

عنوان مقاله:

An Experimental Investigation of the Effects of Canard Position on the Aerodynamic Forces of a Fighter Type Configuration Model

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خلاصه مقاله:

An extensive experimental investigation is conducted to study the effect of canard position relative to the fuselage reference line on the aerodynamic forces of a fighter type configuration model. Aerodynamic forces at different flight conditions are measured in a subsonic wind tunnel. The wing and the canard have triquetrous shapes. Experiments are conducted at Reynolds number of 3.422×10^6 and at 0° to 40° degree angles of attack. The results show that canard increases the lift and drag forces while it decreases the static stability of the model. The canard at its up position increases the aerodynamic forces and decreases the static stability i.e., superior maneuver capability. Furthermore, when the forward position of the canard is considered, both lift and drag are increased; however, the overall aerodynamic efficiency and also more static stability are improved. The canard at up and forward position respect to the wing-body is an appropriate selection for the best performance at moderate to high angles of attack among the various wing-canard-body configurations.

کلمات کلیدی:

Fighter Model, Wind tunnel, delta wing, Canard Position, maneuverability

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