कार्यालय महाप्रबन्धक (कार्मिक), पूर्वोत्तर रेलवे / गोरखपुर-273012
Office of the General Manager (P), N. E. Railway Gorakhpur-273012

कमांक–32
आर.बी.ई. सं.– 23/2024
File No: NER-HQ0PERS(POLI)/6/2023-O/o SPO/HQ/HQ/NER(**Computer No:** 86343) दिनांक 12.03.2024

सचिव / महाप्रबन्धक
सचिव / अपर महाप्रबन्धक
सभी विभागाध्यक्ष
सभी मण्डल रेल प्रबन्धक
सभी कार्मिक अधिकारी
सभी मुख्य कारखाना प्रबन्धक
सभी अतिरिक्त मण्डलाधिकारी / स्थापना
पूर्वोत्तर रेलवे

विषय : Revised Training Modules for Loco Pilots and Assistant Loco Pilots Cadre.

संन्दर्भ :–रेलवे बोर्ड का पत्र सं.E (MPP)/2023/03/41 दिनांक 07.03.2024

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रेलवे बोर्ड के पत्र सं, E (MPP)/2023/03/41 (RBE No. 23/2024) दिनांक 07.03.2024 की प्रतिलिपि सूचना, मार्ग दर्शन एवं आवश्यक कार्यवाही हेतु संलग्न कर प्रेषित की जा रही है ।

संलग्नक / यथोपरि

(गोपाल प्रसाद गुप्ता)
वकाधि / मुख्या.
कृते महाप्रबन्धक / कार्मिक

प्रतिलिपिनिम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाहीहेतुप्रेषित :–
1) महामंत्री / एन.ई. रेलवे मजदूर यूनियन / गोरखपुर।
2) महामंत्री / प्रमोटी अधिकारी संघ / पूर्वोत्तर रेलवे / गोरखपुर।
3) पूर्वोत्तर रेलवे प्रथम श्रेणी अधिकारी संघ / गोरखपुर।
4) महामंत्री / एस.सी. / एस.टी. एवं ओबीसी एशोसियेशन / गोरखपुर।

कृते महाप्रबन्धक / कार्मिक

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RBE No. 23/2024

भारत सरकार Government of India
रेल मंत्रालय Ministry of Railways
(रेलवे बोर्ड) (Railway Board)

No. E (MPP)/2023/03/41 **New Delhi, dated: 7.03.2024**

The General Manager,
All Zonal Railways/PUs
Metro Railway, Kolkata
CORE, Allahabad
DG/RDSO/Lucknow
CAO/DMW/ Patiala
CAO/COFMOW/New Delhi
ED/CAMTECH/Gwalior
DG/NAIR/Vadodara
DG/IRITM/Lucknow
DG/IRIEEN/Nasik
DG/IRICEN/Pune
DG/IRISET/Secunderabad
DG/IRIMEE/Jamalpur
DG/ IRIFM/ Secunderabad
DG/ JRRPF/ Lucknow

Sub: Revised Training Modules for Loco Pilots and Assistant Loco Pilots Cadre.

The existing training modules for Loco Pilots (LPs)/Assistant Loco Pilots (ALPs) cadre have been reviewed in the Board's office in view of the changing technological environment, and taking Safety of passengers' into account. The revised training modules, enclosed as Annexure, have been approved by Board (Member/T&RS).

2. It may be noted that the revised training modules for LP/ALP Cadre have been formulated after undertaking a holistic review of all the existing training modules for LPs/ALPs. Hence, this comprehensive set of revised training modules may only be referred to for training of LP/ALP cadre, and this will supersede all existing training modules for LP/ALP cadre issued earlier.

3. Accordingly, the revised training modules for Loco Pilot/ALP cadre have been scanned and uploaded under **MPP Training Circulars** and can be viewed or downloaded from **Railnet/Indian Railways website.**

4. Kindly acknowledge receipt.

Encl. : (Revised Training Modules: 96 Pages)

6/3/24

(Amit Singh Mehra)
Director/Man Power Planning

No. E (MPP)/2023/03/41 **New Delhi, dated: 7.03.2024**

Copy to:

1) The General Secretary, NFIR, 3 Chelmsford Road, New Delhi for information (Copy may be downloaded from E(MPP) Training Circulars/Railnet/Internet).

2) The General Secretary, AIRF, 4 State Entry Road, New Delhi for information (Copy may be downloaded from E(MPP) Training Circulars/Railnet/Internet).

3) The Secretary General, FROA, R.No.256-A, Rail Bhavan, New Delhi for information (Copy may be downloaded from E(MPP) Training Circulars/Railnet/Internet).

4) The Secretary General, IRPOF, R.No.268, Rail Bhavan, New Delhi for information (Copy may be downloaded from E(MPP) Training Circulars/Railnet/Internet).

5) All Members, Department Council & Secretary Staff side National Council 13-C, Ferozeshah Road, New Delhi (Copy may be downloaded from E(MPP) Training Circulars/Railnet/Internet).

6) The Secretary General, AIRPF Association, Room No.256-D, Rail Bhavan, New Delhi (Copy may be downloaded from E(MPP) Training Circulars/Railnet/Internet).

7) General Secretary, All India SC & ST Railway Employees Association, 171/B-3, Basant Lane Railway Colony, New Delhi (Copy may be downloaded from E(MPP) Training Circulars/Railnet/Internet).

For Principal Executive Director (IR) /Railway Board

No. E (MPP)/2023/03/41 **New Delhi, dated: 7.03.2024**

Copy to:

i) PS & ED(PG) to MR, MoSR (D) & MoSR (J)

ii) PSO/Sr.PPS to CRB, MF, M(Infra.), M(TRS), M(O&BD), DG(HR), DG(RHS) & DG(RPF)

iii) Sr.PPS/PPS/PS to AM(Budget), AM(CE), AM(C&IS), AM(Comml.), AM(Traction), AM(Fin), AM(Mech.), AM(Plg.), AM(Project), AM(PU), AM(Sig.), AM(Staff), AM(RS), AM(T&C), AM(Tele), AM(TT), AM(Works), PED(Vig.), PED(Safety), PED(Coaching) LA,

iv) ED(Plg.), ED(Accts.), EDCE(B&S), EDCE(G), EDCE(Plg.), ED(CHG), ED(CC), ED(C&IS), ED(E&R), EDEE(Dev), EDEE(G), EDE, ED(RRB), EDE(N), EDE(Res), EDF, EDF(B), EDF(X)I, EDF(X)II, ED(H), JS(C), EDME(Chg.), EDME(Fr.), ED(PC)I, ED(PC)II, EDRE, ED(Safety), ED(Safety)-II, IG./RPF(Hqs), ED(Sig.), ED(SP), EDRS(G), EDRS(S), ED(TD), EDTC(R), EDCE(P), ED(PM), ED(FM), EDPG, EDTT(F), EDTT(S), EDV(E), EDV(Elect), EDV(T), EDVE(S), ED(W).

v) Chief Commissioner of Railway Safety, Lucknow.

vi) E(Trg.), E(NG)I, E(NG)II, E(G), F(E)I, F(E)II, F(E)III, E(SCT)I, E(SCT)II branches of Railway Board.

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ANNEXURE

Assistant Loco Pilot Induction Training Course – Electric Traction

Course Code - AIM

Sn.	Training Content	Duration (in days)	
		Class Trg.	Field Trg.
AIM-1	**Orientation Module**	1	
	Organizational structure of IR		
	Comprehensive presentation on the independent role of ALP		
AIM-2	**Lobby Module**	0.25	
	General Description of Lobby working		
	Procedure of Sign-On & Sign-Off through CMS kiosk, Breathalyzer test		
AIM-3	**Running Room Module**	0.25	
	Overview of Running Room functioning		
	Brief on rest rules and importance of it in life of running staff		
AIM-4	**Yard Module -** Yard & Yard Master office	0.5	
	Overview of Yard layout & functions		
	Learning road procedure in yards		
AIM-5	**Station Module -** Station and SM office	0.5	
	Brief description of duties performed by SM/ASM & importance of Signal exchange by station staff		
	Overview on Grant of block - Traffic and OHE, means of communication & tools available at stations		
	Field visit on the above modules		2
AIM-6	**Driving Module - Initial**	4	
	Familiarization with cab & apparatus there in		
	Loco log book		
	Signal call out		
	Duties of ALP		
	Footplate / Field training as Co-ALP		3
	Exam (AIM 1 - 6)	0.5	
AIM-7	**Loco Module**		
	Basic circuitry concept	1	
	Under Frame	4	1
	Machine Room & panels	3	1
	Footplate / Field training as Co-ALP		4
	Locomotive Roof	1	1
	Pneumatic Module incl. testing	3	2
	Footplate / Field training as Co-ALP		4
	Exam – (AIM - 7)	0.5	
AIM-8	**Driving Module – Advance**	10	

	Precautions & inspections of loco		
	Loco energizing de-energizing procedure / sequence		
	Stabling of loco		
	Grounding & un-grounding procedure		
	Cab changing procedure		
	Footplate / Field training as Co-ALP		4
	Knowledge of safety equipment		
	Description of Flasher light		
	Attaching & detaching locomotive		
	MU operation and cab changing procedure		
	Footplate / Field training as Co-ALP		4
	Exam – (AIM 8)	0.5	
AIM 9	**Transportation Module -** Transportation, First Aid, Fire Fighting	24	
	Exam – (AIM 9)		
AIM-10	**C&W and Air Brake Module** & overview of EMU/ MEMU, Vande Bharat type train set, Push-Pull etc.	2	
AIM-11	**TrD Module**	1	
AIM-12	**Control Office Module (TLC, TPC & Section Controller)**	1	1
	Exam (AIM 10-12)	0.5	
AIM-13	**Safety Module – Duties / Role of ALP**	4	
	Derailment, collision, Fire, etc		
	Train protection and opposite line protection		
	Train operation during fog / poor visibility		
	OHE hanging / OHE breakdown		
	Axle seizure / hot axle, etc		
	Footplate / Field training as Co-ALP		4
AIM-14	**Loco Operation Module**	4	
	Action in case of trouble / failure of loco with the help of TSD or helpline		
	Lookout on signal, track, OHE & adjacent line, Tress passers etc.		
	EEC & GR manual operation in Conventional loco.		
	VCD act on line		
	Operation of PTDC in three phase locomotives		
	Working from rear cab		
	Footplate / Field training as Co-ALP		4
AIM-15	**Train Operation Module**	3	
	Detection of flat wheel /hot axle in loco / train		
	Train stalled on gradient section & precautions to avoid rolling down		
	In case of FIBA, VESDA, etc act on line		

	Train working in case of failure of air suspension spring		
	Hose pipe disconnection		
	Miscellaneous failures in train/ wagons		
	Footplate / Field training as Co-ALP		4
	Exam (AIM 13-15)	0.5	
AIM-16	**Learning Road Module**	1	
	Importance of quality Road learning		
	Methodology of quality LR - marking of features of sections like critical locations, signal, gradient, etc		
	Sketching of critical yard and multiple line stations.		
AIM-17	**Simulator and Tripping car Module**	3	
	Practical training of ALP on simulator including application of emergency brake by trainee ALP through RS valve		
	Manual operation of GR & EEC in conventional loco tripping car		
	Footplate / Field training as Co-ALP		4
AIM -18	**Case Studies Module**	3	
	Case studies linked with various above modules		
	Final Exam covering all modules	1	
	Total Days	78	42
	Grand Total Days	**120**	

AIM-1

DESCRIPTION
Orientation Module

DURATION
1 day

CONTENTS

S.no.	Subject	Duration in days
1.	Welcome address & brief on organizational structure of Indian Railways, brief on departments & role.	**1 Day**
2.	Comprehensive presentation on the independent role of ALP in safe train operation& brief description of ACTM and relevant rules applicable to ALP like Cleanliness of Loco, lookout glass cleaning, ALP shall assist the LP, to obey the lawful order of LP, etc.	
3.	Precaution/rules to be followed in electrified zone/electric locomotive • Safety precautions related to 25kV OHE • Safety precautions during corridor / machine room inspection on moving loco	
4.	Role of punctuality in life of running staff	
5.	Appearance and proper uniform.	
6.	Safety precaution during field training shed visit, riding on loco, crossing of railway track.	

AIM-2

DESCRIPTION
Lobby Module

DURATION
¼ day

CONTENTS

Sno.	Subject	Duration in days
1.	General Description of Lobby working	¼ day
2.	Procedure of Sign-On & Sign-Off through CMS kiosk	
3.	Breathalyzer test & its importance (Dos/Don’ts related to consumption of alcohol)	
4.	Overview of Registers & notices/safety bulleting kept in lobbies	
5.	Booking pattern of ALPs on freight trains (FIFO, booking after availing leaves, after PR, etc.)	
6.	Serving of call book	
7.	Leave sanctioning procedure by Sr.CC/CC	
8.	Brief overview of IT tools like HRMS, CMS etc.	
9.	Chalak Dal App and Usage.	

AIM-3

DESCRIPTION
Running Room Module

DURATION
¼ day

CONTENTS

Sno.	Subject	Duration in days
1.	Overview of Running Room functioning	¼ day
2.	Exposure on common facilities available in Running Rooms	
3.	Brief on rest rules and importance of it in life of running staff	
4.	Overview of subsidized meal system in running rooms, system of meal where subsidized meal is not available.	
5.	Dos & don’ts during stay in running room	
6.	Switching off of mobile during rest period in running room	
7.	Procedure of call book serving in running room	
8.	Reporting for duty at out station lobby well in before schedule departure of train (mentioned in call book)	

AIM-4

DESCRIPTION
Yard Module – Yard & yard Master’s office visit incl. LR on foot procedure in yards

DURATION
½ day

CONTENTS

Sno.	Subject	Duration in days
1.	Overview of Yard layout	½ day
2.	Brief on of yard operations: use of switches (turnouts) to direct trains to the appropriate tracks for sorting, classification, or departure.	
3.	Communicating with train crews, including Train Managers (Guard), to ensure a smooth departure and arrival of trains.	
4.	Managing signals within the yard to control the movement of trains and ensure safety during shunting and marshalling.	
5.	Dispatching trains from the yard, coordinating with other yard masters, section controllers, and higher authorities.	
6.	Learning road procedure in yards : On foot LR to conversant with yard signals, crossings, points,	

Sno.	Subject	Duration in days
	washing line, pit line, wired/unwired lines, etc.	

AIM-5

DESCRIPTION **DURATION**

Station Module–Station & SM/ASM office visit **½ day**

CONTENTS

Sno.	Subject	Duration in days
1.	Brief description of duties performed by SM/ASM	**½ day**
2.	Importance of Signal exchange by station staff with passing trains.	
3.	Communicating with section controller to coordinate train movements.	
4.	Line clear obtaining / granting procedure as per system of working.	
5.	Departure/Arrival of trains from/to the station in accordance with the schedule and safety protocols.	
6.	Managing and controlling signals at the station to facilitate safe train movements on the assigned tracks.	
7.	Responding to emergencies, accidents, or incidents at the station and coordinating with relevant authorities for assistance.	
8.	Facilitating the changeover of train crews at the station.	
9.	Brief description on means of communications available in SM's office/cabin like Control phone, TLC/TPC phone, P&T phone, VHF set, walkie-talkie, etc.	
10.	Tolls available with ASM/SM for securing the loads like chains, sprag & wedges, padlocks, clamps etc,	
11.	Registers like stabling register, train intactness register etc	
12.	Overview on Grant of block - Traffic and OHE	
13.	Role of statin staff like Porter/Points men and their duties during train passing and signal exchanging with train crew, stabling of load, etc.	
14.	General description of responsibility of Technician Signal (ESM), relay room, panel etc.	
15.	Brief overview of Data logger.	

DURATION

Field Visit on above modules **2days**

DESCRIPTION
Driving Module - Initial

DURATION
4 days

CONTENTS

Sno.	Subject	Duration in days
1.	Familiarization with layout of loco cabs of three phase & conventional locomotives (incl. WAG12)	**4days**
2.	Knowledge of A9/SA9 brake valves, Horn, wiper, other apparatus in cab	
3.	Knowledge of various equipment like Headlight, Flasher light, Marker light, gauges & meters in cab, etc and their functions.	
4.	Location of handbrake / parking brake and its operation	
5.	RS valve (emergency brake valve)	
6.	Familiarization with Loco log book & Loco Pilot's pocket diary	
7.	Duties of ALP w.r.t. signals	
8.	Importance of Signal call out and procedure (Demonstration of procedure of call out signal as per instructions laid down. This should be demonstrated by each trainee ALP multiple times)	

Footplate /Field training as Co-ALP

DURATION
3days

Footplate /Field training as Co-ALP for overseeing the cab of various electric locomotives and functions of ALPs during normal train operation. Special emphasis should be given to procedure of signal call out by ALP.

