



AUSTRALIAN RAIL TRACK CORPORATION LTD

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Engineering Standard – NSW

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Signalling

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Arrangements of Infrastructure at Signalling to Train Order and Token Area Boundaries

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		Refer to Reference Number	H Olsen	M Owens	Refer to minutes of meeting 12/08/04

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About This Standard

This Principle addresses the arrangements of Infrastructure at Signalling to Train Order and Token Area Boundaries that are referenced throughout these Principles and with regard to the descriptions and definitions currently accepted and in use.

Document History

Primary Source – RIC Standard SC 00 13 01 24 SP Version 1.1

List of Amendments –

ISSUE	DATE	CLAUSE	DESCRIPTION
1.1	01/09/2004		<ul style="list-style-type: none">▪ Reformatting to ARTC Standard
1.2	14/03/2005	Disclaimer	<ul style="list-style-type: none">▪ Minor editorial change▪ Footer reformatted

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24. ARRANGEMENTS OF INFRASTRUCTURE AT TRAIN ORDER BOUNDARIES

24.1 INTRODUCTION

This principle details the specific arrangement of infrastructure between a train order section, and a signalled area. The preferred arrangement provides for a 500m separation between the two safeworking systems.

24.2 ARRANGEMENT WHERE A TRAIN ORDER SECTION IS ADJACENT TO A SIGNALLED AREA.

24.2.1 WHERE SHUNTING OUTSIDE THE HOME SIGNAL IS NOT REQUIRED

As trains approaching a signalled interlocking from a train order section will not encounter another train order location, a landmark is to be provided before the home signal in the normal way. (If circumstances require, this may be a distant signal).

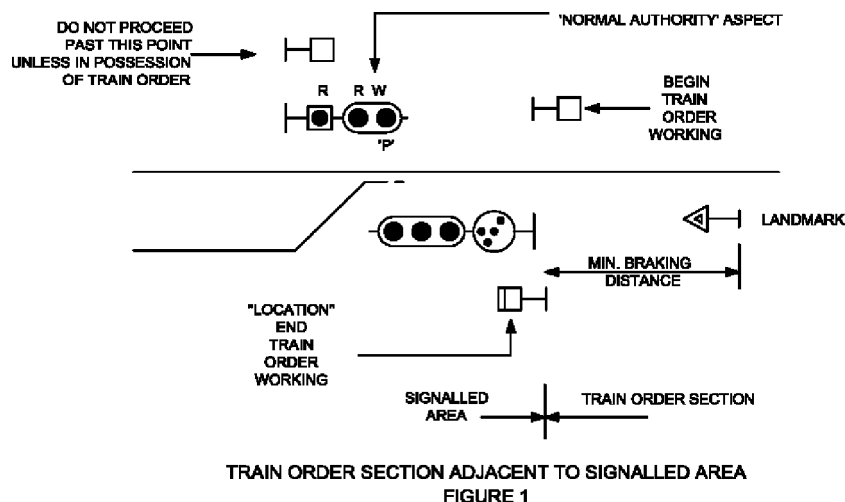
The "End Train Order Working" board is to be located adjacent to the home signal. The location name board is to be mounted above the End Train Order Working Board.

The starting signal into the train order section is to display a "Normal Authority" indication in lieu of a green light.

A board inscribed "DO NOT PROCEED PAST THIS POINT UNLESS IN POSSESSION OF TRAIN ORDER" is to be provided adjacent to the Starting Signal.

The "Begin Train Order Working" board is located adjacent to the "End Train Order Working" board.

A diagram of the arrangements is shown in figure 1.



24.2.2 WHERE SHUNTING OUTSIDE THE HOME SIGNAL IS REQUIRED

This arrangement may be adopted where it is necessary to shunt outside the home signal, but it is not desired to block the train order section.

A "Yard Limit" board is to be located a minimum of 2 Km from the home signal, and the "Location Board" is to be a minimum of braking distance from the Yard Limit board.

To define the start of the train order location for trains entering from the signalled area, a location name plate is mounted above a Yard Limit board installed adjacent to the home signal.

