Operating Manual for IR, 2008.

Chapter - VI



OPERATING MANUAL FOR INDIAN RAILWAYS

GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

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PREFACE

The objective behind the Operating Manual is to provide a ready handbook to officers and staff involved in train operations. The Manual contains a broad framework of guidelines, which cover various aspects of train operations, and an effort has been made to standardise the diverse operating practices over IR.

New areas covered in the Manual include changes in train operations brought about by IT, 'Non-Interlocked working', 'Derailment Investigations' and 'Command Control and Coordination of Emergency Rescue Operations'. It is hoped that the inclusion of the latter shall sensitise staff in matters on which texts are not available. However, instructions and guidelines contained in the Manual do not in any way supersede or replace the G&SR or other instructions at Zonal and Divisional levels.

I am extremely thankful to Shri Govind Ballabh, IRTS (retd.), for his painstaking effort without which this Operating Manual would not have been possible. I am also thankful to Shri Vinay Mittal, COM/CR, Shri V.K.Roy, COM/NR and Shri S. Jayanth, COM/SR for their valuable suggestions.

I hope all officials involved with train operations will find this Manual useful in their day to day working.

(V.N. Mathur)

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MOVEMENT OF OVER DIMENSIONAL AND OTHER BULKY CONSIGNMENTS (Back to Index)

Definition:
Consignments, which when loaded upon a wagon, would infringe the maximum standard moving dimension, at any point, on the entire route, from the booking station to the destination, including via break of gauge is called an Over Dimensional Consignment (ODC).
Therefore, any consignment exceeding the dimension quoted below shall not be registered for booking unless prior sanction for its acceptance has been obtained from the Zonal headquarters.
Maximum Moving Dimensions from rail level (at any point):

Description	Gauge		
	BG (MM)	MG (MM)	NG (762 MM)
Height at Centre	4115	3430	3200
Height at sides	3505	3200	2895
Maximum Width	3050 for Bogie Wagon 3200 for 4 wheeled Wagon	2590	2286

Note: (i) Above mentioned dimensions includes lashing and packing.
(ii) When a dummy truck is used, the maximum weight that may be loaded, in any wagon or truck is distinctly marked on each vehicle and must not be exceeded.

Classification of ODC consignment:

ODCs are divided into 3 classes according to the minimum clearance available between the consignment and minimum fixed structure profile.

Class 'A': Those ODC loads, which has a gross clearance of 22.86 cm (9 inches) and above.

Class 'B': Those ODC loads, which has a gross clearance of 15.24 cm (6 inches) and above, but less than 22.86 cm (9 inches),

Class 'C': Those ODC loads, which has a gross clearance of less than 15.24 cm (6 inches) but not less than 10.16 cm (4 inches).

Class	Sanctioning Authority	Maximum Permissible Sanctioned Speed	Movement During Day or Night	Required to be escorted by
A	**Within Division** : DRM **Inter Division of the same zone** COM **Inter Rly.**: COM of the Zone and COM of concerned Railway.	Sectional speed	Day & Night	--
B	**Local** : DRM **Inter Div/fgn.Rly.**: COM	BG-40 KMPH MG-25 KMPH NG-15 KMPH	Day & Night	TXR
C	CRS	BG-25 KMPH MG-25 KMPH NG-15 KMPH	Day	SE (C&W) SE(P.Way) TI

Net Clearance:
The net clearance shall be worked out as under:
The net clearance between the consignment as loaded in the train and any fixed structure should be calculated after making an allowance of 75 mm (3 inches) for lurch (horizontal) and 7.62 cm (3 inches) bounce (vertical) on the straight together with following additional factors applicable only when the structure in question is situated on a curve.

1. **Horizontal Clearance:**

(a) Allowance for lean due to super-elevation and over hang due to curvature.
The lean should be calculated for that point on the profile of the load which is likely to have the smallest clearance from fixed structure the formula being :- HC

G

where H = height in feet to the point being considered.
C = Super elevation
G = gauge.

For the central overhang due to curvature, the formula will be:- B2/8R

where B = distance between bogie centre
R = Radius of curve.

In cases where the overhang at the end of a vehicle may have to be calculated by the formula will be: -

$$\frac{L2-B2}{8R}$$

where L is the length of the vehicle.

(b) Additional lurch on curves may be taken 38 mm.

Vertical clearance:

In case where the top width of the consignment exceeds the gauge of the track the vertical tilt should be added to the height of consignment to work out the vertical clearance from the fixed structure.

Procedure for sanctioning movement of ODC

When ODC consignment is offered at a station for booking SS/SM will verify if the consignment exceeds the maximum moving dimension from originating station to destination station including via. and break of gauge, if involved. He should apply to the Sr.DOM, who will obtain the necessary sanction of the competent authority.

An application must show the length, width, height, and weight of the load accompanied by a sketch in duplicate of the consignment.

In communicating sanction for the movement of ODC, specific route, through which the particular consignment will move, should be indicated, and it will be the responsibility of the SS/SM of the station from which the load originates.