Exam

DURATION
½ day

Exam – (AIM-1 to AIM-6).

AIM-7

DESCRIPTION
Loco Module

DURATION
25days
Incl.
Shed/field/Practical/
Footplate

CONTENTS

Loco Sub-Module – Basic Circuitry Concept **1 Day**

Sno.	Subject	Duration in days
1.	**Basic Circuitry Concept**	
1.1	Principle of electric locomotives - three phase & conventional electric locomotives (incl WAG12)	1 Day
1.2	different electrical circuits of 3 Phase electric locomotives	
1.3	Brief description of different electrical circuits of conventional electric locomotives	

Loco Sub-Module – Under Frame **5 Days**

Sno.	Subject	Duration in days
2.	**Loco Under Frame**	4 days
2.1	Brief description on under frame safety fittings & intactness like cattle guard, rail guard, sand box & sander pipes, side buffers, CBC & TC coupling, axle box, battery box, other under gear equipment which needs to be checked on line, etc.	
2.2	Different parts of bogies of conventional & three phase locomotives which need to be checked for safety of locomotive.	
2.3	Location of different type of pneumatic valves, cocks, gauges and their normal positions	
2.4	Moisture draining locations, location of lubrication points, etc.	
2.5	Application of hand brake / parking brake and releasing.	
2.6	Location of wooden wedges and usage	
2.7	**Shed/field visit for location of equipment & practical training**	1 day

Loco Sub-Module – Machine Room & panels **4 Days**

3.	**Machine Room & panels**	
3.1	Layout & location of equipment in corridors, machine room.	3 days
3.2	Location of various pneumatic pressure switches which needs to check during trouble shooting.	
3.3	Brief description of relays, switches, MCB etc and their normal positions.	
3.4	Location and checking procedure of different oil levels like GR, transformer, traction converters, CP, coolant level of Traction converter etc.	
3.5	Location of fixed and portable fire extinguishers and their usages.	
3.6	**Shed / field visit for location of equipment & practical training**	1 day

DURATION

Footplate /Field training as Co-ALP **4 days**

Footplate /Field training as Co-ALP for overseeing the location and functions various locomotive equipment and action of ALPs during normal train operation.

Loco Sub-Module – Roof **2 Day**

4.	**Roof Module**	
4.1	Brief description of loco roof equipment like pantograph, roof bars, HPT link, surge arrestor etc.	1 day
4.2	Description of various equipment of pantograph.	
4.3	Knowledge of ORD in high reach pantograph	
4.4	Raising & lowering of pantograph	
4.5	**Shed/ Field visit for location of equipment & practical training**	1 day

Loco Sub-Module – Pneumatic incl testing **5Days**

5.	**Pneumatic test & procedures**	
5.1	Basic principle of loco brake system	3 days
5.2	Description of E-70 & CCB brake panel of three phase locomotives	
5.3	Function of A9 & SA9 valves and their different positions along with amount of pressure drop.	
5.4	Overview of PTDC procedure of three phase locomotive.	
5.5	Working of Compressor, MR buildup and creation of BP & FP.	
5.6	Application of brake through A9 & SA9 and releasing	
5.7	Procedure of BP leak test	
5.8	Procedure of FP leak test	
5.9	Procedure for leak test in train	
5.10	Description of continuity test and procedure	
5.11	Importance of brake feel test & brake power test and procedure	
5.12	Testing procedure of loco brake power & its importance in light engine operation.	
5.13	Function & use of BPEMS switch.	
5.15	Hose pipe connection/disconnection	
5.16	**Shed/field visit for location of equipment & practical training**	2 days

Footplate /Field training as Co-ALP **DURATION 4 days**

Footplate /Field training as Co-ALP for overseeing the location and functions various pneumatic equipment on loco and action of ALPs during normal train operation.

Exam **DURATION ½ day**

CONTENTS

Exam – (AIM-7).

AIM-8

DESCRIPTION
Driving Module - Advance

DURATION
18days
Incl.
Shed/field/Practical/
Footplate

CONTENTS

Sno.	Subject	Duration in days
	Part-I	5 days
1.	Precautions & inspections of loco before taking over charge in yards, shed/outpit, etc. like ensuring loco standing online & under OHE, general inspection of loco under frame, etc.	
2.	Description of Flasher light and its usage & checking procedure	
3.	Loco energizing precautions, procedure/sequence	
4.	Loco de-energizing procedure/sequence	
5.	Stabling of loco (including securing of loco using hand brake, parking brake, wooden wedges, etc.).	
6.	Inspection of loco at halts& crew changing points, inspection of axle boxes, under frame equipment and TM fixation and draining of MRs etc.	
7.	Grounding & ungrounding procedure of three phase & conventional loco.	
8.	Cab changing procedure	

Footplate /Field training as Co-ALP

DURATION
4 days

Footplate /Field training as Co-ALP for overseeing the above procedures, tests and action of ALPs during normal train operation.

Sno.	Subject	Duration in days
	Part-II	5 days
9.	Multiple loco operation and cab changing procedure	
10.	Overview on operation of PTDC in three phase locomotive	
11.	Attaching & detaching locomotive including coupling, hose pipe connection, and precaution before attaching on load	
12.	Brake continuity test and its procedure	
13.	Loco brake testing procedure	
14.	Brief overview of long-haul / Python train & Push-Pull loco operation	
15.	Overview of DPWCS, EOTT, etc.	

16.	Knowledge of safety equipment like VCD, KAVACH, RDAS, Fog Safe/Fog Pass device, etc.	
17.	Operation of sanding gear and its importance	
18.	Procedure of loco HT/LT testing	

Footplate /Field training as Co-ALP **DURATION 4 days**

Footplate /Field training as Co-ALP for overseeing the above procedures, tests and action of ALPs during normal train operation.

Exam **DURATION ½ day**

CONTENTS

Exam – (AIM-8).

AIM-9

DESCRIPTION **DURATION**
Transportation Module **24 days**
Transportation, First Aid,
Fire Fighting (incl. Exam)

CONTENTS

Sno.	Subject	Duration in days
1.	Important definitions such as Adequate Distance, Block Section, Isolation, Faulting mark, Running Line, Axle counter, Station section. Authority to proceed and Station working rules, Light engine, Relief Engine, Banking Engine, Train Engine, Shunting Engine, etc	24 days
2.	Personal equipment of ALP	
3.	Stations • Kinds and classification of stations minimum essential signals etc. for each station. • Block and non-Block stations. • Block overlap. • Yard Layout, etc.	
4.	System of working – • Absolute Block System • Automatic Block System, • Train following System, etc	
5.	Signals – • Necessity and Evaluation of signals, • classification and kinds of signals, • Approach and Departure signals permissive signals, subsidiary signals, etc.	
6.	Defective signals • Defective signal, Automatic signals, Semi-	

Sno.	Subject	Duration in days
	automatic and Gate signals, manual signals. • Action and rules for passing defective signals of different types. • Practical tour for sight in Yard.	
7.	Engineering signals – • Engineering Signals. Their placement. • Permanent and Temporary Engineering Cautions. • Brief of Ghats Section. • Speeds.	
8.	Isolation	
9.	Different authorities/forms	
10.	Working of trains • When Headlight is failed. • When a train is received on Blocked line or to be started from a Non-Signal/Non running line without brake van or without guard. • Departure from non-signaled line • When train has a hot axle. • Having ODC • Train formed from a non-TXR point, etc. • Caution order • Authorized persons in Cab • Stopping on gradient	
11.	Abnormal working – • Rules for working of trains – single line working on Double line in absolute and automatic Block Sections. • Total failure Communication. • Rules for sending relief engine from right line and wrong line. • Precautions to be observed during abnormal working in different cases.	
12.	Shunting – • Kinds of shunting. • Precautions for safe and smooth shunting. • Rules for shunting in Yard, coaching Yard and “B” class stations. • Model Room training.	
13.	Train operation in fog	
14.	Protection Rules	
15.	Exchange of Signal & its significance	
16.	Accident – • Duties of ALP in case of accident. • Mid Section derailments. Engine failures etc. • Over shooting • Protection in block section in case of accidents. • Use of detonators	
17.	Duties in case of fire in train/loco.	
18.	Identifying and handling of various types of fire extinguishers, precautions to be taken while extinguishing fire, Render first aid to the burn injuries, first aid to persons affected by suffocation,	

Sno.	Subject	Duration in days
	communication, etc.	
19.	**Exam**	

AIM-10

DESCRIPTION
C&W and Air Brake Module & EMU/MEMU, Vande-Bharat type train set, Push-Pull, etc.

DURATION
2 days

CONTENTS

Sno.	Subject	Duration in days
1.	Different types of Rolling stock - Nomenclature	2 days
2.	Air brake system - working method with diagrams, parts & functions, working single pipe and Twin pipe air brake system. Pneumatic brake - working principle, BMBS and APS, Hand brake in rolling stock.	
3.	Brake power certificates - kinds - Coaching & Freight trains, percentage of brake power required in goods/mixed/passenger trains, Alarm chain pulling - resetting & isolation, FIBA, Fire Detection(VESDA), etc	
4.	Continuity test, cases of brake binding and releasing, Flat wheel detection and action to be taken.	
5.	LHB coach, Hybrid coach, conventional coach, Hot axle symptoms and action to be taken.	
6.	Guard & Loco Pilot check - clearance from road side station/sidings/non-TXR points & brake power calculation	
7.	Brake continuity test and its importance, isolation of distributor valve.	
8.	Overview of EMU/MEMU, Vande-Bharat type train set, Push-Pull, etc.	
9.	Train working without guard	
10.	Discussion on Miscellaneous failures in trains / wagons	

AIM-11

DESCRIPTION
TrD Module

DURATION
1 day

CONTENTS

Sno.	Subject	Duration in days
1.	Brief overview of OHE system	1 day
2.	Familiarization with OHE equipment for identification (including cantilever assembly)	
3.	Electrical engineering boards	
4.	Description & usage of neutral section related boards (500 meter board, 250 meter board, DJ open board, DJ close board).	
5.	Duties of ALP during OHE Break Down.	
6.	Precaution before passing neutral section and before resuming traction after passing neutral section	
7.	Description of SIGMA board and its importance	

AIM-12

DESCRIPTION
Control Office Module

DURATION
2days
Incl.
Shed/field/Practical/
Footplate

CONTENTS

Sno.	Subject	Duration in days
1.	**Traction Control Office**	½ day
1.1	Brief description on the role of Traction Control organizational structure	
1.2	Communication protocol for informing TLC regarding loco failure, abnormalities, etc.	
1.3	Exposure of related IT tools like ICMS, FOIS, etc.	
1.4	General knowledge of Booked speed, Max speed, sectional speed	
1.5	General knowledge of Crew link, loco link, etc.	
1.6	Maintaining various records regarding schedule inspection carried out, overdue, etc.	
1.7	Overview of the trip schedule of locomotives.	
1.8	Brief description on the role of Traction Power Controller & visit to SCADA control room	
1.9	Overview of RTIS equipment, usage and precautions.	
2.	**Section Controller Office**	½ day
2.1	Brief overview of Section Control office	
2.2	Brief description of duties/tasks performed by Section controllers w.r.t. train movement viz controlling the movement of trains within the assigned railway section, Monitoring and ensuring that trains adhere to their schedules, Communicating with Station Masters, making decisions on train priorities, overtaking, and other operational matters to ensure efficient and safe train operations, etc.	
2.3	Responding to emergencies such as accidents, breakdowns, or other incidents that may affect train operations and coordination with relevant authorities and initiating appropriate actions to address emergencies.	
2.4	Maintaining communication with train crews, station staff, and other relevant personnel to relay important information and instructions.	

Field visit

DURATION
1 day

CONTENTS

Field Visit (under supervision of Training Instructor / CLI) of TLC office, TPC office, SCADA and Section Controller Office for overseeing the functions of the establishments.

Exam **DURATION ½ day**

CONTENTS

Exam – (AIM-10 – AIM-12).

AIM-13

DESCRIPTION
Safety Module – Duties/Role of ALP

DURATION
8days
Incl. Shed/field/Practical/ Footplate

CONTENTS

Sno.	Subject	Duration in days
1.	Derailment, collision, etc	4 days
2.	Train protection and opposite line protection	
3.	OHE hanging / OHE breakdown	
4.	Axle seizure / hot axle	
5.	Smoke from underslung equipment	
6.	Operation during water on track or flood	
7.	Obstructed track / land slide	
8.	Train operation during fog/poor visibility	
9.	In case of train parting	
10.	Flasher light of opposite train glowing	
11.	Panto entanglement and securing of broken pantograph & isolation of pantograph (through HPT link on loco roof)	
12.	In case of loco entered in unwired territory	
13.	Cattle Run Over (CRO) & inspection of loco after CRO	
14.	Fire in train / locomotive	
15.	Use of detonators & related duties	

.

Footplate /Field training as Co-ALP **DURATION 4days**

AIM-14

DESCRIPTION
Locomotive Operation Module

DURATION
8days
Incl.
Shed/field/Practical/
Footplate

CONTENTS

Sno.	Subject	Duration in days
1.	Sharp lookout on signal, track, OHE & adjacent line, Tress passers etc.	**4 days**
2.	Reading of Trouble shooting directory of various three phase & conventional locomotives.	
3.	EEC & GR manual operation in Conventional loco.	
4.	Wedging of different type of relays & contactors in conventional locomotive	
5.	Flasher light – its checking procedure & usage	
6.	Precautions to be followed in case of any equipment of loco are isolated (as per TSD).	
7.	VCD act on line	
8.	Headlight not working	
9.	Horn not working	
10.	Speedometer not working	
11.	BPEMS acted on line	
12.	Operation of PTDC in three phase locomotive	
13.	Throttle not responding	
14.	Harmonic filter isolation	
15.	MR not buildup	
16.	BP/FP not creating	
17.	BP not maintaining	
18.	Working from rear cab	
19.	Fire in locomotive	
20.	Flat wheel in locomotives & precaution to avoid wheel skid, wheel slip & rail burn (Continuous wheel slip and use of sanders)	
21.	Attaching dead locomotive in train and accompany by ALP.	
22.	Communicating to TLC or other official regarding information of any abnormality and assistance required (protocol to be followed like train no., loco no., section, between stations, km no., nature of abnormality, assistance required, etc.)	
23.	Action in case of trouble / failures of locomotives with the help of TSD or helpline	

Footplate /Field training as Co-ALP

DURATION
4days

AIM-15

DESCRIPTION
Train Operation Module

DURATION
8days
Incl.
Shed/field/Practical/
Footplate

CONTENTS

Sno.	Subject	Duration in days
1.	Detection of flat wheel in loco train	**4days**
2.	Train stalled on gradient section & precautions to avoid rolling down	
3.	In case of FIBA, VESDA, etc act on line	
4.	In case of Alarm Chain Pulling (ACP) in train	
5.	Brake binding in coach/wagon	
6.	Coach brake system isolation / pneumatically by pass	
7.	Train working in case air suspension bellow ruptured/punctured	
8.	Hot axle / fire in train	
9.	Walkie-talkie not working	
10.	Train working without Guard	
11.	Overview of EOTT	
12.	Hose pipe disconnection	
13.	Procedure of GDR (TMLR) check and duties of ALP	
14.	Punctuality of trains	
15.	Knowledge of WTT	
16.	Checking of coupling after attaching on load	
17.	Guard's brake valve in brake van and how to use it	
18.	All right exchange with guard at starting, curve, after passing temporary caution order, etc.	
19.	Other issued related to train operation	

Footplate /Field training as Co-ALP

DURATION
4days

Exam

DURATION
½ day

Exam – (AIM-13 to AIM-15).

AIM-16

DESCRIPTION
Learning Road (LR) Module

DURATION
1 day

CONTENTS

Sno.	Subject	Duration in days
1.	Importance of quality Road learning (LR) in life of running staff for ensuring safety of trains.	1 day
2.	Methodology of quality LR in main line, station sections, yards, etc.	
3.	Procedure for yard LR – on foot LR	
4.	Marking of features of sections like critical locations, signal at right hand side, signals located in curvature, heavy gradient section, etc.	
5.	Sketching of critical yard and multiple line stations.	

