

Glossary of

Aeronautical and astronautical terms —

Section 3: Structures

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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Contents

	Page
Subsection 31. General	1
Subsection 32. Detail parts	3
Subsection 33. Aeroelasticity	4
Subsection 34. Fatigue	6

(Notes on the arrangement and scope of the glossary are contained in the Foreword to Section 1.)

Subsection 31. General

No.	Term	Definition
3101	buckling	A structural deformation due initially to instability under load, irrespective of whether the deformation is elastic or permanent and whether it leads at once to collapse or not.
3102	creep buckling	Critical terminal buckling resulting from slow and steady increase in the deformation of a structure under a constant load.
3103	thermal buckling	Buckling induced wholly or in part by thermal stress or by thermal distortion.
3104	factor of safety	The factor by which a limit load is multiplied to produce the load to be used in the design of an aircraft or part of an aircraft. It is introduced to provide a margin of strength against loads greater than the limit loads, and against uncertainties in materials, construction, load estimation and stress analysis.
3105	proof factor	The factor of safety corresponding to the proof load.
3106	ultimate factor	The factor of safety corresponding to the load which is regarded as the ultimate for design propose, i.e. the fully-factored load.
3107	fineness ratio	The ratio of the length of a body to its maximum transverse dimension or, sometimes, to some equivalent dimension.
3108	flight envelope MANOEUVRING V- <i>n</i> DIAGRAM	A diagram in which, for a particular aircraft type, the specified design normal accelerations (as multiples of <i>g</i>) form the ordinates and the corresponding equivalent airspeeds the abscissae. The boundary of the diagram forms a closed figure which defines the design limits for the aircraft concerned.
3109	fully-factored load	The maximum load which a structure is required to be capable of withstanding.
3110	geodetic construction	A method of making curved space frames in which the principal structural members follow geodesics in the surface, so that the forces set up in the members are either tensile or compressive.
3111	gust alleviation factor ALLEVIATION FACTOR	A correction factor which allows for gust shape, aircraft flexibility, freedom in pitch and delay in the growth of the lift increment. The factor is applied to the increment in acceleration found from a simple calculation of the response to a sharp-edged gust in which no allowance is made for these effects.
3112	gust envelope GUST V- <i>n</i> DIAGRAM	A diagram in which, for a particular aircraft type, the gust load factors form the ordinates and the corresponding equivalent airspeeds the abscissae, and on which contours of constant vertical gust velocity can be drawn. It is often superposed on the flight envelope because of the common abscissae.
3113	gust frequency	The number of discrete gusts encountered per unit horizontal distance (usually one mile) having vertical velocity equal to or greater than a given value.
3114	integral construction	The formation of a structural member as a single whole instead of by the assembly of a large number of separate elements.
3115	limit load UNFACTORED LOAD	The maximum load expected to be applied, in a particular condition of operation, to the aircraft or to any part of it.