control	Train location head end	C	C	C	C
		Train location rear end	C	C	C	C
		Extent of current Authority	O	O	O	O
	Remote Points Operation (from locomotive)	Status of points ahead	R	R	R	NA

Shaded area: Denotes the minimum EAS Display requirements of EAS systems

LEGEND: —Information Displayed:

C = Continuously

R = On Request Displayed

E = By Exception

O = Continuously or On Request

N/A = Not Applicable

* May include the management of LP, TOA, TWA and TRIs.

3.7 COMMUNICATIONS PROTOCOLS

Communications protocols apply to voice communications systems. Examples of systems that may be authorised are radio, satellite or mobile phone.

3.7.1 General safety

Communications equipment needs to be used correctly to ensure safety. Rail workers **shall**—

- (a) Give priority to emergency messages, safeworking and other rail transmissions, in that order.
- (b) Use the correct identification when initiating or acknowledging safeworking transmissions.
- (c) Make transmissions so they may be understood, be brief and related to the task at hand.
- (d) Promptly acknowledge transmissions.
- (e) Not transmit any false or irrelevant messages or information.
- (f) Use standard radio terms when operating with radios.
- (g) When a message or standard radio term is not clear, use the phonetic alphabet and spoken figures to avoid confusion.
- (h) Transmit by speaking in a natural rhythm, using normal tone, dividing message into phrases and speaking at a rate slightly slower than used in normal conversation.

3.7.2 Emergency messages

The following apply:

- (a) Emergency messages **shall** only be sent when:
 - (i) there has been an accident involving injury;
 - (ii) the passage of a train is endangered; or
 - (iii) a condition exists that is hazardous.
- (b) To transmit an emergency message by radio or on an "open system"—
 - (i) say "Emergency, Emergency, Emergency";
 - (ii) state identification and location;
 - (iii) state nature of the emergency;
 - (iv) state type of assistance required; then
 - (v) if not answered immediately, repeat (b) (i) to (iv).
- (c) Emergency messages **shall**—
 - (i) be given priority over other transmissions; and
 - (ii) be answered immediately.

3.7.3 Testing communications equipment

Communications equipment provided for railway operations (for example radios on trains, in terminals and yards, or used for track work) **shall** be tested and checked for their intended operation before use. Communications equipment to be tested and checked may include the following:

- (a) Radios fitted to mobile units, for example—
 - (i) locomotives, passenger carriages or other rollingstock;

Rules

- (ii) road rail, track vehicles or machines.
- (b) Hand held portable radios.
- (c) Radios fitted as part of office equipment.
- (d) Any radio being carried as a spare or back up.
- (e) Any satellite or mobile phone carried for operational purposes.

3.7.4 Transmitting and receiving messages

- (a) When transmitting and receiving messages on "open" communication systems, the following process **shall** be used:
 - (i) *listen* for a sufficient interval to ensure the facility is not being used;
 - (ii) *offer the message* in the form—"Called party (identification), from calling party (identification), OVER";
 - (iii) *make contact*—"Called party, receiving calling party, OVER";
 - (iv) *exchange messages*—clearly without ambiguity using "OVER" at the end of each transmission; and
 - (v) *sign off*—last party to speak ends with the word "OUT".
- (b) When receiving a message the called party **shall not** delay the acknowledgment unless it interferes with duties relating to safety.

3.7.5 Identification

The following apply:

- (a) When offering a message or making contact, unique, positive identification **shall** be used, using as appropriate, the following terms in the order listed:
 - (i) **for mobile units—**
 - train identity;
 - locomotive identity; and
 - track vehicle identity;
 - (ii) **for bases and stationary units on track—**
 - organisation;
 - title; and
 - location name.
- (b) After positive identification has been made and acknowledged, shortened identification may be used.

3.7.6 Standard radio terms

When using radios or other equipment provided for operational communications standard radio terms **shall** be used as follows:

Term	Meaning
Receiving -	I (called party) acknowledge your call, proceed with message.
Message received -	I have received your message and I understand it.
Over -	I have finished speaking and I am waiting for a reply.
Out -	My transmission has been completed.
Correct -	You are correct or what you have transmitted is correct.

Rules

Negative -	No, or permission is not granted, or there is an error in your read back.
Stand-by -	Wait, I will be back soon.
Read back -	Repeat all, or the specified part, of this message exactly as you received it.
I read back -	I repeat all, or the specified part, of your last transmission.
Say again -	Please repeat your last message.
I say again -	I repeat all, or the specified part of my last transmission.
I spell -	I am about to spell a word using the phonetic alphabet.
Speak slower -	Speak more slowly, it is hard to understand you.
Roger -	All your last message is received and is understood.
Loud and Clear -	Your signal is strong, every word is understood.
Emergency -	This is an emergency situation.

3.7.7 Phonetic alphabet

If necessary for clarity, the phonetic alphabet **must** be used to pronounce any letter to avoid possible confusion. The Phonetic Alphabet, word used and its pronunciation is as follows:

A	Alpha	Al fah	N	November	No VEM ber
B	Bravo	BRAH VOH	O	Oscar	OSS cah
C	Charlie	CHAR lee	P	Papa	pah PAH
D	Delta	DELL tah	Q	Quebec	key Beck
E	Echo	ECK oh	R	Romeo	ROW me oh
F	Foxtrot	FOX trot	S	Sierra	see AIR RAH
G	Golf	GOLF	T	Tango	TANG go
H	Hotel	hoh TELL	U	Uniform	YOU nee form
I	India	IN dee ah	V	Victor	VIC tah
J	Juliet	JEW lee ETT	W	Whiskey	WISS key
K	Kilo	KEY loh	X	X ray	ECHS RAY
L	Lima	LEE mah	Y	Yankee	YANK key
M	Mike	MIKE	Z	Zulu	ZOO loo

3.7.8 Spoken figures

If necessary for clarity, standard spoken figures **must** be used to pronounce any figure to avoid possible confusion. Spoken figures and their pronunciation is as follows:

0 - ZERO	5 - FI-YIV	
1 - WUN	6 - SIX	
2 - TOO	7 - SEVEN	Decimal Point - DAY-SEE-MAL
3 - THUH-REE	8 - ATE	
4 - FO-WER	9 - NINER	

3.8 RADIO, HAND, LIGHT AND FLAG COMMANDS

3.8.1 General safety

The following apply:

- (a) A movement **shall** proceed under regular and repeated radio or hand commands.
- (b) Where a radio or hand command is not received and one would be reasonably expected, or the train crew loses sight of the hand command, the train crew **shall**:
 - sound the locomotive warning device;
 - bring the movement to a stop; and
 - not make any further movement until regular and repeated commands are again established.
- (c) Any command not clearly understood **shall** be regarded as a 'stop' command.
- (d) A white light waved vigorously may be used in an emergency to signify danger. It **shall** be regarded as a 'stop' command.
- (e) Radio, hand, light and flag commands **shall not** be used where the command can be given by means of a fixed signal.
- (f) Hand signals may only be used when there is good visibility.
- (g) When using for shunting, each movement **shall** be given direction and distance to be travelled.
- (h) Multiple shunting operations **shall not** be conducted simultaneously unless managed and prioritised so that one operation does not impinge upon another.

NOTE: In the following commands, reference to "DA4" in the radio commands is a reference to an indicative locomotive.

Rules

3.8.2 Stop commands

Stop commands used to stop a train or shunt movement are as follows:

(a) By radio — “DA4 Stop”

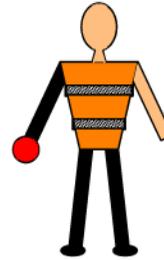
(b) By hand — Both arms raised above head.

(c) By light — Red light held steadily.

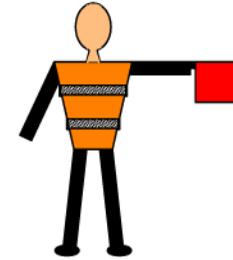
(d) By flag — Red flag held steadily.



Hand



Light



Flag

(e) Either of the situations covered in Clause 3.8.1(c) and (d) above.

3.8.3 Move away commands

Move away commands used when the shunt movement is required to ‘move away’ from the worker giving the command are as follows:

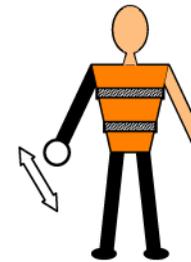
(a) By radio — “DA4 move away”

(b) By hand — One arm held out from the side of the body and waved in a circular motion, below shoulder height.

(c) By light — White light held at the side of the body and moved slowly up and down in a pendulum motion, below shoulder height.



Hand



Light

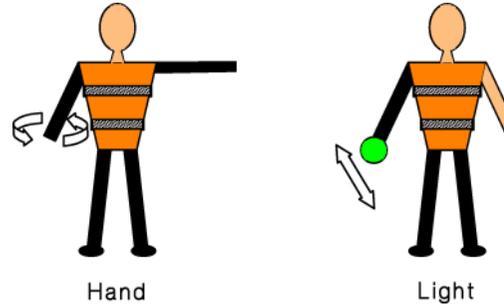
(d) By flag — Not used.

Rules

3.8.4 Move away slowly commands

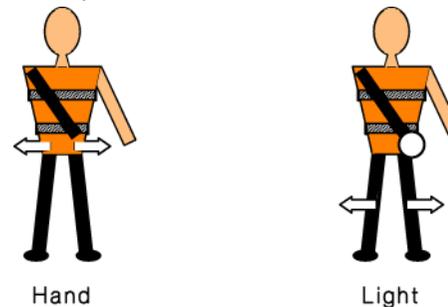
Move away slowly commands used when the shunt movement is required to 'move away slowly' from the worker giving the command are as follows:

- (a) By radio — “DA4 move away slowly”
- (b) By hand — One arm held out from the side of the body above shoulder height and the other arm held out from the body and waved in a circular motion below shoulder height.
- (c) By light — Green light held at the side of the body and moved slowly up and down in a pendulum motion, below shoulder height.
- (d) By flag — Not used.

**3.8.5 Move toward commands**

Move toward commands used when the shunt movement is required to 'move towards' the worker giving the command' are as follows:

- (a) By radio — “DA4 move towards”
- (b) By hand — One arm waved slowly from side to side across the front of the body, below shoulder height.
- (c) By light — A white light waved slowly from side to side across the body.
- (d) By flag — Not used.



Rules

3.8.6 Move slowly toward commands

Move slowly toward commands used when the shunt movement is required to 'move slowly towards' the worker giving the command' are as follows:

- (a) By radio — “DA4 slowly move towards”
- (b) By hand — One arm held out horizontally from the side of the body and the other arm waved from side to side across the front of the body, below shoulder height.
- (c) By light — A green light waved slowly from side to side across the body.
- (d) By flag — Not used.



Hand

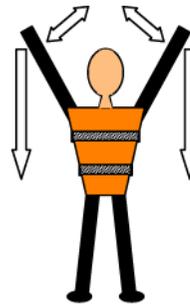


Light

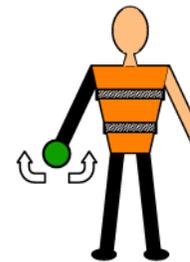
3.8.7 Ease up/couple up commands

Ease up/couple up commands used when the train crew is required to bring the vehicles together and exert pressure on couplers to assist coupling or uncoupling are as follows:

- (a) By radio — “DA4 ease up”
- (b) By hand — Both arms raised above the head, brought together and returned to the side of the body.
- (c) By light — A green light moved slowly from side to side in a small arc.
- (d) By flag — Not used.



Hand



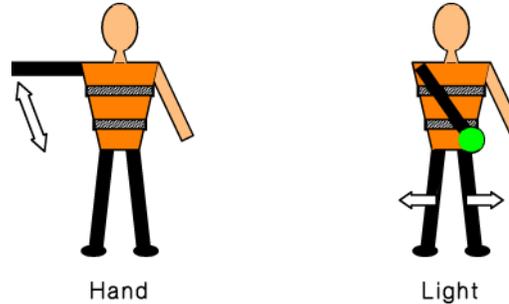
Light

Rules

3.8.8 Caution—reduce speed commands

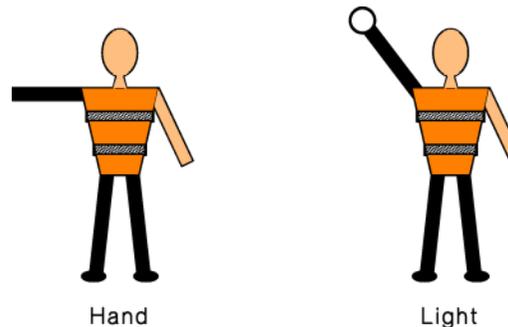
Caution, reduce speed commands used when the train crew is required to reduce the speed of the train or shunt movement are as follows:

- (a) By radio “DA4 reduce speed”
- (b) By hand One arm waved up and down at the side of the body.
- (c) By light A green light waved slowly from side to side across the body.
- (d) By flag Not used.

**3.8.9 All right—clear to proceed commands**

All right—clear to proceed commands used when the track ahead is safe for the passage of the train are as follows:

- (a) By radio — “DA4 all right to proceed”
- (b) By hand — One arm held out horizontally from the side of the body.
- (c) By light — A white light held steadily at an angle of 45 degrees above shoulder height.
- (d) By flag — Not used.



Rules

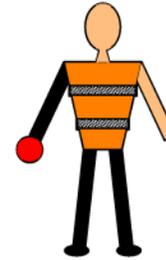
3.8.10 Apply brakes commands for a stationary train

Apply brakes commands for a stationary train used when the train crew is required to apply brakes are as follows:

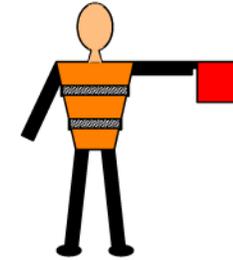
- (a) By radio — “DA4 apply brakes”
- (b) By hand — Both arms raised above the head.
- (c) By light — Red light held steadily.
- (d) By flag — Red flag held steadily.



Hand



Light



Flag

3.8.11 Release brakes commands

Release brakes commands used when the train crew is required to release brakes are as follows:

- (a) By radio — “DA4 release brakes”
- (b) By hand — One arm waved in a horizontal circular motion above the head.
- (c) By light — A white light waved in a horizontal circular motion above the head.
- (d) By flag — Not used.



Hand



Light

Rules

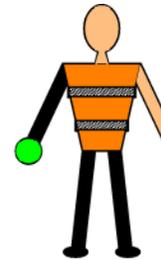
3.8.12 Admit and dispatch commands

Admit and dispatch commands used to admit or to dispatch trains from yards where there are no fixed signals for the purpose are as follows:

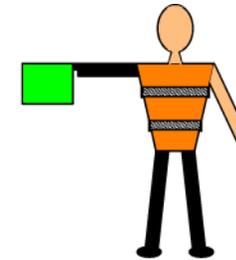
- (a) By radio — “DA4 points confirmed, OK to proceed”
- (b) By hand — One arm held out horizontally from the side of the body.
- (c) By light — Green light held steadily.
- (d) By flag — Green flag held steadily.



Hand



Light



Flag

The command **shall not** be given until the facing points for the intended movement have been examined and confirmed as correctly set and locked.

3.9 TRAIN AUTHORITY PROTOCOLS

Unless otherwise specified, these protocols apply to all manually issued Train Authorities.

3.9.1 Communications

The following apply:

- (a) Train crews and track workers operating trains, track vehicles or machines, **shall** be equipped with communications equipment that provides for reliable communication with train control.
- (b) All communications between train control and train crews or track workers operating trains, track vehicles or machines, **shall** be subject to logging as follows:
 - (i) voice logging in the case of voice communication.

3.9.2 Train Authority use

The following apply:

- (a) The Train Authority provides a standard procedure that enables important operational instructions to be issued with integrity.
- (b) Train Authority forms may be used in each safeworking system in certain circumstances.
- (c) Train Authorities may be issued using voice communication, or by mechanical or electronic means.
- (d) In systems other than TOW, when the normal means of communicating an Authority is unavailable, a manual Train Authority will be issued.
- (e) The circumstances under which Train Authorities are used for normal purposes to convey occupancy Authorities in EAS and TOW systems and in abnormal cases in CTC and ABS systems are shown in Table 3.5.

TABLE 3.5
CIRCUMSTANCES UNDER WHICH TRAIN AUTHORITIES ARE USED TO
CONVEY AUTHORITIES OR OTHER INSTRUCTIONS

Safeworking system	When a Train Authority is used to convey an occupancy Authority
Electronic Authority Systems (EAS)	<ul style="list-style-type: none"> • PA – During normal operations. • PRA – When restrictions apply that affect normal operation e.g. working to an obstruction. • WA – For work train operations, assisting disabled trains, or working to and from obstructions. • SHA – To enable shunting outside yard limits. • LP – To institute or cancel a Local Possession.
Train Order Working (TOW)	<p>As for EAS above and the following:</p> <ul style="list-style-type: none"> • CPA – During normal operations to expedite crosses and passes between trains.
Centralised Traffic Control (CTC)	<ul style="list-style-type: none"> • PA – To pass fixed signals at stop at the entrance and through a section during system failure, where the cause is not unsafe track. • PRA – To pass fixed signals at stop at the entrance to and through a section during system failure, where track condition is the cause but operations may continue with restrictions. • PRA – When the fixed signal indication alone does not convey the nature of the restriction e.g. working to an obstruction. • PRA – To permit single line working in double or multi-line areas during track maintenance and failure situations. • WA – For work train operations, assisting disabled trains, or working to and from obstructions. • SHA – When shunting cannot be undertaken using existing signal indications or within yard limits. • LP – To institute or cancel a Local Possession. • Instructions to hold signals at stop.
Single line Automatic Block Signalling (ABS)	<p>As for CTC above and the following:</p> <ul style="list-style-type: none"> • Instructions to stop or report before entering a section or a location that may be obstructed. • Instructions for traffic management prioritisation.

3.9.3 Train Authority formulation

- (a) The formulation of Train Authorities by train control may be computer assisted. If they are not computer assisted, they **shall** be undertaken manually.
- (b) Irrespective of computer assistance, Train Authorities **shall** be formulated by train control to comply with Clause 2.6.2 Joint occupancy rules and in particular—
- (i) Table 2.5 Safeworking system Table for communications systems—EAS and TOW; or
 - (ii) Table 2.6 Safeworking system Table for signalled systems—CTC and ABS.

3.9.4 Train Authorities issued for TOW

In addition to the requirements of Clause 3.9.3, the following apply to Train Authorities issued for TOW:

- (a) A Train Authority issued to authorise a train to proceed to an unattended block location, and to enter the yard upon arrival, **shall** state the line to be taken.

Rules

Authority

Proceed to DINGO take Main Line

TA Example 4—The Authority extends to the Dingo main line.

- (b) If a line is not stated on the Train Authority, the train **shall** stop and not enter the yard until authorised by a subsequent Train Authority.

Authority

Proceed to DINGO

TA Example 5—The Authority extends to the yard limit sign at the entrance to Dingo.

- (c) When a CPA is to be issued, the first words **shall** read “After fulfilling TA.....”.

Authority

After fulfilling TA9
Proceed to DINGO take Main Line

TA Example 6—TA9 has not been fulfilled at the time the Train Authority is issued.

- (d) A Train Authority—
- (i) may be issued over a series of consecutive sections within TOW;
 - (ii) **shall not** be issued beyond the train controller’s jurisdiction;
 - (iii) **shall not** be issued beyond locations specified by the Network Owner.
- (e) A single Train Authority **shall** specify within the text of the Train Authority, only one location as the crossing or passing location with one or more trains.
- (f) Train Authorities issued for crossing or passing other trains at unattended block locations **shall** state crossing or passing instructions which include the track that each of the trains **shall** take (e.g. main line or crossing loop). The only exception is where the line to be taken by each train is specified in local rules or instructions.

Rules

- (g) When a train is already authorised to proceed to a location without crossing or passing instructions included in the Train Authority, an opposing train **shall not** be authorised to proceed to the same location until the first train is issued a Train Authority containing the crossing or passing instructions.
- (h) Train Authorities for crossing or passing at an attended block location—
- (i) **shall** state crossing or passing instructions; but
 - (ii) **shall not** state the track that each of the trains are to occupy.
- Admittance to the attended block location, and the track for each of the trains, **shall** be managed by the qualified worker attending the location.

Authority

Proceed to BILBY
Cross 4MR6 Loco FR32

TA Example 7—Bilby is an Attended Block Location.

- (i) Train Authorities for trains to proceed to specified terminal locations, when attended, **shall** state neither—
- (i) the track that each of the trains is to occupy; nor
 - (ii) crossing or passing instructions.
- The tracks to be taken and crossing or passing procedures **shall** be managed by the qualified worker in charge of the terminal location.
- The Network Owner nominates the specified terminal locations to which this rule applies.

Authority

Proceed to JUNIPER

TA Example 8—Juniper is a Specified Terminal Location.

