

22/3/13

SYLLABUS FOR SELECTION OF JEP.WAY (20% Quota)

1.	GENERAL KNOWLEDGE & MENTAL ABILITY: (Approximately 10% of total marks) He should have knowledge of Indian History , Indian political system and current affairs of general interest.
2.	Basic knowledge of Maths & Physics to the level of class-VIII (Approximately 10% of total marks).
3.	TRACK RELATED KNOWLEDGE : (Approximately 60% of total marks).
3.1.	TRACK STRUCTURE
a.	Formation – Function, width at top, slopes, side and catch water drains.
b.	Ballast: Function, advantages of clean ballast.
c.	Sleepers: Function, different types of sleepers.
d.	Rail: Different types of rail sections and UTS, careful handling during loading unloading & Stacking, unloading of long rail panels.
e.	Joints: Different types- fish plated , insulated, combination fish plates etc. Examination of rail ends and lubrication of joints.
f.	Sleeper Fastening- Different conventional and elastic types. Toe load measurement ,inspection & casual renewal of fastenings, different types of elastic rail clips, renewal of fastenings, rubber pads ,liners, correct method of fixing and extracting ERCs and fixing of GFN liners.
g.	Tools and plants: Different types of Gang tools and their usage, accountal and careful handing to prevent damage/loss.
3.2.	WORKMEN SAFETY: Personal safety- Movement in running lines, multiple lines, vigilant and watchful operation, look out man, safety during regular maintenance activity, handling/transporting materials, machine working, incidental activities, emergency duties & patrolling etc. Working in curves, with poor visibility, Track Circuited areas, electrified areas. Importance of team spirit for ensuring personal safety, safety at accident spots, congested locations like bridge, tunnel precautions while working during night, safety against snake/insect bites, safety during heavy rains against possibility of being carried away by flood, Basic knowledge of First aid.
3.3.	TRACK PROTECTION RULES. Track protection rules: Various method of protections: banner flag, HS lamp, detonators, hooters, protection during working, Shorts/ long term protection, Fixed/permanent/temporary indication boards, speed restrictions and stop dead boards, position of indicators boards from site, (TP&TP Boards) lighting in night including permanent & temporary restrictions.
3.4.	ACTION DURING EMERGENCY Meaning of emergency, Probable types of emergency in Railway system, hanging parts of rolling stock, protection rules during programmed work in single/double/multiple line sections, working of trolley, lorry and rail dolly. Unsafe condition due to track obstruction, unsafe train parts coach/wagon/engine related matters, protection of track in affected and adjoining lines, stopping of train, reporting of case, protective and remedial works.

3.5.	MAINTENANCE OF TRACK
a.	Maintenance of Track parameters and their measurement.
b.	Approved methods of maintenance: Conventional, beater packing, machine maintenance, 3- tier system of maintenance, working of MMU-differences with conventional maintenance, Service maintenance tolerances,
c.	Programmed regular maintenance: Through packing, over hauling, slack picking, Pre-monsoon, during monsoon and post monsoon attentions, Record of Gang work, Gang Chart/diary, Key man's diary, Male diary, Record of work of Artisans and other workmen.
d.	Mechanized Maintenance: Brief introduction of function of different types of machines. Pre-requisites to tamping and other machine working, Pre & Post and during attentions for tamping and other machine working.
e.	Annual Programme for regular track maintenance.
f.	Small track machines: types, use, maintenance, spot attention with off tampers,
g.	Special attention to maintenance of platform lines and drainage, fixing distance pieces on platform lines, Fouling Mark, corrosion of rails, fastening of concrete sleepers, jamming of ERCs and problem of groove formation, protection against corrosion- greasing of ERCs, inserts and liners, painting of welds and rails, maintenance of turn in curves, infringements, maintenance of Land boundaries, Knowledge of Schedule of Dimension. Hectometre & Gradient Posts.
h.	Maintenance in track circuited sections,
i.	Inspection schedule of JE/SE (Incharge) P-Way, including Mates, Keyman & Trackman.
j.	Minimum supervisory level of different types of Track maintenance activity.
k.	Precautions during use of Push Trolley, Dip lorry and Rail Dollies.
3.6.	SCREENING –DEEP & SHALLOW INCL. DRAINAGE:
a.	Deep screening: Importance, procedure, periodicity, important precautions, speed restrictions & raising of speed
b.	Shallow screening: Importance, procedure, periodicity, important precautions, distribution of works, supervision, quality etc.
c.	Cleaning different types of drains and water ways in yards as well as along the track.
3.7.	CREEP- CAUSES & PREVENTION:
	Creep-causes & prevention, anti-creep devices, measuring creep, allowance limit pulling back of rails with safety measures.
3.8.	LIFTING & LOWERING OF TRACK:
	Lifting and lowering of track: Correct procedure and precautions.
3.9.	Points & Crossings:
	Points and Crossing: Need for correct maintenance of different parameters, correct ways of working in conjunction with signal staff in case of interlocked points, special attention to condition of switch rails, crossings and check rail clearance, packing under the crossing, measurement maintenance of Points & Crossings including inspection schedule, layout.

