

Comparison between low-wing and high-wing aircraft

	Low	High
Structure & Aerodynamics		
Favorable ground effect in takeoff & landing	+	-
Moving surfaces closer to the ground are more easily damaged	-	+
High wings tend to be strutted because they are often thinner so as to leave enough headroom. (more draggy than low-winged arrangements)	+	-
Low wing structure is useful anchorage and stowage for landing gear	+	-
Landing gear can be made shorter and lighter	+	-
Deeper spar can be used (can be incorporated into seat structure)	+	-
Increase the depth of the fuselage if deeper spar is needed	+	-
Fairing between wing root and fuselage more critical aerodynamically (upper surface of the wing generates 66% of the total lift and some is lost by imperfect fillets, while imperfections beneath the root of a high wing increase static pressure and increase lift)	-	+
Stability		
High wing provides more <u>lateral stability</u> through dihedral effect	-	+
<u>No dihedral needed</u> , easy to build (a high wing augments dihedral, while a low wing works against dihedral. So that low-winged airplanes need more dihedral than those with high wing)	-	+
Safety & Visibility		
Better fields of view from above the horizon, downwards (better touring aircraft)	-	+
Better fields of view from above the horizon, upwards (agile aircraft)	+	-
Visibility in the direction of turn	+	-
Maneuverability, Agility (good fields of view in the direction of turn and maneuver)	+	-
<u>Crashworthiness</u> , tough and resilient structure is needed to take the weight of the aircraft when on its back	-	+
<u>Crashworthiness</u> , easily exit from the aircraft	-	+
Note: the extend of cockpit glazing should be determined by the pilot needs. An agile airplane which regularly exceeds angles of bank of 60° needs wider fields of view than a stately transport machine, which rarely exceeds 30°		
Aircraft category		
Touring aircraft	-	+
Agile aircraft	+	-

References

Darrol Stinton, The Design of the Aeroplane, BSP Professional Books