

RECOMMENDATIONS OF COMMITTEE ON REVIEW OF
MAINTENANCE & EXAMINATION PATTERN OF COACHING TRAINS
- RPC 4 (REVISION - JAN. 2007)

Authority: **Railway Board's L. No.2003/M(C)/141/MP dated 10.4.2008**

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METHODOLOGY

1. A national seminar of C&W supervisors was arranged at Wadibunder depot of Mumbai division on 19.04.2008 in which 30 Supervisors and Officers of various Railways participated.
2. Meeting of Committee members was held on 21.04.2008 at CSTM. In the deliberation CRSE/WR and CWM/MTN were also invited to give their views.
3. Vide this office letter no. M. Coaching Policy No.4.Revision dated 11.04.2008, feedback and various data was asked from all the Zonal Railways. Views of CAMTECH/Gwalior and IRIMEE/Jamalpur were also requested.
4. Telephonic discussion and exchange of views through e-mail was undertaken with various Zonal Railways and major Coaching depots.

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TERMS AND CONDITIONS

- i) Adequacy of existing maintenance instructions/practices as stipulated for the examination and maintenance pattern of coaching trains permitting running of trains in a round trip upto 3500 kms after primary maintenance for desired level of availability, reliability and safety in operation of passenger train service.
- ii) Maintenance requirement to ensure desired level of house-keeping, external and internal cleanliness of rakes to ensure high level of public hygiene. Identify difficulties being encountered, and suggest improvement in the system.
- iii) To study pattern of coach detachments – their impact on safety and reliability of passenger train operation. Identify weak areas including their consequence in operation, and suggest technological upgradation and improvement in maintenance system.
- iv) To study issues related with running of integrated rake links and suggest appropriate system in respect of availability of water, cleanliness, linen management, escorting staff for AC coaches etc.
- v) Adequacy of mandatory conditions to be fulfilled at primary and other end(s) for round trip pattern of running of coaching trains.
- vi) Study and suggest the requirement of minimum time slot required for various activities to be carried out during terminal attention/
- vii) Requirements of technological up-gradation in coaches, maintenance methodology/practices and infrastructure facilities for permitting running of trains in a round trip beyond 3500 kms. after primary maintenance. Suggest plan for providing additional requirement. If an, for infrastructure/facilities and material up-gradation etc.
- viii) Any other items pertinent to the subject.

Executive Summary of Recommendation

1. Adequacy of existing maintenance instructions/practices:

1.1 All trains running on Round Trip BPC as per RPC-IV (Jan.2007) circular of Railway Board should on a mandatory basis undergo Mechanized interior and exterior cleaning along with provision of OBHS in terms of Board's letter No. 95/M(C)/141/1 Vol-II dt. 2.1.2007 & No. 2006/M(C)/165/9, dated 1.10.2007 (issued with the concurrence of Finance Directorate).

1.2 Committee noted that the biggest single factor which is responsible for the requirement of lifting of a coach in maintenance Depot is on account of replacement of "V" Belts for example in Mumbai Division of C.Rly 935 coaches had to be lifted in 2007-08 on account of replacement of broken "V" Belts. Problem has arisen due to instructions of RDSO, contained in their letter No EL / 6.9.9 dated 02.12.03, which have stopped provision of spare V Belts. These instructions need to be withdrawn with immediate effect.

2. Maintenance requirement to ensure desired level of house-keeping:

Present bleak scenario is reflected in letter from Board No 2007/PG/3/12 dated 21.02.08, which indicates 104% increase in cleanliness & 25% increase in watering related cases on C.Rly during Apr to Dec 2007.

(i) Committee feels that while Sr.CDO/Sr.DME on the division is largely responsible for reply to passenger complaints either due to non-availability of passenger amenities or due to inadequate hygiene/standards, none of the 30+ Railway staff (including Crew TTE, Pantry Car Staff, AC attendant, AC Mechanic, Guards) presently available on-Board a long distance Mail/Express trains is responsible to him. Thus he has no access to the travails of passengers on-Board. In view of the aforesaid problems most of his attention to address the problems faced by passengers is not well directed and lacks focus in areas, which really bother passengers.

ii) Committee recommends that AC Coach Attendants should be brought under Mechanical Department and should be given following additional responsibilities besides the existing duties which mainly concern linen distribution. Detailed duty list enclosed in Annexure II.

.Monitoring OBHS

.Giving feed back to Sr Dme about lack of amenity fittings

.feed back about presence of rodents and cockroaches which today is available only from affected passengers

.monitoring on board passenger complaints,

.ensuring train watering at halts .etc.

