



भारत सरकार - नई दिल्ली
उत्पत्तिका अधिकारी और मशीन
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फैक्स (0522) 2450215

Government of India-Ministry of Railways
Research Design & Standards Organisation
Lucknow - 226 011
T.D. (0522) 2451115
D.D. (0522) 2451510



TM/HM/45/UTV/TRIDENT

Date : 04-02-2019

मुख्य अभियन्ता (ट्रैक मशीन)

- 1- मरा रेलवे, सीएसटी मुम्बई-400 001
- 2- फायरली ब्रोरा, पूर्ण रेलवे, कोलकाता-700 001
- 3- गडौदा हाउस, उत्तर रेलवे, नयी दिल्ली-110 001
- 4- उत्तरपूर्व रेलवे, गोरखपुर-273 012
- 5- मालीगान, उत्तरपूर्व रेलवे, गुवाहाटी-781 011
- 6- पार्क टाउन, दक्षिण रेलवे, चेन्नई-600 003
- 7- रेल निलयम्, दक्षिण मध्य रेलवे, शिकन्दराबाद-500 371
- 8- गार्डन रीच, दक्षिणपूर्व रेलवे, कोलकाता-700 043
- 9- चर्चगेट, पश्चिम रेलवे, मुम्बई-400 020
- 10- उत्तर पश्चिम रेलवे, जयपुर-302 001
- 11- पूर्व मध्य रेलवे, हाजीपुर-844 101
- 12- दक्षिण पश्चिम रेलवे, हुबली-580 023
- 13- उत्तर मध्य रेलवे, इलाहाबाद-211 001
- 14- पूर्व तट रेलवे, भुवनेश्वर-751 001
- 15- पश्चिम मध्य रेलवे, जबलपुर-482 001
- 16- दक्षिण पूर्व मध्य रेलवे, बिलासपुर-495 004

Chief Engineer (Track Machines)

- CST, C R, Mumbai - 400 001.
Fairlie Place, E R, Kolkata-700 001.
Baroda House, N R, New Delhi-110 001.
N E R, Gorakhpur-273 012.
Maligaon, N F R, Guwahati -781 011.
Park Town, S R, Chennai -600 003.
Rail Nilayam, SCR, Secunderabad-
Garden Reach, S E R, Kolkata-700 043.
Churchgate, W R, Mumbai-400 020
N W R, Jaipur-302 001.
E C R, Hazipur-844 101
SWR, Hubli-580 023
NCR, Allahabad-211 001
East Coast Rly, Bhubaneshwar-751 001
WCR, Jabalpur-482 001
South East Central Rly, Bilaspur 495 004

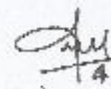
विषय Utility Track vehicle (Trident) की निरीक्षण जाँच सूची प्रस्तुत

Sub: Inspection Check List for Utility Track vehicle for Utility Track vehicle (Trident)

Utility Track vehicle (Trident) की निरीक्षण जाँच सूची प्रस्तुत का अंतिम पत्र सं टीएम/एच/एम/रूटी/सूटीवी पार्ट III दि 18.12.2018 द्वारा जारी किया गया था, परन्तु क्षेत्रीय रेलवे ले कोडे टिप्पणी प्राप्त नहीं हुई अथवा निरीक्षण जाँच सूची प्रस्तुत का तैयार करने की प्रक्रिया पूर्ण की जा चुकी है। जिसकी प्रति, आपके सूचना तथा मशीन के कार्याचारियों को फील्ड में काम कर रहे हैं को मार्गदर्शन हेतु संलग्न है। यद्यपि उपरोक्त संशोधन बनाते समय सभी आवश्यकताएँ बरती गई हैं फिर भी यदि कोई त्रुटि हो तो कृपया अपने सुझावों/ टिप्पणियों को सुधार हेतु ई-मेल फॉक्स चमत्कार द्वारा अद्योदरालसरी को भेजें।

Provisional Inspection Check List for Utility Track vehicle(Trident) has been circulated vide letter no. TM/HM/UTV pt.III dt.18.12-2018, but no comments received from Zonal Railways. Now procedure of preparation for inspection check list is completed. A copy of the same is enclosed herewith for your information and guidance of the machine staff working in the field. However every care has been taken during revision of the above said list, the discrepancy noticed, if any, may be brought to the knowledge of the undersigned for further improvement by email/fax/post.

