

MECHANICAL DEPARTMENT

1.0 ORGANISATION

1.1 Gazetted Cadre (HQ):

The following is the Gazetted Cadre of Mechanical Department at HQ.

Grade	Available	Posts
HAG	1	CME
SAG	3	CWE, CMPE, CRSE
JAG/SG	3(2 Rev. + 1 W/C)	Dy. CME(HQ) + Dy. CME(C&W)+ Dy. CME(M&P)
SS	2 (1 Rev. + 1 W/C)	EME(O&F) + 1 operated at KUR
JS	2	AEME(C&W) + AEME(M&P)
Total	11	10 + 1 vacancy

2.0 Manpower Position

2.1 NON Gazetted C&W Cadre Manpower position of Division

C&W staff position				
Division	Category	Sanction	Actual	Vacancy
WAT	Supervisors	170	125	45
	Artisan	1180	1075	105
	Ancillary	181	138	43
	Group D	666	435	231
	Ministerial	24	19	5
KUR	Supervisors	123	97	26
	Sub Total	123	97	26
	Artisan	766	629	137
	Ancillary	109	78	31
	Group D	447	290	157

	Ministerial	59	40	19
SBP	Supervisors	39	32	7
	Artisan	175	175	0
	Ancillary	16	11	5
	Group D	98	61	37
	Ministerial	5	3	2
Grand Total	Supervisors	332	254	78
	Artisan	2121	1879	242
	Ancillary	306	227	79
	Group D	1211	786	425
	Ministerial	88	62	26

2.2 Wagon Ownership:

Sl.No	Type of wagon	NO OF WAGONS	
		2010-11	2011-12
1.	BOBRN	1059	1055
2.	BOXNHS	3236	3236
3.	BOBYN	225	225
4.	BRNA	65	65
5.	BRNAHS	363	363
6.	BVZI	52	52
7.	BCNAHS	513	513
8.	BOST	109	109
9.	BOSTHS	1258	1258
10.	BOXNLW	1193	1193
11.	BOY	300	300
12.	BTPN	360	385
13.	BOBSN	47	47
14.	BOBRNHS	372	405
15.	BCNHL	1093	1330
16.	BFNS	25	25
17.	BOXNHL	1883	2754
18.	BOBRNHSM1		606
	TOTAL	12153	13921

3.0 Freight Maintenance:

3.1 Freight Sick lines and Examination Points-

Location	Facilities	Category	Infrastructure up gradation Works
CTC	Intensive, PEE examination & sick line	F category sick line. D category examination Point	Pathways have been provided between 7&8, 8&9, 9&10. Work for providing covered sick line per CAMTECH standard as under execution.
PRDP	Intensive, PEE examination & sick line	F category sick line.	
ANGL	PME examination & ROH depot	--	--
OEC	PME, PEE, ROH depot & sick line	A category	Bogie repair shed & covered shed for 2 PME lines are under construction. TDC – Dec-12
RMUY/ VSPS	PEE, ROH depot sick line & PME depot	A category	Work for provision of a separate bogie repair shed in ROH depot is under progress. TDC – Dec-12
			Work for providing infrastructure as per CAMTECH standard in 2 additional lines is under progress. TDC – Dec-12
FPY/ VSPS	PEE & Intensive examination	F category	Work for providing infrastructure as per CAMTECH standard in 2 lines is under progress. TDC – Dec-12
R/Yard	CC, PEE & Intensive examination	A category	Four lines have been provided facility as per CAMTECH standard for examination.
R & D Yard, VZP	Intensive examination	F category	
CSL/VSKP	ROH depot & sick line	B & A category	Proposal for RCC roof building for sanctioned CNC surface wheel lathe and other facilities through Law Book 2012-13
RGDA	Intensive examination & Sick Line	F category	
KBJ	PEE, Intensive examination & Sick Line	F category	Works for improvement of pathway for freight train examination yard .tender opened on 07.06.2012 work yet to start.

3.2 Wagon Maintenance

3.2.1 Wagon examination facility & work load:

Wagon examination facilities are located at 11 locations over East Coast Railway. Facility categorization and number rakes examined per month in 2011-12 are detailed below. Up gradation of facilities to Category A are under execution through sanctioned work except at Kantabanji. New examination yard at Titlagarh has been sanctioned in lieu of Kantabanji.

Sl.No	Name of Examination Yard	Division	Category	Average no of rakes examined per month		
				PME	PEE	Intensive
1.	Reception Yard-VSKP	VSKP	A	23	35	28
2.	Departure Yard VSKP		F	-	-	39
3.	Reception & Departure Yard VZP		F	-	-	205
4.	Ore Exchange Yard-VSKP		A	28	43	3
5.	Raw Material Unloading Yard-VSPS		A	21	46	14
6.	Finished product yard-VSPS		F	-	21	33
7.	RGDA		F	-	-	7
8.	Khurda road	KURDHA	F	-	-	-
9.	Cuttack		D	-	32	22
10.	Paradeep		F	-	-	102
11	Kantabanji	SAMBALPUR	F	-	3	7

4.0. System improvement & achievement in 2011-12

4.1 Formation of close circuit rakes: Despite constraints of infrastructure and non availability of off POH wagons sufficiently, in 2011-12, total 85 close circuit rakes were formed and inducted in the CC fleet to meet the traffic demand. From April to June in 2012-13, 28 close circuit rakes has been inducted in service.