In order to discriminate between the signalled location as a termination point for train orders, and the train order location itself that exists between the home signal and the "Yard Limit" board, the Location board name plate is to be inscribed with the signalled location name plus "North, South, East or West" as appropriate.

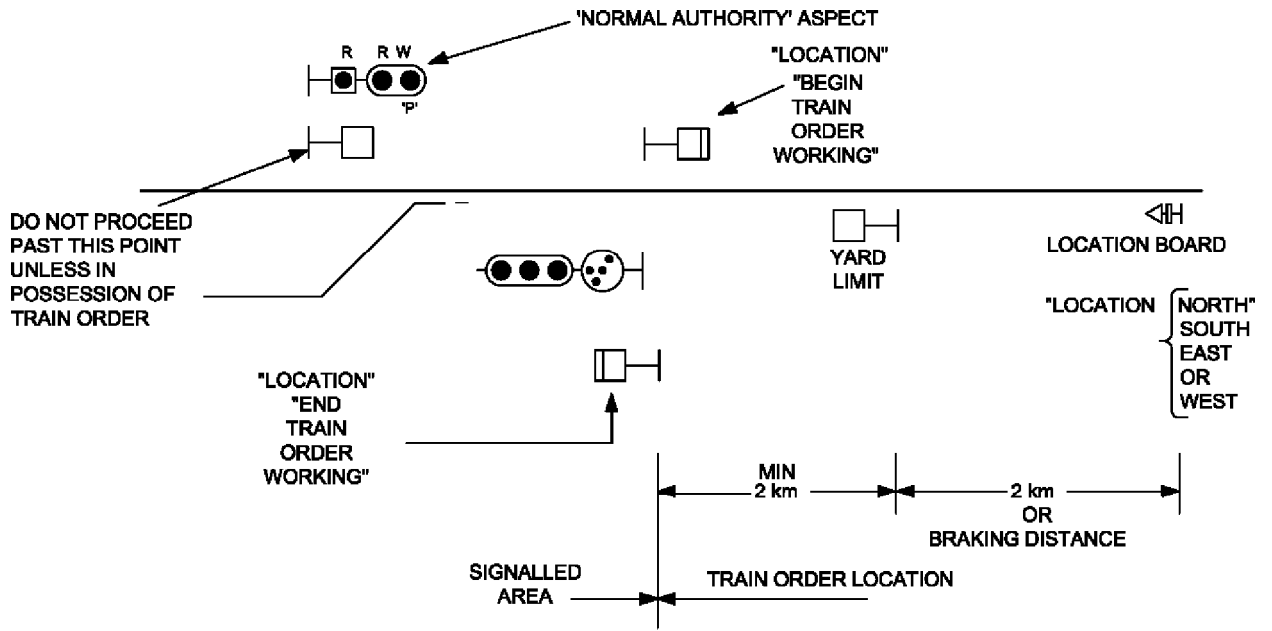
The starting signal into the train order section is to display a "Normal Authority" indication in lieu of a green light.

A board inscribed "DO NOT PROCEED PAST THIS POINT UNLESS IN POSSESSION OF TRAIN ORDER" is to be provided adjacent to the Starting Signal.

The "Begin Train Order Working" board is located adjacent to the "End Train Order Working" board.

