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Nota di contenuto	Intro -- Aircraft Propulsion -- Table of Contents -- Preface to the Second Edition -- Acknowledgments -- Preface -- Intended Audience -- Motivation -- Mathematical Level -- Chapter Organization and Topical Coverage -- Instructor Resources -- Acknowledgments -- Nomenclature -- 1 Introduction -- 1.1 History of the Airbreathing Jet Engine, a Twentieth-Century Invention-The Beginning -- 1.2 Innovations in Aircraft Gas Turbine Engines -- 1.2.1 Multispool Configuration -- 1.2.2 Variable Stator -- 1.2.3 Transonic Compressor -- 1.2.4 Low-Emission Combustor -- 1.2.5 Turbine Cooling -- 1.2.6 Exhaust Nozzles -- 1.2.7 Modern Materials and Manufacturing Techniques -- 1.3 New Engine Concepts -- 1.3.1 Advanced Turboprop (ATP) and Geared Turbofan (GTF) -- 1.3.2 Advanced Airbreathing Rocket Technology -- 1.3.3 Wave Rotor Topping Cycle -- 1.3.4 Pulse Detonation Engine (PDE) -- 1.3.5 Millimeter-Scale Gas Turbine Engines: Triumph of MEMS and Digital Fabrication -- 1.3.6 Combined Cycle Propulsion: Engines from Takeoff to Space -- 1.4 New Vehicles -- 1.5 Summary -- 1.6 Roadmap for the Second Edition -- References -- Problems -- 2 Compressible Flow with Friction and Heat: A Review -- 2.1 Introduction -- 2.2 A Brief Review of Thermodynamics -- 2.3 Isentropic Process and Isentropic Flow -- 2.4 Conservation Principles for Systems and Control Volumes -- 2.5 Speed of Sound & Mach

Number -- 2.6 Stagnation State -- 2.7 Quasi-One-Dimensional Flow -- 2.8 Area-Mach Number Relationship -- 2.9 Sonic Throat -- 2.10 Waves in Supersonic Flow -- 2.11 Normal Shocks -- 2.12 Oblique Shocks -- 2.13 Conical Shocks -- 2.14 Expansion Waves -- 2.15 Frictionless, Constant-Area Duct Flow with Heat Transfer -- 2.16 Adiabatic Flow of a Calorically Perfect Gas in a Constant-Area Duct with Friction -- 2.17 Friction (Drag) Coefficient  $C_f$  and D'Arcy Friction Factor  $f_D$ .

2.18 Dimensionless Parameters -- 2.19 Fluid Impulse -- 2.20 Summary of Fluid Impulse -- References -- Problems -- 3 Engine Thrust and Performance Parameters -- 3.1 Introduction -- 3.1.1 Takeoff Thrust -- 3.2 Installed Thrust-Some Bookkeeping Issues on Thrust and Drag -- 3.3 Engine Thrust Based on the Sum of Component Impulse -- 3.4 Rocket Thrust -- 3.5 Airbreathing Engine Performance Parameters -- 3.5.1 Specific Thrust -- 3.5.2 Specific Fuel Consumption and Specific Impulse -- 3.5.3 Thermal Efficiency -- 3.5.4 Propulsive Efficiency -- 3.5.5 Engine Overall Efficiency and Its Impact on Aircraft Range and Endurance -- 3.6 Modern Engines, Their Architecture and Some Performance Characteristics -- 3.7 Summary -- References -- Problems -- 4 Gas Turbine Engine Cycle Analysis -- 4.1 Introduction -- 4.2 The Gas Generator -- 4.3 Aircraft Gas Turbine Engines -- 4.3.1 The Turbojet Engine -- 4.3.2 The Turbojet Engine with an Afterburner -- 4.3.3 The Turbofan Engine -- 4.3.4 Ultra-High Bypass (UHB) Turbofan Engines -- 4.4 Analysis of a Mixed-Exhaust Turbofan Engine with an Afterburner -- 4.4.1 Mixer -- 4.4.2 Cycle Analysis -- 4.5 The Turboprop Engine -- 4.5.1 Introduction -- 4.5.2 Propeller Theory -- 4.5.3 Turboprop Cycle Analysis -- 4.6 Summary -- References -- Problems -- 5 General Aviation and Uninhabited Aerial Vehicle Propulsion System -- 5.1 Introduction -- 5.2 Cycle Analysis -- 5.2.1 Otto Cycle -- 5.2.2 Real Engine Cycles -- 5.3 Power and Efficiency -- 5.4 Engine Components and Classifications -- 5.4.1 Engine Components -- 5.4.2 Reciprocating Engine Classifications -- 5.5 Scaling of Aircraft Reciprocating Engines -- 5.5.1 Scaling of Aircraft Diesel Engines -- 5.6 Aircraft Engine Systems -- 5.6.1 Aviation Fuels and Engine Knock -- 5.6.2 Carburetion and Fuel Injection Systems -- 5.6.3 Ignition Systems -- 5.6.4 Lubrication Systems -- 5.6.5 Supercharging.

