Code of Federal Regulations

This Section of CFR is No Longer Current.

Sec. 23.572

Part 23 AIRWORTHINESS STANDARDS: NORMAL, UTILITY, ACROBATIC, AND COMMUTER CATEGORY AIRPLANES	
Subpart C--Structure	Fatigue Evaluation

Sec. 23.572

[Metallic**]** wing, empennage, and associated structures.

[(a) For normal, utility, and acrobatic category airplanes, the strength, detail design, and fabrication of those parts of the airframe structure whose failure would be catastrophic must be evaluated under one of the following unless it is shown that the structure, operating stress level, materials and expected uses are comparable, from a fatigue standpoint, to a similar design that has had extensive satisfactory service experience:
(1) A fatigue strength investigation in which the structure is shown by tests, or by analysis supported by test evidence, to be able to withstand the repeated loads of variable magnitude expected in service; or**]**
(2) A fail safe strength investigation in which it is shown by analysis, tests, or both, that catastrophic failure of the structure is not probable after fatigue failure, or obvious partial failure, of a principal structural element, and that the remaining structure is able to withstand a static ultimate load factor of 75 percent of the critical limit load at V_C. These loads must be multiplied by a factor of 1.15 unless the dynamic effects of failure under static load are otherwise considered.
(3) The damage tolerance evaluation of Sec. 23.573(b).
(b) Each evaluation required by this section must:
(1) Include typical loading spectra (e.g. taxi, ground-air-ground cycles, maneuver, gust);
(2) Account for any significant effects due to the mutual influence of aerodynamic surfaces; and
(3) Consider any significant effects from propeller slipstream loading, and buffet from vortex impingements.

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Comments

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