



SECTION 4

TRAIN MARSHALLING

Version: 2.1

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General Instruction Pages

Train Operating Conditions Manual

Document control

Revision	Date of Approval	Summary of change
1.0	18/10/11	For publication
2.0	8/7/16	Reviewed for currency
2.1	18/12/2020	Moved B4 brake type to limit non-ECP trains to 1500m

Summary of changes from previous version

Page	Summary of change
2	Moved B4 brake type to limit non-ECP trains to 1500m as trains with pneumatically controlled brakes longer than 1500m cannot meet the signalling requirements on the CRN.

TRAIN MARSHALLING

Marshalling involves making up the vehicle consist of a train.

There are a number of marshalling restrictions that apply to freight trains to ensure safe and reliable operation.

Loaded vehicles should be marshalled immediately behind the locomotive(s), where possible. The position of a vehicle within a train is also determined by:

- the draw capacity
- brake equipment type
- main reservoir hoses (where fitted)
- type of vehicle (e.g. wooden body)
- vehicle destination
- dangerous goods
- length difference between adjacent vehicles
- independent brake fitted ('B' wagons)
- Assisting (banking) the train from the rear

The overall length of a train includes all locomotives whether powering, off line, dead attached or banking.

DRAW CAPACITY

The draw capacity of a vehicle is determined by the:

- coupler strength
- draft gear capacity
- or underframe strength

whichever is the weakest link, and is specified for each vehicle type in **Section 10 Locomotives and Rolling Stock Data** pages.

TRAIN LENGTH RESTRICTIONS DUE TO BRAKE TYPE

The brakes on a train apply and release due to changes in pressure in the brake pipe. These pressure changes are less definite the further the vehicle is from the locomotive(s). To ensure that the brakes on vehicles operate correctly towards the rear end of a train, operating limits have been determined based on the brake equipment sensitivity. Less sensitive equipment must be marshalled towards the front of a train where the pressure change is more prominent.

When a train is being marshalled at its point of origin, remarshalled or has vehicles attached enroute the **brake type** listed in **Section 10 Locomotives and Rolling Stock Data** pages must be checked against the following table to ensure these limits are not exceeded. The train length includes all locomotives on the train.

Brake type	Allowable vehicle position in train
B1	Any position in the first 900 metres of train
B2, B3 & B4	Any position in the first 1500 metres of train
E1	Any position in train (all locomotives and wagons ECP braked)

MAIN RESERVOIR

Some vehicles are fitted with a main reservoir pipe and hoses. The main reservoir may be used to recharge the air brake system on the vehicle and/or operate pneumatic equipment such as air operated doors or a pneumatic discharge system.

On trains containing vehicles with a main reservoir pipe, these vehicles should be marshalled together and coupled to the locomotive(s) or to any other vehicles with main reservoir hoses, which are already attached to the locomotive(s).

Where main reservoir hoses are duplicated at each end of a vehicle, all hoses should be coupled and all coupling cocks opened:

- between locomotives
- between the rear locomotive and the first vehicle
- and between the vehicles

On some sections of descending steeply graded track, operating restrictions may apply to the total train length/mass of loaded trains in the case where “two pipe” main reservoir equipped vehicles are not marshalled at the front of the train.

Vehicles that are fitted with a main reservoir pipe are identified in Section 10 Locomotives and Rolling Stock Data pages.

- indicates that the vehicle is fitted with a “two pipe” air brake system. The main reservoir pipe recharges the air brake system.
- indicates that the vehicle is fitted with a main reservoir pipe but it does not recharge the air brake system from that pipe. This vehicle can be marshalled anywhere in a two pipe train but is not categorized as a “two pipe” vehicle.

WOODEN BODIED VEHICLES

A locomotive hauled train conveying wooden-bodied vehicles at either end of the consist must be worked as a block train unless both terminal vehicles are steel strengthened or they are unoccupied for the duration of the journey

A self propelled train containing wooden-bodied vehicles (such as CPH railcars) must be worked as a block train unless such vehicles are fitted with approved hazard warning lights at each terminal end and approved impact resistant barriers on the front and rear windows.

LOCOMOTIVE HAULED PASSENGER CARS ON FREIGHT TRAINS

Locomotive hauled passenger cars may be marshalled empty anywhere on a freight train, within normal marshalling restrictions, and operated under the same conditions as a freight vehicle.

If a passenger vehicle is the last vehicle on a train, an approved end of train marker must be fitted to the rear of that vehicle.

TEST ACCOMMODATION AND CREW CARS

Test accommodation vehicles or crew cars may be marshalled anywhere within a train consist as determined by the operator or staff travelling on those vehicle(s) and with agreement of the Network Manager.

VEHICLES UNDER TEST

The approval of the Network Manager is required before any vehicle or train is permitted to undergo on-track tests.

DANGEROUS GOODS

All vehicles containing dangerous goods must be labelled in accordance with the provisions of the Australian Dangerous Goods Code (ADG Code).

Shunting of vehicles containing or carrying dangerous goods shall be in accordance with Safeworking Rules.

Separation between dangerous goods on rail wagons and marshalling of rolling stock containing dangerous goods must comply with the provisions of Volume 2 Part 9 of the current ADG Code and any regulations, provisions or exemptions to that code as approved by the Competent Authority.