

Figure 6.1
Angles in directional plane.

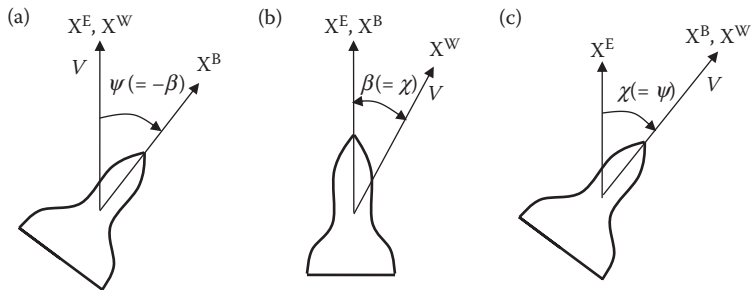


Figure 6.2

Different ways in which an aircraft can be disturbed in the horizontal plane.

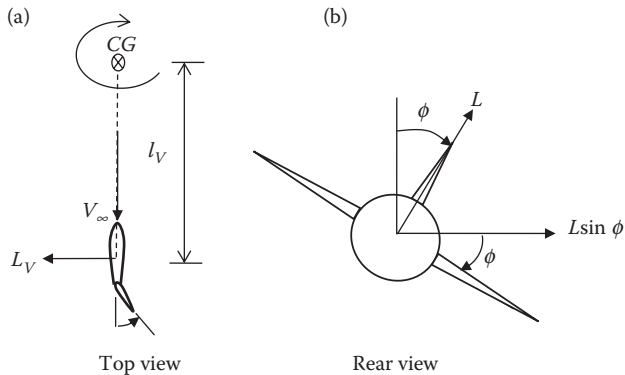


Figure 6.3

Two ways of changing the flight path in horizontal plane.

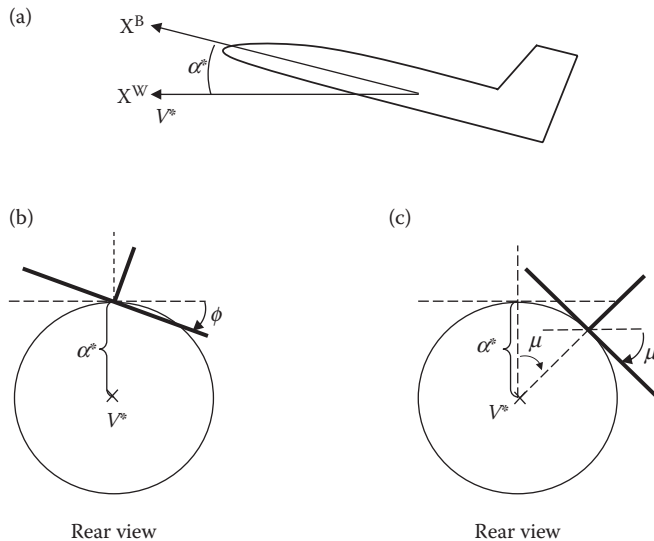


Figure 6.4

(a) An airplane in level flight at a positive angle of attack, (b) rear view of the airplane at a positive bank angle ϕ and (c) rear view of the airplane rolled around the velocity vector by angle μ .

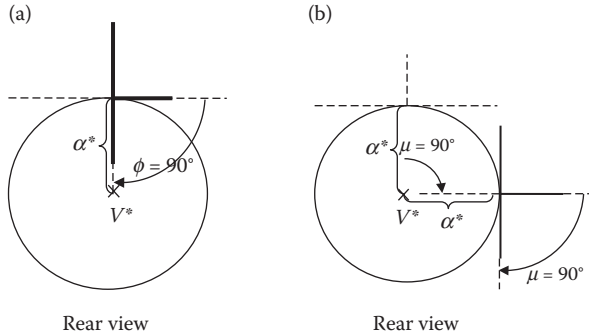


Figure 6.5

(a) Rear view of an airplane banked at an angle, $\phi = 90^\circ$, and (b) rear view of the airplane rolled around the velocity vector by an angle, $\mu = 90^\circ$.

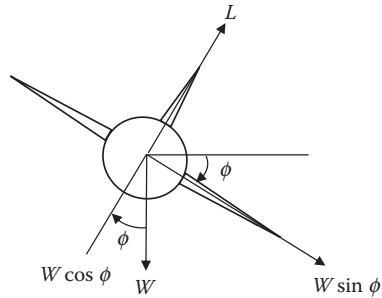


Figure 6.6

Rear view of an airplane banked right at an angle ϕ with lift and weight components.