4.2 Wagon detachment: The total en-route wagon detachment was **87 Nos** during 2011-12 as compared to **89 Nos.** during corresponding period of last year showing an improvement of **2.25%** and against Board's target of **140 Nos.** reflecting an improvement of **37.86%** over target.

4.3 Hot Axle: The total en-route wagon detachment was **49 Nos. during 2011-12** as compared to **51 Nos.** during corresponding period of last year showing an improvement of **3.92%**.

4.4 All most all wagons were fitted with additional coil springs to make them fit to carry the enhanced load (CC+8+2 & CC+6+2).

5.0 PERFORMANCE HIGHLIGHTS

5.1. Target vis-à-vis Performance

Sl. No.	Item	Target for 2012-13	Monthly performance for JUNE		Cumulative performance APRIL-JUNE		% improvement over target/ last year
			JUN-2011	JUN-2012	2011	2012	
2	Carriage and Wagon						
a)	Wagon detachments	112	8	1	19	8	57.80%
b)	Hot Axle	33	2	4	7	14	-100%
b)	Spring Breakage	0	0	0	0	0	0.00
c)	Goods ineffective in %	1.00	0.59	0.91	0.57	0.583	-45.61%
d)	Direct Punctuality loss cases on C&W account	48	7	4	21	17	19.05
e)	Total Punctuality loss cases on C&W account	120	9	7	25	30	-20.00%
f)	Train Parting	70	10	4	27	17	37.04%

Action plan to reduce equipment failure:

i) Wagon Detachment:

, There are two main causes for wagon detachment – Hot Axles & coupler defects - there being 14 cases of hot axles. To reduce cases of hot axles, special emphasis is being given on feeling of axle boxes at terminal TXR points with the help of infrared thermometer. For coupler defects, ROH Depot has been advised to check all parameters of CBC during ROH.

Following actions are being taken to reduce the wagon detachments

- Damage of wagons in siding is being monitored to reduce incidences of body bulging of wagons enroute.
- POH workshops are being advised about all such cases for taking remedial measures. [ECoR does not have any wagon POH shop].
- Other weak areas are being identified for further improvement.

ii) Train Parting:

There has been increase in train parting cases in this period. An analysis of train parting cases has been done & divisions have been advised to take action on following points.

- a) Joint investigation of train parting cases at officers level.
- b) Improving maintenance practices of CBC components.
- c) Counseling of running staff on proper driving techniques,
- d) Ensuring proper GDR checks by Crew while taking over the train.

iii) Hot Axles:

- a) Rolling in examination at terminating TXR points and examination points is being done meticulously.
- b) A technical circular for monitoring and detection of hot axle has been issued to the field units for guidance and followed up to detect the potential warm box which may cause problem/detachment in section.
- c) The POH workshops are being advised about all such cases for taking remedial measures. [ECoR does not have any wagon POH shop]

6.0 CARRIAGE & WAGON

East Coast Railway comprises of 03 Divisions – KUR, WAT & SBP. All three divisions are headed by Sr. Divisional Mechanical Engineers

6.1 **Repair of 'C' Category Unloadable Wagons:** As per Railway Board's letter No 208/M(N)/951/21 Pt dt 2nd July 2010, ECoR has been asked to repair 30 'C' category BOXN unloadable wagons per month at VSKP. A special gang has been formed at CSL/VSKP by reorganizing man power & on an average 25 wagons was repaired during 2011-12 against 24 nos. Action has been initiated for procurement of materials on a regular basis and to outsource welding work to achieve the out-turn of 30 wagons per month in future.

6.2 Setting up of Wagon Manufacturing Factory:

A proposal for setting up of wagon manufacturing factory at Sitapalli Village near Jaganathpur Railway station in Ganjam Distt of Odisha on 101.604 acres land in Sitapalli Village for setting up of Wagon Manufacturing Factory has been prepared at an estimated cost of Rs. 184.25 crore under PH-42(Cap) and sanctioned by Railway Board vide pink book item No. 389/2012-13.

7.0 INNOVATIONS AND SYSTEM IMPROVEMENT

7.1 **Side pillar pressing device:** Body damages including stanchions is a frequent problem in wagons and repairs to these stanchions is a tedious and time consuming task. In sick line, it is not possible to get back the alignment of pillars.

To overcome the above problem, WAT Division has fabricated a **side pillar pressing device** at VSPS Depot locally for pressing these broken pillars (Stanchions) to correct alignment. This device aids in strong and sound welding work.



7.2 Test bench for Door Operating Mechanism(DOM) cylinder

The staffs of C&W Depot OEC have developed a test stand for testing of door operating mechanism cylinders during ROH and defective / repaired DOM cylinders of BOBRN wagons. This test stand facilitates easy identification of defects / leaks if any on DOM cylinder developed due to wear and tear of seals, sealing ring of end cover and piston rings.

Benefits:

- Improve the reliability of DOM cylinders thereby of BOBRN wagons.



7.3 CBC shank lifting and inserting device: A CBC shank lifting and inserting device has been fabricated indigenously by staff of RHO Depot/VSPS. *The device has been provided with wheels for easy movement and screw mechanism for horizontal and vertical movement of CBC for adjustment. The equipment can be lifted upto the required height and then inserted into the draft gear pocket of a wagon with minimum effort. This device can be used for transportation and fixing of CBC equipment by a single person. Thus saving manpower and taking care of safety on handling.*



Wheel for adjusting the height



Wheel for guiding the CBC in to the draft gear pocket

