



Calendar of Courses 2011



Indian Railways Track Machines Training Centre
Allahabad 211 012

- **Indian Railways Track Machines Training Centre, Allahabad is one of the three Training centres of the World, besides at Linz/Austria & Watford/U.K., imparting training in Track Machine technology.** It was inaugurated by Shri T.N.Ramchandran, the then Member Engineering Railway Board on 17.05.1984 to meet the needs of training in all the sub-disciplines related to the operation and maintenance of track machines on Indian Railways. While establishing the Centre, adequate provision has been kept for its future expansion and development to meet the ever-increasing specialized training needs of more and more sophisticated track machines, which the Indian Railways are bound to procure in pursuit of track modernization. The whole project costed Rs. 46.02 lacs at that time. IRTMTC is located approx. 7 Kms west of Allahabad Railway station, adjacent to IOC Terminal at Subedarganj. The Training Centre is strategically situated in the vicinity of Central Periodical Overhauling Workshop making it an ideal place for demonstrating all the technicalities of Track Machines besides giving hands-on training.
- *The Center covers standard training modules approved by Railway Board on Induction, Promotional, Refresher & Special Courses for Track Machines Operators/Technicians besides conducting IRICEN/Pune sponsored courses for IRSE(P), and Working of Track Machines courses for officers upto Jr. Administrative Grade.*
- The training programmes are generally residential in nature. Available infrastructure includes a well-stocked Library, Computer Centre, Model-rooms, Conference hall, Mess, Sports & recreational facilities for the trainees.
- **The Centre presently imparts quality training to officers and staff of Indian Railways and Railway PSUs viz. RITES, IRCON, KRCL etc.**

OUR QUALITY POLICY

- **TO DEVELOP SKILLS IN SPECIALISED HIGH TECHNOLOGY FIELDS LIKE HYDRAULICS, I.C. ENGINE, MANUFACTURING PROCESS AND ELECTRONICS.**
- **TO STUDY THE MACHINES AND DEVELOP THEIR OPERATING AND MAINTENANCE INSTRUCTIONS FOR OPTIMUM UTILIZATION.**
- **TO CREATE A KNOWLEDGE BANK FOR TRACK MACHINES AND RELATED SPECIAL TECHNOLOGY ON INDIAN RAILWAYS.**

CALENDAR OF COURSES 2011

Contents

	Page No.
1	Contact numbers
	1
2	CoC 2011 - Chart
	2
3	COC 2011- Distribution of seats
	3
4.	CoC 2011 - Statement
	4

**Eligible staff only should be nominated to a Course. Please refer page 3 for distribution of seats. The distribution given is indicating the minimum number of seats for each zonal railway. Larger number can be nominated and increased participation is welcome.*

**We value your suggestions. Please pass them onto us.*

Communicate at :

Fax : 0532-2552051
e-mail : irtmtc@yahoo.co.in
Website : webpages uploaded on www.ncr.railnet.gov.in

Contact Numbers of Faculty Members

Name & Designation		BSNL Phones		Rly. Phone		CUG No.	e-mail address
		Off.	Resi.	Off.	Resi.		
S.K.Bhagat	Principal	2552051	2616412	22167	22168	9794835239	irtmtc@yahoo.co.in
Hotam Singh	V. Principal	2430053	2427357	22169	22154	9794835240	-
M.M. Mukherjee	C. Instructor	-	2435178	-	-	9794866683	-
V.K.Dube	C. Instructor	-	-	-	-	9794866684	-
B. K. Srivastava	C. Instructor	-	-	-	-	-	-
Daood Ahmed	C. Instructor	-	-	-	-	9794866687	-
B.K.Bhardwaj	C. Instructor	-	-	-	-	9794866689	-
A.K.	C. Instructor	-	-	-	-	9794866207	-
P. K. Upadhyay	C.Instructor	-	-	-	-	9794866685	-

