आज़ादी का अमृत महोत्सव

भारत सरकार GOVERNMENT OF INDIA
रेल मंत्रालय MINISTRY OF RAILWAYS
रेलवे बोर्ड RAILWAY BOARD

Azadi Ka Amrit Mahotsav

E office: 3324111

No.2019/M (N)/204/6 New Delhi, Dated 25.01.2023

The Principal Chief Mechanical Engineer
All Zonal Railways

Sub: Prohibiting Loading of steel in BOXNHL wagons.

Ref.: RDSO's letter no.MW/BOXNHL dated 20.01.2023 (copy enclosed).

****

RDSO has examined the causes of premature condemnation of BOXNHL wagons. Vide letter under reference above, RDSO has communicated that the likely reason for damage to BOXNHL wagons are due to mishandling of the wagons during loading/unloading and operations.

RDSO has further stated that one of the several reasons for generation of multiple cracks and heavy sagging in Centre Sill of BOXNHL wagons is due to Steel Coil loading. BOXNHL wagons have been designed for uniform distributed loading like coal, iron etc. and not for point loaded consignments.

In view of above, it is requested to prohibit loading of steel in BOXNHL wagons and remove the welded attachments / cleats in BOXNHL wagons wherever found during examinations.

Vimk 25/01/23

DA: As above.

(VIVEK MOHAN)
Director Mechanical Engineering (Freight)
Railway Board
Telephone no. 011-23047448
Email – dmef@rb.railnet.gov.in

Copy to: **1. PED (W&D), Railway Board**
2. EDS (Wagon), RDSO, Lucknow
3. GM/FMM, CRIS

फैक्स / Fax : 91-0522-2452494
टेलीफोन / Tele: 0522- 2462638
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सत्यमेव जयते

भारत सरकार –रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ – 226011
Government of India - Ministry of Railways
Research Designs & Standards Organisation
Lucknow – 226011

No. MW/BOXNHL

Date: 20.01.2023

DME(Freight),
Railway Board,
Rail Bhavan,
New Delhi-110001

Sub: Request for approval of condemnation sanction for 21 nos. under aged wagons lying at Wagon Shop / Kharagpur workshop.

Ref: Railway Board letter no 2019/M(N)/60/6 (e-3318728) dated 06.01.2023

1. Vide letter under reference above, officials of RDSO visited Kharagpur workshop to check the wagons which have been requested for condemnation by Kharagpur workshop. The main cause of concern about these wagons regarding premature condemnation is that these wagons are being recommended for condemnation without even completing 50% of their codal life.
2. Total 21 nos. wagons have been requested for condemnation by Kharagpur workshop was thoroughly examined. Out of 21 wagons, conditions of the total of 05 wagons (02 BOXNHL, 01 BOXNLW, 01 BRN and 01 BVZI) found as repairable and these wagons can be repaired as per guidelines issued by RDSO. Details of wagons which are repairable/non-repairable are mentioned under Table-2 & Table-3 of Annexure-1.
3. The total 21 nos. wagons proposed for condemnation are open type, flat type, hopper type and brake van type. Wagon wise observations are as under:

a) BOXNHL Wagon:

i. The proposed condemnation of 12 nos. BOXNHL wagons in which 10 nos. wagons are Non-repairable and 02 nos. BOXNHL wagons are repairable.

ii. Majority of cases for condemnation of BOXNHL wagons is due to cracks occurring at multiple locations and heavy sagging of centre sill. In two wagons cracks in centre sill have started from one side and propagated to other side across the top flange of Centre sill.

iii. The likely reasons for damages are due to mishandling of the wagon during loading/unloading and during operations. It seems that one of the several reasons for generation of multiple cracks and heavy sagging in centre sill of BOXNHL wagons is due to steel coil loading.

iv. 04 nos. wagons found with damages due to accident and point loaded consignments (steel coil loading). The BOXNHL wagon has been designed for uniform distributed loads like loading of coal, iron ore etc., not for point loaded consignments.

v. The floor of several BOXNHL wagons has been modified locally with steel cleats/stoppers to enable steel coil loading and securing at the time of its loading of steel coils.

vi. As per loading diagram no. WD-22038-S-03 provided by RDSO, vide letter no. MW/BOSTHSM2 dated 02.06.2022, steel coils have been allowed for loading in BOST and BOXN wagon.

vii. The maximum weight of the steel coil to be loaded at the specified locations (at bolster and center of the wagon) are mentioned in the loading diagram but most of the cases loading of steel coil are not as per loading diagram which is one of the reasons of damage/failure of centre sill (photos of steel coil loading is attached as Annexure-II). Railway Board may take a view.

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b) BOXNLW Wagon:

I. The proposed 03 nos. BOXNLW wagons in which conditions of centre sills of 01 nos. BOXNLW wagons is repairable condition since the material of centre sill is IRS:M41 which is more ductile and easily repairable than IRS:M44. This damaged BOXNLW wagon can be repaired following the RDSO issued guidelines.

II. The conditions of Centre sill and other key members (like Sole bar, head stock, cross bar etc.) of 02 nos. BOXNLW wagon are heavily damaged/cracked and corroded. Due to heavy damages/cracks and heavy corrosion in the main load bearing members of the wagon these 02 nos. BOXNLW wagons cannot be repaired.

c) BRNA Wagon:

The proposed condemnation of 01 nos. BRNA wagon without bogie brake components was placed on the other BRN wagon. Detail investigation was not feasible only visual examination conducted and found damages and heavily corroded and it seems wagon is not repairable because of heavy damage & corrosion.

d) BRN wagon :

On examination of the proposed 01 nos. BRN wagon, sagging and corrosion observed but the damaged & bend members can be restored / repaired as per RDSO issued guidelines.

e) BRNAHS Wagon:

In the proposed condemnation of 02 nos. BRNAHS wagons, heavy sagging, damages, bend and corrosion observed in the key members of the wagons which cannot be restored / repaired as per RDSO issued guidelines.

f) BVZI Wagon:

The proposed condemnation of 01 nos. BVZI wagon has been examined and found in good condition except damages at one or two locations. The load bearing members are in good condition. The damaged & bent members can be restored/repaired as per RDSO issued guidelines.

g) BOBRNM1 Wagon:

Very heavy corrosion observed in the hopper plates, side walls, cross ridge and load bearing members (center sill, sole bar, head stock etc.). Hence this wagon can not be repaired by following RDSO issued guidelines.