AIM-17

DESCRIPTION
Simulator & Tripping Car Module

DURATION
4day

CONTENTS

Sno.	Subject	Duration in days
1.	Simulator Training for application of emergency brake by trainee ALP through RS valve (each individual trainee ALP)	4 days
2.	Manual operation of GR & EEC in conventional loco tripping car (each individual trainee ALP)& Troubleshooting practice with help of TSD	

Footplate /Field training as Co-ALP

DURATION
3 days

AIM-18

DESCRIPTION **DURATION**
Case Studies Module **3 days**

CONTENTS

Sno.	Subject	Duration in days
1.	Discussion on issues noticed during footplate training	3 days
2.	**Case Studies** of various accidents and lessons linked with various above modules. (Particularly focusing on scenarios where prompt actions by ALPs could have averted the incidents or accidents.)	
3.	Revision of important safety instructions, procedures, etc.	
4.	Summarizing the importance and procedure of quality road learning to ensure safe train operation.	
5.	Session on personal hygiene and importance of clean environment & stress management during any unusual.	
6.	How to submit a memo to the section controller/TLC through SM/ASM for any information required to be brought to notice.	
7.	Important dos & don’ts like switching off of mobile phone, not to use walkie-talkie for getting information of signal aspect from station staff, drunkenness on duty, etc. Any other topic deemed fit to be imparted to trainee ALPs.	

DESCRIPTION **DURATION**
Final Exam covering all modules **1 day**

Instruction for training centers& Instructors

- During classroom training, it is preferable to use audio-visual aids with digital content.
- In-depth knowledge of various circuits, such as electrical and pneumatic circuits, etc is not required.
- The training should primarily emphasize the activities and responsibilities of the ALP in their day-to-day operations with locomotives/trains.

- During subject-specific classroom training, it is essential to emphasize discussions on safety cases, including SPAD, accidents, derailments, collisions, side collisions, and incidents involving entering unwired/sand humps. This emphasis should highlight how adherence to proper procedures or correct actions by the ALP on the subject could have effectively prevented such cases.
- For effective monitoring of footplate training by trainee Assistant Loco Pilots (ALPs), temporary IDs should be created in the CMS (CMS software may need modification). Subsequently, trainee ALPs should be scheduled as additional ALPs within the regular loco crew roster during normal train bookings.
- A minimum of 1000 kilometers of footplate experience is recommended.
- Proper records of footplate kilometers of individual trainee ALPs should be kept by the concerned training center. The record of footplate kilometers should also be maintained in CMS.
- To enhance understanding of the working system, it is suggested that during footplate training, trainee ALPs may be assigned to lobbies and booked as additional ALP with the regular set of crew (preferably on lobbies where they are expected to work upon completion of their training).
- After being assigned to the lobby, trainee ALPs may be directed to undergo footplate training as Co-ALP (with the regular set of loco crew) for completing at least two round trips in each section of the specific lobby (crew beat) and also stay in running room to the extent possible.
- Trainee ALPs may also be allowed to stay in running rooms so that they can gain footplate experience up to the full crew beat along with the train crew. This will also enable them to familiarize themselves with the running room system of working. (In the case of regular ALPs undergoing conversion training, this aspect is not required.)

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ALP/LPs to LP (G) Promotional Training Course – Electric Traction

Course code– GPM

Module no.	Training Content	Duration in days
GPM-1	Loco module	5
GPM-2	Driving module	6
GPM-3	Safety module	3
GPM-4	Loco Operation module	4
GPM-5	Train Operation module	3
GPM-6	Loco Pneumatic module	3
GPM-7	Transportation module- Transportation, First Aid, Fire Fighting, etc.	24
GPM-8	C&W and Air Brake module& overview of EMU/MEMU, Vande Bharat type train set, Push-Pull etc.	2
GPM-9	TrD module	1
GPM-10	Simulator Training	6
	Final Exam	1
	Total days	**58**

Note -After the completion of a 58-day training at Traction Training Centers, trainees shall be directed to their respective divisions for a 20-day 'Loco/Train Handling on Line,' as outlined in the Board's letter no. 2004/M(L)/466/7101 dated 31.08.2009.

DESCRIPTION
Locomotive Module

DURATION
5 days

CONTENTS

Sno.	Subject	Duration in days
7.	Comprehensive presentation on the independent role of Loco Pilot in train operation.	5 Days
8.	General description of electric locomotive – Three phase & conventional locomotives (including microprocessor & SIV based locos) - Hauling capacities, Tractive effort, weight, axle load, hauling capacity, etc.	
9.	Brief description on safety items - undergear safety fittings & intactness (cattle guard, rail guard, sand box & sander pipes, CBC & TSC coupling, axle box, battery box, other bogie/under gear equipment which needs to be checked on line, moisture draining locations, location of lubrication points, etc.	
10.	Location and functions of various equipment of three phase & conventional locomotives	
11.	Location and functions of various types of relays, switches, MCBs, fuses, and other electrical equipment, along with their normal positions, need to be regularly checked and operated during train operations	
12.	Checking of stabled locomotive before energizing Ensuring loco standing on line & under OHE, general inspection of loco under frame, ensuring various switches/MCBs are in normal position, checking level of all type of oil/coolants & ensure all levels are above 'MIN' mark, availability of fire extinguishers and wooden wedges, etc.	
13.	Energizing, De-energizing & stabling of locomotive & cab changing procedure • Loco energizing sequence/procedure for three phase & conventional locomotives. • Cab changing procedure/sequence • Loco de-energizing procedure/sequence and stabling of loco (including securing of loco using hand brake, parking brake, wooden wedges, etc).	
14.	Description of A9 & SA9 brake valves and their different positions & respective amount BP drop	
15.	• Application/releasing of loco brake, brake power testing procedure of locomotive • Procedure for application/releasing of loco brake & testing of loco brake power of three phase &	

Sno.	Subject	Duration in days
	conventional locomotives	
16.	Description and function of ZBAN, ZTEL, Hotel load& BHLO	
17.	Function & use of BPEMS switch.	
18.	Safety items to be checked while taking over charge of locomotives enroute, yard, stabled loco etc.	
19.	• Model room demonstration	

GPM-2

DESCRIPTION **DURATION**
Driving Module **6days**

CONTENTS

Sno.	Subject	Duration in days
1.	Methodology of quality Road Learning and its importance.	6 days
2.	Precaution before moving a locomotive – removing of wooden wedges, releasing of hand/brakes, duty with respect to signals, etc.	
3.	Proper call out of signal with ALP • Demonstration of procedure of call out signal as per instructions laid down • This should be demonstrated by each LP multiple times.	
4.	Precaution before attaching/detaching the locomotive on/from load	
5.	Brake continuity, Brake feel & brake power test • Procedure for carry out of brake continuity test and locations/situations where carry out. • Importance of brake feel test & brake power for safety of trains. • Procedure for carry out brake feel test & brake power test.	
6.	Brake power certificates - kinds - Coaching & Freight trains, percentage of brake power required in goods/mixed/passenger trains, etc	
7.	How to start train without jerk and gradual acceleration, deacceleration, etc.	
8.	Observance of permissible speed, permanent & temporary speed restrictions, etc.	
9.	Description of dynamic/regenerative braking procedure and its benefits.	
10.	How to stop train on level, gradient, Controlling of train & coasting, energy conservation etc.	
11.	Use of BPCS and precaution while using it.	
12.	Effective on regenerative/dynamic braking of braking through A9/SA9 and no tension of OHE.	
13.	Description of auto regression feature of	

Sno.	Subject	Duration in days
	locomotives especially in case of full service brake application and emergency brake application.	
14.	MU, Double headed, Push-Pull loco operation	
15.	Train operation in ghat sections	
16.	Passing of neutral section – precaution before neutral section, actions after passing neutral section for resuming traction, etc.	
17.	Precaution to be taken to avoid wheel slipping, wheel skidding, rain burning, train parting, etc.	
18.	Duties of LP defined in ACTM related to loco operation	
19.	Description of tools provided to LP and provided on loco	
20.	• Brief knowledge of caution order, Permanent &temporary speed restriction, OHE boards, Engineering boards, coasting boards and gradient boards and their observance. • Keep watch on alertness of ALP. • Sharp lookout on signal, track, OHE & adjacent line, Tress passers etc.	
21.	Use of Flasher light and actions to be taken when flasher light of opposite direction train is glowing.	
22.	Looking back in curves for smooth running of train i.e. abnormal sound, hanging part, smoke, etc.	

GPM-3

DESCRIPTION
Safety Module – Duties/Role of LP

DURATION
3 days

CONTENTS

Sno.	Subject	Duration in days
1.	Derailment, collision, etc	3 days
2.	Train protection and opposite line protection	
3.	OHE hanging / OHE breakdown	
4.	Axle seizure / hot axle	
5.	Smoke from underslung equipment	
6.	During water on track or flood	
7.	Obstructed track / land slide	
8.	Train operation during fog/poor visibility	
9.	In case of train parting	
10.	Flasher light of opposite train glowing	
11.	Panto entanglement and securing of broken pantograph & isolation of pantograph (through HPT link on loco roof)	
12.	In case of loco entered in unwired territory	
13.	Cattle Run Over (CRO) & inspection of loco after CRO	
14.	Stabling of locomotives & securing of train/loco to	

Sno.	Subject	Duration in days
	avoid rolling down/rolling back.	
15.	Action to be taken train stalled on gradient	

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GPM-4

DESCRIPTION
Loco Operation Module

DURATION
3 days

CONTENTS

Sno.	Subject	Duration in days
1.	Sharp lookout on signal, track, OHE & adjacent line, Tress passers etc.	**4 days**
2.	Reading of Trouble shooting directory of various three phase & conventional locomotives.	
3.	EEC & GR manual operation in Conventional loco.	
4.	Wedging of different type of relays & contactors in conventional locomotive	
5.	Flasher light – its checking procedure & usage	
6.	Precautions to be followed in case of any equipment of loco are isolated (as per TSD).	
7.	VCD act on line	
8.	Headlight not working	
9.	Horn not working	
10.	Speedometer not working	
11.	BPEMS acted on line	
12.	Operation of PTDC in three phase locomotive	
13.	Throttle not responding	
14.	Harmonic filter isolation	
15.	MR not buildup	
16.	BP/FP not creating	
17.	BP not maintaining	
18.	Working from rear cab	
19.	Fire in locomotive	
20.	Flat wheel in locomotives & precaution to avoid wheel skid, wheel slip & rail burn (Continuous wheel slip and use of sanders)	
21.	Procedure of attaching dead locomotive in train.	
22.	Function of various safety equipment VCD, Fog safe/Fog Pass device, KAVACH, RDAS, etc.	
23.	RTIS equipment, usage and precautions.	
24.	Types of loco faults, reading method DDS, status code and reading of troubleshooting directories.	
25.	Communicating to TLC or other official regarding information of any abnormality and assistance required (protocol to be followed like train no., loco no., section, between stations, km no., nature of abnormality, assistance required, etc.)	

GPM-5

DESCRIPTION
Train Operation Module

DURATION
2 days

CONTENTS

Sno.	Subject	Duration in days
1.	Detection of flat wheel in train	**3 days**
2.	Train stalled on gradient section & precautions to avoid rolling down	
3.	In case of FIBA, VESDA, etc act on line	
4.	In case of Alarm Chain Pulling (ACP) in train	
5.	Brake binding in coach/wagon	
6.	Coach brake system isolation / pneumatically by pass	
7.	Train working in case air suspension bellow ruptured/punctured	
8.	Walkie-talkie not working	
9.	Train working without Guard	
10.	Overview of EOTT	
11.	Hose pipe disconnection	
12.	Tips for good driving technique, controlling of on different terrain, etc.	
13.	Description of booked speed, maximum permissible speed, working time table etc.	
14.	Case Studies	

GPM-6

DESCRIPTION
Loco Pneumatic Module

DURATION
3 days

CONTENTS

Sno.	Subject	Duration in days
1.	Overview on braking system of three phase locomotive (including WAG12)	3days
2.	Working of A9, SA9, parking brake on three phase locomotives	
3.	Overview on braking system of conventional locomotive	
4.	Working of A9 & SA9 on conventional locomotives	
5.	Action to be taken in case of MR pressure not build up	
6.	Action to be taken in case of BP pressure not build up	
7.	Action to be taken in case of FP pressure not build up	
8.	Action to be taken in case of BP pressure not maintaining	

Sno.	Subject	Duration in days
9.	Miscellaneous failures of air brake of locomotive	
10.	Pneumatically isolation of bogie	
11.	Releasing of parking/hand brake in case of brake binding in locomotive	
12.	Location of air dryer and isolating procedure	
13.	Procedure of various tests & checks related to loco brake system like CP efficiency test, BP & FP leak test, train leak test, Loco brake power test, etc.	
14.	Discussion of various pneumatic failures and remedies	

GPM-7

DESCRIPTION
Transportation, First Aid & Fire Fighting

DURATION
24days

CONTENTS

Sno.	Subject	Duration in days
1.	Brief description of GR & SR pertaining to LOCO PILOTs. Correction slips.	**24 days**
2.	Important definitions such as Ad. Distance, Block Section, Isolation, Faulting mark, Running Line, Axle counter, Station section. Authority to proceed and Station working rules	
3.	Light engine, Relief Engine, Banking Engine, Train Engine, Shunting Engine, etc	
4.	Personal equipment of LOCO PILOTS	
5.	Stations • Kinds and classification of stations minimum essential signals etc. for each station. • Block and non-Block stations. • Block overlap. • Yard Layout, etc.	
6.	System of working – • Absolute Block System • Automatic Block System, • Train following System, etc	
7.	Signals – • Necessity and Evaluation of signals, • classification and kinds of signals, • Approach and Departure signals permissive signals, subsidiary signals, etc.	
8.	DEFECTIVE SIGNALS • Defective signal, Automatic signals, Semi-automatic and Gate signals, manual signals. • Action and rules for passing defective signals of different types. • Practical tour for sight in Yard.	
9.	ENGINEERING SIGNALS – • Engineering Signals. Their placement. • Permanent and Temporary Engineering Cautions. • Brief of Chat Section.	

	• Speeds.	
10.	Isolation	
11.	Different authorities/forms	
12.	WHISTLE CODES What is a Whistle Code? When and how is to be used? Precautions before starting a Train from a station (originating) or Yard right signals.	
13.	Working of trains • When Headlight is failed. • When a train is received on Blocked line or to be started from a Non-Signal/Non running line without brake van or without guard. • Departure from non-signaled line • When train has a hot axle. • Having ODC • Train formed from a non-TXR point, etc. • Caution order • Authorized persons in Cab Stopping on gradient	
14.	Abnormal working – • Rules for working of trains – single line working on Double line in absolute and automatic Block Sections. • Total failure Communication. • Rules for sending relief engine from right line and wrong line. • Precautions to be observed during abnormal working in different cases.	
15.	Shunting – • Kinds of shunting. • Precautions for safe and smooth shunting. • Rules for shunting in Yard, coaching Yard and “B” class stations. • Model Room training.	
16.	• Train operation in fog	
17.	Protection Rules	
18.	Exchange of Signal & its significance	
19.	Accident – • Duties of LOCO PILOT in case of accident. • Mid Section derailments. Engine failures etc. • Over shooting • Protection in block section in case of accidents. Use of detonators	
20.	• Duties in case of fire in train/loco.	
21.	Identifying and handling of various types of fire extinguishers, precautions to be taken while extinguishing fire, Render first aid to the burn injuries, first aid to persons affected by suffocation, communication, etc.	
22.	Discussion and queries on safety and accidents.	
23.	Accident free service award.	

GPM-8

DESCRIPTION
C&W and Air Brake Module & EMU/MEMU, Vande-Bharat type train set, Push-Pull, etc.

DURATION
2 days

CONTENTS

Sno.	Subject	Duration in days
11.	Different types of Rolling stock - Nomenclature	2days
12.	Air brake system - working method with diagrams, parts & functions, working single pipe and Twin pipe air brake system. Pneumatic brake - working principle, BMBS and APS, Hand brake in rolling stock.	
13.	Brake power certificates - kinds - Coaching & Freight trains, percentage of brake power required in goods/mixed/passenger trains, Alarm chain pulling - resetting & isolation, FIBA, Fire Detection(VESDA), etc	
14.	Continuity test, cases of brake binding and releasing, Flat tire detection and action to be taken.	
15.	LHB coach, Hybrid coach, conventional coach, Hot axle symptoms and action to be taken.	
16.	Guard & Loco Pilot check - clearance from road side station/sidings/non-TXR points & brake power calculation	
17.	Brake continuity test and its importance, isolation of distributor valve.	
18.	Duties in case of fire in train	
19.	Overview of EMU/MEMU, Vande-Bharat type train set, Push-Pull, etc.	