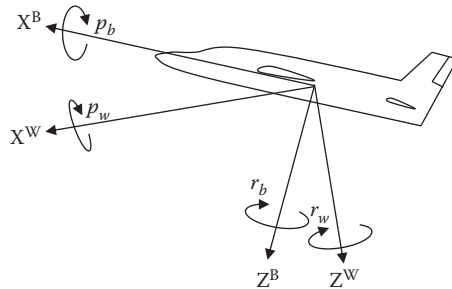


Figure 6.7

Angular rate variables in lateral-directional motion about the airplane body- and wind-fixed axes.

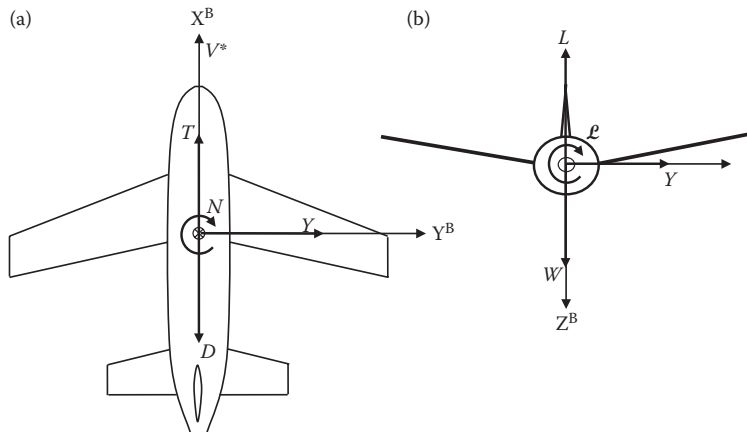


Figure 6.8

(a) Top view: X^B - Y^B , V^* , forces: T , D , Y (side force), moment: N . (b) Rear view: Y^B - Z^B , forces: L , W , Y , moment: ℓ .

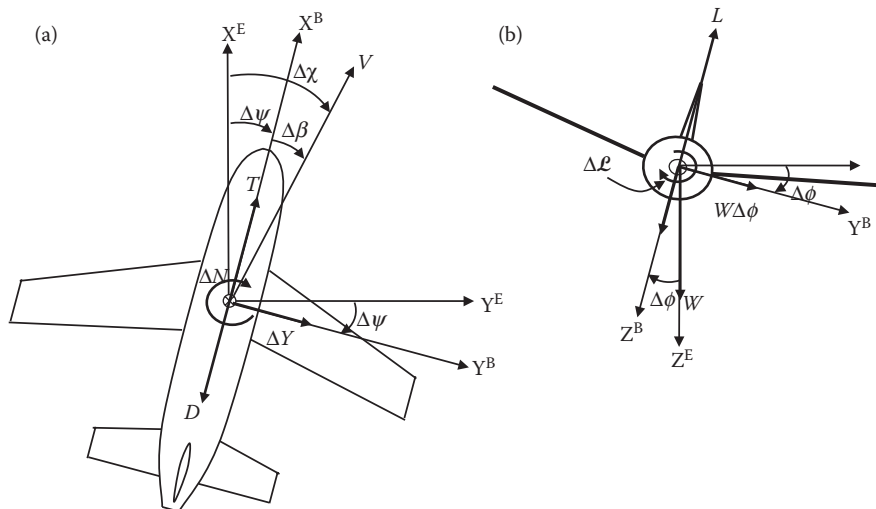


Figure 6.9

(a) Top view: X^B - Y^B axis yawed by $\Delta\psi$, V^* yawed by $\Delta\chi$, difference between them $\Delta\beta$ (positive as shown), forces T , D along X^B , ΔY along Y^B , ΔN at CG, and (b) rear view: Y^B - Z^B axis banked by $\Delta\phi \approx \Delta\mu$, forces L along Z^B , W along Z^E , $W\sin \Delta\phi \approx W\Delta\phi$ along Y^B , ΔL at CG.

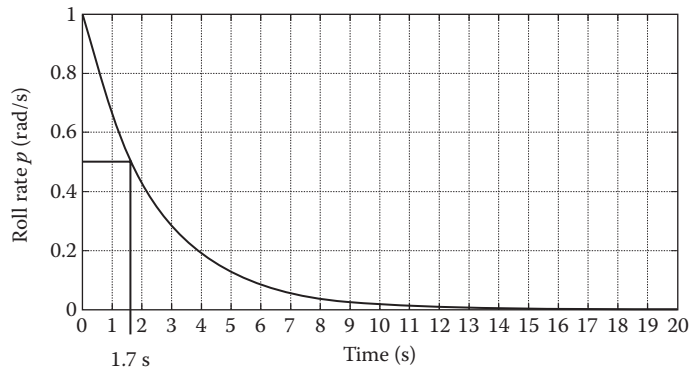


Figure 6.10
Roll rate response for Example 6.3.