भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226 011
EPBX (0522) 2451200
Fax (0522) 2458500

Government of India-Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226 011
DID (0522) 2450115
DID (0522) 2465310

PROVISIONAL SPEED CERTIFICATE FOR OPERATION

No.	TM/HM/11/35/UTV

Date	As signed

महाप्रबन्धक (इंजीनियरिंग),

1. मध्य रेलवे, छत्रपति शिवाजी टर्मिनस, मुम्बई– 400 001
2. पूर्व रेलवे, फेयरली प्लेस, कोलकाता– 700 001
3. उत्तर रेलवे, बडौदा हाऊस, नई दिल्ली– 110 001
4. पूर्वोत्तर रेलवे, गोरखपुर– 273 001
5. पूर्वोत्तर फ्रन्टियर रेलवे, मालीगॉव, गुवाहाटी– 781 011
6. दक्षिण रेलवे, एनेक्सी, पार्क टाऊन, चेन्नई– 600 003
7. दक्षिण मध्य रेलवे, रेल निलायम, सिकन्दराबाद– 500 071
8. दक्षिण पूर्व रेलवे, गार्डन रीच, कोलकाता– 700 043
9. पश्चिम रेलवे, चर्चगेट, मुम्बई– 400020
10. उत्तर मध्य रेलवे, प्रयागराज– 211 001
11. उत्तर पश्चिम रेलवे, जयपुर– 302 006
12. पूर्व मध्य रेलवे, हाजीपुर– 844 101
13. पूर्व तट रेलवे, रेलवे कॉम्पलेक्स, भुवनेश्वर– 751 023
14. दक्षिण पश्चिम रेलवे, हुबली– 580 023
15. पश्चिम मध्य रेलवे, जबलपुर– 482 001
16. दक्षिण पूर्व मध्य रेलवे, बिलासपुर– 495 004

Sub.	Provisional Speed Certificate for Utility Track Vehicle,Transportation Code CUTV/SANEL/B supplied by M/s San Engineering & Locomotive Company Ltd., Bangalore.
Ref.	i) Provisional speed certificate No. TM/HM/11/35/UTV dated 27.10.2017. ii) Railway Board's letter No. 87/M(C)/202/10 Vol(iv)Part(vi) dated 04.07.2018. iii) South Western Railway letter No SWR/W.506/TM/RDSO dated 28.09.2022.

1.0	**IMPORTANT PARAMETERS RELATED TO ROLLING STOCK**

Type	**Final / Provisional / Oscillation Trial / COCR Movement**	Provisional

Validity/ Period or Permanent	**IR / Sectional**	5 yrs /IR

Stock Name	Utility Track Vehicle

Max. Axle Load (Empty)	16.0t

Max. Axle Load (Loaded)	17.5t

Transportation Code	CUTV/SANEL/B	**GA Drg. No.**	M/s San Drg. No.SNSK-4541 Rev.02.

Bogie arrangement Drg. No.	NA	**Suspension arrangement Drg. No.**	M/s San Engg. Drg. No. SNSK-4564

Commodity	**Coal / Ore / Steel /Bagged / Oil /etc.**	NA	**Gauge**	BG	

Type of Bogie	NA	**Type of Coupler**	Screw Coupler	**Wheel Dia.(mm)**	New: 915 / Worn: 845

Rake / Train consist for COCR / Oscillation Trial	NA

Max. Permissible Speed	**Own Power**	50 kmph	**Train Formation**	50 kmph

2.0	**INTRODUCTION**

2.1	Utility Track Vehicle is a self propelled bi-directional 4-wheeled vehicle manufactured by M/s San Engineering & Locomotive Company Ltd., Bangalore as per their drawing No. SNSK-4541 Rev.02. The machine is used for picking up of P. Way material from mid section and transportation of men, material and equipment. Transportation Code of the Utility Track Vehicle is CUTV/SANEL/B as per Railway Board's letter No. 87/M(C)/202/10 Vol(iv)Part(vi) dated 04.07.2018.
2.2	The maximum axle load and wheel diameter of machine are 17.5t and 915mm respectively. Both axles of the machine are powered. The leading particulars of UTV manufactured and supplied by M/s San Engineering & Locomotive Company Ltd., Bangalore,vide Railway Board's Contract No.2015/Track-III/MC/4(i) dated 28.10.2016, are indicated in their Drg. No. SNSK-4541 Rev.02 and Annexure-A. The design speed of machine is 80 kmph when running on its own power as well as when running in train formation as a dead vehicle. The dynamic simulation results of Utility Track Vehicle are found satisfactory upto speed of 80 kmph.
2.3	The Utility Track Vehicle, supplied by M/s San Engg. to Drg. No. SNSK-4541 Rev.02 & Annexure-A was permitted to run provisionally at a maximum speed of 50 kmph when running on its own power as well as when running in train formation as a dead vehicle vide RDSO's speed certificate TM/HM/11/35/UTV dated 27.10.2017.The Zonal Railway had submitted the performance of vehicle and stated that the vehicle is running safely without any problem.

