

me263 – Fluids and Heat Transfer

Lab 3 – Lift and Drag

OBJECTIVE

Through experimentation with model aircraft (a paper aeroplane) the lift and drag coefficients will be calculated.

PROCEDURE

1. Working in pairs, build a paper aeroplane out of a single 8 1/2" x 11" sheet of paper.
2. Weigh the paper aeroplane. Measure the aeroplane's important dimensions.
3. Measure the height from which the aeroplane will be launched.
4. Launch the aeroplane in such a way that it does not stall at any point in its path to the ground. Measure the time of flight.
5. Measure the distance the aeroplane has travelled (to the point that it first makes contact with the ground).
6. Calculate the lift and drag coefficients of the aeroplane using the diagram shown on the other side of this sheet.
7. Repeat the procedure, described above, a total of three times on each paper aeroplane so that average flight characteristics can be obtained.

REPORT

1. Summarise your experimental data in tabular form.
2. Calculate the C_L and C_D for each test and then find average values. Report your values in Tabular form.
3. Include the paper plane with your report.
4. Provide a sample calculation.

