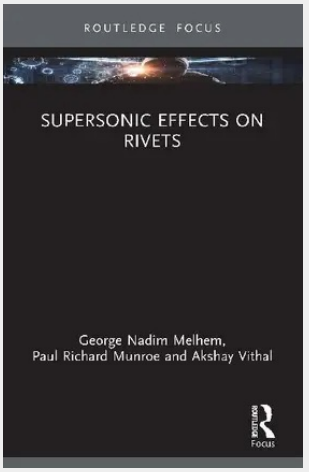
Melhem / Munroe / Vithal

Supersonic Effects on Rivets

Supersonic Effects on Rivets introduces aerospace components, such as rivets, used in subsonic and supersonic/hypersonic aircraft. It investigates the various alloys used to manufacture rivets/fasteners and the heat treatment of those alloys. Providing background on commercial (subsonic and supersonic) and military (subsonic and supersonic/hypersonic) aircraft, the book discusses selecting materials, rivet arrangement, skin friction/drag effects, estimating temperature, thermal properties, and fatigue testing of aerospace rivets. It includes real-world case studies on aircraft failures due to incorrect design and failure mechanisms of aerospace rivets. Lessons learnt from the failures of the iconic Concorde, Space Shuttle Columbia, and American Airbus A300-600 Flight 587 are also deliberated upon. Laboratory research including future recommendations are presented. The book will be useful for military applications, commercial aircraft, practicing aerospace/ aeronautical engineers, materials scientists, metallurgical engineers, universities, colleges, higher education, schools and students.

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