3. To study pattern of coach detachments:

For studying the pattern of coach detachment during Primary, Secondary & RBPC maintenance, figures of CR, NR & ER were taken
Analysis of cause-wise Coach Detachment –

	Cause	C.Rly/ BB Div	N.Rly.	E.Rly.
Holding		1600	4836	
Primary	Wheel	304	1044	
	Bolster Spring	248*	381	
	Dash pot spring	219*	159	
	Other	329	3611	
	Total	1100	5195	
Secondary	Wheel	26	47	23
	Bolster Spring	20*	60	
	Dash pot spring	15*	18	
	Other	48	100	9
	Total	109	225	34
RBPC train	Wheel	6	2	
	Bolster Spring	8*	7	13
	Dash pot spring	5*	2	5
	Other	27	11	
	Total	46	13	

* Springs were replaced on rake without detachment.

Figures indicates that coaches keep getting detached for major problems during Primary & Secondary examination.

4. Integrated Rake Links:

Following problems are being encountered with integrated links:

- (i) Change of Destination Board -
Problem can be solved by introduction of Electronic programmable digital destination board as introduced by SCR.
- (ii) If such a link involves four or more nights, problem of stocking of linen arises due to less space availability in the linen compartment of ACCN coaches.

After the introduction of additional middle berth we may have to

keep some space for stocking linen in the luggage compartment of SLR or else some berths will have to be blocked for stocking of linen.

5. Mandatory conditions to be fulfilled:

5.1 Day Time Primary Maintenance:

Trains running with 3500 kms round trip BPC should invariably be examined (Primary Maintenance) in day shift only. In case, night shift examination is inescapable, the desired illumination levels in LUX must be prescribed for Pit lighting and General lighting.

Committee recommends _____ LUX for General and ____ LUX pit lighting.

5.2 Improvement in pit line working:

- i)** To have clear space for examination and to have mechanization of various manual activities pit line design as given in Annexure is proposed for universal adoption.
- ii)** It is recommended that pit lines should mandatorily be Un-wired, to have free access to the roof for attention to RMPU AC units and roof leakages.
- iii)** Trains running with 3500 kms round trip BPC should invariably be given a clear block (Primary Maintenance) of **six hours** on pit line.
- iv)** At the other end, rake must either be placed on pit line or on a washable apron with facility of watering, washing, charging and pre-cooling. It should also be well illuminated where night maintenance is undertaken.
- v)** Since there is marginal difference in cost of a washable apron with facilities as prescribed in RPC-4, with construction of a new pitline, policy document, IR should only go in for proper pit line to ensure flexibility in working.

5.3 Stabling of Mail/Express rakes:

Committee noted that on many Railways, due to non-availability of stabling line in the main coaching terminal, rakes are being taken to nearby way side station for stabling where proper security of the rakes cannot be ensured.

Committee recommends –

(i) Mail/Express rakes should be stabled in Main coaching complex and should not be stabled at way side station like goods train.

(ii) Even in major coaching complexes, where lie-over is more than six hours, contract to Pvt. Security agency be arranged to ensure proper security of the rake.

This should also include locking up of rakes, downing of window shutters and opening the same before placement on platform line

for departure. Information of such contract should be advised to Security Branch, but co-ordination will be under Sr.DME of the division.

(iii) In between the train should be taken for Mechanical examination.

5.4 Watering:

With increase in length of the train, to ensure full carriage watering at nominated carriage watering stations following points should be strictly adhered to:

(i) Hydrant discharge rate – A discharge rate of 100 litres per minute on individual hydrant after opening of all the hydrants should be ensured.

(ii) The feeding pipeline should be of minimum 12" dia.

(iii) Halt of the train should minimum be 20 minutes.

(iv) Deployment of adequate man power @ 5 men minutes per coach should be ensured.

(v) Adequate overhead and underground water storage should be ensured.

(vi) Stand by pumping and power supply arrangement should be ensured.

5.5 Availability of Stores:

Non availability of safety, amenity along with cleaning agents is a constant problem experienced by Sr.DMEs/Sr.CDOs. Following suggestions are made:

i) Availability of safety, amenity and cleaning agents should be ensured by Store depot throughout 24x7x365.

ii) Powers of local purchase to Sr.DMEs & Sr.CDOs and CDO with independent charge should be increased to Rs. 5 Lacs. They should be permitted to purchase the following items on single quotation basis:

a) Branded cleaning agents of well known firms. Rates can be fixed for the purpose.

b) safety/amenity items from RDSO/PU approved firms at a rate which

the firm has quoted against a major supply in his last PO to a Zonal Railway/PU.

5.6 Staff

Railway Board vide their letter no. 2000/M(C)/143/5, dated 24.12.2001 had issued Bench Marking Yardsticks for providing maintenance staff in coaching maintenance depots. Review of position in various depots on Central & other Railways (**Annexure – I**) revealed that in most of the depots, staff as per Yard stick is not available. Even at places where sanctioned post are available, the same are lying vacant since induction of Group D and Artisan staff (direct recruit) has virtually come to a standstill on the Railways. This has directly affected the quality of maintenance standard of rakes, particularly cleanliness and availability of amenity fittings. It was

particularly seen that on account of staff shortage, there is reluctance among supervisors in-charge for maintenance of trains to avoid interior/exterior washing of trains which are undergoing secondary maintenance, even though they have covered long distance of more than 2500 kms (round trip).

