



भारत सरकार

रेल मंत्रालय

GOVERNMENT OF INDIA
MINISTRY OF RAILWAY

**INSPECTION CHECK LIST FOR
UTILITY TRACK VEHICLE (UTV) PHOOLTAS**

**Series No. 202000106-H TO
202208171-H, 202102060-P to
202203067-P**



Report no-TM-289

**अनुसंधान अभिकल्प एवं मानक संगठन लखनऊ-226011
RESEARCH DESIGNS & STANDARDS ORGANISATION
LUCKNOW- 226011**

**Name & Designation of Inspecting
Official**

:

Date of Inspection

:

Machine No.

:

Base Station /division

:

Working between station

:

From_____To_____

Location km

:

From_____To_____

Block hours

:

Progress

:

S. No	Items	Remarks given by inspecting officer
1.	General :	
1.1	Name of supervisor	
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 its reasons in Schedule I,II,III,IV,V,VI,VII	
1.13	Failure register updated	
1.14	Reserve stock of consumables and spare parts	

S. No.	I t e m s	Prevailing Condition	
1.15	General cleanliness of the machine	Ok <input type="checkbox"/>	To be cleaned <input type="checkbox"/>
1.16	Function of locking devices	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
1.17	Condition of camping coach	Satisfactory <input type="checkbox"/>	Poor <input type="checkbox"/>
1.18	Condition of machine base stabling siding	Satisfactory <input type="checkbox"/>	Poor <input type="checkbox"/>
1.19	Condition of rest house at stabling station if available	Satisfactory <input type="checkbox"/>	Poor <input type="checkbox"/>
1.20	Provision of water & electric supply at stabling station	Available <input type="checkbox"/>	Not available <input type="checkbox"/>
1.21	Pre and Post machine operation being done	Yes <input type="checkbox"/>	No <input type="checkbox"/>
1.22	Back-up system of machine (D.C. Motor)	Satisfactory <input type="checkbox"/>	Poor <input type="checkbox"/>
1.23	Condition of tools & plants (spanner, wrench etc.)	Ok <input type="checkbox"/>	To be replaced <input type="checkbox"/>
1.24	Material available at site (as per critical spares parts list)	Yes <input type="checkbox"/>	No <input type="checkbox"/>

History of Machine:

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S.No.	I t e m s	Prevailing Conditions	
2.	ENGINE: AL – N6 450 HP @2200 RPM.		
2.1	Engine hours on date	Dated _____ERH
2.2	Last top overhauling of the Engine if done	Dated _____ERH
2.3	Starting problem	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.4	Condition of smoke	White <input type="checkbox"/> Normal <input type="checkbox"/>	Black <input type="checkbox"/> <input type="checkbox"/>
2.5	Leakage in Head gasket	Yes <input type="checkbox"/> Head no	No <input type="checkbox"/>
2.6	Leakage of water from water pump seal hose and radiator	No	Need attention
2.7	V-Belts condition and tension	Ok <input type="checkbox"/>	To be tightened <input type="checkbox"/>
2.8	Calibration of fuel injection pump (to be done after every 2000 hrs)	done <input type="checkbox"/>	due <input type="checkbox"/>
2.9	Tightness of engine mounting bolts	Ok <input type="checkbox"/>	To be tightened <input type="checkbox"/>
2.10	RPM of the Engine (Min.-800, max.-2200)	Actual-----	
2.11	Calibration of Fuel Injectors (to be done after every 2000 hrs)	done <input type="checkbox"/> Dated.....	due <input type="checkbox"/>
2.12	Change of Air Cleaner filters (500 hrs duration)	done <input type="checkbox"/> Dated.....	due <input type="checkbox"/>
2.13	Change of engine oil (300 Hrs duration)	done <input type="checkbox"/> Dated.....	Not done <input type="checkbox"/>
2.14	Change of lub oil filter (300 Hrs duration)	done <input type="checkbox"/> Dated.....	Not done <input type="checkbox"/>
2.15	Change of Lube oil By-pass (hrs duration)	done <input type="checkbox"/> Dated.....	Not done <input type="checkbox"/>
2.16	Change of diesel filters (Hrs)	done <input type="checkbox"/> Dated.....	Not done <input type="checkbox"/>
2.17	Engine oil pressure a) Kg/cm ² at idle speed -3.2 b) Kg/ cm ² on load after 2 hours working -6.5	Ok <input type="checkbox"/> Ok <input type="checkbox"/>	need attention <input type="checkbox"/> need attention <input type="checkbox"/>

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2.18	Check lube oil temperature and pressure sensor	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
2.19	Camp and Crank sensor	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
2.20	Engine throttle sensor	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
2.21	Transmission selector switch and cylinder	Working <input type="checkbox"/>	Not working <input type="checkbox"/>