CALENDAR OF COURSES 2011

DISTRIBUTION OF SEATS

S. N.	Type of Course	Railways/Organization																	
		Central	Eastern	East Central	East Coast	Northern	North Central	North Eastern	North East Frontier	North Western	Southern	South Central	South Eastern	S.E. Central	South Western	Western	West Central	R.D.S.O & Others	Total
1.	Induction & Promotional Courses	As per actual requirement of Zonal Railways																	
2.	Refresher JE/SE/SSE	2	1	1	1	1	1	1	1	1	3	8	1	1	1	1	3	\$	28
3.	Refresher Technician	3	1	1	1	1	1	1	2	1	1	8	1	1	1	1	3	\$	28
4.	Special Courses#	2	2	2	2	2	2	1	1	1	2	2	2	2	1	2	2	\$	28
5.	IRICEN/Pune Officers Courses	As per nomination from Zonal Railways received from IRICEN/Pune																	

Distribution of Seats for Course on Track Machines for AXEN/XENs (CE-34) will be intimated separately.

\$ No Seat demanded. But, seats may given to such Railways/RDSO and on demand.

- Note:**
1. Nomination received for CE-26: SR-22. SECR-31, NWR-1
 2. Nomination received for CE-28: SR-07. SECR-31, NWR-27, NFR-01
 3. Nomination received for CE-27: SR-18. SECR-08, WCR-30,
 4. Nomination received for CE-29: SR-24. SECR-20, SCR-30, CR-36, WCR-05, NWR-83, NFR-06
 5. Nomination received for CE-33: SR-00. SECR-02, SCR-08, CR-05, NWR-23, NFR-02

- *Increase in number of seats is welcome; please get in touch with the Principal/Vice Principal.*
- *Eligible staff only should be nominated to a course.*
- *Only such staff should be nominated who can read, write & understand Hindi or English.*

IRTMTC CALENDAR OF COURSES 2011

I. INDUCTION COURSES:

S. N.	COURSE NO.	DESCRIPTION	DURATION	FROM	TO	CATEGORY
01	CE-26	Initial JE-II/SE	26 Weeks	31.01.2011	30.07.2011	Direct Recruit JE-II/SE
02	CE-26	Initial JE-II/SE	26 Weeks	01.08.2011	28.01.2012	Direct Recruit JE-II/SE
03	CE-28	Initial Technician-III	13 Weeks	31.01.2011	30.04.2011	Direct Recruit Technician
04	CE-28	Initial Technician-III	13 Weeks	01.08.2011	29.10.2011	Direct Recruit Technician

II. PROMOTIONAL COURSES:

05	CE-27	Promotional JE-II	08 Weeks	02.05.2011	25.06.2011	Promoted JE-II
06	CE-27	Promotional JE-II	08 Weeks	31.10.2011	24.12.2011	Promoted JE-II
07	CE-29	Promotional Tech-III	06 Weeks	27.06.2011	06.08.2011	Promoted Technician-III
08	CE-29	Promotional Tech-III	06 Weeks	19.12.2011	28.01.2012	Promoted Technician-III
09	CE-33	Promotional SE	02 Weeks	13.06.2011	25.06.2011	Promoted SE
10	CE-33	Promotional SE	02 Weeks	14.11.2011	26.11.2011	Promoted SE

III. REFRESHER COURSES:

11	CE-30	Refresher Technician	02 Weeks	17.01.2011	29.01.2011	Working Technician
12	CE-30	Refresher Technician	02 Weeks	04.04.2011	15.04.2011	Working Technician
13	CE-30	Refresher Technician	02 Weeks	02.05.2011	14.05.2011	Working Technician
14	CE-30	Refresher Technician	02 Weeks	27.06.2011	09.07.2011	Working Technician
15	CE-30	Refresher Technician	02 Weeks	23.08.2011	03.09.2011	Working Technician
16	CE-30	Refresher Technician	02 Weeks	03.10.2011	15.10.2011	Working Technician
17	CE-30	Refresher Technician	02 Weeks	12.12.2011	24.12.2011	Working Technician
18	CE-31	Refresher JE/SE/SSE	02 Weeks	03.01.2011	15.01.2011	Working JE/SE/SSE
19	CE-31	Refresher JE/SE/SSE	02 Weeks	18.04.2011	30.04.2011	Working JE/SE/SSE
20	CE-31	Refresher JE/SE/SSE	02 Weeks	30.05.2011	11.06.2011	Working JE/SE/SSE
21	CE-31	Refresher JE/SE/SSE	02 Weeks	18.07.2011	30.07.2011	Working JE/SE/SSE
22	CE-31	Refresher JE/SE/SSE	02 Weeks	19.09.2011	01.10.2011	Working JE/SE/SSE
23	CE-31	Refresher JE/SE/SSE	02 Weeks	24.10.2011	05.11.2011	Working JE/SE/SSE
24	CE-31	Refresher JE/SE/SSE	02 Weeks	26.12.2011	07.01.2012	Working JE/SE/SSE