4. ACMT/KGP was also present during inspection of the listed wagons and has taken material sample of 5 nos damaged wagons (01 BOXNHL, 02 BOXNLW, 01 BRNAHS, 01 BOBRNM1) for metallurgical analysis. Metallurgical reports are attached as Annexure-3. The chemical compositions of test samples obtained from KGP workshop have been compared with their respective material specifications. The chemical compositions of test samples obtained from KGP workshop are almost at par with the specified ranges given in their respective material specifications.

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ARVIND KUMAR

Digitally signed by ARVIND KUMAR
DN: cn=ARVIND KUMAR, c=IN, st=UTTAR PRADESH, o=MINISTRY OF RAILWAYS, ou=MINISTRY OF RAILWAYS, serialNumber=F10E98F39668A2DB6570BFB1B5426E8C921AB13E8179DBAE7C49E1256932D6CF
Date: 2023.01.20 18:09:38 +05'30'

D.A.: Annexure-I, II , III & IV

(Arvind Kumar)
Jt. Director/WD-II
For Director General/RDSO

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ANNEXURE -1

Table-1: List of the wagons for which condemnation has been applied by KGP Workshop:

S/no	Type of wagon	Wagon no	Name of manufactures & year
1	BOXNHL	22160866937	TEXMACO, 2009
2	BOXNLW	14120812580	2008
3	BOXNHL	22141348520	ASR, 2013
4	BOXNLW	14120940030	BWT, 2009
5	BOXNHL	22121586508	JRIL, 2015
6	BOXNLW	14120939928	BWT, 2009
7	BOXNHL	22120933501	BESCO, 2009
8	BOXNHL	22130963352	TEXMACO, 2009
9	BOXNHL	22130961860	TEXMACO, 2009
10	BOXNHL	22111214251	ASR, 2012
11	BOXNHL	22120930777	TEXMACO, 2009
12	BOXNHL	22100980129	TEXMACO, 2009
13	BOXNHL	22130962614	TEXMACO, 2009
14	BOXNHL	22150963766	TEXMACO, 2009
15	BOXNHL	22100983854	2009
16	BVZI	86151108758	ASR Workshop,2011
17	BRNAHS	56070511182	Braithwaite,2005/07
18	BRNAHS	56110858956	2008
19	BRN	55080140825	2001
20	BRNA	55030822009	2008
21	BOBRNM1	72100312307	2003

Table-2: **List of wagons which may be repaired:**

S/no	Type of wagon	Wagon no	Name of manufactures & year
1	BOXNHL	22130963352	TEXMACO, 2009
2	BOXNHL	22100980129	TEXMACO, 2009
3	BOXNLW	14120812580	2008
4	BVZI	86151108758	ASR Workshop,2011
5	BRN	55080140825	2001

Table-3: List of wagons which may not be repaired:

S/no	Type of wagon	Wagon no	Name of manufactures & year
1	BOXNHL	22160866937	TEXMACO, 2009
2	BOXNHL	22141348520	ASR, 2013
3	BOXNHL	22121586508	JRIL, 2015
4	BOXNHL	22120933501	BESCO, 2009
5	BOXNHL	22130961860	TEXMACO, 2009
6	BOXNHL	22111214251	ASR, 2012
7	BOXNHL	22120930777	TEXMACO, 2009
8	BOXNHL	22130962614	TEXMACO, 2009
9	BOXNHL	22150963766	TEXMACO, 2009
10	BOXNHL	22100983854	2009
11	BOXNLW	14120940030	BWT, 2009
12	BOXNLW	14120939928	BWT, 2009
13	BRNA	55030822009	2008
14	BOBRNM1	72100312307	2003
15	BRNAHS	56070511182	Braithwaite,2005/07
16	BRNAHS	56110858956	2008

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ANNEXURE -II

Loading of steel coils in BOXNHL wagon having same size at all location:



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Annexure-III

Wagon wise Material Specification

S.No.	Wagon Type	Material
1	BOBR	IS:2062-E250
2	BRNAHS	IS:2062-E250
3	BOXNHL	IRS:M44
4	BOXNLW	IRS:M41

Composition of different types of materials:

S.No	Material properties	IS:2062 E-250	IS:2062 E450 Br with Cu	IRS:M41	IRS: M44
1.	Yield strength	250 N/mm²	450 N/mm²	300-340 N/mm²	350-450 N/mm²
2.	Percentage Elongation	23%	20%	22%	25%
3..	Chemical composition				
	% C	0.23 max	0.22 max	0.1 max	0.03 max
	%Mn	1.5 max	1.6 max	0.25 to 0.45	0.8 to 1.5
	%Si	0.4 max	0.45 max	0.28 to 0.72	1 max
	%Ni	----	----	0.2 to 0.47	1.5 max
	%Cu	0.2 to 0.35	0.2 to 0.35	0.3 to 0.6	----
	%Cr	-----	-----	0.35 to 0.6	10.8 to 12.5
	%S	0.04 to 0.045	0.045	0.03 max	0.03 max
	%P	0.04 to 0.045	0.045	0.075 to0.14	0.03 max
	%Ti	-----	-----	------	0.75 max

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दक्षिण पूर्व रेलवे/South Eastern Railway

कार्यालय
रसायनी एवं धातुविद
खड़गपुर कारखाना
खड़गपुर - 721301

Office of the
Chemist & Metallurgist
Kharagpur Workshop
Kharagpur -721301

पत्रांक: सीएमटी /5/5/2023/CSD/49-53 /54 Date:19.01.2023.

