

## Training Module for Section Controller Initial & Promotion

<b>Department</b>	<b>Transportation</b>
Course No.	<b>TI/TP-3</b>
Category	<b>Section Controller Initial / Promotion</b>
Stage	<b>Induction through RRB or Promotion through Departmental Exam</b>
Duration	<b>54 working days / 324 Hours</b>

<b>S. No.</b>	<b>Subject</b>	<b>Hours</b>	<b>Days</b>
TI/TP-3/1	Foundation Course	12	02
TI/TP-3/2	Transportation -1 (Lower Transportation)	60	10
TI/TP-3/3	Transportation – 2 (Commercial)	36	06
TI/TP-3/4	Transportation – 3 (Higher Transportation)	48	08
TI/TP-3/5	Transportation – 4 (Other Departments)	30	05
TI/TP-3/6	Practical Training	18	03
TI/TP-3/7	Safety Management	18	03
TI/TP-3/8	Information Technology	30	05
TI/TP-3/9	Ethical leadership & Soft Skills	14½	2 ½
<b>TI/TP-3/9A</b>	<b>Child Right , Child Protection and Related Laws</b>	<b>3 ½</b>	<b>½</b>
TI/TP-3/10	Control Training (6 Days x 6 Hrs.)	36	06
TI/TP-3/11	Examination	18	03
	<b>TOTAL</b>	<b>324</b>	<b>54</b>

TI/TP-3/1	FOUNDATION COURSE
TI/TP-3/1.1	Admission Formalities
TI/TP-3/1.2	History and Development of Indian Railways, its prime objectives-Vision
TI/TP-3/1.3	Organisational Set up of Indian Railways – Railway Board, Zonal Railway, Divisional Level & Station/Depot Level
TI/TP-3/1.4	Various Departments of Indian Railways – Their functions – an Introduction
TI/TP-3/1.5	Organisational Set up of Traffic Department – Role of Operating, Commercial Department
TI/TP-3/1.6	Control Department – Structure, Role, Importance and Functions in Operations.
TI/TP-3/1.7	Safety Department – Role, Importance and Functions in Railway Operations, CRS: Organisation, Importance and Functions.
TI/TP-3/1.8	Official Language Implementation – Importance – Various Incentives for qualifying in Hindi proficiency

TI/TP-3/2	TRANSPORTATION - 1
TI/TP-3/2.1	<b>Safety Rules-</b> G&SR, Special Instructions (BWM, AM, OM, WTT), Approved special Instructions, SWR and Miscellaneous Instructions- Introduction
TI/TP-3/2.2	Rules applying to Railway servants generally
TI/TP-3/2.3	Definitions
TI/TP-3/2.4	Basic knowledge on P.Way, Rolling Stock, Electrical(Traction distribution) and S & T, CRIS and its various applications in Indian Railways,
TI/TP-3/2.5	<b>Signals -</b> Fixed Signals in Multiple Aspect Colour light signals - Distant, Inner Distant, Combination of Distant Signal with Last Stop signal and Gate stop signal, Home, Routing Home, Starter, Inter-Starter, Advanced Starter, Calling-On Signal, Shunt Signal- Types, Gate Stop Signal with 'G' and without 'G' marker, Intermediate Block Stop Signal on Single line, Double line and multiple line, Indicators - Route indicators, Shunting Permitted Indicator, Boards- Warning Boards (Passenger, Goods, Shunting & Station), Shunting/Block Section Limit Board, Caution & Termination Indication Boards, etc. Hand Signals and their description, knowledge and their exhibition, Fog / Detonating Signals, VTO, Fog signal post, Fog Signalling , station detonator register, Working of trains in thick and foggy weather, Warning Signal .
TI/TP-3/2.6	Station layouts, CSL, Marshalling yards, Components of Goods and Coaching yards, Terminal yards
TI/TP-3/2.7	<b>Points and its components -</b> Points and crossovers, turnouts, types of points, setting and securing of Points, Point indicator and trap indicator, Isolation - Definition, Objective, Approved means of isolation, Interlocking - Definition, Essentials of Interlocking, Kinds and Standards of interlocking, Various interlocking devices - Mechanical, Electro mechanical, Electronic and digital interlocking devices - Lever, Lever cabin, Panel, RRI, VDU, BPAC, HASSDAC