GPM-9

DESCRIPTION
TrD Module

DURATION
1 day

CONTENTS

Sno.	Subject	Duration in days
1.	Introduction to TrD	1day
2.	Brief of Power Supply arrangement.	
3.	Cantilever - Its parts	
4.	Use of ATD in OHE	
5.	Neutral Section.	
6.	Different type of TrD boards & description	
7.	Panto Entanglement - it's causes	
8.	Instruction of Loco Pilots to in case of tripping of OHE	
9.	Duties of Loco Pilot during OHE unusual and Break Down	

GPM-9

DESCRIPTION
Simulator Training& Tripping Car

DURATION
6days

CONTENTS

Simulator Training – simulator training may be imparted to develop good driving skills on level terrain, light ascending terrain, Light Descending Grade, Heavy Ascending Grade, Heavy Descending Grade, entering in loop line, approaching signal on Danger, approaching starter signal, etc.

Tripping car – Practical training of troubleshooting used TSD**.**

GPM-10

DESCRIPTION
Review & Exam

DURATION
1day

CONTENTS

Review & Exam

DESCRIPTION
Loco/Train handling on line

DURATION
20 days

CONTENTS

After the completion of a 58-day training at Traction Training Centers, trainees shall be directed to their respective divisions for a 20-day 'Loco/Train Handling on Line,' as outlined in the Board's letter no. 2004/M(L)/466/7101 dated 31.08.2009.

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Instruction for training centers & Instructors

- During classroom training, it is preferable to use audio-visual aids with digital content.
- In-depth knowledge of various circuits, such as electrical and pneumatic circuits, etc is not required.
- The training should primarily emphasize the activities and responsibilities of the LP in their day-to-day operations with locomotives/trains.
- During subject-specific classroom training, it is essential to emphasize discussions on safety cases, including SPAD, accidents, derailments, collisions, side collisions, and incidents involving entering unwired/sand humps. This emphasis should highlight how adherence to proper procedures or correct actions by the LP on the subject could have effectively prevented such cases.

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LP(G) to LPP (Loco) Promotional Training Course – Electric Traction

Course Code - PPM

Sub-Module no.	Training Module	Duration in days
PPM-1	Driving Module	2
	Field Training / Footplate	2
PPM-2	Safety Module	1
PPM-3	Loco Operation Module	1
	Field Training / Footplate	2
PPM-4	Train Operation module	1
PPM-5	Loco Pneumatic Module	1
PPM-6	Transportation Module - Transportation, First Aid, Fire Fighting,	6
PPM-7	C&W and Air Brake Module & overview of EMU/MEMU, Vande Bharat type train set, Push-Pull etc.	1
	Field Training / Footplate	2
PPM-8	Simulator Training	2
PPM-9	Case Studies	1.5
	Review & Exam	0.5
	Total days	**24**

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PPM-1

DESCRIPTION
Driving Module

DURATION
2 days

CONTENTS

Sno.	Subject	Duration in days
23.	Precaution before attaching the locomotive on coaching trains	2 days
24.	How to start train without jerk and acceleration, deacceleration, etc.	
25.	Brake continuity, Brake feel & brake power test • Procedure for carry out of brake continuity test and locations/situations where carry out. • Importance of brake feel test & brake power for safety of trains. • Procedure for carry out brake feel test & brake power test.	

Sno.	Subject	Duration in days
26.	Punctuality of coaching trains, Working time table Maximum permissible speed, etc.	
27.	Observance of permissible speed, permanent, & temporary speed restrictions, etc.	
28.	Description of dynamic/regenerative braking procedure and its benefits.	
29.	Use of BPCS and precaution while using it.	
30.	Good driving technique, instructions for train operation, alertness, etc.	
31.	Stopping of coaching train with position of coach display board/stop board provided at platform.	
32.	Train operation in ghat sections	
33.	Duties of LP defined in ACTM related to loco operation	
34.	• Observance of caution order, Permanent &temporary speed restrictions, engineering boards, OHE boards, coasting boards, gradient boards, etc. • Keep watch on alertness of ALP. • Sharp lookout on signal, track, OHE & adjacent line, Tress passers etc. • Looking back in curves for smooth running of train i.e. abnormal sound, hanging part, smoke, etc.	
35.	Use of Flasher light and actions to be taken when flasher light of opposite direction train is glowing.	

Field Training / Footplate **2 days**

- Field Training / Footplate under Training Instructor/Chief Loco Inspector.

PPM-2

DESCRIPTION **DURATION**

Safety Module – Duties/Role of LP **1 day**

CONTENTS

Sno.	Subject	Duration in days
16.	Derailment, collision, fire etc	1 day
17.	Train protection and opposite line protection	
18.	OHE hanging / OHE breakdown	
19.	Axle seizure / hot axle	
20.	Smoke from underslung equipment	
21.	During water on track or flood	
22.	Obstructed track / land slide	
23.	Train operation during fog/poor visibility	
24.	In case of train parting	

Sno.	Subject	Duration in days
25.	Flasher light of opposite train glowing	
26.	Panto entanglement and securing of broken pantograph & isolation of pantograph (through HPT link on loco roof)	
27.	In case of loco entered in unwired territory	
28.	Cattle Run Over (CRO) & inspection of loco after CRO	
29.	Stabling of locomotives & securing of train/loco to avoid rolling down/rolling back.	
30.	Action to be taken train stalled on gradient	
31.	Communicating to TLC or other official regarding information of any abnormality and assistance required (protocol to be followed like train no., loco no., section, between stations, km no., nature of abnormality, assistance required, etc.)	

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PPM-3

DESCRIPTION
Locomotive Operation Module

DURATION
2 days

CONTENTS

Sno.	Subject	Duration in days
26.	Description and feature of electric coaching locomotives and difference between freight & coaching locos.	**2 days**
27.	Description of latest modifications and changes in locomotives and their requirement, actions by crew etc.	
28.	Hotel load and related troubleshooting.	
29.	Reading of Trouble shooting directory (in-built/external) of various three phase & conventional locomotives.	
30.	Precautions to be followed in case of any equipment of loco is isolated (as per TSD).	
31.	Flat wheel in locomotives & precaution to avoid wheel skid, wheel slip & rail burn (Continuous wheel slip and use of sanders).	
32.	Speedometer not working.	
33.	VCD act on line.	
34.	Operation of PTDC in three phase locomotive.	
35.	Throttle not responding.	
36.	Harmonic filter isolation.	
37.	Working from rear cab.	
38.	Function of various safety equipment VCD, Fog safe/Fog Pass device, KAVACH, RDAS, etc.	
39.	RTIS equipment, usage and precautions.	
40.	Section clearing in case of SIV internal fault.	
41.	Effectiveness of regenerative/dynamic braking, upon application of A9/SA9, isolation upon emergency braking &no tension of OHE.	
42.	Description of auto regression feature of locomotives	

Sno.	Subject	Duration in days
	especially in case of full service brake application and emergency brake application.	
43.	Push-Pull loco operation.	
44.	EEC & GR manual operation in Conventional loco.	
45.	Wedging of different type of relays & contactors in conventional locomotive.	

Field Training / Footplate **2 days**

- Field Training / Footplate under Training Instructor/Chief Loco Inspector.

PPM-4

DESCRIPTION **DURATION**
Train Operation Module **1 day**

CONTENTS

Sno.	Subject	Duration in days
15.	Detection of flat wheel in train	**1 day**
16.	Train stalled on gradient section & precautions to avoid rolling down	
17.	In case of FIBA, VESDA, etc act on line	
18.	In case of Alarm Chain Pulling (ACP) in train	
19.	Brake binding in coach/wagon	
20.	Coach brake system isolation / pneumatically by pass	
21.	Train working in case air suspension spring failed	
22.	Walkie-talkie not working	
23.	Train working without Guard	
24.	Overview of EOTT	
25.	Hose pipe disconnection	
26.	Tips for good driving technique, controlling of on different terrain, etc.	
27.	Description of booked speed, maximum permissible speed, working time table etc.	
28.	Miscellaneous troubles of coaching trains	
29.	Importance of feed pipe continuity in LHB coaching movement.	
30.	Actions in case of fire in train.	

PPM-5

DESCRIPTION **DURATION**
Loco Pneumatic Module **1day**

CONTENTS

Sno.	Subject	Duration in days
15.	Overview on braking system of three phase & conventional locomotives	1day
16.	Action to be taken in case of MR pressure not build up	
17.	Action to be taken in case of BP pressure not build up	
18.	Action to be taken in case of FP pressure not build up	
19.	Action to be taken in case of BP pressure not maintaining	
20.	Miscellaneous failures of air brake of locomotive	
21.	Pneumatically isolation of bogie	
22.	Releasing of parking/hand brake in case of brake binding in locomotive	
23.	Procedure of various tests & checks related to loco brake system like CP efficiency test, BP & FP leak test, train leak test, Loco brake power test, etc.	
24.	Discussion of various pneumatic failures and remedies	
25.	BPEMS functions and usage	

PPM-6

DESCRIPTION
Transportation, First Aid & Fire Fighting

DURATION
6days

CONTENTS

Sno.	Subject	Duration in days
24.	Brief description of GR & SR pertaining to LOCO PILOTs. Correction slips.	6 days
25.	Summarizing of Important definitions such as Adequate. Distance, Block Section, Isolation, Faulting mark, Running Line, Axle counter, Station section. Authority to proceed and Station working rules	
26.	Light engine, Relief Engine, Banking Engine, Train Engine, Shunting Engine, etc	
27.	Personal equipment of LOCO PILOTS	
28.	Stations • Kinds and classification of stations minimum essential signals etc. for each station. • Block and non-Block stations. • Block overlap. • Yard Layout, etc.	
29.	System of working – • Absolute Block System • Automatic Block System, • Train following System, etc	
30.	Signals – • Necessity and Evaluation of signals, • classification and kinds of signals, • Approach and Departure signals permissive signals, subsidiary signals, etc.	
31.	Defective signals	

	• Defective signal, Automatic signals, Semi-automatic and Gate signals, manual signals. • Action and rules for passing defective signals of different types. • Practical tour for sight in Yard.	
32.	Engineering signals – • Engineering Signals. Their placement. • Permanent and Temporary Engineering Cautions. • Brief of Chat Section. • Speeds.	
33.	Isolation	
34.	Different authorities/forms	
35.	Whistle codes What is a Whistle Code? When and how is to be used? Precautions before starting a Train from a station (originating) or Yard right signals.	
36.	Abnormal working – • Rules for working of trains – single line working on Double line in absolute and automatic Block Sections. • Total failure Communication. • Rules for sending relief engine from right line and wrong line. • Precautions to be observed during abnormal working in different cases.	
37.	Shunting – • Kinds of shunting. • Precautions for safe and smooth shunting. • Rules for shunting in Yard, coaching Yard and "B" class stations. • Model Room training.	
38.	• Train operation in fog	
39.	Protection Rules	
40.	Exchange of Signal & its significance	
41.	Accident – • Duties of Loco Pilot in case of accident. • Mid Section derailments. Engine failures etc. • Over shooting • Protection in block section in case of accidents. • Use of detonators	
42.	• Duties in case of fire in train/loco.	
43.	Identifying and handling of various types of fire extinguishers, precautions to be taken while extinguishing fire, Render first aid to the burn injuries, first aid to persons affected by suffocation, communication, etc.	

PPM-7

DESCRIPTION **DURATION**
C&W and Air Brake Module & **1day**
EMU/MEMU, Vande-Bharat type train set,
Push-Pull, etc.

CONTENTS

Sno.	Subject	Duration in days
20.	Different types of coaching stock - Nomenclature	1 day
21.	Air brake system - working method with diagrams, parts & functions, working single pipe and Twin pipe air brake system. Pneumatic brake - working principle. Bogie mounted brake cylinders etc.	
22.	Brake power certificates - kinds - Coaching trains, percentage of brake power required in mixed/passenger trains.	
23.	Alarm chain pulling - resetting & isolation, FIBA, Fire Detection(VESDA), etc	
24.	Continuity test, cases of brake binding and releasing, Flat wheel detection and action to be taken, isolation of distributor valve, isolation of bogie pneumatically, etc.	
25.	LHB coach, Hybrid coach, conventional coach, Hot axle symptoms and action to be taken.	
26.	Brake continuity test and its importance	
27.	Overview of EMU/MEMU, Vande-Bharat type train set, Push-Pull, etc.	
28.	Isolation / bypassing of coaches pneumatically	
29.	Hose pipe changing	

Field Training / Footplate **2 days**

- Field Training / Footplate under Training Instructor/Chief Loco Inspector.

PPM-8

DESCRIPTION **DURATION**
Simulator Training **2days**
& Tripping Car

CONTENTS

Simulator Training – simulator training may be imparted to develop good driving skills on different type of terrains, jerk free starting & stopping, acceleration & deacceleration, controlling of speed etc.

Tripping car – Practical training of troubleshooting used TSD**.**

PPM-9

DESCRIPTION **DURATION**
Case Studies **1½ days**

CONTENTS

Sno.	Subject	Duration in days
10.	Discussion on issues noticed during footplate training	2 days
11.	**Case Studies** of various accidents and lessons linked with various above modules. (Particularly focusing on scenarios where prompt actions by crew could have averted the incidents or accidents.)	
12.	Revision of important safety instructions, procedures, etc.	
13.	How to submit a memo to the section controller/TLC through SM/ASM for any information required to be brought to notice.	
14.	Important dos & don’ts like switching off of mobile phone, not to use walkie-talkie for getting information of signal aspect from station staff, drunkenness on duty, etc. Any other topic deemed fit to be imparted to trainee ALPs.	
15.	Any other issues related to Coaching trains/locomotives	

DESCRIPTION **DURATION**
Review & Exam **½ day**

CONTENTS

Review & Exam

*****

Instruction for training centers& Instructors

- During classroom training, it is preferable to use audio-visual aids with digital content.
- In-depth knowledge of various circuits, such as electrical and pneumatic circuits, etc is not required.
- The training should primarily emphasize the activities and responsibilities of the LP in their day-to-day operations with locomotives/trains.
- During subject-specific classroom training, it is essential to emphasize discussions on safety cases, including SPAD, accidents, derailments, collisions, side collisions, and incidents involving entering unwired/sand humps. This emphasis should highlight how adherence to proper

procedures or correct actions by the LP on the subject could have effectively prevented such cases.

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ALP Refresher Training Course– Combined

Course Code - ARM

Module no.	Training Content	Duration in days
ARM-1	Loco module – Summarizing of various systems/sub-systems of Electric locomotives (3-Ph & Conv,) and Diesel Locomotives and important modifications in locomotives along with related instructions for ALP.	2
ARM-2	Driving module	1
ARM-3	Loco Pneumatic module (Electric & Diesel locos)	2
ARM-4	Loco Operation module	2
ARM-5	Safety module	1
ARM-6	TrD module	0.5
ARM-7	C&W module	1
ARM-8	Transportation module - Transportation, First Aid, Fire Fighting	6
ARM-9	Simulator Training	1
ARM-10	**Case Studies** of various accidents with focus on scenarios where prompt actions by ALPs could have averted the incidence or accident.	1
	Recapitulation	0.5
	Total days	**18**

ARM-1

DESCRIPTION
Loco Module
including important modifications in locomotive

DURATION
2days

CONTENTS

Sno.	Subject	Duration in days
20.	Discussion on problems faced by ALPs during train working	2 days
21.	Summarizing of general description of Three phase & conventional electric locomotives (including microprocessor & SIV based locos)	
22.	Summarizing of general description of different type of Diesel locomotives (including microprocessor & SIV based locos)	
23.	Summarizing of locations of safety & important equipment on electric & diesel locomotives.	
24.	Summarizing of location and functions of various types of relays, switches, MCBs, fuses, and other electrical equipment, along with their normal positions, need to be regularly checked and operated during train operations	
25.	Description of latest modifications and changes in electric & diesel locomotives and their requirement, actions by crew etc..	

ARM-2

DESCRIPTION
Driving Module

DURATION
1 day

CONTENTS

Sno.	Subject	Duration in days
1.	Proper call out of signal with LP. Demonstration of procedure of call out signal as per instructions laid down. This should be demonstrated by each trainee ALP multiple of times.	1 day
2.	• Use of emergency brake (RS valve) - demonstration of emergency brake application through RS valve. This should be practically operated by each trainee ALP. • Keep watch on alertness of LP. • Sharp lookout on signal, track, OHE & adjacent line, Tress passers etc.Invariably keep the eye on the speedometer for speed monitoring and warn LP if speed exceeds the prescribed speed limit.	