Joint Director
Office of the Wagon Directorate
RDSO/Lucknow.

Sub: Chemical composition of samples obtained from condemned wagons during audit.
Ref: AWM-II(Wagon)/KGP's letter no: Dy.CME (W)/TC/227 dtd: 16/01/2023.

S No.	Wagon No.	Wagon Type	Nomenclature	Report
1	ECR 72100312307	BOBR	Centre Seal Hopper	Annexure A
2	NWR 56110858956	BRNAHS	French Channel	Annexure B
3	NWR 22111214251	BOXNHL	Floor Plate	Annexure C
4	ECoR 14120812580	BOXNLW	Body Bolster	Annexure D
5	ECoR 14120939928	BOXNLW	Main Transom	Annexure E

The results of the samples are forwarded for your information & further course of action at your end please.
NB: As discussed, the test results are to be compared with the specification at your end.

19/1/23
(U.K.Pattanayak)
ACMT/KGPW
सहायक रसायनी एवं धातुविद
खड़गपुर कारखाना
दक्षिण पूर्व रेलवे
Asst. Chemist & Metallurgist
Kharagpur Workshop
S. E. Railway.

Copy to: Asst.Works Manager-II(Wagon)/S.E.Railway/KGP.

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ANNEXURE A

DOCUMENT NO.:KGPW/TEST/03

CMT LAB, Kharagpur Workshop
(NABL Accredited Testing Laboratory)
South Eastern Railway
Kharagpur, Paschim Mednipur-721301

Test Report

ULR NO- NA
Test Certificate no: CMT/5/5/2023/CSD/49/54 Issue Date: 19.01.2023
Name and Address of Client: Asst. Works Manager-II(Wagon)/S.E.Railway/KGP
Letter No: Dy.CME(W)/TC/227 dtd. 16.01.2023 ID No: 235014
Job No:2023/CHEM/49 Item Description: Centre Seal Hopper
Drawing No.Nil Quantity: 01 Temperature (°C):22.8
Received on: 16.01.2023 Tested on: 17.01.2023-18.01.2023
Specification: Nil Humidity(%): 56
Test method: IS: 8811/1998(RA2018)

Test Results:

Sr.No	Characteristics tested	Obtained Values	Measurement uncertainty (At 95% confidence level, K=2)
1	% Carbon	0.15	± 0.006
2	% Silicon	0.13	± 0.009
3	% Manganese	0.85	± 0.016
4	% Phosphorous	0.016	± 0.003
5	% Sulphur	0.009	± 0.002
6	% Copper	0.34	± 0.006

Remarks:The analytical datas are forwarded for your ready referecence please.

Note:
1.Test results pertain only to the items tested in this laboratory as received from your end.
2.We hereby certify that the above figures are correct as contained in the records of the laboratory.
3.Any reproduction/ Xerox, in part or full is not valid.
4.Samples are disposed after three months of testing.

19/1/23
NAME: U.K. Pattanayak
DESIGNATION: Asstt. Chemist & Metallurgist
(COUNTER SIGNED)

19/01/23
NAME: Irani Maji
DESIGNATION: CMS
(AUTHORISED SIGNATORY)

*****End of Test Report****

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ANNEXURE B

DOCUMENT NO.:KGPW/TEST/03

CMT LAB, Kharagpur Workshop
(NABL Accredited Testing Laboratory)
South Eastern Railway
Kharagpur, Paschim Mednipur-721301

Test Report

ULR NO- NA
Test Certificate no: CMT/5/5/2023/CSD/50/59 Issue Date: 19.01.2023
Name and Address of Client: Asst. Works Manager-II(Wagon)/S.E.Railway/KGP
Letter No: Dy.CME(W)/TC/227 dtd. 16.01.2023 ID No: 235015
Job No:2023/CHEM/50 Item Description: French Channel
Drawing No.Nil Quantity: 01 Temperature (°C):22.8
Received on: 16.01.2023 Tested on: 17.01.2023-18.01.2023
Specification: Nil Humidity(%): 56
Test method: IS: 8811/1998(RA2018)

Test Results:

Sr.No	Characteristics tested	Obtained Values	Measurement uncertainty (At 95% confidence level, K=2)
1	% Carbon	0.22	± 0.006
2	% Silicon	0.11	± 0.009
3	% Manganese	0.78	± 0.016
4	% Phosphorous	0.020	± 0.003
5	% Sulphur	0.028	± 0.002
6	% Copper	0.26	± 0.006

Remarks:The analytical datas are forwarded for your ready referecence please.

Note:
1.Test results pertain only to the items tested in this laboratory as received from your end.
2.We hereby certify that the above figures are correct as contained in the records of the laboratory.
3.Any reproduction/ Xerox, in part or full is not valid.
4.Samples are disposed after three months of testing.