IV. SPECIAL COURSES:

25	CE-34	Course for XEN/AXEN of Track Machines	02 Weeks	21.02.2011	05.03.2011	Working XEN/AXEN
26	CE-34	Course for XEN/AXEN of Track Machines	02 Weeks	16.05.2011	28.05.2011	Working XEN/AXEN
27	CE-34	Course for XEN/AXEN of Track Machines	02 Weeks	08.08.2011	20.08.2011	Working XEN/AXEN
28	CE-34	Course for XEN/AXEN of Track Machines	02 Weeks	28.11.2011	10.12.2011	Working XEN/AXEN
29	CE-36	Special Course for JE / SE (P. Way)	02 Weeks	07.02.2011	19.02.2011	Direct JE/SE (P.Way)
30	CE-36	Special Course for JE / SE (P. Way)	02 Weeks	05.09.2011	17.09.2011	Direct JE/SE (P.Way)

		Special Course on 09 M & 3X	01 Week	11.07.2011	16.07.2011	Working Tech/JE/SE/SSE
		Special Course on BCM & SBCM	01 Week	17.10.2011	22.10.2011	Working Tech/JE/SE/SSE
33	CE-42	Special Course on PQRS, TRT & T-28	01 Week	21.03.2011	26.03.2011	Working Tech/JE/SE/SSE
34	CE-50	Special Course on Electronics	01 Week	28.03.2011	02.04.2011	Working Tech/JE/SE/SSE

IRICEN/PUNE COURSES:

35	CE-52	IRSE (P)	01 Week	07.03.2011	12.03.2011	IRSE(P)
36	CE-52	IRSE (P)	01 Week	14.03.2011	19.03.2011	IRSE(P)

INITIAL JE/SE

Objective

To impart training in operation and maintenance of track Machines and to provide required knowledge of various sub assemblies of Track Machines so as to enable them in the technique of trouble shooting, operations and regular maintenance system.

Eligibility

Directly recruited JE-II/Section Engineer, promoted JE-II/SE who had no exposure to track machine working.

Duration: 26 weeks

Contents in brief:

- | | |
|---|---|
| <ul style="list-style-type: none"> • General data of all tamping/non tamping machine. • Major units of All Track Machine. • Working Principal of each track machine. • Power transmission of 08, CSM, UNIMAT, DGS and New Duomatic. • List of Hydraulic components used on each track machine. • Main gear boxes & sub gear boxes of all track machines. • Hydraulic pressure of each section of tamping/non tamping machine. • Operation of pneumatic break and hydraulic break during operation. • List of electrical components and their function & rating. • List of PCB's and their functions and quantity/machine. • Proportional lining in 4 point and 3 point. • Left over error of 4 point and 3 point lining & reduction ratio. • Method of feeding Vm value. • Calculation of "V" value in 3 point lining. • Method of design lining in 4 point and 3 point lining. • Criteria for the selection of base line and general lift. | <ul style="list-style-type: none"> • Method of ramp-in and ramp-out during lifting. • Method of feeding S.E. value during operation of tramping machine. • Quality control i.e. pre-tamping operation post tamping and during tamping. • Knowledge of Track Machine Manual. • Track Technology • Establishment. • Stores & Accounts. |
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E-28

INITIAL TECHNICIANS-III

Objective

To impart training in operation and maintenance of track Machines and to provide required knowledge of various sub assemblies of Track Machines so as to enable them in the technique of trouble shooting, operations and regular maintenance system.

Eligibility

Directly recruited Technicians-III or Promoted Tech.-III who has no exposure of Track machine working.

Duration: 13 weeks

Contents in brief:

- Introduction to Railway Organization.
- Track technology
- Workshop technology.
- Diesel Engine.
- Hydraulic system.
- Pneumatic system.
- Mechanical system.
- Electrical system.
- Working Principle of Track Machine.
- POH/IOH of Track Machines.
- Failure & monitoring.
- Spot checks.
- Personal matters
- G.I.P.S.D.