3.	• Checking procedure of Flasher light and its usage. Action to be taken when flasher light of opposite direction train is glowing.	
4.	• Looking back in curves for smooth running of train i.e. abnormal sound, hanging part, smoke, etc. • Reading of gauges and recording in logbook, recoding energy/fuel consumption in logbook & CMS	
5.	Inspection of loco at halts, inspection of axle boxes, under frame equipment and TM fixation and draining of MRs etc.	
6.	Checking of loco at the originating, intermediate points and crew changing points on line.	
7.	Checking of coupling after attaching on load	
8.	Action to be taken in case of OHE tripped during dynamic / regenerative braking	
9.	Procedure of passing neutral section • Description & usage of neutral section related boards (500 meter board, 250 meter board, DJ open board, DJ close board). • Precaution to be taken before neutral section.	

ARM-3

DESCRIPTION **DURATION**

Loco Pneumatic Module **2 days**

CONTENTS

Sno.	Subject	Duration in days
1	Summarizing of braking system of electric &diesel locomotives	2 days
2.	Action to be taken in case of MR, BP, FP pressure not build up/not maintaining	
3.	Miscellaneous failures of air brake of locomotives	
4.	Pneumatically isolation of bogie	
5.	Releasing of parking/hand brake in case of brake binding in locomotives	
6.	Overview on operation of PTDC in three phase electric locomotive	
7.	Location of air dryer and isolating procedure	
8.	Actions to be taken in case of BP/ FP angle cock broken/Hose pipe damaged due to CRO	
9.	Application/releasing of parking/hand brake of locomotives and related failures & troubleshooting	
10.	Procedure of various tests & checks related to loco brake system like CP efficiency test, BP & FP leak test, train leak test, Loco brake power test, etc.	
11.	Miscellaneous failure related to brake system of electric & diesel locomotives along with troubleshooting	

ARM-4

DESCRIPTION
Loco Operation Module

DURATION
2 days

CONTENTS

Sno.	Subject	Duration in days
1.	Discussion on various common defects in different type of electric & diesel locomotives	2 days
2.	Reading of Troubleshooting directories of electric & diesel locomotives, fault acknowledgment, actions as per TSD.	
3.	Isolation procedure for isolating various equipment.	
4.	Wedging of relays & contactors in conventional locomotives.	
5.	Miscellaneous failures of electric & diesel locomotive	
6.	Correction in TSD	
7.	Discussion on various tests to be conducted on electric & diesel locos	
8.	Application/releasing of parking/hand brake of locomotives and related failures & troubleshooting	
9.	Procedure of MU loco operation, cab changing in MU loco, dead attaching of loco, stabling of locomotives, etc.	
10.	Grounding & un-grounding of electric locomotive	
11.	Summarizing the duties defined in ACTM like Cleanliness of Loco, ALP shall assist the LP, appearance and proper uniform, duty assigned to him by the LP/CC/Sr.CC, maintaining a log of times and detentions enroute, etc.	
12.	Actions to be taken in case VCD act on line	

ARM-5

DESCRIPTION
Safety Module

DURATION
1 day

CONTENTS

Sno.	Subject	Duration in days
1.	Action to taken in case train / loco stalled on gradient.	1 day
2.	Actions to be taken to avoid rolling down/rolling back of train/loco.	
3.	Action to be taken in case of train parting	
4.	Action to be taken in case flat wheel is detected	
5.	Derailment, collision, fire etc	
6.	Train protection and opposite line protection	
7.	OHE hanging / OHE breakdown	
8.	Axle seizure / hot axle	
9.	Smoke from underslung equipment	
10.	During water on track or flood	
11.	Obstructed track / land slide	
12.	Train operation during fog/poor visibility	
13.	In case of train parting	
14.	Flasher light of opposite train glowing	
15.	Panto entanglement and securing of broken pantograph & isolation of pantograph (through HPT link on loco roof)	
16.	In case of loco entered in unwired territory	
17.	Cattle Run Over (CRO) & inspection of loco after CRO	
18.	Stabling of locomotives & securing of train/loco to avoid rolling down/rolling back.	
19.	Communicating to TLC/TPC/Section controller or other official regarding information of any abnormality and assistance required (protocol to be followed like train no., loco no., section, between stations, km no., nature of abnormality, assistance required, etc.)	

ARM-6

DESCRIPTION
TrD Module

DURATION
½ day

CONTENTS

Sno.	Subject	Duration in days
1.	Brief Knowledge of TrD • Brief overview of OHE system	½ day

	• Familiarization with OHE equipment for identification (including cantilever assembly)	
2.	Procedure of passing neutral section • Description & usage of neutral section related boards (500 meter board, 250 meter board, DJ open board, DJ close board). • Precaution to be taken before& after neutral section.	
3.	Provision of Sigma Board& usage.	
4.	Communication with TPC/TLC in case of panto broken or OHE hanging.	
5.	Action to be taken in case of panto broken/entangled.	
6.	Roof inspection & isolation of pantograph from HPT link and securing of broken panto, etc.	
7.	Duties of ALP during OHE Break Down.	

ARM-7

DESCRIPTION **DURATION**
C&W Module **1 day**

CONTENTS

Sno.	Subject	Duration in days
1.	Different types of Rolling stock - Nomenclature	1 day
2.	Summarization of air brake system of coaches, wagons, BMBS and APS, etc and Hand brake in rolling stock.	
3.	Alarm chain pulling - resetting & isolation, FIBA, Fire Detection (VESDA), etc	
4.	Continuity test, cases of brake binding and releasing, Flat tire detection and action to be taken, isolation of distributor valve, etc	
5.	Guard & Loco Pilot check - clearance from road side station/sidings/non-TXR points & brake power calculation	
6.	Duties in case of fire in train	
7.	Summarizing of type of Brake power certificates, percentage of brake power required in goods/mixed/passenger trains, etc.	
8.	Overview of EMU/MEMU, Vande-Bharat type train set, Push-Pull, etc.	

ARM-8

DESCRIPTION **DURATION**
Transportation, First Aid, Fire Fighting **6days**

CONTENTS

Sno.	Subject	Duration in days
30.	Brief description of GR & SR. Correction slips	6 days

Sno.	Subject	Duration in days
31.	Important definitions such as Adequate distance, Block Section, Isolation, Faulting mark, Running Line, Axle counter, Station section, etc.	
32.	Light engine, Relief Engine, Banking Engine, Train Engine, Shunting Engine, etc.	
33.	Systems of working, Ghat working/Ghat Rules Train formed from a non-TXR point , etc.	
34.	Unusual working e.g. failure of Head light, train received on Blocked line or to be started from a Non-Signal/Non running line, without brake van or without guard, with hot axles, etc.	
35.	Types of signaling systems, classification of signals. Approach and Departure signals permissive signals, subsidiary signals, automatic signal, semi-automatic signal, etc.	
36.	Defective signals and authority to pass.	
37.	Various authorities used during train operation & shunting	
38.	Duties of in case of accident, Mid Section derailments, protection of block section in case of accidents/incapacitation, Use of detonators, etc.	
39.	Duties in case of fire in train/loco.	
40.	Identifying and handling of various types of fire extinguishers, precautions to be taken while extinguishing fire, Render first aid to the burn injuries, first aid to persons affected by suffocation, communication, etc.	

ARM-9

DESCRIPTION **DURATION**

Simulator Training **1day**
& Tripping car

CONTENTS

Sno.	Subject	Duration in days
1.	Simulator training for confidence building to apply emergency brake (RS valve) in any unsafe situation.	1 day
2.	Demonstration of signal call out by each ALP	
3.	Manual operation of GR & EEC in conventional loco tripping car (each individual trainee ALP)	

ARM-10

DESCRIPTION **DURATION**

Cases Studies of various accidents **1day**

CONTENTS

Sno.	Subject	Duration in days
1.	Case Studies of various accidents and lessons. (Particularly focusing on scenarios where prompt actions by ALPs could have averted the incidents or accidents.)	1 day

DESCRIPTION **DURATION**

Recapitulation **½ day**

CONTENTS

- Recapitulation

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Instruction for training centers& Instructors

- This course shall be applicable to all ALPs and is deemed to refresh the learning of both the tractions.
- During classroom training, it is preferable to use audio-visual aids with digital content.
- In-depth knowledge of various circuits, such as electrical and pneumatic circuits, etc is not required.
- The training should primarily emphasize the activities and responsibilities of the ALP in their day-to-day operations with locomotives/trains.
- During subject-specific classroom training, it is essential to emphasize discussions on safety cases, including SPAD, accidents, derailments, collisions, side collisions, and incidents involving entering unwired/sand humps. This emphasis should highlight how adherence to proper procedures or correct actions by the ALP on the subject could have effectively prevented such cases.
- There shall **NOT** be any pass / fail criteria in refresher course.

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LP Refresher Training Course– Combined

Course Code - PRM

Module no.	Training Content	Duration in days
PRM-1	Loco module – Summarizing ofvarious systems/sub-systems of different type of electric & diesel locos and important modifications along with related instructions for LP.	2
PRM-2	Driving Module	1
PRM-3	Loco Pneumatic Module (electric & diesel locos)	1
PRM-4	Loco Operation Module	2
PRM-5	Safety Module	1
PRM-6	TrD Module	0.5
PRM-7	C&W Module	0.5
PRM-8	Transportation Module - Transportation, First Aid, Fire Fighting	6
PRM-9	Simulator Training	2
PRM-10	Case Studies of various accidents with focus on scenarios where prompt actions by LPs could have averted the incidence or accident.	1.5
	Recapitulation	0.5
	Total days	**18**

PRM-1

DESCRIPTION
Loco Module
including important modifications in locomotive

DURATION
2 days

CONTENTS

Sno.	Subject	Duration in days
26.	Discussion on problems faced by LPs during train working	2 days
27.	Summarizing of general description of Three phase & conventional electric locomotives (including microprocessor & SIV based locos)	
28.	Summarizing of general description of different type of diesel locomotives	
29.	Summarizing of locations of safety & important equipment on electric & diesel locomotives.	
30.	Summarizing of location and functions of various types of relays, switches, MCBs, fuses, and other electrical equipment, along with their normal positions, need to be regularly checked and operated during train operations - use of audio-visual content is recommended.	
31.	Description of latest modifications and changes in electric & diesel locomotives and their requirement, actions by crew etc..	

PRM-2

DESCRIPTION
Driving Module

DURATION
1 day

CONTENTS

Sno.	Subject	Duration in days (Sessions)
10.	Proper call out of signal with LP. Demonstration of procedure of call out signal as per instructions laid down.	1 day
11.	Precautions while attaching locomotive on load	
12.	Train starting/stopping without jerk and gradual acceleration & deacceleration	
13.	Tips to avoid train parting, wheel slip, wheel skidding, rail burn etc.	
14.	• Keep watch on alertness of ALP. • Sharp lookout on signal, track, OHE & adjacent line, Tress passers etc	
15.	Procedure of passing neutral section	

	• Description & usage of neutral section related boards (500 meter board, 250 meter board, DJ open board, DJ close board). • Precaution to be taken before neutral section.	
16.	Looking back in curves for smooth running of train i.e. abnormal sound, hanging part, smoke, etc.	
17.	Procedure of MU loco operation, cab changing in MU loco, dead attaching of loco, stabling of locomotives, etc.	
18.	Description of dynamic/regenerative braking procedure and its benefits.	
19.	Summarizing the duties defined in ACTM	
20.	Good driving techniques	
21.	Train controlling in different terrain.	

PRM-3

DESCRIPTION
Loco Pneumatic Module

DURATION
1 day

CONTENTS

Sno.	Subject	Duration in days (Sessions)
12.	Summarizing of braking system of electric & diesel locomotives	1 day
13.	Action to be taken in case of MR, BP, FP pressure not build up/not maintaining	
14.	Miscellaneous failures of air brake of locomotive	
15.	Pneumatically isolation of bogie	
16.	Releasing of parking/hand brake in case of brake binding in locomotive	
17.	Operation of PTDC in three phase locomotive	
18.	Location of air dryer and isolating procedure	
19.	Actions to be taken in case of BP/ FP angle cock broken/Hose pipe damaged due to CRO	
20.	Application/releasing of parking/hand brake of locomotives and related failures & troubleshooting	
21.	Procedure of various tests & checks related to loco brake system like CP efficiency test, BP & FP leak test, train leak test, Loco brake power test, etc.	
22.	Miscellaneous failure related to brake system & troubleshooting	

PRM -4

DESCRIPTION
Loco Operation Module

DURATION
2 days

CONTENTS

Sno.	Subject	Duration in days
13.	Discussion on various common defects in electric & diesel locomotives	2 days
14.	Reading of Troubleshooting directories of electric & diesel locomotives, fault acknowledgment, actions as per TSD.	
15.	Precautions to be followed in case of any equipment of loco are isolated (as per TSD).	
16.	Isolation procedure for isolating various equipment.	
17.	Operation of PTDC in three phase locomotive.	
18.	Wedging of relays & contactors in conventional locomotives.	
19.	Miscellaneous failures of locomotive	
20.	Correction in TSD	
21.	Discussion on various tests conducted on locos	
22.	Application/releasing of parking/hand brake of locomotives and related failures & troubleshooting	
23.	Procedure of MU loco operation, cab changing in MU loco, dead attaching of loco, stabling of locomotives, etc.	
24.	Grounding & un-grounding of locomotive	
25.	Summarizing the duties defined in ACTM like Cleanliness of Loco, ALP shall assist the LP, appearance and proper uniform, duty assigned to him by the LP/CC/Sr.CC, maintaining a log of times and detentions enroute, etc.	
26.	Actions to be taken in case VCD act on line	
27.	Action to be taken in case of OHE tripped during dynamic / regenerative braking	
28.	Application/releasing of parking/hand brake of locomotives and related failures & troubleshooting	
29.	Procedure of attaching dead locomotive in train.	
30.	BPEMS switch and its usage	
31.	How to stop train on level, gradient, Controlling of train & coasting, energy conservation etc.	

DESCRIPTION
Safety Module

DURATION
1 day

CONTENTS

Sno.	Subject	Duration in days
20.	Action to taken in case train / loco stalled on gradient.	1 day
21.	Actions to be taken to avoid rolling down/rolling back of train/loco.	
22.	Action to be taken in case of train parting	
23.	Action to be taken in case flat wheel is detected	
24.	Derailment, collision, fire etc	
25.	Train protection and opposite line protection	
26.	OHE hanging / OHE breakdown	
27.	Axle seizure / hot axle	
28.	Smoke from underslung equipment	
29.	During water on track or flood	
30.	Obstructed track / land slide	
31.	Train operation during fog/poor visibility	
32.	In case of train parting	
33.	Flasher light of opposite train glowing	
34.	Panto entanglement and securing of broken pantograph & isolation of pantograph (through HPT link on loco roof)	
35.	In case of loco entered in unwired territory	
36.	Cattle Run Over (CRO) & inspection of loco after CRO	
37.	Stabling of locomotives & securing of train/loco to avoid rolling down/rolling back.	
38.	Communicating to TLC/TPC/Section controller or other official regarding information of any abnormality and assistance required (protocol to be followed like train no., loco no., section, between stations, km no., nature of abnormality, assistance required, etc.)	

PRM -6

DESCRIPTION
TrD Module

DURATION
½ day

CONTENTS

Sno.	Subject	Duration in days
8.	Brief Knowledge of TrD • Brief overview of OHE system • Familiarization with OHE equipment for identification (including cantilever assembly)	½ day
9.	Procedure of passing neutral section • Description & usage of neutral section related boards (500 meter board, 250 meter board, DJ open board, DJ close board). • Precaution to be taken before& after neutral section.	
10.	Provision of Sigma Board& usage.	
11.	Communication with TPC/TLC in case of panto broken or OHE hanging.	
12.	Action to be taken in case of panto broken/entangled.	
13.	Roof inspection & isolation of pantograph from HPT link and securing of broken panto, etc.	
14.	Duties of during OHE Break Down.	

PRM-7

DESCRIPTION
C&W Module

DURATION
½ day

CONTENTS

Sno.	Subject	Duration in days (Sessions)
9.	Different types of Rolling stock - Nomenclature	½ day
10.	Summarization of air brake system of coaches, wagons, BMBS and APS, etc and Hand brake in rolling stock.	
11.	Alarm chain pulling - resetting & isolation, FIBA, Fire Detection (VESDA), etc	
12.	Continuity test, cases of brake binding and releasing, Flat tire detection and action to be taken, isolation of distributor valve, etc	
13.	Guard & Loco Pilot check - clearance from road side station/sidings/non-TXR points & brake power calculation	
14.	Duties in case of fire in train	

15.	Summarizing of type of Brake power certificates, percentage of brake power required in goods/mixed/passenger trains, etc.	
16.	Overview of EMU/MEMU, Vande-Bharat type train set, Push-Pull, etc.	

