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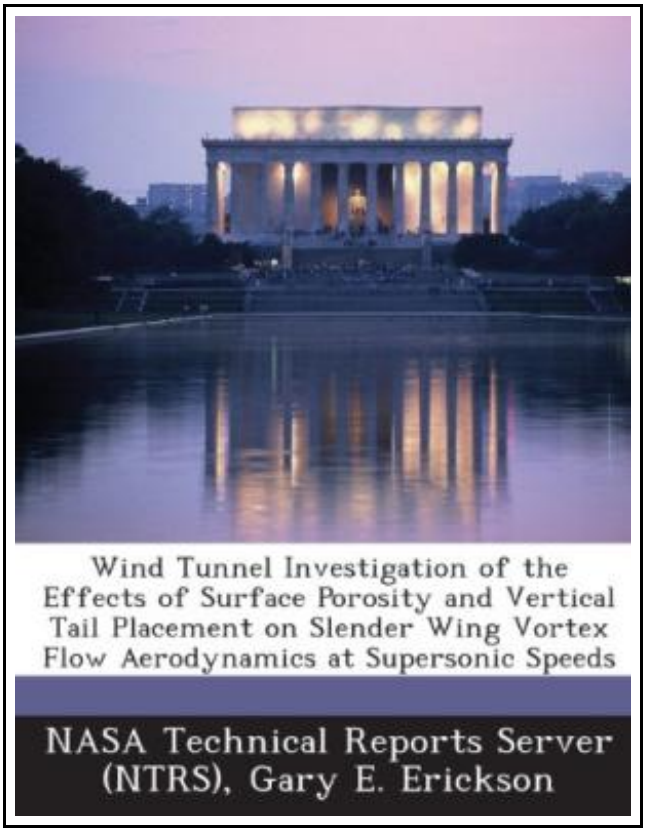

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BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 160 pages. Dimensions: 9.7in. x 7.4in. x 0.3in.A wind tunnel experiment was conducted in the NASA Langley Research Center (LaRC) Unitary Plan Wind Tunnel (UPWT) to determine the effects of passive surface porosity and vertical tail placement on vortex flow development and interactions about a general research fighter configuration at supersonic speeds. Optical flow measurement and flow visualization techniques were used that featured pressure sensitive paint (PSP), laser vapor screen (LVS), and schlieren, These techniques were combined with conventional electronically-scanned pressure (ESP) and six-component force and moment measurements to quantify and to visualize the effects of flow-through porosity applied to a wing leading edge extension (LEX) and the placement of centerline and twin vertical tails on the vortex-dominated flow field of a 65 cropped delta wing model. Test results were obtained at free-stream Mach numbers of 1. 6, 1. 8, and 2. 1 and a Reynolds number per foot of 2. 0 million. LEX porosity promoted a wing vortex-dominated flow field as a result of a diffusion and weakening of the LEX vortex. The redistribution of the vortex-induced suction pressures contributed to large nose-down pitching moment increments but did not significantly affect the vortex-induced lift. The trends associated with LEX porosity were unaffected by vertical tail placement. The centerline tail configuration generally provided more stable rolling moments and yawing moments compared to the twin wing-mounted vertical tails. The strength of a complex system of shock waves between the twin tails was reduced by LEX porosity. This item ships from La Vergne,TN. Paperback.

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