

# [Pressure bulkhead to support the landing gear system](https://assignbuster.com/pressure-bulkhead-to-support-the-landing-gear-system/)

Pressure Bulkhead for the Landing Gear System Number Pressure bulkheads to support the landing gear system
The structure of pressure bulkhead for installation on an aircraft’s landing gear includes a web of bulkheads and a supporting structure to ensure stability. The bulkhead web is made of one part in front of the pressurized part and a second part directly opposite the initial compartment (Roskam, 2002). The supporting structure, which is developed from several major beams, secondary beams, and connecting structures, is placed on the subsequent compartment of the bulkhead structure. Accordingly, parts of the architecture embody or create horizontal and vertically placed pressure bulkhead of aircraft in a simple but effective manner (Yadav, & Shukla, 2012). In ideal embodiments, pressure bulkheads diffuse excessive overpressure and underpressure exerted by the aircraft’s cabin load, thus avoiding cases of hard landing that can result in instability.
According to Parker (2005), all structures of the creation, both the horizontal and vertical bulkhead can be achieved through the installation of an anticlastic exterior; that is, a double-curved structure complete with the depressions in opposite ways. An anticlastic surface is normally used for landing gear to its symmetry and balancing of the cabin load for stability.
Pressure bulkheads are important to the landing gear architecture, mainly for stability purposes during landing and take-off (Bahrami, 2012; Currey, 1988). The portion of an airplane constituting the wheels, tyres, braking system, drag brace, and pressure absorption and distribution mechanisms is referred to as the landing gear or undercarriage. Additional parts connected to and working in tandem with the undercarriage may encompass retracting mechanisms, door panels, steering devices, and shimmy dampers (Canaday, 2012).
Central gear
Centrally-placed landing gear provides symmetric support to the aircraft, and ensures its uniform movement on the ground (Canaday, 2012). It also serves as the main proportionate means of diffusing any accumulations of energy created in the changeover from flight to landing roll, thus prevents the aircraft from landing by its side (Wright, & Cooper, 2008). Mair and Birdsall (1996) aver that the brakes, usually connected to the main wheels, came handy when the forward movement of the aircraft needs retarding: in light of this, a centrally placed gear provides stability in the navigation of the aircraft during retracting.
According to Currey (1988), the popular structure of modern aircraft landing gear come in the form of a tricycle, with the primary gear fixed aft of a front nose gear, and at the centre of gravity. The nose gear carries one-fifth of the aircraft’s static weight (Bahrami, 2012). The central position of the landing gear, especially for large aircraft with immense cabin load is supported by multiple-wheeled bogies to reinforce the enormous weight and, in some cases, ensure soft terrain for takeoff and landing purposes.
Generally, pressure bulkhead is important to the structure and function of an aircraft’s landing gear, since it helps to disperse any pressures and energy build-up during take-off and landing. The central positioning of the gear respects the gravitational force, thus provides stability and proportionality to the cabin load, and prevents cases of the aircraft falling by its side during landing. The undercarriage serves the transitional function of ensuring that an airborne craft touches the ground, and takes off with insignificant or no challenge to critical stability.
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