

RAIL OPERATIONS

Train Captain/ Senior Train Captain

Job description: The Senior Train Captain/ Train Captain operates passenger trains to provide a safe, reliable and efficient commute for passengers and to achieve the overall train service standards. The captain is well-versed with train operations and the functions of train-borne systems and equipment, monitors and analyses the train operations from the cabs of the trains in order to make quick and sound operational decisions to maintain and improve train service standards and reliability.

Current Job Tasks	Future view of job tasks	Impact at task-level
1. Operate passenger trains and meet overall train service standards	<ul style="list-style-type: none"> Modern trains are highly automated, operate in confined environment and equipped robust signalling systems which automates tasks such as setting train in motion, stopping train, door closure and operation in event of disruption. The Train Captain's focus will shift towards monitoring technology solutions and interpreting data to manage exceptions through train dashboards. 	
2. Maintain communication with the Operations Control Centre (OCC)	<ul style="list-style-type: none"> Train related information are collected via train-borne sensors and train-to-ground communications are established automatically with trackside communication systems. The role of the Train Captain will be limited to monitoring and handling of exceptions. 	
3. Maintain passenger safety onboard of trains	<ul style="list-style-type: none"> Train-borne Video Surveillance Systems can be accessed via OCC and safety surveillance can be conducted remotely The role of the Train Captain will be restricted to reporting of safety non-compliance incidences onboard trains and apply judgment on corrective measures 	
4. Implement and execute service recovery measures during rail emergencies and incidents	<ul style="list-style-type: none"> The Train Captain will continue to act under pressure in instances of crisis and select the best approach to address rail emergencies and incidents. Digital communication tools and virtual signages would supplement service recovery activities and may reduce manpower required during unforeseen circumstances 	



A SIGNIFICANT proportion of job tasks will be automated by key technologies, tasks performed will have a

HIGH degree of change



Reskilling is required

To take on adjacent job role(s) the skills below will become critical:

- Passenger Train Operations
- Rail Regulatory Compliance
- Rail Incident Management
- Rail Emergency Response Management
- Workplace Facilities Safety Management
- WSH Incident and Accident Investigation
- WSH Culture Development
- Health and Fatigue Risk Management
- Data Usage and Implementation
- Sensor Monitoring Management
- Innovation Management



Within the next **10 – 20 years**, the job role(s) could potentially change

DISPLACEMENT



Job Adjacency

The job holder could potentially take on adjacent job roles as:

- Bus operations control centre controller
- Rail operations control management

Legend for job tasks & skills

- High impact
- Medium impact
- Low impact
- Declining skills
- Adjacent skills
- Emerging skills

Legend for job adjacency

Pivot score shows job fit between current to future job role derived from Faethm. The higher the score, the easier the transition. A pivot score of >75 is deemed as a good fit for the future role.

Note(s): 1. This is a suitable role within the land transport industry to transition into; other external roles can also be considered.

10-year skills impact analysis for rail operations (at-risk roles)


















Job tasks today	Job tasks in 10 years	Job skills in 10 years	Job task impact	Job role impact	Job role transition
1. Implement and execute service recovery measures during rail emergencies and incidents	 Continue to act under pressure in instances of crisis but digital communication tools and virtual signages would supplement service recovery activities	 Rail Incident Management  Rail Emergency Response Management  Data Usage and Implementation	 High degree of impact	 Displacement	1. Company Secretaries 2. Customer Service Manager 3. Station manager 4. Bus Operations Control Centre Controller 5. Rail operations control management
2. Conduct recovery of train and station equipment in malfunction (For Customer Service Officer/ Rover)	 IoT devices and sensors will perform remote diagnostics of train and station system malfunctions and report incidences, shifting focus towards monitoring of sensor data and interpreting signals before site mobilization for first-line recovery and close-up inspections	 Train Station Operations Management  Data Usage and Implementation  Sensor Monitoring Management			
3. Operate passenger trains and meet overall train service standards (For Train Captain)	 Modern trains are highly automated, operate in confined environment and equipped robust signalling systems, shifting focus towards monitoring technology solutions and interpreting train dashboard data to manage exceptions	 Passenger Train Operations  Data Usage and Implementation  Sensor Monitoring Management			
4. Oversee the performance and well-being of Train Captains (For Crew Manager)	 Train Captain tasks being largely automated may lead a smaller pool being managed, while IoT sensors onboard trains will gather and centrally store performance data of Train Captains for processing and analysis	 Data Usage and Implementation  Sensor Monitoring Management			
Declining Functions	Train, station and depot operations that requires manual intervention such as onboard operating of trains and station patrolling				
Emerging Functions	Use of data and interpretation of outputs from automated systems				

Table 18: 10-year skills impact for rail operations (at-risk roles)

20-year skills impact analysis for rail operations (at-risk roles)


















Job tasks today	Job tasks in 20 years	Job skills in 20 years	Job task impact	Job role impact	Job role transition
1. Implement and execute service recovery measures during rail emergencies and incidents	 Continue to act under pressure in instances of crisis but digital communication tools and virtual signages would supplement service recovery activities	 Rail Incident Management  Rail Emergency Response Management  Data Usage and Implementation	 High degree of impact	 Displacement	1. Company Secretaries 2. Customer Service Manager 3. Station manager 4. Bus Operations Control Centre Controller 5. Rail operations control management
2. Conduct recovery of train and station equipment in malfunction (For Customer Service Officer/ Rover)	 IoT devices and sensors will perform remote diagnostics of train and station system malfunctions and report incidences, shifting focus towards monitoring of sensor data and interpreting signals before site mobilization for first-line recovery and close-up inspections	 Train Station Operations Management  Data Usage and Implementation  Sensor Monitoring Management			
3. Operate passenger trains and meet overall train service standards (For Train Captain)	 Modern trains are highly automated, operate in confined environment and equipped robust signalling systems, shifting focus towards monitoring technology solutions and interpreting train dashboard data to manage exceptions	 Passenger Train Operations  Data Usage and Implementation  Sensor Monitoring Management			
4. Oversee the performance and well-being of Train Captains (For Crew Manager)	 Train Captain tasks being largely automated may lead a smaller pool being managed, while IoT sensors onboard trains will gather and centrally store performance data of Train Captains for processing and analysis	 Data Usage and Implementation  Sensor Monitoring Management			
Declining Functions	Train, station and depot operations that requires manual intervention such as onboard operating of trains and station patrolling				
Emerging Functions	Use of data and interpretation of outputs from automated systems				

Table 20: 20-year skills impact for rail operations (at-risk roles)