PRM-8

DESCRIPTION
Transportation, First Aid, Fire Fighting

DURATION
6days

CONTENTS

Sno.	Subject	Duration in days (Sessions)
41.	Brief description of GR & SR. Correction slips	6 days
42.	Important definitions such as Adequate distance, Block Section, Isolation, Faulting mark, Running Line, Axle counter, Station section, etc.	
43.	Light engine, Relief Engine, Banking Engine, Train Engine, Shunting Engine, etc.	
44.	Systems of working, Ghat working/Ghat Rules Train formed from a non-TXR point , etc.	
45.	Unusual working e.g. failure of Head light, train received on Blocked line or to be started from a Non-Signal/Non running line, without brake van or without guard, with hot axles, etc.	
46.	Types of signaling systems, classification of signals. Approach and Departure signals permissive signals, subsidiary signals, automatic signal, semi-automatic signal, etc.	
47.	Defective signals and authority to pass.	
48.	Various authorities used during train operation & shunting	
49.	Duties of in case of accident, Mid Section derailments, protection of block section in case of accidents/incapacitation, Use of detonators, etc.	
50.	Duties in case of fire in train/loco.	
51.	Identifying and handling of various types of fire extinguishers, precautions to be taken while extinguishing fire, Render first aid to the burn injuries, first aid to persons affected by suffocation, communication, etc.	

PRM -9

DESCRIPTION
Simulator Training

DURATION
2 days

& Tripping car

CONTENTS

Sno.	Subject	Duration in days
4.	Simulator training for developing good driving techniques on different terrain.	**2 days**
5.	Troubleshooting practice in tripping car with the help of (in-built/external TSD.	

ARM-10

DESCRIPTION **DURATION**
Cases Studies of various accidents **1½ days**

CONTENTS

Sno.	Subject	Duration in days
2.	Case Studies of various accidents and lessons. (Particularly focusing on scenarios where prompt actions by LP/ALPs could have averted the incidents or accidents.)	1½ days

DESCRIPTION **DURATION**
Recapitulation **½ day**

CONTENTS

- Recapitulation

*****

<u>Instruction for training centers& Instructors</u>

- This course shall be applicable to all LPs and is deemed to refresh the learning of both the tractions.
- During classroom training, it is preferable to use audio-visual aids with digital content.
- In-depth knowledge of various circuits, such as electrical and pneumatic circuits, etc is not required.
- The training should primarily emphasize the activities and

responsibilities of the LP in their day-to-day operations with locomotives/trains.

- During subject-specific classroom training, it is essential to emphasize discussions on safety cases, including SPAD, accidents, derailments, collisions, side collisions, and incidents involving entering unwired/sand humps. This emphasis should highlight how adherence to proper procedures or correct actions by the ALP on the subject could have effectively prevented such cases.
- There shall **NOT** be any pass / fail criteria in refresher course.

*****

LP(G) to Motorman Promotional Training Course – Electric Traction

Course Code - MPM

Module no.	Training Module	Duration in days
MPM-1	EMU/MEMU Module	3
MPM-2	Driving Module	6
	Field Training / Footplate	2
MPM-3	Safety & Operation Module	5
	Field Training / Footplate	2
MPM-4	Pneumatic Module	2
MPM-5	Transportation Module - Transportation, First Aid, Fire Fighting,	12
MPM-6	C&W and Air Brake Module & overview of Vande Bharat type train set, Push-Pull etc.	1
MPM-7	TrD module	1
MPM-8	Case Studies	1.5
MPM-10	Final Exam	0.5
	Total days	**36**

Note -After completion of training at ETTC (36 days), a 12-day Train Handling on Line,' shall be given by respective divisions and trainees shall be booked as Co-Motorman in EMU/MEMU trains.

MPM-1

DESCRIPTION
EMU/MEMU Module

DURATION
3 days

CONTENTS

Sno.	Subject	Duration in days
1.	Summarizing the general description of electric Multiple Unit (EMU/MEMU) – Three phase & conventional EMU–composition, types of coaches – MC, TC (driving, non driving), speed, Tractive effort, etc.	3 Days
2.	Brief description on safety items - undergear safety fittings & intactness (cattle guard, rail guard, coupling, axle box, battery box, air suspension bellow, switch gear, tap changer, other bogie/under gear equipment which needs to be checked on line, moisture draining locations, location of lubrication	

Sno.	Subject	Duration in days
	points, etc..	
3.	Location and functions of various types of relays, switches, MCBs, fuses, and other electrical equipment, along with their normal positions, in LT/HT compartment - need to be regularly checked and operated during train operations	
4.	Detailed description of CAB items, switches/controls to be operated by LP. Understanding symbols in HMI and various operations in HMI like brake release etc.	
5.	Safety items to be checked while taking over charge of train.	
6.	Model room/Field demonstration	

MPM-2

DESCRIPTION **DURATION**
Driving Module **6days**

CONTENTS

Sno.	Subject	Duration in days
36.	Methodology of quality Road Learning and its importance.	6 days
37.	Proper Self call out of signal. • Demonstration of procedure of self call out of signal as per instructions laid down • This should be demonstrated by each LP multiple times.	
38.	Energizing (cab occupation) and De energizing an EMU rake.	
39.	Brake continuity, Brake feel & brake power test • Procedure for carry out of brake continuity test and locations/situations where carry out. • Importance of brake feel test & brake power for safety of trains. • Procedure for carry out brake feel test & brake power test.	
40.	Instructions for Joint Brake Power Testing as per ACTM	
41.	How to start train without jerk and acceleration, deacceleration, etc.	
42.	Observance of permissible speed, permanent, & temporary speed restrictions, etc.	
43.	Punctuality of coaching trains, Working time table Maximum permissible speed, etc.	
44.	Description of dynamic/regenerative braking procedure and its benefits.	
45.	Use of BPCS and precaution while using it.	
46.	Use of ENS, PIS configuration.	

Sno.	Subject	Duration in days
47.	Effect on regenerative/dynamic brake upon braking through EP/Auto brakes and no tension of OHE.	
48.	Description of auto regression feature in case of full service brake application and emergency brake application.	
49.	Good driving technique, instructions for train operation, alertness, etc.	
50.	Train operation in ghat sections	
51.	Duties of LP defined in ACTM.	
52.	Description of tools provided to LP and provided on Rake	
53.	• Observance of caution order, Permanent &temporary speed restrictions, engineering boards, OHE boards, coasting boards, gradient boards, etc. • Sharp lookout on signal, track, OHE & adjacent line, Tress passers etc. • ADD and ORD of panto.	
54.	Use of Flasher light and actions to be taken when flasher light of opposite direction train is glowing.	
55.	Stopping of coaching train with position of coach display board/stop board provided at platform.	
56.	Operation of passenger related amenities – Lights, Fans, Ventilation, Announcements, PIS etc.	

Field Training / Footplate **2 days**

- Field Training / Footplate under Training Instructor/Chief Loco Inspector.

MPM-3

DESCRIPTION **DURATION**
Safety & Operation Module **5days**

CONTENTS

Sno.	Subject	Duration in days
1.	Types of faults, reading method fault in HMI, status code and reading of troubleshooting directories.	4 days
2.	Working with isolation of different equipment in rake	
3.	Bell codes, Talkback, Fault indication lamps.	
4.	Function & use of BPEMS switch.	
5.	Rescue Driving Mode.	
6.	Train operation in case of Head light defective.	
7.	Train operation in case of SPM defective.	
8.	Train operation in case of HMI defective.	

Sno.	Subject	Duration in days
9.	Train Operation with deflated/punctured bellow.	
10.	Stabling of rake & securing to avoid rolling down/rolling back.	
11.	Action to be taken train stalled on gradient	
12.	Actions to be taken in case of ACP.	
13.	Actions to be taken & inspection of rake in case of CRO.	
14.	Precautions in dead movement of rake.	
15.	Function of various safety equipment VCD, Fog safe/Fog Pass device, KAVACH, RDAS, AWS etc.	
16.	RTIS equipment, usage and precautions.	
17.	Cab Changing Procedure.	
18.	Case Studies of various accident – Role of LP	1 day

Field Training / Footplate **2 days**

- Field Training / Footplate under Training Instructor/Chief Loco Inspector.

MPM-4

DESCRIPTION **DURATION**
EMU/MEMU Pneumatic Module **2 days**

CONTENTS

Sno.	Subject	Duration in days
26.	Overview on braking system of three phase EMUs	2days
27.	Working of EP, Auto, dynamic and parking brake on three phase EMUs	
28.	Overview on braking system of conventional EMU	
29.	Working of EP, Auto and parking on conventional locomotives	
30.	Action to be taken in case of MR pressure not build up	
31.	Action to be taken in case of BP pressure not build up	
32.	Action to be taken in case of BP pressure not maintaining	
33.	Pneumatically/Electric isolation of brakes.	
34.	Operations and control of pneumatic system from HMI	
35.	Releasing of parking/hand brake in case of brake binding.	
36.	Location of air dryer and isolating procedure	
37.	Procedure of various tests & checks – joint brake power testing	
38.	Discussion of various pneumatic failures and remedies	

DESCRIPTION
Transportation, First Aid & Fire Fighting

DURATION
12days

CONTENTS

Sno.	Subject	Duration in days
44.	Brief description of GR & SR pertaining to LOCO PILOTs. Correction slips.	12 days
45.	Summarizing of Important definitions such as Adequate. Distance, Block Section, Isolation, Faulting mark, Running Line, Axle counter, Station section. Authority to proceed and Station working rules	
46.	Light engine, Relief Engine, Banking Engine, Train Engine, Shunting Engine, etc	
47.	Personal equipment of LOCO PILOTS	
48.	Stations • Kinds and classification of stations minimum essential signals etc. for each station. • Block and non-Block stations. • Block overlap. • Yard Layout, etc.	
49.	System of working – • Absolute Block System • Automatic Block System, • Train following System, etc	
50.	Signals – • Necessity and Evaluation of signals, • classification and kinds of signals, • Approach and Departure signals permissive signals, subsidiary signals, etc.	
51.	Defective signals • Defective signal, Automatic signals, Semi-automatic and Gate signals, manual signals. • Action and rules for passing defective signals of different types. • Practical tour for sight in Yard.	
52.	Engineering signals – • Engineering Signals. Their placement. • Permanent and Temporary Engineering Cautions. • Brief of Chat Section. • Speeds.	
53.	Isolation	
54.	Different authorities/forms	
55.	Whistle codes What is a Whistle Code? When and how is to be used? Precautions before starting a Train from a station (originating) or Yard right signals.	
56.	Abnormal working – • Rules for working of trains – single line working on Double line in absolute and automatic Block Sections. • Total failure Communication.	

	• Rules for sending relief engine from right line and wrong line. • Precautions to be observed during abnormal working in different cases.	
57.	Shunting – • Kinds of shunting. • Precautions for safe and smooth shunting. • Rules for shunting in Yard, coaching Yard and "B" class stations. • Model Room training.	
58.	• Train operation in fog	
59.	Protection Rules	
60.	Exchange of Signal & its significance	
61.	Accident – • Duties of Loco Pilot in case of accident. • Mid Section derailments. Engine failures etc. • Over shooting • Protection in block section in case of accidents. • Use of detonators	
62.	• Duties in case of fire in train/loco.	
63.	Identifying and handling of various types of fire extinguishers, precautions to be taken while extinguishing fire, Render first aid to the burn injuries, first aid to persons affected by suffocation, communication, etc.	

MPM-6

DESCRIPTION **DURATION**
C&W and Air Brake Module & **1day**
Vande-Bharat type train set, Push-Pull, etc.

CONTENTS

Sno.	Subject	Duration in days
52.	Different types of coaching stock - Nomenclature	1day
53.	Air brake system - working method with diagrams, parts & functions, working single pipe and Twin pipe air brake system. Pneumatic brake - working principle, BMBS and APS, Hand brake in rolling stock.	
54.	Brake power certificates - kinds - Coaching trains, percentage of brake power required inmixed/passenger trains, Alarm chain pulling - resetting & isolation, FIBA, Fire Detection(VESDA), etc	
55.	Continuity test, cases of brake binding and releasing, Flat tire detection and action to be taken, isolation of distributor valve, isolation of bogie pneumatically, etc.	
56.	LHB coach, Hybrid coach, conventional coach, Hot axle symptoms and action to be taken.	
57.	Brake continuity test and its importance	
58.	Overview of Vande-Bharat type train set, Push-Pull, etc.	

MPM-7

DESCRIPTION
TrD Module

DURATION
1 day

CONTENTS

Sno.	Subject	Duration in days (Sessions)
16.	Introduction to TrD	1day
17.	Brief of Power Supply arrangement.	
18.	Cantilever - Its parts	
19.	Use of ATD in OHE	
20.	Neutral Section.	
21.	Different type of TrD boards & description	
22.	Panto Entanglement - it's causes	
23.	Instruction of Loco Pilots to in case of tripping of OHE	
24.	Duties of Loco Pilot during OHE unusual and Break Down	

MPM-8

DESCRIPTION
Case Studies

DURATION
1½ days

CONTENTS

Case Studies of various accidents and lessons. (Particularly focusing on scenarios where prompt actions by Motormen could have averted the incidents or accidents.).

MPM-10

DESCRIPTION
Review & Exam

DURATION
½ day

CONTENTS

Review & Exam

DESCRIPTION
Train handling on line

DURATION
12days

After the completion of a 36-day training at Traction Training Centers, trainees shall be directed to their respective divisions for a 12-day 'Train Handling on Line,' and shall be booked as Co-Motorman in EMU/MEMU .

*****

Instruction for training centers& Instructors

- During classroom training, it is preferable to use audio-visual aids with digital content.
- In-depth knowledge of various circuits, such as electrical and pneumatic circuits, etc is not required.
- The training should primarily emphasize the activities and responsibilities of the LPP/Motorman in their day-to-day operations with EMU/MEMU trains.
- During subject-specific classroom training, it is essential to emphasize discussions on safety cases, including SPAD, accidents, derailments, collisions, side collisions, and incidents involving entering unwired/sand humps. This emphasis should highlight how adherence to proper procedures or correct actions by the LPP/Motorman on the subject could have effectively prevented such cases.

*****

Motorman Refresher Course

Course Code - MRM

Module no.	Training Course	Duration in days
MRM-1	EMU/MEMU Module	2
MRM-2	Driving Module	2
MRM-3	Safety & Operation Module	2
MRM-4	Pneumatic Module	2
MRM-5	Transportation Module - Transportation, First Aid, Fire Fighting,	6
MRM-6	C&W and Air Brake Module & overview of Vande Bharat type train set, Push-Pull etc.	½
MRM-7	TrD module	½
MRM-8	Simulator Training	1
MRM-9	Case Studies	2
	Total days	**18**

MRM-1

DESCRIPTION
EMU/MEMU Module

DURATION
2 days

CONTENTS

Sno.	Subject	Duration in days
7.	Summarizing the general description of electric Multiple Unit (EMU/MEMU) – Three phase & conventional EMU – composition, types of coaches – MC, TC (driving, non driving), speed, Tractive effort, etc.	2 Days
8.	Brief description on safety items - undergear safety fittings & intactness (cattle guard, rail guard, coupling, axle box, battery box, air suspension bellow, switch gear, tap-changer, other bogie/under gear equipment which needs to be checked on line, moisture draining locations, location of lubrication points, etc. – use of audio-visual digital content is recommended.	
9.	Location and functions of various types of relays, switches, MCBs, fuses, and other electrical equipment, along with their normal positions, in LT/HT compartment - need to be regularly checked and operated during train operations - use of audio-visual digital content is recommended.	
10.	Detailed description of CAB items, switches/controls to be operated by LP. Understanding symbols in HMI and various operations in HMI like brake release etc.	
11.	Safety items to be checked while taking over charge of train.	
12.	Model room/Field demonstration	

MRM-2

DESCRIPTION
Driving Module

DURATION
2 days

CONTENTS

Sno.	Subject	Duration in days
57.	Proper Self call out of signal. • Demonstration of procedure of self call out of signal as per instructions laid down This should be demonstrated by each LP multiple times.	2 days
58.	Energizing (cab occupation) and De energizing an EMU rake.	
59.	Brake continuity, Brake feel & brake power test • Procedure for carry out of brake continuity test and	

Sno.	Subject	Duration in days
	locations/situations where carry out. • Importance of brake feel test & brake power for safety of trains. • Procedure for carry out brake feel test & brake power test.	
60.	Instructions for Joint Brake Power Testing as per ACTM	
61.	Observance of permissible speed, permanent, & temporary speed restrictions, etc.	
62.	Punctuality of coaching trains, Working time table Maximum permissible speed, etc.	
63.	Description of dynamic/regenerative braking procedure and its benefits.	
64.	Use of Cruise Control and precaution while using it.	
65.	Use of ENS, PIS configuration.	
66.	Effect on regenerative/dynamic brake upon braking through EP/Auto brakes and no tension of OHE.	
67.	Description of auto regression feature in case of full service brake application and emergency brake application.	
68.	Good driving technique, instructions for train operation, alertness, etc.	
69.	Train operation in ghat sections	
70.	Duties of LP defined in ACTM.	
71.	Description of tools provided to LP and provided on Rake	
72.	• Observance of caution order, Permanent & temporary speed restrictions, engineering boards, OHE boards, coasting boards, gradient boards, etc. • Sharp lookout on signal, track, OHE & adjacent line, Tress passers etc. • ADD and ORD of panto.	
73.	Use of Flasher light and actions to be taken when flasher light of opposite direction train is glowing.	
74.	Stopping of coaching train with position of coach display board/stop board provided at platform.	
75.	Operation of passenger related amenities – Lights, Fans, Ventilation, Announcements, PIS etc.	

