

**Government of India
Ministry of Railways
(Railway Board)**

RBE No. __225/2009.

No.E(MPP)/2009/3/12

New Delhi, dated 21 -12-2009.

The General Managers
All Indian Railways including Production Units

The Director,
Indian Railway Institute of Signal Engineering & Telecommunication,
Secunderabad.

Sub: Revised Training Module for Supervisors of Signal & Telecom Department.

The Report of the Task Force under Human Resource Reforms Committee constituted to review the Training Modules for S&T Department has since been received. The Board (ML & MS) have approved the training modules recommended by the Committee. Accordingly, the revised training module for Supervisors of Signal & Telecom Department are circulated herewith. The details and sequence of the training programme is annexed at Annexure-I and the training module is annexed at Annexure-II.

2. For better management of training, the following decisions/inputs are also communicated:

(i) Institutional training programme for Supervisors of S&T Department be continued to be held at IRISSET. However, to improve the field training component of induction programme, it has been decided that the same should be controlled by the respective training managers viz. CSE for Signalling Supervisors and CCE for Telecom Supervisors on the respective Railways.

(ii) A 52 weeks induction programme with Institutional Training at IRISSET in 2 phases has been approved for all categories of directly recruited Supervisors which includes 12 weeks of attachment without giving them independent charge, for gaining on-the-job experience.

iii) During the period of on-the-job attachment, the Trainee Supervisors should be attached with senior officials at the workplace, who would act as their mentors and guide them to learn how they are expected to discharge their official duties, when they are put on a working post. During this period, the Trainee Supervisors are not required to work independently or take decisions at their level, instead they would assist the officials with whom they are attached in discharge of their official duties. However, as the working in Telecom Branch does not have safety implications of the nature of Signal Branch, in the

last phase of their training, the Telecom Branch Supervisors can be detailed on working post under the supervision of a senior official.


(iv) Refresher course and promotion course for Signal and Telecom Supervisors have been merged in a single course of four weeks duration. This would be held at IRISSET, as at present. The supervisors are required to undergo this course once in four years. In between this period, modular courses of duration of three days to a week should be developed to enable the Supervisors to update their knowledge on technical as well as general subjects such as quality circles, organizational behaviour, leadership, industrial relations and labour laws etc. These modular courses should be delivered at S&T Training Centres on Zonal Railways preferably or any other institutes as may be decided by the respective Zonal Railways.

(v) The Course Content for General and Subsidiary Rules should be developed by IRISSET, in consultation with the Railways and ZRTIs. This standardized course should be for 3 Weeks period to be conducted by respective ZRTI's of the Railways in between the spells of field Training on the job attachment.

(vi) The detailed course contents and lesson plans would be prepared by IRISSET, as at present.

Please acknowledge receipt.

Hindi version will follow


(K. Harikrishnan)
Director(MPP)
Railway Board.

No.E(MPP)/2009/3/12

New Delhi, dated 21-12-2009.

Copy to:

1. The General Secretary, AIRF, 4, State Entry Road, New Delhi, with 35 spares.
2. The General Secretary, NFIR, 3 Chelmsfor Road, New Delhi, with 35 spares.
3. The Secretary General FROA, Room No.256-A Rail Bhavan New Delhi with 5 spares.
4. The Secretary General, IRPOF, Room No.268 Rail Bhavan New Delhi with 5 spares
5. The Secretary RBSS Group 'A' Officers Association, Room No.462, Rail Bhavan.
6. All Members, Departmental Council and Secretary Staff side National Council 13-C, Ferozeshah Road, New Delhi with 90 spares
7. The General Secretary, AIRPF Association, Room No,256 Rail Bhavan New Delhi with 5 spares.


For Secretary/Railway Board.

