

Abstract for SETP's 56th Annual Symposium

Development of a Flight Demonstration for Civil Certification Icing Flight Testing

The paper, previously presented at the 42nd San Diego Symposium in March 2012, documents the development of a flight demonstration sortie intended to show flight test students how to evaluate the effects of icing on performance and flying qualities of an aircraft. Using guidelines published by the FAA for flight test of 14 CFR Part 23 aircraft, the National Test Pilot School has developed a profile for a flight test exercise using an SR-22 aircraft with simulated “pre-activation” ice applied to the leading edge of the wing and horizontal tail. The presentation details the preparation of the aircraft, the buildup to flight and the end product in terms of degradation in climb performance, stall warning, stall speed and stall characteristics. One surprising result was further investigated and during that investigation an inherent, but previously unused flight test data source was discovered, allowing data previously flown to be analyzed precisely.

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