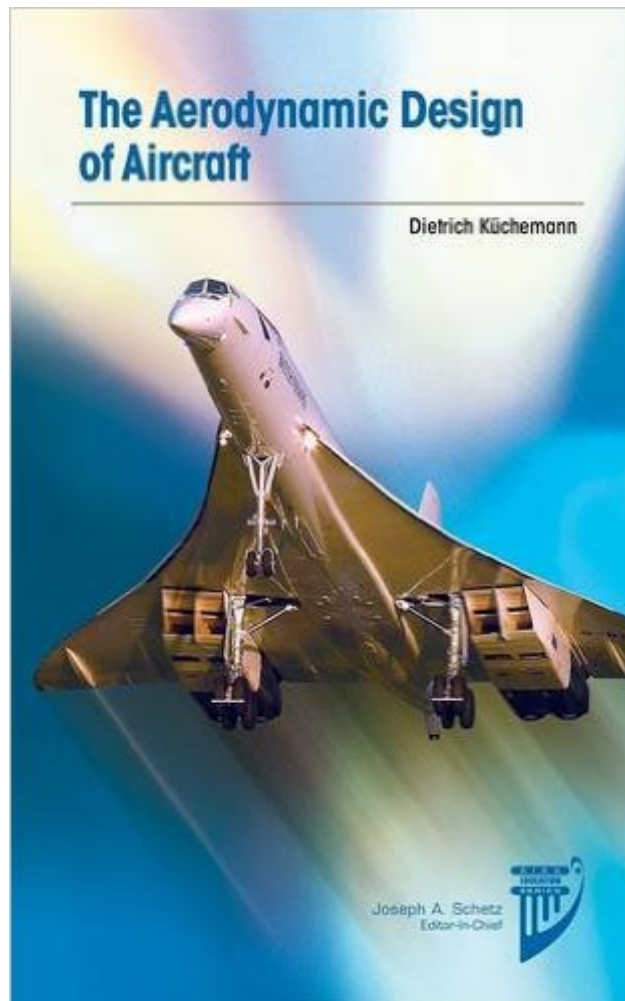


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# The Aerodynamic Design Of Aircraft (AIAA Education Series)



## Synopsis

Dietrich Kuchemann's *The Aerodynamic Design of Aircraft* is as relevant and as forward looking today as it was when it was first published in 1978. It comprises the philosophy and life's work of a unique and visionary intellect. Based upon material taught in a course at Imperial College London, the insight and intuition conveyed by this text are timeless. With its republication, Kuchemann's influence will extend to the next generation of aerospace industry students and practitioners and the vehicles they will produce. Kuchemann establishes three classes of aircraft based on the character of flow involved. Each class is suitable for a distinct cruise speed regime: classical and swept aircraft for subsonic and transonic cruise, slender-wing aircraft for supersonic cruise, and wave-rider aircraft for hypersonic cruise. Unlike most engineering texts, which focus on a set of tools, Kuchemann's approach is to focus on the problem and its solution - what kind of flow is best for a given class of aircraft and how to achieve it. With this approach, Kuchemann fully embraces the true inverse nature of design; rather than answer "what flow given the shape," he strives to answer "what flow given the purpose" and then "what shape given the flow."

## Book Information

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## Customer Reviews

This book, written in the early to mid 1970s, covers the whole of classical analytical aerodynamics, in the tradition of Ludwig Prandtl, up to the early days of CFD methods. The author was a member and eventually Head of Aerodynamics Department at the Royal Aircraft Establishment,

Farnborough, having been a student of Ludwig Prandtl at Gottingen before the second world war. Kuchemann discusses basic concepts for generating lift and drag and works through the types of aircraft shape needed to fly efficiently at up to hypersonic conditions. Although dated by the lack of coverage of CFD, the basis in classical theory allows sensitivities to be understood by the mathematically literate.

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