फैक्स / Fax : 91-0522-2452494
तार : 'रेलमानक' लखनऊ
Telegram : 'RAILMANAK' Lucknow
टेलीफोन / Tele: 2451200 (PBX)
2465773 (DID)

सत्यमेव जयते

भारत सरकार –रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ – 226011

Government of India - Ministry of Railways
Research Designs & Standards Organisation Lucknow – 226011

No. MW/SPD/BG/BCN/22.32(IR) Dated :18.08.2009

The General Manager (Engg.)

1. Northern Railway, Baroda House, New Delhi – 110 001.
2. Central Railway, Chhatrapati Shivaji Terminus, Mumbai – 400 001.
3. Eastern Railway, Fairlie place, Kolkata – 700 001.
4. Western Railway, Churchgate, Mumbai – 400 020.
5. Southern Railway, Park Town, Chennai – 600 003.
6. South Central Railway, Rail Nilayam, Secunderabad – 500 071.
7. South Eastern Railway, Garden Reach, Kolkata – 700 043.
8. North Eastern Railway, Gorakhpur – 273 001.
9. North East Frontier Railway, Maligaon, Guwahati – 781 011.
10. East Central Railway, Hajipur – 844 101.
11. North Central Railway, Allahabad – 211 001
12. North Western Railway, Jaipur – 302 006.
13. South Western Railway, Hubli – 580 023.
14. East Coast Railway, Railway Complex, Bhubaneswar – 751 023.
15. West Central Railway, Jabalpur – 482 001.
16. South East Central Railway, Bilaspur – 495 004.

Sub: Amendment No.2 to Final Speed Certificate No. MW/SPD/BG/BCN/22.32t (IR) Dated: 22-11-2007 for maximum permissible Speed of 22.32t (CC+6t+2t) axle load Broad Gauge Bogie Covered Wagon type BCN.

Ref: RDSO speed certificate no. MW/SPD/BG/BCN/22.32t (IR) Dated: 22-11-2007 followed by Amendment no.1 dated 01-04-2009.

The existing Para 2.1 of amendment no.1 dated 01-04-2009 to Speed Certificate No. MW/SPD/BG/BCN/22.32 (IR) Dated: 22-11-2007 should be replaced by the following Para:

"2.1 The sections where operation of 22.32t (CC+6t+2t) axle load wagon is not permitted are listed in Railway Board letter no. 2007/CE-II/TS/1-Vol.1 dated 23-07-2007. However, on upgradation of section by concerned railway and approval of Railway Board for operation of 22.32t (CC+6t+2t) on the section, this speed certificate will also become applicable for such sections approved by Railway Board."

(S. Mani)
Executive Director Standards (Motive Power)

S.R.

फैक्स / Fax : 91-0522-2452494
तार रेलमानक लखनऊ
Telegram : 'RAILMANAK' Lucknow
टेलीफोन / Tele: 2451200 (PBX)
2465773 (DID)

सत्यमेव जयते

भारत सरकार –रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ -- 226011

Government of India - Ministry of Railways Research Designs & Standards Organization Lucknow – 226011

No. MW/SPD/BG/BCN/22.32(IR) Dated :01.04.2009

The General Manager (Engg.)

1. Northern Railway, Baroda House, New Delhi – 110 001.
2. Central Railway, Chhatrapati Shivaji Terminus, Mumbai – 400 001.
3. Eastern Railway, Fairlie place, Kolkata – 700 001.
4. Western Railway, Churchgate, Mumbai – 400 020.
5. Southern Railway, Park Town, Chennai – 600 003.
6. South Central Railway, Rail Nilayam, Secunderabad – 500 071.
7. South Eastern Railway, Garden Reach, Kolkata – 700 043
8. North Eastern Railway, Gorakhpur – 273 001.
9. North East Frontier Railway, Maligaon, Guwahati – 781 01
10. East Central Railway, Hajipur – 844 101.
11. North Central Railway, Allahabad – 211 001
12. North Western Railway, Jaipur – 302 006.
13. South Western Railway, Hubli – 580 023.
14. East Coast Railway, Railway Complex, Bhubaneswar – 75 023.
15. West Central Railway, Jabalpur – 482 001.
16. South East Central Railway, Bilaspur – 495 004.

Sub: Amendment No.1 to Final Speed Certificate No. MW/SPD/BG/BCN/22.32t(IR) Dated: 22-11-2007 for maximum permissible Speed of 22.32t (CC+6t+2t) axle load Broad Gauge Bogie Covered Wagon type BCN.