3.0	Based on the design features of Utility Track Vehicle supplied by OEM as given in Annexure-A and above, may be permitted provisionally to run at a maximum speed of 50 kmph when running on its own power as well as when running in train formation as a dead vehicle subject to the following conditions:

3.1	**TRACK**
3.1.1	**Track structure Details & Speed**
	The track shall be to a minimum standard of-

	Rail Section	Sleeper Density	Ballast Cushion	Max. Speed (own power)	Max. Speed (train formation)
	52 kg (72 UTS)	1540 Nos./km	250mm (100mm clean & rest in caked up on compact and stable formation)	50 kmph	50 kmph

3.1.2	Track Geometry standards shall be maintained to as per provisions of Indian Railways Permanent Way Manual, June-2020, containing track geometry standards under Para 522.
3.1.3	For track maintained to lower standard than that mentioned above, the Chief Engineer shall decide the lower maximum permissible speed on the basis of maintenance condition. In this connection, instructions issued by Railway Board letter no. 65/WDO/SR/26 dated 19/20.10.1966 may be seen. When the Chief Engineer considers that the road bed is not compacted or there is improper drainage, he may suitably restrict the maximum permissible speed depending upon the local conditions.
3.1.4	The maximum permissible speed on curves shall be decided on the basis of the existing provisions of the Indian Railways Permanent Way Manual, June-2020.
3.1.5	The welds shall be protected by joggled fish plates as per provisions of USFD Manual and Indian Railways Permanent Way Manual, June-2020 and other policy instructions of Railway Board. The maintenance of rails and rail joints shall be ensured as per provisions of Indian Railways Permanent Way Manual, June-2020. In addition, wherever condition warrants on account of corrosion on rail/weld collar, wear on rail, cupping of welds etc., necessary precautions shall be taken for fish plating/joggled fish plating.
3.1.6	Zonal Railways may ensure further detailed examination of track as deemed fit based on age cum condition basis, overdue renewal and condition of formation etc. as per provisions of Indian Railways Permanent Way Manual, June-2020, regarding permanent way renewals and may suitably restrict maximum speed of operation based on such examination.

3.2	**BRIDGE STIPULATIONS:**

3.2.1	The clearance refers to “Standard RDSO Spans” bridges with standard design of girders, slabs, pipe culverts, piers and abutments etc. issued by RDSO for BGML, RBG, MBG and 25t-2008 standard loadings.				
3.2.2	Superstructures & Bearings of “Special Spans” (designed and constructed by Zonal Railways based on site requirements), Arches and sub-structures (including foundation) of all bridges (Standard RDSO spans & Special Spans) are to be got examined by the Chief Bridge Engineer and certified safe with respect to current Indian Railway Standard Codes with up to-date correction slips.				
3.2.3	The clearance is subject to the following parameters of Utility Track Vehicle:				
	Rolling Stock	**Maximum axle load** (t)	**Maximum tractive effort**(t)	**Maximum braking force at rail level per axle**(t)	**Maximum CG height from rail level**(mm)
	Utility Track Vehicle	17.5	5.63	8.6	1550
3.2.4	Track on bridge and approaches of RBG spans 1.0m & 1.5m (all effective) and MBG spans of 1.0m & 1.5m (all effective) shall be strengthened or modified in such a way so				

	as to allow for dispersion of longitudinal force as per clause 2.8.3.2 of IRS Bridge Rules. In cases where dispersion cannot be allowed as per clause 2.8.3.2 such as due to provision of SEJ in bridges etc., the bridge superstructure including bearings and sub-structure shall be checked for longitudinal force without dispersion and certified safe by the Chief Bridge Engineer concerned.
3.2.5	All Standard RDSO spans of BGML, RBG, MBG and 25t-2008 loading are fit for proposed speed of 50 kmph when running on its own power and 50 kmph in train formation.
3.2.6	During operation of Utility Track Vehicle with single/multiple locomotives and other rolling stocks the speed certificate issued by RDSO of the single/multiple locomotives /rolling stocks in empty/loaded condition shall be strictly complied with. Therefore, speed certificate of each single/multiple locomotive and rolling stocks in train formation shall be examined carefully & speed restriction /strengthening / prohibition /any other restriction shall be imposed according to most restrictive rolling stock/locomotive/multiple locomotives in train formation.
3.2.7	Location of bridges on which speed restrictions are imposed should be notified by the Railways and incorporated in the working timetable.
3.2.8	The above clauses have been arrived at considering bridges are in physically sound condition. In case the bridges are not in satisfactory physical condition, necessary speed restriction to be imposed by Chief Bridge Engineer of Zonal Railway on condition basis.

3.3	**SIGNALLING STIPULATIONS:**

3.3.1	Provisions of GR, SR, IRSOD, SEM & all extant instructions issued from time to time shall be complied with.
3.3.2	In case of locomotive/rolling stocks /train (having this machine in its composition) having EBD of more than 1 km and non-provision of second distant signal/4 Aspect Automatic signalling in the section, action as per para 7.8.9 of IRSEM (issue July 2021) shall be taken.
3.3.3	While running through a station yard, speed of the Rolling stock shall be restricted to the maximum permissible speed as per standard of interlocking provided at the station or any other speed restriction whichever is severe.

3.4	**TRACTION STIPULATIONS:**

3.4.1	In 25KV AC traction area, the Principal Chief Electrical Engineer of the concerned Railway shall have to ensure that the minimum height of contact wire and electrical clearances as stipulated in provisions of Chapter-V and V-A, Electric Traction 'Schedule of Dimensions of 1676mm Gauge (BG) revised 2022' with latest Addendum & Corrigendum Slips is not violated and strictly followed to ensure its safe running.
3.4.2	In addition to above, the Principal Chief Electrical Engineer of the concerned Railway may impose any temporary speed restriction on the basis of personal knowledge, experience of the sectional OHE and the field conditions prevailing on the particular section.
3.4.3	Any parts which are meant for operation/movement during operation/ maintenance e.g. crane, zib etc provided on the vehicle shall be in closed and locked down condition during movement and while standing under 25 KV AC OHE such that no parts of the vehicle extend beyond the MMD envelop & also to ensure minimum electrical clearance as per SOD.

