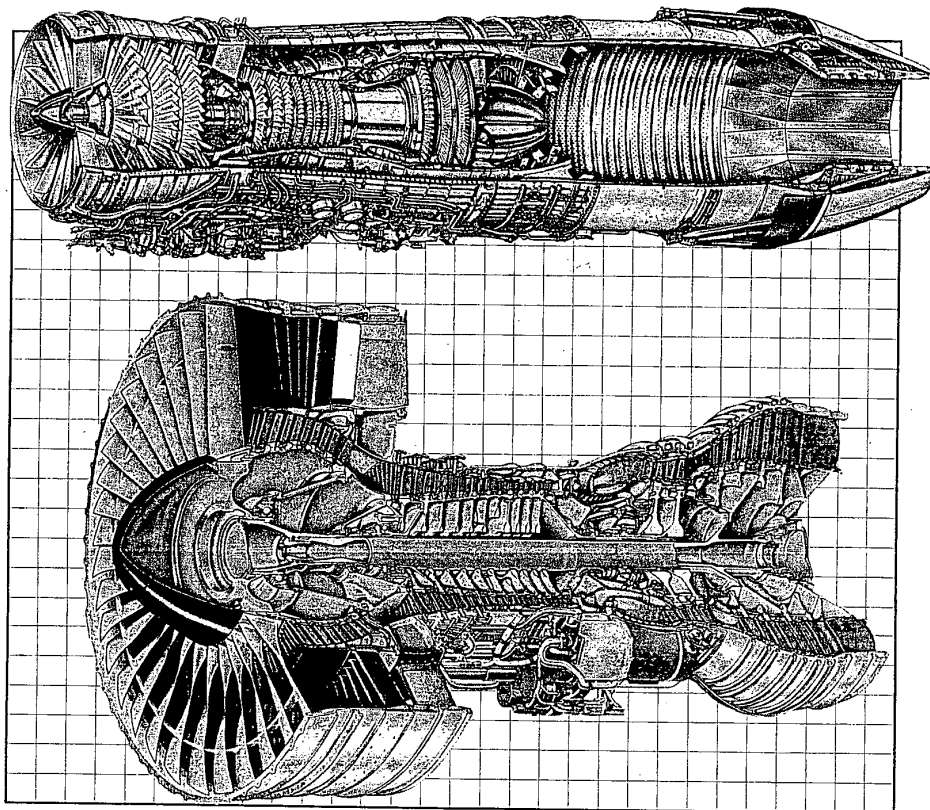


Elements of Gas Turbine Propulsion

Jack D. Mattingly



Foreword by
Hans von Ohain
German Inventor of the Jet Engine

Mattingsly

Elements of
Gas Turbine Propulsion

TL
709
.M38
1996

ELEMENTS OF GAS TURBINE PROPULSION

McGraw-Hill Series in Aeronautical and Aerospace Engineering

Consulting Editor

John D. Anderson, Jr., University of Maryland

Anderson: *Computational Fluid Dynamics: The Basics with Applications*

Anderson: *Fundamentals of Aerodynamics*

Anderson: *Hypersonic and High Temperature Gas Dynamics*

Anderson: *Introduction to Flight*

Anderson: *Modern Compressible Flow: With Historical Perspective*

Burton: *Introduction to Dynamic Systems Analysis*

D'Azzo and Houpis: *Linear Control System Analysis and Design*

Donaldson: *Analysis of Aircraft Structures: An Introduction*

Gibson: *Principles of Composite Material Mechanics*

Kane, Likins, and Levinson: *Spacecraft Dynamics*

Katz and Plotkin: *Low-Speed Aerodynamics: From Wing Theory to Panel Methods*

Mattingly: *Elements of Gas Turbine Propulsion*

Nelson: *Flight Stability and Automatic Control*

Peery and Azar: *Aircraft Structures*

Rivello: *Theory and Analysis of Flight Structures*

Schlichting: *Boundary Layer Theory*

White: *Viscous Fluid Flow*

Wiesel: *Spaceflight Dynamics*

McGraw-Hill Series in Mechanical Engineering

Consulting Editors

Jack P. Holman, Southern Methodist University

John R. Lloyd, Michigan State University

- Anderson:** *Computational Fluid Dynamics: The Basics with Applications*
- Anderson:** *Modern Compressible Flow: With Historical Perspective*
- Arora:** *Introduction to Optimum Design*
- Bray and Stanley:** *Nondestructive Evaluation: A Tool for Design, Manufacturing, and Service*
- Burton:** *Introduction to Dynamic Systems Analysis*
- Culp:** *Principles of Energy Conversion*
- Dally:** *Packaging of Electronic Systems: A Mechanical Engineering Approach*
- Dieter:** *Engineering Design: A Materials and Processing Approach*
- Doebelin:** *Engineering Experimentation: Planning, Execution, Reporting*
- Driels:** *Linear Control Systems Engineering*
- Eckert and Drake:** *Analysis of Heat and Mass Transfer*
- Edwards and McKee:** *Fundamentals of Mechanical Component Design*
- Gebhart:** *Heat Conduction and Mass Diffusion*
- Gibson:** *Principles of Composite Material Mechanics*
- Hamrock:** *Fundamentals of Fluid Film Lubrication*
- Heywood:** *Internal Combustion Engine Fundamentals*
- Hinze:** *Turbulence*
- Holman:** *Experimental Methods for Engineers*
- Howell and Buckius:** *Fundamentals of Engineering Thermodynamics*
- Hutton:** *Applied Mechanical Vibrations*
- Juvinall:** *Engineering Considerations of Stress, Strain, and Strength*
- Kane and Levinson:** *Dynamics: Theory and Applications*
- Kays and Crawford:** *Convective Heat and Mass Transfer*
- Kelly:** *Fundamentals of Mechanical Vibrations*
- Kimbrell:** *Kinematics Analysis and Synthesis*
- Kreider and Rabl:** *Heating and Cooling of Buildings*
- Martin:** *Kinematics and Dynamics of Machines*
- Mattingly:** *Elements of Gas Turbine Propulsion*
- Modest:** *Radiative Heat Transfer*
- Norton:** *Design of Machinery*
- Phelan:** *Fundamentals of Mechanical Design*
- Raven:** *Automatic Control Engineering*
- Reddy:** *An Introduction to the Finite Element Method*
- Rosenberg and Karnopp:** *Introduction to Physical Systems Dynamics*
- Schlichting:** *Boundary-Layer Theory*
- Shames:** *Mechanics of Fluids*
- Sherman:** *Viscous Flow*
- Shigley:** *Kinematic Analysis of Mechanisms*
- Shigley and Mischke:** *Mechanical Engineering Design*
- Shigley and Uicker:** *Theory of Machines and Mechanisms*
- Stiffier:** *Design with Microprocessors for Mechanical Engineers*
- Stoecker and Jones:** *Refrigeration and Air Conditioning*
- Turns:** *An Introduction to Combustion: Concepts and Applications*
- Ullman:** *The Mechanical Design Process*
- Vanderplaats:** *Numerical Optimization: Techniques for Engineering Design, with Applications*
- Wark:** *Advanced Thermodynamics for Engineers*
- White:** *Viscous Fluid Flow*
- Zeid:** *CAD/CAM Theory and Practice*

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.