Ref: RDSO speed certificate no. MW/SPD/BG/BCN/22.32t (IR) Dated: 22-11-2007.

Replace existing Para 2.0, 2.1, 2.2 for Track and 2.3.8 under Bridges of the Speed Certificate No. MW/SPD/BG/BCN/22.32t (IR) Dated: 22-11-2007 by the following Para:

" 2.0 On the basis of the above, it is certified that BCN wagon with axle load of 22.32t (CC+6t+2t), may be permitted to run up to a maximum speed of 75 kmph in loaded condition and 80 kmph in empty condition, subject to the following conditions: -"

" 2.1 As per Railway Board's letter No. 2007/CE-II/TS/1 dated 23-07-2007 followed by letter of even no. dated 13-02-2009, operation of BCN wagon with axle load of 22.32 t (CC+6t+2t) is permitted on all over IR except following sections where it will be restricted:

S.R.

Rly.	Sections
CR	Parasia-Chindwara Branch line
ER	Nalhati-Azimganj, Mandarhill-Bhagalpur Munger-Jamalpur, Bandel-Titagarh
ECR	Kiul-Patna, Kiul-Gaya, Kiul-Simariya-Garhara-Barauni Samastipur-Darbhanga, Saugali-Raxaul
NR	Firozpur city-Fazilka, Faizabad-Prayag-Allahabad, Jalandhar city-Nakodar,Zafarabad-Janghai, Amritsar-Khemkaran, Verka-Dera Baba Nanak
NCR	Shikohabad-Farrukhabad, Ait-Komach Yamuna Bridge-Agra City-Raja Ki Mandi
NER	Allahabad-Varanasi
NWR	Suratgarh-Anoopgarh, Merta-Merta Road
SCR	PGDP-NDKD, ADB-PIMP. JKM-BDHN, PDPL-KRMR-JGTL
SER	Baltikuri-Amta, Rupsa-Baripada, Tamluk-Digha, Tata-Badapahar
SWR	Bagalkot-Hotgi, Londa-Miraz, Birur-Shimoga
WCR	Guna-Gwalior

However in case of emergencies such as accidents etc, running of CC+6t+2t loaded wagons, in the restricted sections indicated as above, can be permitted. This however shall be done at the level of PCE, who will advice suitable speed restrictions keeping in view the condition of fixed infrastructure.

This speed certificate will also be applicable for other such routes which may be permitted by Railway Board in future."

"2.2 **Track**

2.2.1 The track shall be to a minimum standard of 52Kg rail (90UTS) on sleeper with M+7 density and minimum depth of ballast cushion below sleeper of 250mm, which may consist of at least 100mm clean and the rest in caked up condition on compact and stable formation.-Maximum permissible Speed up to 75Kmph for loaded condition and 80Kmph in empty condition.

2.2.2 The track shall be to a minimum standard of 52Kg rail (72UTS) on sleeper with M+7 density and minimum depth of ballast cushion below sleeper of 250mm, which may consist of at least 100mm clean and the rest in caked up condition on compact and stable formation.-Maximum permissible Speed up to 60Kmph for loaded condition and 80Kmph in empty condition.

2.2.3 The track shall be to a minimum standard of 90R rail on sleeper with M+4 density and minimum depth of ballast cushion below sleeper of 200mm, which may consist of at least 75mm clean and the rest in caked up condition on compact and stable formation.-Maximum permissible Speed up to 30Kmph in loaded condition and 80Kmph in empty condition.

2.2.4 Wherever condition warrant on account of corrosion on rail/weld collar, wear of rail, cupping in the welds necessary precautions should be taken for fish plating/ joggle fish plating of the rail/weld.

2.2.5 Zonal Railways may impose such further restrictions of speed as deemed fit, based on the age and condition of track and the extent of rail fractures/weld failures/defect generation rate occurring in the sections.

2.2.6 The maximum permissible speed on curves to be decided on the basis of the existing provision of Indian Railway Permanent Way Manual Second Reprint-2004.

2.2.7 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, Railway Board's letter No. 65/WDO/SR/26 dated 19/20-10-1966 may be seen. When the Chief Engineer considers that the roadbed is not compacted or there is improper drainage, he may suitably restrict the maximum permissible speed depending upon the local conditions."