3.5	**ROLLING STOCK STIPULATIONS:**

3.5.1	Before operation of the Utility Track Vehicle, the Chief Engineer/Track Machine of the concerned Railway shall certify track worthiness and safety of the rolling stock. He shall ensure the proper maintenance of the rolling stock.
3.5.2	Brakes of the Utility Track Vehicle shall be in perfect working condition during the operation.

3.6	**GENERAL STIPULATIONS:**

3.6.1	The working of Maintenance Machine shall be as per provision of Indian Railways Permanent Way Manual, June-2020.
3.6.2	All the permanent and temporary speed restrictions in force and those that shall be imposed from time to time due to track, bridges, curves, signaling and interlocking etc. shall also be observed. In this connection, the speed on curve shall be in accordance with para 3.1.4 of this speed certificate.
3.6.3	The design of Utility Track Vehicle, supplied M/s San Engineering & Locomotive Company Ltd., Bangalore, infringes clauses 15, 19(a) and 20(a) of Chapter IV (A) of Indian Railways Schedule of Dimensions (BG) Revised, 2004. Railway Board has condoned the infringements vide letter No. 2017/CEDO/SD/RS/06 dated 07.09.2017.
3.6.4	The movement of the machine in case of failure in block sections, the instructions of the para 708(4) of Indian Railways Track Machine Manual, September -2019 shall be followed.
3.6.5	Competent track machine staff who can apply the machine brakes in case of train parting shall escort the machine while running in train formation as a dead vehicle.
3.6.6	When the machine is being moved either on its own power or hauled in a train, it shall be ensured that all the protruding parts are withdrawn and suitably locked, so that during the run there is no possibility of any infringement occurring to the standard moving dimensions.
3.6.7	This provisional speed certificate for Utility Track Vehicle manufactured by M/s San Engineering & Locomotive Company Ltd., Bangalore, shall remain valid upto 5 years from date of issue or before date of issuance of relevant final speed certificate, whichever is earlier.

ENCLOSURES /संलग्नक :

i)	Annexure-A
ii)	Drg. No. SNSK-4541 Rev. 02
iii)	Railway Board's letter No. 2017/CEDO/SD/RS/06 dated 07.09.2017
iv)	Railway Board's letter No. 87/M(C)/202/10 Vol(iv)Part(vi) dated 04.07.2018
v)	Railway Board's letter No.65/WDO/SR/26 dated 19/20.10.1966
vi)	Para 708(4) of Indian Railways Track Machine Manual, September -2019
vii)	South Western Railway letter No SWR/W.506/TM/RDSO dated 28.09.2022

Digitally Signed by Nitin Mehrotra
Date: 21-04-2023 10:07:36
Reason: Approved

(नितिन मेहरोत्रा)
कार्यकारी निदेशक मानक/चालन शक्ति

प्रतिलिपि:

1. **सचिव, {यांत्रिक / विद्युत / इंजीनियरिंग(जी)}, रेलवे बोर्ड, रेल भवन, नई दिल्ली– 110001**
2. **मुख्य रेल संरक्षा आयुक्त, अशोक मार्ग, लखनऊ–226001**
3. **महाप्रबन्धक (यांत्रिक / विद्युत / संचालन / संकेत एवं दूरसंचार)**
   - i) मध्य रेलवे, छत्रपति शिवाजी टर्मिनस मुम्बई– 400 001
   - ii) पूर्व रेलवे, फेयरली प्लेस, कोलकाता– 700 001
   - iii) उत्तर रेलवे, बडौदा हाऊस, नई दिल्ली– 110001
   - iv) पूर्वोत्तर रेलवे, गोरखपुर– 273001
   - v) पूर्वोत्तर फ्रन्टियर रेलवे, मालीगॉव ,गुवाहाटी– 781 011
   - vi) दक्षिण रेलवे, एनेक्सी, पार्क टाऊन, चेन्नई– 600 003
   - vii) दक्षिण मध्य रेलवे, रेल निलायम, सिकन्दराबाद– 500 071
   - viii) दक्षिण पूर्व रेलवे, गार्डन रीच, कोलकाता– 700 043
   - ix) पश्चिम रेलवे, चर्चगेट, मुम्बई– 400020
   - x) उत्तर मध्य रेलवे, प्रयागराज– 211 001
   - xi) उत्तर पश्चिम रेलवे, जयपुर– 302 006
   - xii) पूर्व मध्य रेलवे, हाजीपुर– 844 101
   - xiii) पूर्व तट रेलवे, रेलवे कॉम्पलेक्स, भुवनेश्वर– 751 023
   - xiv) दक्षिण पश्चिम रेलवे, हुबली– 580 023
   - xv) पश्चिम मध्य रेलवे, जबलपुर– 482 001
   - xvi) दक्षिण पूर्व मध्य रेलवे, बिलासपुर– 495 004
4. **अध्यक्ष एवं प्रबन्ध निदेशक, कोंकण रेलवे कारपोरेशन लिमिटेड, बेलापुर भवन, सेक्टर–11, सी.बी.डी.बेलापुर नवी मुम्बई–400 614.**

