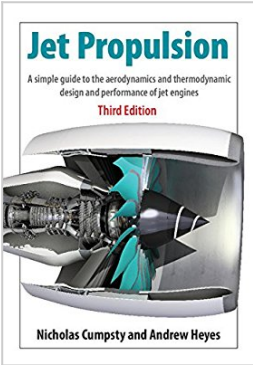

Jet Propulsion: A Simple Guide to the Aerodynamics and Thermodynamic Design and Performance of Jet Engines

By Nicholas Cumpsty, Andrew Heyes

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Now in its third edition, Jet Propulsion offers a self-contained introduction to the aerodynamic and thermodynamic design of modern civil and military jet engine design. Through two-engine design projects for a large passenger and a new fighter aircraft, the text explains modern engine design. Individual sections cover aircraft requirements, aerodynamics, principles of gas turbines and jet engines, elementary compressible fluid mechanics, bypass ratio selection, scaling and dimensional analysis, turbine and compressor design and characteristics, design optimization, and off-design performance. The civil aircraft, which formed the core of Part I in the previous editions, has now been in service for several years as the Airbus A380. Attention in the aircraft industry has now shifted to two-engine aircraft with a greater emphasis on reduction of fuel burn, so the model created for Part I in this edition is the new efficient aircraft, a twin aimed at high efficiency.

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Review
"This book provides an excellent overview of the thermodynamic analysis and performance of turbojet based engines for the aircraft industry. ... The book includes an excellent set of example questions for each section which are given a relevant contemporary context. ... This is an excellent resource for anyone wishing to use this as a textbook as part of an undergraduate aerospace engineering programme. The authors have used their extensive industrial links to develop a textbook that is not only useful to undergraduate students on any programme covering aero gas turbine engines but would find a suitable place on the desk of professionals working in the industry."
K. L. Smith, The Aeronautical Journal

About the Author
Nicholas Cumpsty is a Professor Emeritus at Imperial College London. He conducted his postgraduate research at the University of Cambridge, where he was awarded a PhD for a dissertation entitled 'The Calculation of Three-Dimensional Turbulent Boundary Layers'. He has been a Professor of Aerothermal Technology at the University of Cambridge and a visiting professor at the Massachusetts Institute of Technology. Nick has also worked at Rolls Royce Ltd as a Senior Noise Engineer and, more recently, as a Chief Technologist.

Andrew Heyes is Professor of Mechanical Engineering and Head of Department in Mechanical and Aerospace Engineering at the University of Strathclyde. He has previously held positions at the University of Leeds and Imperial College London, where he spent a number of years teaching engine design based on the second edition of Jet Propulsion. Before Imperial, he worked with Rolls-Royce and British Aerospace (Military Aircraft Division, Warton). He is a Chartered Engineer and Fellow of the Institution of Mechanical Engineers.

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