

Audit Objective 3

Wagon maintenance was ensured in an effective manner and wagons/locos were condemned as planned

Chapter IV Maintenance of Locomotives and Wagons

The safety of the train operations is dependent on proper maintenance of the rolling stock and other assets. These are required to be maintained at the constant intervals for smooth and safe running of the trains. For ensuring optimum performance of rolling stock fleet, it is necessary that:-

- Preventive maintenance is done timely to avoid occurrence of defects
- Defects are attended effectively well in time so that the wagons remain fit for traffic use till the next schedule falls due
- Detention during examination and repairs is kept to minimum
- Frequent failures of similar nature are studied and necessary modifications/ design changes are effected to eliminate the cause of such failure.

Rolling stock is given periodical overhauling (POH) at various workshops nominated for the purpose at prescribed intervals as given below:-

Table 24 –Wagon Maintenance Schedule

Type of rolling stock	Periodical Overhaul (POH)	Routine Overhaul (ROH)/Intermediate Overhaul (IOH)
Wagons	4.5 to 6 years	28 to 24 months
Diesel Locos	8 Years or 10 lakh kms whichever is earlier	4 Years
Electric locos	6 to 12 Years or 8 to 18 lakh kms which ever is earlier	3 to 6 Years or 4 to 10 lakh kms which ever is earlier
Coaches	12 to 24 Months	12 months

Source:-Indian Railway Code for Mechanical Department

Since the present report is regarding the Management of goods trains, maintenance of coaches has not been included in it. Further, maintenance of locomotives taken up separately as a Theme Based Audit has already appeared in Para 4.1 of Report No. 25 of 2013 and hence this was excluded from the scope of Performance Audit

on the subject. The significant audit findings pertaining to the maintenance issue of locomotives are, however, given below.

4.1 Maintenance of locomotives

Locomotives play a vital role in the Railways. The results of the audit examination as included in the Para 4.1 of Report No. 25 of 2013 highlighted that in many instances locomotives were not getting repaired/ periodically overhauled as per schedule and running overdue. Such locomotives create operational problems and are a safety risk in the system. Quality of maintenance provided was poor. 65 per cent of locomotives overhauled failed within 180 days of their POH. There were incidences of unscheduled repairs and enroute detention of locomotives. The figures of unscheduled repairs estimated by audit were much higher than the locomotives failure statistics reported by the Zonal Railways requiring a detailed examination by IR. In addition there were incidences of extra time taken for POH and other scheduled repairs. Locomotives were found detained before and after POH in the exchange yards. There were inordinate delays in bringing back the dead locomotives to Loco sheds for repairs and putting them back on line within the prescribed time frame. The above incidences can be controlled by effective planning and management. The total loss of potential earning capacity and the extra expenditure incurred brought out in the above stated report by audit was estimated as ₹ 733 crore and ₹ 234 crore respectively. MoR has not replied on the above issues so far.

4.2 Maintenance of wagons

This maintenance is carried out in the wagon maintenance depots. Train examination (TXR examination) in wagon maintenance depots is periodically carried out to assess the condition of wagons and the TXR examination in freight terminals certifies the fitness of wagons for the next run. Freight stocks viz wagons are given maintenance in train formation at the various nominated yards at the time of train examination. Further, heavily damaged wagons involving more than 100 man hours also carried out either in sick lines or in workshops. Further, scheduled repairs of wagons (POH/ROH) are carried out in workshops located in Zonal Railways.

A review of efficiency parameters as covered in Para 3.2.2 in chapter III highlighted the increased cases of Hot Axle, Spring Breakage, Wagon detachment and train parting cases. Although targets have been fixed by the Railway Board to monitor these parameters but audit scrutiny revealed that varying targets were fixed amongst the Zonal Railways and the reasons for the same were not available on record. Increased instances of such parameters affect the operational efficiency

besides resulting in loss of revenue. Further, this also reflects deficient maintenance of the wagon stock in yards/sick lines and workshops.

Defects in a wagon attached to a rake, if noticed at a station, are immediately intimated by the station staff to the next wagon maintenance station for remedial action by the mechanical department either on the station or in the yard. In case the wagons found unfit for operational activities, the same are separated from the rake and are placed on sick lines for repairs.

Repairs to wagons involve more than eight man hours and up to 100 man hours. These normally cover the repairs to the under frame members viz head stock, middle bars, sole bars, changing of axle guards, wheel changing, heavy panel patching, heavy floor repairs etc.

Results of the review of records maintained at wagon examination points in terminal yards and as well as in workshops have been discussed in the succeeding paragraphs.

