

टेलीक्स : 0535-2424 RDSO-IN
फैक्स : 91-0522-458500
तार : 'रेलमानक' लखनऊ
Telegram : 'RAILMANAK', Lucknow
टेलीफोन/Tele : 451200 (PBX)
450115 (DID)



भारत सरकार - रेल मंत्रालय
अनुसंधान अभिकल्प और मानक संगठन
लखनऊ - 226 011
Government of India-Ministry of Railways
Research Designs & Standards Organisation
LUCKNOW - 226 011



TECHNICAL CIRCULAR NO. 28

No. No. EI/3.1.39 / 1

Dated 17.7.1998
04.08.98

CHIEF ELECTRICAL ENGINEER,

- Central Railway, Mumbai CST-400 001
- Eastern Railway, Fairlie Place, Calcutta-700 001
- Northern Railway, Baroda House, New Delhi-110 001
- Southern Railway, Park Town, Chennai-600 003
- South-Eastern Railway, Garden Reach, Calcutta-43
- South-Central Railway, Rail Nilayam, Secund-rabad-71
- Western Railway, Churchgate, Mumbai-400 020
- Chittaranjan Locomotive Works, Chittaranjan-713 331

Director, IRIEEN, Post Box No.233, Nasik Road, Nasik – 422 101

Sub:- Haulage capacity of WAG7 Electric Locomotives on start and in run through conditions on different gradients.

**Ref: 1. Railways Board's letter No. 93/Elect(TRS)/440/3 Vol. II dt.27.5.98
2. Technical Circular No.22 issued vide letter No. No. EI/3.1.39/1 dt.1/2.6.98**

Railway Board vide Ref (i) above, have issued directive regarding Haulage/Starting capabilities of WAG7 locos on graded section. Vide para 2 (c) , it has been directed that locos with 16:65 gear ration can negotiate a load of 4700t on 1:150 gradient under run through condition, if the length of such patch is upto 3.25 km. The deployment of locos be so decided in line with this directive of Railway Board, as far as operating instructions are concerned.

In the past, after Technical Circular No. 6 was issued, some Railways reported stalling cases in 1:200 gradients. On scrutiny it was observed that the compensated gradients on such stretches were steeper than these values. To ascertain the compensated gradients, computer studies have been done for WAG7 loco for various attacking speeds and have been circulated to Railways Vide Ref No.(2) above. This is for the purpose of guidance only and not be implemented as operation instructions.

You are requested to conduct trials as per Ref (2) and wherever, the performance is not as per the table, kindly look for:

- (a) Whether the gradients as shown in time table and at site are actually same or steeper?
- (b) Whether the gradient as shown, is compensated gradient or curve allowance is to be added ? In all cases computed compensated gradients is to be considered.

In this connection para 818 of Indian Railways and works Manual is reproduced below for ready reference.

“ All gradients should be compensated for curvature if the ruling gradient on the section is otherwise exceeded. The compensation to be allowed should ordinarily be 0.04 percent per degree of curvature on the broad gauge, 0.03 percent per degree of curvature on the metre gauge and 0.02 percent per degree of curvature on the narrow gauge 762 mm (2`-6”).”

In cases where the differences exist, joint checks with Engg. Deptt be conducted to indicate the correct gradients. Feedback on the trials/studies by Railways may kindly be advised to RDSO.

Ramesh Chandra

Encl.: Nil

(Ramesh Chandra)
for Director General/Elect.

Copy to: Secretary (Elect. Traction) , Railway Board, Rail Bhawan, New Delhi-110 001

Ramesh Chandra

Encl.: Nil

(Ramesh Chandra)
for Director General/Elect.