- (j) A Train Authority for a train to proceed to a location which is normally unattended, but is to be attended at the time the train is to arrive, **shall** be cancelled and a new Train Authority issued—
- (i) stating crossing or passing instructions;
 - (ii) not stating the track that each of the trains are to occupy; and
 - (iii) providing advice that the location is attended.

Authority

TA12 is cancelled at MANGO
 Now proceed to DINGO
 Cross 4MR6 Loco FR32

Supporting information

DINGO attended

TA Example 9—Dingo is now to be Attended at the time 4MR6 is to arrive.

- (k) When temporary speed restrictions are included in Train Authorities, they **shall** be issued stating the kilometre locations in the appropriate sequence for the direction of movement.

Authority

Proceed to JUNIPER
 Take Main Line

Supporting information

TSR 50 km/h 105.000 km to 104.100 km
 No TSR signs erected

TA Example 10—The train will approach the temporary speed restriction from the direction of the 105.000 km.

3.9.5 Train Authorities issued for single line ABS

In single line ABS, in addition to the provisions of Clause 3.9.3, a single Train Authority may specify more than one location as the crossing or passing location, within the text of a single Train Authority.

Authority

Take crossing loop at *COCKATOO*
 Cross 5VL3 Loco HD 38
 Take Main Line at *HERRON*
 Cross 5ND5 Loco HD113

TA Example 11—This example applies only to ABS where the Train Authority may specify more than one crossing or passing location.

3.9.6 Train Authority preparation

Train Authorities **shall**—

- (a) Be issued by train control.
- (b) Be uniquely identifiable.
- (c) Be brief and only contain information or instructions essential to train movements.
- (d) Be compiled by train control and recorded by the recipient, both of whom **shall** use an authorised Train Authority form (Appendix 1).
- (e) Be in permanent ink.
- (f) Be neat and legible.
- (g) Be prepared in the format prescribed.
- (h) Record location names in block letters e.g. BILBY.
- (i) Record approved abbreviations only as follows:

hrs	hours
JCT	Junction
km	kilometre
km/h	kilometres per hour
Loco	locomotive
LL	light locomotive
m	metres
mins	minutes
Mt	Mount
No.	number
Pt	Port
RC	Rail Car
TM	track vehicle or machine
TA	Train Authority
TSR	temporary speed restriction
- (j) Be prepared without erasure, alteration, or additions between words or lines.
- (k) Be prepared without the use of circles, brackets or other characters.
- (l) Once issued, not be rewritten, or have information altered added or deleted, except where specifically provided for in these rules.
- (m) If partly prepared or an error made, be endorsed as “NON ISSUED” across the face of each copy.
- (n) When cancelled, be endorsed as “CANCELLED” across the face of each copy.
- (o) When fulfilled, be endorsed as “FULFILLED” across the face of each copy.

Rules

- (p) When instructing the train crew to “report” at a location as part of the Train Authority, use the words—
- “*Through* BILBY” to signify the train crew *may report without stopping* the train at BILBY; or
 - “*At* BILBY” to signify that the train **shall** stop and report at BILBY.
- (q) If lost or mutilated, be reported to train control and the Train Authority cancelled and re-issued.
- (r) Be retained and submitted in accordance with each organisation’s system for the collection of Train Authorities.

3.9.7 Issuing a Train Authority to the train crew of a moving train in TOW

A Train Authority issued to a moving train **shall not** be issued by train control or received by train crews, unless Train Authorities to moving trains are formally authorised by the Network Owner and Train Operators. Where authorised, Train Authorities issued to moving trains **shall—**

- (a) Be issued in the section immediately prior to the section in which the Train Authority is to take effect.
- (b) Not be regarded as in effect by the train crew (i.e. the train crew **shall not** enter the section for which the Train Authority is being issued) until the Train Authority repeat back process has been completed and train control has acknowledged the correct completion of the repeat back process.
- (c) Record, on the Train Authority, the name of the location in advance as the location at which the Train Authority is *issued*.
- (d) Record, on the Train Authority, the word “EN ROUTE” as the location at which the Train Authority is received so as to signify that the Train Authority has been issued to a moving train (see TA Example 12 below).
- (e) Not be issued to the train crew of a train yet to arrive at a location for a cross, unless the train to be crossed has arrived and is stationary at the crossing location.

Confirmation		(*Delete as necessary)
<i>Received at</i>	EN ROUTE	Location 1015 hrs *Qualified Worker
<i>Repeated by</i>	C. Driver	*Driver
	J. Hancock	Train Controller

TA Example 12—This example shows the confirmation portion of a Train Authority issued to a moving train and endorsed en route.

3.9.8 Issue of a Train Authority for a train before entering TOW

A Train Authority may be issued for a train before the train enters TOW. The first words of the Train Authority **shall** read, “Proceed from (Location name at entrance to TOW) to (Location name) (TA Example 13).

Authority

Proceed from JUNIPER to MANGO
Take main line.

TA Example 13—The Train Authority has been issued before entering TOW which, in this case, begins at Juniper.

3.9.9 Train Authority format

When preparing a Train Authority, the following information **shall** be recorded, in full, in the spaces provided on the Train Authority form (see Appendix 1):

- (a) Address information as follows:
 - (i) Train Authority number;
 - (ii) Date;
 - (iii) Train identity;
 - (iv) Leading locomotive identity, or
 - identity of the leading cab of an electric train;
 - identity of a single track vehicle or machine when operating as a train; or
 - identities of leading and last track vehicle or machine when multiple units operate in convoy as a train;
 - (v) Location to which the Train Authority is transmitted.
- (b) Authority (in text form):
 - (i) the authorised movement; and
 - (ii) crossing and passing instructions.
- (c) Supporting information:
 - (i) temporary speed restrictions;
 - (ii) other instructions; and
 - (iii) details of Train Authorities to opposing trains.
- (d) Confirmation:
 - (i) location to which the Train Authority was transmitted or received;
 - (ii) time transmitted;
 - (iii) name of train controller;
 - (iv) time repeated; and
 - (v) name of recipient.
- (e) Deletions as necessary.

3.9.10 Issuing a Train Authority

The procedure is as follows:

- (a) Before transmitting a Train Authority, train control **shall—**
 - (i) ensure all data is updated correctly in relation to—
 - train identification, including train length;
 - Authorities issued;
 - status of unfulfilled Authorities;
 - the location of trains;
 - the location of track worksites;
 - the location of track vehicle and machine movements;
 - track conditions, including any temporary speed restrictions or other warnings;
 - (ii) establish communications;
 - (iii) establish that the recipient of the Train Authority is the person for whom it is intended;
 - (iv) establish the location of the train; and
 - (v) challenge the location if it is not reasonable in relation to the last location report or for any other reason.
- (b) During transmission of the Train Authority, train control **shall—**
 - (i) record the Train Authority as it is being transmitted;
 - (ii) clearly pronounce all the information;
 - (iii) transmit the information at a rate that enables it to be taken down in writing;
 - (iv) spell location names immediately after they are given (e.g. BILBY B-I-L-B-Y);
 - (v) give each number individually (e.g. ONE ZERO FOUR); and
 - (vi) if the Train Authority transmission continuity is interrupted, re-establish communications and the identity of the recipient, then recommence the process.
- (c) During transmission the recipient **shall—**
 - (i) record location names in block letters (e.g. BILBY); and
 - (ii) record words and numerals legibly as they are being transmitted and not from memory or notations.
- (d) Following the transmission, the recipient **shall—**
 - (i) challenge train control if the Train Authority is not understood or thought to be incorrect in any way;
 - (ii) once satisfied with the content and its meaning is understood, read it back to train control;
 - (iii) spell location names immediately after they are read (e.g. BILBY B-I-L-B-Y); and
 - (iv) read each number individually (e.g. ONE ZERO FOUR).
- (e) During the reading back of the Train Authority train control **shall—**
 - (i) verify and underline the Train Authority word for word, numeral for numeral, as it is being repeated;

Rules

- (ii) when satisfied that the Train Authority is correct, give the following indication to the recipient "Train Authority No. (quote the Train Authority No.) is correct";
- (iii) then write "Complete" on the train control copy of the Train Authority.
- (f) The Train Authority **shall** be regarded as "in effect" as soon as train control acknowledges its correctness, irrespective of its delivery to those concerned.
- (g) The Train Authority remains "in effect" until fulfilled or cancelled.

3.9.11 Fulfilled Train Authority

The following apply:

A fulfilled Train Authority means the train has arrived complete and all instructions on the Train Authority have been fulfilled. A fulfilled Train Authority **shall** be endorsed with the word "FULFILLED".

3.9.12 Reporting train clear of section in TOW

The following apply:

- (a) Before reporting train clear of section to train control:
 - (i) the train **shall** arrive complete; and
 - (ii) it **shall** be clear of the section.
- (b) Train complete is determined by the train crew by roll-by, where a qualified worker advises the train crew that the end of train marker is in its correct position on the last vehicle. In the case of track vehicles and machines, train complete is when those identified on the Train Authority have arrived.
- (c) The Roll-by method **shall** be used when:
 - (i) crossing or passing other trains; or
 - (ii) arriving at attended block locations or terminals.
- (d) Train complete for the purpose of train clear of section is carried out as follows:
 - (i) electronically, where electronic end of train devices are provided; and
 - (ii) interpretation (in areas specified by the Network Owner) by the train crew of indications on the locomotive flow meter (fluctuations).
- (e) The position of the train when reporting clear of section is indicated in the examples in Figure 3.6.

Rules

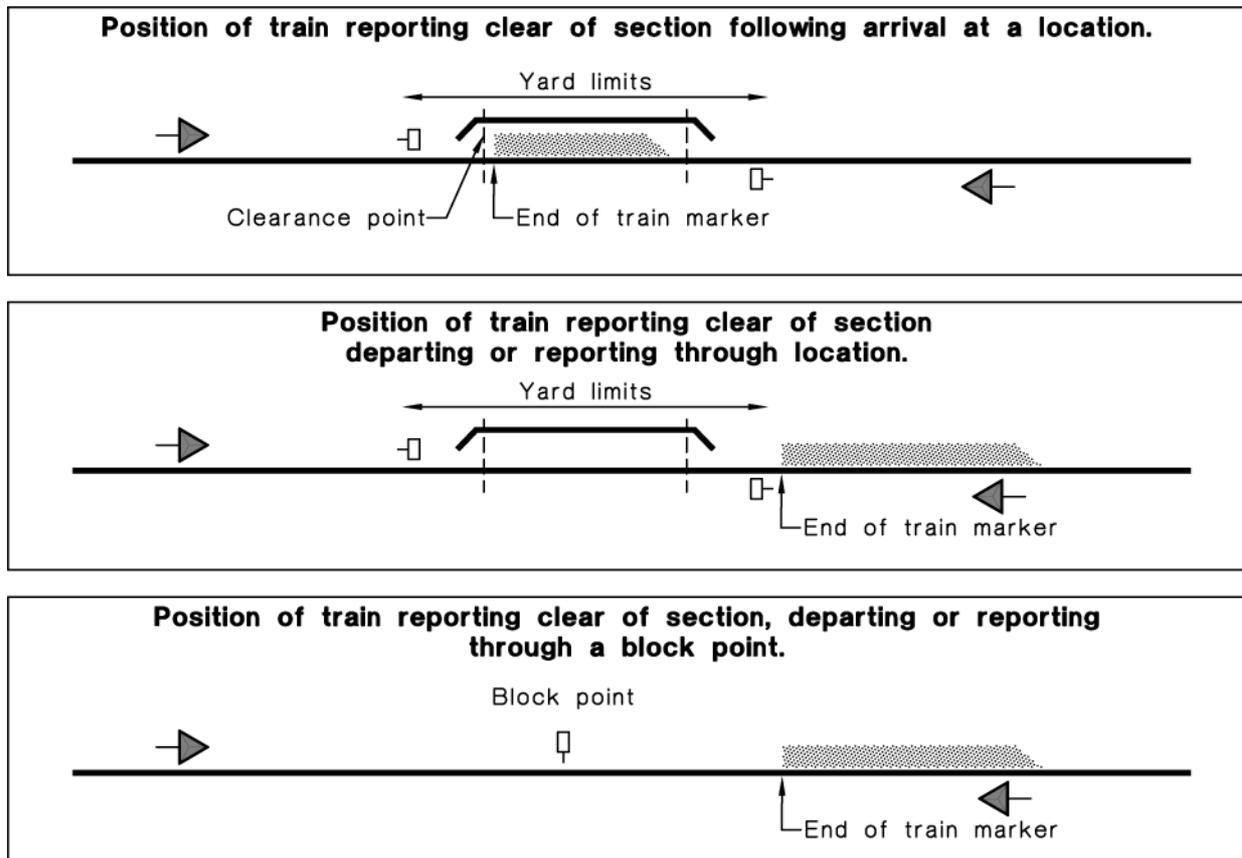


FIGURE 3.6 TRAIN POSITION EXAMPLES

- (f) The report clear of section may be made by the train crew or by the qualified worker if the location is an attended block location.

3.9.13 Cancelling a Train Authority

The following apply:

- (a) Cancelling a Train Authority means a previous Train Authority which has not been fulfilled—
- is endorsed as CANCELLED; and
 - if necessary, is replaced by a new Train Authority which is issued containing the new or amended instructions.
- (b) The first words of the Authority information in the new Train Authority (issued when the previous Train Authority has not been fulfilled and is endorsed as CANCELLED) **shall** begin with words as follows—
- when issued to the train crew of a moving train, "Train Authority (quote the Train Authority No.) is cancelled" (TA Example 14);
 - when issued to the train crew of a stationary train, or a qualified worker who will arrange delivery to the train crew, "Train Authority (quote the Train Authority No.) is cancelled at (location)" (TA Example 15).

The Train Crew **shall** then continue with the new Train Authority.

Rules

Authority

TA16 is cancelled
 Now proceed to JUNIPER
 Take Main Line

TA Example 14—The Train Authority is being cancelled while the train is moving.

Authority

TA14 is cancelled at DINGO
 Now proceed to JUNIPER
 Take crossing loop
 Cross 2VL3 Loco HD41

TA Example 15—The Train Authority is being cancelled while the train is stationary at Dingo.

- (c) Once the Train Authority is issued, it takes effect immediately and remains in effect until fulfilled or cancelled.
- (d) The recipient of the new Train Authority **shall** endorse the cancelled Train Authority (and any copies) with the word “CANCELLED” across the entire page in large block letters.
- (e) If it is necessary to alter the crossing location of two trains, the Train Authority for the train to be held back **shall** be cancelled before a further Train Authority is issued for the train to be advanced.
- (f) If a Train Authority cancelling another Train Authority is issued to a qualified worker other than the train crew already in possession of a Train Authority to proceed, the qualified worker who received the Train Authority **shall**—
 - (i) deliver the new Train Authority to the train crew for whom it is intended;
 - (ii) endorse the original Train Authority as “CANCELLED”; and
 - (iii) then, without delay, confirm to train control that the process has been completed.
 Train control **shall not** advance the opposing train until this confirmation has been received by the qualified worker.
- (g) If it is necessary to alter only supporting information contained within the Train Authority, the Train Authority need not be cancelled. The information may be altered in accordance with Clause 3.9.14.

TEXT WITH STRIKETHROUGH NOT APPLICABLE ON THE ARTC NETWORK
REFER TO ARTC ADDENDUM FOR DETAILS

3.9.14 Changing supporting information contained in a Train Authority

The following apply:

- (a) Once a Train Authority is in effect, train control may change supporting information without cancelling the Train Authority provided the altered or additional supporting information—
 - (i) is transmitted clearly and verified as understood by the train crew for whom it is intended; and
 - (ii) the complete process is recorded on the voice logging facility.
- (b) Supporting information that may be changed verbally includes the following:
 - (i) details of a ~~TSR~~ or TWA imposed, changed or cleared;
 - (ii) advice of out of gauge loading; and
 - (iii) advice of an over length train.

NOTE: Where CAN warning information is included on a Train Authority in the supporting information, and is required to be altered, either a new Train Authority or a CAN form must be issued.

3.9.15 Train crew change-over

Where train crew change-over takes place, and the Train Authority has not been fulfilled, the incoming train crew **shall** report to train control and read and verify the unfulfilled Train Authority to train control.

~~TEXT WITH STRIKETHROUGH NOT APPLICABLE ON THE ARTC NETWORK
REFER TO ARTC ADDENDUM FOR DETAILS~~

3.10 TRAIN WORKING ADVICE

Train crews use the Train Working Advice form to record operational information received from train control. The section for recording opposing, preceding and following trains **shall** be completed for operation in TOW but may also be used in other territory on the Defined Interstate Rail Network. ~~The form has provision for recording instructions and TSR information. These portions shall be used for recording this kind of information in all safeworking systems.~~

The train working advice form is shown in Appendix 2 and is used as follows:

- (a) When a Train Working Advice is issued it **shall** be—
- (i) issued before the Train Authority is issued;
 - (ii) issued by the train control responsible for the area for which it is to apply;
 - (iii) issued to the train crew of each train or to a qualified worker at attended block locations for delivery to the train crew before entering the area for which it is to apply;
 - (iv) neatly printed using permanent ink on the Train Working Advice form; and
 - (v) completed by the train crew or qualified worker.
- (b) The following information **shall** be recorded, in full, in the spaces provided on the Train Working Advice form:
- (i) ~~train working advice number;~~
 - (ii) date;
 - (iii) train number;
 - (iv) the locations between which the advice is applies;
 - (v) hours between which the advice is applicable; and
 - (vi) in TOW:
 - last reported “Opposing Trains” details. This may include any track machines, locomotives, trains, or vehicles stabled on running lines;
 - last reported “Preceding Train” details. Last reported “Following Train” details.
- In TOW the recipient of the Train Working Advice, or the train crew, **shall** challenge train control, where Train Working Advice information conflicts with the subsequently issued Train Authority. The train crew **shall not** proceed until the conflict is resolved and Train Authorities are cancelled or re-issued as appropriate;
- (vii) ~~in all areas:~~
- ~~• any important instructions;~~
 - ~~• any TSR not already issued by other means;~~
 - ~~• train controller's name and time of issue;~~
 - ~~• recipient's name and time of repetition.~~
- ~~(c) Where TSR details are recorded the recipient shall repeat details to train control to verify correct recording.~~
- (d) The recipient **shall** complete any deletions that apply.
- (e) Each completed Train Working Advice **shall** be retained and submitted in accordance with each organisation's system for collection.

3.11 TRACK WORK PROTOCOLS

3.11.1 Communications

The following apply:

- (a) The worksite supervisor in charge of track workers present on or near the running lines **shall** have access to communications facilities that provide a reliable means of voice communication with train control.
- (b) All communications between track workers and train control **shall** be subject to voice logging.

3.11.2 Track or infrastructure work on or near network running lines

Track or infrastructure work on or near the running lines is undertaken using processes that formally establish safe and efficient traffic management conditions before the work can begin. The following requirements and recommendations apply:

- (a) Safe and efficient traffic management **shall** take into consideration—
 - (i) risks to track workers from train activity; and
 - (ii) risks to trains from track workers' activity.
- (b) The management process entails use of one of the following strategies:
 - (i) where the track **is** to be broken and/or obstructed by heavy equipment one of the following occupancy Authorities **shall** be used:
 - a Local Possession (LP) **shall** be used if the section is to be closed to train movements other than the work trains associated with the work;
 - a Track Occupancy Authority (TOA) **shall** be used if access for work between train movements is required or trains are to be diverted around the work on another track;
 - a Track Work Authority (TWA) **shall** be used if traffic is to be stopped in the section before reaching the worksite;
 - (ii) where the track **is not** to be broken or obstructed but does involve the use of light track equipment Train Running Information (TRI) which entails providing advice as to the running of trains and warning to workers of the approach of trains, may be used;
 - (iii) where work on or near the running lines:
 - **does not** include breaking or obstructing the track, or
 - **does not** include the use of track equipment,
 - but **does** involve, for example, walking on the track for inspection;

a No Authority Required (NAR) may be used.

The process is not formalised but requires the workers to be responsible for their own arrangements for safe occupation between the passage of trains.

*Note: The availability for use of LPs, TOAs, TWAs, TRIs and NARs is at the discretion of the Network Owner. However this discretion **shall** take into account provisions of Item (b) of this Clause to ensure an Authority with greater and not lesser protection is available, for example, if a TRI is not permitted either a LP, TOA, TWA **shall** be available for use.*

- (c) Before allowing a track vehicle or machine to traverse a junction, or to work on or near the running lines or enter track controlled by another jurisdiction, the worker in

charge of the movement or work **shall** obtain the appropriate Authority from train control for that jurisdiction.

