

## Aircraft Engine Design Second Edition Aiaa Education Series

The mechanical engineering curriculum in most universities includes at least one elective course on the subject of reciprocating piston engines. The majority of these courses today emphasize the application of thermodynamics to engine efficiency, performance, combustion, and emissions. There are several very good textbooks that support education in these aspects of engine development. However, in most companies engaged in engine development there are far more engineers working in the areas of design and mechanical development. University studies should include opportunities that prepare engineers desiring to work in these aspects of engine development as well. My colleagues and I have undertaken the development of a series of graduate courses in engine design and mechanical development. In doing so it becomes quickly apparent that no suitable textbook exists in support of such courses. This book was written in the hopes of beginning to address the need for an engineering-based introductory text in engine design and mechanical development. It is of necessity an overview. Its focus is limited to reciprocating-piston internal-combustion engines – both diesel and spark-ignition engines. Emphasis is specifically on automobile engines, although much of the discussion applies to larger and smaller engines as well. A further intent of this book is to provide a concise reference volume on engine design and mechanical development processes for engineers serving the engine industry. It is intended to provide basic information and most of the chapters include recent references to guide more in-depth study.

The new edition of this popular textbook provides a modern,

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accessible introduction to the whole process of aircraft design from requirements to conceptual design, manufacture and in-service issues. Highly illustrated descriptions of the full spectrum of aircraft types, their aerodynamics, structures and systems, allow students to appreciate good and poor design and understand how to improve their own designs. Cost data is considerably updated, many new images have been added and new sections are included on the emerging fields of Uninhabited Aerial Vehicles and environmentally-friendly airlines. Examples from real aircraft projects are presented throughout, demonstrating to students the applications of the theory. Three appendices and a bibliography provide a wealth of information, much not published elsewhere, including simple aerodynamic formulae, an introduction to airworthiness and environmental requirements, aircraft, engine and equipment data, and a case study of the conceptual design of a large airliner.

This textbook for advanced students focuses on industry design practice rather than theoretical definitions. Covers configuration layout, payload considerations, aerodynamics, propulsion, structure and loads, weights, stability, and control, performance, and cost analysis. Annotation copyright Book Winner of the Summerfield Book Award. The next great leap for jet propulsion will be to power-sustained, efficient flight through the atmosphere.

Annotation A design textbook attempting to bridge the gap between traditional academic textbooks, which emphasize individual concepts and principles; and design handbooks, which provide collections of known solutions. The airbreathing gas turbine engine is the example used to teach principles and methods. The first edition appeared in 1987. The disk contains supplemental material. Annotation c. Book News, Inc., Portland, OR ([booknews.com](http://booknews.com)).

A significant addition to the literature on gas turbine

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technology, the second edition of Gas Turbine Performance is a lengthy text covering product advances and technological developments. Including extensive figures, charts, tables and formulae, this book will interest everyone concerned with gas turbine technology, whether they are designers, marketing staff or users.

Aircraft Engines and Gas Turbines is widely used as a text in the United States and abroad, and has also become a standard reference for professionals in the aircraft engine industry. Unique in treating the engine as a complete system at increasing levels of sophistication, it covers all types of modern aircraft engines, including turbojets, turbofans, and turboprops, and also discusses hypersonic propulsion systems of the future. Performance is described in terms of the fluid dynamic and thermodynamic limits on the behavior of the principal components: inlets, compressors, combustors, turbines, and nozzles. Environmental factors such as atmospheric pollution and noise are treated along with performance. This new edition has been substantially revised to include more complete and up-to-date coverage of compressors, turbines, and combustion systems, and to introduce current research directions. The discussion of high-bypass turbofans has been expanded in keeping with their great commercial importance. Propulsion for civil supersonic transports is taken up in the current context. The chapter on hypersonic air breathing engines has been expanded to reflect interest in the use of scramjets to power the National Aerospace Plane. The discussion of exhaust emissions and noise and associated regulatory structures have been updated and there are many corrections and clarifications. Covers the design of engine control & monitoring systems for both turbofan & turboshaft engines, focusing on four key topics: modeling of engine dynamics; application of specific control design methods to gas turbine engines; advanced

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control concepts; &, engine condition monitoring.

The aircraft is only a transport mechanism for the payload, and all design decisions must consider payload first. Simply stated, the aircraft is a dust cover.

