



Reduction of Interior Damage to Improve Delivered Quality for Aston Martin St Athan

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Introduction

Aston Martin Lagonda operates in the luxury vehicle sector, where interior finish strongly influences delivered quality and customer perception (Juran and Godfrey, 1999; Styliadis, Wickman and Söderberg, 2015). At St Athan, cosmetic interior damage such as scuffs, scratches and marring can create rework and increase warranty exposure. Temporary protective covers were introduced across high-contact interior areas to reduce this risk.

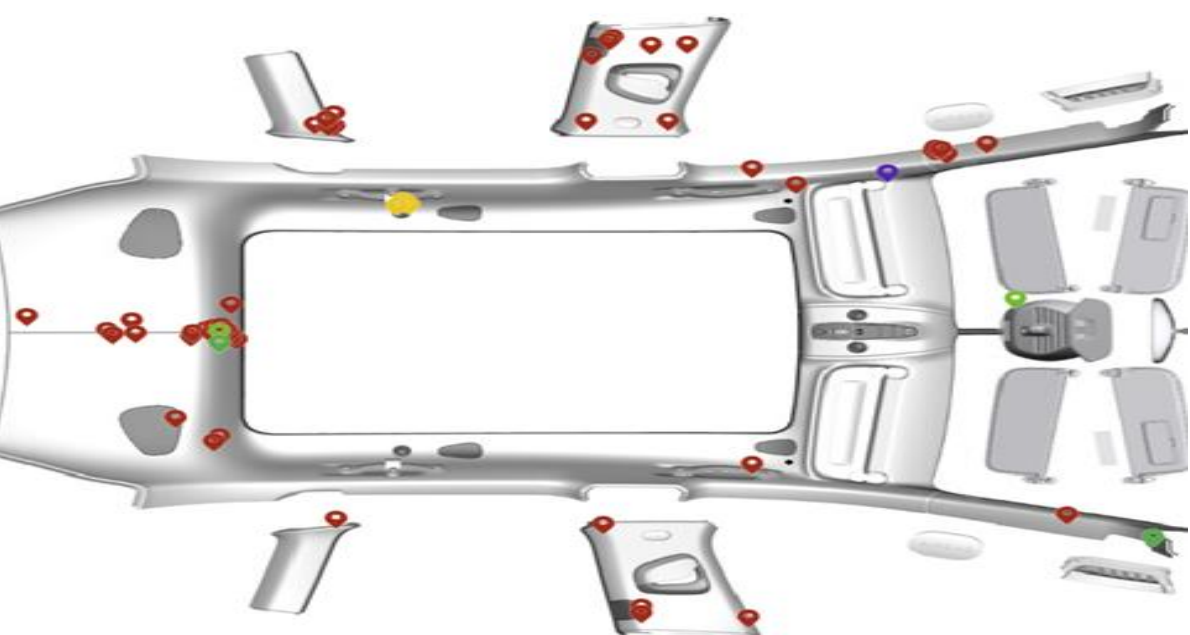


Figure 1 – Interior damage hotspot mapping used to identify high-risk areas

Project Aims

- Evaluate whether protective covers reduced in-scope interior damage.
- Compare pre- and post-intervention performance.
- Assess repair time, labour cost and warranty impact.
- Identify why remaining damage may still occur.
- Recommend further process controls.

Protective Cover Examples



Figure 4 – Examples of temporary protective covers fitted during production

Evaluation Method

- Retrospective before-and-after evaluation (Shadish, Cook and Campbell, 2002).
- Internal data = leading indicator.
- Warranty cost = lagging indicator.
- Same scope rules applied across both periods (AIAG, 2010).

