

GROUP B
OFFICERS ACADEMY

ADVANCED OPERATIONS

Wednesday, 12 November 2025

Group B Officers Academy (9346999858)





International Year of Cooperatives

Cooperatives Build
a Better World



CONTROL ORGANIZATION



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CONTROL ORGANISATION

- The Control Organization of Indian Railways is the **nerve centre** of train operations.
 - It controls the asset management of the Railways, in a dynamic situation, round the clock moving trains on its entire network.
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CONTROL ORGANISATION

OBJECTIVES OF THE CONTROL ORGANISATION

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The Control Organisation in Indian Railways plays a crucial role in the real-time regulation of train operations with the aim of ensuring safe, efficient and punctual movement of traffic.

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CONTROL ORGANISATION

Ensuring Punctuality of Mail/Express and Passenger Trains

Trains



- Passenger carrying trains are **high priority trains.**
- Control ensures **timely departures, arrivals, crossings and precedence.**
- Prevents **avoidable delays** by prompt decisions and coordination.

CONTROL ORGANISATION

Maximum Utilisation of Rolling Stock:

- Locomotives, coaches and wagons are valuable mobile assets.
- Control ensures:
 - Avoidance of idle detention
 - Quick turnaround of rakes and locomotives
 - Proper allocation and balancing of stock across sections/yards

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CONTROL ORGANISATION

Optimum Utilisation of Section Capacity:

- Each section has a defined **line capacity** depending on:

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- Signalling system
- Track layout
- Speed restrictions
- Traffic density

- Controllers ensure **smooth flow** of trains so that the **maximum possible trains** are run safely and efficiently.

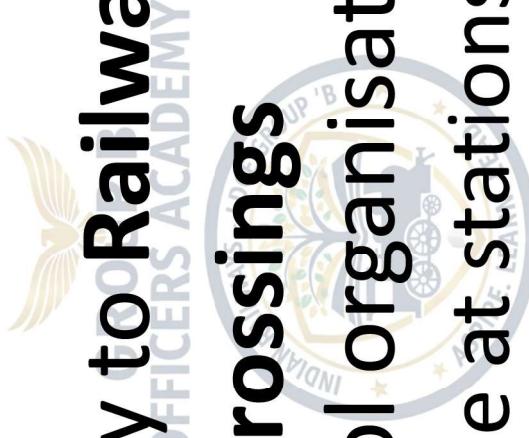
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CONTROL ORGANISATION

Increasing the Speed and Throughput of Goods

Trains:



- Goods trains are key to Railway revenue.
- By planning crossings and precedence intelligently, control organisation aims to:
 - Reduce waiting time at stations
 - Achieve higher average speeds
 - Improve NTKM and throughput

CONTROL ORGANISATION

Maximum Utilisation of Train Crew:

- Crew availability should match train movement demand.
- Controllers ensure:
- Timely crew changing arrangements
- Proper roster management
- Avoidance of crew overtime / shortage delays



CONTROL ORGANISATION

- This basic structure of **Operating Control** on Indian Railways exists at the Divisional Level, which has also been extended to Area Control levels.
- In addition, Central Control Office is situated in the headquarters office and one at Railway Board.



CONTROL ORGANISATION

- The area spread of a division is divided into control sections.
- Each control section having a given number of stations.
- The two-way telephone system, which permits all stations to have direct communication with Section Controller
- SCOR is responsible for train regulation in his area.
- The section Controller can speak to all stations at the same time or to one station selectively, using individual numbers/buttons.

CONTROL ORGANISATION

- Movement of trains is plotted on a Time-Distance graph to record their actual progress
- These records, called control charts
- To guide and assist the section controller, there are shift Deputy Controllers.

CONTROL ORGANISATION

All technical disciplines involved in train movement have a representative in the Control office to provide the required support from his department.