ENCLOSURES / संलग्नक :

i)	Annexure-A
ii)	Drg. No. SNSK-4541 Rev. 02
iii)	Railway Board's letter No. 2017/CEDO/SD/RS/06 dated 07.09.2017
iv)	Railway Board's letter No. 87/M(C)/202/10 Vol(iv)Part(vi) dated 04.07.2018
v)	Railway Board's letter No.65/WDO/SR/26 dated 19/20.10.1966
vi)	Para 708(4) of Indian Railways Track Machine Manual, September -2019
vii)	South Western Railway letter No SWR/W.506/TM/RDSO dated 28.09.2022

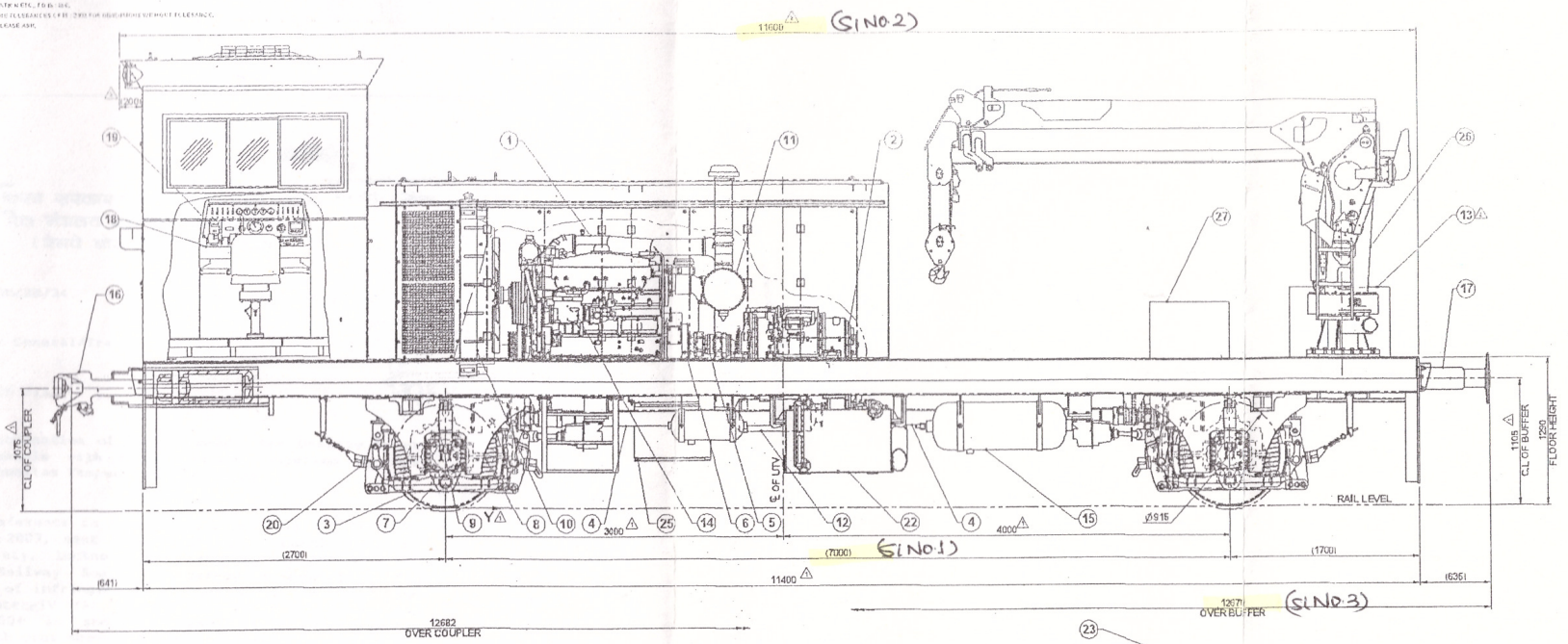
(**Signed**)
(नितिन मेहरोत्रा)
कार्यकारी निदेशक मानक / चालन शक्ति

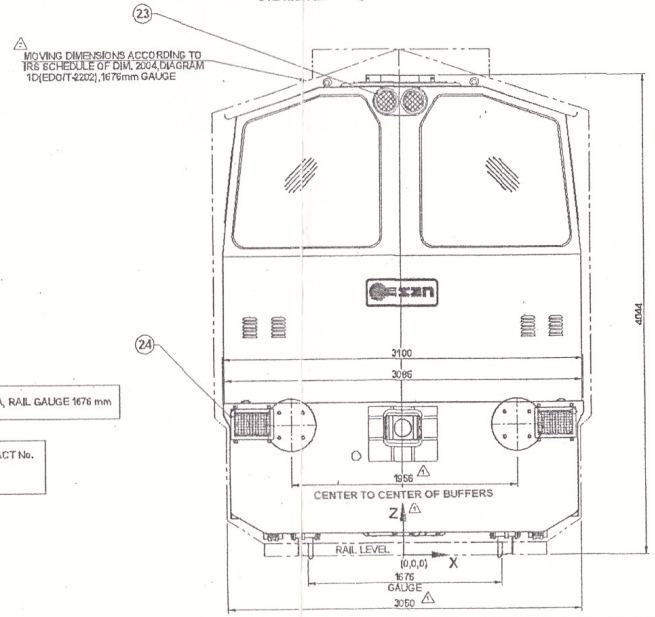
Annexure-A

Technical Details of Utility Track Vehicle manufactured by M/s San Engineering , & Locomotive Company Ltd., Bangalore .

