

IRCON International Limited

New Delhi

Derailment Case & Preventive Measures

Reported Incident

Derailment of Wagon - IRCON/3018/DFCCIL-CTP-12/OCG/011-2/8046 Dt. 20.12.2021.

Date of Incident

20.12.2021 at DFCC Ch: 78.00

Cause of Derailment

- Loco 182 with 18 no's Bobrn wagons, loaded with ballast were moving from Ch.No 45+000 up line to 90+000 down line for Ballast unloading work vide order no 2021/12/187. Loco with wagons after reaching ancheli yard was shifted on downline and travelled on downline till 77+800.
- At 78+000 it shifted on upline via temporary 1 in 8.5 turnout at Navsari yard. Loco was in pulling mode and while crossing temporary turnout at Navsari Yard, 17th Bobrn wagon got derailed. The 17th wagon got decoupled from 16th wagon during derailment. Loco pilot immediately applied brakes and stopped the wagons. Around 10 sleepers were damaged in the incident.
- Wagon was rerailed at 6.00 AM on 21.12.2021

Observation at Site

- There is Level Difference in Rails (Twist) at turnout location.
- Gauge difference was also observed at turnout location
- Lack of risk perception by Loco Pilot

Remedial Measures taken

- The work train should maintain a speed of 5kmph at temporary turnout.
- Manual packing to be carried out at point & Crossing
- Before movement from turnout and point & crossing clamp fixed on switch blades to be thoroughly checked by operation team.
- Point & Curve movement to be done cautiously.

Preventive Measures

1. Responsibility Define for each & every activity
2. Check list to be filled before execution of any activity by Execution team

Movement of Bobrn wagons After reaching loading location/parking place

- 1 After placing loco and wagons in position, handbrake of first and last wagon (i.e., 1st and 18th wagon) from engine side shall be applied.
- 2 Before start of loading activity wooden wedges under axles of 1st and 18th wagon from engine side shall be provided.
- 3 Wooden Wedges shall be provided under axles of LOCO
- 4 LOCO Engine will be in running mode until activities listed above are completed. The LOCO pilot/pointsman will personally inspect and get satisfied about the arrangements.
- 5 Detachment of loco from wagons will be done only after successful completion of all above mentioned activities.
- 6 In case bobyn wagons are placed for parking only (ie no loading activity is being carried out) chain lock system will be in placed in 1st and 18th wagon.

Movement of Bobrn wagons - For movement of wagons from loading point/parking place

- 1 Loco pilot will attach Loco to wagons and place wedges under axles of Loco
- 2 Loco pilot shall build sufficient air pressure in braking system of loco.
- 3 Handbrake of first and last wagon (i.e. 1st and 18th wagon) wagon from engine side shall be released.
- 4 In case chain lock system is in place, it shall be removed
- 5 Before start of movement wooden wedges under axles of 1st and 18th wagon from engine side shall be removed
- 6 LOCO Engine will be in running mode until activities listed above are completed. The LOCO pilot/pointsman will personally inspect and get satisfied about the arrangements.
- 7 Wedges shall be provided under axles of LOCO shall be removed and loco shall move ahead

Movement of NTC Rakes - After reaching loading location/parking place

- 1 After placement of NTC rakes in position pressure inside rakes shall be brought to zero
- 2 Wooden wedges under axles of first and last rake from engine side shall be provided.
- 3 Wooden Wedges shall be provided under axles of Loco
- 4 Loco Engine will be in running mode until activities listed above are completed. The Loco pilot/pointsman will personally inspect and get satisfied about the arrangements.
- 5 Detachment of loco from wagons will be done only after successful completion of all above mentioned activities.
- 6 In case rakes are placed for parking only (ie no loading activity is being carried out) chain lock system will be in placed in first and last wagon.

Movement of NTC Rakes - During loading of Rail Panels

- 1 After placement of NTC rakes in position by Loco pressure inside rakes shall be brought to zero
- 2 Loco pilot shall build sufficient air pressure in braking system of loco.
- 3 Wedges shall be provided under axles of Loco with Loco attached to rakes.
- 4 Wooden wedges under axles of first and last rake from engine side shall be provided.
- 5 LOCO will be in running mode until activities listed above are completed. The LOCO pilot/pointsman will personally inspect and get satisfied about the arrangements.
- 6 Wedges shall be provided under axles of LOCO shall be detached and loco shall move ahead

Movement of NTC Rakes - Movement from parking to loading point & after loading of Sleepers & Rail Panels

- 1 Loco pilot shall build sufficient air pressure in braking system of loco.
- 2 Loco will be attached to rakes
- 3 Pressure will be built inside rakes for releasing braking system
- 4 Wedges shall be provided under axles of LOCO
- 5 Wooden wedges under axles of rakes shall be removed
- 6 LOCO will be in running mode until activities listed above are completed. The LOCO pilot/pointsman will personally inspect and get satisfied about the arrangements.
- 7 Wedges shall be provided under axles of LOCO shall be removed and loco shall move ahead along with rakes

Project Name: - DFCC (WCP-2). Pkg: - CTP 12.	Inspection Checklist- Construction Railway Operations	Doc No	CRO 01
Location:-		Rev	00
Date of Inspection:-		Date of	06/01/22

