

## OUTLINE

OpenTrack training is available to licence holders for their nominated participants.

### VENUE

The courses are usually held at Plateway's office:

- Sydney - Unit 6, 3 Sutherland Street, Clyde

In the event that the numbers exceed those that can be accommodated at these locations, Plateway will advise an alternative venue closer to the course dates. Venues for courses held in other cities will be notified to participants closer to the course dates.

### FEE STRUCTURE

Attendance for the full course, per participant: \$3,000 plus GST

Attendance for Segments 2 and 3, per participant: \$2,500 plus GST

Attendance for Segment 3, per participant: \$2,250 plus GST

Courses conducted outside Sydney attract a surcharge of \$500 per participant.

All fees are due and payable 14 days after the date of invoice.

A discount of \$500 per participant is available for an organization which purchases a licence.

### APPLICATIONS

Applications for participants to attend the course should be made by email to

[OpenTrack@plateway.com.au](mailto:OpenTrack@plateway.com.au).

Applications close 5 working days before the commencement of the course if Plateway is required to provide temporary OpenTrack licences. Where temporary licences are not required then applications for course attendance can be made up to 3 working days before course commencement.

### QUERIES

If you have any questions please contact Plateway by email to [OpenTrack@plateway.com.au](mailto:OpenTrack@plateway.com.au)

### TRAINING APPROACH

The course proper will concentrate on manual manipulation from primary principles to ensure that the basics are well drilled. There will be opportunities to demonstrate electronic file transfer and the import and export of files into Excel.

## SESSION HOUSEKEEPING

### PHONE MESSAGES

Participants are asked to have their mobile phones turned off or silent during the training sessions. There will be 90 minutes of breaks during the day designed to enable participants to check messages etc.

### LUNCH

Plateway will provide light refreshments at the morning and afternoon breaks and a sandwich lunch. If you have any special food requests (e.g. vegetarian, vegan, gluten free) please email [OpenTrack@plateway.com.au](mailto:OpenTrack@plateway.com.au) and specify your requirements. Tea, coffee and juice will be provided.

### NOTE TAKING

Plateway will provide each participant with hardcopies of each of the presentations. These will be in multislide per page format suitable for writing notes appropriate to the relevant slides. Where licence holders have been issued with their OpenTrack licences we request that each participant brings with them a copy of their OpenTrack manual. For cases where a permanent licence is installed on a client's laptop prior to the course, Plateway will provide a hard copy of the manual. Each participant will be issued with a USB memory stick. The stick contains copies of the course material and the OpenTrack Manual issued for the latest versions.

## TRAINING COURSE STRUCTURE

### SEGMENT 1

The first segment, to be conducted on the Monday, is an introduction to rail transportation. This segment provides a background in the elements of rail operations that are used in the OpenTrack Rail Network Simulation. As an example, the Rolling Stock basics unit on Monday afternoon gives an understanding of the characteristics of modern rolling stock. Participants can get a feel for typical values that can be experienced when entering data in OpenTrack and understand the criteria being discussed in module unit 8 which covers the OpenTrack Rolling Stock elements of Trains and Engines on Wednesday.

For those with a background in rail it is not necessary to attend the Monday course units. To make the decision if to participate or not please review the course outline. If you feel comfortable with your knowledge of the course material, you can join the course for segments 2 or 3.

Monday  09:00-10:30	<b>Unit 1 Development of Railways in the UK and USA with emphasis on Signalling and Safeworking concepts</b> <ul style="list-style-type: none"> <li>• Early history – driven by the market demands of the industrial revolution</li> <li>• Evolution of rail safety systems</li> <li>• Tokens and timetables</li> <li>• Recognising the fallibility of humans</li> <li>• Modern system developments</li> </ul>
10:30-11:00	Morning Break
11:00-12:30	<b>Unit 2 Railway Physics – The laws of physics as applied to railway operations and as used by OpenTrack</b> <ul style="list-style-type: none"> <li>• Basics of force, mass, acceleration, energy, power, velocity, speed, friction &amp; gravity</li> <li>• Comparative advantages for rail of steel wheel to steel rail operations</li> </ul>
12:30-13:00	Lunch Break
13:00-14:30	<b>Unit 3 Rolling Stock Basics</b> <ul style="list-style-type: none"> <li>• Characteristics of Diesel Electric and Electric traction</li> <li>• Tractive effort curves</li> <li>• Hotel power</li> <li>• AC V DC Traction motors</li> </ul>
14:30-15:00	Afternoon Break
15:00-16:30	<b>Unit 4 Australian Rail Operations – including sources of information, Curve &amp; Gradient Diagrams</b> <ul style="list-style-type: none"> <li>• Access providers, TOC information sources</li> <li>• Railway topography, differences between steam era and modern era alignment</li> </ul>

## TRAINING COURSE STRUCTURE

### SEGMENT 2

The second segment, conducted on Tuesday morning, is also part of the introduction but it covers signalling and safeworking. From past experience, we have found that even those experienced with rail operations would appreciate a refresher in these elements.