S.No.	Description	Details
1.	Principal dimensions of rolling stock	M/s San Drg. No.SNSK-4541 Rev.02. a) Length over buffers :12670 mm b) Bogie centre distance :NA c) Wheel base : 7000 mm d) Max. axle load :17.5t e) Max. design speed- i) Own power :80 kmph ii) Train formation :80 kmph f) Weight : Gross weight :35t Tare weight :32t
2.	Wheel details	Wheel dia : New : 915mm Worn out : 845mm
3.	Suspension arrangement	M/s San Engg. Drg. No. SNSK-4564
4.	Brake system details	Compressed air brake
5.	Details of coupler and buffer	IR Standard- Coupler : CBC SK-62723 Buffer :IRS TDSK-223
6.	Engine	Make- Cummins,Model-NTA 855 L,400hp @ 2100 rpm
7.	Safety Items	a) Fire extinguisher : one b) Hooter (manual) : two c) Jack (10t) : two d) Wooden Blocks : four e) Crow bars : four f) Hydraulic hand pump : one g) Emergency pneumatic/ Hydraulic hose with end fittings : one h) Flasher light i) Head light

DRG. NO. SNSK4541





UTV 1400A, RAIL GAUGE 1676mm

POWER LINE ITEMS

1. DIESEL ENGINE - 1 No.
2. HYDRAULIC TRANSMISSION - 1 No.
3. WHEEL & AXLE SET - 2 Nos.
4. CARDAN SHAFT - 2 Nos.
5. CARDAN SHAFT - 1 No.
6. FLEXIBLE COUPLING - 1 No.
7. FINAL DRIVE GEAR BOX - 2 Nos.

SUSPENSION

8. COIL SPRINGS - 8 Sets.
9. HYD DAMPER - 4 Sets.

ENGINE ACCESSORIES

10. RADIATOR - 1 No.
11. AIR CLEANER - 1 No.
12. EXHAUST SILENCER - 1 No.
13. HYDRAULIC TANK & OIL COOLER. - 1 No.

PNEUMATIC EQUIPMENTS

14. AIR COMPRESSOR(ENGINE MTG.) - 1 No.
15. AIR RESERVOIR - 3 Nos.

COUPLER & SIDE BUFFERS

16. CB COUPLER - 2 Nos.
17. SIDE BUFFER - 4 Nos.

DRIVING CONTROL

18. OPERATING DESK - 1 No.
19. INSTRUMENT PANEL - 1 Sets
20. BRAKE RIGGING - 4 Sets
21. SPEED CONTROL - 1 Sets(NOT SHOWN)

OTHERS

22. FUEL TANK - 1 No.
23. HEAD LIGHT - 2 Nos.
24. TAIL LIGHT - 4 Nos.
25. BATTERY BOX - 1 No.
26. CRANE - 1 No
27. GEN. SET - 1 No

AXLE LOAD -16 T (NOMINAL, TARE)
AXLE LOAD -17.5 T (UNDER GROSS)

UTILITY VEHICLE UTV1400A, RAIL GAUGE 1676 mm

RAILWAY BOARD CONTRACT No. 2015/TRACK-III/MC/4, DATED 28.10.2016

DTM-III

निदेशक–III/रेलपथ मशीन
Director-III/Track Machine
अ.अ.मा.सं./लखनऊ–226011
RDSO/Lucknow-226011

ECN. NO.	REV.	DESCRIPTION	DATE	INTL.
9000	02	DWG.11600 (A01 & 200 [A2]) ADDED, g-ADD DESC. (08) w.r.t DEVIATION OF HEIGHT AND WIDTH AS PER ID (811)	23.09.2011	DAS
9132	01	DWG. NOS. 1600, 11600, 4000 & TOP TELESCOPIC CRANE REMOVED, DWG. TYPE USED TYPE (S16) ARE ALSO MODIFIED AND CO-ORDINATE SYSTEM ADDED	02.01.2012	DAS

DRN.	K.Gowrishankar
TR'D.	
CHKD.	A.K.Sinha
APPD.	S.K.Ramachandra

GENERAL ARRANGEMENT
(FOR UTV)

SCALE 1:20
DATE 18.11.2016

SAN ENGG. AND LOCOMOTIVE COMPANY LTD., BANGALORE - 560 048

DRG. NO. SNSK4541 REV. 02

File No.RDSO-TMM0HM(S035)/1/2023-O/o PED/TMM/RDSO

भारत सरकार Government Of India
रेल मंत्रालय Ministry Of Railways
(रेलवे बोर्ड) (Railway Board)

सं. 2017/CEDO/SD/RS/06 **New Delhi, Dated ~~31.08.2017~~ 07.09.2017**

The Director General,
RDSO, Manak Nagar,
Lucknow.

विषय : Condonation of infringements by Utility Track Vehicle, supplied by M/s San Engineering & Locomotive Company Ltd., Bangalore to IRSOD (BG) Revised, 2004.

संदर्भ : Your office letter no. CT/TMM/General, dated 20.06.2017.

In reference to above, sanction of Ministry of Railways, Railway Board is hereby communicated for condonation of infringements by Utility Track Vehicle, supplied by M/s San Engineering & Locomotive Company Ltd., Bangalore to IRSOD (BG) Revised, 2004.

