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Abstract :

The experimental data available on a 65° swept-back, cropped delta wing with a canard has been analysed to study the effects of canard. Two sets of results are available: the first set is with a wing having sharp leading edges and the second set with a wing having rounded leading edges.

The tests were carried out at Mach numbers of 0.4 and 0.85 (Reynolds number of 9.10^6 based on wing root chord) for the first set and at 0.5, 0.7, 0.85 and 1.2 (Reynolds number of $4.5.10^6$ based on wing root chord) for the second set.

The main effect of the canard is to delay leading edge separation in the forward part of the rounded leading edge wing. In the case of the sharp leading edge wing, although earlier measurements have shown that the canard is able to suppress leading edge separation, there is no direct evidence of this in the present measurements. However, the results do show a significant weakening of the wing vortex in the presence of the canard.