



## Steve Dosman, CEng, BSc (Mech)

Engineering Investigator - Consultant

Steve is a Chartered Engineer with 23 years of hands-on experience in the Aerospace failure investigation/design/modification/flight and ground testing/NDE/structural integrity arenas. Steve has had a long career dealing with broken bits of aeroplanes – both assessing in service failures, and actively trying to break parts, built-up components and even full aircraft.

### Areas of Expertise

- Failure assessments for metallic components, pressure vessels, fittings, lugs, welds and joints
- Strength, Stability, Fatigue and Damage Tolerance assessments for metallic and composite structures
- Structural dynamics assessments including: Normal Modes, Frequency Response, Transient, Experimental Modal Analysis and Ground Vibration Testing, Shock, Vibration, Shock Response Spectra
- Structural test - development, support, witnessing and assessment: static strength, fatigue, crack growth for coupon, details, components up to full scale
- Data acquisition and assessment - strain gauge, accelerometer, and other metrics
- Operational Loads Measurement on full scale structures, long term and targeted duration
- Vehicle Usage Monitoring and assessment

After graduating with a 1<sup>st</sup> class degree in Mechanical Engineering from the University of British Columbia Steve began his career as a stress engineer for Marshall Aerospace and Defence Group in Cambridge, carrying out strength assessments on new designs, calculating crack growth rates and fracture sizes for critical design details on transport aircraft modifications, and providing Structural Integrity advice on several RAF Transport/Tanker/AEW aircraft types. This included assessing failures on everything from failed main wing spars to landing gear support fittings, to main frames, to wayward flap track frogs.

Steve helped develop, and later became Chief Engineer, on two large, multi-year, full scale fatigue tests involving the C-130 Hercules aircraft for the RAF and RAAF. This included developing the load spectra, commissioning, supporting test operations, maintaining the rigs (which required a dedicated hangar), evaluating all inspection and NDE results, and then developing and carrying out residual strength testing to failure.

Steve became the Technical Authority for Marshall ADG for all work involving Fatigue, Damage Tolerance and Structural dynamics disciplines, had Check and Approval signoff on structural drawings and reports, and was an EASA and MAA Compliance Verification Engineer for Panel 3: Structures and Panel 14: Instructions for Continued Airworthiness. Steve was also a committee member of the MAA Military Aircraft Structural Airworthiness Advisory Group (MASAAG), which provides Guidance Material, Acceptable Means of Compliance and guided development for UK Defence Standards and MAA regulatory articles.

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