The details of infringement w.r.t. Chapter-IV (A) of Indian Railway Schedule of Dimensions (B.G.), Revised, 2004 as shown in Annexure-I and drawing accompanying above referred letter are as under :

(i) **Clause 15** – Maximum rigid wheel base for 4- wheeled vehicles by 900mm (i.e 7000mm instead of 6100mm)

(ii) **Clause 19(a)** – maximum length of body or roof for 4- wheeled vehicle by 3060mm (i.e 11600mm instead of 8540mm)

(iii) **Clause 20(a)** – Maximum length over side buffers for 4-wheeled vehicle by 2860mm (i.e 12670mm instead of 9810mm)

Further, above condonation is subject to stipulation as under :

"RDSO to mention 'Unique Transportation Code' of subject rolling stock in the Speed Certificate at the time of its issuance."

Rsg 7/9
ह/- (प्रेम सागर गुप्ता)
कार्यकारी निदेशक/सिविल इंजीनियरिंग(जी)/रेलवे बोर्ड
[Phone : 030-44803 (Rly.); 011-23383379 (MTNL); 09717647692 (CUG Mobile)]
e-mail address : edceg@rb.railnet.gov.in

सं. 2017/CEDO/SD/RS/06 **New Delhi, Dated ~~31.08.2017~~ 07.09.2017**

Copy forwarded for information to :

(i) The Chief Commissioner of Railway Safety, Office Compound of DRM/NER, Ashok Marg, Lucknow w.r.t. his endorsement no. क्यू 14011/03/2017-18 - त.वि., dated 10/11.07.17.
(ii) General Manager, All Indian Railways.
(iii) Commissioner of Railway Safety, All Circles.
(iv) Executive Director (Track-1), RDSO, Lucknow.
(v) EDTk/Machine, Railway Board, Rail Bhawan, New Delhi.

Rsg 7/9
ह/- (प्रेम सागर गुप्ता)
कृते सचिव, रेलवे बोर्ड

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 87/ M(C) /202/10 Vol (iv) pt (vi)

New Delhi, dated 4.07.2018

The Executive Director (Carriage),
RDSO, Lucknow.

Corrigendum

Sub: Transportation code for Utility Track Vehicle (UTV) supplied by M/s SAN Engineering & Locomotive , Bangalore

Ref: Board's letter of even no dated 27.4.2018

Reference to above, RDSO has requested to allot transportation code for Utility Track Vehicle (UTV) supplied by M/s SAN Engineering &Locomotive, Bengalore and reference drawing no. SNSK-4511 Rev.02 submitted by RDSO.

The following unique transportation code is allotted.

Type of coach	Layout Drawing Number	Transportation code
Utility Track Vehicle (UTV) supplied by M/s SAN Engineering &Locomotive, Bengalore	Drawing no. SNSK-4511 Rev.02	CUTV/SANEL/B

Layout drg.no. SNSK-4511 Rev.02 may be read as SNSK-4541 Rev.02.

Other contents would remain the same.

4-7-18

(Navaid Talib)
Dir. Mech Engg.(Chg.)
Railway Board

Copy to : ED/Track Machine, Railway Board

CARRIAGE DIRECTORATE
RECEIPT/DESPATCH

1. कार्य. निदे. (मानक) / सवारी डिब्बा
2. निदेशक / ई एम एम
3. निदेशक / मानक
4. निदेशक / सी डी जी
5. निदेशक / एम एस
6. संयुक्त निदेशक / सी डी
7. संयुक्त निदेशक / मानक

SSE/DSO
9/07

No.65/WDO/SR/26 (Railway Board) New Delhi, October 19/20, 1966

To

The General Managers,
All Indian Railways.

The G.M. & Chief Engineer,
Railway Electrification project, Calcutta.

The Chief Administrative Officer,
B.B.K. Railway Projects, Waltair.

Sub: Use of new type of Rolling Stock.

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Use of new type of rolling stock on existing Railway systems is governed by the Rules laid down in Chapter VI of the Rules for opening of a Railway. In terms of para 5 of this Chapter, applications for use of new type of rolling stock are required to be accompanied by a certificate to be signed by the Chief Engineer and Chief Mechanical Engineer of a Railway in a form specified therein.

2. The Board wish to point out that this certificate by the Chief Engineer and the Chief Mechanical Engineer (and Chief Electrical Engineer in case of electrical stock) is a positive act of certification in regard to track and locomotive maintenance standards for the speed indicated and a statutory obligation. The Officers signing the certificate are required to decide, on the basis of their personal knowledge and experience of the maintenance conditions of the track, locomotives or rolling stock, with due regard to relevant information available and the maintenance requirements of the new type of rolling stock, as to whether the operation of the particular type of locomotive or rolling stock on the relevant section of the Railway is safe and practicable with the facilities available on the Railway system. The RDSO merely recommend the maximum speed at which locomotives and rolling stock could be permitted to run on standard track under average maintenance conditions and this recommendation is made only on the basis of design features of the particular type of locomotive, rolling stock and assessment of their suitability from oscillation and other tests conducted by the RDSO. These certificates for speed issued by RDSO are meant merely to assist the CEs and CMEs/CEEs in deciding on the speed at which these engines/rolling stock may be permitted to run on their Railway system for the maintenance conditions obtaining on their Rlys.

3. A note on the subject prepared by the DG/RDSO is enclosed herewith in quadruplicate for guidance of your officers.

4. Receipt of this letter may please be acknowledged.

Sd/-
(B.S.D. Baliga)
Director, Civil Engineering,
Railway Board
New Delhi, October 19/20, 1966,

DA: As above.