TI/TP-3/2.8	<b>System of working</b> - Essentials of Absolute Block system, Classification of Stations, minimum equipment of signals in multiple aspect area, Station section, Block Section - condition for granting line clear, Conditions for taking OFF Home signal, Routing signal, Starter, Inter Starter, Advanced Starter, Intermediate block Stop Signal, Gate Stop Signal, Other system of working applicable on concern railway.
TI/TP-3/2.9	<b>Various Authorities to Proceed</b> - Single line and Double line, Block instrument Failure, Follow up action, Procedure for preparation and issue of authorities
TI/TP-3/2.10	<b>Reception and despatch of trains during signal failure</b> - Duties of SM when signal is defective - Inspection of defective gear, reporting and recording of failures, restoration of failures - S&T/NM, S&T(T/351) (G&SR 3.68)
TI/TP-3/2.11	Procedure for dealing trains during failure of all reception and despatch stop signals, Intermediate Block Stop Signal, Shunt signal, Shunting Permitted Indicator, Gate Stop Signal Other occasions- Reception and Despatch: Reception on obstructed/non-running/non-signalled Road, Despatch from a Non- Running/ Non- Signalled Road, line governed by common Starter Responsibilities of Controller during Block Failure and abnormal conditions.
TI/TP-3/2.12	<b>Control &amp; Working of Stations</b> - Standard Time, Advertised Time, Station Working Rules – Various safety aspects and special features.
TI/TP-3/2.13	Shunting - Definition, Types, Control, Supervision, Shunting on Gradients and Authorities, Securing of Vehicles - Stabling of train at Station /Yard /Siding - Role of station and running staff, Ghat section rules- Slip siding and Catch siding
TI/TP-3/2.14	Caution Order - Types, Circumstances, computer printed caution order, exchange of caution messages through E-Mail, Receiving/Cancelling Caution Order Message, Making Entries in Caution Order Register Engine Pushing, Goods Train without Guard/ BV.
TI/TP-3/2.15	<b>Abnormal Working</b> - Procedure for Sending relief engine, Total Interruption of Communication, Temporary Single line working on Double line, Train parting, Train dividing, Run away trains , Vehicles escaping
TI/TP-3/2.16	<b>Level Crossing</b> -Types, Classification, Working and Failure
TI/TP-3/2.17	<b>Automatic Block System</b> - Essentials and Salient features of Automatic Block System – Single line and Double line Kinds of Signals in Automatic Territory Various Authorities to Proceed - Single line and Double line Passing Automatic / Semi- Automatic / Semi- Automatic Gate Stop Signal / Modified Semi- Automatic Stop Signal at 'ON', Movement against direction of traffic, Shunting Sending Relief Engine/ Train into an Obstructed section Abnormal working in Automatic Block System.

TI/TP-3/3		TRANSPORTATION - 2
TI/TP-3/3.1	<input type="checkbox"/> Brief introduction and role of commercial department <input type="checkbox"/> Classification of station & minimum amenities provided at stations <input type="checkbox"/> Booking of coach & Special Train (FTR) <input type="checkbox"/> General features of rates and freight structure, Theory of rates, Routing,	

	<ul style="list-style-type: none"> <li>☐ Opening and closing of halt station,</li> <li>☐ Wagon demand, Registration, e-Registration, e-Demand, e-Payment</li> <li>☐ allotment &amp; supply of wagon, Change of destination, change of commodity</li> <li>☐ Common carrier liability under section 93 to 104, Provision of 123 to 129 of Rly. Act</li> <li>☐ Various users consultative committees, public relations</li> <li>☐ Procedure for re-booking and diversion, Short of destination</li> <li>☐ Freight incentive schemes &amp; Transportation products</li> <li>☐ Down fall of traffic, Suggestions to capture the traffic, Measures to improve railway earnings</li> </ul>
TI/TP-3/3.2	<ul style="list-style-type: none"> <li>☐ Rail–Road co-ordination and competition,</li> <li>☐ Booking and acceptance of Goods traffic,</li> <li>☐ Demurrage and wharfage rules, stacking permission and rules, Waiver of Demurrage and wharfage</li> <li>☐ Types of sidings &amp; opening of sidings, Traffic survey of new lines</li> <li>☐ Weighment, Re-weighment, Punitive charges</li> <li>☐ Private Freight Terminal, EOL</li> <li>☐ Un connected , Un delivered, Over carrying consignment &amp; working of NR cell</li> <li>☐ Claims, Causes &amp; preventions,</li> <li>☐ Commercial Statistics IT, FOIS, TMS, PMS, NTES</li> </ul>