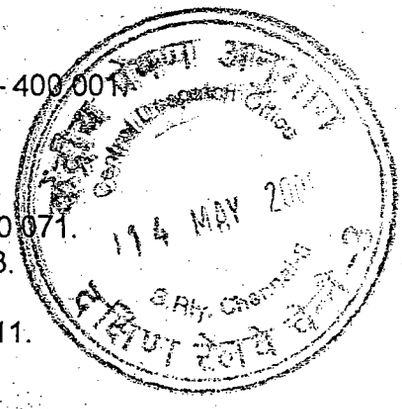
"2.3.8 The directives of RDSO for operation of CC+6+2t, axle load 22.32t communicated vide RDSO Letter No. CBS/Golden/Q/Strength dated 20.03.07 shall also be followed."

(D. K. Singh)
Executive Director Standards (Motive Power)

Copy for information to:

(1) The Secretary (Mech./Engg.), Railway Board, Rail Bhavan, New Delhi – 110 001.

(2) The General Manager (Mech./Optg.):
- (i) Northern Railway, Baroda House, New Delhi – 110 001.
- (ii) Central Railway, Chhatrapati Shivaji Terminus, Mumbai – 400 001.
- (iii) Eastern Railway, Fairlie place, Kolkata – 700 001.
- (iv) Western Railway, Churchgate, Mumbai – 400 020.
- (v) Southern Railway, Park Town, Chennai – 600 003.
- (vi) South Central Railway, Rail Nilayam, Secunderabad – 500 071.
- (vii) South Eastern Railway, Garden Reach, Kolkata – 700 043.
- (viii) North Eastern Railway, Gorakhpur – 273 001.
- (ix) North East Frontier Railway, Maligaon, Guwahati – 781 011.
- (x) East Central Railway, Hajipur – 844 101.
- (xi) North Central Railway, Allahabad – 211 001
- (xii) North Western Railway, Jaipur – 302 006.
- (xiii) South Western Railway, Hubli – 580 023.
- (xiv) East Coast Railway, Railway Complex, Bhubaneswar – 751 023.
- (xv) West Central Railway, Jabalpur – 482 001.
- (xvi) South East Central Railway, Bilaspur – 495 004.



(D. K. Singh)
Executive Director Standards (Motive Power)

फैक्स / Fax : 91-0522-2452494
तार : 'रेलमानक' लखनऊ
Telegram : 'RAILMANAK' Lucknow
टेलीफोन / Tele: 2451200 (PBX)
2465773 (DID)

भारत सरकार – रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ – 226011

Government of India - Ministry of Railways
Research Designs & Standards Organisation
Lucknow – 226011

5 DEC 2007 S. Rly. Chennai-3

No. MW/SPD/BG/BCN/22.32 t (IR) Dated:22.11.2007

The General Manager (Engg.)

1. Northern Railway, Baroda House, New Delhi – 110 001.
2. Central Railway, Chhatrapati Shivaji Terminus, Mumbai – 400 001.
3. Eastern Railway, Fairlie place, Kolkata – 700 001.
4. Western Railway, Churchgate, Mumbai – 400 020.
5. Southern Railway, Park Town, Chennai – 600 003.
6. South Central Railway, Rail Nilayam, Secunderabad – 500 0[illegible]
7. South Eastern Railway, Garden Reach, Kolkata – 700 043.
8. North Eastern Railway, Gorakhpur – 273 001.
9. North East Frontier Railway, Maligaon, Guwahati – 781 011.
10. East Central Railway, Hajipur – 844 101.
11. North Central Railway, Allahabad – 211 001
12. North Western Railway, Jaipur – 302 006.
13. South Western Railway, Hubli – 580 023.
14. East Coast Railway, Railway Complex, Bhubaneswar – 751 023.
15. West Central Railway, Jabalpur – 482 001.
16. South East Central Railway, Bilaspur – 495 004.

Central Despatch Office
-5 DEC 2007
S. Rly. Chennai-3

Sub: Final Speed Certificate for maximum permissible Speed of 22.32t (CC+6t+2t) axle load Broad Gauge Bogie Covered Wagon type BCN.

1.0 Broad Gauge Bogie Covered wagon type BCN having maximum axle load of 22.32 t (CC+6t+2t) is same as existing 20.32 t axle load BCN wagon. All dimensions, bogie particulars (except suspension), purpose etc. are same. The leading particulars of the wagon are indicated in RDSO Drg. No.WD-84014-S-1 Alt.11.

