

East Coast Railway  
**(Engineering Department)**  
**CE's CIRCULAR No. 25**

**Sub: Supply and loading/training out of ballast**

The ballast supply is mainly taken through ballast depots. In ballast depots a large quantities of ballast are handled at one place and better control on quality and quantity of ballast can be exercised. Though ballast supply & loading in depots is an old established practice but it is felt necessary to reiterate procedures and extent instructions in this regard.

The part 'F' of chapter-2 of IRPWM deals with ballast and ballast depots. The important paras are reproduced below;

- (i) **Para 261. Type of ballast in use** - Stone ballast shall be used on all lines including points and crossings.
- (ii) **Para 262. Size of the Ballast** - The gauge of stone ballast shall be as follows - As per specifications issued from time to time.
- (iii) **Para 265. Collection and Training out of Ballast** - The collection of ballast can either be done-
  - (a) by resorting to alongside collection, or
  - (b) by collecting at depots and training them out in ballast trains.

The mode of collection will have to be decided taking into account proximity of quarry, availability of good stone ballast, service roads along side the line for carrying of ballast, availability of ballast trains, the turn round of ballast trains and availability of block for unloading.

- (iv) **Para 266. Depot collection of ballast** -
  - (1) Register of ballast collection and training out - The Inspector in-charge of the depot shall maintain a register showing all transactions in respect of stone

ballast, moorum and sand ballast. If the depot deals with boulders also, the same should also find a place in a register.

(2) Loading from the Depot - At all depots the following instructions should be followed:

- (a) The space along the sides of the Railway siding, meant for stacking, should be divided into convenient number of zones and demarcated.
- (b) For each depot, a depot diagram shall be maintained, which should indicate the site details of all the measured stacks.
- (c) Each stack in each zone should be serially numbered.
- (d) The operations of collecting and training out materials should not be carried out at the same time in any one zone.
- (e) The ground on which the stacks are made should be selected and leveled.
- (f) Where practicable, no stack should be less than one meter in height.
- (g) Measurements should be taken of complete stacks. The measured stacks should be identified suitably by lime sprinkling or any other method.
- (h) Before training out of Ballast or other material is undertaken on contract, a copy of each of the depot diagram should be kept with the permanent Way Inspector, the Ballast Train Guard and the Contractor, the original being with the Assistant Engineer. As each stack is lifted, this should be recorded on the depot diagram, which should always be kept up-to-date. Challans should be prepared after loading the ballast into wagons.

(3) Quantity trained out - When settling accounts for training out ballast, checks should be made by comparing the quantities as per stack measurements recorded in the measurement books, with those deduced from wagon measurements as recorded in the ballast train reports, due allowance being given for sinkage as per rules. Should the wagon measurements differ from the recorded measurements by more than 5 percent, the matter should be investigated immediately and reported to the Divisional Engineer. In special cases direct measurement of ballast in wagons may be resorted to with the approval of the Chief Engineer.

- (v) **Para 267. Along side Collections (Cess Collections)** - In the case of along side collections the Inspector-in-charge should maintain separate register showing the measurement of stacks as well as its disposition (Between km. to km.). The stacks should be serially numbered between the successive posts. Any entry should be made in the register whenever the stacks are removed and ballast put into the track. Record should show the place where the removed ballast has been used with the date of removal.
- (vi) **Para 268. Handing over charge by Assistant Engineer** - During transfer of charge of a sub division, the Assistant Engineer taking over, should satisfy himself by test checking some of the stacks at each depot and along the cess to the effect that the quantities of materials shown in the registers are correct. He should certify that this has been done by initialing each entry so checked.
- (vii) **Para 269. Unloading Ballast along the line** - When unloading ballast along the line care shall be taken that the heaps at the sides and the centre are clear of prescribed running dimensions. Ballast shall not be unloaded upon signal wires or point rods. Care should be taken to ensure that no stone is left inadvertently between the stock rail and tongue rail.

In addition to above, stipulations regarding ballast supply and transport as mentioned in Engineering Code are mentioned below;

- (i) **E-1332. Measurement of Ballast Train Work**- It is not usually convenient to record in measurement books detailed measurement of work done by contractors in connection with the working of ballast and material trains e.g. loading and unloading of ballast, permanent way and other construction materials. In such cases ballast train or material train challans in the following form (E. 1332) should be prepared in four copies by the subordinate supervising the loading of ballast or material. One copy should be retained as office copy of the subordinate who trained out the material. Two copies should be sent to the receiving subordinate through the guard of the ballast or material train. One copy should be sent directly to the Assistant Engineer concerned immediately after loading to reach within 24 hours to enable the Assistant Engineer to verify the ballast or materials if required. The receiving

subordinate should check the quantities of materials received with those shown on the challan and accept it subject to any remarks, he may have to make. One copy of the accepted challan should then be submitted to the Assistant Engineer concerned to enable the latter to prepare the contractor's loading, and unloading bill. In this case, the accepted challan takes the place of a measurement book.

