Jet Engine Air Intakes

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150 and 300 KW Lightweight Diesel Aircraft Engine Study Hungry Tomato ®

From extremely fast passenger planes to stealthy military vehicles, jets have come a long way since their invention. Action shots and diagrams along with high-interest text explore these superfast aircraft.

Gas Turbines and Jet Propulsion for Aircraft AIAA

Reproductions of reports, some declassified, of research done at Aircraft Engine Research Laboratory during World War II. The order of reports does not represent when they were chronologically issued. Reference to the original version of each report is included.

Technical Manual **Cambridge University Press**

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.

Gas Turbines and Jet Propulsion for Aircraft National Academies Press

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.

Aircraft Engines and Gas Turbines, second edition Pearson Education

In this textbook, the authors show that a few fundamental principles can provide students of mechanical and aeronautical engineering with a deep understanding of all modes of aircraft and spacecraft propulsion.

Noise Control for Aircraft Engine Test Cells and Ground Run-up Suppressors Crowood Press (UK)

The German war machine resulted in many innovations in jet engine and gas turbine development. The most noteworthy was the Me262, the world's first operational jet fighting aircraft.

Subject Classification of Technical Reports CRC Press

Effects of roughness, size, and constructional features on efficiency and pressure loss are checked in two intake ducts of different area. Results indicate that larger internal passages increase efficiency. Poor finishing may decrease efficiency by as much as 50%, while spoilers may increase duct pressure los by 700%. Splitter vanes across duct, to insure rigidity, increase pressure loss by about 50%.

Commercial Aircraft Propulsion and Energy Systems Research AIAA (American Institute of Aeronautics & Astronautics)

Compressor performance and turbine performance are presented in the form of performance maps at selected values of Reynolds number index; the effects of Reynolds number on performance are summarized. The effects of variable stator angle and high inlet-air temperatures on compressor performance are also shown. Over-all engine performance (net thrust and specific fuel consumption) is presented for a flight Mach number of 0.9 at rated engine conditions over a range of altitudes to illustrate performance losses resulting from decreased Reynolds number index.

Intake Aerodynamics MIT Press

This book describes the design, operation, performance, and selection of the inlets (also known as intakes and air-induction systems) indispensable to proper functioning of an airbreathing engine. Topics include functions and fundamentals, supersonic diffusers, subsonic diffusers, viscous effects, operational characteristics, performance estimation, installation factors, variable geometry, and proof of capability.

Mechanics and Thermodynamics of Propulsion Wiley-Blackwell

This book provides, for the first time, the distilled experience of authors who have been closely involved in design of air intakes for both airframe and engine manufacturers. Much valuable data from systematic experimental measurements on intakes for missiles, combat, and V/STOL aircraft from research sources in the United Kingdom, the United States, France, and Germany are included, together with the latest developments in computational fluid dynamics applied to air intakes.

Performance of Basic XJ79-GE-1 Turbojet Engine and Its Components Crowood Press UK

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

Aircraft Induction, Fuel, and Oil Systems AIAA (American Institute of Aeronautics & Astronautics)

This book is intended for those who wish to broaden their knowledge of jet engine technology and associated subjects. It covers turbojet, turboprop and turbofan designs and is applicable to civilian and military usage. It commences with an overview of the main design types and fundamentals and then looks at air intakes, compresors, turbines and exhaust systems in great detail.

Practical Intake Aerodynamic Design

This introductory 2005 text on air-breathing jet propulsion focuses on the basic operating principles of jet engines and gas turbines. Previous coursework in fluid mechanics and thermodynamics is elucidated and applied to help the student understand and predict the characteristics of engine components and various types of engines and power gas turbines. Numerous examples help the reader appreciate the methods and differing, representative physical parameters. A capstone chapter integrates the text material into a portion of the book devoted to system matching and analysis so that engine performance can be predicted for both on- and off-design conditions. The book is designed for advanced undergraduate and first-year graduate students in aerospace and mechanical engineering. A basic understanding of fluid dynamics and thermodynamics is presumed. Although aircraft propulsion is the focus, the material can also be used to study ground- and marine-based gas turbines and turbomachinery and some advanced topics in compressors and turbines.

Flying Power

Lærebogsagtig beskrivelse af og beregninger samt diagrammer i f.m. flygasturbinemotorer

Jet Engine Exhaust Emissions of High-altitude Commercial Aircraft Projected to 1990

The primary human activities that release carbon dioxide (CO2) 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 CO2 emissions only make up approximately 2.0 to 2.5 percent of total global annual CO2 emissions, research to reduce CO2 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 CO2 emissions. Commercial Aircraft Propulsion and Energy Systems Research develops a national research agenda for reducing CO2 emissions from commercial aviation. This report focuses on propulsion and energy technologies for reducing carbon emissions from large, commercial aircraftâ€" single-aisle and twin-aisle aircraft that carry 100 or more passengersâ€"because such aircraft account for more than 90 percent of global emissions from commercial aircraft. Moreover, while smaller aircraft also emit CO2, they make only a minor contribution to global emissions, and many technologies that reduce CO2 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, CO2 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.

Investigation of Intake Ducts for a High-speed Subsonic Jet-propelled Airplane

Aircraft Gas Turbine Engine Technology

Superfast Jets

German Jet Engine and Gas Turbine Development, 1930-45

Jet Engine Mechanic (AFSC 42652): Associated jet engine systems