- ✓ Motive Power Controller
- ✓ Traction Power Controller (TPC)
- ✓ Signalling and Tele-Communication Controller
- ✓ Commercial Controller
- ✓ Security Controller
- ✓ C& W Control
- ✓ Engineering Controller



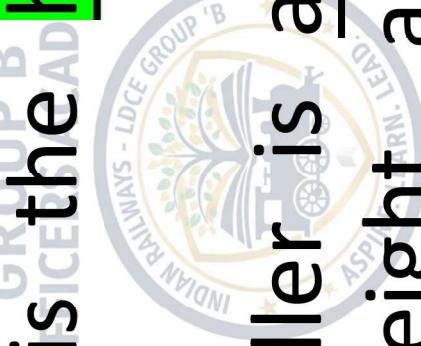
CONTROL ORGANISATION

The entire organization works round the clock, all days of the year without any interruption to monitor actual movement of trains on the entire rail network.



CONTROL ORGANISATION

- Sr.DOM has the **administrative control** of the Divisional Control Office.
- Chief controller **is the head** of the control organisation.
- The Chief controller is **assisted** by Dy. Chief controller in Freight and Passenger train operations.
- Dy.CHC looks after **the Traffic Control**.



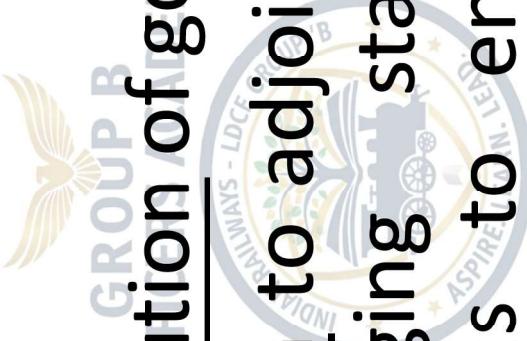
CONTROL ORGANISATION

FUNCTIONS:

- Continuous supervision of the movement of all traffic in the controlled area with a view to achieve the maximum possible operating efficiency.
- Systematic maintenance of accurate charts of train movements and the arrangements of crossing and precedence to the greatest advantage.
- Analysis of detentions to trains.
- Planning, ordering and running of goods trains to the best possible paths.

CONTROL ORGANISATION

- Elimination of avoidable detentions to goods stock at loading and unloading points and at transhipment stations.
- Allotment and distribution of goods stock to stations
- Supply of information to adjoining controls, terminals and engine changing stations regarding the movements of trains to enable adequate timely arrangements for their reception and onward despatch.



CONTROL ORGANISATION

- Arranging of engineering and other departments blocks with minimum detention to traffic.
 - Running of material trains and other track machines, tower wagons etc
 - Arranging relief for engine crews and Guards.
 - Ensuring maximum utilization of locomotives.
 - Issuing instructions for train working in case of equipment failures and whenever abnormal methods or working have to be adopted
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CONTROL ORGANISATION

- Speedy arrangements for relief rescue and restoration in the event of accident.
- To rectify immediately the irregularities on the part of line staff and provide them necessary guidance.
- To provide operations management information.
- To ensure smooth functioning of FOIS and other IT applications.

CONTROL ORGANISATION

TO DISPOSE THE FUNCTIONS, THE FOLLOWING CONTROLS OF VARIOUS DEPARTMENTS ARE INVOLVED:

- TRAIN CONTROL
- TRAFFIC CONTROL
- COMMERCIAL CONTROL
- POWER CONTROL
- C&W CONTROL
- ENGINEERING CONTROL
- TRACTION POWER CONTROL
- SECURITY CONTROL

TRAIN CONTROL

Train Control – Supervision & Regulation of Train Movements

- Train Control is the art and science of supervising and regulating train movements from station to station over a section to ensure safety, punctuality, and optimal utilisation of line capacity.
- Its primary objective is to avoid delays, maintain fluidity, and maximize throughput of trains through effective coordination, planning, and effective communication.

TRAIN CONTROL

- ◊ Monitoring Train Movements:

Constantly observe and record the movement of trains from station to station, maintaining train charts and noting pathing, crossings, and detentions.

- ◊ Crossing & Precedence Planning:

Arrange the crossing and precedence of trains judiciously, keeping in view punctuality, priority of trains, and section capacity.

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TRAIN CONTROL

- Departmental & Material Train Management
 - Plan and regulate the movement of departmental, ballast, and material trains without disturbing regular train operations.
- Time Signal Transmission:
 - Ensure the daily transmission of the official time signal to all stations on the section at the prescribed time @1600hrs on 1st November 2025.
 - WPS Office 2019

TRAIN CONTROL

- Fulfilling Interchange Commitments:
Maintain smooth interchange of rakes between adjoining divisions/zones to achieve target commitments.
- Assisting / Banking / Light Engine Movement:
Arrange for timely placement and movement of assisting, banking, or light engines for efficient train handling.