Form No E. 1332

..... RAILWAY

**BALLAST/MATERIAL TRAIN CHALLAN FORM**

Department ..... Division .....

Ballast Train Report of ..... train, ordered vide D.E.N's/A.E.N.'s No.....

.....working from Km ..... To km .....

on.....Engine No..... Class..... Composition of train.....

..... Labour ..... Mistries/Mates..... Men.....

.....Women.....Name of Contractor.....

Station		Time		Hours occupied	Trip No.	Work done	Trains crossed	Allocation	
From	To	From	To					Name of work	Head account

Loaded						Unloaded								
At		Trip No.	Contents			At		Trip No.	Contents					
Km.	TP		Wagon	Description	Quantity	Km.	TP		Wagon	Description	Quantity			

Contractor or his authorised Agent.	Inspector No..... Section	B.T. Guard/Engg. Official incharge
..... 20.....	..... 20.....	.....20.....
A.E.N. No.....	D.E.N.....	
Sub. Divn	Division	
.....20.....	.....20.....	

Note:- On reverse of this form, the class, capacity and number of each wagon should be shown. Also, particular of detentions to trains other than for Engineering work.

(ii) **E-1333. The Measurement of Ballast-Ballast** should as a rule, be measured in stacks. When ballast taken over by the Railway is trained out. the correctness of the measurements recorded in the ballast train challans, after making due allowance for shrinkage enroute should be checked with the original stack measurements. In cases where owing to uneven surface of the stacking ground or for want of space in the quarry, etc. ballast cannot be stacked in stacks of convenient sizes and where in consequence ballast has to be measured and taken directly in wagons, the procedure laid down in para 1332 may be adopted subject to a test check of 20% of the wagon measurement by the Assistant Engineer.

(iii) **E-1466. Ballast Train Returns** - A monthly or fortnightly return in the form given below, showing the working, of each ballast train will be prepared for the purpose of debiting the necessary charge on account of ballast train freight to the works or heads of revenue working expenses concerned. This return will originate from the office, which controls the movements of engines and drivers and will be sent to the Divisional Engineer for completion and transmission to the Accounts Officer for effecting the necessary adjustment. "The ballast train charges should be adjusted by debit to the work's and account heads concerned and credit to Revenue head K-693-Demand No. 12, treating the same as reduction in expenditure on the pattern of other railway material."

Note - For the form prescribed for ballast train return please refer Engineering code.

It is very clear from the above stipulations that proper accountal of ballast supply taken and loaded into wagons and then unloaded in track has to be done without fail even in case of ballast unloaded/used in same section. During the

recent checks it has come to notice that no details of quantities of ballast loaded in to wagons from ballast depots is being maintained by supervisors and challans are also not being issued as per para 1332 of Engineering Code.

It is therefore reiterated that all supervisors should strictly follow the instructions/ procedures regarding ballast supply and loading/training out.

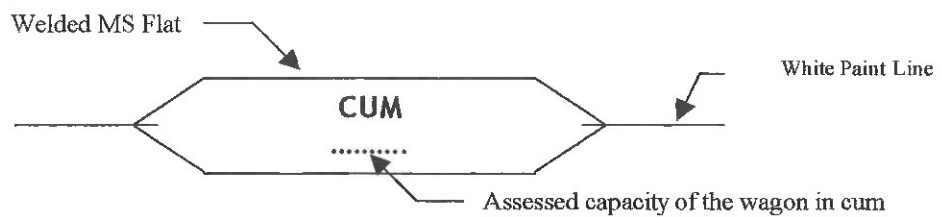
Following instructions should be ensured in field;

- i) The instructions contained in all the above-mentioned para of IRPWM and Engineering code shall be followed in field.
- ii) The level ground certificate to be issued without fail before commencing supply on a particular ground.
- iii) The correctness of sieves and other measuring accessories such as scales, weights, staff, tape and scale shall be ascertained before taking measurements.
- iv) At regular depots each stack site shall be permanently demarcated by providing unserviceable rail post with graduations in metre and centimeter corresponding to 4 top corners of the stack of the height 25 cm more than the height of the highest stack that can be accommodated. Another rail post similarly graduated shall be provided at the intersection of diagonals connecting 4 rail posts as mentioned above.
- v) All Subordinate handling ballast depots should ensure proper accountal of ballast. The ballast registers and depot diagrams as per para 266 of IRPWM shall invariably be maintained in the following format;

Date	Receipts			Issues				Balance Qty. (Cum)
	Stack No.	Qty. (Cum)	Total Qty. (Cum)	Wagon No.	Qty. (Cum)	Consignee	Challan No.	