Copy to:

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ED(Plg), ED(Accts), EDF(BC), EDCE(B&S), EDCE(G), EDCE(Plg), ED(Coaching), ED(CC), ED(C&IS), ED(E&R), EDEE(Dev), EDEE(G), EDE, ED(RRB), EDE(N), EDE(Res), EDF, EDF(E), EDF(S), EDF(B), EDF(RM), EDF(X)I, EDF(X)II, ED(H), EDLM, ED(MIS), EDE(GC), ED(T&MPP), EDME(Chg), EDME(Fr.), EDME(Tr.), EDME(TOT), EDME(Dev), EDME(W), ED(PC)I, ED(PC)II, ED(PP), ED(Project), ED(Project/DMRC, EDRE, ED(safety), JS, JS(C), JS(E), JS(G), JS(P), IG/RPF(Hqs), IG/RS, ED(Sig), ED(Stat & Econ), EDRS(C), EDRS(C), EDRS(G), EDRS(P), EDRS(S), EDRS(W), ED(TD), EDTT(M), EDT(MC), EDT(P), ED(T&C), EDCE(P), ED(PM), ED(PG), EDTC®, EDTC(FM), EDTT(F), EDTT(FM), EDTT(S), EDV(A), EDV(E), EDV(T), ED(W).

E(Trg), E(NG)I, E(NG)II, E(G), F(E)III and Budget Branches of Railway Board

Annexure-1

The details and sequence of the training programme

(Figure in weeks)

S.No.	Module	JE (Signal)	SE (Signal)	JE (Tele)	SE (Tele)
1	Joining Formalities	1	1	1	1
2	Phase I at IRISSET	14	12	14	12
3	Field Training	6	6	6	6
4	Phase II at IRISSET	14	13	14	13
5	G&SR (ZRTI)	3	3	3	3
6	Attachment on a working post without independent charge	12	12	12	12
7	Special course on Managerial/Executive skills	-	2	-	2
8	Presentation/Project Work	1	2	1	2
9	Posting Exam	1	1	1	1
	Total	52 weeks	52 weeks	52 weeks	52 weeks

ANNEXURE-II

**TRAINING MODULES OF INDUCTION AND REFRESHER COURSES FOR
SUPERVISORY STAFF OF SIGNAL BRANCH**

S No	Subject	JE Sig Ph_I	JE Sig Ph_II	SE Sig Ph_I	SE Sig Ph_II	Inter JE_Sig Ph_I	Inter JE_Sig Ph_II	Refresher SSE/JE
1	Briefing & Registration	2	2	2	2	2	2	2
2	Basics of Signalling Engineering	16		16		10		
3	Interlocking Plans & Locking Concepts	18		18		12		
4	Mechanical Signalling-Single Wire & Rodding	14		14		8		
5	Mechanical Signalling-Double wire	8		8		8		
6	Locking Table	14		14		14		
7	Dog Chart	10		10		10		
8	Colour Light & Automatic Signalling	10		10		6		2
9	Control Tables, Indication & Signal Controls	16		16		14		
10	Interlocking with Metal-Carbon Relays	24		24		12		10
11	Circuit Practices - Metal to Carbon Relays	24		24		14		
12	Signalling Relays & Cables	10		10		6		
13	Reversers & Slot Circuits	10		10		4		2
14	Electric Point Machine & Signal machine	10		10		6		2
15	Block Working-S.L.Token & D.L.Block Instruments	16		16		6		
16	Train Detection- Track ckts	12		12		6		4
17	Signalling in 25 KV AC Electrified		10		10		6	4
18	Signalling General, Specifications & safety		16		12		8	4
19	Power Supply for Signalling		8		8		6	4
20	Interlocking with Metal-Metal Relays		16		16		8	10
21	Panel Interlocking with Metal-Metal Relays		14		14		14	
22	RRI Siemens		10		10		10	
23	Circuit Practice- Siemens		18		18			
24	Electronic Interlocking		12		12		10	6
25	Tokenless Block Instrument for S.L		16		16		10	
26	Intermediate Block Signalling,Block Working -Axle Counters		12		12		6	6
27	Train Detection Devices- Axle Counters- Analog & Digital		14		14		8	4
28	AWS, TPWS,Data loggers,ETCS, ACD		10		10		10	6
29	Construction, Maintenance Practices		10		10		6	
30	Mechanical Signalling Lab	18		18		14		
31	Out door Mech Sig Lab	16		16		10		
32	Electrical Signalling Lab	40	32	40	32	12	18	10
33	Out door electrical Sig Lab	38		38		20		6
34	Block Lab	24	24	24	24	12	12	8
35	ODT lab		4		4			
36	Telephony Lab		2		2			
37	Control Lab		4		4		4	
38	OFC Lab		4		2			
39	Digital Lab						2	

