

## Expert Report Conclusion Section

Retained expert report, Rule 26(a)(2)(B) | Final specimen

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A conclusions section rewritten to carry the cross-references, qualifiers and definitions already present earlier in the same report.

### FINAL TEXT

SPECIMEN, PREPARED BY EDITFAST FOR ILLUSTRATION. NOT A REAL RECORD.

Report of J. Halloran, P.E. - Meridian Forensic Group (fictitious)

EXTRACT FROM EARLIER SECTIONS (reproduced unchanged in both panels)

3.1 Fatigue morphology: beach marks and ratchet marks on a fracture surface.

4.2 Fracture surface at the bolt hole: beach marks and one ratchet mark observed.

4.5 Measured bolt torque as found: 31 foot-pounds.

5.1 Endurance limit used in analysis: 18 ksi.

5.3 Finite element model run at 55 foot-pounds: predicted stress range 14 ksi.

6.2 Installation instructions at Appendix C state a torque of 55 foot-pounds. They state no tightening sequence for the four bolts.

### SECTION 7 - CONCLUSIONS

7.1 The bracket failed in fatigue. Basis: the fracture surface observations at Section 4.2, read against the fatigue morphology at Section 3.1.

7.2 The failure was caused by improper installation. Basis: the as-found torque of 31 foot-pounds at Section 4.5, against the 55 foot-pounds specified in the instructions at Section 6.2.

7.3 Had the bracket been installed correctly, the incident would not have occurred. Basis: the model at Section 5.3, run at 55 foot-pounds, predicts a stress range of 14 ksi against the endurance limit of 18 ksi at Section 5.1.

7.4 It is my opinion that the manufacturer's instructions were inadequate. Basis: Section 6.2, where the instructions state a torque but no tightening sequence for the four bolts. [Query to the author: inadequate is not defined anywhere in the report. Do you intend the opinion to be limited to the absence of a tightening sequence, or wider than that?]