CS 31GB.28 Tethered flight loads

ED Decision 2011/012/R

1. The effects of the loads associated with tethered flight on the balloon's components and any additional equipment (if required) must be considered in the design.
2. The tethered restraint system must be designed so that any single failure will not jeopardise the safety of the occupants, the balloon and or third parties.
3. Operational limitations, associated to tethered flight, must be established and recorded in the Flight Manual. (See CS 31GB.81(b)(2))

AMC 31GB.28(a) Tethered Flight Loads

ED Decision 2011/012/R

Due to the complexity of tethered flight loading, a simple analysis using configurations based on industry best practice (e.g. restraints/tether lines in a 'flat tripod' configuration with upwind and downwind v-bridles) can be used to determine the suitability of a design.

The structure needs to be designed so that stress concentrations beyond the limit of fatigue are avoided in areas where normal operation may produce varying stress.

Note: The greatest danger during tethering is if any element of the tethering equipment should fail with insufficient positive buoyancy for safe free flight. For this reason, a single point/single element tethering should not be considered.

→ CS 31GB.30