3.11.3 Track work movements by rail to or from attended block location

The following apply:

- (a) Where track vehicles or machines are authorised to travel by rail to an attended block location, train control **shall** advise the qualified worker in charge of the location, and give them the track work movement details.
- (b) When the track vehicles or machines arrive at an attended block location, they **shall** be admitted into the yard limits by the qualified worker attending the location.
- (c) Track work movements departing from an attended block location, by rail, **shall** be authorised by the qualified worker in charge of the location and by train control.

3.11.4 Track work at attended block locations

Where track work is to be within the limits of an attended block location, the work **shall** be authorised by the qualified worker in charge of the location and not by train control.

3.11.5 Movement over points

The following apply:

- (a) Before allowing a track vehicle or machine to traverse points which are normally remotely operated, for example, by train control, a signal box or an approaching train, the worker in charge of the movement **shall—**
 - (i) obtain permission for the movement, from train control or the signal box, as appropriate;
 - (ii) traverse the points; and
 - (iii) advise train control or signal box that the movement is complete.

Exception: This clause does not apply where the movement involves track vehicles or machines classified for activating track circuits and operating on Train Authorities.
- (b) Before allowing a track vehicle or machine to move to or from the crossing loop where points are locally operated and electrically operated, the worker in charge of the movement **shall—**
 - (i) unlock the points security mechanism;
 - (ii) place the points machine in manual mode;
 - (iii) set the points for the movement;
 - (iv) traverse the points;
 - (v) restore the points to the original position;
 - (vi) place the points into electric mode; and
 - (vii) secure the points security mechanism.

3.11.6 Local Possession (LP)—Closing the section

The following apply:

- (a) An LP is an Authority to close a defined section of track for a specified period. The track section may be occupied by a number of separate track work groups and by associated work trains. Operational safety within the section is controlled by the Overall Worksite Supervisor to whom the LP has been granted by train control.
- (b) Except in an emergency, train operators **shall** be given sufficient advance notice of an LP to enable train-planning revisions. A Train Notice **shall** be issued to give notice of each LP, and include the following:
 - (i) date(s) and time(s) each LP is planned to start and finish;
 - (ii) specified section;
 - (iii) purpose or description of work; and
 - (iv) details of work trains involved.

The name of the Overall Worksite Supervisor, to be responsible for the LP, **shall** be formally notified to train control prior to LP actually commencing.

- (c) Once authorised by train control, the LP enables the track to be broken and obstructed between the specified limits by—
 - (i) workers;
 - (ii) track vehicles and machines; and / or
 - (iii) associated work trains;under the control of the Overall Worksite Supervisor.
- (d) The LP **shall** remain current until formally cancelled and provides for—
 - (i) complete curtailment of normal train services;
 - (ii) management of planned major track works to be undertaken; and
 - (iii) management of emergency situations where there has been extensive track damage or blockage.
- (e) Train control **shall** protect the specified limits by applying LP Occupancy rules. In addition the following are required:
 - (i) in EAS, CTC and ABS the appropriate mechanical or electrical blocking facilities **shall** be applied by train control at the panel, workstation or levers to prevent inadvertent operation;
 - (ii) in ABS where blocking facilities are not provided, a TA containing formal instructions **shall** be issued for trains not to enter the section where the LP is current; and
 - (iii) in TOW and where a manual train graph or diagram is being used by train control, a formal process **shall** be used for blocking the section to protect against train control decision-making errors.

3.11.7 LP occupancy rules

Train control **shall not** permit an LP when a PA, PRA, WA, SHA, CPA, TOA, TWA or TRI has been authorised and is current for the same section.

3.11.8 LP initiation

The Overall Worksite Supervisor **shall** initiate the LP request to train control. Train control **shall** check the Train Notice which advises of the LP, and then—

- (a) Validate the request for its appropriateness for the type of work and equipment to be used.
- (b) Validate the request against occupancy rules.
- (c) Consider traffic management requirements.
- (d) Accept the request if it is reasonable or reject the request if it is unreasonable.

3.11.9 LP format

When requesting an LP, the following procedure **shall** be used:

- (a) The Overall Worksite Supervisor **shall** establish communications with train control and provide—
 - (i) the location from which the request is made; and
 - (ii) the Train Notice number (advising the LP).
- (b) Train control **shall** validate the request then issue a Train Authority that—
 - (i) authorises the LP;
 - (ii) clearly states the LP limits, expressed as being between two locations which may include specific signal locations or yard limits; and
 - (iii) states the times by which the LP **shall** be clear, and the track restored, for normal train operations (TA examples 16 and 17).

Authority

Local Possession is authorised
from Signal No. 3 at BILBY
to Signal No. 3 at WARATAH

Supporting information

Train Notice 254 refers
Report track clear by 1800 hrs

TA Example 16—The LP is authorised in CTC between specified signals at Bilby and Waratah. The supporting information refers to the previously issued Train Notice and a time by which the track **shall** be clear for normal operations.

Authority

Local Possession is authorised from BUNYIP east yard limit to MANGO east yard limit

Supporting information

Train Notice 201 refers Report track clear by 1630 hrs

TA Example 17—The LP is authorised in TOW between specified yard limits. The supporting information refers to the previously issued Train Notice and a time by which the track **shall** be clear for normal operations.

- (c) The Overall Worksite Supervisor, on commencing work within the specified limits **shall** maintain communications with train control—
 - (i) when instructed on the TA;
 - (ii) to discuss progress of work, as needed; or
 - (iii) to cancel the LP.
- (d) The LP **shall not** be cancelled until the section is clear and safe for the passage of trains.
- (e) The LP is cancelled when—
 - (i) the Overall Worksite Supervisor reports to train control and advises that the track is clear for normal traffic and any conditions that apply, for example, TSRs; and
 - (ii) the TA authorising the LP is endorsed as cancelled.

3.11.10 Work train arriving, working and departing LP limits

The following apply:

- (a) A work train associated with an LP, **shall** be authorised by train control until it reaches the LP limits.
- (b) The Overall Worksite Supervisor or a qualified employee delegated, **shall**—
 - (i) verify with the train crew of a work train that the LP has been granted; and
 - (ii) accompany the work train, and otherwise direct all the movements required by the work train, whilst within the LP limits.
- (c) The train crew **shall not** exit from the limits of the LP until authorised to do so by train control.

3.11.11 Protection of operations within LP limits

The Overall Worksite Supervisor **shall** provide additional local protection within the LP limits in respect of—

- (a) Work train, track vehicle and machine and track worker separation.
- (b) Passage over level crossings.

3.11.12 Track Occupancy Authority (TOA)—Access between train movements or diverting traffic to another track

The following apply:

- (a) A TOA is an Authority for occupancy of the track by track workers and their movement in either direction within specified limits. The track may be broken or otherwise obstructed while the work is being carried out. Trains or traffic not permitted through the track section during currency of the TOA.
- (b) A TOA may involve one or more track vehicles and machines working within the specified limits under the supervision of the Worksite Supervisor to whom the TOA has been issued by train control.
- (c) In normal circumstances, the Worksite Supervisor **shall** give train control sufficient notice of each TOA so that traffic management requirements can be considered. The notice **shall** include date and time the TOA is planned to start and finish and the specified limits for work. The TOA form may be partially completed with these details at this time (see Clause 3.11.15(a)).
- (d) Once authorised by train control, the TOA enables the track to be broken and obstructed between the specified limits by:
 - (i) track vehicles and machines;
 - (ii) workers and their equipment; and
 - (iii) track vehicle or machine movement in either direction;for the purpose of work or travel.
- (e) The TOA **shall** remain current unless cancelled to provide for the passage of trains. The currency of the TOA **shall** be restored after the passage of trains, and this procedure **shall** be repeated until the TOA is no longer required and is finally cancelled.
- (f) Train control protects the specified limits by applying TOA Occupancy Rules. In addition the following applies:
 - (i) in EAS, CTC and ABS, the appropriate mechanical or electrical **blocking** facilities **shall** be applied at the panel, workstation or levers to prevent inadvertent operation;
 - (ii) in ABS, where blocking facilities are not provided, formal instructions **shall** be issued for trains not to enter the section where the TOA is current; and
 - (iii) in TOW, and where train graph or diagram is being used, a formal process **shall** be used for blocking the section to protect against decision making errors.
- (g) The Worksite Supervisor may provide additional local protection to protect against Authority overruns by—
 - (i) trains into the section; or
 - (ii) track vehicles and machines into the specified limits.

3.11.13 TOA occupancy rules

The following apply:

- (a) Train control **shall not** permit a TOA when an LP has been authorised and is current for the same section.
- (b) Train control may permit a TOA when one or more of the following are authorised for the same section subject to the following conditions:
 - (i) PA, PRA, WA, CPA—provided the TOA is issued after the train has passed the proposed worksite and is not returning;
 - (ii) SHA, TOA, TWA—provided the specified limits do not overlap;
 - (iii) TRI—provided the Worksite Supervisor receives advice about all the relevant train or track force movements likely to occur during the currency of the Authority.

NOTE: Adjacent TOAs should be separated by a minimum of 500 metres.

3.11.14 TOA initiation

The Worksite Supervisor **shall** initiate the TOA request to train control. Train control **shall—**

- (a) Validate the request for its appropriateness for the type of work and equipment to be used.
- (b) Validate the request against occupancy rules.
- (c) Consider traffic management requirements.
- (d) Accept the request if it is reasonable or reject if it is unreasonable.

3.11.15 TOA format

When requesting a TOA the following procedure, as specified on a TOA Form (see Appendix 3) **shall** be used:

- (a) **Worksite Supervisor to Train Control** The Worksite Supervisor establishes communication with train control and provides the following information in the sequence shown:
 - (i) equipment to be used;
 - (ii) TOA Limits, expressed as being between two locations which may include the following:
 - kilometre locations;
 - signal locations or numbers;
 - a main track or crossing loop at a specific location;
 - the track where there are multiple tracks; and
 - section name;
 - (iii) track clearance method, e.g. take-off, goods siding, refuge;
 - (iv) TSRs, if any apply;
 - (v) cancellation time anticipated;
 - (vi) time and date of request;
 - (vii) name of Worksite Supervisor and Company; and
 - (viii) contact mode e.g., mobile telephone number.

Rules

NOTE: This information may be partly prepared in advance on the TOA Form by the Worksite Supervisor and by train control at the time notice of the TOA was given.

- (b) **Train Control to Worksite Supervisor** Train control validates the request then provides the following information to the Worksite Supervisor who checks the information being repeated and records fresh information being provided by train control as shown below:
- (i) a unique TOA number issued by train control;
 - (ii) information provided originally by the Worksite supervisor and now repeated by train control:
 - equipment to be used;
 - limits of TOA; and
 - track clearance method;
 - (iii) fresh information provided by train control:
 - trains times anticipated at entrance to the section;
 - time clearance required for the first train;
 - other TOA or TWA limits in same section, if any;
 - protection method provided by train control; and
 - time, date and name of train controller.
- (c) **TOA acceptance** The Worksite Supervisor accepts the TOA by saying to train control “TOA (number) OK”. The Worksite Supervisor may then commence work and travel between the specified limits. When commencing work, the Worksite Supervisor **shall** establish communication with train control to—
- (i) advise clearance for passage of trains;
 - (ii) request reinstatement of TOA after passage of train;
 - (iii) cancel the TOA; and
 - (iv) advise date, time and details of next TOA.

NOTE: The TOA form for the next TOA may be partially prepared at this time.

3.11.16 Track Work Authority (TWA)—Traffic is stopped in the section before reaching the worksite

The following apply

- (a) A TWA is an Authority for occupancy of the track by track workers and their movement in either direction within specified limits. Track may be broken and otherwise obstructed while work is being carried out. However, it **shall** be restored and cleared for the passage of trains as necessary during the currency of the Authority. The Worksite Supervisor directs trains through the worksite. Trains may be subjected to delays, reduced speeds or other restrictions at the worksite.
- (b) A TWA may involve one or more track vehicles and machines working within the specified limits under the supervision of the Worksite Supervisor to whom the TWA has been issued by train control.
- (c) In normal circumstances, train control is given sufficient notice of each TWA so that traffic management requirements can be considered. Notice **shall** include the following:
 - (i) date and time the TWA is planned to start and finish;
 - (ii) specified limits for work;

Rules

- (iii) protection arrangements;
- (iv) TSRs; and
- (v) may include other available information specified on the TWA form.

The TWA form may be partially completed with these details at this time (see Clause 3.11.19(a)).

- (d) Once authorised by train control, the TWA enables the track to be broken and obstructed between the specified limits by—
 - (i) track vehicles and machines;
 - (ii) workers and their equipment; and
 - (iii) track vehicle or machine movement in either direction for the purpose of work or travel.
- (e) The TWA remains current until cancelled and allows for the continuation of train services by providing for trains to enter the section, with the track being restored and cleared to allow trains through the limits under direction of the Worksite Supervisor, and subject to appropriate restrictions.
- (f) Train control protects the specified limits by applying TWA occupancy rules. Additional protection **shall** be provided by train control as follows:
 - (i) prior to the issue of a TWA advice to train crews of each train affected by the TWA, which may be provided by either—
 - a system of train notices or circulars; or
 - by train control using Track Work Advice Form (Appendix 4).
 - (ii) in TOW, and where train graph or diagram is being used, a formal process **shall** be used for blocking the section to protect against decision making errors.
- (g) The Worksite Supervisor **shall** arrange worksite protection before work commences (Appendix 5).

3.11.17 TWA occupancy rules

The following apply:

- (a) Train control **shall not** permit a TWA when an LP has been authorised and is current for the same section.
- (b) Train control **may** permit a TWA, when one or more of the following are authorised for the same section, subject to the conditions shown:
 - (i) PA, PRA, WA, SHA, CPA—provided the work supervisor is advised of all train movements likely to occur during the currency of the Authority;
 - (ii) TOA, TWA—provided the specified limits do not overlap; and
 - (iii) TRI—provided the Worksite Supervisor receives advice about all of the relevant train or track force movements likely to occur during the currency of the Authority.

3.11.18 TWA initiation

The Worksite Supervisor **shall** initiate the TWA request to train control. Train control **shall—**

- (a) Validate the request against occupancy rules.
- (b) Consider traffic management requirements.
- (c) Accept the request if it is reasonable or reject if it is unreasonable.

3.11.19 TWA format

When requesting a TWA, the following procedure, as specified on a TWA Form (see Appendix 6), **shall** be used:

- (a) **The Worksite Supervisor to Train Control** The Worksite Supervisor establishes communication with train control and provides the following information in the sequence shown:
- (i) equipment to be used;
 - (ii) TWA Limits expressed as being between two locations which may include the following:
 - kilometre locations;
 - signal locations or numbers;
 - a main track or crossing loop at a specific location;
 - the track where there are multiple tracks; and
 - section name;
 - (iii) TSRs, if any apply;
 - (iv) Stop sign locations;
 - (v) cancellation time anticipated;
 - (vi) time and date of request;
 - (vii) name of Worksite Supervisor and Company; and
 - (viii) contact mode, e.g. mobile telephone number.

NOTE: This information may be partly prepared in advance on the TWA Form by the Worksite Supervisor and by train control at the time notice of the TWA was given.

- (b) **Train Control to Worksite Supervisor** Train control validates the request then provides the following information to the Worksite Supervisor who checks the information being repeated and records fresh information being provided by train control in the following sequence:
- (i) a unique TWA number (issued by train control);
 - (ii) information originally provided by the Worksite Supervisor and now repeated by train control:
 - equipment to be used;
 - limits;
 - associated TSRs, if any apply; and
 - stop sign locations;
 - (iii) fresh information provided by train control:
 - train times anticipated at the worksite;
 - time clearance required for the first train;
 - other TOA or TWA limits in the same section, if any;
 - method of advising TWA to train crews;
 - time and date; and
 - name of train control.

Rules

- (c) **TWA acceptance** The Worksite Supervisor accepts the TWA by saying to train control “TWA (number) OK”. The Worksite Supervisor may then commence work and move between the specified limits. When commencing work, the Worksite Supervisor **shall** maintain communications with train control to:
- (i) advise the time the train clears the TWA worksite;
 - (ii) receive updates on anticipated arrival time of next train;
 - (iii) cancel the TWA; and
 - (iv) advise date, time and details of when the next TWA is anticipated.

NOTE: The TWA form for the next TWA may be partially prepared at this time.

3.11.20 Train Running Information (TRI)—Advice and warning of approaching trains

The following apply:

- (a) A TRI is information issued to relevant workers to make them aware of the running of trains.
- (b) A TRI **may** be requested from train control, without notice, normally at the commencement of the working day, and is used to plan work.
- (c) Once given by train control, the TRI enables work and movement to be undertaken between the specified limits without the track being broken. Work includes—
 - (i) the use of light track equipment for work or travel; and
 - (ii) track workers and their equipment.
- (d) Information specified in the TRI by train control **shall** provide for the following:
 - (i) the normal operation of trains through the section as listed in the TRI but not earlier than the time specified in the TRI; and
 - (ii) the updating of the information in the TRI.
- (e) Train control **shall** apply TRI Occupancy rules.
- (f) Before work commences the Worksite Supervisor **shall** arrange appropriate worksite protection (see Appendix 7) which may include the use of lookouts, whistle boards, or approved audible warning devices to—
 - (i) enable train crews of approaching trains to be warned that a worksite is being approached;
 - (ii) ensure the train crew of the approaching trains sound the warning device; and
 - (iii) warn workers of the approach of trains.

3.11.21 TRI occupancy rules

The following apply:

- (a) Train control **shall not** permit a TRI when an LP has been authorised and is current for the same section.
- (b) Train control **may** permit a TRI, when one or more of the following are authorised for the same section, subject to the conditions shown:
 - PA, PRA, WA, SHA, CPA, TOA, TWA, TRI—provided the information contains advice as to the movements of all relevant trains and other track workers.

3.11.22 TRI initiation

The Worksite Supervisor **shall** initiate the TRI request to train control. Train control **shall**:

- (a) Validate the request for its appropriateness for the type of work and equipment to be used.
- (b) Validate the request against occupancy rules.
- (c) Consider traffic management requirements.
- (d) Accept the request if it is reasonable or reject the request if it is unreasonable.

3.11.23 TRI format

When requesting a TRI the following procedural format (see Appendix 8) **shall** be used:

- (a) The Worksite Supervisor establishes communication with train control and provides the following information in the sequence shown:
 - (i) name of Worksite Supervisor and Company;
 - (ii) location from which the request is made;
 - (iii) type of vehicle or work;
 - (iv) TRI limits (travel or worksite) expressed as being between two locations which may include the following:
 - kilometre locations;
 - signals locations or numbers;
 - a main track or crossing loop at a specific location;
 - the track where there are multiple tracks; and
 - section name;
 - (v) completion time anticipated;
 - (vi) time; and
 - (vii) contact mode e.g. mobile telephone number.
- (b) Train control validates the request and then provides the following information to the Worksite Supervisor in the sequence shown:
 - (i) type of vehicle or work;
 - (ii) TRI limits;
 - (iii) train times anticipated at the entrance to the section;
 - (iv) time to report for updated Train Running Information;
 - (v) time and date; and
 - (vi) name of train control.
- (c) The Worksite Supervisor accepts the TRI by repeating the times and trains that are anticipated at the entrance to the section. When accepting the TRI, the Worksite Supervisor **shall** maintain communication with train control to—
 - (i) advise times that trains are clear of the worksite and receive updates on anticipated arrival time of next train; and
 - (ii) confirm track clear, work completed.

3.11.24 No Authority Required (NAR)

The following apply:

- (a) The NAR is a system whereby the authorised workers make their own arrangements for safe occupation of the track between the passage of trains.
- (b) A NAR does not require a request to train control.
- (c) The NAR enables access to infrastructure but the track **shall not** be broken or obstructed with equipment. The NAR is used—
 - (i) for short periods of time only; and
 - (ii) for limited work such as inspections.
- (d) The authorised workers **shall** make their own arrangements for protection between the passage of trains and **may** request train control to provide information on the running of trains.

3.12 REPORTING TO TRAIN CONTROL BEFORE NETWORK ENTRY

The following procedure **shall** apply before a train enters the Network running lines from any of the following:

- The train's origin location.
 - A yard or terminal.
 - Another train control jurisdiction,
- (a) The train crew **shall—**
- (i) establish communication with train control to confirm correct operation of the voice communications equipment; and
 - (ii) discuss with train control any issues that are pertinent to their working.
- (b) The qualified worker attending the origin location, yard or terminal, or the train crew **shall—**
- (i) advise departure time from origin location, yard or terminal, or the anticipated network entry time from another jurisdiction;
 - (ii) confirm train identification details; and
 - (iii) confirm train length, tonnage, train crew names and time on duty, as appropriate to their working.
- (c) Train control **shall** confirm and record the details, as appropriate to the operational management of the train through the jurisdiction.