S No	Subject	JE Sig Ph_I	JE Sig Ph_II	SE Sig Ph_I	SE Sig Ph_II	Inter JE_Sig Ph_I	Inter JE_Sig Ph_II	Refresher SSE/JE
40	Microprocessor /Microcontroller Lab		4		4			
41	Line Plant Practice & Telecommunication Cables		4		4			
42	Principles of Telephony		4		4			
43	Train Traffic Control		4		4		4	
44	Optical Fibre Cables & Systems		4		4		4	
45	Mobilé Train Radio Communication		2		2			
46	Information Technology & Hardware		2		2			
47	MS-Office						6	
48	Auto CAD		10		10			
49	Vigilance		2		2		2	2
50	Rajbhasha		2		2		2	2
51	Tenders and Contracts		2		2		4	2
52	Establishment		6		6		4	4
53	Accounts		2		2		2	4
54	Accidents Case Studies		6		6		4	2
55	Disaster Management & Accident Communication		4		4		4	2
56	Library/Holidays/Extra Classes/CD-spare	32	30			13	18	
57	Comm Skills, Time Management, Team working, Group Disc, Quiz		12				12	
58	Stress Management		6				4	
59	Extn Lectures-P way/C&W/Stores/Fire Fighting/First Aid/AV		10		10		8	6
60	Visit to Local Stations/ Firms		8		8		12	
61	Visit to Out stations		18		12		18	
62	Project Assignment/Presentation	2	8	4	10	2	10	
63	Theory Exam	18	14	16	12	17	10	4
64	Practical Exam	16	16	18	16			
65	Open House Discussion	2	2	2	2	2	2	2
	Total Hours	420	420	390	360	240	270	120
	Total Weeks	14	14	13	12	8	9	4

Each session would last for an hour and in each week 30 sessions would be conducted

**TRAINING MODULES OF INDUCTION AND REFRESHER COURSES FOR
SUPERVISORY STAFF OF TELECOMMUNICATION BRANCH**

S No	Subject	JE Tel Ph_I	JE Tel Ph_II	SE Tel Ph_I	SE Tel Ph_II	Inter JE_Tel Ph_I	Refresher SSE/JE
1	BFG+REG	4	2	2	2	2	2
2	S&T Org/Telecom wing/Manuals	4		4		2	
3	Circuit Components & Devices	4				2	
4	Network Analysis	6					
5	Electronics Fundamentals	8					
6	Applied Electronics	8		6		4	
7	Modulation Techniques (Analog & Digital)	8		8		4	
8	Digital Electronics	12				8	
9	Microprocessors	12		6			
10	Microcontrollers	12		6			
11	Applications of Microprocessors & Microcontrollers	10					
12	Radio Propagation	8		6		8	
13	Electronic measurements	12		12		8	
14	Line Plant Practice (6 quad cable)	12		8		4	
15	Public Address system	10		8		6	
16	Power Plant practice	10		8		6	
17	Telephony principles – Instruments	6		4		6	
18	Introduction to SPC Exchanges	8		6			
19	Electronic Exchange - OKI	8			4		
20	Electronic exchange – C-DOT	8		8			
21	Multiplexing (Analog)	12		8		16	
22	Multiplexing (Digital)	16		16		8	
23	Train Traffic Control	12		10		4	
24	Microwave – Analog	8		6		6	
25	Microwave – Digital	12		12		4	
26	Data Communication & Networking (Part-I)	16		16		12	
27	Basic concepts of signalling	8		12		20	
28	Block signalling - Introduction	8		12			
29	Trolley working	2		2			
30	First aid & Fire fighting	4		4		2	2
31	Computer basics (Excel)			4			
32	General (Stores - 2 hrs, Estb - 2 Hrs, Contracts - 2 Hrs, Accounts-1Hr, Vigilance - 1 Hr, DAR - 1 Hr Official Language - 1 Hr					10	
33	Microprocessors, Microcontrollers & applications					6	
34	Passenger information system (PIS)					6	4
35	Power supply Protection Arrangements					16	
36	Public information system		12		12		
37	Power supply arrangements		8		10		
38	Sigg. in Telecom		12				
39	Electronic Exchange – ISDN		12		12		6
40	SDH Principles & Applications		24			12	