TRAIN CONTROL

- Clearance of Sick Wagons:
Ensure prompt removal of defective (sick) wagons from line or roadside stations to avoid congestion.
- Duty Relief Management:
Coordinate timely relief arrangements for staff performing 10-hour control duties, ensuring continuity and efficiency.

TRAIN CONTROL

- ◊ Incident Management:
Oversee incident handling and restoration operations during failures, accidents, or disruptions on the section.
- ◊ Engineering & Power Block Coordination:
Arrange engineering and traction power blocks in such a way that train operations are least affected, ensuring optimal utilization of available time.



TRAIN CONTROL

- Yard Fluidity & Stock Control:
Maintain fluidity of yards by controlling inward and outward flow of stock, avoiding bottlenecks and ensuring balanced traffic distribution.
- Accident Relief & Restoration:
Facilitate speedy relief and restoration operations in case of accidents, coordinating with all concerned departments.

TRAFFIC CONTROL

Traffic Control – General & Over-Riding Supervision

Traffic control is divided into two units at the HQ level for easing up its objectives:

- Central control
- Emergency control

TRAFFIC CONTROL

Traffic Control – General & Over-Riding Supervision

- ❖ Dy. Chief Controller Goods
- ❖ Dy. Chief Controller Coaching
- ❖ Dy. Chief Controller Stock



TRAFFIC CONTROL

Traffic Control – General & Over-Riding Supervision

- Traffic Control is the general and over-riding control exercised for the supervision of the movement of goods and coaching traffic on the section.
- It ensures smooth and efficient train operations by coordinating all related activities involving stations, yards, sheds, and adjoining divisions.



TRAFFIC CONTROL

- Collecting Information from the various stations on the section in respect of:
 - (i) Registration for wagons outstanding at stations and arrangements for supply of wagons.
 - (ii) Number of wagons loaded and empty wagons/rakes awaiting despatch.
 - Arranging Running, Regulation, Putting Back and Cancellation of Trains (covering both freight and coaching services as per operational requirements).
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TRAFFIC CONTROL

- Securing Maximum Loads for Trains
 - Ensuring every train runs with optimum load capacity to achieve better wagon and engine utilization.
- Collecting Stock Position
 - Gathering stock details from different stations, marshalling yards, and terminal yards for efficient planning.
- Arrangement of Crew & Guard for Freight Trains
 - Coordinating with crew booking lobbies to ensure availability of qualified staff for train operation

TRAFFIC CONTROL

- Co-operation (Liaison) with Adjoining Railways and Divisions
 - Maintaining close coordination with adjoining jurisdictions to fulfil interchange commitments effectively.
 - Monitoring and Co-ordinating Working of Yards, Goods Sheds, Sidings, Loco-Sheds, TXR Depots, and other operational units to maintain efficiency and avoid congestion.

TRAFFIC CONTROL

- Supervision of Stock Control

Ensuring proper monitoring of rolling stock, minimizing idle time, and maintaining balance between demand and availability.

- Arranging Supply of Wagons Against Pending Registrations Prioritizing and fulfilling wagon demands from stations to avoid detention and improve customer satisfaction.

- Securing Optimum Utilisation of Stock Achieving maximum output with minimum detention, ensuring wagons and rakes are efficiently cycled.

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TRAFFIC CONTROL

- Ensuring Optimum Utilisation of Loco and Staff
- Balancing locomotive power and crew availability for uninterrupted train operation.
- Arranging ART OFFICES & Crane from Adjoining Railway/Division
- In case of accidents or operational disruptions, promptly arranging Accident Relief Train (ART) and crane assistance and ensuring inter-departmental coordination.

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POWER CONTROL

Power Control – Provision and Management of Motive Power

- Power Control is responsible for the provision of motive power to all trains by maintaining the position and availability of locomotives in accordance with traffic requirements.
- The objective is to ensure optimum and economical utilisation of locomotives through efficient planning, supervision, and coordination with sheds, yards, and control offices.