4.2.1 Examination of wagons in Terminal Yards

Audit was conducted in 32 selected terminal yards along with sick lines in 16 Zonal railways over Indian Railways. Scrutiny of the record collected for the period 2008-09 to 2012-13 in respect of the selected terminal yards/sick lines revealed that:-

1. As many as 5,83,380 wagons were declared unfit for operational activities and sent to various sick lines for repairs. Of these, 53815 wagons suffered detention in terminal yards for a period ranging between 9:36 and 53:45 hours resulting in loss of earning capacity of ₹ 24.63 crore. Yard wise breakup is tabulated below:-

Table 25 –Detentions to wagons in terminal yards

Railway	Name of the selected yard	Total Wagons declared unfit	Period of detention (range in hours:minutes)	Loss of revenue (figures in crore ₹) ³¹
CR	Wadi	5,328	9:36 to 15:54	0.86
ER	Andal Up line	20,763	14:32 to 44:58	14.06
SECR	Korba	1,144	60:00	0.93
	BIA Exchange Yard	14,086	12:26 to 23:37	2.86
WCR	Kota	12,494	24:33 to 53:45	5.92

Source:-Information collected from the record maintained I terminal yards

³¹ Loss has been calculated at the rate of ₹ 3250 (average earning of wagon per day during 2008-13) which is based on the earning of wagon per day as given in Indian Railways Statistical statement of IR for these years.

2. It was further noticed that 5481 wagons³² were found unfit within 90 days of POH. Wagons declared unfit for operational activities, within a short period of POH indicate improper maintenance in workshop/shed besides, loss of earnings of ₹ 5.35 crore (presuming that such wagons remained out of service for three days as details of the period for which these wagons remained out of service was not available on record).

The main reasons for abnormal detention were shortage of man power; wheel and Centre Buffer Coupler (CBC) repair cross bar, floor sheet, floor channel and door repair draft gear replace, draft gear broken yoke.

4.2.2 Wagon examination in sick line

Audit conducted at test check of the record of four months i.e. October and March month of 2011-12 and 2012-13 in respect of sick lines in 32 selected terminal yards of 16 Zonal Railways. Study in audit revealed that:-

1. No permissible norms of detention of wagon during the maintenance activities in the sick lines existed either at Railway Board or at Zonal Railway level.
2. Out of 13895 wagons attended for repairs in sick lines, 12145 wagons suffered delays ranging between 1 to 114 days during repairs in sick lines. The delays were attributed to late placement, less staff availability, non-availability of wheel sets, Heavy Body repairs etc.
3. Mechanical Code of Indian Railway (Para 913) provides that when a part becomes a stock item, the officer-in-charge of the workshop stores should be made responsible for arranging for recouplement as soon as the stock reaches the fixed minimum. Despite this clear cut provision, the necessary stock items were not made available timely in respect 71 wagons in seven terminal yards in six zones³³ where the delay in repair was attributed to shortage of stock items.
4. During the period under review, 13895 wagons given repairs in sick lines suffered detentions in yard before being put to traffic use. Of these, 2484 wagons suffered detention in yard in four Zonal Railways (ECoR, NCR, SER & SECR) for the period ranging between 48 to 173 days after being declared fit. This resulted in loss of earning capacity of ₹ 72.65 crore. No reasons for such detentions were made available by concerned Zonal Railways Administration except for Jhansi Terminal yard (NCR) where detention was due to formation of rake and non availability of path.

³² At Andal UP Sick line of ER (473); TKD of NR (736); NMP and BNDM of SER (428 & 771) and NKJ of WCR (451)

³³ CR, NR, NCR, NEFR, SCR, WR and WCR

MoR replied (September 2014) that all efforts are made by Railways to reduce the time taken in repairing the wagons in sick lines and there has been no loss to the Railways since overall in-effective percentage of wagon stock in IR is within four per cent. Contention of MoR is not tenable since no time period has been fixed for attending to the repairs wagons in sick lines and the revenue earning assets suffered detentions for the durations ranging between nine to 53 hours in terminal yards before being sent to sick lines for repairs. The wagons were subsequently subjected to detentions ranging up to 114 days in sick lines for repairs. Apart from this the wagons were kept in waiting in yards having being declared fit after repairs in sick lines.

4.3 Non-availability of infrastructure facility as well as required machinery and plant at terminal yards

Necessary infrastructure facilities, machinery and plant are required in the terminal yards for conducting intensive examination and maintenance of wagons as prescribed in Wagon Maintenance Manual.

Table 26 –List of important infrastructure facilities and Plant and Machinery required for maintenance

Description of Infrastructure Facilities	Description of required Plant and machinery
<ul style="list-style-type: none"> • Adequate centre to centre distance between tracks for nominated lines for conducting intensive examination • Concrete pathways from one end to another • Welding grid on the entire length of train • Duty room for Junior Engineer (Carriage and Wagons)) • Staff room • Air compressor/vacuum exhauster room • Store room for stocking material • Tool room • Oil grease room • Welding machine Battery charging room 	<ul style="list-style-type: none"> • Diesel screw compressor • Vacuum exhauster • Welding plant • Rake test rig • Hydraulic jacks for various capacities • Lister truck for carrying material such as brake blocks etc.

A review of position of availability of the above mentioned infrastructure facility at 32 selected terminal yards revealed as follows:-

1. The basic amenities were not provided in a substantial number of terminals yard thereby adversely affecting the timely maintenance of wagons causing detention to wagons.
2. In only four terminal yards (KJGY, NRY, SGT, Vadodara) over four zones (NR, SER, SWR & WR) all required facilities were found available.

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3. The facilities such as oil grease room and battery charging room were not available at 15 and 11 terminals of 10 zones³⁴. Similarly, tool room and welding machine room were not available at 7 and 6 terminals of 6 zones respectively.
4. Further, the facilities such as vacuum exhauster and diesel screw compressor were not available at 25 and 11 terminals. Similarly, lister truck for carrying material such as brake blocks etc. tool room and welding machine room were also not available at six zones.