2.1 Oscillation trials on BCN wagon in loaded condition with axle load of 22.32 t were conducted on Nagda-Ujjain-Bairagarh Section of Ratlam Division in Western Railway and the results of the trials are published in RDSO's report No. MT-750/F Rev.-0 of March 2007. The results indicate that BCN wagon exhibiting satisfactory performance up to a test speed of 100 kmph in loaded condition with an axle load of 22.32t.

1.2 BCN wagon has been permitted to run at 80 kmph speed in empty condition vide speed certificate No. MW/BCN dated 16-09-1988 on the basis of oscillation trial Report No.M-469 that will continue further.

2.0 On the basis of the above, it is certified that BCN wagon with axle load of 22.32t (CC+6t+2t), may be permitted to run up to a maximum speed of 60 kmph in loaded condition and 80 kmph in empty condition, subject to the following conditions: -

2.1 As per Railway Board's letter No. 2007/CE-II/TS/1 dated 23-07-2007, operation of BCN wagon with axle load of 22.32 t (CC+6t+2t) is permitted on all over IR except following sections where it will be restricted:

Rly.	Sections
CR	Parasia-Chindwara Branch line, Wani-Pampalkutti
ER	Nalhati-Azimganj, Mandarhill-Bhagalpur,Munger-Jamalpur, Sitarampur-Jhajha(UP),Bhagalpur-Sahibganj Shaktigarh-Bandel-BTPS-Titagarh
ECR	Kiul-Patna, Kiul-Gaya, Kiul-Simariya-Garhara-Barauni Samastipur-Darbhanga, Muzaffarpur-Narkatiaganj-ValmikinagarSaugali-Raxaul, Hazipur-Bachwara via Shahpur Patori, Barauni-Katihar
ECoR	Khurda Road -Puri
NR	Firozpur city-Fazilka, Faizabad-Prayag-Allahabad, Jalandhar city-Nakodar,Zafarabad-Janghai, Amritsar-Khemkaran, Verka-Dera Baba Nanak.
NCR	Shikohabad-Farrukhabad, Ait-Komach Yamuna Bridge-Agra City-Raja Ki Mandi
NWR	Suratgarh-Anoopgarh, Merta-Merta Road
SCR	PGDP-NDKD, ADB-PIMP. JKM-BDHN, PDPL-KRMR-JGTL
SER	Baltikuri-Amta, Rupsa-Baripada, Tamluk-Digha, Tata-Badapahar
SWR	Bagalkot-Hotgi, Londa-Miraz, Birur-Shimoga
WCR	Guna-Gwalior

However in case of emergencies such as accidents etc, running of CC+6t+2t loaded wagons, in the restricted sections indicated as above, can be permitted. This however shall be done at the level of PCE, who will advice suitable speed restrictions keeping in view the condition of fixed infrastructure.

2.2 **Track**

2.2.1 The track shall be to a minimum standard of 52Kg rail (72UTS) on sleeper with M+7 density and minimum depth of ballast cushion below sleeper of 250mm, which may consist of at least 100mm clean and the rest in caked up

condition on compact and stable formation -Maximum permissible Speed up to 60Kmph for loaded condition and 80Kmph in empty condition.

2.2.2 The track shall be to a minimum standard of 90R rail on sleeper with M+4 density and minimum depth of ballast cushion below sleeper of 200mm, which may consist of at least 75mm clean and the rest in caked up condition on compact and stable formation -Maximum permissible Speed up to 30Kmph in loaded condition and 80Kmph in empty condition.

2.2.3 Wherever condition warrant on account of corrosion on rail/weld collar, wear of rail, cupping in the welds necessary precautions should be taken for fish plating/ joggle fish plating of the rail/weld.

2.2.4 Zonal Railways may impose such further restrictions of speed as deemed fit, based on the age and condition of track and the extent of rail fractures/weld failures/defect generation rate occurring in the sections.

2.2.5 The maximum permissible speed on curves to be decided on the basis of the existing provision of Indian Railway Permanent Way Manual Second Reprint-2004.

2.2.6 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, Railway Board's letter No. 65/WDO/SR/26 dated 19/20-10-1966 may be seen. When the Chief Engineer considers that the roadbed is not compacted or there is improper drainage, he may suitably restrict the maximum permissible speed depending upon the local conditions.

2.2.7 Besides USFD testing of rail as per USFD manual, testing of rail head for detection of gauge face corner defects shall be undertaken at the frequency specified for need based concept in USFD manual.