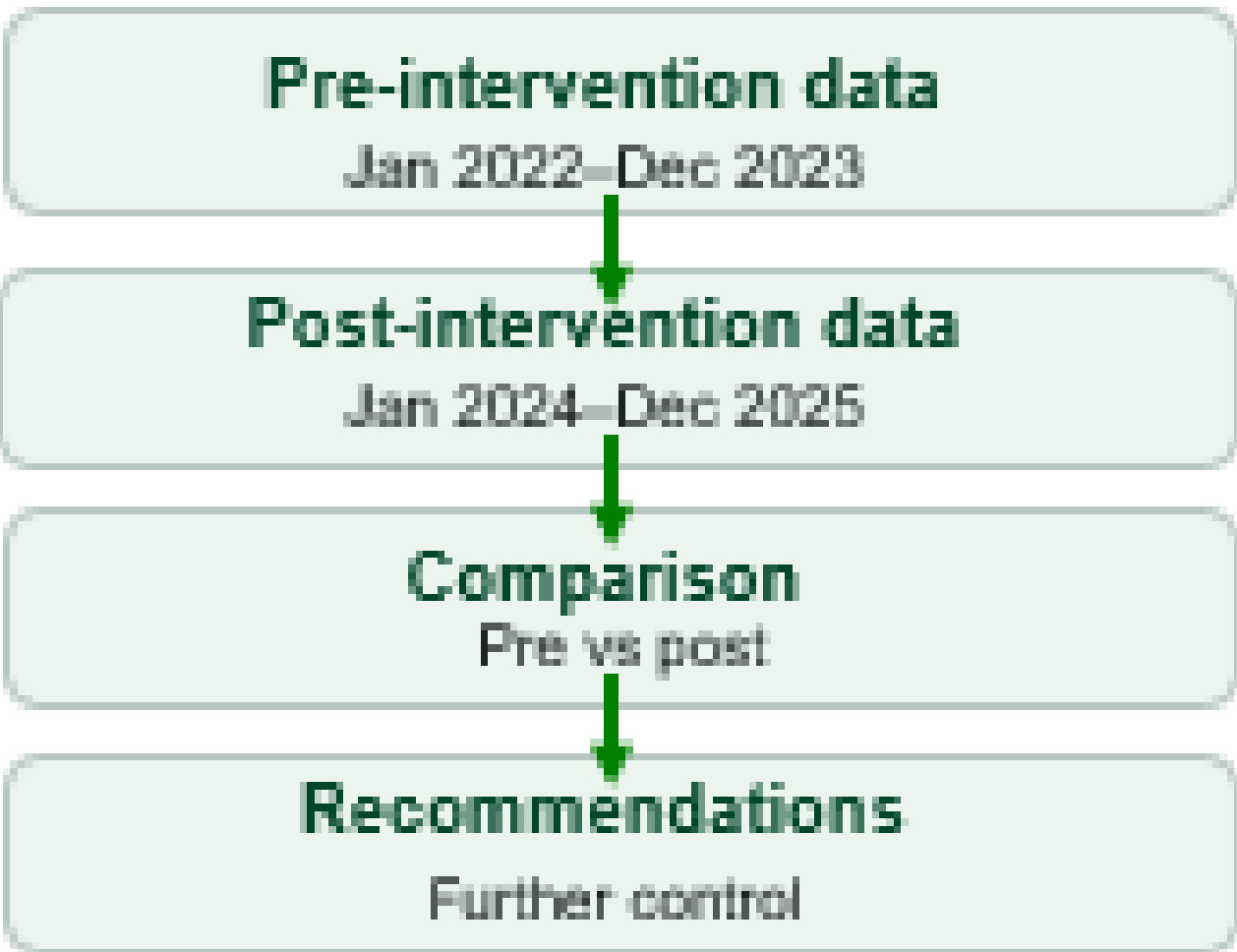


Figure 2 – Before-and-after evaluation method used for the project

Key Results

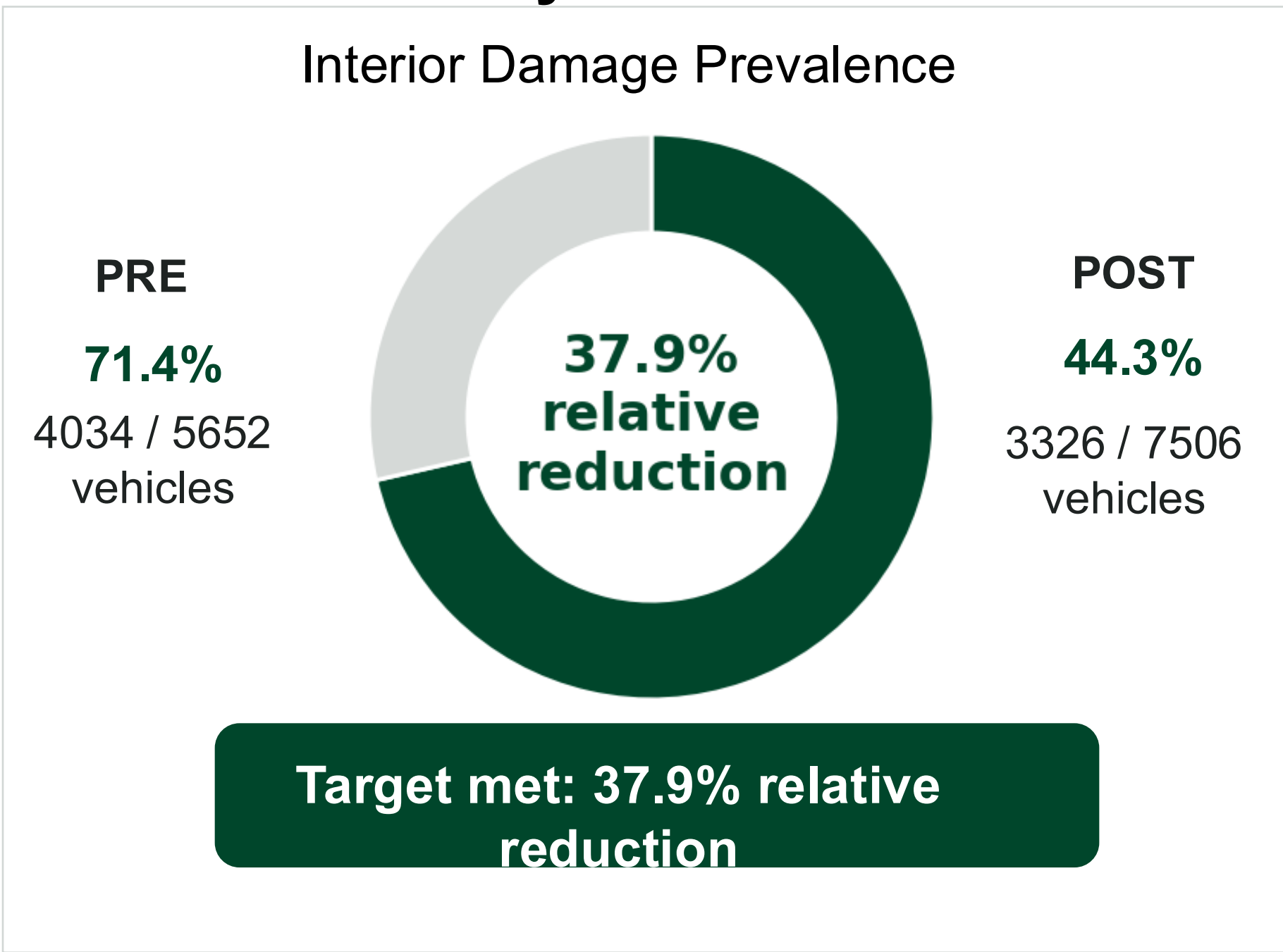


Figure 3 – Vehicle-level interior damage prevalence before and after protective cover introduction

Interpretation

- Vehicle-level prevalence reduced from 71.4% to 44.3%.
- Main repairable defect records / built vehicle reduced: 2.02 → 1.34.
- Repair time per built vehicle reduced slightly: 0.565 h → 0.536 h.
- Warranty cost per built vehicle increased: £8.70 → £84.78.
- Warranty increase likely reflects severity, replacement route, missed detection, transport/dealer handling, coding or acceptance-process variation. No confirmed policy change was identified.

Evaluation Control

- Consistent defect scope across both periods.
- Vehicle-level prevalence used to account for build volume.
- Per-vehicle metrics used when interpreting totals.
- Warranty interpreted cautiously as a lagging, multi-factor indicator; acceptance practice/coding changes may influence recorded cost (Montgomery, 2019).

Recommended Further Work

- Audit cover fit, removal timing and refitting.
- Define clean storage for removed covers.
- Improve close-up photographic evidence before release.
- Review door card cover design and retention.
- Monitor damage prevalence, repair time and warranty cost monthly (Imai, 1997; Montgomery, 2019).

Conclusion

The protective cover intervention reduced vehicle-level interior damage prevalence and achieved the target reduction. However, warranty cost increased even after volume normalisation. This may reflect higher severity, replacement route, missed detection, transport/dealer handling, coding, and a warranty acceptance practice where lower-value claims, understood to be under approx. £5,000, were more readily accepted. The process is therefore partially effective but not fully optimised.

Key References and Use

- AIAG (2010): defect classification and inspection consistency.
- Bhushan (2013): scuffing, scratching and debris-related contact mechanisms.
- Juran and Godfrey (1999): cost-of-poor-quality interpretation.
- Montgomery (2019): volume-normalised comparison and monitoring.
- Shadish, Cook and Campbell (2002): before-and-after evaluation design.