41	Mobile Communications (VHF, GSM, GSM-R, WLL-DECT, TETRA)		20				
42	Data communication & Networking (Part-II)		20		20		
43	OFC Principles, Cable details & laying		12		10	18	
44	SDH Equipment & Networks including EI interface		24				
45	Disaster management communication		8		8		2
S No	Subject	JE Tel Ph_I	JE Tel Ph_II	SE Tel Ph_I	SE Tel Ph_II	Inter JE_Tel Ph_I	Refresher SSE/JE
46	Earthing & Lightning Protection for different Telecom. Installations		10		8		2
47	Computer basics (Excel)		0				
48	MS Office (MS Access)		0				
49	CAD		0				
50	Establishment matters		12		14		
51	Tenders & Contracts		8		9		
52	Accounts & Stores		8		12		
53	Introduction to quality standards such as CENELEC, ISO (an awareness)		4		4		
54	Introduction to RAM-Reliability Models		2				
55	Data acquisition, collection & statistical analysis to draw plans for practices for Predictive & preventive maintenance, MTBF, MTBR calculations & Concepts		2				
56	Personality Development & Communication Skills		6		6		
57	Accident case study		2				
58	Field experiences		2				
59	Official language		2		2		2
60	Introduction to RAM-Reliability Models , MTBF, MTBR calculations & Concepts; Data acquisition, collection & statistical analysis to draw plans for practices for Predictive & preventive maintenance.				2		
61	Signalling in Telecom Networks				10		
62	OFC Measurements & Networks				15		
63	Mobile Communications (VHF, GSM, GSM-R, WLL-DECT, TETRA)				14	2	
64	SDH				18		
65	Multiplexing-Digital (SDH) & Equipment						10
66	Multiplexing-Digital (PDH)						8
67	Control communication						4
68	Mobile Train Radio Communication						8
69	Data Communication & Networking, Intranets of Railways						10
70	Optic Fibre Cable & Systems, Sources, Detections, laying practices						8
	LABS						
1	Microprocessor & Microcontrollers	10		12		6	
2	Signalling Labs	10		12			
3	Electronics Lab	6		6		6	
4	Digital Electronics	8					
5	Out door Telecom Lab	10		16		12	2

6	Control Lab	12		12		12	4
7	MW Lab (Analog & Digital)	12		12		10	
8	Computer lab	0					
9	Telephony Lab	16		12		16	
10	Public Address System	6		6			
11	MUX Lab	16		10		18	
12	Data Communication & Networking Lab	8		6			
13	SDH Lab		24			16	
14	OFC Lab		24		30	8	
15	Computer Lab (Internet & Railnet)		10		12		
16	Data Communication & Networking		24		12		
S No	Subject	JE Tel Ph_I	JE Tel Ph_II	SE Tel Ph_I	SE Tel Ph_II	Inter JE_Tel Ph_I	Refresher SSE/JE
17	Pasenger Information System		12		8	4	
18	Electronic Exchange Lab		12		18		
19	Mobile Communication Lab & DMC		12		6	4	
20	Networking Lab					8	6
21	PIS						2
22	Exchange						6
23	PDH MUX						6
24	DMW						4
25	OFC (Medium)						6
26	STM & DTA						12
70	EXTENSION LECTURES	0	6	0	4	2	2
71	AUDIO-VISUAL	6	8	10	12	0	0
72	LOCAL VISIT	0	12	12	16	0	0
73	STUDY TOUR	0	0	0	30	0	0
74	GROUP DISCUSSION	0	10	0	8	0	0
75	PROJECTS / MONOGRAPH	0	12	0	0	0	0
76	THEORY EXAMINATIONS	18	28	28	28	18	2
77	PRACTICAL EXAMINATIONS	12	12	10	12	10	0
78	Open House Discussion	2	2	2	2	2	0
	Total Hours	420	420	360	390	354	120
	Total Weeks	14	14	12	13	12	4

Each session would last for an hour and in each week 30 sessions would be conducted