DA: As above


4.3.19
(ओम प्रकाश)

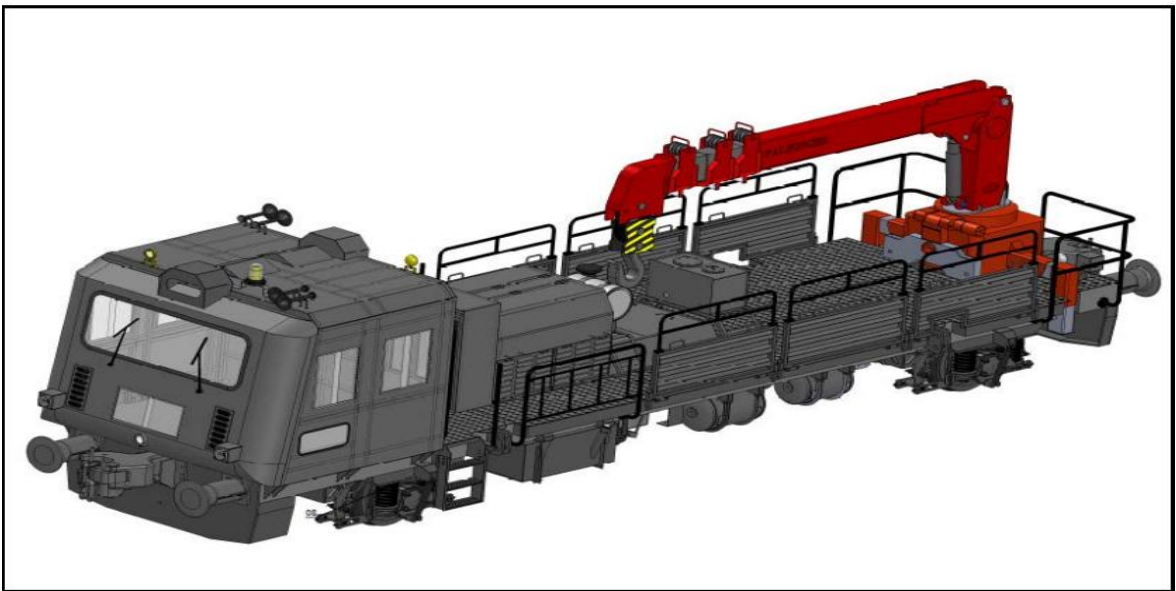
निदेशक रेलपथ मशीन III



भारत सरकार
रेल मंत्रालय

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS

**INSPECTION CHECK LIST
FOR
UTILITY TRACK VEHICLE
(TRIDENT)**



Report No. TM- 223

Feburary -2019

अनुसंधान अभिकल्प और मानक संगठन लखनऊ
RESEARCH DESIGNS & STANDARDS ORGANISATION
LUCKNOW- 226 011

PREFACE

Any Machine can only be kept in good condition by regular Inspection of its various assemblies at different levels of inspections. To ensure that the components of On-Track machines are properly working & being maintained and the documentation of the same is being done properly, multi tiered Inspection of On-Track machines is also required. For the purpose IRTMM-2000 includes the duties of different inspecting authorities from Dy. CE/TMC to SSE/TMC with the objective to monitor the health of machines and to ensure that the officials concerned are carrying out their duties satisfactorily. For the guidance of the inspecting authorities, RDSO is dealing with the preparation and issuing the list of items to be inspected for a particular type of machine.

In this context, the Check list for Inspection of Utility Track Vehicle (Trident) is prepared as recommended by OEM.

While every care has been taken to make the Inspection Check List quite exhaustive, there will always be scope for further improvement. Suggestions from the railways in this regard will be welcome and may be sent to the undersigned for future improvement.