3.13 REPORTING TRAIN PROGRESS, DELAYS AND CONSIST CHANGES

The following procedures apply:

- (a) Unless reporting train progress is done automatically to train control, for example as in CTC, reports **shall** be made using voice communications. Train progress reporting **shall** include the following:
 - (i) train arrival and departure times, for each location where the train has stopped; and
 - (ii) train departure times only for each location where the train has not stopped.
 - (b) Train crews **shall** report to train control any of the following reasons for train delays:
 - (i) if the sectional running times have been exceeded;
 - (ii) if scheduled time for stops (e.g. for crew changes, shunting or fuelling) have been exceeded; and
 - (iii) if an incident has occurred (e.g. dragging brakes, locomotive failure).
 - (c) Train crews **shall** report to train control and provide details before departing any location where a train consist has been changed. This includes changes to—
 - (i) train locomotives working or hauled;
 - (ii) train length;
 - (iii) train tonnage; or
 - (iv) train sequence (marshalling).
 - (d) Train progress reports **shall** also be given to train control when—
 - (i) instructed on a Train Authority;
 - (ii) the train crew is changed (crew change-over);
 - (iii) time is lost and exceeds 15 minutes—unless a lesser time is specified by the Network Owner; or
 - (iv) any time is gained or made up.
- NOTE: Time lost or made up is calculated by comparing actual and specified sectional running times.*
- (e) Where voice communications with train control fail, but the train crew has an Authority to proceed, the details in (c) and (d) of this Clause **shall** be provided at the first opportunity.
 - (f) In TOW, at the location prior to the limit of the current Train Authority or the location where a cross is to take place, the following is also required:
 - (i) the train crew **shall** verify their understanding of the current Train Authority with train control; and
 - (ii) if for any reason voice communication with train control cannot be established, the train crew **shall** re-read and confirm their understanding of the current Train Authority and approach the crossing location in accordance with crossing procedures.

TEXT WITH STRIKETHROUGH NOT APPLICABLE ON THE ARTC NETWORK
REFER TO ARTC ADDENDUM RULE 40 FOR DETAILS

3.14 UNSAFE TRACK OR INFRASTRUCTURE

3.14.1 Temporary Speed Restrictions (TSR)

When a track worker assesses a portion of the track or infrastructure as unsafe and the unsafe condition is to be managed by imposing a TSR, the following is required:

- (a) The track worker **shall**—
 - (i) advise train control giving details of the TSR for subsequent notification to train crews; and
 - (ii) erect the appropriate TSR signs.
- ~~(b) The train controller **shall** arrange for train crews of each approaching train to be advised the details of the TSR until~~
 - ~~(i) either the TSR is formally removed; or~~
 - ~~(ii) the TSR is formally advised or 'published'.~~

3.14.2 Track out of service

When a portion of track or infrastructure is found to be unsafe and cannot be managed by the imposition of a TSR, for example due to a natural occurrence such as flood, fire or rock slides, or a road accident that results in track damage or obstruction, to protect against derailment or collision each affected track **shall** be taken “Out of Service” as soon as possible. The procedure is as follows:

- (a) A track worker finding the unsafe track **shall** proceed as follows:
 - (i) remain at the site, advise each affected train control jurisdiction of the circumstances and give details of the following:
 - the damage or obstruction to each affected track; and
 - the limits between which each affected track is unsafe for traffic;
 - (ii) if train control cannot be contacted, protect each unsafe track if practicable, using track “Out of Service” protection arrangements (Appendix 9). Otherwise, use any means of communication available to instruct an approaching movement to stop and advise each affected train control jurisdiction at the first opportunity;
 - (iii) at the first opportunity, report the circumstances to the person to whom the worker normally reports.
- (b) Train control, upon becoming aware of unsafe track **shall** proceed as follows:
 - (i) contact, by any means available, any movement occupying or authorised to proceed into the same section or same area as the unsafe track. The movement **shall** be advised to stop immediately and remain in communication with train control until normal operation can be resumed and relevant Authorities cancelled or issued, as is appropriate to the circumstances;
 - (ii) if a movement threatened by the unsafe track cannot be contacted direct the track worker to stop the movement by radio, hand or light command and arrange further inspections and reports as necessary;
 - (iii) if a member of the public has made the report arrange for the track to be inspected, a report to be provided immediately and the situation reassessed before permitting a movement to enter or continue through the section where the unsafe track has been reported;
 - (iv) in EAS, CTC and ABS, apply the appropriate mechanical or electrical blocking facilities at the panel, workstation or levers to prevent inadvertent operation;

Rules

- (v) in ABS where blocking facilities are not provided, issue a TA instructing movements not to enter the section where the track is out of service;
 - (vi) where a train graph is used, use a formal blocking process to protect against decision making errors; and
 - (vii) at the first opportunity, verbally report the circumstances to the person to whom the train controller normally reports.
- (c) Train control must wait until the track is formally reinstated to service before resuming normal operations into or through the section.

3.14.3 Suspected unsafe track

The following procedures apply:

- (a) In the event that unsafe track has been reported or suspected but—
- (i) it is not practicable or possible to have the site inspected (for example due to its remoteness);
 - (ii) normal operations will be unduly disrupted; and
 - (iii) the reported location of the site of the suspected unsafe track can be reasonably assured;
- train control **shall** seek permission from the appropriate person in authority to allow a train to enter the section, e.g. a train which is already being held and delayed.
- (b) If permission is received, the movement **shall** be issued a Proceed Restricted Authority (PRA) to proceed to the vicinity of the site. The PRA **shall** be issued as a Train Authority (TA Examples 18 and 19) and **shall** include the following instructions:
- (i) signal to be passed at stop (if signals are at stop in ABS and CTC);
 - (ii) movement to travel at low speed up to the vicinity of the site;
 - (iii) movement to stop on reaching the site and inspect; and
 - (iv) report to train control.
- (c) Upon receiving the report, train control **shall—**
- (i) report the result of the inspection to the appropriate person in authority;
 - (ii) not allow the movement to proceed over the unsafe track unless the inspection has determined that the track is safe for normal operations; and
 - (iii) when it is established that the track is safe for normal operations, seek permission to have the track that was Out of Service reinstated to service.
- (d) Upon removal of the Out of Service protection arrangement, resume normal operations.

NOTE: On the ARTC Network, Rail Traffic Crews must be warned about suspected unsafe track by issuing a written warning using a:

- Condition Affecting the Network form in ABS and CTC territory, or
- Train Authority in Train Order territory.

Where a Train Authority has previously been issued for the Section, the written warning must be issued on a CAN form or cancel the current Train Authority and issue a new Train Authority with the additional supporting information.

Authority

Proceed at low speed to the vicinity of 163.200 km.
Stop, inspect and report on suspected obstruction on track.

TA Example 18—Train control has received permission to allow a train to proceed to the site of suspected track damage or obstruction. This example applies to EAS, TOW or on CTC or ABS where signals have not gone to stop.

Authority

Pass Signal No. 3 at Stop
Proceed at low speed to the vicinity of 163.200 km.
Stop, inspect and report on suspected track obstruction.

TA Example 19—Train control has received permission to allow a train to proceed (in ABS or CTC) to the site of suspected track obstruction reported to be at the 163.200 km. Signal No 3 is at Stop and is to be passed to enable the train to enter the section.

3.15 LIMIT OF AUTHORITY OVERRUN

The following procedures apply:

- (a) Limit of Authority overrun occurs when a movement—
 - (i) passes a signal at stop without Authority;
 - (ii) exceeds the limit of a Train Authority; or
 - (iii) enters a section without a Train Authority.
- (b) In the event of Limit of Authority overrun, the train crew **shall**—
 - (i) stop the movement and protect the train against any immediate danger;
 - (ii) report to train control details of the overrun; and
 - (iii) remain in communication with train control until normal operation can be resumed and relevant Authorities cancelled or issued as appropriate.
- (c) Train control **shall** protect the movement that has overrun and any affected traffic, as follows:
 - (i) contact by any means available any movement occupying the same section that may be on a collision course with the movement that has overrun; and
 - (ii) advise each movement to stop immediately and remain in voice communication with train control until normal operation can be resumed, and relevant Authorities cancelled or issued as appropriate.
- (d) After train control and the train crew have protected against collision or other immediate danger, train control **shall**—
 - (i) report the details of the overrun in accordance with the organisation's policies and procedures; and
 - (ii) seek direction in relation to train crew replacement or otherwise.
- (e) In the event that the overrun is a signal passed at stop in CTC or ABS, the following applies:
 - (i) any movement forward **shall** be authorised by a PRA issued by train control;
 - (ii) the train crew **shall** proceed in accordance with the PRA;
 - (iii) where the next signal in advance is displaying clear, the train crew **shall** obey the signal but not increase speed until the end of the train has passed clear of the signal; and
 - (iv) unless a movement to the rear is being made to protect against any immediate danger in accordance with Item (b)(i) of this Clause, any movement to the rear **shall** be in accordance with Clause 3.19, Train pushing back on the main track.
- (f) In the event the overrun is exceeding the limit of a Train Authority, the following applies:
 - (i) unless a movement to the rear is being made to protect against any immediate danger in accordance with Item (b)(i) of this Clause any movement forward **shall** be authorised by a Train Authority issued by train control; and
 - (ii) any movement to the rear **shall** be in accordance with Clause 3.19, Train pushing back on the main line.

3.16 TRAIN DISABLED IN THE SECTION

A train is disabled in the section when the train crew requires assistance to remove the train from the section due to an event such as locomotive failure or derailment.

The following procedures apply:

- (a) When a train becomes disabled in the section, the train crew **shall**—
- (i) report the circumstance to train control;
 - (ii) establish the location of the front and rear of the train by reference to trackside kilometre signs and to the actual length of the train, and report the information to train control;
 - (iii) secure the train against movement, if necessary by applying hand brakes;
 - (iv) stand by the train;
 - (v) remain in voice communication with train control and await instructions; and
 - (vi) not move the train again without Authority of train control.
- (b) Train control **shall**—
- (i) cancel the current Train Authority if operating in TOW;
 - (ii) formally instruct the train crew, by Train Authority, to remain stationary at the reported location (TA Example 20);
 - (iii) determine the recovery strategy;
 - (iv) advise the train crew accordingly; and
 - (v) keep the train crew advised.
- (c) The train crew **shall** protect the train as indicated in Figures 3.7 and 3.8, subject to the following provisions:
- (i) if in contact with train control, protection **shall** be provided from the direction from which assistance will arrive as directed by train control;
 - (ii) protection by detonating signals **shall** be used in the following cases:
 - on parallel line(s) which are or could be obstructed (as in the case of a derailment);
 - voice communications with train control have failed or are not available. In such cases, both directions **shall** be protected;
 - visibility is impaired or poor from the direction of assistance; and
 - in dual gauge track areas detonating signals, when used, **shall** be placed on all rails.

Detonating signals are not normally used in other cases.

Authority

TA19 is cancelled at 135.100 km.
Remain at 135.100 km wait assistance.

TA Example 20—The TA cancels a previous TA as the train was operating in TOW.

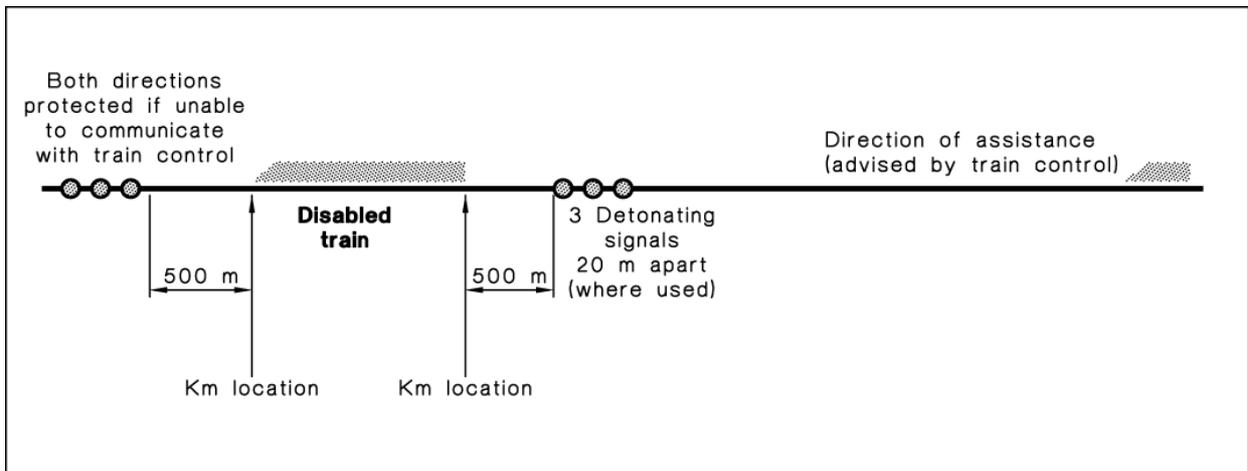


FIGURE 3.7 DISABLED TRAIN PROTECTION ARRANGEMENTS—SINGLE LINES (EXAMPLE)

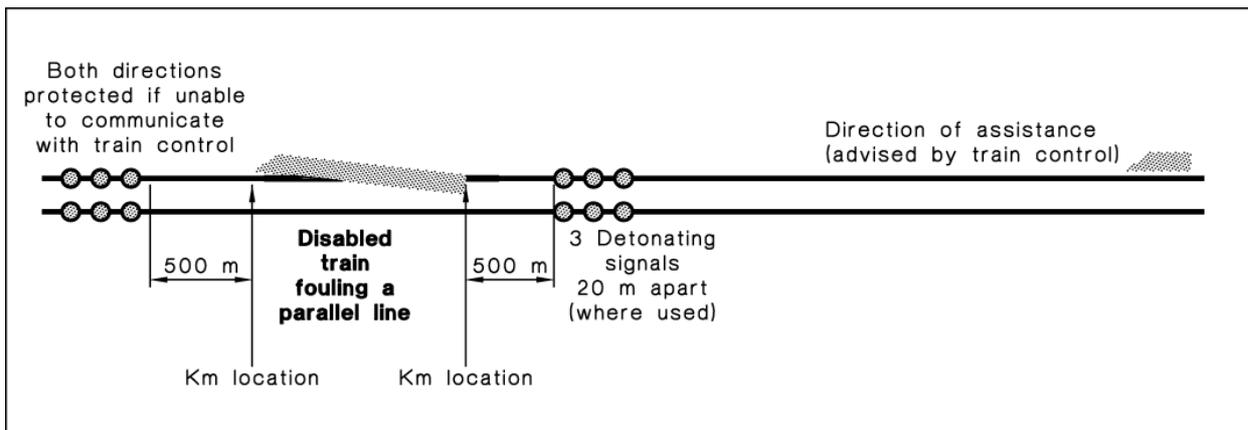


FIGURE 3.8 DISABLED TRAIN PROTECTION ARRANGEMENTS—DOUBLE OR MULTIPLE LINES (EXAMPLE)

3.17 TRAIN ASSISTING A DISABLED TRAIN IN THE SECTION

The following procedure applies:

- (a) The train crew of the disabled train and train control **shall** carry out the procedures set out in Clause 3.16, Train disabled in the section.
- (b) When a disabled train requires assistance for its removal from the section, train control **shall** issue a Work Authority to the train crew of the assisting locomotive at the entrance to the section in which the disabled train is standing.

NOTE: In CTC or ABS a following train may already be in the same section as the disabled train and be proceeding on a PRA.

- (c) The Work Authority **shall** include the following:
 - (i) in CTC or ABS, the signal(s) to be passed at stop;
 - (ii) the location of the disabled train as the Work Authority destination, as reported by the train crew. This will include the km location of the front or rear of the train depending on the direction from which the train assisting is to arrive;
 - (iii) whether the disabled train has been protected using detonating signals;
 - (iv) the location in advance or to the rear, to which the disabled train is to be assisted; and
 - (v) when operating in TOW territory, the track to be taken and if required, crossing or passing instructions. (TA Examples ~~21~~ and 22.)
- (d) The train crew of the assisting train may proceed in accordance with the Work Authority at normal speed, to a point 2500 metres short of the disabled train. On reaching this point the train crew **shall** proceed as follows:
 - (i) stop, establish and maintain voice communications with the train crew of the disabled train;
 - (ii) proceed at low speed and stop a second time not less than 500 metres from the disabled train;
 - (iii) explode any detonating signals or remove them from the track once the train has stopped;
 - (iv) proceed beyond this point under radio, hand signal or light commands as provided by the train crew or qualified worker at the disabled train;
 - (v) attach to the disabled train and prepare the train for departure;
 - (vi) proceed in accordance with the Work Authority; and
 - (vii) maintain voice communication with train control, as needed, to enable the recovery process to be monitored.

This process is described in Figure 3.9.

Rules

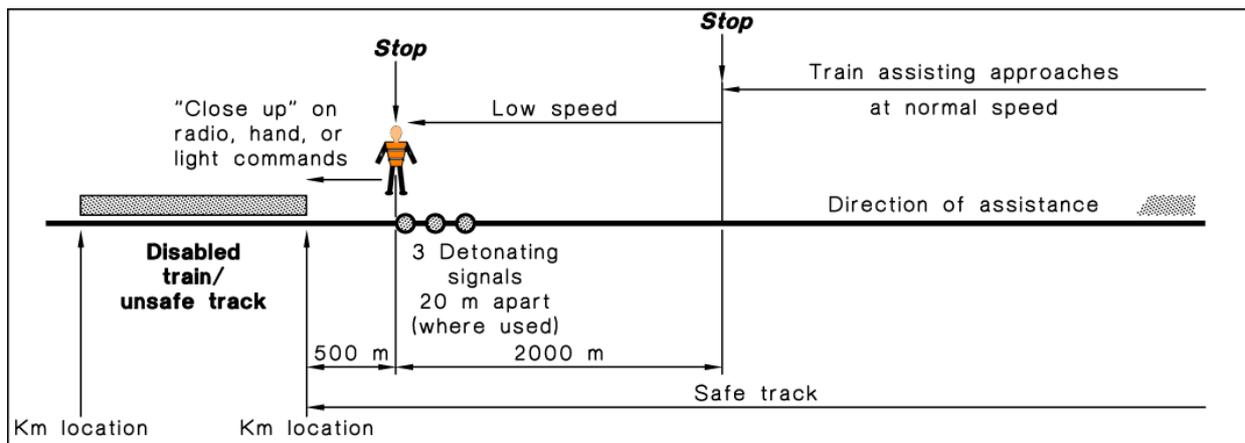


FIGURE 3.9 TRAIN ASSISTING A TRAIN DISABLED IN THE SECTION

- (e) Once the section has been cleared and the WA fulfilled the train crew **shall** report train clear of section to train control.

Authority

Pass Signal No. 3 at Stop.
 Proceed to the vicinity of 133.500 km.
 Stop until signalled forward.
 Assist 3MR4 loco FR15 disabled at 134.000 km to
 COCKATOO ~~take Main Line.~~

TA Example 21—3MR4 is disabled in CTC and is to be assisted forward to the location Cockatoo, on a Work Authority. The Work Authority also indicates the point 500 m short of the rear of the disabled train where the train is to stop until signalled forward.

TEXT WITH STRIKETHROUGH NOT APPLICABLE ON THE ARTC NETWORK

Authority

Proceed to the vicinity of 1313.500 km.
 Stop until signalled forward.
 Assist 3MR4 loco FR15 disabled at 1314.000 km to
 MANGO.
 Take crossing loop cross 5VL3 loco HD45

TA Example 22—3MR4 is disabled in TOW and is to be assisted forward to the location Cockatoo, on a Work Authority where a cross with another train is to take place. The Work Authority indicates a point to stop 500 m short of the rear of the disabled train.

3.18 TRAIN DIVIDING IN THE SECTION

A train may divide in the section due to rolling stock failure, insufficient locomotive power to haul the train without reducing the load, or due to rolling stock becoming uncoupled.

The following procedures apply:

- (a) The train crew **shall** report the circumstances to train control.
- (b) If it is not possible to communicate immediately with train control, the report **shall** be made using the first available means at the first opportunity.
- (c) If it becomes necessary for the locomotive to take a portion of the train to the location in advance, the following applies:
 - (i) in TOW, the current Train Authority held by the train crew of the train to be divided **shall** remain in effect until the second portion is taken to the location in advance unless at the discretion of train control, a new Train Authority is issued cancelling the current Train Authority and containing new instructions (TA Example 23);
 - (ii) in CTC or ABS, the train crew of the disabled train **shall** obtain a WA from the train controller before returning for the second portion of the train (TA Example 24).
- (d) When dividing the train, the train crew **shall—**
 - (i) effectively secure the rear portion of the train by full application of sufficient handbrakes to hold the train, taking into account train length, tonnage, track gradient and the weather conditions;
 - (ii) record the number of the last vehicle of the front portion;
 - (iii) record the exact location and number of the lead vehicle of the rear portion and report the information to train control;
 - (iv) protect the front vehicle of the rear portion using protection arrangements; and
 - (v) when the front portion has arrived complete at the location in advance, report to train control.
- (e) In TOW, if the current Train Authority includes crossing instructions for the location in advance, the train crew of the divided train **shall** inform the train crew of the train to be crossed, of the situation.
- (f) The train crew of the locomotive returning for the second portion **shall—**
 - (i) proceed to the point 2500 metres short of the disabled train and stop;
 - (ii) proceed at low speed and stop a second time not less than 500 metres from the disabled train;
 - (iii) explode any detonating signals or remove them from the track once the train has stopped;
 - (iv) move beyond this point under radio, hand, or light commands;
 - (v) attach to the disabled train; and
 - (vi) maintain communication with train control, as needed, to enable the recovery process to be monitored.