"Fundamentals of Aircraft and Airship Design, Volume 1: Aircraft Design" emphasizes that the science and art of the aircraft design process is a compromise and that there is no right answer; however, there is always a best answer based on existing requirements and available technologies.

Find the right answer the first time with this useful handbook of preliminary aircraft design. Written by an engineer with close to 20 years of design experience, General Aviation Aircraft Design: Applied Methods and Procedures provides the practicing engineer with a versatile handbook that serves as the first source for finding answers to realistic aircraft design questions. The book is structured in an "equation/derivation/solved example" format for easy access to content. Readers will find it a valuable guide to topics such as sizing of horizontal and vertical tails to minimize drag, sizing of lifting surfaces to ensure proper dynamic stability, numerical performance methods, and common faults and fixes in aircraft design. In most cases, numerical examples involve actual aircraft specs. Concepts are visually depicted by a number of useful black-and-white figures, photos, and graphs (with full-color images included in the eBook only). Broad and deep in coverage, it is intended for practicing engineers, aerospace engineering students, mathematically astute amateur aircraft designers, and anyone interested in

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aircraft design. Organized by articles and structured in an "equation/derivation/solved example" format for easy access to the content you need Numerical examples involve actual aircraft specs Contains high-interest topics not found in other texts, including sizing of horizontal and vertical tails to minimize drag, sizing of lifting surfaces to ensure proper dynamic stability, numerical performance methods, and common faults and fixes in aircraft design Provides a unique safety-oriented design checklist based on industry experience Discusses advantages and disadvantages of using computational tools during the design process Features detailed summaries of design options detailing the pros and cons of each aerodynamic solution Includes three case studies showing applications to business jets, general aviation aircraft, and UAVs Numerous high-quality graphics clearly illustrate the book's concepts (note: images are full-color in eBook only)

Readers of this book will be able to: utilize the fundamental principles of fluid mechanics and thermodynamics to analyze aircraft engines, understand the common gas turbine aircraft propulsion systems and be able to determine the applicability of each, perform system studies of aircraft engine systems for specified flight conditions, perform preliminary aerothermal design of turbomachinery components, and conceive, analyze, and optimize competing preliminary designs for conventional and unconventional missions. Early coverage of cycle analysis provides a systems perspective, and offers context for the chapters on turbomachinery and components Broader coverage than

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found in most other books - including coverage of propellers, nuclear rockets, and space propulsion - allows analysis and design of more types of propulsion systems In depth, quantitative treatments of the components of jet propulsion engines provides the tools for evaluation and component matching for optimal system performance Worked examples and end of chapter exercises provide practice for analysis, preliminary design, and systems integration Theory of Aerospace Propulsion, Second Edition, teaches engineering students how to utilize the fundamental principles of fluid mechanics and thermodynamics to analyze aircraft engines, understand the common gas turbine aircraft propulsion systems, be able to determine the applicability of each, perform system studies of aircraft engine systems for specified flight conditions and preliminary aerothermal design of turbomachinery components, and conceive, analyze, and optimize competing preliminary designs for conventional and unconventional missions. This updated edition has been fully revised, with new content, new examples and problems, and improved illustrations to better facilitate learning of key concepts. Includes broader coverage than that found in most other books, including coverage of propellers, nuclear rockets, and space propulsion to allows analysis and design of more types of propulsion systems Provides in-depth, quantitative treatments of the components of jet propulsion engines, including the tools for evaluation and component matching for optimal system performance Contains additional worked examples and progressively challenging end-of- chapter

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exercises that provide practice for analysis, preliminary design, and systems integration

If you're looking for a clear, comprehensive overview of basic electromagnetics principles and applications to antenna and microwave circuit design for communications, this authoritative book is your best choice. Including concise explanations of all required mathematical concepts needed to fully comprehend the material, the book is your complete resource for understanding electromagnetics in current, emerging and future broadband communication systems, as well as high-speed analogue and digital electronic circuits and systems.