Till such time contracts are awarded for mechanized cleaning activities in such depots, Sr.DMEs should be empowered to get into labour contracts, purely for cleaning & washing activities.

It was also seen that tremendous resistance is encountered at divisional and zonal level to push through the proposals of mechanized cleaning & washing of coaches in the depots. It was noted that except for isolated pockets of success in majority of major/medium/minor depots, such proposals are lying in a state of uncertainty on account of the fact that Finance wing of the Railways does not feel that these proposals are required by Railways. This has given rise to a peculiar situation in which neither the departmental staff is available nor an external agency is available for cleaning/washing work for majority of trains. This is clearly reflected in the rising passenger complaints on account of cleanliness and train watering vide Railway Board's letter no. 2007/PG/3/12, dated 21.2.2008. It was stated that as per monitoring at Railway Boards level, there was 104% increase in number of complaints in CR on account of dirty trains and 38% increase in number of complaints on account of train watering.

5.7 CTS: All prescribed CTS (**Clean Train Station**) stations must be commissioned

6. Minimum time slot:

Minimum time slot requirement for different types of maintenance should be as follows –

- (i) For rakes undergoing primary maintenance to run with RBPC Up to 3500 kms – 6 hrs (on pit from line block to line release).
- (ii) For rakes undergoing secondary maintenance – 5 hrs (on pit from line block to line release).
- (iii) For rakes requiring watering and cleaning at other end (running with RBPC) – 3 hrs, the rake should preferably be placed on washing siding.
- (iv) For rakes requiring watering and cleaning on platform (running with RBPC) – 2 hrs.

- v) For P/F return trains two hours time must be provided to ensure dry sweeping, cleaning of toilets and watering.

7. Requirements of Technological up gradation:

Committee noted that following components of a coach are still giving line failures. Suggested remedies along with list of items are given as under:

S.No.	Items	Proposed Remedial Action
1	Hot Box – Enroute detachments of coaches in last 5 years have virtually remains constant at around 50 cases per annum on IR	(i) Prescribing life of roller bearing as 12 years (ii) Mandatory use of laser gun thermometer for recording axle box temperature during Rolling-In examination. (iii) 100% change of Shoulder Ring and Rear Cover of Axle Box assembly during POH.
2	Equalizing Stay Rod. Continues to figure in cases of broken equalizing stay rods detected at STR points beside during PM/SM of the rakes.	Adoption of CR/Matunga workshop's design where tubular structure has been replaced by solid rod.
3	Truss Bar Hanger. Continues to figure in cases of broken truss bar hanger detected at STR points beside during PM/SM of the rakes.	While improvement has been achieved with the Class-III steel as against the use of Class IV earlier, however, adoption of changes in profile also will result in further improvement as suggested by Dy.CCMT/PR and forwarded to RDSO.
4	Failure of VPH Coach	Failure of sole bar and cross member is still continuing on VPH coaches even after adoption of BOX type cross section for sole bars. Committee, therefore, feels that further strengthening of structure of sole bar is

		needed particularly in view of increase in CC of VPH coaches from 23 tons to 25 ton as per instructions issued by Board. Till such time modifications are finalized, loading in VPH should be restricted to 23 tons.
5	PVC flooring & Upholstery of coaches	1. PVC flooring procured with upgraded specification () has a tendency for muck accumulation. Specification needs to be revised. 2. Upholstery/Rexine procured with upgraded specification is having a problem with removal of oil stains. Specification needs revision.
6	Toilet flooring	Committee noted that there is a problem in sticking PVC with SS inlays in coach toilets, particularly after the use of Mechanized Cleaning equipments which inter alia make use of high pressure jet and vacuum cleaner, the PVC gets detached from SS inlay. Committee recommends use of polyurea powder coating on SS inlay, which has given good result on Western Rly.
7	Rubber Components	Committee recommends that whenever possible use of superior products like Hytrel should be made use in addition to regular use of UPPER & LOWER washer for Dash Pot Spring. (i) Bolster spring – Upper and lower washers – trials conducted on CR have proved to be successful. (ii) Axle Box Cover – Presently use of FRP covers which has resulted in prevention of theft cases but the number of cases of Axle box cover getting cracked en route are being reported. (iii) “O” Ring and seating rings of Angle Cocks – Presently frequent cases of Angle cock leakages are reported on account of “O” ring or Seating Ring getting perished. Solution will have to be found to entice branded products - Supplier to supply these items in view of these being of a “LOW VALUE Items” which fail to entice suppliers.
8	Springs	Instances of both Primary and Secondary suspension spring failures are still too high. C R – Dash pot springs: 13 cases/100 coaches Bolster springs: 15 cases/100 coaches N R – Dash pot springs: 04 cases/100 coaches Bolster springs: 09 cases/100 coaches W R – Dash pot springs: 04 cases/100

		coaches Bolster springs: 07 cases/100 coaches RSK/STLI/GWL may please be requested to improve "QAP" to bring down failure of springs.
9	Brake Blocks	The present tolerance band for important parameter is too wide. The same needs to be suitably narrowed and additional features are incorporated in the specification. Details advised to RDSO vide this office Letter No. M.542.Coaching brake block, dated 24.4.2008
10	Water Tank	Two piece Water tank of ICF design should be standardized which is giving near NIL on line failures.
11	Air Hoses	Failure of air hoses (BP/FP) on run is still high. Committee recommends that workshops should check 100% (BP/FP) at 10 kg/cm ² as prescribed. Quality of clip and crimping to be improved.