This process is described in Figure 3.10.

NOTE: If the train controller considers it expedient to authorise another locomotive to remove the second portion from the section (for example from an another train), the procedure to be used is Clause 3.17, Train assisting a disabled train in the section.

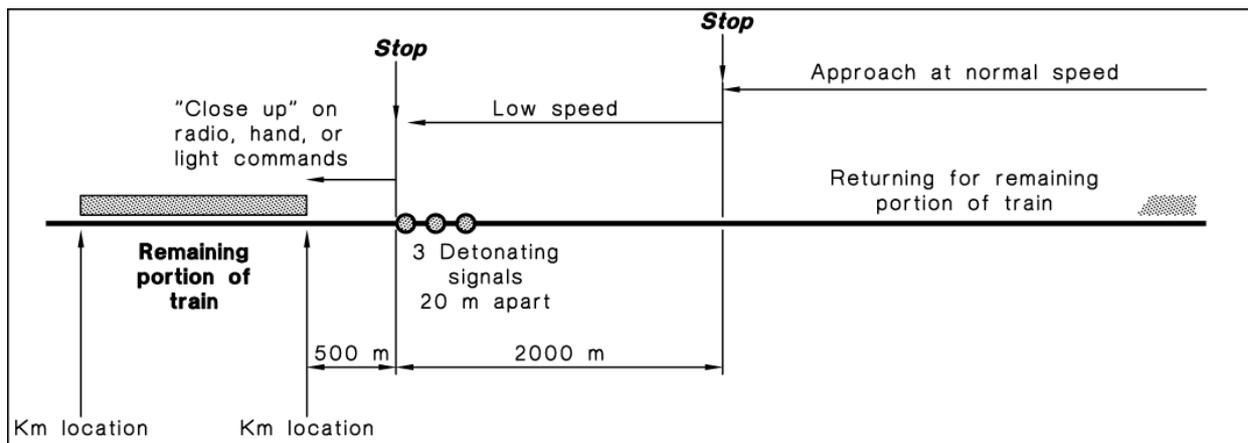


FIGURE 3.10 TRAIN DIVIDING IN SECTION

- (g) The train crew **shall** prepare the train for departure, ensuring that the track has been cleared of any obstructions, e.g. couplings or draw bars from rolling stock failure.
- (h) Once the section has been cleared and the Train Authority fulfilled, the train crew **shall** report to train control.

Authority

TA 22 is cancelled at 1315.000 km.
Work between 1315.000 km and MANGO.
Recover your train to MANGO Main Line.

TA Example 23—The train is disabled in TOW at the 1315.000 km and is authorised by Work Authority to clear the train to the location in advance.

Authority

Pass Signal No. 5 at Stop.
Work between COCKATOO and 135.100 km.
Recover your train to WARRATAH Main Line.

TA Example 24—The train is disabled in CTC at the 135.100 km. The train has cleared the front portion and is authorised by Work Authority to return for the second portion.

Rules

- (i) If a train has become uncoupled but can be re-coupled and continue safely on its journey, the train crew may push back on the main track at low speed (Clause 3.19) and re-couple to the rear portion on hand, radio or light commands, provided that the rear portion of the train—
 - (i) can be seen by the crew; and
 - (ii) has stopped running, and the track between the front and rear portion is inspected and clear of obstructions.

If these conditions are not met, action in accordance with Items (c) to (h) above as appropriate, **shall** be taken.

3.19 TRAIN PUSHING BACK ON THE MAIN LINE

The following procedures apply:

- (a) A train **shall not** push back on the main line unless it is—
 - (i) within yard limits;
 - (ii) shunting on arrival at a location where the push back is up to the stationary portion of the train;
 - (iii) at locations specified by the Network Owner to pick up train crew;
 - (iv) authorised by WA or SHA; or
 - (v) a push back up to the stationary portion of an uncoupled train as specified in Clause 3.18(i).
- (b) Pushing back on the main line **shall** be limited to situations where—
 - (i) there are no driving controls on the leading end of the movement and the train crew cannot simply change ends;
 - (ii) the provision of a locomotive to assist is not practicable; and
 - (iii) the leading vehicle can be accompanied by a qualified worker.
- (c) Before a train is authorised to push back on the main line, to an attended block location to the rear, train control **shall**—
 - (i) advise the qualified worker attending the location to the rear, of the details and circumstances of the push back movement; and
 - (ii) if the signal controlling the entrance to the section is operated from that location, formally instruct that the signal be held at stop and the blocking facility applied.
- (d) Where a WA is issued to the train crew it **shall** include—
 - (i) the location to which the push back movement is authorised, and if required, the track to be taken; and
 - (ii) in TOW, cancelling of the current Train Authority, and provision of crossing or passing instructions if required. (TA Example 25.)
- (e) The train crew of the train to push back **shall**—
 - (i) ensure the air brake connection is continuous throughout the train;
 - (ii) ensure the leading vehicle is fitted with an operating air brake;
 - (iii) ensure a qualified worker accompanies the leading vehicle to direct the movement using continuous radio communication with the train crew, or when radio is not available, by hand or light commands;
 - (iv) where the train is so long that hand or light commands cannot be kept in sight by the train crew, ensure that an additional qualified worker or workers accompany the movement to relay the commands from the person accompanying the leading vehicle;
 - (v) keep a sharp look out ahead and be prepared to act immediately upon any radio, hand or light commands by the qualified worker accompanying the leading vehicle;
 - (vi) sound the locomotive whistle and stop promptly and smoothly if radio communication or sight of hand or light commands is lost with the worker directing the movement, and not resume the movement until further commands are received;

Rules

- (vii) keep a watch for fixed signals;
 - (viii) not push the leading vehicle past any fixed signal that applies to the movement, and is at stop, or beyond the section for which the Work Authority is held; and
 - (ix) not exceed 25 km/h.
- (f) Before pushing a train across a level crossing equipped with automatic warning devices, the qualified worker accompanying the leading vehicle **shall**—
- (i) go forward to the level crossing;
 - (ii) check automatic warning devices are operating normally; and
 - (iii) if the warning devices are operating normally, continue the movement across the level crossing without stopping.
- (g) Before pushing a train across a level crossing that is not equipped with automatic warning devices, the qualified worker accompanying the leading vehicle **shall**—
- (i) stop the movement short of the level crossing;
 - (ii) stop all road and pedestrian traffic; and
 - (iii) commence movement, allowing the train to pass over the level crossing without stopping.

Authority

TA 24 is cancelled at 135.100 km.
Now push back to BILBY.
Take Main Line.
Allow 3DN2 Loco FR19 to Pass.

TA Example 25—The train is disabled in TOW at the 135.100 km and is authorised to push back to Bilby, the location to the rear. Note the original Train Authority was cancelled.

3.20 WORK TRAIN WORKING IN A SECTION

The following procedures apply:

- (a) A work train **shall not** enter a section for the purpose of working, except as authorised by a WA.
- (b) The WA to the train crew of the work train **shall** specify—
 - (i) the limits of work;
 - (ii) the location to which the train is to proceed or return to clear the section;
 - (iii) the time by which the section is to be clear; and
 - (iv) in TOW, crossing and passing instructions, if required.

Note: In CTC or ABS, a proceed indication to enter the section.

- (c) In EAS, CTC and ABS, once the train has entered the work section, the appropriate mechanical or electrical blocking facilities **shall** be applied at the panel, workstation or lever to prevent inadvertent operation.
- (d) In ABS, if the appropriate mechanical or electrical blocking cannot be applied as in Item (c) above, a TA **shall** be issued to each approaching train to stop before entering the section where the WA is to be authorised.
- (e) Where train graph or diagram is being used, a formal process **shall** be applied for blocking the section to protect against decision making errors.
- (f) The train crew **shall** then proceed in accordance with the WA, working in both directions in the section, as directed by the qualified worker.

Authority

**Work between BILBY and MANGO
East End Yard Limit
Then return to BILBY
take Crossing Loop by 1400hrs**

Supporting Information

Report 1200hrs

TA Example 26—Work between BILBY and MANGO East End yard limit then return to BILBY take Crossing Loop by 1400 hrs.

3.21 TRAINS WORKING OR STABLING AT INTERMEDIATE SIDINGS IN A SECTION GOVERNED BY TOW

The following procedures apply:

- (a) The movement of trains in TOW **shall** be authorised by a Train Authority when—
 - (i) terminating at;
 - (ii) stabling at;
 - (iii) arriving to working at; or
 - (iv) originating from;
 an intermediate siding.
- (b) The train crew **shall** be in possession of the necessary safeworking keys that enables access to the intermediate siding.
- (c) On arrival, the train crew **shall**—
 - (i) unlock and set the points for entry into the intermediate siding;
 - (ii) if required, unlock and remove any security or derail devices;
 - (iii) enter the siding.
- (d) Once in clear of the running lines at the intermediate siding, the train crew **shall**—
 - (i) restore and lock points, derail and security devices to the normal position;
 - (ii) report train clear of section to train control;
 - (iii) not foul the running lines until authorised by Train Authority; and
 - (iv) report again to train control when, or if, the train is stabled.
- (e) If the intermediate siding is located adjacent to the running lines, subsequent trains authorised to proceed through the section and past the intermediate siding, **shall** be advised that a train is working in the siding.

Authority

Proceed to BILBY take Main Line

Supporting information

6MR4 working in clear at BUDGIE

TA Example 27—6MR4 has arrived and been reported clear of section and is now working in clear at Budgie.

3.22 TRAINS SHUNTING AT UNATTENDED BLOCK LOCATIONS

3.22.1 TOW

The following procedures apply:

- (a) When a train is to shunt at an unattended block location in TOW, the train crew **shall**—
 - (i) before commencing the shunt, obtain permission from train control so that traffic management requirements can be considered;
 - (ii) if the points are equipped with self-restoring mechanisms they are to be operated in hand mode, and restored to motor mode when shunting is completed;
 - (iii) attend to security and derail devices; and
 - (iv) restore and lock points for the main track before departure.

Limit of shunting movement is indicated in the examples in Figure 3.11.

- (b) Where train control has issued a SHA, the train crew **shall**, on completion of the shunt, report clearance to the train controller and write 'FULFILLED' across the Train Authority.

3.22.2 EAS

*** TO BE DETERMINED ***

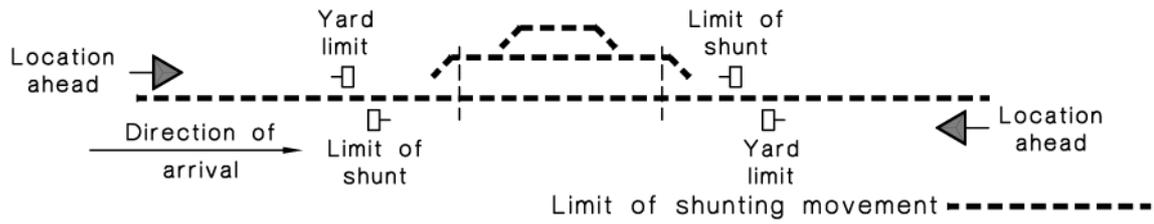
3.22.3 CTC or ABS

The following procedures apply:

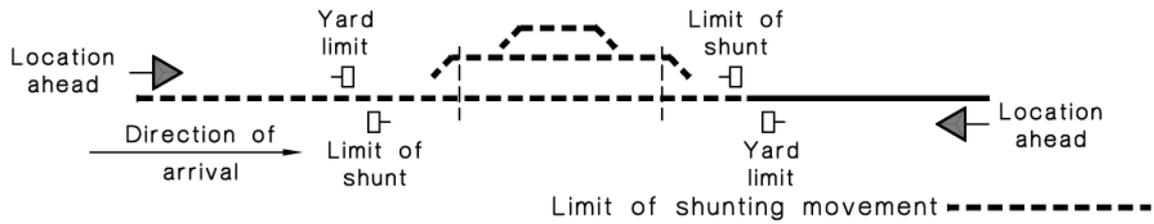
- (a) When a train is to shunt at an unattended block location in CTC or ABS territory, the train crew **shall** obtain permission from train control before commencing the shunt.
- (b) Shunting **shall** be performed—
 - (i) by using signal indications, where provided; or if not
 - (ii) by using the “Electric Release” facility where provided; or in the absence of either
 - (iii) by SHA issued by train control.
- (c) When using a SHA the train crew **shall**—
 - (i) obtain the SHA from train control;
 - (ii) on completion of the shunt, report clearance to the train controller and write 'FULFILLED' across the Train Authority.

Rules

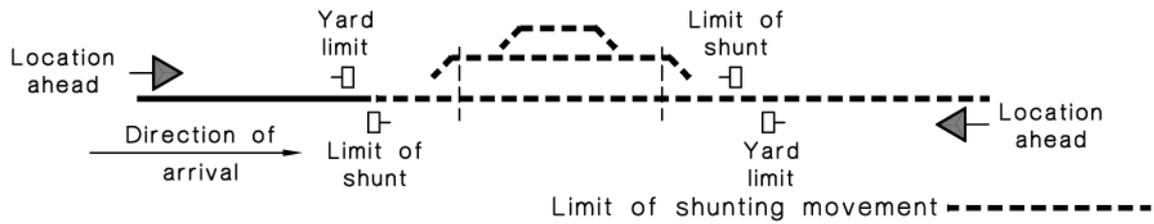
Example 1 - Train is shunting "on the way in" - Authority through the location.



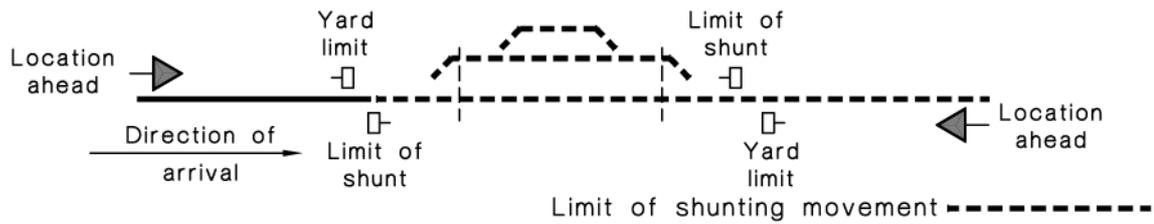
Example 2 - Train shunting "on the way in" - Authority terminating at the location.



Example 3 - Train shunting at the location - Authority through the location but train has been reported clear of section before shunting.



Example 4 - Train shunting at the location - using SHA issued for section in advance.



Example 5 - Train shunting at the location - train has reported clear of section and shunting within yard limits.

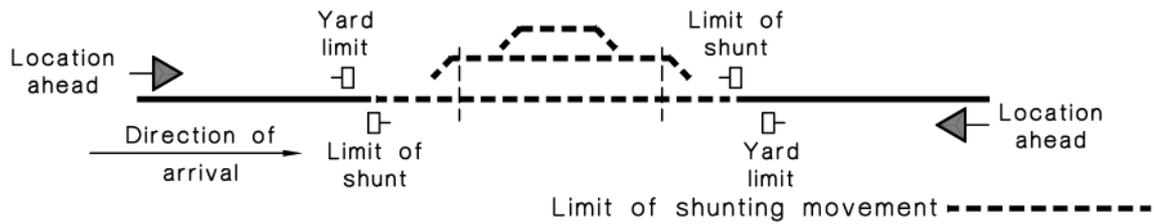


FIGURE 3.11 TRAINS SHUNTING AT UNATTENDED BLOCK LOCATIONS: TOW

TEXT WITH STRIKETHROUGH NOT APPLICABLE ON THE ARTC NETWORK
REFER TO ARTC ADDENDUM FOR DETAILS

3.23 SINGLE LINE WORKING OVER DOUBLE OR MULTIPLE LINES

Single line working may be established over double or multiple lines if one or more lines are not available for movements. Normally the establishment of this working arrangement is planned and a Train Notice or other instruction is issued in advance to advise all affected parties. The following procedures apply:

- (a) The portion of line over which single line working is to be established **shall** extend over the most suitable crossovers available each side of the unavailable lines.
- (b) Before introducing single line working train control **shall** ensure that the single line to be used meets the following requirements:
 - (i) it is unoccupied;
 - (ii) it is not affected by the work or obstruction on the other line(s);
 - (iii) in EAS, CTC and ABS the appropriate mechanical or electrical blocking **shall** be applied at the panel, work station or levers to prevent inadvertent operation of each signal governing the entrance to and operation over the unavailable line(s);
 - (iv) in ABS, if the appropriate mechanical or electrical blocking cannot be applied, train control **shall** issue a TA to each approaching train to stop at the entrance to where single line working is to apply; and
 - (v) where a train graph or diagram is being used, a formal process for blocking the section to protect against inadvertent decision making errors, is in place.
- (c) Each train **shall** stop at any signal at stop at the entrance to the single line working area and report to train control.
- (d) Where a movement is to run against a signal indication the following applies:
 - (i) train control **shall** issue for each train to proceed through the single line working area, a TA which **shall** include:
 - the number of any signal that is to be passed at stop; and
 - low speed for the extent of any obstruction on the adjacent unavailable lines;
 - (ii) the train crew **shall** proceed in accordance with the TA;
 - (iii) if approaching a level crossing equipped with automatic warning devices the following applies:
 - a qualified worker shall go forward to the level crossing and check that automatic warning devices are operating normally; and
 - if the warning devices are operating normally, continue the movement across the level crossing without stopping.
- (e) Where a movement is to run with signal indication train control **shall**—
 - ~~(i) issue a Train Working Advice form detailing Low Speed for the extent of any obstruction on the adjacent unavailable lines; and~~
 - (ii) remove the mechanical or electrical blocking to allow the train crew to proceed in accordance with the signal indication.
- (f) After the train has entered the section train control **shall** again apply mechanical or electrical blocking.

4 SECTION 4: TRAIN CONTROLLING RULES

4.1 TRAIN CONTROLLER COMPETENCY

The following competencies apply:

- (a) A train controller **shall** be competent in the following:
 - (i) specified sections of the Code of Practice for the Defined Interstate Rail Network, Volume 3: Operations and Safeworking, Part 1, Rules (this Part); and
 - (ii) network owner specified competencies.
- (b) To be the train controller responsible for controlling an area of track, the train controller **shall** be competent in train control "board" or "room" operations. This may include but is not limited to the following:
 - (i) interface arrangements for network entry and exit, and associated documentation;
 - (ii) route and infrastructure practical knowledge, including yards and other facilities;
 - (iii) communications equipment and facilities;
 - (iv) train control or signalling panels and associated facilities;
 - (v) computing facilities;
 - (vi) train graphing techniques;
 - (vii) emergency procedures; and
 - (viii) other office equipment.

4.2 GENERAL RESPONSIBILITIES OF THE TRAIN CONTROLLER

The train controller **shall**—

- (a) Ensure accurate time is maintained and is used for all procedures and communications.
- (b) Control and record each Authority and occupancy.
- (c) Accurately record—
 - (i) the progress of Train and Track Worker Authorities and information;
 - (ii) track closures or track out of service; and
 - (iii) communications, signalling and other infrastructure conditions as necessary for the safe and efficient operation of the network.
- (d) Accurately maintain up-to-date information on anticipated train paths within the train controller's jurisdiction, in relation to—
 - (i) trains currently operating;
 - (ii) planned track or infrastructure work, and effects on operations;
 - (iii) trains entering from adjacent or neighbouring jurisdictions;
 - (iv) terminals and yards; and
 - (v) any location from which a train is planned to enter the network.
- (e) Initiate accurate advice, as appropriate, to—
 - (i) neighbouring jurisdictions;
 - (ii) destination yards or terminals;

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- (iii) train network exit locations;
 - (iv) train operator representatives; and
 - (v) maintainers of track and infrastructure;
- and give the anticipated arrival times for the trains and other movements under their control.
- (f) Report any breach of safeworking, actual or suspected, to their supervisor or manager.
 - (g) Comply with train notices, circulars and other instructions.
 - (h) Assist workers, as necessary, to—
 - (i) reach their destinations for the purpose of track and infrastructure works;
 - (ii) attend failures or emergencies; and
 - (iii) test any infrastructure equipment, or facilities receiving maintenance or requiring attention.
 - (i) When vehicles are detached short of their destination at an unattended location, record and maintain the status of the vehicle for subsequent movement as required for the train operator concerned.
 - (j) Ensure changes are recorded to train length, tonnage, locomotives and other operational information, and provide the information to train control in the adjoining jurisdiction as required.
 - (k) Be immediately responsive to train crews reporting fatigue or other emergencies requiring the train to be stopped at the next available location.
 - (l) Complete and submit timely, accurate reports as required for the reporting of incidents.
 - (m) Record information into logbooks or other facilities provided for the purpose of hand over or advice to train controllers on subsequent shifts.