COURSE NO. CE-27 PROMOTIONAL JE-II

Objective

To upgrade their knowledge on various sub-assemblies of Track Machines and general administrative so as to equip them to take charge of the promoted post.

Eligibility

Promoted JE-II who has some exposure of Track machine working.

Duration: 08 weeks

Contents in brief:

- Track Technology.
- Workshop Technology.
- Diesel Engine.
- Hydraulics system
- Pneumatic system
- Mechanical system.
- Electrical/Electronics system.
- Working Principles
- P.Q.R.S.
- Mobile Flash Butt welding plant
- Ballast Cleaning machine.
- Dynamic Track Stabilizers.
- Track relaying Train.
- Ballast Regulator
- POH/IOH of Track Machines.
- Spot Checks
- Personal matters.
- Stores & Accounts

E-29

PROMOTIONAL TECHNICIANS-III

Objective

To upgrade their knowledge on various sub-assemblies of Track Machines and general administrative so as to equip them to take charge of the promoted post.

Eligibility

Promoted Technician-III from Gr'D' Staff who has some exposure of Track machine working.

Duration: 06 weeks

Contents in brief:

- Introduction & history of Track Machines.
- Working Principle of track Machines.
- Working of different track machines.
- POH/IOH of track Machines.
- Failure of Track machines.
- Track technology.
- Workshop technology.
- Diesel engine.
- Hydraulic system.
- Pneumatic system.
- Electrical system.
- G.I.P.S.D.

**COURSE NO. CE-33
PROMOTIONAL SE**

Objective

To upgrade knowledge of track machine and other miscellaneous matters, to enable the trainee to take the new charge effectively.

Eligibility:

Promoted SE from JE/Track Machines.

Duration: 02 weeks

Contents in brief:

- Working principles of tamping machines as leveling lining in smoothing mode & design mode.
- Working & maintenance of track machines as PQRS, T-28, BCMs, DGS, TRT, BRM, Tampers.
- Hydraulic system – Function of hydraulic components, circuits, trouble shooting.
- Pneumatic system – Function of electrical components, important circuits as EK-16 etc.
- Mechanical system – About ZF hydrodynamic in gear box, other gear boxes, tamping unit etc.
- I.C. Engine – About different systems & trouble shooting of diesel engines used on machines.
- Maintenance schedule of track machines.
- P.Way (Track Technology) – Brief description of rails, sleepers, LWR etc.
- Establishment rules – Pass rules, leave rules, HOER etc.
- Trouble shooting & remedial measures of different assemblies.

REFRESHER TECHNICIAN

Objective

To refresh knowledge in Track Machine Technology & upgrade their skills in operations, maintenance and trouble shooting of Track Machines for ensuring their optimum utilization.

Eligibility: Technician Gr. I/II/III

Duration: 02 weeks

Contents in brief:

- Hydraulic and pneumatic system.
- I.C.Engine.
- Electrical & Electronic system.
- Working principle.
- Track technology.
- Working of tamping machines.
- Working of Ballast cleaning machines
- Working of TRT, PQRS.
- Working of BRM, DGS.
- Maintenance Schedules.

COURSE NO. CE-31

REFRESHER JE/SE/SSE

Objective

To refresh knowledge in Track Machine Technology & upgrade their skills in operations, maintenance and trouble shooting of Track Machines for ensuring their optimum utilization.

Eligibility: JE/SE/SSE

Duration: 02 weeks

Contents in brief:

- Working principles of tamping machines as leveling lining in smoothening mode & design mode.
- Working & maintenance of track machines as PQRS, T-28, BCMs, DGS, TRT, BRM, Tampers.
- Hydraulic system – Function of hydraulic components, circuits, trouble shooting.
- Pneumatic system – Function of electrical components, important circuits as EK-16 etc.
- Mechanical system – About ZF hydrodynamic in gear box, other gear boxes, tamping unit etc.
- I.C. Engine – About different systems & trouble shooting of diesel engines used on machines.
- Maintenance schedule of track machines.
- P.Way (Track Technology) – Brief description of rails, sleepers, LWR etc.
- Establishment rules – Pass rules, leave rules, HOER etc.
- Trouble shooting & remedial measures of different assemblies.