MoR in their reply stated (September 2014) that an elaborate exercise is carried out every year to identify the short coming in the infrastructure and Machinery and Plant available in freight examination yards/POH/Sick Lines. Audit findings mentioned above, however, defy the MoR's contention.

4.4 POH in workshops

The wagon stock is required to be periodically overhauled at prescribed intervals as detailed in Wagon Maintenance Manual. On receipt of newly built wagons, intensive examination is conducted before operational activities and its maintenance periodicity is determined and recorded on the wagons. Yearly target for POH of wagons is fixed by Railway Board based on capacity of workshops.

CR, ECR, ECoR, NER & SWR have no wagon workshops and workshop of WR started functioning from October 2012. A review of POH activity during 2008-13 in the remaining 10 Zonal Railways revealed that eight Zonal Railways³⁵ could not achieve the target of POH as indicated in Table 27.

Table 27-Statement showing shortfall in POH targets

Railway	Target for POH	Actual no. of wagons given POH	Shortfall	Per cent shortfall
ER	28740	28679	61	0.21
NR	26137	25657	480	1.84
NCR	36300	36003	297	0.82
NFR	6000	5832	168	2.80
NWR	2970	2942	28	0.94
SR	10348	9542	806	7.79
SER	25260	19971	5289	20.94
SECR	21180	20766	414	1.95

Source:-Record maintained in workshops of respective Zonal Railways

³⁴ (ER, ECR, ECoR, NR, NFR, NWR, SER, SECR, WR, WCR) and 7 (ER, NCR, NFR, NWR, SECR, WR, WCR)

³⁵ ER, NR, NCR, NFR, NWR, SR, SER, SECR

MoR replied (September 2014) that the flow of the traffic is not uniform throughout the year and fluctuates in some months thereby boosting demand for wagons for short term. To meet such exigencies Board permits restricting the feed to workshops up to 60/90 days. Audit is of the view that permitting the restriction on feed by the Railway Board is in contravention to the provision contained in Para 209 of the Wagon Maintenance Manual which stipulates that empty wagon will be marked sick for POH up to 30 days in advance of the due date and loaded wagons will be allowed up to 30 days after the due date of POH.

4.4.1 Erroneous dispatch of wagons not due for POH to workshops and wagons found over due for POH

Wagons are to be given POH periodically as prescribed in the Wagon Maintenance Manual. Next date of POH is stenciled on each wagon. Operating department is supposed to sort out the wagons due for POH and send them to the nearest railway workshop for POH on due dates. Audit scrutiny of data maintained in 10 workshops during the period 2008-13 revealed the following:-

1. As many as 31928 wagons (**Annexure 7**) not due for POH were erroneously received in the workshops for POH during the years 2008-13. Out of these, 4850 wagons pertaining to six workshops³⁶ in NR, NWR, SR, SCR, SER and WR could not be returned timely by the workshop authorities. These wagons were returned out of workshop with delays as indicated below:-

Table 28-Details of the wagons erroneously sent to workshops for POH

Nos. of wagons	Period of delay
4702	Three months (In South Central and Northern Railway maximum number of wagons i.e. 2485 and 1063 respectively were belatedly returned)
123	3 to 6 Months
25	Six months to one year

Source:-Record maintained in workshops

The avoidable delay in return of these wagons after unnecessary detention of wagon resulted in loss of revenue amounting to ₹ 144.35 crore. This indicates in-effective internal control on the part of Railway Administration for identification of wagons due for POH. There were no reasons available on record with Workshop Administration for the delayed return of wagons under reference above.

³⁶ Jagadhar, Ajmer, Peerumbur, Guntapally, Kharagpur and Dahod

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2. In nine selected workshops over nine Zonal Railways³⁷ as many as 51625 wagons were found overdue for POH during the period 2008 to 2013 (Annexure 8). In SR, the information related to 2008-09 to 2010-11 was not available. Position of wagons found overdue for POH is as follows:-

Table 29-Details of the wagons found overdue for POH

Year	Overdue period (Number of wagons)				
	Less than 3 Months	3 to 6 Months	6 Months to 1 Year	1 to 3 Years	More than 3 Years
2008-09	4076	537	222	89	12
2009-10	3725	1004	682	215	5
2010-11	6388	1532	495	540	14
2011-12	8188	4099	1239	342	29
2012-13	8309	6512	2771	551	49
Total	30686	13684	5409	1737	109

Source:-Record maintained in workshops

3. From the table above it is seen that during the period under review, 5409 wagons were found overdue for POH for six months to one year, 1737 wagons for a period of one to three years and 109 wagons even for more than three year period.
4. As many as 37725 wagons (73 per cent) were found over due for POH up to six months during the period 2008-13 in four Zonal Railways³⁸ alone.

Wagons remaining overdue for POH for the durations mentioned in the Table above indicates improper and ineffective monitoring of maintenance activities thereby posing safety risk while these were on run after becoming due for POH.

