My dear Hussain,

Sub: Running of 25 Tonne axle load freight train on Indian Railway – Rail Stress Calculation.

Ref: (i) RDSO’s report received under letter No. CT/DG/LW/HAW dtd 21.02.2018.
    (ii) Railway Board’s letter No. 2018/CE-II/25T dated 14.03.2018

On the basis of above referred RDSO report, Railway Board had issued the revised track structure for running 25T axle load freight stocks. It is noted from RDSO Report that need for 110UTS rail arose primarily on account of measurement of higher residual rail stress on 20mm rail slice as per international norms.

Running of 25T axle load freight trains at 100kmph is one of the main objective of Indian Railways to augment freight loading, which are to be run on nominated routes of IR. In view of the above, following course of action needs to be taken on priority:-

(i) Re-validate the RDSO Report referred at (i) above through established reputed overseas Institution/Organisation having expertise in Rail technology ‘on priority’ which would also include expert opinion on requirement of track structure for running 25T axle load freight trains at 100kmph for various rolling stock operating on IR and prevalent loading conditions. Whether such rolling stock can be permitted to run with 25T axle load on existing PSC sleepers and 60kg 90 UTS (Yield strength 460 Mpa) Rail and if so, at what speed.
(ii) Feasibility of improving the yield stress of 60 kg, 90 UTS grade rail from existing yield stress of 460 Mpa through technical inputs including metallurgy & manufacturing process.

(iii) Action Plan for Development of 60kg 110UTS rail indigenously with corresponding welding technology for Flash Butt Welding (FBW) and Alumino-Thermit Welding (ATW).


An early action in the matter is requested.


Yours sincerely,


(M.K. Gupta)

Shri M. Hussain,
Director General,
Research Designs & Standards Organization (RDSO),
Manak Nagar,
Lucknow - 226011