8. Any other items pertinent to the subject:

- a) To ensure efficacy of OBHS scheme, it is essential that the services On-Board are monitored by a Railway person responsible. In this connection duty list of AC Coach Attendant may be seen at Annexure. Perusal of the same will reveal that most of the items in the duty list are those for which responsibilities rests with Mechanical Department. Committee recommends that AC Coach Attendants are brought under Mechanical Department and made answerable to Sr.DMEs of the division. They will monitor implementation of OBHS scheme.
- b) Committee noted that in European Railways and in many other Railway systems there is no system of providing a guard on Mail/Express trains. Committee feels that with the leasing of luggage space of SLR on end to end basis coupled with virtual elimination of the concept of provision of slip coaches; the guard's services can be better utilized if he is trained in troubleshooting of C&W items en route.

The current duty list of guard (at Annexure –II) should be modified and they should be brought under Sr.DMEs who are responsible for the rolling stock related problems en route. This will result in better utilization of guard. Here, it may be noted that particularly in electrified section, there is no representative of Mechanical department On Board a train who reports to Sr. DME. This will ensure that Sr.DME gets proper technical feedback about the enroute problems associated with the safety of rolling stock,

thus helping him to give focused attention during primary examination on pit line.

c) Modification in BPC

Presently, there is hardly any difference between BPC of a goods train and that of a Mail/Express train.

With increasing expectation of traveling public, it is essential that a Mail/Express passenger train is certified not only for safety of undergear but also for cleanliness and availability of passenger amenity items. It is recommended that BPC of a Mail/Express train should be rechristened as "Train Fit Certificate" and should have two parts, one dealing with safety as is the practice at present and the 2nd dealing with cleanliness. Trains should be graded as A, B, C and D as under:

- A.** Trains which are given Mechanized Cleaning work both for interior and exterior of the coach; with contracts in place for "On-Board cleanliness and hygiene" (wherever required as per Board's guidelines).
- B.** Trains, which are given manual interior and exterior cleaning without "On-Board cleaning and hygiene" .
- C.** Trains in which only interior cleaning is done; including wet cleaning of the toilet and no external cleaning.
- D.** Dry cleaning of interior.
- E.** No cleaning is done at all.

Similarly, % availability of important amenity fittings should be certified.

A train should be permitted to run on round trip TFC only if the cleanliness standard is classified as "A".

Similarly, availability of important amenity fittings should be 100% at the time of certification.

(L. C. TRIVEDI) **(D. K. SINGH)** **(P. K. SINGH)** **(D.C. SHARMA)**
CRSE/CR/CONVENER ED/CARR.RDSO CRSE/ER CRSE/NR

Para – I

Adequacy of existing maintenance instructions/practices as stipulated for the examination and maintenance pattern of coaching trains permitting running of trains in a round trip upto 3500 kms after primary maintenance for desired level of availability, reliability and safety in operation of passenger train service.

Committee feels that following additional instructions need to be incorporated:

(i) Trains, which run on Round-Trip BPC upto 3500 kms. should preferably be maintained during daytime at Primary Maintenance end.

(ii) In case it is inescapable to have year long maintenance of the train only during Night the illumination levels should be prescribed for general lighting and for Pit-Light where focused attention is needed. The committee for this purpose recommends a lux level of _____ for general lighting and _____ for Pit lighting.

(iii) International practices: Committee proposes that there is a need to compare practices prevalent on IR with International practices particularly in countries like CHINA, RUSSIA & CANADA where long distance passenger train operation is in vogue. A visit by committee members to these countries is proposed.

(iv) Committee notes that still large number of problems keep taking place enroute a long distance mail/express train while some of these comes problems are detected at "SAFE TO RUN" examination points during detection at the stage of Rolling-in and Rolling out examination and corrective action taken in many other cases unscheduled detentions keep taking place on account of these problems. Some of them are listed below:

- a) Leakage from angle cock.
- b) Malfunctioning of DV.
- c) Feed pipe / Brake pipe disconnection.
- d) Brake binding.
- e) Attending to any unusual.
- f) Pressure leakage.
- g) Attending to damages caused enroute on account of cattle run over etc.

(v) Any train running beyond 2500 kms. on RBPC-IV must run only with OBHS in place.