19/1/23
NAME: U.K. Pattanayak
DESIGNATION: Asstt. Chemist & Metallurgist
(COUNTER SIGNED)

19/01/23
NAME: Irani Maji
DESIGNATION: CMS
(AUTHORISED SIGNATORY)

*****End of Test Report****

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ANNEXURE C

DOCUMENT NO.:KGPW/TEST/03

CMT LAB, Kharagpur Workshop
(NABL Accredited Testing Laboratory)
South Eastern Railway
Kharagpur, Paschim Mednipur-721301

Test Report

ULR NO- NA
Test Certificate no: CMT/5/5/2023/CSD/51/ 54 Issue Date: 19.01.2023
Name and Address of Client: Asst. Works Manager-II(Wagon)/S.E.Railway/KGP
Letter No: Dy.CME(W)/TC/227 dtd. 16.01.2023 ID No: 235016
Job No:2023/CHEM/51 Item Description: Floor Plate
Drawing No.Nil Quantity: 01 Temperature (°C):22.8
Received on: 16.01.2023 Tested on: 17.01.2023-18.01.2023
Specification: Nil Humidity(%): 56
Test method: IS: 9879/1998(RA2015)

Test Results:

Sr.No	Characteristics tested	Obtained Values	Measurement uncertainty (At 95% confidence level, K=2)
1	% Carbon	0.024	± 0.005
2	% Silicon	0.45	± 0.006
3	% Manganese	1.42	± 0.011
4	% Phosphorous	0.020	± 0.001
5	% Sulphur	0.007	± 0.001
6	% Nickel	0.19	± 0.006
7	% Chromium	11.29	± 0.050
8	% Titanium	Trace	---

Remarks:The analytical datas are forwarded for your ready referecence please.

Note:
1.Test results pertain only to the items tested in this laboratory as received from your end.
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19/1/23
NAME: U.K. Pattanayak
DESIGNATION: Asstt. Chemist & Metallurgist
(COUNTER SIGNED)

19/01/23
NAME: Irani Maji
DESIGNATION: CMS
(AUTHORISED SIGNATORY)

*****End of Test Report***

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ANNEXURE D

DOCUMENT NO.:KGPW/TEST/03

CMT LAB, Kharagpur Workshop
(NABL Accredited Testing Laboratory)
South Eastern Railway
Kharagpur, Paschim Mednipur-721301

Test Report

ULR NO- NA
Test Certificate no: CMT/5/5/2023/CSD/52/54 Issue Date: 19.01.2023
Name and Address of Client: Asst. Works Manager-II(Wagon)/S.E.Railway/KGP
Letter No: Dy.CME(W)/TC/227 dtd. 16.01.2023 ID No: 235017
Job No:2023/CHEM/52 Item Description: Body Bolster
Drawing No.Nil Quantity: 01 Temperature (°C):22.8
Received on: 16.01.2023 Tested on: 17.01.2023-18.01.2023
Specification: Nil Humidity(%): 56
Test method: IS: 8811/1998(RA2018)

Test Results:

Sr.No	Characteristics tested	Obtained Values	Measurement uncertainty (At 95% confidence level, K=2)
1	% Carbon	0.086	± 0.006
2	% Silicon	0.37	± 0.010
3	% Manganese	0.42	± 0.016
4	% Phosphorous	0.10	± 0.004
5	% Sulphur	0.009	± 0.002
6	% Nickel	0.29	± 0.010
7	% Chromium	0.43	± 0.015
8	% Copper	0.34	± 0.007

Remarks:The analytical datas are forwarded for your ready referecence please.

Note:
1.Test results pertain only to the items tested in this laboratory as received from your end.
2.We hereby certify that the above figures are correct as contained in the records of the laboratory.
3.Any reproduction/ Xerox, in part or full is not valid.
4.Samples are disposed after three months of testing.

19/1/23
NAME: U.K. Pattanayak
DESIGNATION: Asstt. Chemist & Metallurgist
(COUNTER SIGNED)

19/01/23
NAME: Irani Maji
DESIGNATION: CMS
(AUTHORISED SIGNATORY)

*****End of Test Report****

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ANNEXURE E

DOCUMENT NO.:KGPW/TEST/03

CMT LAB, Kharagpur Workshop
(NABL Accredited Testing Laboratory)
South Eastern Railway
Kharagpur, Paschim Mednipur-721301

Test Report

ULR NO- NA
Test Certificate no: CMT/5/5/2023/CSD/53/54 Issue Date: 19.01.2023
Name and Address of Client: Asst. Works Manager-II(Wagon)/S.E.Railway/KGP
Letter No: Dy.CME(W)/TC/227 dtd. 16.01.2023 ID No: 235018
Job No:2023/CHEM/53 Item Description: Main Transom
Drawing No.Nil Quantity: 01 Temperature (°C):22.8
Received on: 16.01.2023 Tested on: 17.01.2023-18.01.2023
Specification: Nil Humidity(%): 56
Test method: IS: 8811/1998 (RA2018)

Test Results:

Sr.No	Characteristics tested	Obtained Values	Measurement uncertainty (At 95% confidence level, K=2)
1	% Carbon	0.18	± 0.006
2	% Silicon	0.049	± 0.009
3	% Manganese	0.74	± 0.016
4	% Phosphorous	0.015	± 0.003
5	% Sulphur	0.015	± 0.002
6	% Copper	0.21	± 0.006

Remarks:The analytical datas are forwarded for your ready referecence please.

Note:
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4.Samples are disposed after three months of testing.

19/1/23
NAME: U.K. Pattanayak
DESIGNATION: Asstt. Chemist & Metallurgist
(COUNTER SIGNED)

19/01/23
NAME: Irani Maji
DESIGNATION: CMS
(AUTHORISED SIGNATORY)

*****End of Test Report****

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ANNEXURE-IV

Wagon Condition Report :
S.N.-1

Wagon details:

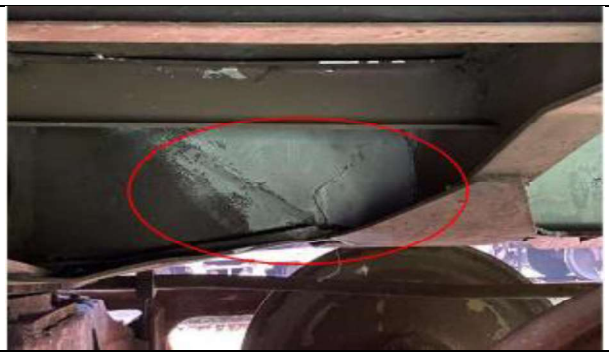
Type of wagon	BOXNHL	Name of Manufacturer	TWL
Wagon no.	22160866937	Year of Manufacturing	2009
ROH date/Workshop	-	POH date/Workshop	JMPW/17.04.2015