TI/TP-3/4	TRANSPORTATION - 3
TI/TP-3/4.1	<p><b>Control Organisation :</b></p> <ul style="list-style-type: none"> <li>• Organisational Setup, functions of various controls – trains, traffic, punctuality, power, traction loco, crew, traction power, engineering, S&amp;T, security, C&amp;W, General Electrical</li> <li>• Master Chart – preparation, advance plotting and planning</li> <li>• Duties of Trains Controller, traffic controller, Punctuality Controller, Chief Controller, Various Registers maintained at Control office</li> <li>• Trains Branch- Preparation of various reports on hourly, daily and periodically, Preparation of statistics, USF, Data collection/ monitoring on FOIS and ICMS</li> <li>• Working of Central and Emergency Control at HQ</li> </ul>

TI/TP-3/4.2	<p><b>Goods train operations –</b></p> <ul style="list-style-type: none"> <li>• Nomenclature of various goods stock, Maintenance schedule of Rolling stock, Brake Power Certificate</li> <li>• Kinds of goods trains, load, ordering of goods train, average speed of goods train, Pre-departure and Post arrival detention, putting back of ordered goods trains, Express goods train and Goods time table</li> <li>• Interchange of Goods trains – Forecast and commitments for the day, factors affecting interchange</li> <li>• Block rake marshalling –, movement, special goods stock, CONCORD, CONTRACK, Steel rakes and NMG, Restricted and prohibited trains, TPMS, e-Act, ODC/ISMD</li> <li>• Marshalling yard and its components</li> <li>• Wagon pool, wagon census, stock report</li> <li>• Allotment of wagons, Quotas and restrictions, Preferential traffic schedule</li> <li>• Line Capacity – calculation, factor affecting line capacity, measures to improve line capacity, Load Table, Requirement of Banking and Assisting Engine,</li> <li>• Throughput - factor affecting, measures to improve throughput, ESP, SIP, DPR, Goods Terminal, various Sidings – working, measures to reduce detention</li> </ul>
TI/TP-3/4.3	<p><b>Passenger train operation –</b></p> <p>Nomenclature of various coaching stock, Special features of New coaching stock</p> <p>Types of passenger carrying trains – Mail/Express, Super Fast, Passenger viz conventional, EMU, DEMU, MEMU, Train-18, Tejas, Train-20 etc.</p> <p>Time tabling of Passenger trains – types, procedure for preparation, issue and revision , SATSANG, Platform occupation Chart, pit-line occupation chart</p> <p>Running time- Calculation, Speed trial, MPS, Booked Speed, Speed over Facing Points, turnouts, Various time allowances.</p>
	<p>Punctuality – calculation, factors affecting punctuality and measures to improve punctuality, PAM, GPS, Data logger, e-TSR, LTM-Cause wise analysis</p> <p>Rake link- Preparation and issue of Rake link booklet</p> <p>Movement of special / VIP trains, precautions for military and 'mela' special</p>
TI/TP-3/4.4	<p><b>Loco Utilisation -</b></p> <p>Locos – types, hauling capacity, detention, balancing, power plan, outage, measures to improve loco utilisation, engine link, Maintenance – Scheduling of various locos, POH, ROH, nomination of locos for various services and sections, economy in fuel consumption, Managing loco failures, Dead loco movement</p>
TI/TP-3/4.5	<p><b>Crew Management</b> - crew link, booking of crew, lobby working, 10 hour rule, HQ and outstation rest, Running room and other facilities for crew.</p>
TI/TP-3/4.6	<p><b>Operating Statistics</b></p> <p>Wagon holding- Average wagon balance, Wagon KM per Wagon Day, NTKM per Engine Hour, NTKM per Wagon Day, EKM per Engine Day on Line, In Use etc.</p> <p><b>Wagon turn round</b> – calculation and measures to improve wagon turn round, Operating Ratio</p>
TI/TP-3/4.7	<p><b>Train Papers -</b></p> <p>Combined Train Report, Rough Journal Book, Vehicle Guidance , Late Train Memo</p>
TI/TP-3/4.8	<p><b>Inspections -</b> Objectives, types, levels, periodicity, Techniques, follow up</p>

