



Rethinking safety through  
**INCLUSION**  
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**WELLBEING**

**RAIL**

**ELEMENT 17A**

20/10/2023

# COMMISSIONING OF ROLLING STOCK

## PURPOSE AND SCOPE

The purpose of this Procedure is to advise Laing O'Rourke personnel involved in the commissioning of rolling stock of the processes to be applied during the commissioning phase. This Procedure needs to be read in conjunction with **Element 17F Design Management and Certification of Rolling Stock**, as well as **Element 16A Procurement of Rolling Stock**. Other procedures will support specific issues associated with the commissioning and subsequent operation and maintenance of the rolling stock.

This Procedure applies to all items of rolling stock purchased, or leased by Laing O'Rourke, for the railway operations they will be engaged in throughout Australia.

Whilst the commissioning process will be generic across the country, there will be specific requirements set by the relevant Rail Infrastructure Manager (RIM) for the network on whose railway the rolling stock will operate. The registration process is defined in **Element 17J Registration of Rolling Stock**.

### 1.0 PROCEDURES

For any new type of rolling stock, or the re-introduction of a type of Rolling Stock not used within the past 3 years, Office of the National Rail Safety Regulator (ONRSR) must be notified as per the Rail Safety National Law (RSNL). Select shall provide all details to the Rail Safety and Compliance Manager for the required notification to be lodged at least 28 Days prior to the introduction into service.

Commissioning has two purposes:

- To complete the process of determining compliance with the design and construction standards/processes to assure Laing O'Rourke and then the Regulator that the item has been designed, built, and tested in accordance with acceptable standards
- To demonstrate that the performance of the item meets the requirements of the Rail Infrastructure Manager (RIM) – as called up in the Vehicle Information Packs issued by each RIM.

Inspection and testing of the item of rolling stock shall be undertaken prior to acceptance of the item at the premises of the manufacturer or supplier, to ensure the item meets the specific criteria determined, as part of the purchasing process. Records of this detailed analysis will be compiled and retained by the people involved in the analysis.

Commissioning of rolling stock is an essential element in ensuring the safety integrity of the item of rolling stock and shall be conducted by suitably qualified and competent personnel in accordance with the following:

### 2.0 INSPECTION AND TEST PLAN

An Inspection and Test Plan shall be developed and cover the following items:

- The independence of personnel performing the inspection and testing which could include manufacturers or suppliers as well as Laing O'Rourke and Select personnel
- The compatibility between new or modified rolling stock and other functional areas with which it will interface
- Verification that the rolling stock conforms to the design and operating parameters of the Rail Infrastructure Manager as advised to the respective party i.e. Laing O'Rourke or Select
- Validation that the rolling stock conforms to the required safety standards and Rail Infrastructure Managers' requirements as advised to the respective party i.e. Laing O'Rourke or Select



- The need to ensure safe transition during the handover, acceptance or reintroduction phase as previously determined in **Element 16A Procurement of Rolling Stock**
- Allocating the item of rolling stock an identification number (refer E16A)
- Inclusion of the item of rolling stock in the operational fleet (refer E17B)
- The provision of operator's manuals, maintenance manuals and as built drawings where relevant (Refer **Element 16A Procurement of Rolling Stock**)

The Inspection and Test Plan can either be developed by the manufacturer, supplier or by Laing O'Rourke as part of this commissioning process and shall be reviewed and approved by Select.

### 3.0 COMMISSIONING TESTS

Testing and inspections shall be undertaken in accordance with the criteria set out in AS7501:2019 and any specific criteria required by the RIM As part of the in-service safety inspections, consideration should also be given to incorporating Safety Critical Items into the commissioning process with the relevant items being determined by Select.

Detailed commissioning test checklists (e.g., factory acceptance checklist) will be developed for each item of rolling stock by Select and shall be completed by the nominated person involved in the commissioning process.

Of particular importance is the registration requirements for items of rolling stock required to operate on the respective RIM's railway.

Where the RIM requires an Engineers Report it shall include as a minimum the following items:

- An assessment of the base road vehicle's suitability to meet the proposed on-track task. This needs to analyse the rolling stock outline, e.g., GVM, axle load distribution, tyre configuration
- An assessment of the rail equipment and mounting design for its suitability to support and guide the vehicle, including:
  - Structural integrity of the equipment for the expected loading
  - Method of attachment and the attachment integrity
  - Structural integrity of the vehicle chassis (due to difference in load paths of the rail guidance gear compared to the standard suspension)
  - System geometry and method of locking (such as over centre design)
  - Suspension design adequacy in terms of spring capacity and optimum operating range
  - Wheel design for expected loading and load eccentricity, including wheel diameter, tread profile and bearing capacity
- An assessment of ancillary equipment added to the vehicle to produce its on-track functionality, including an assessment of the integrity of add-ons such as elevated work platforms, securing devices, vehicle stability for elevated and/or eccentric loading, including WHS design registration number
- Check rail guidance and ancillary equipment design for relevant standards compliance, including confirmation that the relevant components have been designed to a relevant acceptable standard (such as RISSB's AS7500 series)
- Inspection of the final road/rail vehicle construction to include:
  - A visual inspection of the finished vehicle for compliance with the reviewed design
  - A review of the inspection and test records for compliance with the rail infrastructure manager's standards



- Arrange for the issue of an inspection report certifying that the vehicle design and construction has been assessed and is deemed safe to operate on track, which needs to include diagrammatic/photographic evidence of the vehicle and its attachments as well as:
  - Vehicle Make/model
  - Vehicle VIN number
  - Rail Equipment make and serial number
  - Add-on Equipment Make and serial number
  - New GVM
  - Wheel load distribution

The report should clearly state what on-track function/s the vehicle was designed for, as well as:

- Design specifications clearly identified
- Design to include interlocking system
- Provision of adequate visual displays
- Advice of controls to operators
- Horn fitted appropriate to environment

Registration should then be provided by the Rail Infrastructure Manager, with details entered in the relative register in due course. This process is defined in detail in Procedure **Element 17J Registration of Rolling Stock**.

Details of any restrictions or conditions of operations will then be incorporated in the relative operating process for the respective item of rolling stock and incorporated in the Safe Work Method Statement for the operation of the item of rolling stock.

#### 4.0 LEGISLATION, GUIDES AND STANDARDS

- Rail Safety National Law
- ONRSR Guideline Preparation of a Rail Safety Management System
- RISSB Standards relative to Rolling Stock
- Network owner's standards relative to registration of rolling stock on their network.
- State or Territory Acts & Regulations
- **Element 11 Management of Change (MoC)**

#### 5.0 FORMS, TEMPLATES AND RECORDS

The following documents will be retained / produced where relevant in accordance with this Procedure:

- MoC Control Form
- MoC Implementation Action Plan
- Design records
- Inspection and Test Plans
- Track Bound Plant Commissioning and Annual Inspection
- RRV Commissioning and Annual Inspection
- Engineers Reports as required
- Training records aligned to Operation and Maintenance manuals
- Rolling Stock Assessment Report
- Independent Certification by an authorised person.