Surveying/Geomatic Engineering

What is railway surveying?

Railway surveying encompasses a broad range of surveying activities from general engineering and cadastral, to high precision control and monitoring surveys, to specialised railway surveying. Railway surveying is focused on providing and managing the spatial information required for the design and maintenance of the rail infrastructure.

Railway surveying requires the use of rigorous surveying techniques, technical standards and design principles that allow tracks and associated infrastructure to be designed, built and maintained so that trains can move safely at an optimum speed over the system.

What is the purpose of surveying in a rail environment?

Railway surveying serves three main purposes:

- **Safety** – to maintain the safe clearances between trains and structures beside the track as well as between trains on adjacent track.
- **Efficiency** – to enable the management of the track location in order to maximise the benefits of properly adjusted continuously welded track and minimise maintenance problems caused by poor alignment.
- **Passenger comfort** – to help ensure a smooth ride for our passenger customers.

What are the career paths for surveyors?

Working in a rail environment offers a surveyor the opportunity of being involved in a variety of tasks including:

- Determining spatial relationships in a challenging environment (for example the swept path of rollingstock in tunnels).
- Setting out and ensuring quality control of construction work.
- Maintaining the integrity of the track control network and its associated databases.
- Ensuring clearance standards are met.

These tasks lead to career opportunities in:

- General Maintenance Surveying
- Project Surveying
- Technical Standards
- Project Management
- Geographical Information Systems (GIS)

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What kind of surveyor is suited to working in a rail environment?

Railway surveyors are professionals who are able to meet the challenges of a demanding industry and environment.

They seek to push the boundaries through innovation and the use of technology to meet project requirements.

The railway surveyor will need to:

- take responsibility for providing survey solutions in a project environment
- accept the challenges of working in an organisation in which safety is the first priority
- enjoy working in locations across New South Wales
- expect to progress to registration with the NSW Board of Surveyors. (RailCorp will offer support in achieving registration.)

Surveying offers career opportunities that can be field or office based or a combination of both.

What subjects should a surveyor study at university to have a career in rail?

Surveyors may have studied Surveying or Geomatic Engineering at university or a combination degree of civil and surveying. They should have a sound knowledge of surveying principles and be familiar with standard commercial CAD and administrative packages. Railway surveyors use state of the art technology such as GPS, modern Total Stations, Digital Levels and sophisticated "railway specific" computer programs.

There are no specific railway surveying subjects or courses available at tertiary institutions in Australia. The only way to learn about railway surveying in this country is through on the job training and attending in-house courses. Current railway surveyors have a wide range of experience in many facets of surveying.

For further information about RailCorp please visit **www.railcorp.nsw.gov.au**

To apply for further information about the Graduate Program, please contact: graduate@railcorp.nsw.gov.au

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