We Claim:

1. A lift assembly (300) in an aerial vehicle, the lift assembly (300) comprising:

   a fixed wing (102) comprising a leading edge (108) and a trailing edge (110) and a chord (117); and;

   a vertical rotor (118) having a vertical axis (121) disposed below the wing (102);

   wherein

   a position of the vertical axis (121) is disposed at a placement distance (122) from the leading edge (108) of the wing (102) of at least a distance of the chord (117) at the trailing edge (110) of the wing (102);

   the vertical rotor (118) is operational during a forward flight of the aerial vehicle;

   a placement distance (122) defined as a distance between the leading edge (108) and the vertical axis (121) of the vertical rotor (118) is determined by an operational RPM of the vertical rotor (118), angle of attack (116) of the wing (102), and the wing chord (117) of the wing (102);

   a combined effect of the wing (102) and the vertical rotor (118) in operation provides a higher lift coefficient compared to a sum of a first lift coefficient of the wing (102) and a second lift coefficient of the vertical rotor (118) when operated individually.

2. The lift assembly (300) as claimed in claim 1, wherein a lift force increase with a throttle increase to the vertical rotor (118) from 0 to 100%.

3. The lift assembly (300) as claimed in claim 1, wherein the lift force on the aerial vehicle enables the wings (102) to be smaller and hence incur reduced drag for a given payload.