<p>COURSE NO. CE-38 SPL. COURSE ON 09 CSM & 3X</p> <p>FOR JE/SE (P.WAY)</p> <p>Objective To impart knowledge of Track Machine Working.</p> <p>Eligibility Directly recruited JE/SE (P. Way)</p> <p>Duration: 02 weeks</p> <p>Contents in brief:</p> <ul style="list-style-type: none"> • History of mechanization. • Different machines • Principle of T.T. machining • Working of T.T. machines • Pre-during & post tamping. • Working of P.Q.R.S. • Working of TRT, BCM, BRM. DGS • CPOH Visit • Quality Control. 	<p>COURSE NO. CE-38 SPL. COURSE ON 09 CSM & 3X</p> <p>Objective To provide in-depth understanding in Hydraulics and Electronics circuits of CSM & 3X machines and their calibration.</p> <p>Eligibility Tech/JE/SE/SSE with Diploma</p> <p>Duration: 01 week</p> <p>Contents in brief:</p> <ul style="list-style-type: none"> • Hydraulic circuits. • Pneumatic circuits. • Power supply PCBs. • Tamping Unit control circuit. • Lining Control circuit. • Levelling control circuit. • Work drive and satellite control circuit. • Front input control circuit. • ZF circuit.
<p>COURSE NO. CE-41 BCM, SBCM & BRM</p> <p>Objective To provide in-depth understanding in Electronics and Hydraulic circuits of BCM, SBCM & BRM.</p> <p>Eligibility Tech/JE/SE/SSE with Diploma</p> <p>Duration: 01 week</p> <p>Contents in brief:</p> <ul style="list-style-type: none"> • Hydraulic circuits. • Pneumatic circuits. • Power supply PCBs. • I.C.Engine. • Mechanical assemblies. 	<p>COURSE NO. CE-42 PQRS, TRT & T-28</p> <p>Objective To provide in-depth understanding in Electronics and Hydraulic circuits of PQRS, TRT & T-28</p> <p>Eligibility Tech/JE/SE/SSE with Diploma working on PQRS, TRT & T-28</p> <p>Duration: 01 week</p> <p>Contents in brief:</p> <ul style="list-style-type: none"> • Hydraulic circuits. • Pneumatic circuits. • Power supply PCBs. • PQRS-Pre-requisites, Pre-relaying operations & post relaying operations. • TRT - Pre-relaying operations, Operations during block & post-relaying operations • T-28 – Pre-block operations, operations during block & post block operations. • Mechanical assemblies

<p>CE-50 BASIC ELECTRONICS</p> <p>Objective To impart knowledge in basic Electronics.</p> <p>Eligibility: Tech/JE/SE/SSE with Diploma</p> <p>Duration: 01 week</p> <p>Contents in brief:</p> <ul style="list-style-type: none">• Fundamentals of electronics• Passive components i.e. resistor, capacitor inductor.• Active components ie. Diode, LED, Zenor diode, Transistor• Transducer and relay.• Engine circuit.	<p>COURSE NO. CE-51 IRSE PROBATIONERS</p> <p>Objective To impart training in operation, maintenance and trouble shooting of Track Machines and their sub-assemblies.</p> <p>Eligibility: IRSE(P) officers</p> <p>Duration: 01 week</p> <p>Content in brief:</p> <ul style="list-style-type: none">• Introduction to various track machines as tampers, BCM, track relaying machines.• Hydraulic system – Function of hydraulic components & their uses on machines trouble shooting etc.• Pneumatics system – function of pneumatic components & their uses on machines.• Mechanical system – ZF hydrodynamic gear box, other mechanical gear boxes, Tamping unit, cardon shaft, bearings etc.• I.C. Engine – Function of different systems of engine & their functions.• Electricals/Electronics system of machines – Function of electrical components as relays, transducers, various PCBs, trouble shooting etc.• Working Principles – About leveling & lining of tampers in smoothening mode & design mode.• Technical video films are shown of different machine working.• Visit to CPOH for demonstration of various components as Tamping unit, ZF Gear box etc.• Demonstration at model rooms as in Hydraulic, Electrical, Engine model room. <p>Quality control – Tamping quality etc.</p>
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