MRM-3

DESCRIPTION
Safety & Operation Module

DURATION
2 days

CONTENTS

Sno.	Subject	Duration in days
19.	Types of faults, reading method fault in HMI, status code and reading of troubleshooting directories.	2 days
20.	Working with isolation of different equipment in rake	
21.	Bell codes, Talkback, Fault indication lamps.	

Sno.	Subject	Duration in days
22.	Function & use of BPEMS switch.	
23.	Rescue Driving Mode.	
24.	Train operation in case of Head light defective.	
25.	Train operation in case of SPM defective.	
26.	Train operation in case of HMI defective.	
27.	Train Operation with deflated/punctured bellow.	
28.	Stabling of rake & securing to avoid rolling down/rolling back.	
29.	Action to be taken train stalled on gradient	
30.	Actions to be taken in case of ACP.	
31.	Actions to be taken & inspection of rake in case of CRO.	
32.	Precautions in dead movement of rake.	
33.	Function of various safety equipment VCD, Fog safe/Fog Pass device, KAVACH, RDAS, AWS etc.	
34.	RTIS equipment, usage and precautions.	
35.	Cab Changing Procedure.	

MRM-4

DESCRIPTION
EMU/MEMU Pneumatic Module

DURATION
2 days

CONTENTS

Sno.	Subject	Duration in days
39.	Overview on braking system of three phase EMUs	2 days
40.	Working of EP, Auto, dynamic and parking brake on three phase EMUs	
41.	Overview on braking system of conventional EMU	
42.	Working of EP, Auto and parking on conventional locomotives	
43.	Action to be taken in case of MR pressure not build up	
44.	Action to be taken in case of BP pressure not build up	
45.	Action to be taken in case of BP pressure not maintaining	
46.	Pneumatically/Electric isolation of brakes.	
47.	Operations and control of pneumatic system from HMI	
48.	Releasing of parking/hand brake in case of brake binding.	
49.	Location of air dryer and isolating procedure	
50.	Procedure of various tests & checks – joint brake power testing	
51.	Discussion of various pneumatic failures and remedies	

MRM-5

DESCRIPTION
Transportation, First Aid & Fire Fighting

DURATION
6 days

CONTENTS

Sno.	Subject	Duration in days (Sessions)
64.	Brief description of GR & SR pertaining to LOCO PILOTs. Correction slips.	6 days
65.	Summarizing of Important definitions such as Adequate. Distance, Block Section, Isolation, Faulting mark, Running Line, Axle counter, Station section. Authority to proceed and Station working rules	
66.	Light engine, Relief Engine, Banking Engine, Train Engine, Shunting Engine, etc	
67.	Personal equipment of LOCO PILOTS	
68.	Stations • Kinds and classification of stations minimum essential signals etc. for each station. • Block and non-Block stations. • Block overlap. • Yard Layout, etc.	
69.	System of working – • Absolute Block System • Automatic Block System, • Train following System, etc	
70.	Signals – • Necessity and Evaluation of signals, • classification and kinds of signals, • Approach and Departure signals permissive signals, subsidiary signals, etc.	
71.	Defective signals • Defective signal, Automatic signals, Semi-automatic and Gate signals, manual signals. • Action and rules for passing defective signals of different types. • Practical tour for sight in Yard.	
72.	Engineering signals – • Engineering Signals. Their placement. • Permanent and Temporary Engineering Cautions. • Brief of Chat Section. • Speeds.	
73.	Isolation	
74.	Different authorities/forms	
75.	Whistle codes What is a Whistle Code? When and how is to be used? Precautions before starting a Train from a station (originating) or Yard right signals.	
76.	Abnormal working – • Rules for working of trains – single line working on	

	Double line in absolute and automatic Block Sections. • Total failure Communication. • Rules for sending relief engine from right line and wrong line. • Precautions to be observed during abnormal working in different cases.	
77.	Shunting – • Kinds of shunting. • Precautions for safe and smooth shunting. • Rules for shunting in Yard, coaching Yard and "B" class stations. • Model Room training.	
78.	• Train operation in fog	
79.	Protection Rules	
80.	Exchange of Signal & its significance	
81.	Accident – • Duties of Loco Pilot in case of accident. • Mid Section derailments. Engine failures etc. • Over shooting • Protection in block section in case of accidents. • Use of detonators	
82.	• Duties in case of fire in train/loco.	
83.	Identifying and handling of various types of fire extinguishers, precautions to be taken while extinguishing fire, Render first aid to the burn injuries, first aid to persons affected by suffocation, communication, etc.	

MRM-6

DESCRIPTION
C&W and Air Brake Module &
Vande-Bharat type train set, Push-Pull, etc.

DURATION
½ day

CONTENTS

Sno.	Subject	Duration in days
59.	Different types of coaching stock - Nomenclature	½ day
60.	Air brake system - working method with diagrams, parts & functions, working single pipe and Twin pipe air brake system. Pneumatic brake - working principle, BMBS and APS, Hand brake in rolling stock.	
61.	Brake power certificates - kinds - Coaching trains, percentage of brake power required in mixed/passenger trains, Alarm chain pulling - resetting & isolation, FIBA, Fire Detection(VESDA), etc	
62.	Continuity test, cases of brake binding and releasing, Flat tire detection and action to be taken, isolation of distributor valve, isolation of bogie pneumatically, etc.	
63.	LHB coach, Hybrid coach, conventional coach, Hot axle symptoms and action to be taken.	
64.	Brake continuity test and its importance	
65.	Overview of Vande-Bharat type train set, Push-Pull, etc.	

MRM-7

DESCRIPTION **DURATION**

TrD Module **½ day**

CONTENTS

Sno.	Subject	Duration in days
25.	Introduction to TrD	½ day
26.	Brief of Power Supply arrangement.	
27.	Cantilever - Its parts	
28.	Use of ATD in OHE	
29.	Neutral Section.	
30.	Different type of TrD boards & description	
31.	Panto Entanglement - it's causes	
32.	Instruction of Loco Pilots to in case of tripping of OHE	
33.	Duties of Loco Pilot during OHE unusual and Break Down	

MRM-8

DESCRIPTION	**DURATION**
Simulator Training & Tripping Car	**1 day**

CONTENTS

Simulator Training – simulator training may be imparted to develop good driving skills on different type of terrains, acceleration & deacceleration, controlling of speed, response to unusual scenarios etc.

Tripping car – Practical training of troubleshooting used TSD**.**

Note: In case of non availability of Simulator, handling may be performed under supervision of CLI.

Conversion Training Course ALP – Diesel to Electric Traction

Course Code -ACEM

Sub-Module no.	Training Content	Duration in days
ACEM-1	Loco Module	**4**
	Field Training / Footplate	**2**
ACEM-2	Loco Operation Module	**3**
	Field Training / Footplate	**3**
ACEM-3	TrD Module	**0.5**
ACEM-4	Loco Pneumatic Module	**1**
	Field Training / Footplate	**3**
ACEM-5	Simulator Training & Manual Control of GR & EEC in tripping car	**1**
	Final Exam	**0.5**
	Total days	**18**

ACEM-1

DESCRIPTION
Loco Module

DURATION
4 days

CONTENTS

Sno.	Subject	Duration in days
32.	Precaution/rules to be followed in electrified zone/electric locomotive • Safety precautions related to 25kV OHE • Safety precautions during corridor / machine room inspection on moving loco	4 days
33.	Principle of electric locomotives - three phase & conventional electric locomotives	
34.	Brief on basic electric circuitry of three phase & conventional locomotives.	
35.	General layout of electric locomotives – three phase & conventional loco – brief overview of loco sections viz. cab, corridor, machine room, under frame, roof equipment & pantograph, buffer, coupling, cattle guard, Headlight, Flasher light, Marker light, gauges & meters in cab, RS valve (emergency brake valve), other apparatus in cab, etc.	
36.	Locations of safety & important equipment on locomotive • Brief description on safety items & its checking procedure (how to check online) - undergear safety fittings & intactness (cattle guard, rail guard, sand box & sander pipes, CBC & TSC coupling, axle box, battery box, other bogie/under gear equipment which needs to be checked on line, moisture draining locations,	

Sno.	Subject	Duration in days
	location of lubrication points, etc.	
37.	Location and functions of various types of relays, switches, MCBs, fuses, and other electrical equipment, along with their normal positions, need to be regularly checked and operated during train operations	
38.	Checking of stabled locomotive before energizing • Standing on line & under OHE, oil & lubrication points, availability of fire extinguishers and wooden wedges, etc.	
39.	• Familiarization with Loco log book and description of tools & equipment provided to loco crew	
40.	Location of fixed & portable fire extinguishers and procedure to use fixed fire extinguishers	

Field Training / Footplate **2 days**

- Field Training / Footplate under Training Instructor/Chief Loco Inspector. Practical demonstration and hands on training for learning of loco equipment location, checking procedure of loco before energizing the loco, etc.

ACEM-2

DESCRIPTION **DURATION**
Loco Operation Module **3 days**

CONTENTS

Sno.	Subject	Duration in days
46.	Energizing, De-energizing & stabling of locomotive & cab changing procedure • Loco energizing sequence/procedure for three phase & conventional locomotives. • Cab changing procedure/sequence • Loco shunting down procedure/sequence and stabling of loco (including securing of loco using hand brake, parking brake, wooden wedges, etc).	**3 days**
47.	EEC & GR manual operation in Conventional loco.	
48.	Wedging of different type of relays & contactors in conventional locomotive	
49.	Flasher light – its checking procedure & usage	
50.	VCD act on line	
51.	Headlight not working	
52.	Horn not working	
53.	Speedometer not working	
54.	BPEMS switch & usage	
55.	Operation of PTDC in three phase locomotive	
56.	Throttle not responding	

Sno.	Subject	Duration in days
57.	Harmonic filter isolation	
58.	Working from rear cab	
59.	Fire in locomotive	
60.	Function of various safety equipment VCD, Fogsafe/FogPass device, KAVACH, RDAS, etc.	
61.	RTIS equipment, usage and precautions.	
62.	Types of loco faults, reading method DDS, status code and reading of troubleshooting directories.	
63.	Reading of Trouble shooting directory of various three phase & conventional locomotives.	
64.	Precautions to be followed in case of any equipment of loco is isolated (as per TSD).	
65.	Procedure of grounding / un-grounding of loco	
66.	Action to be taken in case of panto broken/entangled.	
67.	Communicating to TLC or other official regarding information of any abnormality and assistance required (protocol to be followed like train no., loco no., section, between stations, km no., nature of abnormality, assistance required, etc.)	

Field Training / Footplate **3 days**

- Field Training / Footplate under Training Instructor/Chief Loco Inspector. Practical demonstration and hands on training for learning of sequences of loco energizing & deenergizing, ground/un-grounding, etc.

ACEM-3

DESCRIPTION **DURATION**
TrD Module **½ day**

CONTENTS

Sno.	Subject	Duration in days
15.	Brief Knowledge of TrD • Brief overview of OHE system • Familiarization with OHE equipment for identification (including cantilever assembly)	½ day
16.	Procedure of passing neutral section • Description & usage of neutral section related boards (500 meter board, 250 meter board, DJ open board, DJ close board). • Precaution to be taken before& after neutral section.	
17.	Provision of Sigma Board& usage.	
18.	Communication with TPC/TLC in case of panto broken or OHE hanging.	
19.	Action to be taken in case of panto broken/entangled.	
20.	Roof inspection & isolation of pantograph from HPT link and securing of broken panto, etc.	

21.	Duties of during OHE Break Down.	

ACEM-4

DESCRIPTION **DURATION**
Loco Pneumatic Module **1 day**

CONTENTS

Sno.	Subject	Duration in days
52.	Overview on braking system of three phase locomotive	1day
53.	Overview on braking system of conventional locomotive	
54.	Action to be taken in case of MR pressure not build up	
55.	Action to be taken in case of BP pressure not build up	
56.	Action to be taken in case of FP pressure not build up	
57.	Action to be taken in case of BP pressure not maintaining	
58.	Miscellaneous failures of air brake of locomotive	
59.	Pneumatically isolation of bogie	
60.	Releasing of parking/hand brake in case of brake binding in locomotive	
61.	Overview on operation of PTDC in three phase locomotive	
62.	Location of air dryer and isolating procedure	
63.	Actions to be taken in case of BP/ FP angle cock broken due to CRO	
64.	Procedure of various tests & checks related to loco brake system like CP efficiency test, BP & FP leak test, train leak test, Loco brake power test, etc.	

Field Training / Footplate **3 days**

- Field Training / Footplateunder Training Instructor/Chief Loco Inspector. Practical demonstration of subjects related to brake system of electric locomotives and hands on training for learning of procedures, sequences, etc.

ACEM-5

DESCRIPTION **DURATION**
Simulator Training **1 day**
& Tripping car

CONTENTS

Simulator Training &practical training of trouble shooting through TSD, manual operation of GR & EEC etc in tripping car.

DESCRIPTION	DURATION
Review & Exam	**½ day**

CONTENTS

Review & Exam

*****

Instruction for training centers& Instructors

- During classroom training, it is preferable to use audio-visual aids with digital content.
- In-depth knowledge of various circuits, such as electrical and pneumatic circuits, etc is not required.
- The training should primarily emphasize the activities and responsibilities of the LP/ALP in their day-to-day operations with locomotives/trains.
- While footplating as Co-ALP, the trainee should act like an observer only. He/she shall not interfere with activities of crew. He/she shall **NOT** be held responsible for lacunae in any routine/defined duties of ALP in case of any untoward incident, etc.
- During subject-specific classroom training, it is essential to emphasize discussions on safety cases, including SPAD, accidents, derailments, collisions, side collisions, and incidents involving entering unwired/sand humps. This emphasis should highlight how adherence to proper procedures or correct actions by the LP/ALP on the subject could have effectively prevented such cases.

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Conversion Training Course LP – Diesel to Electric Traction

Course Code -PCEM

Module no.	Training Content	Duration in days
PCEM-1	Loco Module	**5**
	Field Training / Footplate	**3**
PCEM-2	Loco Operation Module	**4**
	Field Training / Footplate	**3**
PCEM-3	TrD Module	**0.5**
PCEM-4	Loco Pneumatic Module	**3**
	Field Training / Footplate	**3**
PCEM-5	Simulator Training & Manual Control of GR & EEC in tripping car	**2**
	Final Exam	**0.5**
	Total days	**24**

PCEM-1

DESCRIPTION
Loco Module

DURATION
5 days

CONTENTS

Sno.	Subject	Duration in days
41.	Precaution/rules to be followed in electrified zone/electric locomotive • Safety precautions related to 25kV OHE • Safety precautions during corridor / machine room inspection on moving loco	5 days
42.	Principle of electric locomotives - three phase & conventional electric locomotives	
43.	Brief on basic electric circuitry of three phase & conventional locomotives (including WAG12).	
44.	General layout of electric locomotives – three phase & conventional loco – brief overview of loco sections viz. cab, corridor, machine room, under frame, roof equipment & pantograph, buffer, coupling, cattle guard, Headlight, Flasher light, Marker light, gauges & meters in cab, RS valve (emergency brake valve), other apparatus in cab, etc.	
45.	Location and functions of various types of relays, switches, MCBs, fuses, and other electrical equipment, along with their normal positions, need to be regularly checked and operated during train operations	
46.	Checking of stabled locomotive before energizing • Standing on line & under OHE, oil & lubrication points, availability of fire extinguishers and wooden wedges, etc.	
47.	• Familiarization with Loco log book and description of tools & equipment provided to loco crew	
48.	Location of fixed & portable fire extinguishers and procedure to use fixed fire extinguishers	

Field Training / Footplate **3 days**

- Field Training / Footplate training under Training Instructor/Chief Loco Inspector. Practical demonstration and hands on training for learning of loco equipment location, checking procedure of loco before energizing the loco, etc.