4.3 VIGILANCE

All workers involved in train control **shall** promptly respond to—

- (a) Emergencies.
- (b) Unusual occurrences.
- (c) The requirements of safeworking.
- (d) Incoming radio transmissions.
- (e) Incoming telephone calls, facsimiles and other communications.
- (f) Train notices, circulars and other instructions.

4.4 TRAIN CONTROL HAND OVER

- (a) Before assuming responsibility for a train control jurisdiction, hand over procedures **shall** be conducted and **shall** involve—
 - (i) the outgoing train controller; and
 - (ii) the incoming train controller.

Exception: In circumstances where the control “room” or “board” is to be reinstated after a period of closure, for example, due to a holiday period, only the incoming train controller may be involved.

Rules

- (b) The outgoing train controller **shall not** depart until an understanding is reached in relation to:
- (i) projected train working;
 - (ii) projected train paths;
 - (iii) the actual position and status of each train;
 - (iv) the status of signal and points;
 - (v) the status of Authorities and information;
 - (vi) the status of track and other infrastructure including track out of service, failures etc.; and
 - (vii) log book or other records that could affect safeworking and operations.
- (c) The incoming train controller **shall**—
- (i) check each unfulfilled Authority and ensure that—
 - each is understood;
 - each is correctly recorded; and
 - "blocking facilities" have been applied as appropriate; and
 - (ii) check train graph or other recording facilities, if being used, for the correct recording of temporary speed restrictions and other information pertinent to operations and safeworking.
- (d) The outgoing train controller **shall**—
- (i) ensure that the incoming train controller is fully briefed on all aspects of the working; and
 - (ii) complete any outstanding reports and computer data entries which were not able to be completed during the shift.

4.5 INTERFACE BETWEEN TRAIN CONTROL JURISDICTIONS

The following procedures apply:

- (a) An interface between train control jurisdictions occurs in the following circumstances:
- (i) where two or more train control jurisdictions are physically adjacent, for example, at a state border;
 - (ii) at locations where movements enter, exit or cross the network, for example—
 - at private sidings;
 - yard or terminal locations;
 - junctions; or
 - any other situation where the control of facilities is not the normal responsibility of the train controller with responsibility for the adjacent network running lines, but the facility is connected to the network running lines.
- (b) The interface between train control jurisdictions may be undertaken from the same or different control offices or locations.
- (c) Train controllers whose jurisdictions interface with another jurisdiction **shall** discuss as frequently as necessary to reach understanding in relation to—
- (i) anticipated train arrival and departure times;
 - (ii) the planning of train paths;

Rules

- (iii) train identification details; and
 - (iv) crossing and passing requirements as appropriate.
- (d) Before authorising a movement to proceed to or from a location where the working beyond that location is controlled by another jurisdiction, permission from that jurisdiction **shall** be first properly obtained.

4.6 SAFWORKING FORM IDENTIFICATION

The following procedures apply:

- (a) Safeworking forms used to issue Authorities and other information **shall** be uniquely identified.
- (b) The unique identification may be generated by one of the following methods:
 - (i) automatically, where a facility for the purpose is provided;
 - (ii) by a system prescribed on the forms themselves; and
 - (iii) a manual system where neither of the above is available.
- (c) Where the system is manual, the train controller **shall** use the method already established and ensure that the unique identification of Authorities is maintained.

4.7 INFORMATION MANAGEMENT

The train controller **shall**—

- (a) Complete the transmission, verification and recording of each Authority process before commencing the next process.
- (b) As far as practicable, not cover, fold or obscure that part of a train control graph (where a graph is being used), upon which safeworking decisions are being made.
- (c) Where Authorities are being issued manually—
 - (i) refer to the original Train Authority (and the train graph) when issuing a Train Authority to cross or pass;
 - (ii) refer to the original Train Working Authority when issuing Train Working Advice form;
 - (iii) where a train graph is used, accurately carry forward details of safeworking and operational information from the current train graph to the next, for example:
 - unfulfilled Authorities;
 - train positions;
 - train identification and details;
 - track closures or out-of-service details, until the track has been formally reinstated; and
 - temporary speed restriction details (until these details are published and no longer need to be issued directly to the train crew).

4.8 DECISION MAKING

4.8.1 Safeworking decisions

Train controller safeworking decision-making **shall** comply with the following:

- (a) Clause 2.6.2, Joint occupancy rules.
- (b) In EAS and TOW, Table 2.5, SAFWORKING SYSTEM TABLE FOR COMMUNICATIONS SYSTEMS—EAS AND TOW.

- (c) In CTC and ABS, Table 2.6, SAFEWORKING SYSTEM TABLE FOR SIGNALLED SYSTEMS—CTC AND ABS.
- (d) Clause 3.4, Passing fixed signals at stop (under review).
- (e) Clause 3.9, Train Authority protocols including TA Examples and Clause 3.10 Train working advice.
- (f) Other local operational and interface procedures and instructions.

4.8.2 Train prioritisation decisions

Train controller train prioritisation decision making **shall** comply with the following:

- (a) Code of Practice for the Defined Interstate Rail Network, Volume 3, Operations and Safeworking, Part 2, Route Standards, in particular, Clause 19, Traffic management.
- (b) Other local operational and interface procedures and instructions.

4.9 REPORTING TRAIN PERFORMANCE

The following procedures apply:

- (a) Train control **shall** report on train performance in terms of time lost or gained by each train in relation to—
 - (i) trains exceeding or running better than section running times;
 - (ii) trains exceeding or using less time than scheduled for activities such as crossing, passing, shunting, fuelling, crew changes etc.; and
 - (iii) time lost as a result of unscheduled events, including incidents and train prioritisation decisions.
- (b) The train controller **shall not** assume the reason for delay but where time has been lost, the reason **shall** be sought from—
 - (i) the qualified worker in charge of an attended location, where the delay has occurred within the limits of an attended location;
 - (ii) the train crew, where the delay has occurred during transit; or
 - (iii) the worksite supervisor, where the delay has occurred due to track or infrastructure works.
- (c) Train performance, including reasons for delays, **shall** be reported for each location specified. This may require the train controller to do one or more of the following:
 - (i) accurately input information into computing systems;
 - (ii) accurately record information on train graphs;
 - (iii) produce specialised reports; and
 - (iv) where "codes" are used to describe delays or incidents, use these and provide an additional explanation where the code is not sufficient.

4.10 MANUAL RECORDING PROCEDURES

Where manual recording procedures are used, for example train graphs, the train controller **shall**—

- (a) Accurately record the times and locations of all events requiring recording.
- (b) Neatly record all information in the manner specified for the purpose.
- (c) Use permanent ink or pen, except for planning where pencil **shall** be lightly used.
- (d) Use the colour coding, and techniques specified, for the purpose of train graphing.
- (e) Not make inappropriate erasures but correct errors by neatly crossing them out and recording the correction in its place.
- (f) Not use any colour specified for use for auditing purposes.

5 SECTION 5: TRAIN DRIVING RULES

5.1 TRAIN CREW COMPETENCY

The following competencies apply:

- (a) A train crew member **shall** be competent in the following:
 - (i) specified sections of the National Code of Practice for Operations and Safeworking (this Code);
 - (ii) interface arrangements for network entry and exit, and associated documentation; and
 - (iii) train operator specified competencies.
- (b) To be in control of a train, the train crew member **shall** be competent in operational and practical requirements relating to the following:
 - (i) train preparation, testing and management;
 - (ii) locomotives and rollingstock types to be operated; and
 - (iii) route and infrastructure knowledge, including yards and other facilities, for the areas over which the train crew member is required to operate.

5.2 TRAIN CREW AND LOCOMOTIVE EQUIPMENT

The following procedures apply:

- (a) As appropriate, for the areas over which the train crew member is required to operate, the following equipment in good working order, is required for train crew Network Operations and Safeworking:
 - (i) a watch or clock;
 - (ii) approved high visibility clothing;
 - (iii) personal safety equipment;
 - (iv) locomotive communications equipment;
 - (v) portable communications equipment;
 - (vi) safeworking keys;
 - (vii) supplies of safeworking forms;
 - (viii) emergency equipment; and
 - (ix) first aid supplies.
- (b) Prior to entering traffic, train crew members **shall** ensure that—
 - (i) all necessary air brake tests have been performed and are within required limits;
 - (ii) locomotive headlights are tested on high and low beam and, where fitted, "ditch lights" are checked and are fully operational;
 - (iii) where fitted, locomotive identification lights are fully operational;
 - (iv) the locomotive warning device is fully operational; and
 - (v) the locomotive communications equipment is fully operational.
- (c) The train crew **shall** ensure that a locomotive, when attached to another locomotive or to a train, is securely and correctly coupled.
- (d) When preparing locomotives, the train crew **shall** enter details as required into the data logger or similar device or facility, if provided, on each locomotive before

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working the train. At subsequent crew changes, the details **shall** be entered on the leading locomotive only.

- (e) A train crew member **shall not** render inoperative any device provided for the safe operation of the locomotive unless authorised and appropriate instructions accompany the action.
- (f) If the vigilance control system becomes defective, and it becomes necessary for the crew member to isolate the device, the matter **shall** be reported in accordance with Train Operator's instructions.

5.3 LOCOMOTIVE SPEEDOMETER

The following procedures apply:

- (a) As soon as practicable the train crew **shall**—
 - (i) ensure that the locomotive speedometer is operating; and
 - (ii) check the accuracy of the speedometer, using speed constants or other device or facility, where provided for the purpose.
- (b) In case of speedometer failure use speed constants shown in Table 5.1.

**TABLE 5.1
SPEED CONSTANTS**

km/h	1 km travelled (seconds)	km/h	1 km travelled (seconds)
25	144	115	31
35	102	120	30
40	90	125	29
50	72	130	28
60	60	135	27
65	55	140	26
70	51	145	25
80	45	150	24
100	36	155	23
105	34	160	22.5
110	33	165	22

5.4 TRAIN CREW VIGILANCE

Train crews **shall** observe the following:

- (a) Be alert and observe the track in the direction in which the movement is being made.
- (b) Not engage in any activity on the locomotive that distracts attention to safety.
- (c) Start and stop the train carefully, control slack action, and pay attention to the weather and track conditions as well as the length and mass of the train.
- (d) Regulate the running of the train as accurately as possible to avoid loss of time.
- (e) Not exceed speed limits.
- (f) Be alert and prepared to stop or reduce train speed.

Rules

- (g) Obey each speed restriction imposed, or in accordance with the condition of the track as noticed by the train crew themselves.
- (h) When approaching a station, siding, signals or a level crossing, keep a sharp look out, particularly when weather is not clear or visibility is impaired for any reason.
- (i) Keep a sharp look out for track workers or other persons, track vehicles or machines on or near the track.
- (j) When starting and accelerating, and at frequent intervals during the journey, look back to see that the whole train is following in a safe and proper manner.
- (k) Keep a sharp look out for flooding or fires by the side of the track, or on adjacent land or property.
- (l) Report incidents to train control.
- (m) Not be absent from the normal train crew position in the locomotive cabin, to ensure that there is maximum vigilance when:
 - (i) signalling conditions or general visibility is poor or impaired due to the weather;
 - (ii) obtaining Train Authorities from a moving locomotive;
 - (iii) reporting train position to train control from a moving locomotive;
 - (iv) crossing or passing trains (from the moving train); and
 - (v) operating on a PRA toward an obstruction.

5.5 LOCOMOTIVE WARNING DEVICE OPERATION

5.5.1 Normal use of locomotive warning device

The following procedures apply:

- (a) Train crews **shall** sound the locomotive warning device clearly and distinctly.
- (b) The intensity, length and repetition **shall** be varied according to the circumstances and the distance over which warnings need to be heard.
- (c) The train crew **shall** sound the locomotive warning device in the following situations:
 - (i) before moving a locomotive from stop and, as far as practicable, having seen that no person is in a position of danger;
 - (ii) when approaching a crossing or passing movement;
 - (iii) when shunting is being performed on an adjacent track;
 - (iv) when approaching workers on or near the track on which the train is running;
 - (v) when approaching level crossings (and tunnels when required);
 - (vi) when indicated by whistle signs situated at the track side; and
 - (vii) when operating a work train with workers riding or working in or near rollingstock, before starting or reducing speed.
- (d) The train crew **shall not** sound the locomotive warning device without a valid reason to do so.

5.5.2 Locomotive warning device failure

The following procedures apply:

- (a) If the locomotive warning device fails at any time on the Network, the train crew **shall** report to train control and carry out one of the following alternatives, whichever is the most practical or required in the circumstance:
- (i) repair the fault;
 - (ii) reverse or turn the locomotives, if more than one or multi-cab locomotive is operating on the train;
 - (iii) change the locomotive; or
 - (iv) arrange for the fault to be repaired.
- (b) If it is not possible to carry out any of these alternatives, the following apply:
- (i) the train crew may continue at normal speed while conditions are clear, and there is sufficient view from the driving position to ensure there are no road vehicles, workers, pedestrians or livestock in the vicinity of the track;
 - (ii) if conditions are not clear or there is insufficient view from the driving position to ensure there are no road vehicles, workers, pedestrians or livestock in the vicinity of the track the train crew **shall** reduce to Low Speed. In addition the crew member **shall** "flick" the headlight between low and high beam to attract attention when approaching—
 - a level crossing;
 - a person or people walking or working on or near the track; or
 - any other location where the train crew considers it necessary; and
 - (iii) if the train crew considers that occupants of vehicles or persons walking or working on or near the track have not become aware of the approach of the train they **shall**—
 - attempt to stop the train; and
 - remain stationary until any danger of an accident has passed.
- (c) When approaching level crossings not equipped with automatic warning devices and the locomotive warning device is inoperative, the train crew **shall**—
- (i) approach the level crossing at a speed that will enable the train to stop safely and avoid collisions with road vehicles, workers or pedestrians;
 - (ii) stop before the crossing;
 - (iii) obey the signal of a qualified worker or one of the train crew who **shall** go ahead to the crossing and signal the train crew when the crossing is clear, and all road and pedestrian traffic has stopped or is clear of the crossing; and
 - (iv) proceed across the crossing at Low Speed.

Where conditions are clear and there is sufficient view from the driving position to ensure there are no road vehicles or pedestrians in the vicinity, the train may continue the movement across the crossing.

5.6 LOCOMOTIVE HEADLIGHT OPERATION

(Where headlights are fitted.)

5.6.1 Normal use of locomotive headlight (where fitted)

The following apply:

- (a) The train crew **shall** ensure that the headlight is on at all times, in the full position, whenever the train is moving on the running lines, except as set out in Items (c), (d) and (e) below.
- (b) The train crew **shall** ensure that the headlight is turned off when the train is waiting to cross another train. However, the headlight **shall** only be turned off after the train has been confirmed as standing in clear and the points have been set to protect the train.
- (c) The train crew of an over-length train **shall** dim, but not turn off the headlight, when—
 - (i) the train is authorised to enter a location;
 - (ii) the train is waiting to cross another train; and
 - (iii) the train has stopped, it is not in clear of the clearance point (due to it being over length).
- (d) The train crew of the over length train may only turn the headlight off when—
 - (i) the train crew establishes voice communications with the train crew of the opposing train, before it arrives; and
 - (ii) the conditions of entry are clearly established so that the train can be stopped before the points.
- (e) The train crew **shall** dim the headlight or if "visibility" or "ditch" lights are fitted, switch off the headlight when—
 - (i) passing through locations where shunt locomotives are working;
 - (ii) standing close behind another train;
 - (iii) approaching junctions, terminals or crossing locations;
 - (iv) approaching locations where the train is to stop for any other purpose;
 - (v) when motor vehicles are approaching (on nearby roads) from the opposite direction;
 - (vi) approaching locations where passengers are to join or leave the train; and
 - (vii) approaching a train running in the opposite direction on a parallel track.
- (f) Where "visibility" or "ditch" lights are fitted to the leading locomotive, they **shall** be left on in each of the circumstances described in Items (c), (d) and (e).

5.6.2 Locomotive headlight failure

The following procedures apply:

- (a) If the locomotive headlight fails at any time on the Network and the locomotive is not fitted with either "visibility lights" or "ditch lights" (or these lights if fitted have also failed), the train crew **shall** report to train control.
- (b) One of the following alternatives, whichever is the most practical in the circumstance, **shall** be carried out if possible:
 - (i) repair the fault;

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- (ii) if more than one locomotive is operating on the train, reverse or turn the locomotives;
 - (iii) change the locomotive; or
 - (iv) arrange for a maintenance worker to remedy the defect.
- (c) If it is not possible to carry out any of these alternatives to enable headlight, "visibility lights" or "ditch lights" to be displayed, the train crew **shall** proceed as follows:
- (i) in daylight when conditions and visibility are good, proceed as for normal operation, but be ready to respond if it is considered that the train's approach or presence is not being given proper and due attention;
 - (ii) in darkness, or during conditions of poor visibility—
 - not exceed 50 km/h;
 - reduce to Low Speed over level crossing and through station yards; and
 - use the locomotive warning device to attract attention when approaching—
 - a level crossing;
 - a person, or people, walking or working on or near the track; or
 - any other location where the train crew considers it necessary; and
 - (iii) if the train crew considers that occupants in vehicles, or people walking or working on or near the track, have not become aware of the approach of the train—
 - attempt to stop the train; and
 - remain stationary until any danger of an accident has passed.
- (d) When approaching level crossings not equipped with automatic warning devices the following applies:
- (i) the train crew **shall** approach the level crossing at a speed that will enable the train to be stopped safely and avoid collisions with road vehicles or pedestrians;
 - (ii) the train crew **shall** stop before the crossing;
 - (iii) a qualified worker or one of the crew **shall** go ahead to the crossing and signal the train crew when the crossing is clear, and all road and pedestrian traffic has stopped or is clear of the crossing; and
 - (iv) the train crew may then proceed across the crossing at Low Speed.

Where conditions are clear and there is sufficient view from the driving position to ensure that there are no road vehicles or pedestrians in the vicinity, the train may continue the movement across the crossing at Low Speed.

5.7 TRAIN CREW VERIFYING AUTHORITIES AND OTHER INFORMATION

The following procedures apply:

- (a) For each approaching signal, points indication, speed sign or other trackside sign—
 - (i) the crew member at the controls of the locomotive **shall** obey its meaning; and
 - (ii) if the train crew consists of more than one crew member, each **shall** confirm and verbally call its meaning to the other crew members, and each **shall** obey its meaning.
- (b) In addition to (a) in EAS, the following apply:

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- (i) the crew member at the controls of the locomotive **shall** obey the meaning of the Authority and other information displayed; and
 - (ii) if the train crew consists of more than one crew member, each member of the train crew **shall** obey the meaning of the Authority and other information displayed.
- (c) In addition to (a) and (b) if a Train Authority is obtained manually, the following apply:
- (i) the current Train Authority **shall** be displayed in clear view of the crew member at the controls of the locomotive and its meaning **shall** be obeyed; and
 - (ii) if the train crew consists of more than one crew member, each member of the train crew **shall** obey the meaning of the Authority and any other information obtained manually.
- (d) In EAS and TOW, or when using a Train Authority on the approach to each crossing location, each member of the train crew **shall** again check the instructions on the display or Train Authority. They **shall** then verbally advise each other of its contents and ensure its meaning is obeyed by each train crew member.

5.8 TRAIN CREW FATIGUE OR OTHER INCAPACITY

The following procedures apply:

- (a) A train crew **shall not** commence or continue to operate, a train if their ability to operate a train safely is impaired due to incapacity, for example through illness, injury or fatigue.
- (b) Where incapacity has occurred after the commencement of duty, the train crew **shall—**
 - (i) report to train control, stop their train and obtain the appropriate Authority, as required by the circumstances;
 - (ii) not request Authority to proceed until their capacity to manage the train safely is restored or another train crew is provided.
- (c) At the completion of duty, the train crew **shall** complete a report detailing the circumstances of the incapacity and submit it to their organisation.

5.9 TRAIN DOCUMENTATION AND OTHER INSTRUCTIONS

The train crew **shall** act as follows:

- (a) Before commencing duty or as frequently as necessary, familiarise themselves with any notices and instructions relevant to their working.
- (b) During duty be in possession of, and familiar with, all train documents that are required for their train which may include the following:
 - (i) certificate attesting to train integrity;
 - (ii) train consist;
 - (iii) safeworking documentation;
 - (iv) speed restriction information;
 - (v) dangerous goods documentation; and
 - (vi) other documents.
- (c) At the completion of duty—
 - (i) if the crew is to change over, give the information to the train crew that is to take over the responsibility for the train; and

- (ii) at the final destination, give the documentation to the person appointed for its collection, or place it in the location provided for the purpose, as appropriate.