MoR replied (September 2014) that to meet the exigencies in the demand for the wagons, Board permits restricting the feed to workshops up to 60/90 days. MoR's contention is not acceptable as permitting feed restriction to workshops was in contravention to Para 209 of the Wagon Maintenance manual as already given in para 4.4. Restricting the feed to workshop for 60/90 days to meet the urgent wagon demand goes against the IR's concern for safety as it will lead to wagons getting overdue for POH.

4.4.2 Detention to wagons in workshop (prior to/during/after POH)

Unnecessary and avoidable detention of wagons in workshop prior/after POH affects the availability of wagons consequently leading to loss of earning. Though no fixed time has been prescribed for the POH activity in the workshop, but the

³⁷ (ER, NR, NCR, NFR, NWR, SR, SCR, SER & WCR)

³⁸ Jamalpur workshop, ER-12775; Jhansi Workshop, NCR-6930; Guntapally workshop, SCR-11384 and Kharagpur workshop, SER-6636 wagons.

Railways have been attempting to achieve the same with in a period of five to eight days.

Audit observed that wagons were not being taken up for POH immediately on it receipts. Similarly, wagon turned out after POH were not sent for traffic use immediately and kept in workshop/station yards. Further, there were cases where most of the wagons undertaken for periodical overhauling were not turned out within the cycle time. Audit scrutiny of the record for the period 2008-13 in 11 workshops of 11 Zonal Railways³⁹ in respect of detention of wagons prior to sending them in workshops for POH revealed the following:-

1. There has been un-necessary and avoidable detention of 49825 wagons in yards before the same were sent for POH resulting in loss of 563785 wagon days. Jagadhari workshop (JUDW) of NR alone accounted for 28 per cent (14353 wagons) of the wagons detained in yard before sending for POH.
2. Similar detention in respect of 13258 wagons (26 per cent) in Guntapalli workshop of SCR was noticed before these wagons were sent to workshop. Reasons for such detentions were not available on record.
3. As many as 32880 wagons suffered detention in yard after POH was done but before putting them in service resulting in loss of 675415 wagon days in seven Zonal Railways⁴⁰. Of these, 22956 wagons (70 per cent) were detained after POH in Guntapalli workshop of SCR only.
4. Audit came across instances where as many as 2070 wagons were returned to workshop for repairs within 90 days of their POH in five workshops in ER, NWR, SR, SER & SECR. In WCR, the information could not be collected due to partial availability of old records.

MoR replied (September 2014) that workshops try to ensure that the wagons are taken up for POH as soon as feasible depending upon the berthing available. Similarly on completion of POH, the wagons are kept in waiting for rake formation as operational requirement in order to save power and shunter requirement.

However, the data collected by audit from the record maintained in workshop revealed that wagons suffered an average detention ranging between 11 to 20 days before being sent to POH and for putting them back in service after the POH. Thus, detention of 82705 wagons prior to/after POH in workshop resulted in avoidable loss of earning capacity to the tune of ₹ 333.58 crore. Non availability of line in shop, capacity constraint, non-availability of certain material, single shift working in yard shop due to non availability of light and path way for shunting staff were

³⁹ (ER-Jamalpur, NR-Jagadhari, NCR-Jhansi, NFR-NewBongaigaon, NWR-Ajmer, SR-Peerumbur, SCR-Guntapally, SER-Kharagpur, SECR-Raipur, WCR-Kota & WR-Dahod)

⁴⁰ ER, NCR, NFR, NWR, SR, SCR and SECR

stated as the reasons for these detentions by NCR and WR. The reasons for detention were however, not available in other workshops in remaining eight Zonal Railways.

4.4.3 Delays in POH of wagons in workshops

To achieve optimum utilization of the wagon stock, their ineffectiveness including during their POH in Railway Workshops is required to be kept at minimum level. Railway Board has not prescribed a fixed time cycle for completing POH of wagons in the workshop. In a reply given to PAC, Ministry has stated that they have been trying to complete the POH within five to eight days. A review of record in respect of POH data of 11 selected workshops over 11 zonal railways during the period 2008-09 to 2012-13 revealed that :-

1. POH of wagons was not completed within the cycle time in 40 per cent of the wagons given POH in the workshops during 2008-13 as indicated in the Table 30.

Table 30-Delays in POH of wagons in workshops

Year	Total No. of Wagons given POH	No. of Wagons taken excess time than the prescribed cycle time	Loss of Earning Capacity due to the excess time taken in POH (in Cr ₹.)
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
2008-09	35404	12751	37.71
2009-10	32059	12653	44.13
2010-11	34625	15298	75.24
2011-12	34341	15449	89.13
2012-13	34537	15286	68.50

Source:-Record maintained in workshops

2. The excess time taken ranged variedly between 1 and 295 days. Audit examination revealed that in respect of huge number of wagons (8200 in NCR; 11381 in WCR; 18349 in SCR and 19971 in SER) the time taken in POH exceeded the cycle time for POH. The excess time taken was attributed to shortage of manpower, heavy repair work involved, shortage of store material & staff shortage and lack of infrastructure etc.

Thus, detention of wagons beyond the prescribed cycle time deprived the Railways of their services. This resulted in avoidable loss of earning potential of ₹ 314.71 crore during 2008-13.