TI/TP-3/4.9	<b>Non-Interlocked working</b> - Temporary Working Instructions and Safety precautions, Preparation of chart, planning train operations, precautions to reduce train detentions
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TI/TP-3/5 TRANSPORTATION - 4	
TI/TP-3/5.1	<p><b>S&amp;T:</b>            Specific duties under G&amp;S.R            Duties of S&amp;T Staff – Co-ordination with other Departments, Maintenance Schedule, etc Forms &amp; Memos:</p> <ul style="list-style-type: none"> <li>• S&amp;T (NM), S&amp;T (T/351)</li> <li>• Failure Advice &amp; Joint Restoration Memo</li> <li>• Route Release Memo, etc</li> </ul> <p>Joint Inspection of Points &amp; Crossings with JE/SE/P.Way – Schedule, Observations, Follow up            Signal Sighting Committee            Panel/RRI/SSI- Resetting of Route/BPAC, Data Logger-Use in failure restoration &amp; Maintenance</p>
TI/TP-3/5.2	<p><b>Engineering :</b>            Specific duties under G&amp;S.R            Duties of P.Way Staff – Co-ordination with other Departments, Maintenance Schedule, etc            Basics about Track, Track-Wheel Interface, Sleepers, Ballasts, etc            Types of Track Defects – Slack/Rough running, Lurch, Buckling, etc            Types of Track Machines, Types of Blocks &amp; Working of Track Machines            Types of Engineering Works-CTR,DSW,TRR,TSR            Blocking of Running Lines, Precautions            Integrated Block System &amp; Block Corridor            Action in case of weather warning messages</p>
TI/TP-3/5.3	<p><b>Electrical :</b>            Specific duties under G&amp;S.R            Duties of OHE Staff – Co-ordination with other Departments, Maintenance Schedule, etc            Basics about AC Traction, Elementary Knowledge of OHE            Types of Power Block-Precautions &amp; Procedures, Working of Tower Wagon            Visit to Traction Power Controller Office, SCADA            OHE Sectioning Diagram, FP, SSP, SP, Sector, Sub-Sector, Elementary and Neutral sections, Reporting of abnormalities and action to be taken.            Operation of Isolator Switches, Authorized Persons            Types of Power Block, Precautions &amp; Procedures, Power Block Registers</p>
TI/TP-3/5.4	<p><b>Mechanical :</b>            Rolling Stock – Features &amp; Specifications            Locomotives- Kind, Features and Specifications            Examinations- kinds, Things to be observe and Specifications            Brake System – Working of Air Brake System            Abnormal occasions – Flat Tyre, Brake Binding, Hot Axle, open door etc            Brake Power Certificates – Various kinds of Coaching &amp; Freight BPCs</p>

TI/TP-3/6 PRACTICAL TRAINING	
TI/TP-3/6.1	HOC/TOC, Login, Password, Observe current position, forecast and plan
TI/TP-3/6.2	Charting of trains in the section – Train Ordering, Entering train timings, Plotting work-on-line, line block, power block, caution order, abnormal working, failures of all types, movement of motor trolleys, stabling of vehicles at stations, line position of stations
TI/TP-3/6.3	COA hand held training through CRIS offline.

TI/TP-3/7 SAFETY MANAGEMENT	
TI/TP-3/7.1	<p><b>Accidents</b> – Definitions, Threshold Value, Classification, Reporting, Assistance Protocol.</p> <ul style="list-style-type: none"> <li>• Accident case studies, Safety in train operation</li> <li>• Consequential &amp; other Train accidents</li> <li>• Indicative Accidents – Class F, G &amp; H</li> <li>• Accident Management- Sounding of Hooter, Movement of Relief trains</li> <li>• Chain of command during accident, Running of ART/SPART, ARME/SPARME, Break down Special, Target Time,</li> <li>• Protection of line, Preservation of clues at the site</li> <li>• Various Accident Forms,</li> <li>• Duties of SM, Guard, LP, Controller and Supervisors of various department in case of Serious Accidents</li> <li>• Person falling out / knocked down by Trains – Duties of Guards &amp; SM</li> <li>• Slack, Rough running reported by LPs / Guards</li> <li>• Fire on Trains, Hot Axle, Train Parting / Dividing</li> <li>• Prima-facie cause of accident, Reading and measurement at accident site by Supervisors and preparation of Joint Note</li> <li>• Ex-gratia payments</li> <li>• Causes of accidents and remedial measures</li> <li>• Accident enquiries, Levels of Enquiry</li> <li>• Chronological Register (Log Book)</li> </ul>
TI/TP-3/7.2	<p><b>Disaster Management</b> – Introduction, Various Organizations, Developments on DM at National level, Golden Hour, DM Plans – at Divisional &amp; Zonal levels, Various Telephone Nos. of Authorities to be used in requirement of assistance. Working of trains during disasters (Floods, Cyclones, Earthquakes etc)</p>
TI/TP-3/7.3	<p><b>First Aid</b> – (Theory &amp; Practical) Aims and Objective of First Aid, Respiration, Fractures, Poisons, Injuries to internal Organs.</p> <p>Principles of First Aid, Brief description of the structure and functions of the body. General description of heart and vessels. Circulation of blood. Heart attack, Blood pressure &amp; CVS. Half Day Hands on Practice.</p>
TI/TP-3/7.4	<p><b>Fire Fighting</b> – Theory &amp; Demonstration, Civil defence. Types of fire, causes of fire in train and at station, types of fire extinguisher, upkeep/readiness and use of fire extinguisher. Prevention of fire.</p> <p>Half Day Hands on Practice.</p>

