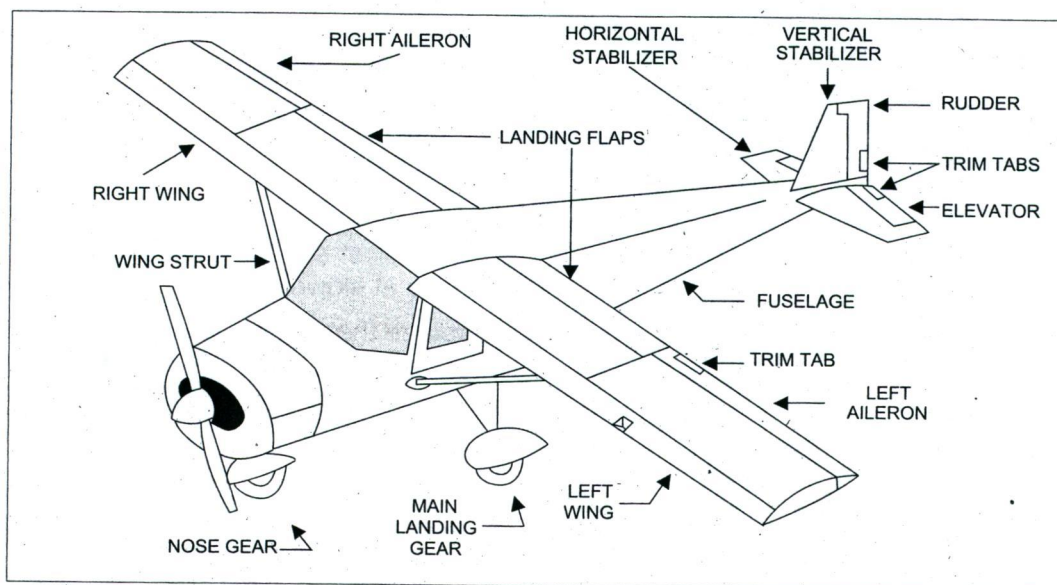


# AIRPLANES: HOW THEY FLY

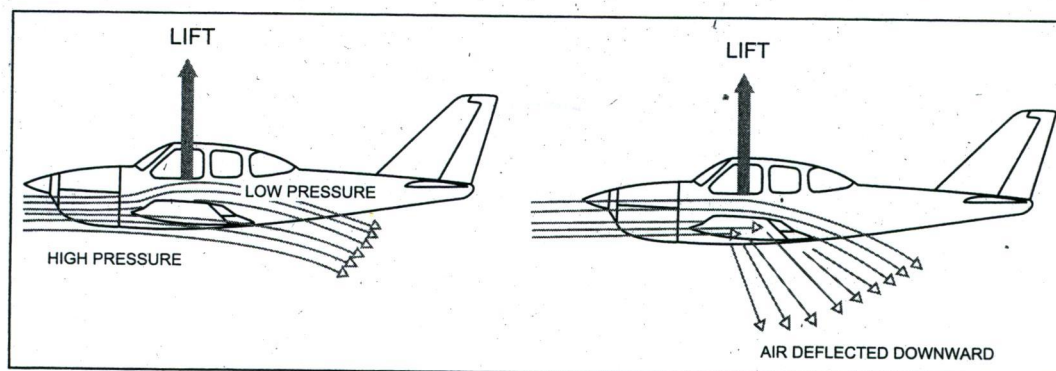
The purpose of the next six pages is to introduce you to the parts of the airplane and to aerodynamics, i.e., the forces acting on the airplane in flight. Remember, this is technical material that will make more sense as you begin your flight lessons.

## 3.1 THE AIRPLANE

The first figure below is a high-wing aircraft, such as a Cessna 152. On low-wing airplanes, such as the Beech Skipper and the Piper Tomahawk, the wings are affixed to the bottom rather than the top of the fuselage, as indicated in the second figure below.



1. **Wing** -- Provides lift by creating a low pressure area on the top of the wing and a high pressure area on the bottom. The top of the wing is curved, which provides a longer distance for air to flow over the wing than under the wing. As the air on top of the wing travels a greater distance in the same amount of time, it moves faster than the air flowing under the wing, which results in less pressure on top than on the bottom of the wing. At the same time, the bottom of the wing deflects air downward, which also produces lift.



2. **Fuselage** -- The main component of the airplane. Its function is to act as a carrier for the wings and tail section. It also is designed to produce a limited amount of lift.
3. **Horizontal stabilizer** -- This structure, located in the rear of the airplane, is designed to provide continuous longitudinal (from front to rear) stability. It prevents uncontrolled up and down movements of the nose (pitching).