Observation Report:

1. Underframe-Assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	No crack found	-
2	Head stock	Bend & damage	No crack found	-
3	Centre sill	Multiple crack in CS	1. At one side web cracked but not up to top portion at junction of both centre sills & at end of stiffening plates 2. At other side centre sill cracked but not up to top portion at junction of both centre sills.	Not Repairable
4	Bolster	Crack, bolster with bottom Gusset bend	No Crack found	-
5	Cross bar	Damage	Crack found at location of brake cylinder	Repairable
6	Stringers	Bend, crack & twisted	Bend found	Repairable
7	Floor plate	Bend & damage	Floor plate damage found due to coil loading	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-





2. Body Side assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found upto height of solebar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Since cracks in centre sill are at multiple locations, this wagon cannot be repaired. The floor of this wagon has been provided with cleat for steel coil securing, Hence it seems that steel coil has been loaded.

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Wagon details:

Type of wagon	BOXNLW	Name of Manufacturer	Missing
Wagon no.	14120812580	Year of Manufacturing	2008
ROH date/Workshop	-	POH date/Workshop	-

1. Underframe-Assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	Crack found in side sole bottom flange near bolster	Repairable
2	Head stock	Bend & damage	No crack found	-
3	Centre sill	Multiple crack in CS	No crack found	-
4	Bolster	Multiple crack in bolster	Crack found in one bolster but repairable	Repairable
5	Cross bar	Damage & bend	Corroded but repairable	Repairable
6	Stringers	Bend, crack & twisted	Bend found	Repairable
7	Floor plate	Bend & damage	Floor plate damage found	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-



2. Body Side assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found upto height of solebar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: There are no serious cracks found in underframe members hence this wagon may be repaired.

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Wagon details:

Type of wagon	BOXNHL	Name of Manufacturer	ASR
Wagon no.	22141348520	Year of Manufacturing	2013
ROH date/Workshop	BSL /26.07.17	POH date/Workshop	JWL/ 01.13

1. Underframe-Assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	No crack found	-
2	Head stock	Bend & damage	No crack found	-
3	Centre sill	CS crack in 100%	1.In one side damage extending in transverse direction 15 cm up to top flange at the end of stiffening plate. 2.On other side 22 cm Crack found in transverse direction.	Not repairable
4	Bolster	Multiple crack in bolster	No damage found	-
5	Cross bar	Damage , bend & cracked	No crack found	-
6	Stringers	Bend, crack & twisted	Bend found	Repairable
7	Floor plate	Bend & damage	Floor plate damage found	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured..	-





2. Body Side assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found upto height of solebar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Since cracks in center sill are at multiple locations, this wagon cannot be repaired. The floor of this wagon has been provided with cleat for steel coil securing, Hence it seems that steel coil has been loaded.

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Wagon details:

Type of wagon	BOXNLW	Name of Manufacturer	BWT
Wagon no.	14120940030	Year of Manufacturing	2009
ROH date/Workshop	BNDM/ 01.07.18	POH date/Workshop	JHSW/ 01.07.18

1. Underframe-Assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	Crack found in one side of sole bar at bottom flange near bolster	Repairable
2	Head stock	Bend & damage	No crack found	-
3	Centre sill	CS crack in 80% at two portion & badly corroded	1. Crack found up to height of half of the centre sill web at the joint of CS. 2. Crack found up to height of half of the centre sill web at the end of stiffening plate	Not Repairable
4	Bolster	Body bolster badly corroded	Corroded	Repairable
5	Cross bar	Damage , bend & cracked	Corroded	Repairable
6	Stringers	Bend, crack & twisted	Bend & corroded	Repairable
7	Floor plate	Bend, crack & twisted	Floor plate damage found	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-





2. Body Side assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found upto height of solebar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Due to heavy cracks & corrosion found in key underframe members of wagon hence this wagon cannot be repaired.

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S.N. 5

Wagon details:

Type of wagon	BOXNHL	Name of Manufacturer	JRIL
Wagon no.	22121586508	Year of Manufacturing	2015
ROH date/Workshop	VTA/ 09.03.18	POH date/Workshop	JRIL/08.11.15

1. Underframe-Assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	No crack found	-
2	Head stock	Bend & damage	No crack found	-
3	Centre sill	CS crack in web and flange	1. Full damage in top, bottom flange and web 2. Large gap between web and flange. Near bolster. 3. Sagged heavily with 55 mm depth observed at centre of wagon	Not repairable
4	Bolster	Body bolster bent	Not found bent	-
5	Cross bar	Damage , bend & cracked	Damaged	Repairable
6	Stringers	Bend, crack & twisted	Damaged	Repairable
7	Floor plate	Bend, crack & twisted	Floor plate damaged	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-





2. Body Side assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found upto height of solebar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Since crack in center sill is extensive along with heavy sagging, this wagon cannot be repaired. The floor of this wagon has been provided with cleat for steel coil securing, Hence it seems that steel coil has been loaded.