"Intake Aerodynamics, Second Edition" presents computational advancements and discoveries in intake aerodynamics. A companion volume to "Practical Intake Aerodynamic Design," this important text considers the problem of airflow, both internal and external to air intake, as applied to civil and military aircraft. It covers the aerodynamics of subsonic and supersonic intakes in real flows, maintaining a progression through the transonic range. Also considered is the joint perspective of the airframe designer and the propulsion specialist in practical cases. Readers will gain insight into the fluid mechanics behind the deceleration of air from free stream to engine velocity, and an understanding of air compression and external drag in extensively revised chapters reflecting progress in the field. More than 300 drawings and diagrams help to illustrate the points defined throughout the book. Copublished with Blackwell Science Ltd. Outside the United States and Canada,

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order from Blackwell Science Ltd., United Kingdom, tel 44 1865 206 206.

Covering basic theory, components, installation, maintenance, manufacturing, regulation and industry developments, *Gas Turbines: A Handbook of Air, Sea and Land Applications* is a broad-based introductory reference designed to give you the knowledge needed to succeed in the gas turbine industry, land, sea and air applications. Providing the big picture view that other detailed, data-focused resources lack, this book has a strong focus on the information needed to effectively decision-make and plan gas turbine system use for particular applications, taking into consideration not only operational requirements but long-term life-cycle costs in upkeep, repair and future use. With concise, easily digestible overviews of all important theoretical bases and a practical focus throughout, *Gas Turbines* is an ideal handbook for those new to the field or in the early stages of their career, as well as more experienced engineers looking for a reliable, one-stop reference that covers the breadth of the field. Covers installation, maintenance, manufacturer's specifications, performance criteria and future trends, offering a rounded view of the area that takes in technical detail as well as well as industry economics and outlook Updated with the latest industry developments, including new emission and efficiency regulations and their impact on gas turbine technology Over 300 pages of new/ revised content, including new sections on microturbines, non-conventional fuel sources for microturbines, emissions, major developments in aircraft engines, use of coal gas



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and superheated steam, and new case histories throughout highlighting component improvements in all systems and sub-systems.

Aircraft Propulsion and Gas Turbine Engines, Second Edition builds upon the success of the book's first edition, with the addition of three major topic areas: Piston Engines with integrated propeller coverage; Pump Technologies; and Rocket Propulsion. The rocket propulsion section extends the text's coverage so that both Aerospace and Aeronautical topics can be studied and compared. Numerous updates have been made to reflect the latest advances in turbine engines, fuels, and combustion. The text is now divided into three parts, the first two devoted to air breathing engines, and the third covering non-air breathing or rocket engines.

The Commercial Aircraft Finance Handbook is a resource for every type of aircraft finance practitioner - seasoned and starter alike. The handbook offers a comprehensive overview of the multifaceted matters that arise in the process of financing commercial aircraft. The book clearly reviews the different topics on a high-level basis, and then explains the terminology used for each particular area of specialization.. It can be used as both a learning aid and reference resource. The area of commercial aircraft finance is multidisciplinary one, touching professionals across law, finance, insurance, and leasing (to name a few) and this book arms these diverse practitioners with a framework for knowing the questions and issues that should be considered in an aircraft financing transaction. This book will also provide practitioners just starting out in this field with an introduction to the myriad of topics in aircraft finance while providing more seasoned professionals with explanations of matters outside their

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normal area of expertise. As well, all practitioners will benefit from the resources provided in the appendices.

This literal survival guide for new pilots identifies "the killing zone," the 40-250 flight hours during which unseasoned aviators are likely to commit lethal mistakes. Presents the statistics of how many pilots will die in the zone within a year; calls attention to the eight top pilot killers (such as "VFR into IFR," "Takeoff and Climb"); and maps strategies for avoiding, diverting, correcting, and managing the dangers. Includes a Pilot Personality Self-Assessment Exercise that identifies pilot "types" and how each type can best react to survive the killing zone.

The major objective of this book was to identify issues related to the introduction of new materials and the effects that advanced materials will have on the durability and technical risk of future civil aircraft throughout their service life. The committee investigated the new materials and structural concepts that are likely to be incorporated into next generation commercial aircraft and the factors influencing application decisions. Based on these predictions, the committee attempted to identify the design, characterization, monitoring, and maintenance issues that are critical for the introduction of advanced materials and structural concepts into future aircraft.

