VEHICLE STRUCTURAL CRASHWORTHINESS ECONOMIC ASSESSMENT OF LOW SPEED IMPACT

The end loading requirements for railway passenger vehicles, in particular multiple units, are under review with the aim of determining a more scientific foundation on which to base design specifications. A preliminary rationale has been developed, which seeks to achieve two objectives:

- To prevent vehicle damage during normal and heavy shunting
- To limit damage and improve passenger and crew protection during accidents

The design requirements need to take into account the economic balance between the initial capital cost of providing impact resistance and the effect this has on subsequent vehicle repair costs. The report addresses this economic assessment, confining itself to multiple unit stock.

Two energy absorption options are considered: replacement GRP tubular energy absorbers and a hydraulic velocity sensitive device.

The report concludes that the provision of energy absorption to protect vehicle structures in the event of accidental impact up to 8 m/sec could easily be accommodated in any proposed vehicle structure.

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