Audit also conducted a sample check on outturn of wagons in 11 workshops existing in 11 Zonal Railways. For this purpose record was collected from these workshops for the March month of the years 2011, 2012 and 2013. Analysis of the data collected revealed that:-

1. In NWR, in/out register was not maintained by Chief Yard Master (CYM) and gate passes for the wagons turned out of the workshop were not maintained by Railway Administration.
2. In only four zones (NCR, SER, WR & WCR) the wagons turned out as per out turn statement matched with the date of out turn as shown in 'out gate pass'.
3. In remaining six zones (ER, NR, NFR, SR, SCR & SECR), as many as 5195 wagons were shown turned out after their POH as per outturn statement. A reconciliation of 'out' date of the wagons as shown in the outturn statement with actual date of turning out of the wagons as per out gate pass, however, revealed that only 3474 wagons were actually turned out in those months and remaining 1721 wagons were either turned out in subsequent months or not turned out (up to September 2013) as tabulated below:-

Table 31-Position of test check of outturn of wagons in workshops

Zone	Period	Monthly outturn as shown by Workshop	Wagon actually turned out during the month as per gate passes	No. of wagons turned out in subsequent month	Wagons not turned out up to September 2013
ER	March-2011	1192	664	356	172
NR	March 2012	1266	613	622	31
NFR	March 2013	280	252	28	0
SR		472	420	52	0
SCR	May -2010 Oct.-2011 May 2012	1208	881	327	0
SECR	Sept. 2010, Sept. -2011 Sept.-2012	777	644	133	0
Total		5195	3474	1518	203

Source:-Record maintained in workshops

As a result, 1518 wagons could not be made available for traffic purpose for 49249 days resulting in loss of their earning capacity to the tune of ₹ 20.96 crore (**Annexure 9**). Scrutiny of record in workshops revealed that heavy body repairs, non placement of wagon due to space constraints in workshop, non availability of the required materials, single shift working due to lighting problem were the reasons attributed for the delays in POH of wagons.

4.4.4 Movement of wagons from the receipt of wagons in workshop for POH till their dispatch for traffic use

With a view to ascertain the delays in POH of wagons at various stages from receipt in workshop to dispatch out of workshop for putting them back in service, audit conducted a sample check in respect of 5695 wagons given POH during

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April, May & June 2012 in eight workshops over eight Zonal Railways⁴¹. Detailed shop wise information right from the receipt of wagons for POH till their dispatch was analysed. The analysis revealed the following: -

1. Out of the 5695 wagons test checked in eight ZRs, 1755 wagons (30.82 per cent) could not be taken up for POH immediately and waiting time in Workshop yard (NR, NWR, SR and SER) before the wagons were sent for POH ranged between 105 to 305 days. Kharagpur (KGP) workshop of SER alone accounted for 873 such wagons wherein a waiting period of one to 302 was observed before sending these wagons to workshop for POH. Details regarding the similar waiting time in workshops in ER, NFR, SCR & SECR ZRs was, however, not available on record.
2. Review of outturn statements prepared in eight workshops revealed that POH of 2303 wagons (40.44 per cent) could not be completed in time. Excess time taken for POH of wagons over and above the targeted cycle time ranged between 4 to 644 days. Detention of wagons on this account would attract loss of earning amounting to ₹ 379 crore.
3. Further, having reviewed the gate passes issued by the workshop, audit found that 3663 wagons (64.32 per cent) could not actually be given POH in time and excess time taken for POH of wagons over and above the targeted cycle time ranged as high as 655 days. The following table indicates the comparative position of the excess time taken in POH as per the two different records.

Table 32 -Position of cycle time in POH as maintained in workshop and as per the gate pass

Zone	Workshop	Excess time taken for POH over targeted cycle time		Actual extra time taken in POH as evident from gate pass	
		No. of wagons	Ranged up to (in days)	No. of wagons	Ranged up to (in days)
NR	Jagadhary	361	234	392	350
SR	Perambur	247	303	247	303
SCR	Guntapally	534	142	865	164
SER	Kharagpur	500	295	Not Available	Not Available
SECR	Raipur	194	644	567	655

Source:-Record maintained in workshops

The variation in figures between POH of wagons cited on the outturn statement and the position of gates passes shows that reliability cannot be placed on the figures of wagons shown as outturned in the case of five workshops⁴². In SR only the position of POH as per outturn statement matched with position of gate passes.

⁴¹ (ER, NR, NFR, NWR, SR, SCR, SER & SECR)

⁴² (Jagadhari, Peerumbur, Guntapally, Kharagpur & Raipur)

4. Jagadhari Workshop (NR) and Guntapally Workshop (SCR) took up to 75 and 50 days respectively in doing necessary inspection of the wagons. In remaining six ZRs⁴³, the position of inspection days could not be assessed as either it was not available or there was no delay.

MoR replied (September 2014) that number of days required for POH of wagons depends on various factors and the time may range between 100 hours to 1000 hours and none of these can be standardized. The contention of MoR contradicts its own reply given to PAC (2010), stating that they have been trying to complete the POH within five to eight days.

4.4.5 Special Repairs to wagons in workshops

Repairs to heavily damaged wagons involving more than 100 man-hours to be carried out either in the workshops or in major sick line are called Special Repairs. Special Repairs to wagons are carried out in workshops only after necessary estimates have been prepared and sanctioned by the competent authority.