Illuminates some of the historically significant developments in WWII aircraft engines that directly contributed to the execution and tactics of war, divided into sections on British and American manufacturers including Rolls-Royce, Bristol, Price and Whitney, and General Electric Turbosuperchargers  
**AIRCRAFT PROPULSION**

Aircraft Engines and Gas Turbines is widely used as a text in the United States and abroad, and has also become a standard reference for professionals in the aircraft engine industry. Unique in treating the engine as a complete system

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at increasing levels of sophistication, it covers all types of modern aircraft engines, including turbojets, turbofans, and turboprops, and also discusses hypersonic propulsion systems of the future. Performance is described in terms of the fluid dynamic and thermodynamic limits on the behavior of the principal components: inlets, compressors, combustors, turbines, and nozzles. Environmental factors such as atmospheric pollution and noise are treated along with performance. This new edition has been substantially revised to include more complete and up-to-date coverage of compressors, turbines, and combustion systems, and to introduce current research directions. The discussion of high-bypass turbofans has been expanded in keeping with their great commercial importance. Propulsion for civil supersonic transports is taken up in the current context. The chapter on hypersonic air breathing engines has been expanded to reflect interest in the use of scramjets to power the National Aerospace Plane. The discussion of exhaust emissions and noise and associated regulatory structures have been updated and there are many corrections and clarifications. Jack L. Kerrebrock is Richard Cockburn Maclaurin Professor of Aeronautic's and Astronautics at the Massachusetts Institute of Technology.

The piston engines that powered Second World War fighters, the men who designed them, and the secret intelligence work carried out by both Britain and Germany would determine the outcome of the first global air war. Advanced jet engines may have been in development but every militarily significant air battle was fought by piston-engined fighters. Whoever designed the most powerful piston engines would win air superiority and with it the ability to dictate the course of the war as a whole. This is the never-before-told story of a high-tech race, hidden behind the closed doors of design offices and intelligence agencies, to create the war's best fighter

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engine. Using the fruits of extensive research in archives around the world together with the previously unpublished memoirs of fighter engine designers, author Calum E. Douglas tells the story of a desperate contest between the world's best engineers – the Secret Horsepower Race. Annotation Design and R & D engineers and students will value the comprehensive, meticulous coverage in this volume. Beginning with the basic principles and concepts of aeropropulsion combustion, chapters explore specific processes, limitations, and analytical methods as they bear on component design.

### Aircraft Engine DesignAIAA

The primary human activities that release carbon dioxide (CO<sub>2</sub>) into the atmosphere are the combustion of fossil fuels (coal, natural gas, and oil) to generate electricity, the provision of energy for transportation, and as a consequence of some industrial processes. Although aviation CO<sub>2</sub> emissions only make up approximately 2.0 to 2.5 percent of total global annual CO<sub>2</sub> emissions, research to reduce CO<sub>2</sub> emissions is urgent because (1) such reductions may be legislated even as commercial air travel grows, (2) because it takes new technology a long time to propagate into and through the aviation fleet, and (3) because of the ongoing impact of global CO<sub>2</sub> emissions.

Commercial Aircraft Propulsion and Energy Systems Research develops a national research agenda for reducing CO<sub>2</sub> emissions from commercial aviation. This report focuses on propulsion and energy

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technologies for reducing carbon emissions from large, commercial aircraft—single-aisle and twin-aisle aircraft that carry 100 or more passengers—because such aircraft account for more than 90 percent of global emissions from commercial aircraft. Moreover, while smaller aircraft also emit CO<sub>2</sub>, they make only a minor contribution to global emissions, and many technologies that reduce CO<sub>2</sub> emissions for large aircraft also apply to smaller aircraft. As commercial aviation continues to grow in terms of revenue-passenger miles and cargo ton miles, CO<sub>2</sub> emissions are expected to increase. To reduce the contribution of aviation to climate change, it is essential to improve the effectiveness of ongoing efforts to reduce emissions and initiate research into new approaches.

This text provides an introduction to gas turbine engines and jet propulsion for aerospace or mechanical engineers. The text is divided into four parts: introduction to aircraft propulsion; basic concepts and one-dimensional/gas dynamics; parametric (design point) and performance (off-design) analysis of air breathing propulsion systems; and analysis and design of major gas turbine engine components (fans, compressors, turbines, inlets, nozzles, main burners, and afterburners). Design concepts are introduced early (aircraft performance in introductory chapter) and integrated throughout. Written with extensive student input on the design of