Tick the relevant activity

S. No	Activity	Tick
1	Movement of Bobysh wagons – After reaching loading location/parking place	
2	Movement of Bobysh wagons – For movement of wagons from loading point/parking place	
3	Movement of NTC Rakes – After reaching loading location/parking place	
4	Movement of NTC Rakes – During loading of Rail Panels/Sleepers	
5	Movement of NTC Rakes – Movement from parking to loading point & after loading of Sleepers & Rail Panels	

Checklist

S. No	Description	Yes	No
A. Movement of Bobynsh wagons – After reaching loading location/parking place			
1	After placing loco and wagons in position, handbrake of first and last wagon (i.e. 1 st and 18 th wagon) from engine side is applied.		
2	Before start of loading activity wooden wedges under axles of 1 st and 18 th wagon from engine side is provided.		
3	Wooden Wedges is provided under axles of LOCO		
4	LOCO Engine is in running mode until activities listed above are completed.		
5	Detachment of loco from wagons is done only after successful completion of all above mentioned activities.		
6	In case bobyn wagons are placed for parking only (ie no loading activity is being carried out) chain lock system is in placed in 1 st and 18 th wagon.		
B. Movement of Bobynsh wagons – For movement of wagons from loading point/parking place			
1	Loco pilot will attach Loco to wagons and place wedges under axles of Loco		
2	Loco pilot shall build sufficient air pressure in braking system of loco.		
3	Handbrake of first and last wagon (ie 1 st and 18 th wagon) wagon from engine side is released.		
4	In case chain lock system is in place, it is removed		
5	Before start of movement wooden wedges under axles of 1 st and 18 th wagon from engine side is removed		
6	LOCO Engine is in running mode until activities listed above are completed. The LOCO pilot/points man will personally inspect and get satisfied about the arrangements.		
7	Wedges is provided under axles of LOCO is removed and loco shall move ahead		
C. Movement of NTC Rakes – After reaching loading location/parking place			
1	After placement of NTC rakes in position pressure inside rakes is brought to zero		
2	Wooden wedges under axles of first and last rake from engine side is provided.		
3	Wooden Wedges is provided under axles of Loco		

4	Loco Engine is in running mode until activities listed above are completed. The Loco pilot/points man will personally inspect and get satisfied about the arrangements.		
5	Detachment of loco from wagons is done only after successful completion of all above mentioned activities.		
6	In case rakes are placed for parking only (i.e. no loading activity is being carried out) chain lock system is in placed in first and last wagon.		
D. Movement of NTC Rakes – During loading of Rail Panels / Sleepers			
1	After placement of NTC rakes in position by Loco pressure inside rakes is brought to zero		
2	Loco pilot shall build sufficient air pressure in braking system of loco.		
3	Wedges are provided under axles of Loco with Loco attached to rakes.		
4	Wooden wedges under axles of first and last rake from engine side is provided.		
5	LOCO is in running mode until activities listed above are completed. The LOCO pilot/points man will personally inspect and get satisfied about the arrangements.		
6	Wedges is provided under axles of LOCO is detached and loco shall move ahead		
E. Movement of NTC Rakes – Movement from parking to loading point & after loading of Sleepers & Rail Panels			
1	Loco pilot shall build sufficient air pressure in braking system of loco.		
2	Loco is attached to rakes		
3	Pressure is built inside rakes for releasing braking system		
4	Wedges is provided under axles of LOCO		
5	Wooden wedges under axles of rakes is removed		
6	LOCO is in running mode until activities listed above are completed. The LOCO pilot/points man will personally inspect and get satisfied about the arrangements.		
7	Wedges is provided under axles of LOCO is removed and loco shall move ahead along with rakes		

Note: This checklist shall be filled by concerned requiring Track block/movement permit from Control Room

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I/ we certify that

1. The locking arrangements for temporary turn outs will be by pad lock and clamp. Works Train will stop 30 meters from the turnout and ensure that the points are set correctly through the lever and clamp before passing.
2. The Works Train will stop 30 meters from the Level Crossing. Supervisor accompanying works train shall inform IR gateman regarding Gate closure for passing of DFC Works Train. IR Gateman shall close the LC gate DFC Gateman shall close the sliding boom from DFC end. After closure of LC Gate from both IR and DFC end Works Train shall Level Crossing. LC gates shall be opened only after passing of Entire length of Works Train.

Site Engineer/Supervisor
Name & Designation

Provision of Safety on LC

Safety at Level Crossings

1. The Works Train will stop 30 meters from the Level Crossing
2. Supervisor accompanying works train shall inform IR gateman regarding Gate closure for passing of DFC Works Train.
3. IR Gateman shall close the LC gate
4. DFC Gateman shall close the sliding boom from DFC end.
5. After closure of LC Gate from both IR and DFC end Works Train shall Level Crossing.
6. LC gates shall be opened only after passing of Entire length of Works Train.
7. At all LC where track has been laid, we are providing gate Man for closing the Sliding Gate.
8. We have provided the training for safety measures to be taken at LC.
9. All the moving machinery crossing the LC ensured that gate is closed.
10. On both side of LC, Red flag is fixed so that no machinery moved without closing of LC gate after removing of Red Flag the movement of machinery is allowed.
11. Reflective paint is done on the sliding barrier so that it can be easily visible during night time.