No special repair/modification work was carried out in five ZRs⁴⁴ during 2008-13. In five ZRs⁴⁵, there were no wagon repairs workshops. Audit reviewed the position of special repair/modifications carried out at various workshops in remaining six Zonal Railways⁴⁶ and noticed that:-

1. Special repairs/modification were carried in 18171 wagons in these six Zones during the years 2008-09 to 2012-13.
2. Completion Report were drawn only for 2337 wagons given special repairs (15.54 per cent) in two Railways (NR & NCR), while, the same were not drawn in respect of 15834 wagons in NWR, SER, SECR and WCR.
3. In JUDW of NR, these modifications were carried out simultaneously with POH of the wagons.
4. In SER, the position of fund allotted for such repairs as well as amount spent was not available. Only estimated cost of repair of wagons was available.

The total amount spent on such special repairs/modifications of 18171 wagons was ₹ 350.49 crore against the total fund allotted ₹ 313.48 crore. Excess over estimate to the extent of ₹ 37.01 crore was noticed only at the Ajmer workshop of NWR and the same remains to be regularized as of 31 March 2014.

⁴³ (ER, NFR, NWR, SR, SER & SECR)

⁴⁴ (ER, NFR, SR, SCR & WR)

⁴⁵ (CR, ECR, ECoR, NER & SWR)

⁴⁶ (NR, NCR, NWR, SER, SECR & WCR)

4.5 Review of Unloadable wagons

Wagons become unloadable primarily due to improper handling at the sidings. Such unloadable wagons require extra repair and consequently suffer additional detention with its resultant effect on wagon turn round. The main reason attributed for wagons becoming unloadable was improper handling by the private siding owners.

In three Zonal Railways (NR, NER & NFR), the position of unloadable was not available. A review of position of unloadable wagons in 13 out of 16 ZRs during the period 2008-13 revealed the following:-

1. As many as 478798 wagons (Annexure 10) became unloadable during the period under report. The age-wise break up is tabulated below:-

Table 33-Age profile of wagons as on 31-3-2013

Age profile	No. of wagons
1 to 5 years	38489
6 to 10 years	57814
11 to 15 years	112991
16 to 20 years	99541
21 to 25 years	99804
26 to 30 years	45177
More than 30 years	24982
Total	478798

Source:-Record maintained by Mechanical Department in Zonal Railways

The table indicates that out of total 478798 wagons that became unloadable, 408639 (85 per cent) wagons were less than 25 years of age. The unloadable wagons would not only result in increased cost of repairs but will also affect the life of the wagons. The reason attributed for wagons becoming unloadable was improper handling by the siding owners.

2. In four Zonal Railways (ECR, SCR, SER and SECR) a huge number of wagons (62 per cent) were found as unloadable. Railway administration could not keep these wagons fit for freight services. The incidence of wagons becoming unloadable is avoidable to a large extent provided proper monitoring is done at loading/unloading points and punitive action is taken against the private siding owners responsible for the wagons becoming unloadable due to improper handling.

These wagons were given Non Periodical Overhauling (NPOH) in workshops in order to keep them running. Audit reviewed the position of NPOH attention given to unloadable wagons at selected wagon examination points during 2011-12 and 2012-13, which revealed that:-

1. At 18 examination points⁴⁷ over 13 Zonal Railways, 1,53,445 wagons became unloadable during 2011-12 and 2012-13. Out of 1,53,445 unloadable wagons requiring attention for repairs 142171 wagons were attended in sick lines/sheds and the remaining 11274 unloadable wagon were sent to various workshops for NPOH attention.
2. An amount of ₹ 62.22 crore was spent on repairs of 3661 unloadable wagons in NWR, SCR and SER. The amount spent on repair of 7551 unloadable wagons was not made available by the remaining 10 Zonal Railways (CR, ER, ECR, SR ECoR, NEFR, SECR, SWR, WCR and WR).

Table 34-Statement showing the NPOH attention given to unloadable wagons

Zone	Name of examination point	Unloadable wagons (Nos.)	Nos of wagons given NPOH attention in workshop	Wagon days lost	Loss of earning capacity (₹ in crore)	Cost of NPOH w.r.t. col. 5 (₹ in crore)
1	2	3	4	5	6	7
CR	BSL	11811	194	Not made available	Not made available	Not made available
ER	Up sickline, Andal	3473	113	2240	0.79	Not made available
	Dn. sickline, Andal	1342	27	1493	0.52	Not made available
	Pakur	3129	17	24	0.008	Not made available
NWR	Madar	47	25	776	0.27	0.14
ECR	Mughalsara	33751	4218	Not available	Not available	Not available
SR	JTJ	2100	17	824	0.29	Not available
ECoR	VSKP	3817	180	Not available	Not available	Not available
NFR	GHY, NJP	150	0	Not available	Not available	Not available
SECR	Bhilai, Raipur	22484	0	Not available	Not available	Not available
SWR	HPT	8215	664	Not available	Not available	Not available
WCR	NKJ, Kota	8706	2020	Not available	Not available	Not available
SCR	Guntapally	4706	1208	21089	7.42	20.54
SER	BKSC and KGP	46440	2428	45745	16.1	41.27
WR	Gandhidham	3212	101	2823	0.99	Not available
Total		153445	11274	75349	26.508	62.22