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the book, the book builds upon definitions and gradually develops the thermodynamics, gas dynamics, and gas turbine engine principles. Although the overall appearance of modern airliners has not changed a lot since the introduction of jetliners in the 1950s, their safety, efficiency and environmental friendliness have improved considerably. Main contributors to this have been gas turbine engine technology, advanced materials, computational aerodynamics, advanced structural analysis and on-board systems. Since aircraft design became a highly multidisciplinary activity, the development of multidisciplinary optimization (MDO) has become a popular new discipline. Despite this, the application of MDO during the conceptual design phase is not yet widespread. Advanced Aircraft Design: Conceptual Design, Analysis and Optimization of Subsonic Civil Airplanes presents a quasi-analytical optimization approach based on a concise set of sizing equations. Objectives are aerodynamic efficiency, mission fuel, empty weight and maximum takeoff weight. Independent design variables studied include design cruise altitude, wing area and span and thrust or power loading. Principal features of integrated concepts such as the blended wing and body and highly non-planar wings are also covered. The quasi-analytical approach enables designers to compare the results of high-fidelity MDO optimization with lower-fidelity methods which

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need far less computational effort. Another advantage to this approach is that it can provide answers to “what if” questions rapidly and with little computational cost. Key features: Presents a new fundamental vision on conceptual airplane design optimization Provides an overview of advanced technologies for propulsion and reducing aerodynamic drag Offers insight into the derivation of design sensitivity information Emphasizes design based on first principles Considers pros and cons of innovative configurations Reconsiders optimum cruise performance at transonic Mach numbers

**Advanced Aircraft Design: Conceptual Design, Analysis and Optimization of Subsonic Civil Airplanes** advances understanding of the initial optimization of civil airplanes and is a must-have reference for aerospace engineering students, applied researchers, aircraft design engineers and analysts.

A comprehensive approach to the air vehicle design process using the principles of systems engineering. Due to the high cost and the risks associated with development, complex aircraft systems have become a prime candidate for the adoption of systems engineering methodologies. This book presents the entire process of aircraft design based on a systems engineering approach from conceptual design phase, through to preliminary design phase and to detail design phase. Presenting in one

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volume the methodologies behind aircraft design, this book covers the components and the issues affected by design procedures. The basic topics that are essential to the process, such as aerodynamics, flight stability and control, aero-structure, and aircraft performance are reviewed in various chapters where required. Based on these fundamentals and design requirements, the author explains the design process in a holistic manner to emphasise the integration of the individual components into the overall design. Throughout the book the various design options are considered and weighed against each other, to give readers a practical understanding of the process overall. Readers with knowledge of the fundamental concepts of aerodynamics, propulsion, aero-structure, and flight dynamics will find this book ideal to progress towards the next stage in their understanding of the topic. Furthermore, the broad variety of design techniques covered ensures that readers have the freedom and flexibility to satisfy the design requirements when approaching real-world projects. Key features:

- Provides full coverage of the design aspects of an air vehicle including: aeronautical concepts, design techniques and design flowcharts
- Features end of chapter problems to reinforce the learning process as well as fully solved design examples at component level
- Includes fundamental explanations for aeronautical engineering students and practicing engineers



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Features a solutions manual to sample questions on the book's companion website Companion website - <http://www.wiley.com/go/sadraey> [www.wiley.com/go/sadraey/a](http://www.wiley.com/go/sadraey/a)

Prepared at the request of NASA, Aeronautical Technologies for the Twenty-First Century presents steps to help prevent the erosion of U.S. dominance in the global aeronautics market. The book recommends the immediate expansion of research on advanced aircraft that travel at subsonic speeds and research on designs that will meet expected future demands for supersonic and short-haul aircraft, including helicopters, commuter aircraft, "tiltrotor," and other advanced vehicle designs. These recommendations are intended to address the needs of improved aircraft performance, greater capacity to handle passengers and cargo, lower cost and increased convenience of air travel, greater aircraft and air traffic management system safety, and reduced environmental impacts.

"Aircraft Engine Design, Third Edition presents a complete and realistic aircraft engine design experience. From the request for proposal for a new aircraft to the final engine layout, it outlines the concepts and procedures required for the entire process. The writing of the third edition of Aircraft Engine Design began as soon as the second edition was published in 2003. The ensuing 15 years of evolutionary changes have created an improved,

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new work. The special contributions of uniquely qualified experts continue to provide valuable material to this new edition. These include Appendix L on Turbine Engine Life Management by Dr. William D. Cowie and Appendix M on Engine Controls by Charles A. Skira (with Timothy J. Lewis and Zane D. Gastineau) with update by Dr. Link Jaw"--

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.