2.3 Bridges

2.3.1 The clearance refers to bridges with standard design of girders, slabs, pipe culverts, piers and abutments etc. issued by RDSO for BGML, RBG and MBG-1987 standard loadings. However, the bearings of span 78.8 m. (effective) designed for BGML standard loading as per RDSO' Drawing No. BA-11154 should be strengthened by providing two additional anchor bolts.

2.3.2 Superstructures and bearings of non-standard spans including arches and sub-structures of all bridges are to be examined under the direction of the Chief Bridge Engineer concern and certified safe by him in terms of current IRS Bridge Rules, Steel Bridge Code, Concrete Bridge Code, Arch Bridge Code, Bridge sub-structures and Foundation Code etc. read with upto-date correction slips.

S.R.

2.3.3 Zonal Railways to certify adequacy of existing Bridges for permitting rolling stock based on physical condition of bridges by keeping them under observations considered necessary by the Chief Bridge Engineer of Railway.

2.3.4 Location of bridges on which speed restrictions are imposed shall be notified by the Railways and incorporated in the working timetable.

2.3.5 In loaded condition, the following restrictions are applicable:

For double-headed operation, track on bridges and approaches of BGML spans 63.0m and 78.8m (both 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.

2.3.6 Other specific restrictions are applicable which are indicated in relevant Speed Certificates of hauling single/multiple locomotives issued by RDSO.

2.3.7 The clearance is subject to the following parameters of BCN wagon loaded upto CC+6t+2t.

(i) Maximum axle load (Empty)	= 6.80 t.
(ii) Maximum axle load (Loaded)	= 22.32 t
(iii) Maximum braking force at rail level per axle	= 10 % of axle load
(iv) Maximum C.G height from Rail level (Empty)	= 1191 mm
(v) Maximum C.G height from Rail level (loaded)	= 1958 mm

2.3.8 The directives of RDSO for operation of CC+6+2t, axle load 22.32t communicated vide RDSO Letter No. CBS/Golden/Q/Strength dated 20.03.2007 and 19.06.2007 shall also be followed.

2.4 Signaling

2.4.1 Provision of GR, SR, SEM and all extent instructions issued from time to time shall be complied with.

2.4.2 On the sections where EBD of more than 1Km. is to be catered for , second distant signal or automatic signaling should be available failing which suitable speed restriction is to be imposed.

2.5 **Rolling Stock**

2.5.1 Before initiating the operation, CME of the railway will certify the track worthiness and safety of the rolling stock. He will also ensure the proper maintenance of the stock.

2.5.2 For movement of wagon on any private or assisted siding for loading or unloading the consignments, the Chief Engineer of Railway shall be referred to.

2.6 **General**

2.6.1 All the permanent and temporary speed restrictions enforced and those that may be imposed from time to time due to track, bridges, curves, signaling and interlocking etc shall be observed.

2.6.2 The design of BCN wagon, does not infringe clauses of Chapter IV (A) of Indian Railway Schedule of Dimensions B.G. Revised, 2004.

2.6.3 Conditions stipulated in the Railway Board letter no. 2005/CE-II/TS/7 dated 01-05-06 for operation of 22.32t (CC+6+2t) axle load shall continue to apply.

Encl: Drg. No.WD- 84014-S-1 Alt.11

(S. Mani)
Executive Director Standards (Motive Power)

Copy for information to :

(1) The Secretary (Mech./Engg.), Railway Board, Rail Bhawan, New Delhi - 110 001.
(2) The General Manager (Mech./Optg.):

(i) Northern Railway, Baroda House, New Delhi – 110 001.
(ii) Central Railway, Chhatrapati Shivaji Terminus, Mumbai – 400 001.
(iii) Eastern Railway, Fairlie place, Kolkata – 700 001.
(iv) Western Railway, Churchgate, Mumbai – 400 020.
(v) Southern Railway, Park Town, Chennai – 600 003.
(vi) South Central Railway, Rail Nilayam, Secunderabad – 500 071.
(vii) South Eastern Railway, Garden Reach, Kolkata – 700 043.
(viii)North Eastern Railway, Gorakhpur – 273 001.
(ix) North East Frontier Railway, Maligaon, Guwahati – 781 011.
(x) East Central Railway, Hajipur – 844 101.
(xi) North Central Railway, Allahabad – 211 001
(xii) North Western Railway, Jaipur – 302 006.

S.R.