Source:-Record maintained in sick lines and workshops in Zonal Railways

⁴⁷ (Bhusawal, Up sickline-Andal; Down sickline-Andal; Pakur; MGS; OEC/VSKP; GHY; Madar; JTJ; MAJN; GY; BKSC; PP Yard-Bhilai; BM Yard-Bhilai; WRS; HPT; Gandhidham; NKJ & Kota yard)

3. Loss of earning capacity in respect of unloadable wagons remaining out of service on account of NPOH attention given in workshops was assessed at ₹ 26.50 crore in six Zonal Railways, while the same could not be assessed on other seven Zonal Railways (CR, ECR, ECoR, NEFR, SECR and SWR) due to non availability of information relating to the period for which the wagons were detained for NPOH attention.

MoR in their reply (September 2014) has stated that steps have been taken for restricting the equipments which were found to be damaging the wagons while handling the cargo. Penalty is also levied on parties on the basis of cost of damage and the labour cost to restore these wagons MoR contention is not acceptable in view of the fact that in many of the Zones cost of repairs on unloadable wagons was not made available to audit as it was not at all worked out.

4.6 Local Passing of Wagons rejected by Neutral Control Office (NCO)

Neutral Control Office in Workshops/Yards are meant for independent examination of the wagons repaired/POHed before actual handing over to open line for operations. Wagons repaired in workshops/at examination points are subjected for a check by Neutral Train Examiner (NTXR). Wagons examined and certified as fit can only be inducted into service. Those found defective by NTXR are detained for further attention.

Examination of the position at selected examination points and workshops revealed that rejected wagons were passed locally without being certified as fit by NCO and put in to service as indicated below.

(a) Train Examination points

Review of records at 18 train examination points⁴⁸ over 11 Zonal Railways⁴⁹ during the period 2008-09 to 2012-13 revealed that out of 17,58,329 wagons examined at these points, only 367990 wagons were offered to Neutral Trains Examiner (NTXR) for passing. Out of 45563 wagons initially rejected by NTXR, 39,853 were subsequently passed locally after further attention given in sick line in eight Zonal Railways (ER, ECR, ECoR, NR, NFR, SR, SER & SECR). In three zones alone, (ECoR SER & NFR), 29244 wagons having been rejected by NTXR were passed locally.

Further, examination by Audit revealed that NTXR office is not working during holidays and Sunday at TKD (NR); GHY & NJP (NFR); BIA Exchange yard and

⁴⁸ (Up sickline-Andal; Down sickline-Andal; BRWD; OEC/VSKP; TKD; KJGY; JHS; GHY; NJP; JTJ; GY; NMP; BNDM; BKSC; BIA Exchange yard; BCN depot & NKJ)

⁴⁹ (ER, ECR, ECoR, NR, NCR, NFR, SR, SCR, SER, SECR & WCR)

BCN depot (SECR) and wagons are passed locally during these days. None of the Zonal Railway has taken any action against the officials for local passing of wagon.

Thus, 39,853 wagons were passed locally despite rejection by NTXR and the same were put into service without getting fitness certificate from Neutral Control Office which is irregular and in contravention of rules.

(b) Wagon Workshops

Audit also analyzed the record at selected 11 wagon workshops over 11 zonal railways (no wagon workshop is there in CR, ECR, ECoR, NER & SWR). It was observed that out of total 182529 wagons given POH, only 176079 wagons were offered to Neutral Control Wagon Superintendent (NCWS) during the period 2008-09 to 2012-13. Of these, 25561 wagons (14.52 per cent) were rejected by the NCWS and 13276 wagons (51.9 per cent) were subsequently passed locally by the workshop authorities without offering for re-inspection in contravention of codal provision. In six Zonal Railways (NFR, NCR, NWR, SCR WR and WCR) no wagon was passed locally by workshop authorities. In ER, NR, SER & SECR, all the 13223 wagons rejected by NTXR were passed locally. The reasons for local passing were not made available by Railway Administration.

MoR in reply stated (September 2014) that Neutral Control staff (NCO) acts as super check for the inspection carried out by the train examiner. NCO staff is posted in 38 out of the 47 train examination depots (also known as ROH depots) available over IR and efforts are being made to keep the local passing percentage to minimum. The fact, however, remains that more than 50 per cent of the wagons rejected by the NCO staff were passed locally and the reasons for the same were not found on record.

4.7 Condemnation of wagons/locos

Normally condemnation has to be carried out on the basis of age-cum-condition basis. In addition, under aged wagons and wagons involved in accidents are also condemned on condition basis. The wagons so condemned should be sent to stores department for final disposal. Study of the condemnation of wagons revealed the following deficiencies:-

- Running of over aged wagons /locos endangering the safety aspect
- Premature Condemnation of wagons before completing the codal life and
- Condemnation within short period of POH indicates improper maintenance in workshops/sheds resulting in loss of earning potential.

4.7.1 Condemnation of Wagons/locos and disposal there of

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Wagons

Audit scrutiny of records in Zonal Railways relating to the condemnation of wagons revealed that 33467 wagons were condemned during the period 2008-13 against 33235 proposed for condemnation. This indicates that the wagons proposed for condemnation were not correctly assessed. Further, the condemned wagons included 21046 wagons condemned prematurely. An amount of ₹ 789.45 crore was realized on account of auction/sale of these condemned wagons.