In the present practice except for passing a memo calling for C&W staff, there is hardly any thing else that crew members including Driver and Guard do. The problem is more acute in electrified territory where even driver of the train is not answerable to Sr.DME. Committee recommends that a Escorting C&W staff needs to be there in all long distance trains or

else Guard should be retrained and made responsible to Sr.DMEs. Here it may be noted that in European Railways, there is no provision of guard for a Mail/Express train.

Para – II

Maintenance requirement to ensure desired level of house-keeping, external and internal cleanliness of rakes to ensure high level of public hygiene. Identify difficulties being encountered, and suggest improvement in the system.

Present scenario is indicated by letter from Board which indicates 104% increase in cleanliness & 25% increase in watering related cases -

(ii) Committee feels that while Sr.CDO/Sr.DME on the division is largely responsible for reply to passenger complaints either due to non-availability of passenger amenities or due to inadequate hygiene/standards, none of the 30+ Railway staff (including Crew TTE, Pantry Car Staff, AC attendant, AC Mechanic, Guards) presently available on-Board a long distance Mail/Express trains is responsible to him. Thus he has no access to the travails of passengers on-Board. In view of the aforesaid problems most of his attention to address the problems faced by passengers and not well directed and lack focus on areas, which really bother passengers.

Committee recommends that AC Coach Attendants should be brought under Mechanical Department and should be given following additional responsibilities besides the existing during which mainly concern linen distribution.

(iii) Responding to passengers' requirement on account of cleanliness/hygiene and non-availability of passenger amenity items.

(iv) Replenishing of consumables like paper rolls in toilet, liquid soap in Liquid Soap container.

(v) Periodical spray of disinfecting liquid in toilets;

(vi) Spray of fragrance whenever so desired by passenger.

(vii) Fixing and attending to small items of passenger amenity fitting like

(a) Missing Push cocks

(b) Attending to loose or dangling bottle holders; magazine pockets

(c) Wiping of windows etc.

(viii) He will also be entrusted with the responsibility of monitoring the working of contractor who is engaged by Railways for "On-Board Mechanized Cleaning" of coaches and hygiene including on-Board services.

(ix) Committee noted that in the present format BPC which is issued to a Coaching train of any type; deals only with the safety aspects of the train and has no place for recording the state of cleanliness and availabilities of amenity fittings. The practice of issuing DSR cards has gone in disuse and Administration has never prescribed any standards of cleanliness. Committee recommends the following –

CLEANLINESS STANDARDS:

Committee recommends that cleanliness level in train should be classified in five categories –

- A.** Trains which are given Mechanized Cleaning work both for interior and exterior of the coach; with contracts in place for “On-Board cleanliness and hygiene” (wherever required as per Board’s guidelines).
- B.** Trains, which are given manual interior and exterior cleaning without “On-Board cleaning and hygiene” .
- C.** Trains in which only interior cleaning is done; including wet cleaning of the toilet and no external cleaning.
- D.** Dry cleaning of interior.
- E.** No cleaning is done at all.

Similarly for amenity fittings deficiency, following guidelines should be followed on the basis of percentage of deficiency–

Category	Glass shutter/Venetian Shutter	Push Cocks	Folding Table	Mirror & Mirror shelf	Bottle Holder
A	NIL	NIL	NIL	NIL	NIL
B	2%	2%	2%	2%	2%
C	4%	4%	4%	4%	4%
D	5% and above	5% and above	5% and above	5% and above	5% and above

Review of duty list of AC Coach attendant and guards.

1. In this connection, existing duty list of AC coach attendant issued by Sr.DEE(G)/CSTM vide Letter No. BB.LG.185.Escorting Staff.122, Dated 9.9.2002 is placed at **Annexure – II**.
2. Duty list of Guard issued by Central railway in General & Subsidiary rules is placed at **Annexure – III**.

Para - III.

To study pattern of coach detachments – their impact on safety and reliability of passenger train operation. Identify weak areas including their consequence in operation, and suggest technological upgradation and improvement in maintenance system.

For studying the pattern of coach detachment, figures of Mumbai Division/CR were taken and same can be seen at Annexure.
Analysis of causewise Coach Detachment –

	Cause	C.Rly	N.Rly.	E.Rly.
Primary	Wheel	304	1044	
	Bolster Spring		381	
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RBPC train	Wheel	6	2	
	Bolster Spring		7	13
	Dash pot spring		2	5
	Other	27	11	
	Total		13	

Following specific suggestions are as under:

(i) Practice of providing additional 'V' belt on coach attention should be re-introduced which was discontinued vide RDSO's L/No EL/6.9.9 dated 02.12.03 The RPC-IV revised instruction should be followed by electrical department also. The analysis of detachment taking place on RBPC trains at other end indicates that 95% of the detachments are by non-Mechanical Department viz. Electrical and Commercial. It was noted that in case of PA-HWH Azad Hind Express at HWH (Other end) were taking place as the contractor engaged by Commercial Deptt. At HWH was not unloading SLR at HWH station and was demanding placement of SLR at Goods shed. This resulted in PA-HWH Azad Hind Express returning from HWH with a different SLR from the one with which it had gone.