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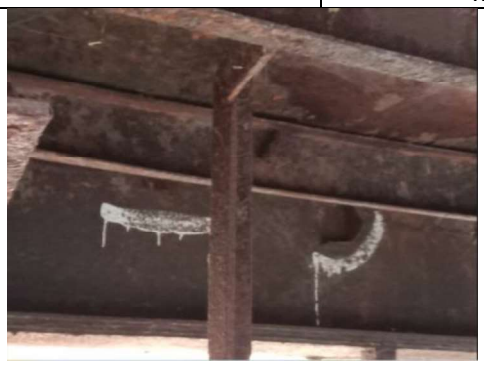
S/no.-6

Wagon details:

Type of wagon	BOXNLW	Name of Manufacturer	BWT
Wagon no.	14120939928	Year of Manufacturing	2009
ROH date/Workshop	BSP/02.11.20	POH date/Workshop	KTTW/23.04.16

1. Underframe-Assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	Crack found in bottom flange on one side near bolster	Repairable
2	Head stock	Bend & damage	Corroded	
3	Centre sill	CS crack in web and flange	Not damaged. Corroded.	Repairable
4	Bolster	Body bolster bent	Corroded and damaged at location of slot of bolster web near solebar location	Repairable
5	Cross bar	Damage , bend & cracked	Damaged	Repairable
6	Stringers	Bend, crack & twisted	Damaged	Repairable
7	Floor plate	Bend, crack & twisted	Floor plate damaged	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-



2. Body Side assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found upto height of solebar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Due to heavy cracks & corrosion found in key underframe members of wagon hence this wagon cannot be repaired.

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S.N.-7

Wagon details:

Type of wagon	BOXNHL	Name of Manufacturer	BESCO
Wagon no.	2212093501	Year of Manufacturing	2009
ROH date/Workshop	BNDM/04.08.19	POH date/Workshop	JHSW/30.06.15

1. Underframe-Assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	No damage found	-
2	Head stock	Bend & damage	No damage found	-
3	Centre sill	CS crack in web and flange	Sagging found at centre of wagon between 70 to 105 mm.	Not Repairable
4	Bolster	Body bolster bent	No damage found	-
5	Cross bar	Damage , bend & cracked	No damage found	-
6	Stringers	Bend, crack & twisted	Damaged	Repairable
7	Floor plate	Bend, crack & twisted	Floor plate damaged	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-





2. Body Side assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found upto height of solebar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Since crack in center sill is extensive along with heavy sagging, this wagon cannot be repaired. The floor of this wagon has been provided with cleat for steel coil securing, Hence it seems that steel coil has been loaded.

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S.N. 8

Wagon details:

Type of wagon	BOXNHL	Name of Manufacturer	TEXMACO
Wagon no.	221306963352	Year of Manufacturing	2009
ROH date/Workshop	DDU/16.02.19	POH date/Workshop	JHSW/19.06.15

1. Underframe-Assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	Crack at bottom flange of solebar at both ends near location of bolsters	Repairable
2	Head stock	Bend & damage	No damage found	-
3	Centre sill	CS crack in web and flange	1.Sagging found at centre of wagon 9 to 33 mm between bolsters. 2.Crack upto approximately half height of web at stiffening plate	Repairable
4	Bolster	Body bolster bent	No damage found	-
5	Cross bar	Damage , bend & cracked	No damage found	-
6	Stringers	Bend, crack & twisted	Damaged	Repairable
7	Floor plate	Bend, crack & twisted	Floor plate damaged	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-





2. Body Side assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found upto height of solebar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Sagging and crack are there but it is repairable. Hence this wagon can be repairable.

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S.N.-9

Wagon details:

Type of wagon	BOXNHL	Name of Manufacturer	TEXMACO
Wagon no.	22130961860	Year of Manufacturing	2009
ROH date/Workshop	BSP/10.10.17	POH date/Workshop	JUDW/04.06.15

1. Underframe-Assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	Sole bar found bend.	Not Repairable
2	Head stock	Bend & damage	No damage found	-
3	Centre sill	CS crack in web and flange	Sagging found at centre of wagon 186 mm.	Not Repairable
4	Bolster	Body bolster bent	No damage found	-
5	Cross bar	Damage , bend & cracked	Damaged	Repairable
6	Stringers	Bend, crack & twisted	Damaged	Repairable
7	Floor plate	Bend, crack & twisted	Floor plate damaged	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-





2. Body Side assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found upto height of solebar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Since crack in center sill is extensive along with heavy sagging, this wagon cannot be repaired. The floor of this wagon has been provided with cleat for steel coil securing, Hence it seems that steel coil has been loaded.

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Wagon details:

Type of wagon	BOXNHL	Name of Manufacturer	ASR
Wagon no.	22111214251	Year of Manufacturing	2012
ROH date/Workshop	PPBIA/14.10.15	POH date/Workshop	-

1. Underframe-Assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	No damage found	Not Repairable
2	Head stock	Bend & damage	No damage found	-
3	Centre sill	CS crack in web and flange	1. Multiple crack found 2. Crack initiated at bottom flange (one side) and propagated across top flange and reached up to bottom flange (other side)	Not Repairable
4	Bolster	Body bolster bent	No damage found	-
5	Cross bar	Damage , bend & cracked	No damage found	-
6	Stringers	Bend, crack & twisted	Damaged	Repairable
7	Floor plate	Bend, crack & twisted	Floor plate damaged	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-





2. Body Side assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found up to height of sole bar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Since cracks in centre sill are at multiple locations, this wagon cannot be repaired. The floor of this wagon has been provided with cleat for steel coil securing, Hence it seems that steel coil has been loaded.