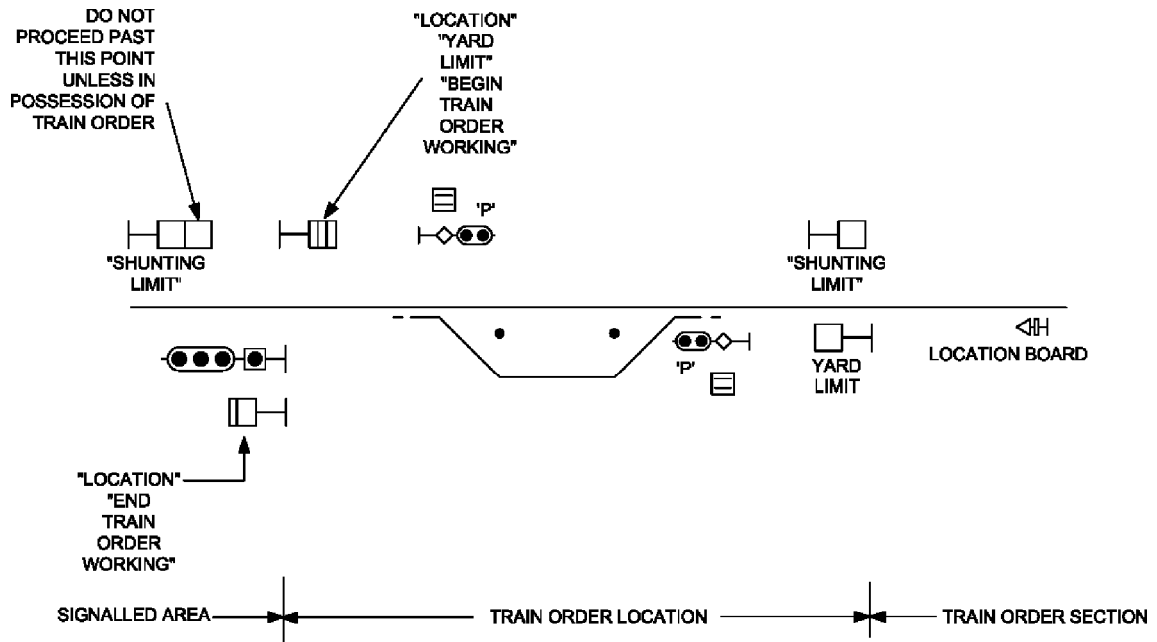
Should a distant signal be required this is to be installed with the same requirements as a Repeater for a Main Line Indicator in Principle 19.2.6. Distant signals should be track circuited and preferably three position.

A diagram of the arrangements is shown in figures 2A and 2B.