No.65/WDO/SR/26

Copy to D.G. RDSO, Alambagh, Lucknow with reference to his letter No.MRA/573 of 16.8.1966.

Sd/-
(B.S.D. Baliga)
Director, Civil Engineering.
Railway Board.

Enclosure to Board's letter No.65/WDO/SR/26 dated 19-10-66.

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Use of new types of Rolling Stock.

The rules for use of new types of rolling stock on existing railways are laid down in Chapter VI of the Rules for Opening of a Railway. According to para 5 of this Chapter, applications for use of new type of rolling stock arerequired to be accompanied by a certificate to be signed by the Chief Engineer and the Chief Mechanical Engineer of the Railway in the form specified in para 5(a)(ii). It should be clearly understood that this certificate by the Chief Engineer and the Chief Mechanical Engineer(Chief Electrical Engineer in the case of Electrical Stock) is a positive act of certification and a statutory obligation.

2. The Chief Engineers and Chief Mechanical Engineers (Chief Electrical Engineers in the case of electric stock) are required to decide on the basis of their personal knowledge and experience of track, locomotives or rolling stock with due regard to relevant information available of track and rolling stock and their maintenance requirements, as to whether the operation of particular locomotive or rolling stock is safe and practicable with the facilities provided on the railway system. It may be emphasized that respective Heads of Departments are required to certify annually regarding the sound condition of the track and rolling stock in operation in terms of para 1522 of Indian Railway Code for Accounts department.

3. Prior to the setting up of testing facilties on the Indian Railways, the safety certificate for operation of locomotives and rolling stock was issued by the Chief Engineer and Chief Mechanical Engineers on the basis of their personal knowledge and experience and on the basis of the recommendation for speed limit by the consulting engineers, who available. With the build up of increased design and testing facilities in RDSO, due recommendation is made by RDSO on the basis of design features of particular stock and assessment of their stability from oscillation tests conducted on main line track in normal state of maintenance and not subjected to speed restriction.

4. R.D.S.O. advises the Railway of the speed at which different types of locomotive and rolling stock can be permitted to run on different track structures. This is done in two stages:

(a) preliminary speed; and

(b) final maximum speed.

The preliminary speed is based on a study of the design characteristics of the vehicle and experience of performance of similar designs in India and/or abroad. Such speed would be generally lower than the sectional maximum speed and it would not be difficult for CEs and CMEs to arrive at a decision in issuing the Safety Certificate. Further, it is up to the CEs to decide whether any particular sections or routes require the imposition of a restriction on a generally sanctioned speed. Such a decision has to be based purely on the personal knowledge and experience of the engineers of the zonal railways.

5. It is, however, necessary to keep a watch on the performance of vehicles permitted on such preliminary speed limit to gather experience for guidance in determination of the final maximum speed both by RDSO and Railways the former taking this aspect into account along with the review of the oscillation test, and the latter while issuing the certificate for the final maximum speed. The final maximum speed is determined by the RDSO on review of the oscillation tests generally conducted for new designs and on confirmation of the suitability of the stock from the point of view of strength of track and bridges, although such investigation is made even at the initial stage of design. The oscillation trials are conducted with a view to obtaining data relating, inter-alia to the riding characteristics of the vehicle at the specified speeds. Such tests include aspects, such as, vertical wheel/axle load and lateral force ratio and vertical and lateral acceleration of the vehicle. The studies are aimed at assessing the possibilities of track distortion, wheel mounting, riding comforts etc. For conducting these tests, a section of main line track is selected over which there are no temporary restrictions and which is considered by the railway as being in a generally run down condition for main line standards but without speed restriction. The vehicle is tested generally for new and worn clearance conditions and also where relevant for operation in the forward or back-ward direction. The vehicle selected is one of those in average condition of normal maintenance. The tests are conducted on speeds usually 10% higher than that to which it is proposed to be certified.

On the basis of the theoretical studies and investigations of the tests as indicated and the analysis of the test results, the RDSO recommends the maximum speeds up to which a vehicle may be permitted in normal traffic operation. The certificate of the RDSO though issued by the Director Standards(Mech.) is the final result of studies conducted by the various concerned

Directorates such as Civil Engineering, Carriage and Wagon Motive Power etc. This recommendation of the RDSO is meant to be used as guidance by the CEs and CMEs of the zonal railways in formulating their own certificates to be furnished to the ACRS. It is upto Chief Engineer, Chief Mechanical Engineers and Chief Electrical Engineers to consider on the basis of their personal knowledge and experience of track locomotive and rolling stock and their maintenance requirements whether the conditions prevailing are such as to require a reduction in the speed of the vehicles in normal traffic operation.

6. In the case of certification of speeds by the CEs and CMEs up to 105 Km/hr., it is neither feasible nor it is considered necessary that any more guidance than that at present being given by RDSO should be available to them in normal cases in arriving at their conclusions in the matter of formulation of their certificates to the ACRS. In the case of operation at higher speeds, it is proposed that in addition to the data at present being furnished, copies of track recording charts of the track over which the tests were conducted would also be incorporated in the test reports and made available for reference to the CEs and CMEs. It has already been accepted by the Board that in the case of high speed track (speed above 105 km/hr) track recording would be done at intervals of about 6 months. A comparison of the track recording for the test track with the track recording of the routes over which the high speeds are to be run would be an additional guidance to the CEs and CMEs in the formulation of their certificates.