POWER CONTROL

- Requisitioning Engines from Loco Sheds:
For all operating requirements such as train working, shunting, and banking operations.
- Ensuring Most Economical Use of Engines:
Through close supervision and monitoring of locomotive deployment both in traffic yards and loco sheds to minimise wastage of engine hours.
- Ensuring Return of Engines to Home Sheds:
Making certain that locomotives are returned to their “Home Sheds” at regular intervals for scheduled servicing, inspection, and maintenance.

POWER CONTROL

- **Maintaining an Even Balance of Engines and Crews:**
Ensuring equitable distribution of locomotives and running staff between different running sheds to meet traffic demands efficiently.
- **Minimising Light Engine Kilometres:**
Taking necessary action so that light engine movements are kept to the **absolute minimum**, thereby improving fuel economy and line capacity utilisation.
- **Providing Guidance to Running Staff:**
Offering technical guidance and troubleshooting support to running staff (Loco Pilots and Assistant Loco Pilots) for safe and efficient train operation.

POWER CONTROL

- POWER CONTROL**



- MOTIVE POWER CONTROLLER**
- TRACTION LOCO CONTROLLER**

CARRIAGE & WAGONS (C&W) CONTROL

•Carriage & Wagon Control – Examination, Fitness & Stock Readiness

- Carriage and Wagon Control functions in close coordination with Train Control and Traffic Control.
- Its primary responsibility is to ensure the timely examination, maintenance, and availability of coaching and wagon stock in fit-to-run condition, so that train operations remain uninterrupted.

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CARRIAGE & WAGONS (C&W) CONTROL

- Ensure timely examination and fitness of all trains including both freight and coaching formations, ensuring they are technically fit before departure.
- Keep a watch over the detachment of sick wagons/coaches And to arrange for their early repair and fitness to minimize detention and avoid yard congestion.
- Monitor availability of vital C&W components Such as Air Hoses, Washers, Clamps, etc., and ensure efficient working of equipment and machines in C&W Depots to avoid detentions of trains.

CARRIAGE & WAGONS (C&W) CONTROL

- Keep a watch over placement and release of wagons/coaches in sick line Ensuring quick turnaround of defective stock.
- Keep account of detention to trains on C&W account And take remedial action to reduce delays and improve operational efficiency.
- Provide guidance to running staff for trouble shooting Assisting Loco Pilots, Guards, and Yard staff in handling on-line mechanical issues.

CARRIAGE & WAGONS (C&W) CONTROL

- For EMU (Electrical Multiple Units), this function is performed by the EMU Controller
 - Ensuring seamless technical support to suburban and EMU operations.
 - GROUP B OFFICERS ACADEMY
 - Ensuring the movement of POH due stock to workshops
 - Monitor the movement of POH due stock to workshops
- Ensuring wagons and coaches reach workshops in time for Periodic Overhaul (POH) to maintain reliability.

COMMERCIAL CONTROL

- Commercial Control – Coordination for Smooth Traffic & Passenger Services
- Commercial Control works in close coordination with both Traffic Control and Train Control.
- Its focus is to ensure that commercial operations, passenger amenities, and freight services run efficiently, without causing avoidable delays or inconvenience.

COMMERCIAL CONTROL

- ◊ Expeditedly dispose off unclaimed and unconnected wagons and parcel consignments Ensuring proper reconciliation, clearance, and forwarding to prevent congestion in yards and platforms.
- ◊ Keep a watch on detention to trains on Commercial account Such as Alarm Chain Pulling, Carriage Watering, Parcel Working, etc., and take remedial measures to minimize delays.

COMMERCIAL CONTROL

- Ensure quick transhipment of sick wagons
- By arranging matching stock and labour, reducing turnaround time and maintaining operational continuity.
- Keep a watch over submission of Station Returns
- Ensuring accurate and timely submission of commercial records and revenue returns from all stations.
- Monitor Public Complaints lodged at stations
- To ensure timely investigation, redressal, and feedback through proper communication channels.

