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Experimental and numerical study on the aerodynamics and stability characteristics of a canard aircraft (Article)

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Abstract

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Modern day fighter aircrafts are mostly canard configured because of its advantages over conventional configuration. The primary objective of this work is to investigate the low speed aerodynamic and stability characteristics of a canard configured aircraft. Using CFD -ANSYS Fluent package, numerical flow simulations were carried out for a typical canard configuration such as Burt Rutan's VariEze, a composite homebuilt canard aircraft. To validate the numerical results, wind tunnel testing of a scaled model was carried out. Finally the effect of horizontal location of canard on the aerodynamics and stability characteristics was studied. © 2019 Penerbit Akademia Baru.

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References (17)

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1 Anderson, S.B.
A look at handling qualities of canard configurations

(1987) *Journal of Guidance, Control, and Dynamics*, 10 (2), pp. 129-138.
doi: 10.2514/3.20194

View at Publisher

2 Rokhsaz, K., Selberg, B.P.
Three-surface aircraft - Optimum vs typical

(1989) *Journal of Aircraft*, 26 (8), pp. 699-704. Cited 8 times.
doi: 10.2514/3.45827

View at Publisher

3 Tu, E.L.
"Numerical study of steady and unsteady canard-wing-body aerodynamics."
(1996)

4 Strohmever, D., Seubert, R., Heinze, W., Österheld, C., Fornasier, L.
Three surface Aircraft - A concept for future transport aircraft

(2000) *38th Aerospace Sciences Meeting and Exhibit*. Cited 2 times.

5 Coiro, D.P., Nicolosi, F.
"Design of a Three Surfaces R/C Aircraft Model."
(2002) *Acta Polytechnica*, 42 (1).

6 Coiro, D.P., Nicolosi, F., De Marco, A., Genito, N.
"Flying Qualities Analysis of A Three surfaces Aircraft Model."
(2002) *In ICAS Conference*. Cited 5 times.
Toronto, Canada

7 Guoqing, Z., Shuxing, Y., Yong, X.
Investigation of Vortex Interaction in Canard-FSW Configurations Based on the Numerical Wind Tunnel Method (Open Access)

(2010) *Chinese Journal of Aeronautics*, 23 (3), pp. 312-319. Cited 4 times.
doi: 10.1016/S1000-9361(09)60221-1

View at Publisher

8 Rizzi, A., Eliasson, P., Goetzendorf-Grabowski, T., Vos, J.B., Zhang, M., Richardson, T.S.
Design of a canard configured TransCruiser using CEASIOM

(2011) *Progress in Aerospace Sciences*, 47 (8), pp. 695-705. Cited 15 times.
doi: 10.1016/j.paerosci.2011.08.011

View at Publisher

Henry, J.J. , Pines, D.J.
(2007) Collection of Technical Papers - AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference

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