In addition to strictly adhering to the specific route, the restrictions (eg. speed restrictions, night running restrictions, platform restrictions etc.) notified for conveyance of the consignment over the route, must be adhered to, and no relaxation in this regard is permitted.

Loading:

On receipt of the sanction, the consignment should be loaded carefully, lashed and packed properly, so as to avoid any change of shifting enroute.

While examining the wagon loaded, the SE(C&W) must pay attention on the following:
Load is well secured;

Load is within the C.C. of the wagon;

Weight on any pair of wheels does not exceed;
Axle load restriction, if any;

Under gear of the wagon.

After loading the consignment, Sr. SE(C&W) will register the measurement and advise the SS/SM concerned of the various overall dimensions, including the packing and lashing etc., as loaded in truck. SE(C&W) must issue "fit to run" certificate to the effect that the loaded wagon concerned is safe to run via the particular route specified.

SS/SM will inform, then to Sr.DOM/DOM and office of the COM, followed by a confirmation copy, to be sent to COM.

The Operating Branch will arrange to advise the COM of the other Rlys. concerned, with full dimensions of the consignment, as loaded in the truck for issue of necessary final sanction for movement.

Under any circumstance, provisional sanction must not be treated as final sanction and final sanction must invariably be awaited before consignment is despatched.

SS/SM/YS/YM concerned must furnish full particulars of the wagon to the Control, such as Wagon No., Owning Rly., Type of Wagon, Station from and to, route over which it is required to move etc. After this, Control/Divisional office will give necessary permission to the concerned staff to despatch the wagon by a particular train on date advise and obtain their acknowledgement.

A Caution Order will be given to the Guard and Loco pilot of the train carrying ODC to restrict the speed and observe any other speed restriction at any other point or other precautions as laid down.

On Electrified Sections:

a) In addition to the precautions laid down above, the following special precautions must be observed for transport of over- dimensional loads on the electrified section:

b) In all cases, where oversize consignment is moving, it should be remembered by all staff accompanying the ODC, that the overhead electrical equipment is always 'LIVE', except when a particular power block has been obtained from the Traction Power Controller. Even when a power block has been obtained, it should be remembered that all the lines, other than those for which the power block has been granted, are 'LIVE' at 25000 Volts.

c) No person should climb on the roof of carriages of wagons, when those vehicles are located beneath the overhead equipment, except when the equipment is made 'DEAD' and earthed.

d) The following are the prescribed clearance from contact wires for the passage of over-dimensional loads through electrified traction areas and the special restrictions required:

e) Special speed restriction is not required when the gross clearance is at least 390 mm.

f) Speed must be restricted to 15 kmph, when the gross clearance is in between 390 mm to 340 mm.

g) Speed must be restricted to 15 kmph and over head power must be switched off when the gross clearance is less than 340 mm

h) No consignment with less than 100 mm gross clearance from the over head contact wire will be permitted over electrified section.

i) A representative of the Traction Department should also accompany all ODC having clearance as specified in item (b) and (c) of sub para (3) above, over electrified section.

j) A representative of the Traction Department should accompany all ODC loads having width of more than 1981 mm for BG and 1910 mm for MG from the centre line of the track.

k) Section Controllers and Traction Power Controller must co-ordinate, while an ODC moves on electrified area.

l) A list of structures, where the clearances are restricted on the electric traction area and also the clearance available under overbridges should be with the Section Controllers and Traction Power Controllers.

Despatch of ODCs:

1. At the originating station the ODC wagon will be moved when final approval has been obtained from the competent authority.

2. At the originating point the number of wagon/wagons carrying ODC should be entered by the Train Clerk/SM in the vehicle guidance in red ink to be handed over to the Guard of the train.

3. SS/SM should advise the Section Controller on duty, before starting the train and while asking line clear, describe the train number with letter 'X' suffixed on it.

4. It will be the duty of the Dy. Chief Controller to keep adjoining Control Office informed about the movement of such ODC, till such time, it is handed over to the adjoining division by specified train. Also ensure that the consignment is moved strictly by the authorised route.

5. Shunting of train with an ODC should be avoided. Loose and rough shunting of ODC wagon and against such wagon is prohibited.

6. When any ODC wagon is detached from the train at any station, SM and Guard are responsible to ensure safe placement and securing of wagon/load.

7 Facility for accompanying staff for extra wagon/brake van should be provided if so required.

8 When a load is so long that it cannot be accommodated in two trucks (i.e. two 8 wheelers), it must be loaded in three trucks so that the entire weight is carried on the centre vehicle and the end trucks are idlers. The load must be placed on packing in the centre truck, so that it is clear of the floor of the end trucks by not less 152 mm and there must not be less than 304 mm up side clearance in the end trucks between each of load and side of truck.

If the weight of the load is such that it cannot be carried on the centre truck, then the load must be carried as equally as possible on the trucks and the centre vehicle must be an idler.