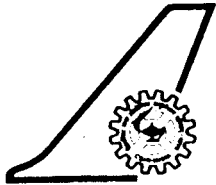


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Title Estimation of Aerodynamic Derivatives and Drag Polars from LCA-TD1(SG) Flight Test Data

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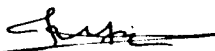
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Remarks

Keywords Flight Data, Stability and Control Derivatives, Estimation, SOEM Drag Polar, Linear Model Values, Model Validation.

Abstract

Stabilized output error method (SOEM) is applied to LCA-TD1 (SG) flight test data and aircraft aerodynamic derivatives are estimated for zero slat, U/C up and clean configurations. The results presented in Chapter 1 of the report show that the pitch damping in flight is lower than that predicted by NDLM values and there is a noticeable reduction in the flight determined derivative $C_{n\beta}$ (and hence, weathercock stability) and $C_{l\delta_a}$ (aileron control effectiveness). In Chapter 2, the performance maneuver data generated during the LCA-TD1 (SG) flight tests at subsonic speeds have been analyzed. The flight determined drag of LCA is found to be lower than the drag obtained from reference aerodata.