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Remedial Actions to Assure Fire and Life Safety in Heritage Passenger Cars – A USA Case Study

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ABSTRACT:

In the United States, passenger train safety standards are addressed in federal regulations published by the Federal Railroad Administration (FRA). Title 49 of the Code of Federal Regulations, Part 238, (49 CFR 238) addresses Passenger Equipment Safety Standards and Title 49 of the Code of Federal Regulations, Part 239 (49 CFR 239) addresses Emergency Preparedness. Part 238 is very prescriptive in its specifications for Fire Safety (238.103), especially with regard to the test methods and performance criteria for the flammability and smoke emission characteristics of materials used in passenger cars and locomotives. While application of these specifications is relatively easy to achieve in the purchase of new passenger equipment, applying these specifications to heritage equipment presents unique challenges. Fortunately, in cases where interior finishes and components cannot be easily replaced with new compliant materials, the railroad may apply remedial actions. This fire protection engineering activity requires significant engineering judgement and creativity.

CONCLUSIONS:

This paper presents how a reasonable level of fire and life safety was achieved in a 70-year-old passenger carriage by applying remedial actions. The paper takes form as a USA case study and looks at the fire safety challenge through the lens of a railroad operator.

REFERENCES:

Passenger Equipment Safety Standards, 49 CFR § 238 (1999 – 2019)
<https://www.ecfr.gov/current/title-49/subtitle-B/chapter-II/part-238>

Passenger Train Emergency Preparedness, 49 CFR § 239 (1998 – 2019)
<https://www.ecfr.gov/current/title-49/subtitle-B/chapter-II/part-239>