

Safe Usage of Tractor with Double Axle Trolley in Railway Construction Sites in India

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Abstract: Tractors, as heavy-duty vehicles used in various industries, are essential for moving loads and supporting activities at work locations. This review focuses on a specific operational document dealing with tractors that are equipped with double axle trolleys, highlighting their importance in safety and risk management.

Transporting construction and erection materials constitutes a major challenge close to Indian Railway tracks where suitable roads are unavailable. While the village's unpaved roads can be utilized, the ground clearance is inadequate for many vehicle types. Tractors are recognized as the best option for traversing these unpaved village roads.

Most of the MNC organizations prohibit the use of tractors due to the unstable trolley attached to the tractor engine as well as this equipment is identified as an agricultural equipment.

This journal paper is to evaluate any Risks associated with a Tractor with a double axle trolley before and after deployment for any activity and ensure a safe & healthy work environment..

Keywords: Tractor, Double Axle Trolley, 360 Degree Swivel Coupling, Compliance, Hazard, Risk, Checklist

I. INTRODUCTION

This paper for the Tractor with double axle trolley applies to all project sites, including stores of the Railway Business Unit

GENERAL RESPONSIBILITY

- Project Manager (PM)/Chief Project Manager (CPM)
- Site Commercial/Admin
- Section In-charge/Execution Engineers/Supervisors
- Site EHSO.

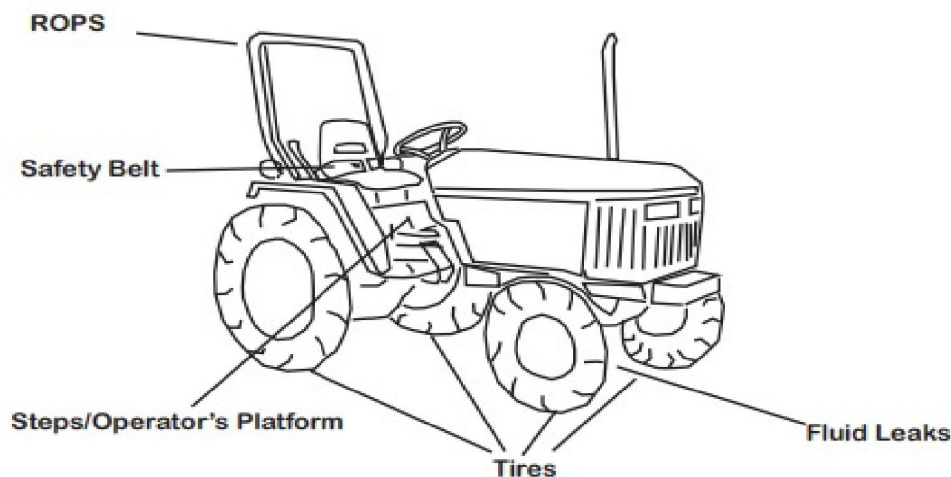
PROCEDURAL STEPS:

S. No	Procedural Steps	Responsibility	
		Operational	Supervisory
1	Hiring of a vehicle at site with exact description of requirement	Site Commercial/ Admin	Project Manger
2	EHS Agreement to be sent at the time of floating the requirement to vendor & Information must be shared about vendor to EHSO	Site Commercial/ Admin	Project Manger
3	EHS Agreement requirement to be explained to the vendor	Site EHSO Representative	Project Manger
4	Signed EHS Agreement to be ensured before issuing the PO	Site Commercial/ Admin	Project Manger



5	Vehicle and drivers' documents - RC, PUC, Fitness, Insurance, Aadhar card, Driving License-LMV is mandatory to be collected. Information must be shared about deploying vehicle and its driver to EHSO for Induction & SOP for issuing ID Card to be followed	Site Commercial/ Admin	Project Manger
6	EHS Induction for driver to be done prior deployment at site	Site EHSO Representative	Project Manger
7	Competency certificate to be issued after training & verification	Site EHSO Representative	Project Manger
8	Green Tagging by EHSO after verification of vehicle document and physical condition of vehicle	Site EHSO Representative	Project Manger
9	Task performer to ensure for green tag & daily checklist for vehicle	Section In-charge/Execution Engineers/Supervisors	Project Manger

