



Small-Scale Transonic Investigation of the Effects of Partial-Span Leading-Edge Camber on the Aerodynamic Characteristics of a 50 Deg 38 Sweptback Wing of Aspect Ratio 2.98

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Bibliogov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 34 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. A small-scale transonic investigation of two semispan wings of the same plan form was made in the Langley high-speed 7- by 10-foot tunnel through a Mach number range of 0.70 to 1.10 and a mean-test Reynolds number range of 745,000 to 845,000 to determine the effects of partial-span leading-edge camber on the aerodynamic characteristics of a swept-back wing. This paper presents the results of the investigation of wing-alone and wing-fuselage configurations of the two wings; one, was an uncambered wing and the other had the forward 45 percent of the chord cambered over the outboard 55 percent of the span. The semispan wings had 50deg 38ft sweepback of their quarter-chord lines, aspect ratio of 2.98, taper ratio of 0.45, and modified NACA 64A-series airfoil sections tapered in thickness ratio. Lift, drag, pitching moment, and root-bending moment were obtained for these configurations. The results indicated that, for the wing-alone configuration, use of the partial-span leading-edge camber provided an increase in maximum lift-drag ratios up to a Mach number of 0.95, after which no gain was...



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