



Rolling Stock Maintenance Course: Bogies, Wheelsets, Brakes, Depots and Overhaul Planning

9 – 13 November 2026

Barcelona - Eixample district four-star



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Introduction:

Rolling stock maintenance, covering bogies, wheelsets, brakes, depots and overhaul planning, is a 5-day course for metro, light rail and mainline fleet engineering and depot teams, ending with a Fleet Maintenance and Overhaul Plan for a case train operator. Many operators run examination intervals inherited from the original supplier, lose trains to repeat wheel, brake and door defects, and plan heavy overhauls too late to protect fleet availability. Nominees already maintain or plan work on passenger trains and analyse real fleet defect, mileage and wheel measurement data in case studies. CoreConcept Training Center delivers this rolling stock maintenance course.

Course Objectives:

- Break a train fleet down into its vehicle subsystems and maintenance tiers and set a baseline for availability and MDBF at a depot
- Inspect bogies, wheelsets, brakes, passenger doors, HVAC and converters against their design standards and recognise typical failure modes
- Set mileage, calendar and condition-based examination intervals using onboard diagnostics and wayside detector data
- Manage wheel-rail interface wear and schedule underfloor wheel lathe reprofiling within flange and tread limits
- Plan bogie exchange, component overhaul cycles and rotatable spares pools to keep heavy maintenance off the critical path
- Analyse repeat defects and life-cycle cost to prepare a Fleet Maintenance and Overhaul Plan for a case operator

Target Audience:

- Fleet engineering teams responsible for the technical performance of metro, light rail and mainline trains
 - Depot management teams accountable for daily train preparation, examinations and fleet release to service
 - Maintenance planning teams that set examination intervals, overhaul cycles and depot work schedules
 - Reliability teams that track defects, run failure investigations and report MDBF and availability
 - Materials and spares teams responsible for rotatable components, bogie pools and repairable parts turnaround
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Course Outline:

Day 1: Rolling Stock Systems, Fleet Types and Current-State Maintenance Review

- Metro, Light Rail and Mainline Fleet Configurations Compared
- Vehicle Breakdown Structure from Car Body to Replaceable Units
- Maintenance Tiers from Daily Checks to Heavy Overhaul
- MDBF, Fleet Availability and Technical Dispatch Reliability Definitions
- Fleet Maintenance Baseline Scorecard for an Own Depot

Day 2: Vehicle Subsystems, Design Standards and Failure Modes

- EN 13749 Bogie Frames with Primary and Secondary Suspension
- EN 15313 In-Service Wheelset Inspection and Axle Bearing Checks
- EN 13452 Urban Rail Brake Equipment and Wheel Slide Protection
- EN 14752 Passenger Door Systems and EN 14750 Saloon HVAC
- EN 50155 Traction and Auxiliary Converter Electronics Fault Patterns

Day 3: Preventive and Condition-Based Regimes, Wheel Lathe Work and Depot Practice

- Mileage and Calendar Examination Intervals in the Maintenance Plan
- Condition-Based Maintenance from Onboard Diagnostics and Wayside Detectors
- Underfloor Wheel Lathe Reprofile and Flange Height Limits
- Wheel-Rail Interface Wear, Conical Tread Taper and Hunting
- Depot Layout with Inspection Pits, Lifting Jacks and Stabling Roads

Day 4: Heavy Overhaul Planning, Repeat Defects and Fleet Optimisation

- Bogie Exchange and Component Overhaul Cycle Planning
- Rotable Spares Pool Sizing and Repairable Component Turnaround
- FRACAS Repeat Defect Analysis and Corrective Action Tracking
- Wheel Flat, Brake Fault and Door Failure Problem Cases
- ISO 55000 Life-Cycle Cost Review for Mid-Life Refurbishment

Day 5: Case Study on a Metro Fleet and Overhaul Plan Build

- Case Operator Fleet Data Pack and MDBF Trend Review
 - Examination Interval Revision for the Case Bogies and Brakes
 - Wheel Lathe Capacity and Reprofile Schedule for the Case
 - Heavy Overhaul Programme and Availability Forecast for the Case
 - Fleet Maintenance and Overhaul Plan Completion and Review
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Skills You Will Gain:

- Bogie and Wheelset Inspection
- Brake and Door Fault Diagnosis
- Examination Interval Setting
- Wheel Reprofilng Scheduling
- Depot Capacity Planning
- Rotable Spares Management
- Fleet Reliability Analysis
- Overhaul Life-Cycle Costing

Why Attend This Course:

- Deliver a Fleet Maintenance and Overhaul Plan for a case operator to the head of rolling stock and the depot manager for approval
- Decide which examination intervals to extend, shorten or convert to condition-based triggers from defect and mileage evidence
- Avoid trains held out of service by wheel flats, repeat brake faults, late overhauls or empty spares shelves
- Share inspection checklists, wheel lathe schedules and MDBF reporting templates with depot technicians and planners

Conclusion:

Back at work, the participant gives the head of rolling stock and the depot manager a Fleet Maintenance and Overhaul Plan that links examination intervals, wheel lathe capacity, spares pools and overhaul timing to fleet availability targets. Planners use it to schedule depot work and heavy maintenance slots, while reliability staff use it to decide which components need design or regime changes. After its first quarter in use, the unit should compare MDBF, trains available for service, repeat defect counts and overhaul turnaround against the plan and revise intervals where the data shows drift.

Frequently Asked Questions FAQ:

What should participants know before a rolling stock maintenance course?

Participants should already work on passenger train maintenance, planning or reliability and read defect reports and maintenance plans. Bringing anonymised examination schedules, wheel measurement records or MDBF figures from their own fleet makes the case work more useful.

How does rolling stock maintenance differ from a track maintenance or railway operations course?

It concentrates on the trains themselves: bogies, wheelsets, brakes, doors, HVAC, converters, depots and overhauls. Track courses cover rails, geometry and ballast, and operations courses cover timetables and signalling, which this course does not teach.

Why does wheel reprofiling matter in rolling stock maintenance?

Wheel reprofiling restores tread and flange shape worn by running, which keeps ride stability, curving and braking within limits. Each cut removes material, so planning lathe work against wear rates extends wheel life and reduces unplanned train withdrawals.

What do participants take back from the rolling stock maintenance course?

Participants take back a Fleet Maintenance and Overhaul Plan for a case metro operator, with examination interval, wheel lathe, spares pool and overhaul templates that can be adapted to their own fleet and depot.