5.10 FIRE ON TRAIN

The train crew shall act as follows:

- (a) When any vehicle or freight on a train is on fire, as far as practicable, stop the train in a position where they can—
 - (i) attend to their own safety and that of any other persons on the locomotive, or on the train if passengers are involved; and
 - (ii) determine the extent of the fire and if dangerous goods are involved.
- (b) Immediately advise train control, in order to institute the appropriate Emergency Response Plan and Emergency Procedures for the train and for the location (e.g. electrified territory).
- (c) Determine if the fire can be dealt with on the spot using on-train emergency response procedures and the equipment provided on the train for the purpose.
- (d) If the burning vehicle(s) carry freight, determine if they should be isolated from the remainder of the train and not moved again until the danger has passed.
- (e) Consult with train control to determine if the train should continue with burning freight vehicle(s) to a convenient location where they can be dealt with or be detached.
- (f) If the freight vehicle(s) where the fire is situated are to be isolated from the remainder of the train, the train crew **shall**—
 - (i) secure the portion of train behind the fire and uncouple that portion of the train;
 - (ii) pull the front portion with the burning vehicle(s) forward and clear of the secured rear portion; and
 - (iii) uncouple the burning vehicles(s) and pull forward once again to isolate that portion.
- (g) The train crew **shall** remain in constant communication with train control to—
 - (i) seek assistance as required;
 - (ii) report actions that have been taken; and
 - (iii) arrange recovery, track clearance and whatever is required for the resumption of normal operations.

5.11 ROLL-BY WHEN TRAINS CROSS OR PASS ON SINGLE LINES

The following procedures apply:

- (a) Where there is no track circuiting or other system to determining that a train is in complete, at each cross or pass, the train crew **shall** visually confirm that the other train's end of train marker is in place.
- (b) Where safe and practical to do so, a roll by inspection **shall** be performed by the train crew of the stationary train.
- (c) Where train crews notice any irregularity, the other train crew and train control **shall** be immediately advised. The train with the irregularity **shall not** continue until the problem is further investigated and rectified.

6 SECTION 6: TRACK WORKING RULES

6.1 TRACK WORKER COMPETENCY

The following apply:

- (a) Track workers **shall** be competent in:
 - (i) Specified sections of the Code of Practice for Operations and Safeworking (this Code); and
 - (ii) Network owner specified competencies.
- (b) To be responsible for track working the track worker in charge **shall** be competent in the appropriate operational and practical requirements relating to—
 - (i) interface arrangements for network access, entry and exit, and associated documentation;
 - (ii) route and infrastructure knowledge for the track segment over which travel is to be undertaken by rail in track vehicles or machines;
 - (iii) infrastructure knowledge in relation to a work site or area where the work is to be performed;
 - (iv) the specific track vehicles and machines and other equipment to be used;
 - (v) the work to be performed;
 - (vi) the safety and conduct of all people involved at the work site; and
 - (vii) the use of LP, TOA, TWA, TRI, NAR.

NOTE: Where the track vehicle or machine is operating as a train, Train Authorities are used.

- (c) All track workers, who are required to be on or near the track, **shall** be certified as competent in track awareness.
- (d) Where a person (for example a visitor) not certified in track awareness is required to be on or near the track, a competent track worker **shall** accompany and be responsible for the person.
- (e) Only persons certified competent in track awareness may be present on or near the track using a NAR.

6.2 PROTECTION FROM APPROACHING MOVEMENTS

6.2.1 Planning for safety

The work site supervisor **shall** assess the work site and plan for safety. Planning for safety **shall** include, but not be limited to, the following considerations:

- (a) The correct choice between an LP, TOA, TWA, TRI or NAR for the type of work and equipment to be used.
- (b) Method of work site protection.
- (c) Assessing the physical characteristics specific to the work site.
- (d) Weather conditions, including visibility.
- (e) Noise generated by the type of work and equipment being used.
- (f) Track speed.
- (g) Adjacent tracks.
- (h) Direction of trains.

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- (i) Sighting distance required.
- (j) Appointment of look-out(s), where required.
- (k) Look-out positions.
- (l) Determining positions of safety.
- (m) Communications with train control and with trains.
- (n) Other hazards.
- (o) Briefing all concerned on site in relation to the approach of a train, in respect of—
 - (i) where to go when a movement approaches;
 - (ii) who will provide the warning of the approaching movement;
 - (iii) how the warning will be provided;
 - (iv) who will clear equipment from the track and the time needed to do so; and
 - (v) the maximum train speed at the work site.

6.2.2 Vigilance

Track workers **shall** be vigilant and not rely solely on the train timetable, schedule, train overviews or train monitoring systems for information as to the running of trains. Trains and other track vehicles and machines **may** run without any prior advice, or be in addition to or vary from timetable or schedule information.

6.2.3 Protection of work site limits from approaching movements— Summary

Work site limits are defined when the work site is established as an LP, TOA, TWA, TRI or NAR. Work sites are protected within these limits from approaching movements as follows:

- (a) **In an LP** as follows:
 - (i) train control **shall not** authorise trains, track vehicles or machines not associated with the LP, to enter the section where the LP is current; and
 - (ii) train, track vehicle and machine movements associated with the LP, entering and moving within the LP section, **shall** be managed by the overall work site supervisor responsible for the LP.
- (b) **In a TOA** as follows:
 - (i) train control **shall not** authorise trains to enter a section in which a TOA is current; and
 - (ii) train control **shall** limit other track vehicle and machine work sites or movements up to the limits of the TOA.
- (c) **In a TWA** as follows:
 - (i) TWA work site protection arrangements **shall** be established to stop any approaching movements before reaching the TWA work site.
- (d) **In a TRI** as follows:
 - (i) a TRI is limited to work where the track is not to be broken or obstructed and only involves the use of light track equipment;
 - (ii) anticipated movements by all trains and track vehicles and machines **shall** be received from train control; and
 - (iii) warning arrangements (automatic warning systems or look-outs) **shall** be positioned in conjunction with the TRI, to give workers sufficient warning time of approaching trains (see Clause 6.2.5).

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- (e) **In an NAR** as follows:
- (i) the NAR is limited to access to the infrastructure for short periods of time where the track is not to be broken or obstructed with equipment;
 - (ii) the qualified workers make their own arrangements for protection.

6.2.4 Warning of approaching movements

The following procedures apply:

- (a) Where provided, network owner approved automatic warning systems **may** be used to give warning of approaching movements.
- (b) Where automatic warning systems have not been provided or are impracticable, look-outs **shall** be used.

6.2.5 Use of Look-outs

The following procedures apply:

- (a) Where automatic warning systems are not being used or cannot be used, look-outs **shall** be used whenever approaching movements may not be seen or heard from the work site, for example—
 - (i) when parallel or adjacent lines are not closed to trains;
 - (ii) when the work site limits are not closed to trains; or
 - (iii) when track is restored for the passage of trains and workers remain in the vicinity of the track when trains are likely to approach.
- (b) The work site supervisor **shall** appoint competent look-outs whose sole duty is to give warning of approaching movements.
- (c) A reliable means of communicating warnings **shall** be used. An effective method of communicating warnings such as whistles or sirens **shall** be provided and used. A radio **may** be used to support the process.

*NOTE: Where look-outs are equipped to communicate directly with trains by radio, additional information **may** be obtained or exchanged between the work site and an approaching movement, for example:*

- *The length or other characteristics of the train.*
 - *The extent or other characteristics of the work site.*
- (d) Where a single look-out cannot adequately protect the site because the look-out cannot see far enough, the approaches are obstructed, or visibility is poor, additional look-outs **shall** be used.
 - (e) The look-out(s) **shall** be positioned at places that will allow the detection of approaching movements.
 - (f) Look-outs **shall** remain in position to protect against each approaching movement.
 - (g) The warning of the approaching movement **shall** be given in sufficient time to warn workers to move to positions of safety.
 - (h) Upon receiving the warning from the look-out, track workers **shall** move clear of the track and acknowledge the warning.
 - (i) Track workers **shall** be given the warning in sufficient time to—
 - (i) react to the warning of approaching movements;
 - (ii) remove their tools, equipment and materials from and clear of the track; and
 - (iii) finally move from the track and stand clear in a position of safety, at least 10 seconds before a train arrives, and remain clear until the train has passed by.
 - (j) The minimum warning time required **shall** be calculated as follows:

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- (i) at least 10 seconds to clear track before train arrives;
- (ii) reaction time;
- (iii) Time required to move the workers, tools, equipment and materials clear of the track.

A sample calculation is shown in Table 6.1.

TABLE 6.1
EXAMPLE OF HOW WARNING TIME IS CALCULATED

Clear of track before train arrives	10 seconds
Reaction time	5 seconds
Time required to move the workers, tools, equipment and materials clear of the track	10 seconds
Minimum warning time required—Total	25 seconds

- (k) The minimum sighting distance needed to see an approaching movement is dependent on the minimum warning time required and the maximum train speed and is determined from Table 6.2 as demonstrated in the following example:

Example: If the minimum warning time required is calculated from Item (j) as 25 seconds, and the maximum track speed in the area is 120 km/h, the minimum sighting distance of an approaching train from Table 6.2 is 833 metres. The look-out must therefore be positioned to be able to see an approaching train at least this far away in order to give the minimum warning time required.

TABLE 6.2
MINIMUM SIGHTING DISTANCE

Maximum train speed km/h	Minimum warning time in seconds					
	20	25	30	35	40	45
160	889 m	1111 m	1333 m	1556 m	1778 m	2000 m
150	831 m	1041 m	1248 m	1458 m	1665 m	1875 m
140	778 m	972 m	1167 m	1361 m	1556 m	1750 m
130	722 m	903 m	1083 m	1264 m	1445 m	1625 m
120	667 m	833 m	1000 m	1167 m	1333 m	1500 m
110	611 m	764 m	916 m	1070 m	1222 m	1375 m
100	556 m	694 m	833 m	972 m	1111 m	1250 m
90	500 m	625 m	750 m	875 m	1000 m	1125 m
80	444 m	556 m	667 m	778 m	889 m	1000 m
70	389 m	486 m	583 m	680 m	777 m	875 m
60	333 m	417 m	500 m	583 m	666 m	750 m
50	277 m	347 m	416 m	486 m	555 m	625 m
40	222 m	278 m	333 m	389 m	444 m	500 m
30	166 m	208 m	250 m	291 m	333 m	375 m
25	139 m	173 m	208 m	243 m	277 m	313 m
20	111 m	139 m	167 m	194 m	222 m	250 m
15	83 m	104 m	125 m	146 m	167 m	188 m

6.2.6 Positions of safety

Positions of safety are places as follows:

- (a) Where there is at least 3 metres clearance between the person and the nearest rail of any line.
- (b) A place which has been properly constructed as a refuge.
- (c) Where a suitable structure or physical barrier has been erected to provide protection.
- (d) Behind the safety line on a station platform.

6.2.7 Walking on or near the track

The following procedures apply:

- (a) Track workers may be required to walk on or near the track in connection with—
 - (i) an NAR;
 - (ii) look-out duties for a TRI;
 - (iii) placing or removing signs or detonating signals at a TWA or TOA work site; or
 - (iv) any other activity involving walking on or near the track.
- (b) The track worker **shall not** engage in any form of activity that will distract from the prime task of keeping continually vigilant while walking on or near the track. In addition, the track worker **shall**—
 - (i) be aware of the speed of trains, track vehicles and machines permitted on that particular section of track;
 - (ii) be aware that movements could approach from either direction on parallel or adjacent tracks;
 - (iii) not rely on others to give warning of approaching movements unless a look-out has been established for the purpose;
 - (iv) ensure high visibility clothing is worn;
 - (v) watch out and listen for approaching movements at all times;
 - (vi) not be distracted by other persons or events nearby; and
 - (vii) look frequently (approximately every 5 seconds is recommended) to ensure there is sufficient warning of approaching movements whether a movement is expected or not.
- (c) In the event the nature of the activity associated with walking on or near the track is to change, the track worker **shall** upgrade the occupancy status as necessary to ensure the appropriate level of protection from approaching trains is being provided.

6.2.8 Coloured clothing and equipment

When on or near the track, track workers **shall not**—

- (a) wear or place red or green clothing or equipment on or near the track; or
- (b) use lights in a manner that could be mistaken for signals.

6.2.9 Fixed signal indications

Track workers **shall not** use fixed signal indications as the means to indicate the occupancy status of the track for the purpose of track work, or protection from approaching movements.

6.3 WORK WITHIN YARD LIMITS

The following procedures apply:

- (a) Before entering or commencing work on any tracks or infrastructure within Yard Limits, on or connected to the network, the track worker **shall** comply with the formal interface arrangements for yard/network entry/exit, specific to the yard.
- (b) Interface arrangements may include, but not be limited to, the following considerations:
 - (i) establishing the identity of the current control Authority for the yard. The control Authority may, for example, be—
 - train control;
 - signal box; or
 - a local worker in attendance or at another location;
 - (ii) hours of business (the yard may be unattended and closed and access not permitted during certain times);
 - (iii) communications systems within the yard;
 - (iv) obtaining permission for yard entry, by rail, by other means;
 - (v) yard conditions (e.g. hazards, lighting, prohibited areas);
 - (vi) signalling operations within the yard (if any apply);
 - (vii) operation and security of points;
 - (viii) rollingstock security (against movement);
 - (ix) managing of movements through the yard, for example "through trains";
 - (x) local shunting activity;
 - (xi) local work, maintenance or storage areas;
 - (xii) working in the yard, including local protection arrangements;
 - (xiii) yard status and condition management;
 - (xiv) other work being performed within the yard;
 - (xv) local emergency procedures; and
 - (xvi) local notices and instructions.

6.4 TRACK VEHICLES AND MACHINES

6.4.1 Use on or near the running lines

Track vehicles and machines, to be used on or within 3 metres of the nearest running line, **shall** be used as follows:

- (a) When used on or within 3 metres of the nearest running line they **shall not** be left unattended.
- (b) When removed from the track, they **shall** be placed clear of the track and effectively secured against movement and unauthorised use.
- (c) When stabled on take-off rails, the take-off **shall** slope away from the track.
- (d) If to be used on track for movements for self-propelled vehicles, they **shall** be fitted with—
 - (i) white headlights to the front;
 - (ii) red tail-lights to the rear; and

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- (iii) flashing strobe light positioned to allow for all round visibility.
- (e) When on or next to the track they **shall** have all of lights listed in Item (d) switched on.
- (f) In the event lights fail or are not fitted, when on track, they **shall** be accompanied by a vehicle or vehicles that are fitted with lights that are functioning correctly.
Exception: A single vehicle suffering a failure of its lights is permitted to continue at Low Speed and clear the track as soon as possible.
- (g) When operating as a train, they **shall** display the track vehicle or machine identity.

6.4.2 Track vehicle and machine operation

A track worker in charge of a track vehicle or machine operation **shall**:

- (a) Ensure appropriate track vehicle and machine inspections have been conducted before operations commence on or near the running lines and equipment affecting safety is in good working order and fit for the purpose intended.
- (b) Not operate a defective track vehicle or machine on or near the running lines where the defect affects safety of operations, for example, defects associated with the track vehicle or machine such as—
 - (i) braking capability;
 - (ii) communications equipment;
 - (iii) lights; or
 - (iv) on/off tracking equipment.
- (c) Be aware of its load capacity and ensure that it is not exceeded.
- (d) Ensure that equipment and materials carried are secured and stowed safely so they cannot fall from the track vehicle or machine.
- (e) Not make unauthorised structural or mechanical alterations, nor add any additional fittings that could affect the operational specification of the track vehicle or machine.
- (f) Not carry passengers other than track workers for whom the work site supervisor or other worker in charge of a track vehicle or machine is responsible.
- (g) Be aware and conversant with locations of suitable take-off points for road-rail vehicles to or from the track over which such vehicle travel is to be undertaken.

6.4.3 Movement over level crossings

The following apply:

- (a) All level crossings **shall** be approached at a speed that will enable the track vehicle or machine to stop safely and avoid collisions with road vehicles or pedestrians.
- (b) Where two or more track vehicles or machines are travelling together, the machines **shall** close up before the level crossing in preparation for movement across the crossing with minimal practical separation.
- (c) Before moving over a level crossing equipped with automatic warning devices, the track vehicle or machine **shall**—
 - (i) stop before the crossing;
 - (ii) if two or more track vehicles or machines are travelling together, close up;
 - (iii) operate the manual switch if provided, to activate the crossing, wait for the traffic to stop and the crossing to be clear, then proceed across the crossing at Low Speed; or

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- (iv) if it is not practicable to operate the manual switch or if one is not provided, wait for all road and pedestrian traffic to stop and the crossing to be clear, then proceed across the crossing at Low Speed.

Exception: (c) does not apply where the movement involves track vehicles or machines classified for activating automatic warning devices at level crossings.

- (d) Before moving over a level crossing not equipped with automatic warning devices, the track vehicle or machine **shall**—
- (i) stop before the crossing;
 - (ii) if two or more track vehicles or machines are travelling together, close up; and
 - (iii) wait for all road and pedestrian traffic to stop and the crossing to be clear then proceed across the crossing at Low Speed.

Exception: Where conditions are clear and there is sufficient view from the track vehicle or machine to ensure there are no road vehicles or pedestrians in the vicinity, the track vehicle or machines permitted to continue the movement across the crossing at Low Speed.

6.4.4 Movement over points

The procedures in Clause 3.11.5 apply.

6.4.5 Travelling in convoy

The following procedures apply:

- (a) When track vehicles and machines are authorised to travel in convoy on the track, the track worker in charge of the movement **shall** ride on the leading unit.
- (b) The track vehicles and machines **shall** either be coupled together using a rigid coupling designed for the purpose, **or** the following provisions **shall** apply:
 - (i) the track worker in charge **shall** maintain effective communications with the driver of each track vehicle or machine travelling as part of the convoy;
 - (ii) the track worker driving each track vehicle or machine **shall** maintain a safe distance between that unit and the one ahead;
 - (iii) particular attention **shall** be given to the approach to level crossings and other places where the convoy is required to reduce speed, close up or stop safely, and is to obey the instructions of the track worker in charge before continuing; and
 - (iv) the track worker in charge **shall** ensure all track vehicles and machines in the convoy have completed the intended movement before reporting to train control.

6.4.6 Speeds not to be exceeded

The driver of a track vehicle or machine **shall not** exceed whichever is the lowest of—

- (a) The maximum authorised speed for the specified track vehicle or machine.
- (b) The maximum track speed.
- (c) Permanent or temporary speed restrictions that apply.
- (d) A speed that when travelling in convoy will enable the track vehicle or machine to stop safely in half the distance to the next track vehicle or machine ahead.
- (e) A speed that, on the approach to all level crossings, will enable the track vehicle or machine to stop safely and avoid collisions with road vehicles or pedestrians.

Exception: This clause does not apply where:

- the track vehicle or machine is classified for operation as a train, and

- the level crossing being approached is equipped with automatic warning devices.

6.5 GENERAL RESPONSIBILITIES OF THE TRACK WORKER IN CHARGE OF SAFETY

For each work site or movement on or near the track the track worker in charge of safety shall—

- (a) Ensure accurate time is maintained and is used for all procedures and communications.
- (b) Ensure everyone on or near a work site, for which the track worker is responsible—
 - (i) understands and complies with the rules, procedures and instructions to the extent that it relates to their duties; and
 - (ii) is correctly attired in high visibility clothing.
- (c) Be present at the work site before, during and at the completion of track work and be responsible for work site protection arrangements.
- (d) Ensure any equipment being used that affects safety is in proper working order.
- (e) Whilst on duty, be readily available to be contacted by train control, including establishing the method of communications to be used.
- (f) Report to train control faults in communication fixed equipment, for example, telephones or radios maintained for the use of track workers.
- (g) Report all accidents including near misses, to train control.
- (h) Not start, nor allow contractors or the public to start, any operation that may affect the track or works connected with them unless the proposed work has been—
 - (i) approved through the proper procedures; and
 - (ii) authorised by train control.
- (i) ensure that if the track worker in charge of an LP, TOA, TWA or TRI is to be changed whilst it is still current—
 - (i) a hand over is conducted between the incoming and outgoing track workers in charge, and an understanding reached on all issues affecting safe operations; and
 - (ii) train control is advised of the name of the new track worker in charge.

Appendix 1: Example Train Authority Form

TRAIN AUTHORITY FORM

Address Information (* Delete as necessary)

Train Authority No. Date/...../.....

*Train Crew *Locomotive/Rail Car No.

*Qualified Worker *Track Vehicles
 *Train No. or Machine Nos.

