



Airplane Measured by the Wing-Flow Method

By Arnold R. Beckhardt

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 48 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. This report presents the results of an investigation in the transonic speed range of the longitudinal stability characteristics of a proposed configuration for the Republic XF-91 airplane. The tests covered a Mach number range of 0.55 to 1.05 and a Reynolds number range from 400,000 to 1,375,000. Lift, pitching-moment, and rolling-moment characteristics of the half model and the hinge moments on the all-moving tail were measured. The downwash factor $\delta \times \epsilon \times \alpha$ at the tail was determined from the pitching-moment data. A calculation of the elevator deflection and stick force required for trim was also made. It was found that the variation of force and moment coefficients was linear through the test angle-of-attack range of -1 deg to 8 deg at any Mach number; that the stability increased markedly at Mach numbers above 0.85; that the effectiveness of the tail in producing pitching moments decreased about one-third with increasing Mach numbers and that the value of the downwash factor, $\delta \times \epsilon \times \alpha$, at the tail decreased from about 0...



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