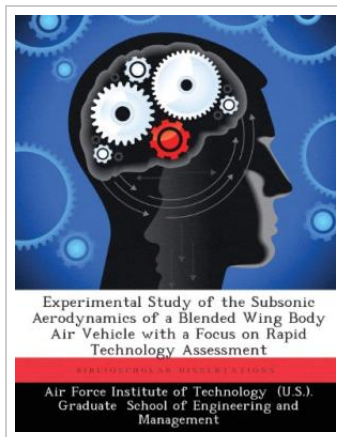




Experimental Study of the Subsonic Aerodynamics of a Blended Wing Body Air Vehicle with a Focus on Rapid Technology Assessment (Paperback)

By David A Gebbie

Biblioscholar, United States, 2012. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****.The subsonic aerodynamic performance of a blended wing body aircraft constructed using selective laser sintering was assessed in the AFIT low-speed wind tunnel. The scaled-down model of a strike tanker aircraft consisted of a shaped fuselage and sweptback wings. The Reynolds number, based on mean wing chord, during testing was on the order of 105 while the Mach number ranged from 0.10 to 0.20. The model evaluation and analysis process included force and moment measurements acquired from a wind tunnel balance, pressure data measured with 8 taps located on the model's upper surface, a comparison to computational fluid dynamics (CFD) solutions acquired in a parallel study conducted by AFRL/VAAC, and global pressure sensitive paint (PSP) measurements. Paint measurements were compared to pressure tap data to ensure their accuracy while lift and drag coefficients, as well as pitching and rolling moments were examined to determine performance characteristics, including stability attributes and aircraft stall. One of the most interesting results was the striking difference in the force and moment measurements before and after the paint was applied to the surface. The average surface roughness,...



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Reviews

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