In conclusion, it may be pointed out that the statutory obligation of certification of speeds is that of the CEs and CMEs/ and CEEs of the zonal railways. In discharging these functions, the CEs and CMEs/CEEs are assisted by the RDSO. The extent of such assistance would normally depend on the speeds involved and the facilities available with the RDSO [illegible]. The procedures, at present, followed are considered satisfactory for speeds upto 105 km/hr. For higher speeds, recording of characteristics of the test track would also be made available to the zonal railways for purpose of comparison with the actual track conditions prevailing from time to time.

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involve large number of labour working with the machine. Hence, extra care is necessary as detailed below, to ensure safety of workers.

(b) Hooters should be provided on the track machines. These hooters should be used to warn the staff working on/around the track machine about approaching train on adjoining track. Remote controlled hooters shall also be deployed as an added precaution by SSE/JE/P.Way so that lookout man standing around 150 m away from the track machine can also operate the hooter to warn the staff suitably. SSE/JE/TM shall also put on the flasher light on as an added precaution till the train on adjacent line has passed the site of work.

(c) Caution order of 30 to 50 kmph with instructions to whistle freely should be imposed on the adjacent line, during the duration of block, for the safety of workmen, depending upon the site conditions and visibility.

(8) **Checking Infringement After Work -** The vertical and lateral clearance for OHE, signal post and any other structure should be checked and adjusted before clearing the block. It shall be ensured by SSE/JE (P.Way) working with track machine that there should be no infringement to signal post, OHE and any other structure as per schedule of dimensions.

708 Failure and Accidents of Track Machines

(1) **Protection in case of Breakdown -** In the event of breakdown, the track machines shall be protected as per GR 6.03 and SR there to by the machine staff, as directed by machine in-charge.

(2) **Failures in Block Section -** Failures in block sections of the track machines will be treated as accident under class 'J – Equipment failure'.

(3) **Accidents involving Track Machine -** Accidents involving track machines shall be treated as train accidents under the appropriate class and action shall be taken as per the rules in force.

(4) **Action in case of Failure in Block -** In case of failure of track machine in block section, immediate information with details should be conveyed to the ADEN/DEN/Sr.DEN of the section and the AXEN/XEN/Dy.CE/Line/TM. SE/JE/TM should decide in consultation with SSE/JE (P. Way), the action to be taken to clear the section. They may decide to push the disabled unit to the nearest station provided the brake power is in good condition. Otherwise, intimation shall be sent to the nearest Station Master asking for a light engine to tow the unit.

(5) **Request for ART/Breakdown -** In case, SSE/JE (P. Way) and/or SSE/JE/TM feels clearance of section is going to take long time, the assistance of Road Break-down or Accident Relief Train shall be asked for immediately. Meanwhile SSE/JE/TM in-charge on the machine shall take necessary action to rectify the defect(s). SSE/JE (P. Way) shall provide all necessary assistance.

दक्षिण पश्चिम रेलवे
South Western Railway

रेल सौधा, प्रधान कार्यालय,
कार्य शाखा, पश्चिम भाग, तीसरी मंजिल,
गदग रोड, हुब्बल्ली – 580 020.

Rail Soudha, Headquarters Office,
Works Branch, West Wing, 3rd Floor,
Gadag Road, Hubballi-580020.

सं/:No.SWR/W.506/TM/RDSO corresp. दिनांक/Date: 28.09.2022

Director/Track Machine-VI
RDSO/Lucknow.

Sub: Revalidation of Provisional Speed Certificate for Utility Track Vehicle, supplied by M/s San Engineering & Locomotive Company Ltd. Bangalore running over SWR. Reg-

Ref: 1) Your Office Lr.No.TM/HM/1135/UTV dated 06.09.2022.
2) RDSO Provisional Speed Certificate No.TM/HM/11/35/UTV dated 27.10.2017.
3) Dy.CE/TM/YPR Lr.No.SWR/TM/506/UTV-001 dated 27.09.2022.

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In connection to the above subject, 04 UTV's were supplied by M/s San Engineering & Locomotive Company Ltd. Bangalore to South Western Railway. The machines were commissioned during Nov-2017, Mar-2018, May-2018 & May-2018 respectively. Vide ref (2) provisional speed certificate was issued by RDSO for these machines over IR. So far the machines are working/running satisfactorily except certain major failures that are enclosed as Annexure-I.

The 04 UTV's supplied by M/s San Engineering & Locomotive Company Ltd. Bangalore are running satisfactorily at maximum permissible speed of 50 kmph while running on its own power.

In view of above, it is requested to revalidate the Provisional Speed Certificate for Utility Track Vehicle, supplied by M/s San Engineering & Locomotive Company Ltd. Bangalore running over SWR.

It is also requested to conduct trail test for these machines for issuing the final speed certificate.

C SELVAM
Digitally signed by C SELVAM
Date: 2022.09.28 18:27:14 +05'30'

सी. सेल्वम
(C. Selvam)
मुख्य अभियंता / ट्रेक मशीन
reenignE feihC/MT

C/-

PCE/SWR: for kind information.

Annexure-I

Sl.No	Machine No	Nature of Failure	Remarks
1.	SAN-001	Pitting, rubbing and burning/dent marks were observed on all four wheels.	The wheel profiling was done at SAN workshop, Bangalore during April-2021. So far the machine running is satisfactory.
2.	SAN-001 & SAN-002	Crane boom not retracting.	The complete crane assemble was replaced with new during April-2021.