The ballast registers should be updated on a regular basis whenever there is any receipt or issue of ballast.

- vi) Ballast registers in terms of para 267 of IRPWM shall be maintained in case of cess supply.
- vii) Entries in DMTR shall be ensured.
- viii) In order to avoid any underutilization of wagons, wagons are to be loaded to full capacity as specified by Commercial rules for that type of wagon. After ascertaining the ballast quantity by weight to be loaded for CC plus additional permissible load for a particular wagon, the volumetric assessment of this quantity is to be done considering the ballast density as 1.68 MT/Cum.
- ix) For correct assessment of quantities loaded into wagons a continuous white line shall be painted inside the wagon to indicate the level to which ballast should be loaded. The cubicle content in cum corresponding to white line shall also be painted on both inside and outside of wagon.
- x) In addition to painted line, mentioned above, short pieces of MS flats with the cubical contents punched, shall be welded at the center of paint line on all the four sides as permanent reference.



- xi) Ballast in the wagon shall be leveled to avoid any uneven loading and to facilitate assessment of quantities. It shall be ensured that normally ballast is loaded in to the wagons up to the paint line except exceptional cases when sufficient ballast is not available for further loading in the last trip. In case of under loaded wagons the quantity of ballast loaded shall be assessed by way of actual measurements.

- xii) The quantity of ballast so loaded in each wagon shall be reflected in DMTRs ballast registers, and challans as per the capacity of each wagon.
- xiii) Ballast train Challans as per Engineering Code para-1332 shall invariably be issued in all cases irrespective of the fact whether ballast is booked for unloading in the section of the depot in-charge or otherwise.
- xiv) However, when ballast supply is made in wagons, shrinkage up to 8% shall be permitted at destination while verifying the booked quantities by the consignee.
- xv) The acceptance/verification of such challans issued shall also be ensured as per Engineering Code para 1332 before preparing contractor's bill for loading/unloading of ballast.
- xvi) Proper record of wagon placement, start and completion of loading and wagon draw out shall be maintained to ensure timely loading by the contractor.
- xvii) The Assistant Engineer, in whose jurisdiction ballast has been unloaded, should exercise field checks for proper quality and quantity of ballast received from depots not directly under his control.
- xviii) Assistant Engineers should exercise adequate control and monitor effective implementation of the above instructions.
- xix) As per para 1325 of Engineering code, whenever the measurements are initially recorded by Inspector specified, Assistant Engineers shall carry out 100% test check for quality and quantity of ballast supply and 20% test check on loading/spreading of ballast.
- xx) Sr DENs/DENs in charge of work shall also carry out test checks for quality and quantity of ballast supply as per SER's CE circular no. 147 dated 09/08/98. The concerned paras of the circular are reproduced below;



- a. section 5% test check is to be done by Sr. DENs/DENs in charge of sections for quality and quantity of ballast supply, wherever the measurements are initially recorded by Inspector specified. Such test check should be conducted by Sr. DEN/DENs in the first supply itself followed intermittently in subsequent bills to be spread over uniformly so that the test check covers different sources of supply against one agreement.
- b. However, where the initial measurements are recorded by AENs or Sr. AENs 20% test check should be conducted by Sr. DENs/DENs in charge of the section in the manner explained in para xx-a) above.

These instructions may be brought to the notice of all concerned officers and supervisors for implementation in field.

  
 (J. S. Tolia) 8/2/06  
 Chief Track Engineer

No. W-4/374/Pt.I/CE Circular/ 878

Date 08.02.2006

**Copy to:**

- (1) Sr DEN (Co)/KUR, SBP &WAT for information and circulation to all concerned.
- (2) All HODs, Dy HODs and Sr. Scale and Jr. Scale Officers of Engg. department at Head Quarters - for information please.
- (3) SDGM/BBS, CSO/BBS - for information please.
- (4) Secretary to GM/ECOR/BBS - for kind information to GM.