TRAIN ORDER LOCATION ADJACENT TO SIGNALLED AREA

FIGURE 2A

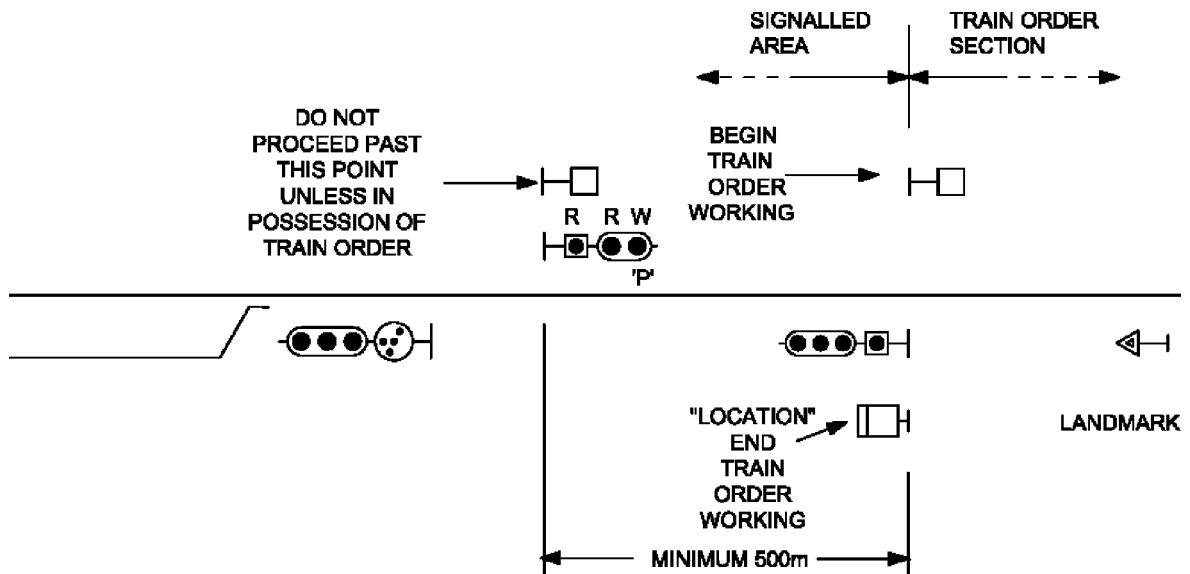


TRAIN ORDER LOCATION ADJACENT TO SIGNALLED AREA

FIGURE 2B

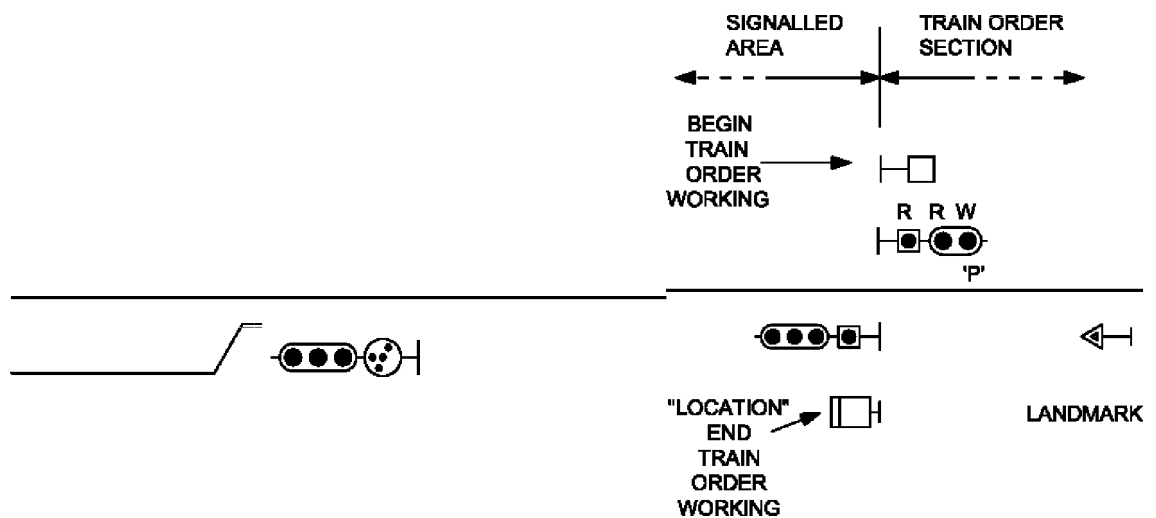
24.3 ARRANGEMENT WHERE A DEDICATED STARTING SIGNAL IS PROVIDED

This arrangement which is used to facilitate shunting without blocking the section is shown in figures 3A & 3B.