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S.N.-11

Wagon details:

Type of wagon	BOXNHL	Name of Manufacturer	TEXMACO
Wagon no.	22120930777	Year of Manufacturing	2009
ROH date/Workshop	VSPS/ 19.11.13	POH date/Workshop	TEXMA/22.03.19

1. Underframe-Assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	No damage found	-
2	Head stock	Bend & damage	No damage found	-
3	Centre sill	CS crack in web and flange	Crack (at stiffening plate) has propagated across the flanges and is heavily sagged. Sagging depth 140mm at the centre of wagon.	Not Repairable
4	Bolster	Body bolster bent	No damage found	-
5	Cross bar	Damage , bend & cracked	Damage found	Repairable
6	Stringers	Bend, crack & twisted	Damaged	Repairable
7	Floor plate	Bend, crack & twisted	Floor plate damaged	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-





2. Body Side assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found up to height of sole bar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Since crack in center sill is extensive along with heavy sagging, this wagon cannot be repaired. The floor of this wagon has been provided with cleat for steel coil securing, Hence it seems that steel coil has been loaded.

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Wagon details:

Type of wagon	BOXNHL	Name of Manufacturer	TEXMACO
Wagon no.	22100980129	Year of Manufacturing	2009
ROH date/Workshop	-	POH date/Workshop	KTTW/17.02.16

1. Underframe-Assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	Crack at bottom flange of solebar at both ends near location of bolsters	Repairable
2	Head stock	Bend & damage	No damage found	-
3	Centre sill	CS crack in web and flange	Crack initiated (two location) at bottom flange (at the end of stiffening plate) and propagated up to half of height of CS web. Sagging depth 54 mm found	Repairable
4	Bolster	Body bolster bent	No damage found	--
5	Cross bar	Damage , bend & cracked	Damage found	Repairable
6	Stringers	Bend, crack & twisted	Damaged	Repairable
7	Floor plate	Bend, crack & twisted	Floor plate damaged	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-





2. Body Side assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found up to height of sole bar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: The developed crack in centre sill can be repairable. Hence this wagon can be repaired.

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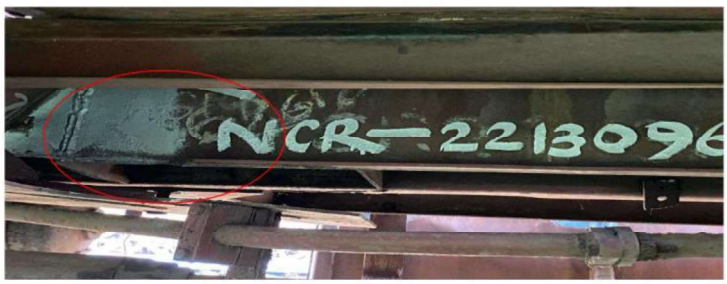
Wagon details:

Type of wagon	BOXNHL	Name of Manufacturer	TEXMACO
Wagon no.	22130962614	Year of Manufacturing	2009
ROH date/Workshop	-	POH date/Workshop	JHSW/05.05.15

1. Underframe-Assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	Twisted & Crack found at one end	Not Repairable
2	Head stock	Bend & damage	No damage found	-
3	Centre sill	CS crack in web and flange	1. Multiple cracks found initiated at bottom flange (at the end of stiffening plate) and propagated up to top flange. 2. Sagging found at centre of wagon 34 mm to 59 mm.	Not Repairable
4	Bolster	Body bolster bent	No damage found	-
5	Cross bar	Damage , bend & cracked	Damage found	Repairable
6	Stringers	Bend, crack & twisted	Damaged	Repairable
7	Floor plate	Bend, crack & twisted	Floor plate damaged	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-





2. Body Side assembly

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found up to height of sole bar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly:

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Since crack in center sill is extensive along with heavy sagging, this wagon cannot be repaired. The floor of this wagon has been provided with cleat for steel coil securing, Hence it seems that steel coil has been loaded.

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S.N.-14

Wagon details:

Type of wagon	BOXNHL	Name of Manufacturer	TEXMACO
Wagon no.	22160963766	Year of Manufacturing	2009
ROH date/Workshop	-	POH date/Workshop	JHSW/06.04.15

1. Underframe-Assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	Twisted & Crack found one side	Not Repairable
2	Head stock	Bend & damage	No damage found	-
3	Centre sill	CS crack in web and flange	1.Multiple crack found initiated at bottom flange (at the end of stiffening plate) and propagated up to top flange. 2.Sagging found at centre of wagon 50 mm.	Not Repairable
4	Bolster	Body bolster bent	No damage found	-
5	Cross bar	Damage , bend & cracked	Damage found	Repairable
6	Stringers	Bend, crack & twisted	Damaged	Repairable
7	Floor plate	Bend, crack & twisted	Floor plate damaged	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-





2. Body Side assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found up to height of sole bar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Since crack in center sill is extensive along with heavy sagging, this wagon cannot be repaired. The floor of this wagon has been provided with cleat for steel coil securing, Hence it seems that steel coil has been loaded.

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Wagon details:

Type of wagon	BOXNHL	Name of Manufacturer	Missing
Wagon no.	22100983854	Year of Manufacturing	2009
ROH date/Workshop	MGS/16.02.17	POH date/Workshop	JHSW/31.07.15

1. Underframe-Assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Sole bar	Both side sole bar crack near bolster	No damage found	-
2	Head stock	Bend & damage	No damage found	-
3	Centre sill	CS crack in web and flange	1.Multiple crack found and propagated up to top flange. 2.Sagging found at centre of wagon 65 mm to 75 mm.	Not Repairable
4	Bolster	Body bolster bent	No damage found	-
5	Cross bar	Damage , bend & cracked	Damage found	Repairable
6	Stringers	Bend, crack & twisted	Damaged	Repairable
7	Floor plate	Bend, crack & twisted	Floor plate damaged	Repairable
8	Squareness	Wagon lost squareness	Loss of squareness cannot be measured.	-



2. Body Side assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body side stanchion	Stanchion cracked and bent	Crack/bend found up to height of sole bar	Repairable
2	Body side sheet	Body side panel patch damaged	Cracks and damages found	Repairable
3	Side top coping	Bend	Cracks and damages found	Repairable
4	Middle side coping	Twisted and bend	Cracks, damages and missing found	Repairable
5	Door way stiffening crossbar	Twisted and bend	Cracks, damages and missing found	Repairable

