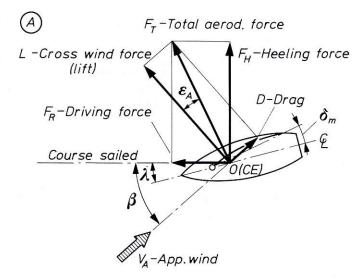
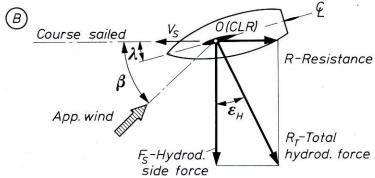
Fig 1.2 Aerodynamic forces on a yacht rig sailed nearly upright resolved in two different ways: lift or cross-wind force L and drag D components as measured in the wind tunnel; driving force F_R and heeling force F_H components which control the boat's behaviour.



Hydrodynamic forces developed on a yacht hull moving through water with an angle of yaw.



Equilibrium of aerodynamic and hydrodynamic forces. When the total aerodynamic force $F_{\rm T}$ and total hydrodynamic force $R_{\rm T}$ are equal and opposite no acceleration takes place and the boat is in equilibrium and steady motion.

If wind velocity increases the aerodynamic forces also increase and the boat will accelerate; conversely, if the wind velocity decreases the boat will decelerate until a new equilibrium of forces is again established.