COMMERCIAL CONTROL

- Ensure proper maintenance of Public Amenities at stations Such as drinking water, seating arrangements, toilets, lighting, display boards, etc., enhancing passenger comfort and satisfaction.
 - Perform any other job entrusted by Sr. DCM / DCM including special drives, inspections, VIP requirements, commercial reviews, and revenue monitoring.
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TRACTION POWER CONTROL (TPC)

- **Traction Power Control – Coordination for Reliable Electrical Supply**
 - **Traction Power Control functions in coordination with Traffic Control and Train Control to ensure continuous and safe power supply to trains operating over electrified sections.**
 - Its role is crucial in maintaining uninterrupted train movement, especially in case of tripping, OHE failures, or power block arrangements.
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TRACTION POWER CONTROL (TPC)

- o Arranging Maintenance Blocks for OHE
- Coordinating planned Overhead Equipment (OHE) maintenance activities with minimum disturbance to train operations.
- o Arranging Alternative Power Supply in case of Tripping
 - By using remote control and switching arrangements to restore supply quickly and avoid prolonged detention of trains.

TRACTION POWER CONTROL (TPC)

- Monitoring OHE Failures and Taking Remedial Action
 - Ensuring prompt reporting, fault diagnosis, and restoration by liaison with TRD staff and field units.
 - Monitoring Detention of Trains on OHE Account
 - Keeping record of train delays caused due to power failures and taking steps to prevent recurrence.
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TRACTION POWER CONTROL (TPC)

- ◊ Guiding Running/Station Staff in Trouble-shooting
- Providing technical advice to Loco Pilots, Station Masters, and field maintenance staff to safely handle electrical power-related issues.

(SCADA-SUPERVISORY CONTROL AND DATA ACQUISITION)

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ENGINEERING CONTROL

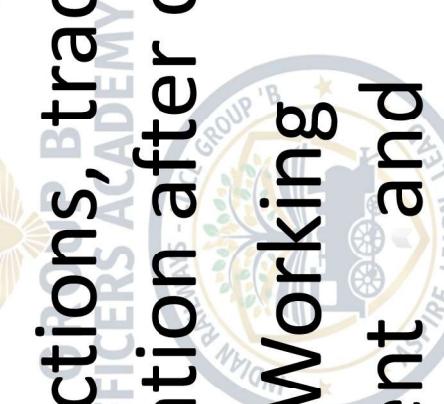
Engineering Control – Coordination of Track & Infrastructure Maintenance

- Engineering Control functions in close coordination with Traffic Control and Train Control to ensure that track maintenance activities are executed safely, efficiently, and with minimum disturbance to train operations.
- It acts as the communication and monitoring centre for all engineering-related activities affecting train movement

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ENGINEERING CONTROL

- Monitors imposition & cancellation of Engineering Restrictions Keeping constant watch on permanent and temporary speed restrictions, track caution orders, and ensuring timely cancellation after completion of works.
 - Monitoring the Working deployment and utilization of track machines (like Tamping Machines, BCM, Rail Grinders, TRT, PQRS, etc.) to ensure maximum output and minimum idle time. Group B Officers Academy (9346999858)
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ENGINEERING CONTROL

- Monitoring Integrated maintenance Blocks Coordinating with Traffic and Power Control to ensure Integrated Blocks (Traffic + Power + Engineering) are planned and executed effectively, with minimal impact on train running.
- Co-ordinate Works during Maintenance Blocks Ensuring field engineering staff, power staff, and operating staff are aligned during maintenance enabling safe and synchronized execution of work.
- Running of Material Trains Arranging movement and placement of Ballast / Material Trains required for track maintenance and strengthening activities.

SIGNAL CONTROL

Signal Control – Monitoring of Signalling & Communication Systems



- Signal Control works in close coordination with Traffic Control and Train Control to ensure the reliable functioning of signalling and communication systems, which are essential for safe and uninterrupted train operations.

SIGNAL CONTROL

- Keep a watch over the S&T failures and take remedial action : Monitoring failures related to signals, points, block instruments, track circuits, axle counters, and panel/relay interlocking equipment, and ensuring prompt rectification by Signal & Telecommunication staff.



SIGNAL CONTROL

- Ensure efficient working of communication channels
- Maintaining and supervising control communication lines, emergency communication systems, walkie-talkies, hotline circuits, VHF, OFC, and GSM-R systems, to guarantee uninterrupted information flow between stations, trains, and control offices.