The amount was credited to different chargeable head in case of six Zonal Railways⁵⁰. The information as to which head of account the amount was credited was not available in respect of remaining 10 Zonal Railways. At the time of auction/disposal of condemned wagons in most of railways except NWR & SECR, the wagons are not categorized between 'over aged' and 'under aged' resulting in non accounting of loss which a zonal railway is incurring on disposal of under aged wagons.

The financial justification in case of premature condemnation of wagons, generally on account of accidents was available at all ZRs except ECoR where 239 such cases were noticed.

Locomotives

Similarly, scrutiny of position on condemnation of locomotives in Zonal Railways revealed that 681 locomotives were condemned during the period 2008-13 against 729 proposed for condemnation. The condemned locomotives included 229 condemned prematurely. An amount of ₹ 219.56 crore was realized on account of auction/sale of these condemned locomotives.

In case of condemnation of locos also, the amount was credited to different chargeable head in five Zonal Railways⁵¹. In the remaining 11 Zonal Railways the information related to head of accounts to which the amount was chargeable was not available.

⁵⁰ (In CR – Abstract Z 500/530 & 500/531; NR – 21214107/31714205; NFR – 20714208; NWR – lying in suspense head; SR – Plan Head 21 (DRF-Capital and SCR – 20-7142-08 of accounts).

⁵¹ In CR – Abstract Z 500/530 & 500/531; NFR –20714209; NWR – 4315389 (2010-11) & 1883700 (2011-12); SR – Plan Head 21 (DRF-Capital) and SCR –21-2179-09 of accounts.

4.7.2 Test check of condemnation of wagons

Audit test checked 3691 wagons due for condemnation covering all Zonal Railways (except NER, WR and SWR where record was not made available) during the period 2010-13. Out of 3691 wagons, 2310 wagons were condemned prematurely. In all these cases of condemnation, process was approved by the competent authority and financial justification was prepared. Zone wise details are given in Table 35 below.

Table 35-details of test check of condemnation of wagons during 2010-13

Railway	Year	No. of Wagons due for condemnation test checked	Wagons condemned prematurely
1	2	3	4
CR	2010-13	150	69
ER	2010-13	2110	1234
ECR	2010-13	150	82
ECoR	2010-13	134	83
NR	2010-13	150	101
NCR	2010-13	150	150
NFR	2010-13	5	4
NWR	2010-13	88	88
SER	2010-13	150	86
SR	2010-13	150	126
SCR	2010-13	150	84
SECR	2010-13	150	80
WCR	2010-13	150	122
WR	2010-13	4	1
TOTAL		3691	2310

Source:-Information collected from the record maintained in Zonal Railways

Further, in a review of position on condemnation of wagons during 2010-13 it was also noticed that five Zonal Railways⁵² could not achieve its targets of condemnation of wagons stock during the years 2010-11 to 2012-13 as per detail in Table 36 as follows:

Table 36-Statement showing the shortfall in condemnation of wagons

Zone	Target condemnation for	Wagons actually condemned	Shortfall, if any
CR	2845	2538	307
ER	6208	3700	2508
NR	2280	1213	1067
SCR	400	313	87 (2012-13)
SECR	282	239	43 (2010-11)

Source:-Record maintained in Mechanical Department in Zonal Railways

⁵² (CR, ER, NR, SCR & SECR)

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In eight Zonal Railways⁵³ the details of target for condemnation of wagons were not available. NCR was the only railway that achieved the target fixed for condemnation.

In CR and NR, lack of co-ordination between the Workshop Authorities and their counterparts in divisions for timely dispatch of condemnable stock resulted in non achievement of the targets for condemnation.

Wagons found unfit for operational activities during the examination suffered detentions for abnormally longer periods in terminal yards and sick lines. No permissible norms of detention for all activities at terminal yards/sick lines existed either at Railway Board or Zonal Railway level. Further, 5481 wagons were found unfit within 90 days of POH which is a clear indication of the improper maintenance depriving the Railways of potential earnings. Sick lines attached to the terminal yards and the POH workshops were found deficient in infrastructure facility as well as required machinery and plant required for maintaining wagons found unfit for operational activity adversely affected the timely maintenance of wagons leading to detention of wagons.

Wagons not-due for POH erroneously received in the workshops were turned out by the workshop authorities with delays ranging between three months to one year resulting in wagons remaining non operational. The review of the arrangements for sending the wagons for periodical overhauling, time taken by workshops in overhauling and removal of wagons turned out after overhauling revealed that wagons suffered detention at all these stages. Though an assurance was given by MoR to PAC in 2010 that Railways have been attempting to achieve the cycle time five to eight days for POH of wagons but excessive detention of wagons beyond prescribed cycle time was observed resulting in avoidable loss of earning potential.

Several instances of wagons being passed locally and put back in service without being certified as fit by NCO were observed. This was irregular and in contravention of rules and a compromise with the safe running of freight trains.

⁵³ (ECR, ECoR, NFR, NWR, SER, SR, WCR & WR)