Requirements for Tractor with double axle trolley usage at site: -



360 Degree Swivel Coupling to be used in Tractor



- Only authorized drivers having a competency certificate is allowed to operate the vehicle and no passengers are allowed on the vehicle.
- Change of driver is only allowed if all criteria are met as per the regular driver & prior information provided to EHSO (Environment, Health & Safety Officer).
- Vehicle document to be collected by the Commercial/Admin Department before issuing the PO.
- Vehicle document to be verified by EHSO before deployment at site (Registration Certificate, Pollution Under Control Certificate, Fitness, Insurance, Driving License-Light Motor Vehicle is mandatory (<7500 Kg). etc. & Green Tag to be ensured before deployment of the vehicle



- No manpower except driver to be transported on tractor & trolley
- Tractor with double axle trolley to be used at site



- Roll Over Protection Structure (ROPS) to be used in tractor
- Tractor to be operated within the speed limit of not more than 20 KM/Hr & Over speeding is not allowed at site.
- Driver should be medically fit to operate the vehicle
- Driver should not be less than 30 years old and not more than 50 Years old based on organisation's requirements.
- Defensive Driving training to be attended by driver as and when planned
- Vehicle to be inspected before deployment
- PPE to be worn by the driver (Reflective Jacket / Helmet / Shoes)
- Loose clothing to be avoided by driver (Lungi, Dhoti, shorts, chadar)
- Over dimension goods not to be transported without LMRA
- Daily Checkpoint by drivers to be ensured
- Minimum 6-meter distance to be maintained from centre of the track
- While crossing Level Crossing (LC) Gate STOP, WAIT & PROCEED to be followed
- Manoeuvring point to be identified with display board and only to be used for turning
- No reversing is allowed within 6-meters from centre of track (Unless area is identified for reversing)
- No Phone & Earphones to be used while operating vehicle (Mobile Phone policy to be followed)
- Music Player is not allowed on tractor.
- 24-hour duty is not allowed for a single driver.
- Drivers should not be under the influence of alcohol. Breath analyser will be used frequently. If found under alcohol influence, then driver will be terminated on immediate basis.
- No maintenance of vehicle is allowed at site



DAILY CHECKLIST FOR TRACTOR WITH DOUBLE AXLE TROLLEY

DAILY CHECKLIST FOR TRACTOR WITH DOUBLE AXLE TROLLEY	Document No.			
	Issue. No.		Rev. No.	
	Issue. Date		Rev. Date	
	Page No.			

Name of Project:		Agency Name:									
Site/Location:		Registration No.:									
DATE:											
DRIVER NAME:											
TASK PERFORMER NAME:											
Sr. No.	CHECK POINTS	OK	/*NR	OK	/*NR	OK	/*NR	OK	/*NR	OK	/*NR
		NOT OK		NOT OK		NOT OK		NOT OK		NOT OK	
1	CRANKCASE OIL: is it clean and full?										
2	TROLLEY: has four wheels (Double Axle) & 360 Degree Swivel Coupling. Is trolley marked with Registration Number ?										
3	RADIATOR: is coolant level correct; no leaks; cap fits properly?										
4	AIR CLEANER: is it in place, clean and not damaged?										
5	BATTERY: is the fluid level correct; are terminals clean & in good condition?										
6	FIRST AID BOX & FIRE EXTINGUISHER: are they in place & in good condition?										
7	IGNITION WIRING: is it clean with no breaks in insulation & in working condition?										
8	STEERING: are connections tight & moves smoothly?										
9	GREASE FITTINGS: are they clean, operable and lubricated?										
10	WHEEL BOLTS: are they tight and not broken?										
11	TIRES: are they in good condition? Is air pressure correct?										
12	ROLL OVER PROTECTION SHEILD (ROPS) / CANOPY: is ROPS in place and in good condition?										
13	BRAKE PEDAL: is locking device functioning and brakes properly adjusted -										



	holds, stops vehicle smoothly?										
14	SEAT AND SEAT BELT: is in good condition?										
15	FUEL SUPPLY: is the tank full and the filler cap tightened?										
16	GUARDING: is guarding to rotating parts in place?										
17	LIGHTS & ALARM: are headlights, tail, license plate, brake, indicator turn signals, Vehicle reverse alarm are operational?										
18	HYDRAULICS SYSTEM: no evidence of leaks and systems operate smoothly										
19	CLUTH & GEARSHIFT: shifts smoothly without jumping or jerking?										
20	STEP: is clean and in good condition?										
21	LEAKS UNDER TRACTOR?										
FIT / NOT FIT											
DRIVER SIGNATURE:											

*NR-Need Repair

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