SECURITY CONTROL

•Security Control – Protection of Railway Property & Passenger Safety

- Security Control** functions in close coordination with Traffic Control, Commercial Control, Train Control to ensure the safety and security of railway property, passengers, and staff.
 - Its role is essential in maintaining **order, vigilance, and prompt response** across stations, trains, and railway premises.
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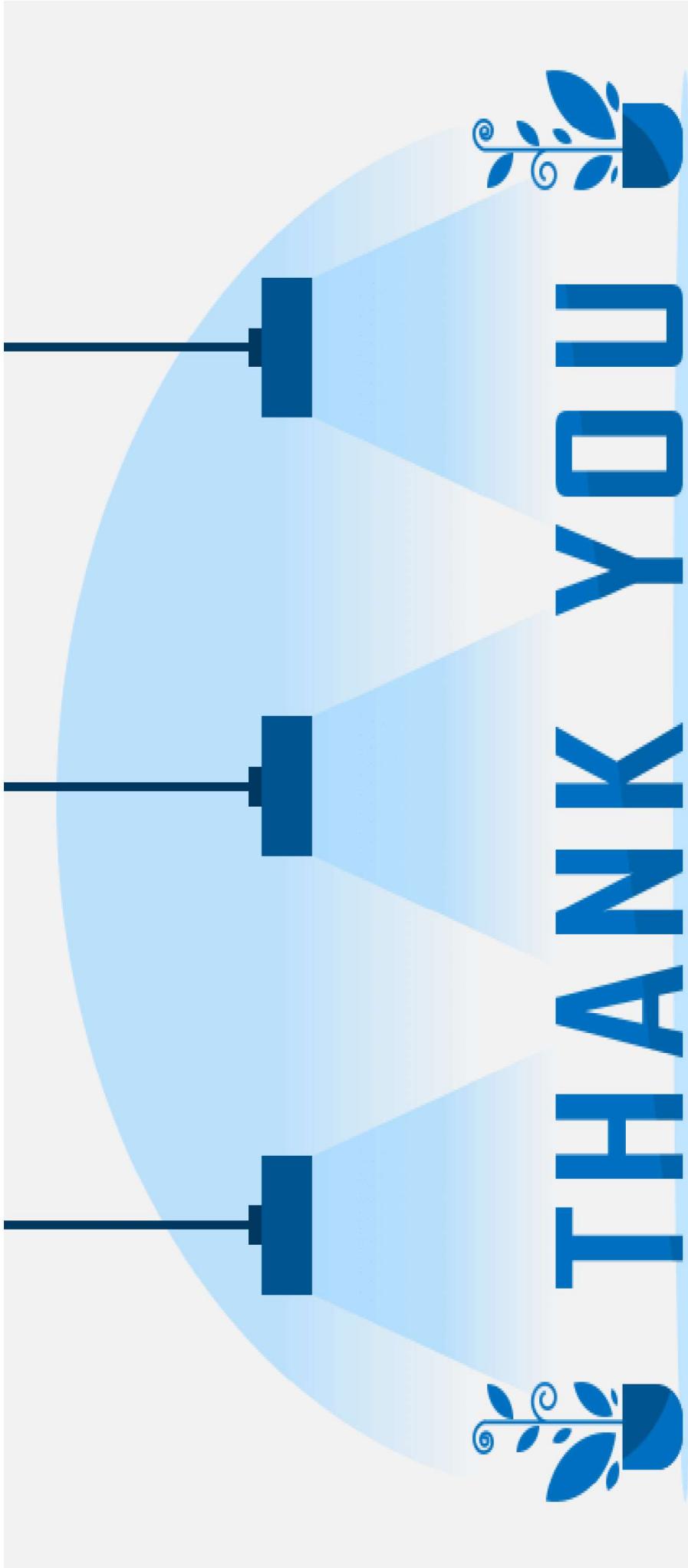
SECURITY CONTROL

- Prevention of theft of railway property
- Maintaining constant surveillance, coordinating with RPF/GRP units, and ensuring intelligence gathering and preventive patrolling.
- Assisting passengers in trains and at stations
- Providing safety support, responding to passenger complaints/distress calls, and taking immediate action in cases of security concerns, harassment, or emergencies.

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THANK YOU