It was also noted that ETL Deptt. detachment at other end were on following account –

- i) Alternator defect
- ii) Less cooling
- iii) Compressor Motor Defect
- iv) F.T. Fitting Repair
- v) WRA Defect

- vi) Tension Rod
- vii) Cell Defective
- viii) Gas Leaking
- ix) Low Voltage
- x) "V" Belt Broken
- xi) Other Elect. Defect

(ii) Breakage of axle box spring and bolster spring along with wheel defect continue to be the dominant reasons for coach detachment during primary and secondary examination. On Central Rly the broken spring are attended to on pit line thus doing a way with the need of detachments. RDSO vide their letter No. MC/SPG dated 17/1/1991. have instructed that detection of broken bolster spring on run should require in position of 75 kmph speed restriction.

iii) It was also seen by the committee that while overall number of en route coach detachments have come down on IR from a level of 203 to 78 during 2000-01 to 2006-07 the number of detachment on account of rolling bearing failures from IR have remain static. Details are as under:
Enroute coach detachments over IR (data collected from Board)

Year	Total no. of cases	Total cases on a/c of RB failure	%age
2004 - 05	108	40	37
2005 - 06	99	45	45
2006 - 07	78	34	43
2007 - 08 (upto Dec.07)	50	27	54

Committee therefore recommends the following -

- (i) All workshops to study and implement the practices employed by MTN which have achieved the rare distinction of zero detachment on account of roller bearing failure during 2007-08.
- (ii) It was also noted that failure of NBC bearing are on higher side and failure of TIMKEN bearing are on lower side.
- (iii) It has also been suggested by some workshops that during POH Rear Cover & Shoulder ring should also be made must change item.

Para - IV.

To study issues related with running of integrated rake links and suggest appropriate system in respect of availability of water, cleanliness, linen management, escorting staff for AC coaches etc.

Following problems are being encountered with integrated links:

- (i) Change of Destination Board -
Problem can be solved by introduction of Electronic programmable digital destination board as introduced by SCR.
- (ii) If such a link involves four or more nights, problem of stocking of linen arises due to less space availability in the AC coaches.

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Para - V.

Adequacy of mandatory conditions to be fulfilled at primary and other end(s) for round trip pattern of running of coaching trains.

All trains running on Round Trip BPC as per RPC-IV (Jan.2007) circular of Railway Board should on a mandatory basis undergo Mechanized interior and exterior cleaning along with provision of OBHS in terms of Board's letter No. 95/M(C)/141/1 Vol-II dt. 2.1.2007 & No. 2006/M(C)/165/9, dated 1.10.2007 (issued with the concurrence of Finance Directorate.

Committee noted that the biggest single factor which is responsible for the requirement of lifting of a coach in maintenance Depot is on account of replacement of "V" Belts for example in Mumbai Division of C.Rly 935 coaches had to be lifted in 2007-08 on account of replacement of broken "V" Belts. Problem has arisen due to instructions of RDSO, contained in their letter No EL / 6.9.9 dated 02.12.03, which have stopped provision of spare V Belts. These instructions need to be withdrawn with immediate effect.

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Para - VI.

Study and suggest the requirement of minimum time slot required for various activities to be carried out during terminal attention.

Minimum time slot requirement for different types of maintenance should be as follows –

- (i) For rakes undergoing primary maintenance to run with RBPC upto 3500 kms – 6 hrs (on pit from line block to line release)
- (ii) For rakes undergoing secondary maintenance – 5 hrs (on pit from line block to line release)
- (iii) For rakes requiring watering and cleaning at other end (running with RBPC) – 3 hrs, the rake should preferably be placed on washing siding.
- (iv) For rakes requiring watering and cleaning on platform (running with RBPC) – 2 hrs.

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Para - VII.

Requirements of technological upgradation in coaches, maintenance methodology/practices and infrastructure facilities for permitting running of trains in a round trip beyond 3500 kms. after primary maintenance. Suggest plan for providing additional requirement. If any, for infrastructure/facilities and material upgradation etc.

Following technological up-gradations are suggested –

(a) In Coaches –

- (i) Quality of springs (Axle Box and Bolster) needs improvement
- (ii) Design of truss bar hanger also needs improvement.
- (iii) Quality of DV POH kit needs improvement.
- (iv) Quality / Design of Water tank needs improvement.
- (v) Quality of paint needs immediate improvement.
- (vi) Quality of adhesive for fixing of PVC needs improvement.
- (vii) Flush cock should be softer and user friendly.
- (viii) Toilet pans should be flush friendly.
- (ix) Provision of urinal pot for economical use of water and to avoid stinking.
- (x) Vinyl flooring in all the coach with high friction resistance quality.
- (xi) Bottle holder should be sturdy and preferably nylon knitted.
- (xii) Bottle holder should be per berth/seat.
- (xiii) Standardization of window glass and amenity fittings to avoid huge Inventory.
- (xiv) Brake gear pins
- (xv) Commode chutes
- (xvi) RDSO to specify parameters of brake blocks
- (xvii) Main door, esp. FRP
- (xviii) Angle cocks/MU washer
- (xix) Angle cock/Isolation cock design such that it is possible to predict sudden failures
- (xx) BP/FP Metallic pipe corrosion'
- (xxi) BR/FP Air hose
- (xxii) Hose pipe uncoupling
- (xxiii) Anchor link: Bush shifting cases/studs loose
- (xxiv) GEV
- (xxv) Truss bar hanger
- (xxvi) FRP axle box covers
- (xxvii) FRP shutters
- (xxviii) Axle guide cap to be integral with guide Dashpot guide cap dropped
and bush broken
- (xxix) ESR: Corrosion/broken/new design to be implemented by other Railways.
- (xxx) SLR door design to be changed
- (xxxi) Vertical shock absorber bolts loose