3. Body End assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Body end stanchion	Stanchion cracked and bent	No damage found	-
2	Body end sheet	Body side panel patch damaged	No damage found	-
3	End top coping	Bend	No damage found	-
4.	Corner stanchion	Cracked	No damage found	-

4. Door assembly :

SN	Description	KGP observation	RDSO observation	Remark
1	Complete door assembly	Twisted and bent	Deficient	Replaceable
2	Locking arrangement	Damaged/Missing	Damaged/Missing	Repairable

Final Remark: Since crack in center sill is extensive along with heavy sagging, this wagon cannot be repaired. The floor of this wagon has been provided with cleat for steel coil securing, Hence it seems that steel coil has been loaded.

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WAGON CONDITION REPORT

Wagon No./Type - 56070511182 (BRNAHS)

Year/ Manufacturer- 2005/2007 (Braithwaite)

POH- BWT 05/07 **ROH- 05/13**

1. Under frame Assembly

SN	Description	Major Failure Reported by Workshop	RDSO observations	Remarks (if any)
1.	Sole Bar	Both Sole Bar heavily twisted sagged & bend	Both Sole Bar heavily twisted sagged	Sagging cannot be restored.
2.	Head Stock	Head stock bend	Minor bend in both side	It is reparable can be repair/ replaced
3.	Centre Girder	Centre Girder heavily sagged and bend	Centre Girder sagged	Sagging cannot be restored.

2. Under Frame Fitting

SN	Description	Major Failure Reported by Workshop	RDSO observations	Remarks (if any)
1.	End longitudinal Bar	End longitudinal Bar cracked and bend.	Crack & Bend not found	Ok
2.	Cross bar	Cross bar heavily cracked.	Crack and Bend not found	Ok
3.	Body Bolster	Body bolster with bottom gusset bent	Bend not found	Ok
4.	Bulk head	Both bulk head bend & damaged	Bend not found	Ok
5.	Side Crib rail	Both side Crib rail bend and damaged	Bend not found	Ok
6.	Floor Channel	Floor Channel Crack & twisted	Bend observed	Can be repairable / replaced





Observation: The Sagging of this wagon cannot be restored.

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WAGON CONDITION REPORT

Wagon No./Type - 56110858956 (BRNAHS)

Year/ Manufacturer- 2008

POH- **ROH-**

1. Under frame Assembly

SN	Description	Major Failure Reported by Workshop	RDSO observations	Remarks (if any)
1.	Sole Bar	Both Sole Bar heavily twisted	Both Sole Bar heavily Sagged.	Sagging cannot be restored.
2.	Head Stock	Head stock bend	Bend not found	Ok
3.	Centre Girder	Centre Girder heavily sagged and bend	Centre Girder heavily sagged and bend	Sagging & Bend cannot be restored.

2. Under Frame Fitting

SN	Description	Major Failure Reported by Workshop	RDSO observations	Remarks (if any)
1.	End longitudinal Bar	End longitudinal Bar cracked and bend.	Crack & Bend not found	Ok
2.	Cross bar	Cross bar heavily cracked.	Crack and Bend not found	Ok
3.	Body Bolster	Body bolster with bottom gusset bent	Bend not found	Ok
4.	Bulk head	Both bulk head bend & damaged	Bend not found	Ok
5.	Side Crib rail	Both side Crib rail bend and damaged	Corrosion found	Can be repair/replaced
6.	Floor Channel	Floor Channel Crack & twisted	Floor Channel twisted crack not found	Twisted can be corrected or replaced Channel can be replaced.

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Observation: The Sagging & Bend of this wagon cannot be restored.

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WAGON CONDITION REPORT

Wagon No./Type - 55030822009 (BRNA)

Year/ Manufacturer- 2008

POH- KGPW 10/13 **ROH- 05/18**

Remarks:

1. This BRNA wagon placed at other BRN wagon not having both bogies and wheels. So the detailed observations have not carried out.
2. Floor plate heavy damaged and corroded.
3. Both bulk head damaged and corroded.









Observation: This BRNA wagon placed at other BRN wagon not having both bogies and Wheels. So the detailed observations have not carried out.

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WAGON CONDITION REPORT

Wagon No./Type - 55080140825 (BRN)

Year/ Manufacturer- 2001

POH- RWS 11/13 **ROH- 06/18**

1. Under frame Assembly

SN	Description	Major Failure Reported by Workshop	RDSO observations	Remarks (if any)
1.	Sole Bar	Both Sole Bar twisted, sagged & bend	Sole bar sagged	Sagging can be restored, it is reparable
2.	Head Stock	Head stock bend	head stock damaged and corroded	Head stock can be replaced with new one
3.	Centre Girder	Centre Girder sagged and cracked	Centre Girder sagged crack not found	Sagging can be restored

2. Under Frame Fitting

SN	Description	Major Failure Reported by Workshop	RDSO observations	Remarks (if any)
1.	End longitudinal Bar	End longitudinal Bar cracked and bend.	End longitudinal Bar sagged, Crack not found	Can be corrected /Replaced
2.	Cross bar	Cross bar heavily cracked.	Crack not found	Ok
3.	Body Bolster	Body bolster with bottom gusset bent	Bend not found	Ok
4.	Bulk head	Both bulk head bend & damaged	Bend not found	Ok
5.	Side Crib rail	Both side Crib rail bend and damaged	Damaged observed	Can be corrected /Replaced
6.	Floor Channel	Floor Channel Crack & twisted	Floor Channel twisted	Can be corrected /Replaced

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Observation: This wagon can be repaired and Camber can be restored by RDSO procedure

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