New edition of the successful textbook updated to include new material on UAVs, design guidelines in aircraft engine

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component systems and additional end of chapter problems Aircraft Propulsion, Second Edition follows the successful first edition textbook with comprehensive treatment of the subjects in airbreathing propulsion, from the basic principles to more advanced treatments in engine components and system integration. This new edition has been extensively updated to include a number of new and important topics. A chapter is now included on General Aviation and Uninhabited Aerial Vehicle (UAV) Propulsion Systems that includes a discussion on electric and hybrid propulsion. Propeller theory is added to the presentation of turboprop engines. A new section in cycle analysis treats Ultra-High Bypass (UHB) and Geared Turbofan engines. New material on drop-in biofuels and design for sustainability is added to reflect the FAA's 2025 Vision. In addition, the design guidelines in aircraft engine components are expanded to make the book user friendly for engine designers. Extensive review material and derivations are included to help the reader navigate through the subject with ease. Key features: General Aviation and UAV Propulsion Systems are presented in a new chapter Discusses Ultra-High Bypass and Geared Turbofan engines Presents alternative drop-in jet fuels Expands on engine components' design guidelines The end-of-chapter problem sets have been increased by nearly 50% and solutions are available on a companion website Presents a new section on engine performance testing and instrumentation Includes a new 10-Minute Quiz appendix (with 45 quizzes) that can be used as a continuous assessment and improvement tool in teaching/learning propulsion principles and concepts Includes a new appendix on Rules of Thumb and Trends in aircraft propulsion Aircraft Propulsion, Second Edition is a must-have textbook for graduate and undergraduate students, and is also an excellent source of information for researchers and practitioners in the aerospace and power industry.

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Significantly expanded and modernized, this text emphasizes recent developments impacting engine design such as theta break/throttle ratio, life management, controls, and stealth. The key steps of the process are detailed in 10 chapters enhanced by AEDsys software on CD-ROM that provides comprehensive computational support for every design step. A user's manual is provided with the software, along with the complete data files used for the Air-to-Air Fighter and Global Range Airlifter design examples of the book.

A vital resource for pilots, instructors, and students, from the most trusted source of aeronautic information.

"The risk of engine failure is greatest when your engine is young, NOT when it's old. You should worry more about pediatrics than geriatrics." -Mike Busch A&P/IA Mike Busch on Engines expands the iconoclastic philosophy of his groundbreaking first book Manifesto to the design, operation, condition monitoring, maintenance and troubleshooting of piston aircraft engines. Busch begins with the history and theory of four-stroke spark-ignition engines. He describes the construction of both the "top end" (cylinders) and "bottom end" (inside the case), and functioning of key systems (lubrication, ignition, carburetion, fuel injection, turbocharging). He reviews modern engine leaning technique (which your POH probably has all wrong), and provides a detailed blueprint for maximizing the life of your engine. The second half presents a 21st-century approach to health assessment, maintenance, overhaul and troubleshooting. Busch explains how modern condition monitoring tools-like borescopy, oil analysis and digital engine monitor data analysis-allow you to extend engine life and overhaul strictly on-condition rather at an arbitrary TBO. The section devoted to troubleshooting problems like rough running, high oil consumption, temperamental ignition and turbocharging issues is worth its weight in gold. If you want your engine to

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live long and prosper, you need this book.

**Airworthiness: An Introduction to Aircraft Certification, Second Edition**, offers a practical guide to the regulations of the International Civil Aviation Organization (ICAO), the U.S. Federal Aviation Administration (FAA), and the European Aviation Safety Agency (EASA). The discussions include the concepts of flight safety and airworthiness; the ICAO and civil aviation authorities; airworthiness requirements; type certifications and the type-certification process; production of products, parts, and appliances; certifications of airworthiness; and rules for “spaceworthiness. The book will be a valuable resource for certification engineers engaged in professional training and practical work in regulatory agencies and aircraft engineering companies. The only airworthiness guide available—a unique single reference covering the requirements of the ICAO (International Civil Aviation Organisation), FAA (the US Federal Aviation Administration) and EASA (European Aviation Safety Agency) Demystifies the relevant European and US regulations and helps anyone involved in the manufacture, flying and maintenance of aircraft to understand this complex yet essential topic

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