TRAIN ORDER SECTION ADJACENT TO SIGNALLED AREA
 PREFERRED ARRANGEMENT WHERE DEDICATED STARTING SIGNAL PROVIDED

FIGURE 3A

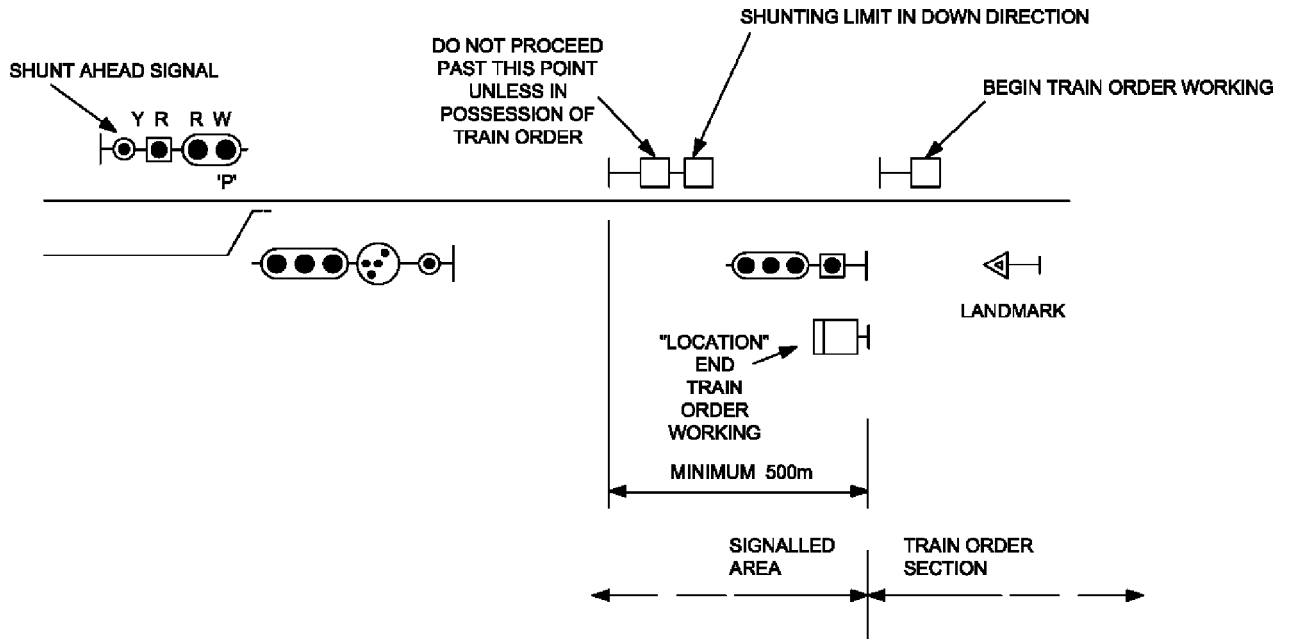


TRAIN ORDER SECTION ADJACENT TO SIGNALLED AREA
 ALTERNATIVE ARRANGEMENT WHERE DEDICATED STARTING SIGNAL PROVIDED

FIGURE 3B

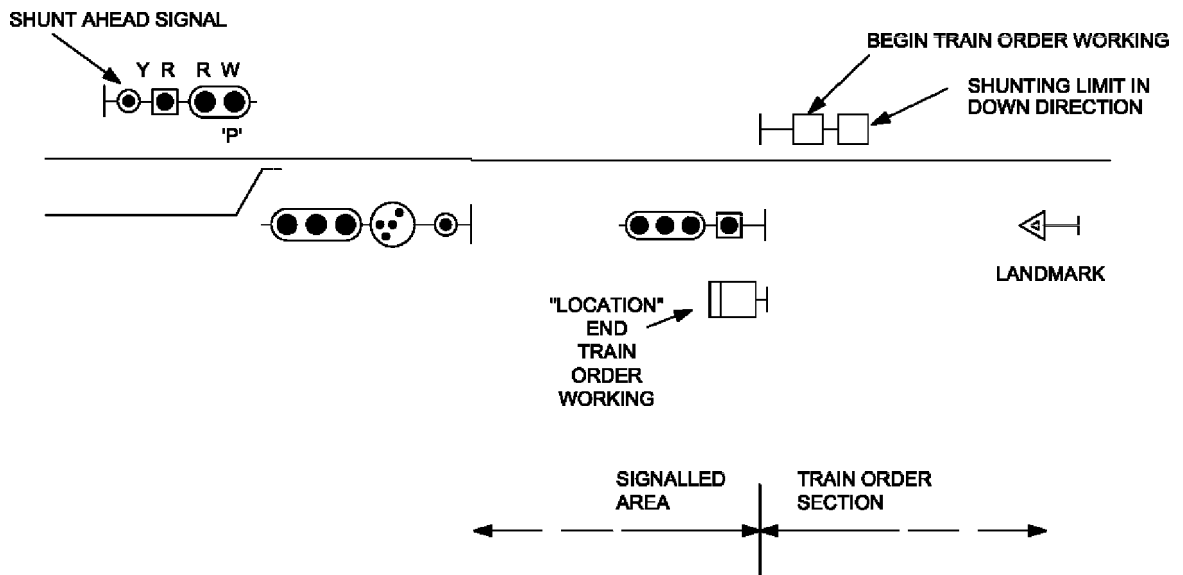
24.4 ARRANGEMENT WHERE A "SHUNTING LIMIT" BOARD IS PROVIDED

This arrangement is a variation to 24.3 above and is shown in figures 4A & 4B.