Tuesday

09:00-10:30

#### Unit 5 Current Safeworking Practice in Australia and New Zealand (Part 1)

- Ordinary Staff (Token)
- Electric Staff (Token)
- Staff and Ticket
- Train Order/ Track Warrant
- Rail Vehicle Detection (Track Circuit and Axle Counter)

10:30-11:00

#### Morning Break

11:00-12:30

#### Unit 5 Current Safeworking Practice in Australia and New Zealand (Part 2)

- CTC
- ARTC ATMS
- ETCS (Levels 1, 2 & 3) CBTC
- Level crossings (includes predictor type)

12:30-13:00

#### Lunch Break

### SEGMENT 3

The third segment is the OpenTrack training course and it commences on Tuesday at 1300. The remainder of Tuesday covers an introduction to the OpenTrack principles. From Wednesday through to Friday we plan to give the participants hands on experience with OpenTrack. To achieve this, we ask that participants came equipped with a laptop. For organisations that can release a laptop preloaded with OpenTrack software that is advantageous.

For organisations that do not have laptops that they can release to course participants Plateway will provide laptops preloaded with temporary OpenTrack licenses. An extra cost will be charged for the hire of the laptops. Where a participant can provide a laptop but it does not have an OpenTrack license then Plateway will install the OpenTrack software and provide a temporary licence. In this case, Plateway will require access to the computer on Tuesday evening and Wednesday morning between 0900 and 1100. On the Tuesday evening the OpenTrack software will be loaded and the necessary codes sent to Zurich that will enable the OpenTrack software to be activated on Wednesday morning.

Tuesday

13:00-14:30

#### Unit 6 An introduction to OpenTrack

- Operational principles of OpenTrack software
- Purpose and application deployment of the OpenTrack Rail Network Simulator

14:30-15:00

#### Afternoon Break

15:00-17:30

#### Unit 7 Structure of OpenTrack software

- Software structure and advantages of combined database and continuous calculation
  - Importance of version control in simulation analysis
  - Awareness of what is material in determining the extent of detail covered in the OpenTrack input phase
- (Unit 6 may extend into 15:00 session)

## TRAINING COURSE STRUCTURE

### SEGMENT 3 CONTINUED

Wednesday

Unit 8 OpenTrack Infrastructure

- Elements of OpenTrack infrastructure

09:00-10:30

10:30-11:00

Morning Break

11:00-12:30

Unit 9 Constructing the OpenTrack Infrastructure – Track (Part 1) – Hands On

- OpenTrack preferences
- Line speeds
- Track and line names
- The double vertex
- Vertex inspector
- Edge elements

12:30-13:00

Lunch Break

13:00-14:30

Unit 9 Constructing the OpenTrack Infrastructure – Track (Part 2) – Hands On

- Connector elements
- Station vertices
- Power areas

14:30-15:00

Afternoon Break

15:00-16:30

Unit 10 Constructing the OpenTrack Infrastructure – Track – Hands On

- Manual and electronic data transfer
- Use of Excel

Thursday

Unit 11 OpenTrack Signalling – Hands On

- Absolute and permissive signals and OpenTrack equivalents
- Virtual signals
- Performance signals
- Stopping commands etc.

09:00-11:00

10:30-11:00

Morning Break

11:00-12:30

Unit 12 Routes, Paths and Itineraries – Hands on

- Determination of an OpenTrack route
- Entry into occupied block

Unit 13 Overlaps, Release Groups and Shunting – Hands On

- Low Speed areas, overlaps, shunting limits etc.

## TRAINING COURSE STRUCTURE

### SEGMENT 3 CONTINUED

12:30-13:00	Lunch Break
13:00-14:30	Unit 14 Rolling Stock – Engines and Trains - Hands on <ul style="list-style-type: none"> <li>• Engine data input requirements</li> <li>• Train composition, as individual wagons or as combined trailing load</li> <li>• Entering rolling stock data into OpenTrack</li> </ul>
14:30-15:00	Afternoon Break
15:00-16:30	Unit 15 Courses and Timetables – Simple Simulation – Hands on <ul style="list-style-type: none"> <li>• Establishing the course and timetable requirements for a single train run</li> <li>• Making a simple point to point single line multiple train timetable</li> </ul>
Friday	Unit 16 Advanced Courses and Timetables – (Part 1) Hands on
09:00-10:30	<ul style="list-style-type: none"> <li>• Creating a scenario for combining two trains and splitting a train into two components that continue their journey</li> <li>• Joining and splitting trains</li> <li>• Creating regular interval timetables</li> </ul>
10:30-11:00	Morning Break
11:00-12:30	Unit 16 Advanced Courses and Timetables – (Part 2) Hands on <ul style="list-style-type: none"> <li>• More advanced simulation and exercises in performance analysis</li> <li>• Train diagrams</li> <li>• Message analysis</li> </ul>
12:30-13:00	Lunch Break
13:00-14:30	Unit 16 Advanced Courses and Timetables – (Part 3) Hands on <ul style="list-style-type: none"> <li>• Single line performance with 'follow on operations'</li> </ul>
14:30-15:00	Afternoon Break
15:00-16:30	<ul style="list-style-type: none"> <li>• Q/A</li> <li>• Revision</li> <li>• Help desk contact details</li> <li>• Wrap up</li> </ul>