PCEM-2

DESCRIPTION
Loco Operation Module

DURATION
4 days

CONTENTS

Sno.	Subject	Duration in days
68.	Energizing, De-energizing & stabling of locomotive & cab changing procedure • Loco energizing sequence/procedure for three phase & conventional locomotives. • Cab changing procedure/sequence • Loco shunting down procedure/sequence and stabling of loco (including securing of loco using hand brake, parking brake, wooden wedges, etc).	4 days
69.	EEC & GR manual operation in Conventional loco.	
70.	Wedging of different type of relays & contactors in conventional locomotive	
71.	Flasher light – its checking procedure & usage	
72.	VCD act on line	
73.	Headlight not working	
74.	Horn not working	
75.	Speedometer not working	
76.	BPEMS switch & usage	
77.	Operation of PTDC in three phase locomotive	
78.	Throttle not responding	
79.	Harmonic filter isolation	
80.	Working from rear cab	
81.	Fire in locomotive	
82.	Function of various safety equipment VCD, Fogsafe/FogPass device, KAVACH, RDAS, etc.	
83.	RTIS equipment, usage and precautions.	
84.	Types of loco faults, reading method DDS, status code and reading of troubleshooting directories.	
85.	Reading of Trouble shooting directory of various three phase & conventional locomotives.	
86.	Precautions to be followed in case of any equipment of loco is isolated (as per TSD).	
87.	Procedure of grounding / un-grounding of loco	
88.	Action to be taken in case of panto broken/entangled. ORD feature.	
89.	Communicating to TLC or other official regarding information of any abnormality and assistance required (protocol to be followed like train no., loco no., section, between stations, km no., nature of abnormality, assistance required, etc.)	

Field Training / Footplate **3 days**

- Field Training / Footplate under Training Instructor/Chief Loco Inspector.

Practical demonstration and hands on training for learning of sequences of loco energizing & deenergizing, ground/un-grounding, etc.

PCEM -3

DESCRIPTION
TrD Module

DURATION
½ day

CONTENTS

Sno.	Subject	Duration in days
22.	Brief Knowledge of TrD • Brief overview of OHE system • Familiarization with OHE equipment for identification (including cantilever assembly)	½ day
23.	Procedure of passing neutral section • Description & usage of neutral section related boards (500 meter board, 250 meter board, DJ open board, DJ close board). • Precaution to be taken before & after neutral section.	
24.	Provision of Sigma Board & usage.	
25.	Communication with TPC/TLC in case of panto broken or OHE hanging.	
26.	Action to be taken in case of panto broken/entangled.	
27.	Roof inspection & isolation of pantograph from HPT link and securing of broken panto, etc.	
28.	Duties of during OHE Break Down.	

PCEM -4

DESCRIPTION
Loco Pneumatic Module

DURATION
3days

CONTENTS

Sno.	Subject	Duration in days
65.	Overview on braking system of three phase locomotive	3 days
66.	Overview on braking system of conventional locomotive	
67.	Action to be taken in case of MR pressure not build up	
68.	Action to be taken in case of BP pressure not build up	
69.	Action to be taken in case of FP pressure not build up	
70.	Action to be taken in case of BP pressure not maintaining	
71.	Miscellaneous failures of air brake of locomotive	
72.	Pneumatically isolation of bogie	
73.	Releasing of parking/hand brake in case of brake binding in locomotive	

Sno.	Subject	Duration in days
74.	Overview on operation of PTDC in three phase locomotive	
75.	Location of air dryer and isolating procedure	
76.	Actions to be taken in case of BP/ FP angle cock broken due to CRO	
77.	Procedure of various tests & checks related to loco brake system like CP efficiency test, BP & FP leak test, train leak test, Loco brake power test, etc.	

Field Training / Footplate **3 days**

- Field Training / Footplate under Training Instructor/Chief Loco Inspector. Practical demonstration of subjects related to brake system of electric locomotives and hands on training for learning of procedures, sequences, etc.

PCEM -5

DESCRIPTION **DURATION**
Simulator Training **2 days**
& Tripping car

CONTENTS

Simulator Training & practical training of trouble shooting through TSD, manual operation of GR & EEC etc in tripping car.

DESCRIPTION **DURATION**
Review & Exam **½ day**

CONTENTS

Review & Exam

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<u>Instruction for training centers & Instructors</u>

- During classroom training, it is preferable to use audio-visual aids with digital content.
- In-depth knowledge of various circuits, such as electrical and pneumatic circuits, etc is not required.
- The training should primarily emphasize the activities and responsibilities of the LP/ALP in their day-to-day operations with locomotives/trains.

- While footplating the trainee should act like an observer only. He/she shall not interfere with activities of crew. He/she shall **NOT** be held responsible for lacunae in any routine/defined duties of LP in case of any untoward incident, etc.
- During subject-specific classroom training, it is essential to emphasize discussions on safety cases, including SPAD, accidents, derailments, collisions, side collisions, and incidents involving entering unwired/sand humps. This emphasis should highlight how adherence to proper procedures or correct actions by the LP/ALP on the subject could have effectively prevented such cases.

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Conversion Training Course ALP – Electric to Diesel Traction

Course Code – ACDM

Module no.	Training Content	Duration in days
ACDM-1	Loco Module	**4**
	Field Training / Footplate	**2**
ACDM-2	Loco Operation Module	**3**
	Field Training / Footplate	**3**
ACDM-3	TrD Module	**0.5**
ACDM-4	Loco Pneumatic Module	**1**
	Field Training / Footplate	**3**
ACDM-5	Simulator Training	**1**
	Final Exam	**0.5**
	Total days	**18**

ACDM-1

DESCRIPTION **DURATION**
Loco Module **4 days**

CONTENTS

Sno.	Subject	Duration in days
78.	Characteristics of different type of diesel locomotives	4 days
79.	Basic principle of Diesel locomotives	
80.	General description of different type of Diesel locomotives	
81.	Familiarization of cab layouts & gauges and apparatus there in	
82.	Description of various sections and circuits of Diesel locomotives	
83.	Brief overview of diesel loco fuel oil, water cooling, lubrication systems & capacities	
84.	Locomotive operating instructions, Safety items of loco and Safety equipment provided to running staff and on loco.	
85.	Examination of locomotive' while turning out from Shed taking over from the previous crew including Familiarization with Repair book, Trip Card, Joint Guard and Loco Pilot Report	

Field Training / Footplate **2 days**

- Field Training / Footplate under Training Instructor/Chief Loco Inspector.

ACDM-2

DESCRIPTION **DURATION**
Loco Operation Module **3 days**

CONTENTS

Sno.	Subject	Duration in days
1.	Different operating procedures & instructions for diesel loco operation	3 days
2.	Loco starting / shutting down sequences	
3.	Different failures of Diesel locomotives and troubleshooting	
4.	Stabling of locomotives	
5.	Safety equipment provided on locomotives and instructions for crew	
6.	Description and functionality of APU – role of crew.	
7.	Precaution/rules to be followed in electrified zone while working on diesel locomotive. • Safety precautions related to 25kV OHE	

Field Training / Footplate **3 days**

Field Training / Footplate under Training Instructor/Chief Loco Inspector. Practical demonstration and hands on training for learning of sequences of loco starting & shutting down, stabling, etc.

ACDM-3

DESCRIPTION **DURATION**
TrD Module **½ day**

CONTENTS

Sno.	Subject	Duration in days
29.	Brief Knowledge of TrD • Brief overview of OHE system • Familiarization with OHE equipment for identification (including cantilever assembly)	½ day
30.	Provision of Sigma Board & usage.	
31.	Communication with TPC/TLC in case of panto broken or OHE hanging.	
32.	Action to be taken in case of panto broken/entangled.	
33.	Roof inspection & isolation of pantograph from HPT link and securing of broken panto, etc.	
34.	Duties of during OHE Break Down.	

ACEM-4

DESCRIPTION **DURATION**
Loco Pneumatic Module **1 day**

CONTENTS

Sno.	Subject	Duration in days
1.	Overview on braking system of different type of Diesel locomotives	1 day
2.	Action to be taken in case of MR pressure not build up	
3.	Action to be taken in case of BP pressure not build up	
4.	Action to be taken in case of FP pressure not build up	
5.	Action to be taken in case of BP pressure not maintaining	
6.	Miscellaneous failures of air brake of locomotive	
7.	Pneumatically isolation of bogie	
8.	Releasing of parking/hand brake in case of brake binding in locomotive	
9.	Location of air dryer and isolating procedure	
10.	Actions to be taken in case of BP/ FP angle cock broken due to CRO	
11.	Procedure of various tests & checks related to loco brake system like CP efficiency test, BP & FP leak test, train leak test, Loco brake power test, etc.	
12.	Discussion on loco brake system failures & troubleshooting	

Field Training / Footplate **3 day**

- Field Training / Footplate under Training Instructor/Chief Loco Inspector. Practical demonstration of subjects related to brake system of Diesel locomotives and hands on training for learning of procedures, sequences, etc.

ACEM-5

DESCRIPTION **DURATION**
Simulator Training **1 days**

CONTENTS

Simulator Training.

DESCRIPTION **DURATION**
Review & Exam **½ day**

CONTENTS

Review & Exam

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Instruction for training centers & Instructors

- During classroom training, it is preferable to use audio-visual aids with digital content.
- In-depth knowledge of various circuits, such as electrical and pneumatic circuits, etc is not required.
- The training should primarily emphasize the activities and responsibilities of the LP/ALP in their day-to-day operations with locomotives/trains.
- While footplating as Co-ALP, the trainee should act like an observer only. He/she shall not interfere with activities of crew. He/she shall **NOT** be held responsible for lacunae in any routine/defined duties of ALP in case of any untoward incident, etc.
- During subject-specific classroom training, it is essential to emphasize discussions on safety cases, including SPAD, accidents, derailments, collisions, side collisions, and incidents involving entering unwired/sand humps. This emphasis should highlight how adherence to proper procedures or correct actions by the LP/ALP on the subject could have effectively prevented such cases.

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MRM-9

DESCRIPTION **DURATION**
Case Studies **2 day**

CONTENTS

Sno.	Subject	Duration in days
1.	Case Studies	2 day

Instruction for training centers & Instructors

- During classroom training, it is preferable to use audio-visual aids with digital content.
- In-depth knowledge of various circuits, such as electrical and pneumatic circuits, etc is not required.
- The training should primarily emphasize the activities and responsibilities of the LPP/Motorman in their day-to-day operations with EMU/MEMU trains.
- During subject-specific classroom training, it is essential to emphasize discussions on safety cases, including SPAD, accidents, derailments, collisions, side collisions, and incidents involving entering unwired/sand humps. This emphasis should highlight how adherence to proper procedures or correct actions by the LPP/Motorman on the subject could have effectively prevented such cases.

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Conversion Training Course LP – Electric to Diesel Traction

Course Code – PCDM

Module no.	Training Content	Duration in days*
PCDM-1	Loco Module	**6**
	Field training / Footplate	**5**
PCDM-2	Loco Operation Module	**4**
	Field training / Footplate	**5**
PCDM-3	TrD Module	**0.5**
PCDM-4	Loco Pneumatic Module	**2**
	Field training / Footplate	**5**
PCDM-5	Simulator Training	**2**
	Final Exam	**0.5**
	Total days	**24**

PCDM-1

DESCRIPTION **DURATION**
Loco Module **6 days**

CONTENTS

Sno.	Subject	Duration in days
86.	Characteristics of different type of diesel locomotives	6 days
87.	Basic principle of Diesel locomotives	
88.	General description of different type of Diesel locomotives	
89.	Familiarization of cab layouts & gauges and apparatus there in	
90.	Description of various sections of Diesel locomotives	
91.	Brief overview of diesel loco fuel oil, water cooling, lubrication systems & capacities	
92.	Locomotive operating instructions, Safety items of loco and Safety equipment provided to running staff and on loco.	
93.	Examination of locomotive' while turning out from Shed taking over from the previous crew including Familiarization with Repair book, Trip Card, Joint Guard and Loco Pilot Report	

Field Training / Footplate **5 days**

- Field / Practical training under training Instructor/Chief Loco Inspector.

PCDM-2

DESCRIPTION **DURATION**
Loco Operation Module **4 days**

CONTENTS

Sno.	Subject	Duration in days
8.	Different operating procedures & instructions for diesel loco operation	4 days
9.	Loco starting / shutting down sequences	
10.	Different failures of Diesel locomotives and troubleshooting	
11.	Stabling of locomotives	
12.	Safety equipment provided on locomotives and instructions for crew	
13.	Description and functionality of APU – role of crew.	
14.	Precaution/rules to be followed in electrified zone while working on diesel locomotive. • Safety precautions related to 25kV OHE	
15.	Jerk Free starting of Trains	
16.	SFC and Fuel Conservation Measures	

Field Training / Footplate **5 days**

Field Training / Footplate under Training Instructor/Chief Loco Inspector. Practical demonstration and hands on training for learning of sequences of loco starting & shutting down, stabling, etc.

PCDM-3

DESCRIPTION **DURATION**
TrD Module **½ day**

CONTENTS

Sno.	Subject	Duration in days
35.	Brief Knowledge of TrD • Brief overview of OHE system • Familiarization with OHE equipment for identification (including cantilever assembly)	½ day
36.	Provision of Sigma Board & usage.	
37.	Communication with TPC/TLC in case of panto broken or OHE hanging.	
38.	Action to be taken in case of panto broken/entangled.	
39.	Roof inspection & isolation of pantograph from HPT link and securing of broken panto, etc.	
40.	Duties of during OHE Break Down.	

PCDM -4

DESCRIPTION **DURATION**

Loco Pneumatic Module **2 days**

CONTENTS

Sno.	Subject	Duration in days
13.	Overview on braking system of different type of Diesel locomotives	1 day
14.	Action to be taken in case of MR pressure not build up	
15.	Action to be taken in case of BP pressure not build up	
16.	Action to be taken in case of FP pressure not build up	
17.	Action to be taken in case of BP pressure not maintaining	
18.	Miscellaneous failures of air brake of locomotive	
19.	Pneumatically isolation of bogie	
20.	Releasing of parking/hand brake in case of brake binding in locomotive	
21.	Location of air dryer and isolating procedure	
22.	Actions to be taken in case of BP/ FP angle cock broken due to CRO	
23.	Procedure of various tests & checks related to loco brake system like CP efficiency test, BP & FP leak test, train leak test, Loco brake power test, etc.	
24.	Discussion on loco brake system failures & troubleshooting	

Field Training / Footplate **5 days**

- Field Training / Footplate under Training Instructor/Chief Loco Inspector. Practical demonstration of subjects related to brake system of Diesel locomotives and hands on training for learning of procedures, sequences, etc.

PCDM -5

DESCRIPTION **DURATION**
Simulator Training **2 days**

CONTENTS

Simulator Training.

DESCRIPTION **DURATION**
Review & Exam **½ day**

CONTENTS

Review & Exam

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Instruction for training centers & Instructors

- During classroom training, it is preferable to use audio-visual aids with digital content.
- In-depth knowledge of various circuits, such as electrical and pneumatic circuits, etc is not required.
- The training should primarily emphasize the activities and responsibilities of the LP/ALP in their day-to-day operations with locomotives/trains.
- While foot plating the trainee should act like an observer only. He/she shall not interfere with activities of crew. He/she shall **NOT** be held responsible for lacunae in any routine/defined duties of LP in case of any untoward incident, etc.
- During subject-specific classroom training, it is essential to emphasize discussions on safety cases, including SPAD, accidents, derailments, collisions, side collisions, and incidents involving entering unwired/sand humps. This emphasis should highlight how adherence to proper procedures or correct actions by the LP/ALP on the subject could have effectively prevented such cases.

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