TRAIN ORDER SECTION ADJACENT TO SIGNALLED AREA
 PREFERRED ARRANGEMENT WHERE SHUNTING LIMIT BOARD PROVIDED

FIGURE 4A



TRAIN ORDER SECTION ADJACENT TO SIGNALLED AREA
 ALTERNATIVE ARRANGEMENT WHERE SHUNTING LIMIT BOARD PROVIDED

FIGURE 4B

It should be noted that a shunting signal is normally required on the Starting Signal for movements up to the Shunting Limit board. A pulsating white "Normal Authority" indication is displayed for through trains that would require a train order.

A board inscribed "DO NOT PROCEED PAST THIS POINT UNLESS IN POSSESSION OF TRAIN ORDER" is to be provided adjacent to the shunting limit

board, where this is not located at the same location as the "End Train Order Working" board.

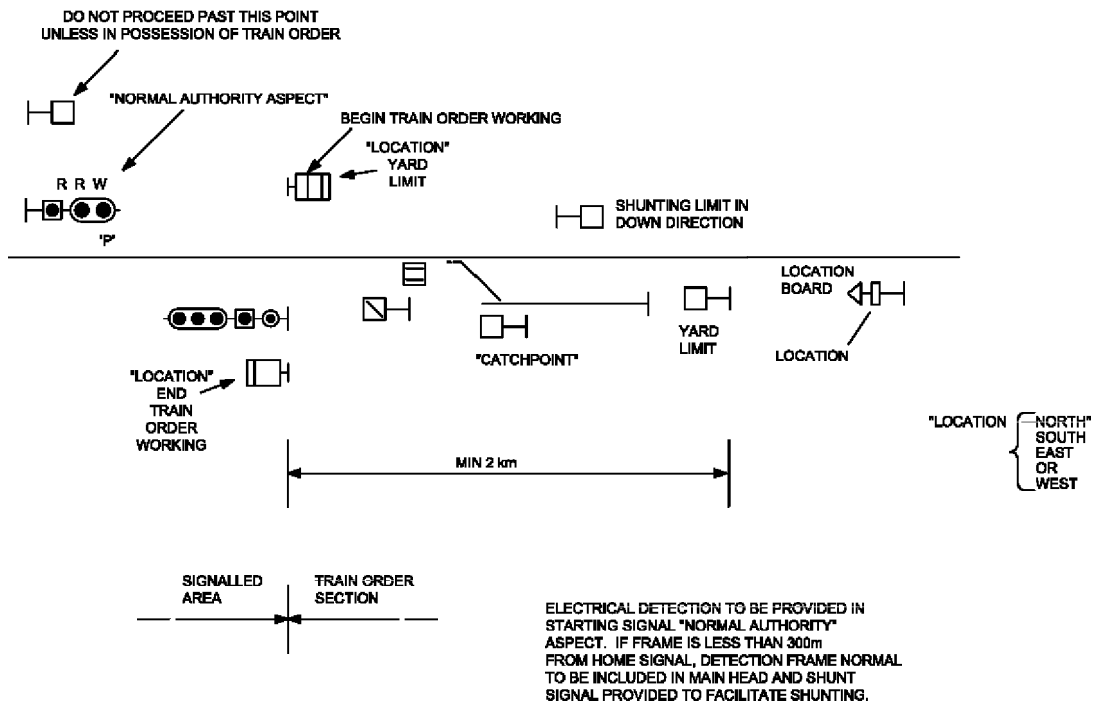
24.5 ARRANGEMENT WITH A SIDING WITHIN A TRAIN ORDER LOCATION ADJACENT TO A SIGNALLED INTERLOCKING

When the ground frame is provided with a mechanical point indicator, and the frame is 300m or less from the home signal, the ground frame normal is to be proved in the main head aspect of the home signal to prevent a possible 'read through' of the mechanical point indicator. In these situations a shunt signal may be required to facilitate shunting of the siding.

The "Normal Authority" indication on the starting signal must also detect the points normal.

Should the frame be closer than 300m to the home signal, but the home signal cannot be seen from the ground frame (or beyond), the requirement for proving the ground frame normal in the home signal main aspect may be omitted, however the points detection will still be required in the starting signal "Normal Authority" indication.

Refer to figure 5.



TRAIN ORDER LOCATION AND SIDING ADJACENT TO SIGNALLED AREA

FIGURE 5