(Om Prakash)
Director/Track Machine-III
RDSO/Lucknow-226011

UTILITY TRACK VEHICLE (Trident)

Name & Designation of Inspecting Official :

Date of Inspection :

Machine No. :

Base Station /division :

Location of working :

Block hours :

Progress :

1.0	General :	
S. No	Items	Remarks given by inspecting officer
1.1.	Name of Machine In charge	
1.2.	Machine make	
1.3.	Year of manufacturing	
1.4.	First POH of Machine done on	
1.5.	Last IOH of M/C done on	
1.6.	Next IOH of M/C due on	
1.7.	Last POH of M/C done on	
1.8.	Next POH of M/C due on	
1.9.	Last POH of camping coach done on	
1.10.	Next POH of camping coach due on	
1.11.	All log book filled properly	
1.12.	Pending Maintenance Schedule and reasons Schedule I,II,III,IV,V,VI,VII	

History of Machine:-----

S.no	Items	Prevailing Condition	
2.0	Engine Model no.: (NTA 855 L) 418bhp at 2100rpm	Engine hours on date-	
2.1.	Over-hauling of the Engine As per Main. Schedule	Due <input type="checkbox"/>	Not due <input type="checkbox"/>
2.2.	Starting problem	No <input type="checkbox"/>	Required attention <input type="checkbox"/>
2.3.	Condition of smoke	White <input type="checkbox"/> Normal <input type="checkbox"/>	Black <input type="checkbox"/> Blue <input type="checkbox"/>
2.4.	Engine temperature during working a) CUMMINS NTA 855 L Optimum 75°C to 85°C b) Thermostat working	Actual ----- °C Ok <input type="checkbox"/> Required attention <input type="checkbox"/>	
2.5.	Leakage in Head gasket	No <input type="checkbox"/>	Yes <input type="checkbox"/> (Head no.-)
2.6.	Compressor leakage	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.7.	Belt condition and tension	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
2.8.	Leakage of water from water pump, seal hose and radiator	No <input type="checkbox"/>	Required attention <input type="checkbox"/>
2.9.	RPM of the Engine (rated 2100)	Actual--- Ok <input type="checkbox"/> Need attention <input type="checkbox"/>	
2.10.	Tightness of engine mounting bolts	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
2.11.	Engine oil pressure (minimum)		
2.12.	CUMMINS NTA 855 L Minimum 1.5 Kg/cm ² at idle rpm Minimum 2.5 Kg/cm ² on rated rpm after 2 hours working	Actual--- Actual---	
2.13.	Overall condition of Engine	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>

Remarks:-

S.N.	Items	Prevailing Condition	
3.0	Working Condition		
3.1.	Infringement ,if any	Yes	No
3.2.	Hydraulic leakage from circuit	Location -----	
3.3.	Pneumatic leakage from circuit	Location -----	
3.4.	Overall condition of the Machine health	Excellent <input type="checkbox"/> Good <input type="checkbox"/>	Very good <input type="checkbox"/> Average <input type="checkbox"/>
3.5.	Application of brake Direct/ Indirect	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
3.6.	Emergency backup system	Fuctioning <input type="checkbox"/>	Need attention <input type="checkbox"/>
3.7.	Clearance between brake shoes and wheel (max.3-5mm)	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
3.8.	Overall Machine working performance	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.0	Crane		
4.1.	Condition of Crane.	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.2.	Condition of Hydraulic pipes	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.3.	Condition of pulley head for wear	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.4.	Condition of rope pulley for any deformation	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.5.	Condition of rope clamps for any deformation	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.6.	Condition of hooks for any cracks	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.7.	Tightness of all nut and bolts	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.8.	Condition of cables for any damage	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.9.	Check all moving parts for proper greasing	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>
4.10.	Check for load holding valve seals	Satisfactory <input type="checkbox"/>	Need attention <input type="checkbox"/>