- (xxxii) Axle Box safety lug broken
- (xxxiii) Wheel grazing
- (xxxiv) Vertical floating lever: Hose oblong
- (xxxv) Spring broken
- (xxxvi) SS pipe lines for WRA and Air brake system
- (xxxvii) Design of Block hanger already upgraded, supply to be received
- (xxxviii) Standardize amenity fittings , most of the fitting to be of SS
- (xxxix) FRP modular toilet not successful
- (xl) Vinyl stickers fading/teaching. SS or acrylic bonded signage's to be provided.

(b) Maintenance methodology/practices and infrastructure facilities

- (1) High discharge watering facilities
- (2) Sidings to have shunting facilities from both the ends
- (3) Proper pathway on off side on platform
- (4) Proper cover over drains
- (5) Minimum 4 mtr gaps in between two centre line of tracks at STR points

(c) Additional requirement. If any, for infrastructure/facilities and material upgradation etc.

- (1) Improvement to Stores Depots + provision of proper flooring, walls and modular storage system.
- (2) Proposal for creation of posts for new trains introduced should get inherent sanction.
- (3) Railway Board's benchmarking norms for provision of man power for cleaning activities should be enhanced to 1.5 men per coach for cleaning activity only.
- (4) Swapping of rake should be strictly prohibited.
- (5) Checking of dash pot oil in each trip is not feasible.
- (6) Curtailment of maintenance time of 6 hours should be strictly prohibited.
- (7) Introduction of escorting C&W staff consisting one TXR, one fitter, two Khalasis & four Safaiwalas should be introduces on long distance Mail/Express trains.
- (8) Bypass coupling should be included as Brake Van equipment item.
- (9) IOW and Electrical Maintenance organization for Coaching Depots should be placed under the control of Sr.DME.
- (10) Imprest power for coaching depots Officers should be enhanced.

Para - VIII.

Any other items pertinent to the subject.

- (a) Merger of two Mail/Express trains in a link should be avoided as storage of linen for 4 days journey is not feasible in AC coaches particularly in 3 AC due to space constraint.
- (b) En route watering and en route examination should be after every 200 Km/4 hrs journey with minimum 20" stoppage to be ensured. Arrangement for adequate water pressure and staff strength should be ensured in prior to allow trains on return BPC.
- (c) Column light must be provided in off side platform for trolley examination.
- (d) Trains should be provided on washing line for terminal examination for 2 to 3 hrs (As per load) for proper watering, lavatory and coach cleaning and proper attention to amenities fitting and mechanical examination as all the mandatory facilities are available on washing line.
- (e) En route attaching/detaching should be avoided in trains running with return BPC. If needed, only one time attaching/detaching may be allowed.
- (f) Proper staff strength along with carpenter and plumber may be provided for terminal attention train.
- (g) Automatic coach washing plant should be provided on primary base depots.
- (h) Proper arrangements to avoid ensure theft may be ensured.
- (i) On-Board cleaning staff may be ensured for better hygienic condition of the trains en route.

Annexure – I

AVAILABILITY OF STAFF AGAINST SANCTIONED STRENGTH OF MAJOR COACHING DEPOTS

S. No.	Depot	Sanctioned strength	Men on Roll	Vacancy
1	DLI/NR	6103	4963	1140
2	FZR/NR	2384	1776	608
3	CSTM/CR	1208	1024	184
4	LT(T)/CR	948	779	169
5	PA/CR	633	547	86

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Annexure – II.