TI/TP-3/8 INFORMATION TECHNOLOGY	
TI/TP-3/8.1	Computerization in Indian Railways
TI/TP-3/8.2	Basic Knowledge of Computers (Word, Excel, Power Point), Means of Social Media and their uses.

TI/TP-3/8.3	COA, FOIS, RMS,TMS, COIS, ICMS, PAM, CMS, NTES, WILD, SIMRAN, SATSANG etc- an overview and integration
TI/TP-3/8.4	Hand on Practice.

<b>TI/TP-3/9 ETHICAL LEADERSHIP &amp; SOFT SKILL</b>	
TI/TP-3/9.1	Ethics – Meaning, Role, Need, Value and Importance in public life.
TI/TP-3/9.2	Leadership – Meaning, Role, Need, Value and Importance, Team building, Crowded/Mob Management.
TI/TP-3/9.3	Personality Development - Meaning, Need and Importance. Positive Attitude Development, Effective communication Skills, Patience, Brain Storming, Perception. Forgiveness, Case studies/ inspirational videos.
TI/TP-3/9.4	Stress Management - Meaning, Causes, Symptoms, remedies importance in personal and professional life.
TI/TP-3/9.5	Customer care - Public perception, public relations, courtesy, Customer service its importance and provision.
TI/TP-3/9.6	Soft Skills – Meaning, Requirements and its importance in public life.
TI/TP-3/9.7	Yoga, PT, Meditation and Shramdan.
TI/TP-3/9.8	Sports

<b>TI/TP-3/9A CHILD RIGHT , CHILD PROTECTION AND RELATED LAWS</b>	
TI/TP3/9.1A	Introduction- Brief about the Organization, Introduce the training and sharing of objective.
TI/TP-3/9.2A	Pre-Assessment- To understand participant's knowledge, attitude, practice in relation to child protection.
TI/TP-3/9.3A	Introduction to child rights- The participants to gain an understanding of the following: Who is child, Why children are on street and on railway platforms? And their vulnerabilities, What are child Rights?
TI/TP-3/9.4A	Introduction to child Protection Mechanism and legal framework in India-Brief introduction and highlights of major laws on child protection with special focus on Juvenile Justice (Care and Protection)Act, 2015
TI/TP-3/9.5A	Orientation on Railway's SOP for Railways to care and protection of children in contact with Railways -Introduction to key components of the SOP and Guidebook, Participants to be introduced to the various roles and responsibilities SS/SM, Roles and responsibilities of CHD with specific focus on RPF, Protocols to be followed in relation with children at the rly. stations and in Train
TI/TP-3/9.6A	Open discussion- Open discussion with participants about challenges while dealing with children
TI/TP-3/9.7A	Post-Training Assessment- To understand participant's knowledge, attitude practice in relation to child protection
TI/TP-3/9.8A	Feedback and vote of thanks

<b>TI/TP-3/10 CONTROL TRAINING</b>	
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TI/TP-3/10.1	Control Training In the Division's Control Office for 6 Days.
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TI/TP-3/11	EXAMINATION	Day	Hours
TI/TP-2/11.1	<b>Paper – 1 (Transportation and Safety Management)</b> <b>Max Marks: 100</b> [Obj: 40 Marks; Descriptive: 60 Marks]	1	3
TI/TP-2/11.2	<b>Paper – 2 (Commercial and Others)</b> <b>Max Marks: 100</b> [Obj: 40 Marks; Descriptive: 60 Marks]	2	3
TI/TP-2/11.3	<b>Paper – 3 (Charting) Max</b> <b>Marks: 100</b>	3	3

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