S.No.	I t e m s	Prevailing Conditions	
2.22	Engine temperature after Two hours working (Optimum range 75 ⁰ c to 85 ⁰ c)°C	
2.23	Any abnormal sound	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.24	Overall condition of engine	Ok <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
2.25	Whether working gauges/display are in order or not		
	a) R.P.M	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	b) Oil Pressure	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	c) Temperature	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	d) Speedo-meter	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	e) Battery charging meter	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	f) Battery volt meter	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	g) Pneumatic pressure gauge	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	h) Hydraulic oil pressure gauge	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	i) Hydraulic oil temperature gauge	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.26	Function of Engine Safety Devices		
	a) High temp. Safety device.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
	b) Low lub. Oil Pressure safety device.	Yes <input type="checkbox"/>	No <input type="checkbox"/>

2.27	Battery charging system	Ok <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
2.28	Condition of batteries & terminals	Ok <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
2.29	Electrolyte level in batteries (Plates should be embedded in electrolyte)	Ok <input type="checkbox"/>	Need Top up <input type="checkbox"/>

S.No.	I t e m s	Prevailing Conditions	
2.30	Specific gravity of electrolyte (min 1.24)	Ok <input type="checkbox"/>	Less <input type="checkbox"/>
2.31	Condition of silencer asbestos rope	Ok <input type="checkbox"/>	Not satisfactory <input type="checkbox"/>
2.32	Air cleaner chocking indication	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2.33	Condition of water radiator	Ok <input type="checkbox"/>	Need cleaning <input type="checkbox"/>
2.34	Water level in radiator	Ok <input type="checkbox"/>	Need Top up <input type="checkbox"/>
2.35	Safety circuit for driving	Ok <input type="checkbox"/>	need attention <input type="checkbox"/>
3. OIL LEVELS			
3.1	Hydraulic oil (Servo system HLP 46 /Servo System HLP 68N)	Ok <input type="checkbox"/>	Need Top up <input type="checkbox"/>
3.2	Axle box grease (AP-3 Castrol)	Ok <input type="checkbox"/>	Need Top up <input type="checkbox"/>
3.3	Mobile oil (Servo premium 15W40)	Ok <input type="checkbox"/>	Need Top up <input type="checkbox"/>
3.4	Axle gear box (EP/HP- 90)	Ok <input type="checkbox"/>	Need Top up <input type="checkbox"/>
3.5	Transmission gear box (Type C4 - SAE 30)	Ok <input type="checkbox"/>	Need Top up <input type="checkbox"/>
3.6	Engine lube oil (Gulf superfleet LE Dura Max. 15 W 40 API CI4)	Ok <input type="checkbox"/>	Need Top up <input type="checkbox"/>

4. POWER TRANSMISSION:			
4.1	Oil leakage in gear boxes	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4.2	Play in universal joints	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
4.3	Greasing of all Cordon shafts	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.4	Greasing of axle flange covers	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
4.5	Oiling of Pins , Bushes & rocker bearings	Done <input type="checkbox"/>	Not done <input type="checkbox"/>

S.No.	I t e m s	Prevailing Conditions	
5.	CRANE UNIT		
5.1	Condition of Hook	Satisfactory <input type="checkbox"/>	To be attended <input type="checkbox"/>
5.2	Condition of Slew cylinder	Satisfactory <input type="checkbox"/>	To be attended <input type="checkbox"/>
5.3	Condition of Main Boom	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
5.4	Condition of Extension Boom 1,2 &3	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
5.5	Condition of Extension Cylinders 1,2 &3	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
5.6	Condition of Retainer lock plates	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
5.7	Condition of pulley head for wear	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.	HYDRAULIC		
6.1	Condition of Hyd. Hoses	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.2	Pressure setting of main relief valve (25 bar)	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.3	Pressure setting of auxiliary relief valve (bar)	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
6.4	Condition of hydraulic pump	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
7.	ELECTRICAL AND ELECTRONICS		
7.1.	Working Head light, Tail light and other light	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
7.2.	Flasher light	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
7.3.	Hooter	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
7.4.	Working of Electric Horn	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
7.5.	Condition of self starter	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
7.6.	Condition of alternator	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
7.7.	Defective /released Relay available with machine	Part no	
8.	PNEUMATICS		
8.1.	Condition of pneumatic hoses	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
8.2.	Condition and clearance of brake shoes	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
8.3.	Condition of brake shoes	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
8.4.	Condition of pneumatic cylinder of brake	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
8.5.	Condition of A9 valve	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
8.6.	Condition of SA9 valve	Working <input type="checkbox"/>	Not working <input type="checkbox"/>

8.7.	Condition of C2W relay and C3W distributor valve	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
8.8.	Condition of KE valve (indirect brake)	Working <input type="checkbox"/>	Not working <input type="checkbox"/>