At Location name

Authority

.....

.....

.....

.....

.....

.....

Supporting information (* Delete as necessary)

.....

.....

.....

.....

.....

*Train Authority No has been issued to Train No..... to take the
 at

*Train Authority No has been issued to Train No..... to take the
 at

*Train Authority No has been issued to Train No..... to take the
 at

*Train No has not yet been issued with a Train
 Authority containing advice of the above crossing or passing.

Confirmation (* Delete as necessary)

Received at Locationhrs

Repeated by *Driverhrs

..... *Qualified Worker

..... Train Controller

Appendix 3: Example TOA Form

/ /	TOA FORM	TOA No.....
A. WORKSITE SUPERVISOR TO TRAIN CONTROL		From: Location
1. TOA is requested to work or travel:		
2. TOA Limits	km locations between km and km	Section
	In the Sig locations between Signal No and Signal No.	
3. Track clearance method: Take off Goods Sdg Other At (Location)		
4. TSR:	Nil As published As below	
	km/h between km and km Signs Y N	
5. Cancellation time and date: hrs / /		
6. Time and date of request: hrs / /		
7. Name and company:		
8. Contact mode:		

B1. TRAIN CONTROL TO WORKSITE SUPERVISOR		
9. Authority is given to work or travel:		Repeat 1. 2. 3. & 4. Worksite Supervisor verifies
10. Next train anticipated at entrance to the section:	At (Location) is	Train no at hrs
		Train no at hrs
11. Other TOAs, TWAs in section are:	TOA TWA between km and km	
	TOA TWA between km and km	
12. Report at: hrs To update 10. & 11.		
13. Clear and restore track for trains no later than: hrs for Train no		
14. The section is "blocked" against entry by trains by: Electrical blocking Manual blocking		
15. Foul track at: hrs / /		
16. Name and company:		
WORKSITE SUPERVISOR TO TRAIN CONTROL		
17. TOA No Is clear and the track is safe for passage of trains at:		hrs / /
18. Name and company:		

B2. TRAIN CONTROL TO WORKSITE SUPERVISOR		
9. Authority is given to work or travel:		Repeat 1. 2. 3. & 4. Worksite Supervisor verifies
10. Next train anticipated at entrance to the section:	At (Location) is	Train no at hrs
		Train no at hrs
11. Other TOAs, TWAs in section are:	TOA TWA between km and km	
	TOA TWA between km and km	
12. Report at: hrs To update 10. & 11.		
13. Clear and restore track for trains no later than: hrs for Train no		
14. The section is "blocked" against entry by trains by: Electrical blocking Manual blocking		
15. Foul track at: hrs / /		
16. Name and company:		
WORKSITE SUPERVISOR TO TRAIN CONTROL		
17. TOA No ... Is clear and the track is safe for passage of trains at:		hrs / /
18. Name and company:		

C. WORKSITE SUPERVISOR TO TRAIN CONTROL		
21. Next TOA	km locations between km and km	Section
	In the Sig locations between Signal No and Signal No.	
Location track Main line Crossing loop Other		
at hrs on / / To be advised		

Tick if applicable

Completed forms must be retained/submitted for audit

Note: Additional TRAIN CONTROL TO WORKSITE SUPERVISOR sections may be added as B3, B4 etc and repeat 9. – 18

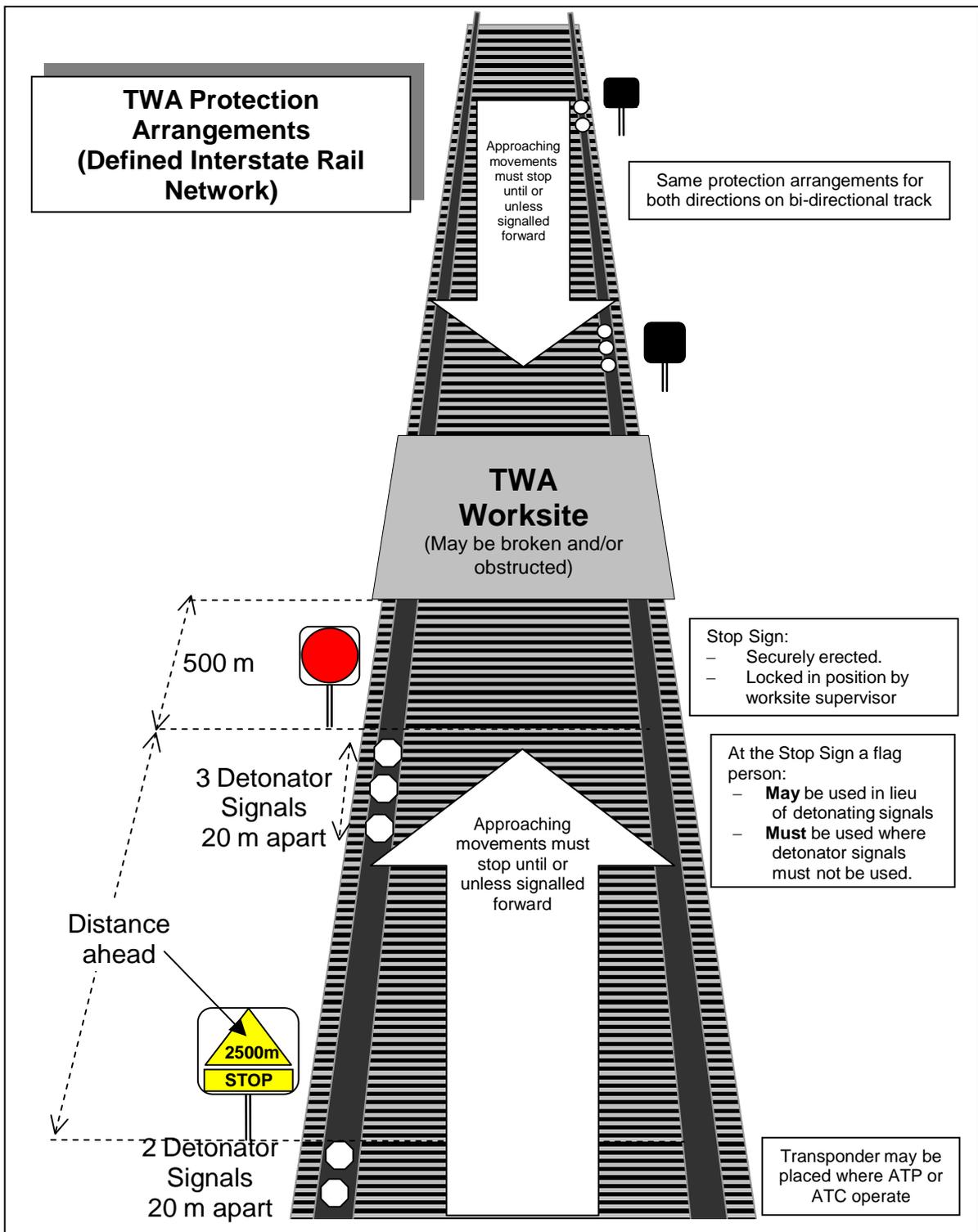
Appendix 4: Example Track Work Authority Advice Form

/ /	TRACK WORK AUTHORITY ADVICE FORM	No.....
TRAIN CONTROL TO TRAIN CREW		
To the Train Crew of Train No. _____ at _____ (location)		
The track is fouled with: _____		
Between: _____ km and _____ km		
In the: _____ to _____ Section		
# Stop your train at _____ km unless or until signalled to proceed		
Associated speed restrictions are:		
Nil	As published	As below
_____ km/h	between _____ km and _____ km	_____ km Signs Y N
_____ km/h	between _____ km and _____ km	_____ km Signs Y N
Repeated by:		
	Train Controller	at _____ hrs
	Driver*	at _____ hrs
	Qualified Worker*	at _____ hrs

Completed forms must be retained/submitted for audit

- # Point of stoppage must be the site of Stop Sign
- Tick if applicable
- * Delete words not required

Appendix 5: TWA Protection Arrangements



Note:

- Distances shown are specified for the Defined Interstate Rail Network
- In double or multi line areas protection is placed on each affected track

Appendix 6: Example TWA Form

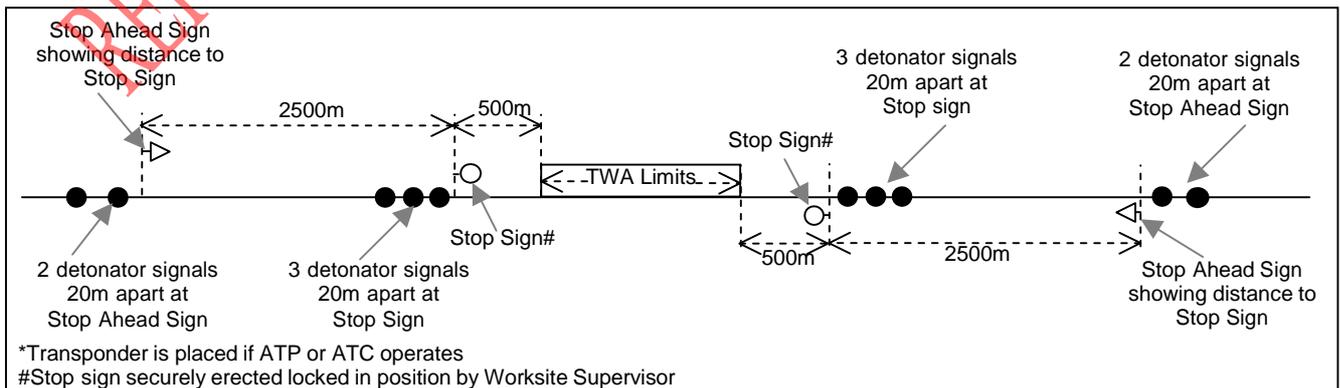
/ /	TWA FORM	TWA No.....
WORKSITE SUPERVISOR TO TRAIN CONTROL		From: Location
1. TWA is requested to work or travel:		
2. TWA Limits	km locations between km and km	Section
	In the Sig locations between Signal No. and Signal No.	Location track Main line Crossing loop Other
3. TSRs:	Nil As published As below	km Signs Y N
	km/h between km and km	km Signs Y N
4. Stop Signs will be erected at: km and km		
5. Cancellation time and date: hrs / /		
6. Time and date of request: hrs / /		
7. Name and company:		
8. Contact mode:		

TRAIN CONTROL TO WORKSITE SUPERVISOR		
9. Authority is given to work or travel: Repeat 1. 2. 3. & 4. Worksite Supervisor verifies		
10. Trains and times anticipated to enter the section:	Train no at hrs	Train no at hrs
	Train no at hrs	Train no at hrs
	Train no at hrs	Train no at hrs
	Train no at hrs	Train no at hrs
11. Other TWAs, TOAs in section are:	TWA TOA between and	
	TWA TOA between and	
12. TWA Advice to train crews: TWA advice form Other (specify)		
13. Report at: hrs To update 10. & 11.		
14. Clear track no later than: hrs		
15. Foul track at: hrs / /		
16. Name and company:		

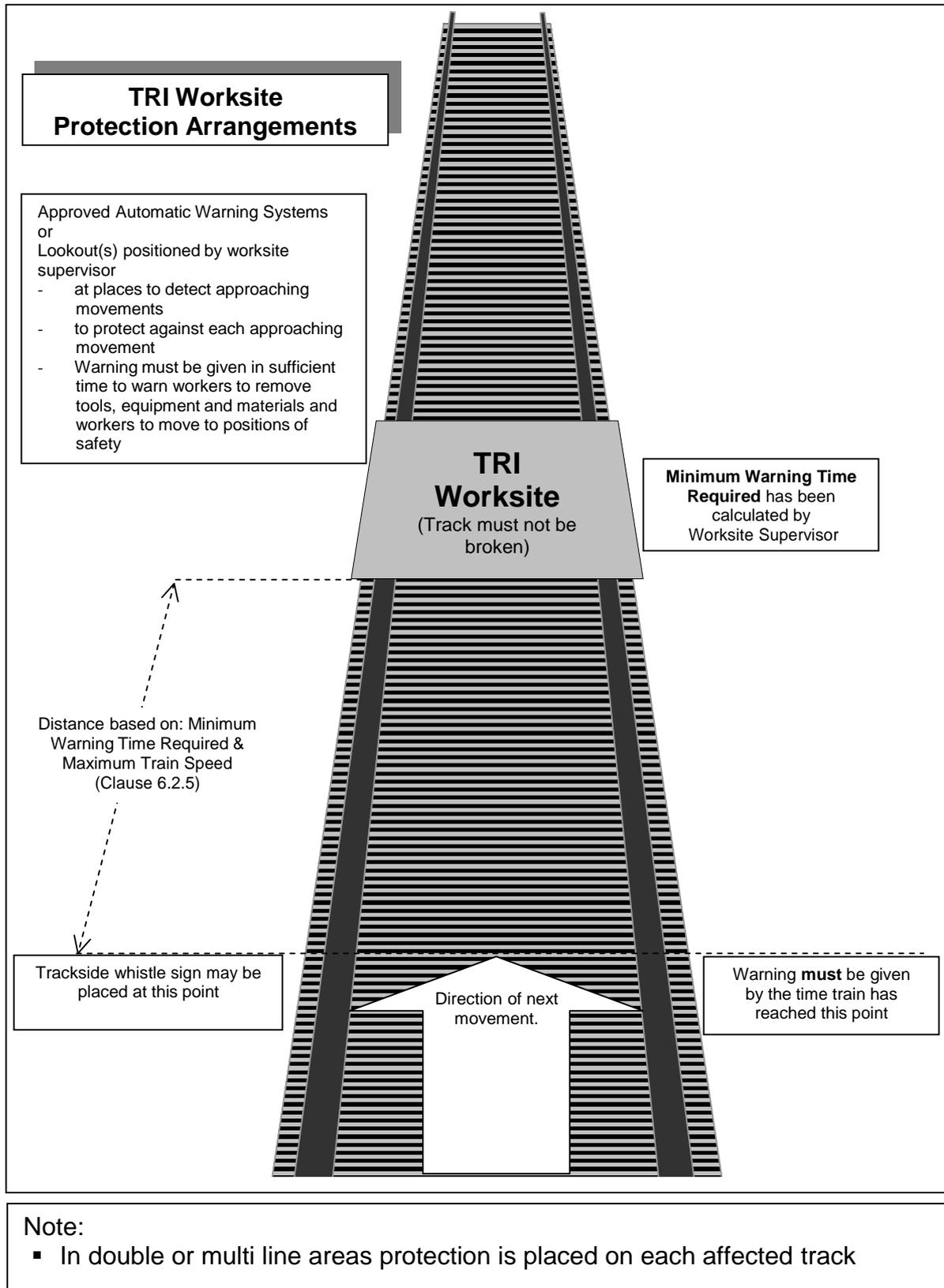
WORKSITE SUPERVISOR TO TRAIN CONTROL		
17. TWA No is clear and the track is safe for passage of trains at: hrs		
18. Next TWA	km locations between km and km	Section
	In the Sig locations between Signal No. and Signal No.	Location track Main line Crossing loop Other
19. TSR:	Nil As published As below	km Signs Y N
	km/h between km and km	km Signs Y N
20. Stop Signs will be erected at: km and km		
21. Name and company:		

Tick if applicable

Completed forms must be retained/submitted for audit



Appendix 7: TRI Worksite Protection Arrangements



Appendix 8: Example TRI Form

TRI FORM

Name: _____ **At Location:** _____ **Date:** ____ / ____ / ____

Vehicle/Work Type _____

Trains Today	Remarks	Train times		Time Received
		*To enter section	*At worksite	
No _____	_____	_____ hrs	_____ hrs	_____ hrs
No _____	_____	_____ hrs	_____ hrs	_____ hrs
No _____	_____	_____ hrs	_____ hrs	_____ hrs
No _____	_____	_____ hrs	_____ hrs	_____ hrs
No _____	_____	_____ hrs	_____ hrs	_____ hrs
No _____	_____	_____ hrs	_____ hrs	_____ hrs
No _____	_____	_____ hrs	_____ hrs	_____ hrs
No _____	_____	_____ hrs	_____ hrs	_____ hrs
No _____	_____	_____ hrs	_____ hrs	_____ hrs
No _____	_____	_____ hrs	_____ hrs	_____ hrs

*Travel _____ to _____ In the
 *#Worksite _____ to _____ Section

*Report Clear/without clearing from track by: _____ hrs

Train controller's name _____ Recipient's signature _____

*Travel _____ to _____ In the
 *#Worksite _____ to _____ Section

*Report Clear/without clearing from track by: _____ hrs

Train controller's name _____ Recipient's signature _____

*Travel _____ to _____ In the
 *#Worksite _____ to _____ Section

*Report Clear/without clearing from track by: _____ hrs

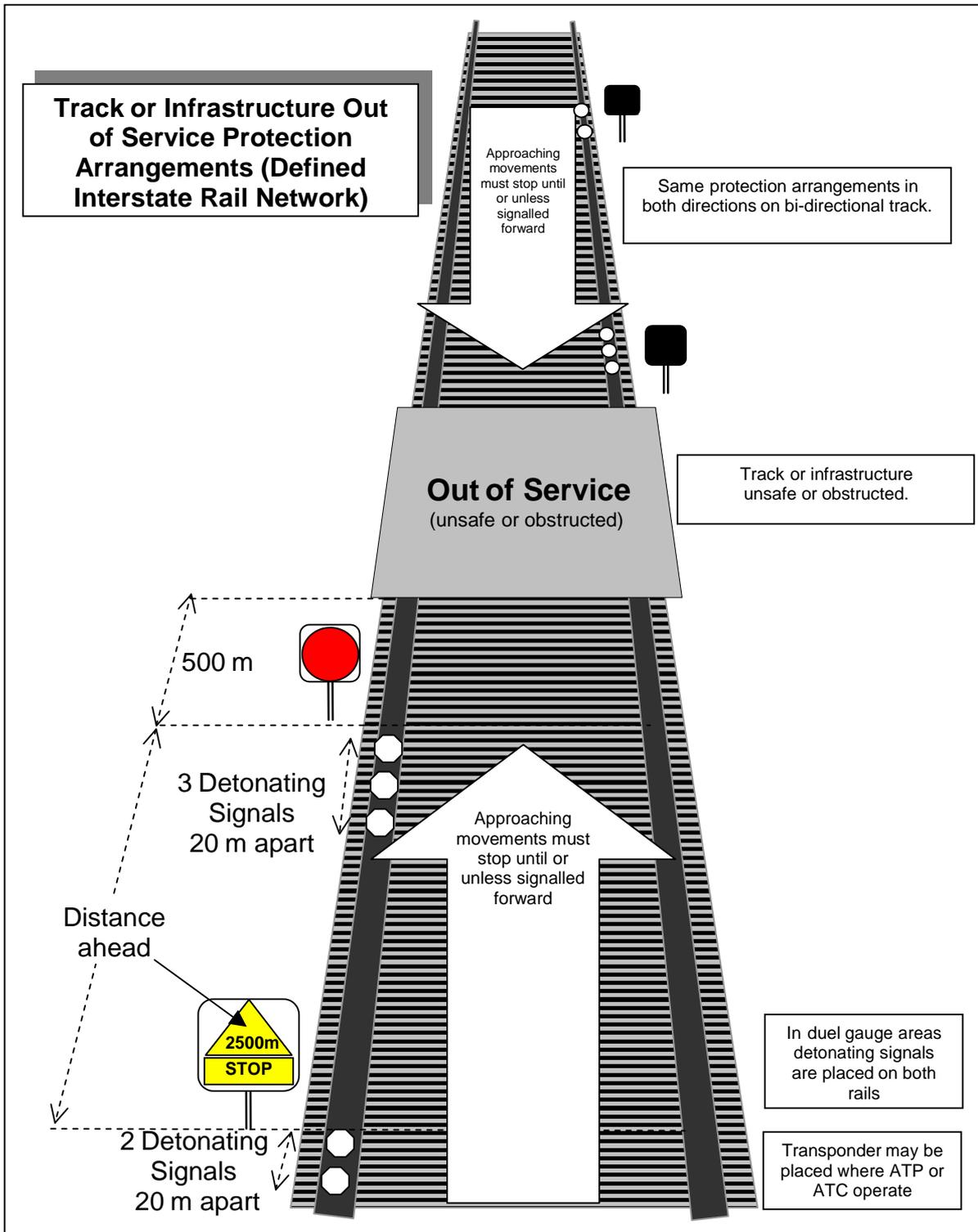
Train controller's name _____ Recipient's signature _____

Completed forms must be retained/submitted for audit

*Delete words not required
 #Planning for safety has been completed

Note: Form made be prepared with additional repeated sections.

Appendix 9: Track or Infrastructure Out of Service Protection Arrangements



Notes:

- Distances shown are specified for the Defined Interstate Rail Network
- In double or multi line areas protection is placed on each affected track