Competency Development Centre

Delivering World-Class Standards in Rail Construction
Rail Transportation in India

Indian Railways is one of the busiest rail networks in the world. The rail network traverses the length and breadth of the country and is said to be the 2nd largest railway network in the world.

A New Dawn for Indian Railways - Vision 2020

Vision 2020 of Indian Railways envisages massive infrastructure addition and network extension over the next 10 year period. The vision calls for 25000 km of new lines, 12000 km of doubling and multiple track additions and 14000 km of existing track electrification.

The phenomenal growth in expansion of the railway infrastructure has opened up new vistas in rail construction. The recent trend is to take up construction of railway lines as an integrated project comprising of all engineering disciplines including permanent way, signalling and telecommunication, railway electrification, installation of substation and allied works, besides overhead equipment.

L&T - Market Leader in Rail Construction

Larsen & Toubro (L&T) is a USD 11.7 billion technology, engineering, construction and manufacturing company with global operations. L&T Construction’s Railway Construction Business Unit has been doing pioneering work in rail infrastructure by bringing in its overall project management capabilities, improving upon construction methods, introducing new technologies, mechanized and efficient execution methods. L&T is the only private organisation which is qualified to undertake integrated rail construction projects of the Railways in India.

L&T has constantly risen to the demands of new integrated construction projects and is equipped with the required expertise for specialized railway works.

Challenges in Rail Construction

The availability of skill and expertise required for taking up railway construction as an integrated project covering all works is rather limited in the construction industry. Non-availability of trained human resource for such specialized rail construction works and the criticality of the activity poses the biggest challenge. Many works in permanent way and signalling need to adhere to safety standards of the highest order. Outside agencies need to have the requisite skills and expertise in these critical areas to meet the stringent safety standards in India and be on par with the international standards.

Hence, there is a compelling need to address the integrated skill requirement and develop specialised trained man power in rail construction.

Competency Development Centre (CDC)

Towards fulfilling the demands in rail construction, L&T has established the Competency Development Centre (CDC), a first-of-its-kind training centre for rail construction in the country at Kanchipuram, near Chennai for different activities based on the integrated project requirements.

Objectives

- To augment the competency of the construction workforce in rail construction
- To familiarize frontline engineers with railway construction concepts, activities and quality working techniques
- To enable middle managers understand activity interfaces and formulate integrated approach on construction of composite railway projects
- To facilitate training by setting up a modular training school with well-defined infrastructure and curriculum
- To create a talent pool of skilled construction workforce capable of delivering world-class standards in rail construction
Infrastructure

The Competency Development Centre is set up in a 6 acre area in a conducive environment that aids learning. The institute is equipped with excellent infrastructure for practical and classroom sessions. It has the facility to impart on-site training to 300 technicians and 180 middle level managers/engineers in a year. Highly experienced and qualified railway engineers are sourced as instructors and trainers.

Specialized training is provided in the following rail construction trades:

**Permanent Way works comprising:**

- Formation of embankment
- Construction of major / minor bridges / culverts
- Mechanized and manual track laying
- Cushion ballast collection and profiling
- Flash butt welding (FBW) and Alumino Thermitt (AT) welding of rails
- Level crossing preparations (manned and unmanned)
- Fabrication and erection of check rails, guard rails, buffer stop
- Assembly of points and crossings
- Assembly of switch expansion joint (SEJs), glued joints, derailing switches
- Ballast less track

**Overhead Electrification involving assembling and erection of:**

- Galvanized steel structures
- Stringing of conductors
- Jumpers and droppers
- Automatic tensioning device
- Sectioning switches
- Insulation
- Switching stations
- Neutral section

**Signalling and Telecommunication comprising indoor and outdoor works involving:**

- Panel interlock (PI)
- Route relay interlock (RRI)
- Solid state interlock (SSI)
- Integrated power supply (IPS) and batteries
- Cabling
- Erection of location box, relays, point machine, shunt signals
- Bonding of track circuit
- Signalling posts, colour light signals
- Wiring of relays, accessories, berthing circuits.
- Audio frequency track circuit (AFTC)
Platform and Buildings comprising:

- Construction of station and service buildings
- Finishing work for buildings as per railway specifications
- Construction of platform including walls, floorings
- Fabrication and erection of foot over bridges (FOB) and platform shelters
- Provision of platform amenities like drinking water tap, seating arrangements, lightings, etc.

Methodology

CDC offers a two level training module. Skills have been grouped into two distinct levels starting from the basic to the specialized level.

Duration

All courses are designed as short term courses. The period of training varies as per the training module. The specialized course is for a period of 90 days and covers specific and related trades in rail construction for technicians. The basic course is designed for middle level managers/engines for a period of 3 weeks and gives an overall exposure on rail construction skills.

Facilities

- Free hostel accommodation
- Canteen that offers nutritious food
- Consolidated monthly stipend
- Modular training to international standards
- Employment at L&T’s project sites after successful completion of training

Benefits

- Trained workmen quickly understand the interface requirements and perform accordingly
- Higher productivity and quality of work
- Ability to handle other areas of specialization