Remarks:-----

S. No.	Items	Agent / Description	Prevailing Condition	
5.0	Oil/water/level in Tank/Container			
5.1.	Hydraulic oil	SERVO -46	OK <input type="checkbox"/>	Need top up <input type="checkbox"/>
5.2.	Diesel Oil	HSD	OK <input type="checkbox"/>	Need top up <input type="checkbox"/>
5.3.	Engine Lube oil changed on due date (After every 300hrs)	SAE-15W-40 (IOC/BP/HP/SHELL)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
5.4.	Engine cooling agent	-----	OK <input type="checkbox"/>	Need top up <input type="checkbox"/>
5.5.	Grease	AP-3(Castrol) or equivalent	OK <input type="checkbox"/>	Need top up <input type="checkbox"/>
5.6.	Pneumatic Lubricant	Shell Tellus -46	OK <input type="checkbox"/>	Need top up <input type="checkbox"/>
5.7.	Transmission oil	Type C-4 AE-30 (IOC/BP/HP/SHELL)	OK <input type="checkbox"/>	Need top up <input type="checkbox"/>
6.0	Filters			
6.1.	Cleaning of Air Cleaner filters outer (Cleaned after every 200 hrs or on dirt indication and change after 1000 hrs)		Done <input type="checkbox"/>	Not done <input type="checkbox"/>
6.2.	Change of air cleaner inner (after every 2000 engine hrs or one year which occurs earlier)		Done <input type="checkbox"/>	Not done <input type="checkbox"/>
6.3.	Change of engine oil filters (After every 300 hrs)		Done <input type="checkbox"/>	Not done <input type="checkbox"/>
6.4.	Change of diesel filters (To be done after every 300 hrs)		Done <input type="checkbox"/>	Not done <input type="checkbox"/>
6.5.	Change of suction filter (after every 500hrs or on choke indication)		Done <input type="checkbox"/>	Not done <input type="checkbox"/>
6.6.	Change of return line filter (after every 500hrs or on choke indication)		Done <input type="checkbox"/>	Not done <input type="checkbox"/>
7.0	Lubrication (Oiling & Greasing as per maintenance schedule)			
7.1.	All balls and socket pivot point	Oil by Servo system-100	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
7.2.	Brake linkage, brake lever bearing & Brake rod	Grease Shell Alvania RL2	Done <input type="checkbox"/>	Not done <input type="checkbox"/>

Remarks:-----

S.no	Items	Prevailing Condition	
8.0	Electrical and Electronics		
8.1.	Condition of battery terminals	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
8.2.	Condition of batteries	Ok <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
8.3.	Electrolyte level in batteries (Plates should be embedded in electrolyte)	Ok <input type="checkbox"/>	Need top up <input type="checkbox"/>
8.4.	Specific gravity of electrolyte (min 1.24)	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
8.5.	Condition of self starter	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
8.6.	Condition of alternator	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
8.7.	Safety circuit for Engine	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
8.8.	Safety circuit for Driving	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
9.0	Gauges and meters working status		
9.1.	Engine Oil Pressure gauge	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
9.2.	Engine Temperature gauge	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
9.3.	Battery charging meter	Ok <input type="checkbox"/>	Need Attention <input type="checkbox"/>
9.4.	Battery voltage meter	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
9.5.	Pneumatic pressure gauge	Ok <input type="checkbox"/>	Need Attention <input type="checkbox"/>
9.6.	Hydraulic oil pressure gauge	Ok <input type="checkbox"/>	Need Attention <input type="checkbox"/>
9.7.	Hydraulic oil temperature gauge	Ok <input type="checkbox"/>	Need Attention <input type="checkbox"/>
10.0	Pneumatic		
10.1.	Condition of brake shoe (worn out)	Satisfactory <input type="checkbox"/>	To be changed <input type="checkbox"/>
10.2.	Condition of pneumatic hoses	Satisfactory <input type="checkbox"/>	To be changed <input type="checkbox"/>

11.0	Hydraulic Pressure and Operation		
S.no	Items	Recommended value	Actual value
11.1.	System Pressure	140-150 bar	
11.2.	Pressure on friction clutch	11-12.5 Kg/cm ²	
11.3.	Air pressure	6.5-7 Kg/cm ²	
11.4.	Hydraulic Oil Temperature after working of machine for 2 hrs. (Max limit 76 ⁰ c)	----- °C	
12.0	Under Frame Inspection		
12.1. Under Frame			
12.1.1	Visual Inspection of centre pivot mounting Bolts and Mounting of Suspension system ,Bogie Frame etc.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.1.2	Examine the shock absorber for damages.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.1.3	Visual Inspect centre pivot cover.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.1.4	Check condition of head stock/sole bar	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.1.5	of centre buffer Coupler	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.2 Bogie frame & Wheels			
12.2.1	Visual and Physical inspection of wheel shall be done at a frequency of once in a year or after every 1000 engine running hours whichever is earlier	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
12.2.2	Visual Inspection of wheels and under gear for any infringement	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.2.3	Visually inspect all the welding locations.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.2.4	Visually check the suspension brackets.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.3 Brake Rigging			
12.3.1	Visually check the rubbing plates.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.3.2	Examine brake beams breakages/ damages.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.3.3	Inspection of Brake hanger bracket , torque support , cardan shaft hanger brackets for damages	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.4 Draw Gear			
12.4.1	Check condition of the screw coupling/CBC coupling and replace if required.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.4.2	Examine draw hook ,draw bars, rubber pads for damages	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.4.3	Ensure that wear at any section on draw hook should not exceed 10 mm.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>