3.10.	Level Crossings :
	Level crossings: Classification of Gates, TVU, Importance of various equipments, overhauling, keeping correct clearances, distinctive features of different classes of level crossings, gate working and protection rules, provision of road signboards, height gauges/speed breakers, W/L boards etc, Visibility of LCs Protection of Track in case of unusual occurrences.
3.11.	MAINTENANCE OF SWR/LWR/CWR:
	Maintenance of SWR/LWR/CWR, Basic difference with ordinary fish-plated track, difference between SWR and LWR, LWR and CWR, importance of temperature in LWR Track maintenance, Do's and don'ts in maintenance work in LWR/SWR, Basic knowledge of, breathing length, SEJ, buffer rail, de-stressing, emergency and permanent repair, work in case of rail and weld failures. Hot and cold weather patrolling, vulnerable locations in LWR/CWR. Toe load measurement.
3.12.	PATROLLING:
	Kinds and objectives of different types of patrolling, eg monsoon patrolling, hot & cold weather patrolling, keyman's daily patrol etc. Equipment, duties and responsibility in different types of patrolling, introduction of patrolling in case of abnormal rainfall.
3.13.	ACCIDENTS & BREACHES:
	Action to be taken at site of accident/breaches including protection of tracks, stopping traffic, reporting to higher officials, watching the affected site, protective & remedial works.
3.14.	BRIDGES:
	Basic knowledge of different types of Bridges Renewals of bridge timbers with special emphasis to maintain different track components related to Bridge channel sleepers in good order at all times. Maintenance of steel channel sleepers and fittings, Guard rails, Importance of maintaining water way specially before and during monsoon. Special attention to be paid to track on Bridge approaches.
3.15.	CURVES:
	Parameters connected with good running quality of track -e.g. cant, versine, cant deficiency, cant excess etc. Fixing of curve boards, lubrication in curves. Transition length, importance and criteria for its length, Realignment of curves, special attention required for maintenance of track on curves, speed on curves.
3.16.	RAIL/WELD FRACTURES AND USFD:
	Preventive actions, action after fracture/weld failure, action for removal of defective weld/rails. USFD: Basic knowledge, Different types of Tester & Probes Frequency USFD of Tongue Rails, Various types of Rail/Weld defects in USFD and follow up action on them. SKV welding process, Equipment and precautions.

3.17.	TRACK MANAGEMENT SYSTEM:
	Basic knowledge, scope, objective, application & generation of different types of reports and alerts.
3.18.	Basic knowledge of OMS and IRC run.
3.19.	Management of store of SE/IE/(P-Way), P-Way returns, stock verification.
4.0.	ESTABLISHMENT: (Approximately 10% of the total marks).
4.1.	Muster Sheets, leave and pass-rules, basic knowledge of DAR rule. Different type of penalties and procedure for its imposition. Leave reserve and rest giver provisions.
5.0.	RAJ BASHA-(10% of the total marks.)

4(Total Four Pages)