Duty list of AC Coach Attendant

1. Appearance in prescribed uniform with badge fixed on it for easy identification by the traveling public.
2. Appearance one hour before the scheduled departure of the train.
3. Checking of all internal fittings in the coach provided for the comfort and safety of passengers are intact and in working order.
4. Ensuring filling up of water tanks and ensuring that all fittings for supply and use of water in the bath-rooms are intact and in good working order.
5. Collection of linen and blankets from the concerned authorities and keep it in his safe custody. He would also supply linen and blankets to the passengers and collect the same and keep their accounts. He would also obtain payment of requisite charges and maintain necessary record.
6. Checking of tickets of passengers when they first enter the coach to occupy berth/seats, if TTE/Conductor is not available to exercise the checks. He should not allow any person without proper tickets to occupy the accommodation available in the coach.
7. Accommodating the passengers joining en-route under the supervision/direction of the Conductor of the coach.
8. Keeping the compartments locked when the train is on the run and open them for occupation as and when required.
9. Assist passengers in obtaining food/refreshments and look after their convenience generally.
10. Prevention of entry of beggars, hawkers, unauthorized passengers and heavy luggage inside the coach especially in the corridors and to keep the corridor and space near bathrooms free from obstructions.
11. Keeping watch on the corridor of the coach from the Attendant Seat during nighttime.
12. Assist AC coach in charge in attending electrical/mechanical defects developing in the coach and call maintenance staff concerned for attending to other repairs whenever necessary.
13. Keeping the berth/seats of compartments properly cleaned at regular intervals by personally dusting the same.
14. Assisting the AC coach in charge in pre-cooling the coach at least one hour before commencement of the journey.
15. Taking the reading of pressures at the panel in respect of duties, discharge pressure of refrigerant and oil pressure of compressor, voltages of the alternator and battery etc. from time to time and make entries in the log book informing AC coach in charge of any abnormalities in the readings.
16. Assisting the AC coach in charge in the rectification of minor faults in the AC coach equipments en route.
17. Remaining with the AC coach when it is detached en route due to sick marking till the coach is attached, made fit and moved thereafter to

either the base depot or any other terminal from where it is to park a service.

18. Carrying out other duties such as cleaning electroplated fittings and assisting AC filters in maintenance of AC coach when spare at Headquarters.

19. Carrying out such other duties as may be assigned to him from time to time by ACCI/TTE.

20. Using fire extinguishers in case of need.

21. Operation of water raising apparatus (WRA) i.e. switching ON and OFF while filling the water tank.

22. Waking up of passenger at night (who are detraining en route)

23. To check carrying of inflammable articles on the coach.

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Annexure – III.

Duties of Guards, -

The Guards must, before starting, comply with the following additional instructions:

1. Guard's Order Book – Guards' Order Books are maintained at all headquarter stations and Guards, on reporting for duty, are responsible for scrutinizing this book for any fresh orders which may have been received and issued through this medium and append their signatures in token of having understood them.
2. Coupling of trains –
 - a. In case of goods train originating from a station/yard the Guard must see that all the screw couplings of his train are tightly screwed and the vacuum hose piped/air pressure pipes are connected before the train leaves station/yard.
 - b. In case of coaching trains this responsibility lies with Train Examiner.
3. The Guard must test the hand brake of his brake-van and inspect tail lamp/tail board.
4. The Guard shall see that his train is properly marshaled in accordance with instructions in force.
5. Before entering the Thull and Bhore guards, Guards of all trains (including material trains) must examine at Kasara, Igatpuri, Karjat or Lonavla, the side and end doors of all stock that open outwards and ensure that all such doors are properly secured or locked so that they cannot swing out. The Assistant Guard and the station staff will assist them in this duty. The Guard of a material train must also ensure that all outward opening doors are secured and locked before the commencement of work in a section between stations and after completion of work before the train resumes running.
6. When taking charge of a train and before signing the Train Examiner's vacuum/air pressure certificate, the Guard of a train shall see that the TXR has signed a certificate on the same form (i.e.T.220 B) that the doors of all carriages and wagons are in proper working order and can be closed and fastened. He shall also see that the vacuum/air pressure prescribed is registered in the vacuum/air pressure gauge of the rear brake van, as per instructions contained in S.R.4.18-6.
7. If it is noticed en route that the vacuum/air pressure on the rear brake van has fallen below the minimum prescribed and the defect cannot be traced, the Driver will work the train forward to the next train examining station by utilizing the available brake power of the train. In such a case the train shall be treated as partially automatic vacuum/air braked and the Driver and the Guard must exercise great care. If the Driver is unable to control the load effectively by means of the available brake power, he shall work forward cautiously at a reduced speed with the assistance of hand brakes. In addition, the hand brakes of sufficient number of wagons may be pinned down/screwed to have effective brake power for controlling the train.

8. The Guard in charge of a goods train must see that open wagons are properly sheeted to protect inflammable or perishable goods from sparks or from rain and that heavy loads are securely fastened; that the doors of all wagons are properly secured and every fastening fixed and that all seats are intact.

9. The Guard of the train should also examine the setting of the empty/load box when taking over the train and ensure correct setting. When a box wagon is attached or detached at road side stations, the Guard should see to the correct setting of the empty/load box. (Also see instructions contained in S.R.5.23-2).

10. The prescribed load is given in the Working Time-Table. Guards are jointly responsible with Station Masters for seeing that shunting operations on their trains are properly carried out.

11. Guard of a passenger carrying train must ensure that the doors of the rear and front luggage van (loaded or empty) are properly closed and locked. If Assistant Guard is available on the train he will be responsible for front SLR.

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