

ABSTRACT

The airplane shape of an continues by develop and it is needed yo investigate the aerodynamic plane. One of the technologies developed on airplanes is canard. Canard is a small wing mounted in front of the main wing. Canard have function to improve maneuverability on aircraft. It also to improve lift and speed also drag. The study about a various positions and various deflections of canard angles. it is a few and far in between.

The research goals is about the flow visualization. It is get a lift and drag coefficient because influence of the deflection angle canard. It uses a water tunnel to test the fluid flow around the main wing and canard and the force of aircraft models. It uses four aircraft models. The first aircraft is a plane that has a canard position as far as 17,715 mm parallel to the main wing canard. It is 0° deflection angle. The second test is a plane that has the same canard position as the first aircraft but a canard have 30° deflection angle. The third test is a plane that has a canard position coincided parallel to the main wing canard 0° deflection angle. The last test is an aircraft that has the same canard position as the third aircraft but a canard 30° deflection angle. Visualization testing uses the water tunnel method with fluid flow velocity 0.1 m/s .

The results obtained from the visualization show that the longest vortex cores in all aircraft models occur at the 20° attack angle. While completely stopped on all aircraft models that occur at the 70° angle of attack. The canard angle deflection affects the value of the force and position of the vortex. It can be seen in the AoA 60° core vortex that occurs in the aircraft model with a canard 30° deflection angle longer than the aircraft model with a canard 0° angle deflection. The C_L value on the aircraft model deflection of the canard 30° angle is higher better than the canard 0° angle. So lift on the aircraft model deflection of the canard 30° angle can improve aircraft style at AoA 60° .

Keywords: water tunnel, canard, aerodynamic, aircraft, angle of attack