12.4.4	Ensure that wear on screw coupling shackle pins, trunion pins, shackle/link holes and draw hook holes should not exceed 3mm.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.4.5	Check condition of draw beam and locking pins on it.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.4.6	Examine visually draft key locking pins.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.5 Buffing Gear			
12.5.1	Visually examine the wheel tyre profile and crack with tyre profile gauge as mention in procedure for inspection of wheels (On Track Machines) issued by RDSO report no. TM-170	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.5.2	Examine for corrosion of sole bar and other under frame member with track tight or inspection lamp.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
12.5.3	Visually examine the buffers casing for cracks/damages.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
13.0	Safety Items and Staff Matter:		
13.1.	Safety equipment as per Annexure-I	Available <input type="checkbox"/>	Deficient <input type="checkbox"/>
13.2.	Working of safety Emergency Braking System of the machine	Ok <input type="checkbox"/>	Defective <input type="checkbox"/>
13.3.	Competency certificate of SSE/JE	Current <input type="checkbox"/>	Expired <input type="checkbox"/>
13.4.	Strength of staff	Full <input type="checkbox"/>	deficient <input type="checkbox"/>
13.5.	Staff availing rest on due date	Yes <input type="checkbox"/>	No <input type="checkbox"/>
13.6.	Staff amenities(As per latest correction slip)	Available <input type="checkbox"/>	deficient <input type="checkbox"/>
13.7.	Safety awareness	Excellent <input type="checkbox"/> Good <input type="checkbox"/>	V. Good <input type="checkbox"/> Average <input type="checkbox"/>
13.8.	Staff due for Medical	Yes <input type="checkbox"/>	No <input type="checkbox"/>
13.9.	Condition of machine base siding	Satisfactory <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>

Remarks:-----

Signature of inspecting authority

List of Safety Equipments

S.N	Description	Quantity
1.	Detonators in a tin case	1 box
2.	H.S. flag red	2 nos.
3.	H.S. flag green	1 nos.
4.	H.S. Tri Colour lamps/LED lamps	2 nos.
5.	Chain & Padlock	1 set
6.	Point Clamp with Padlock	2 nos.
7.	10 t jack with terfor	2no.
8.	Crow bars	2nos.
9.	Wooden blocks off sizes	8 nos.
10.	Rail thermometer (dial type)	1 no.
11.	Banner flag	2 nos.
12.	Walki talki	1 nos.
13.	First Aid Box	1 no
14.	Skids	4 nos.
15.	Working time table of section where machine working	1 copy
16.	G&SR book with up to date amendment slips	1 copy
17.	4 cell flasher light/ LED torch,6watt	1 no.
18.	LED Petromax	1 no.
19.	Safety helmets	Each Machine staff
20.	Protective clothing, safety shoes and safety gloves	Each Machine staff
21.	Track Machine Manual	1 no.
22.	Accident Manual	1 no.
23.	Fire extinguisher	1 no.(in each cabin)
24.	Hooter (Manual/ Remote)	2 nos.
25.	Hydraulic Hand Pump	1 no.
26.	Emergency pneumatic/Hydraulic hose off sizes	1 no.

ACKNOWLEDGEMENT

Following officers and staff have made their valuable contributions in finalization of the of Inspection Check List for utility Track vehicle (Trident)

RAILWAYS

RDSO

- | | | |
|----------|----------------|---------|
| 1. S/SRI | Muslim Ahmad | ARE/TM |
| 2. " " | A.N.Srivastava | SSRE/TM |
| 3. . " " | A.K.Srivastava | SSE/TM |