S.No.	I t e m s	Prevailing Conditions	
8.9.	Condition of air unloader	Working <input type="checkbox"/>	Not working <input type="checkbox"/>
8.10.	Function of air compressor	Ok <input type="checkbox"/>	Need attention <input type="checkbox"/>
8.11.	Strength of staff as per IRTMM - 2019	Full <input type="checkbox"/>	Deficient <input type="checkbox"/>
8.12.	Safety awareness	Excellent <input type="checkbox"/>	Very good <input type="checkbox"/>
		Good <input type="checkbox"/>	Average <input type="checkbox"/>
8.13.	Staff due for Medical	Overdue <input type="checkbox"/>
9. STAFF			
9.1.	Staff due for training	Overdue <input type="checkbox"/>
9.2.	Staff availing rest on due date	Yes <input type="checkbox"/>	No <input type="checkbox"/>
9.3.	Staff amenities as per up to date IRTMM -2019.	Satisfactory <input type="checkbox"/>	Poor <input type="checkbox"/>
10 SAFETY ITEMS			
10.1.	Safety equipment as per Annexure-I	Available <input type="checkbox"/>	deficient <input type="checkbox"/>
10.2.	Working of safety Emergency Braking System of the machine	Ok <input type="checkbox"/>	Defective <input type="checkbox"/>
10.3.	Fire extinguisher	Current <input type="checkbox"/>	Expired (Date.....) <input type="checkbox"/>
10.4.	Ultrasonic testing of axles of machine shall be done between 40,000 to 45,000 kms of running engine hours or three years, whichever is earlier.	Done <input type="checkbox"/>	Not done <input type="checkbox"/>
11 UNDER GEAR INSPECTION			
11.1.	Visual Inspection of wheels and under gear for any infringement.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
11.2.	Visual Inspection of centre pivot mounting boards ,Mounting of Suspension system ,Bogie Frame etc.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
11.3.	Inspection of Brake hanger bracket , torque support , cardan shaft hanger brackets for damages	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>

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S.No.	I t e m s	Prevailing Conditions	
11.4.	Visual Inspection of centre buffer Coupler	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
11.5.	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"/>
11.6.	Visually inspect all the welding locations.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
11.7.	Visually check the suspension brackets.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
11.8.	Visually check the rubbing plates.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
11.9.	Examine the shock absorber for damages.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
11.10.	Check the coupling/CBC coupling for any damages.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
11.11.	Visually examine the buffers casing for cracks/damages.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>
11.12.	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"/>
11.13.	Examine for corrosion of sole bar and other under frame member with track light or inspection lamp.	Ok <input type="checkbox"/>	To be attended <input type="checkbox"/>

Remark :

Date.....

Signature of inspecting officer

Annexure – 1**List of Safety Equipments**

S.No.	Description	Quantity	Available Yes (√)/No (x)
1.	Red hand signal flags	2 Nos.	
2.	Green hand signal flag	1 No.	
3.	Tri- colour hand signal lamps/LED torch	2 Nos.	
4.	Chain With Padlock	2 Nos.	
5.	Fire Extinguisher	One per cabin	
6.	Hooter (Manually Controlled)	2 Nos.	
7.	Jack 10t	2 Nos.	
8.	Wooden Blocks	4 Nos.	
9.	Crow bars	4 Nos.	
10.	Hydraulic hand pump	1 No.	
11.	Emergency Pneumatic /Hydraulic hose off size suiting to different machines (complete with end fitting)	-	
12.	Wire rope with close loops at both ends 2 meters and 9 meters long one of each length	-	
13.	Machine Specific Equipment if any.	-	
14.	Fog signals (detonators) in a tin case	10 Nos.	
15.	A copy of working time table of this section where the machine is working	1 No.	
16.	G & SR book with up to date amendment slips	1 No.	
17.	4 cells flasher light LED lamp cum flasher light (rechargeable)	1 No.	
18.	Banner flags	2 Nos.	
19.	First aid Box	1 No.	
20.	Skids	2 Nos.	
21.	Safety Helmet for all machine staff	All machine staff	
22.	Protection clothing , safety shoes and safety gloves	All machine staff	
23.	Walkie talkie with frequency of SM, guard and loco pilots	2 Nos.	
24.	Internal communication system walkie talkie and /or head mounting system	-	
25.	Track machine manual with up to date correction slip	1 No.	
26.	Accident manual	1 No.	
27.	Tail Lamp	1 No.	

Note: Inspecting official should wear the protective equipment when doing the inspection of machine.

ACKNOWLEDGEMENT

Following officer and staffs have made their valuable contributions in finalization of Inspection check list for UTV (Phooltas).

RAILWAYS:-

1. Shri Anil Mandal SSE/TM

RDSO:-

1. Shri Rakesh Tewari ARE/TM
2. Shri Ved Prakash Srivastava SSE/TM
3. Shri Vivek Tewari JRE/TM