5.7 Electric Engines -- 5.7.1 Electric Motors -- 5.7.2 Solar cells -- 5.7.3 Advanced Batteries -- 5.7.4 Fuel cells -- 5.7.5 State of the Art for Electric Propulsion - Future Technology -- 5.8 Propellers and Reduction Gears -- References -- Problems -- 6 Aircraft Engine Inlets and Nozzles -- 6.1 Introduction -- 6.2 The Flight Mach Number and Its Impact on Inlet Duct Geometry -- 6.3 Diffusers -- 6.4 An Ideal Diffuser -- 6.5 Real Diffusers and Their Stall Characteristics -- 6.6 Subsonic Diffuser Performance -- 6.7 Subsonic Cruise Inlet -- 6.8 Transition Ducts -- 6.9 An Interim Summary for Subsonic Inlets -- 6.10 Supersonic Inlets -- 6.10.1 Isentropic Convergent-Divergent Inlets -- 6.10.2 Methods to Start a Supersonic Convergent-Divergent Inlet -- 6.11 Normal Shock Inlets -- 6.12 External Compression Inlets -- 6.12.1 Optimum Ramp Angles -- 6.12.2 Design and Off-Design Operation -- 6.13 Variable Geometry-External Compression Inlets -- 6.13.1 Variable Ramps -- 6.14 Mixed-Compression Inlets -- 6.15 Supersonic Inlet Types and Their Performance-A Review -- 6.16 Standards for Supersonic Inlet Recovery -- 6.17 Exhaust Nozzle -- 6.18 Gross Thrust -- 6.19 Nozzle Adiabatic Efficiency -- 6.20 Nozzle Total Pressure Ratio -- 6.21 Nozzle Pressure Ratio (NPR) and Critical Nozzle Pressure Ratio (NPR<sub>crit.</sub>) -- 6.22 Relation Between Nozzle Figures of Merit,  $n$  and  $n^*$  -- 6.23 A Convergent Nozzle or a De Laval?

-- 6.24 The Effect of Boundary Layer Formation on Nozzle Internal Performance -- 6.25 Nozzle Exit Flow Velocity Coefficient -- 6.26 Effect of Flow Angularity on Gross Thrust -- 6.27 Nozzle Gross Thrust Coefficient  $C_{fg}$  -- 6.28 Overexpanded Nozzle Flow-Shock Losses -- 6.29 Nozzle Area Scheduling, A8 and A9/A8 -- 6.30 Nozzle Exit Area Scheduling, A9/A8 -- 6.31 Nozzle Cooling -- 6.32 Thrust Reverser and Thrust Vectoring -- 6.33 Hypersonic Nozzle.  
6.34 Exhaust Mixer and Gross Thrust Gain in a Mixed-Flow Turbofan Engine -- 6.35 Noise -- 6.35.1 Jet Noise -- 6.35.2 Chevron Nozzle -- 6.36 Nozzle-Turbine (Structural) Integration -- 6.37 Summary of Exhaust Systems -- References -- Problems -- 7 Combustion Chambers and Afterburners -- 7.1 Introduction -- 7.2 Laws Governing Mixture of Gases -- 7.3 Chemical Reaction and Flame Temperature -- 7.4 Chemical Equilibrium and Chemical Composition -- 7.4.1 The Law of Mass Action -- 7.4.2 Equilibrium Constant  $K_P$  -- 7.5 Chemical Kinetics -- 7.5.1 Ignition and Relight Envelope -- 7.5.2 Reaction Timescale -- 7.5.3 Flammability Limits -- 7.5.4 Flame Speed -- 7.5.5 Flame Stability -- 7.5.6 Spontaneous Ignition Delay Time -- 7.5.7 Combustion-Generated Pollutants -- 7.6 Combustion Chamber -- 7.6.1 Combustion Chamber Total Pressure Loss -- 7.6.2 Combustor Flow Pattern and Temperature Profile -- 7.6.3 Combustor Liner and Its Cooling Methods -- 7.6.4 Combustion Efficiency -- 7.6.5 Some Combustor Sizing and Scaling Laws -- 7.6.6 Afterburner -- 7.7 Combustion-Generated Pollutants -- 7.7.1 Greenhouse Gases, CO<sub>2</sub> and H<sub>2</sub>O -- 7.7.2 Carbon Monoxide, CO, and Unburned Hydrocarbons, UHC -- 7.7.3 Oxides of Nitrogen, NO and NO<sub>2</sub> -- 7.7.4 Smoke -- 7.7.5 Engine Emission Standards -- 7.7.6 Low-Emission Combustors -- 7.7.7 Impact of NO on the Ozone Layer -- 7.8 Aviation Fuels -- 7.9 Alternative "Drop-In" Jet Fuels (AJFs) -- 7.10 Combustion Instability: Screech and Rumble -- 7.10.1 Screech Damper -- 7.11 Summary -- References -- Problems -- 8 Axial Compressor Aerodynamics -- 8.1 Introduction -- 8.2 The Geometry -- 8.3 Rotor and Stator Frames of Reference -- 8.4 The Euler Turbine Equation -- 8.5 Axial-Flow Versus Radial-Flow Machines -- 8.6 Axial-Flow Compressors and Fans -- 8.6.1 Definition of Flow Angles -- 8.6.2 Stage Parameters -- 8.6.3 Cascade Aerodynamics.  
8.6.4 Aerodynamic Forces on Compressor Blades -- 8.6.5 Three-Dimensional Flow -- 8.7 Compressor Performance Map -- 8.8 Compressor Instability - Stall and Surge -- 8.9 Multistage Compressors and Their Operating Line -- 8.10 Multistage Compressor Stalling Pressure Rise and Stall Margin -- 8.11 Multistage Compressor Starting Problem -- 8.12 The Effect of Inlet Flow Condition on Compressor Performance -- 8.13 Isometric and Cutaway Views of Axial-Flow Compressor Hardware -- 8.14 Compressor Design Parameters and Principles -- 8.14.1 Blade Design - Blade Selection -- 8.14.2 Compressor Annulus Design -- 8.14.3 Compressor Stall Margin -- 8.15 Summary -- References -- Problems -- 9 Centrifugal Compressor Aerodynamics -- 9.1 Introduction -- 9.2 Centrifugal Compressors -- 9.3 Radial Diffuser -- 9.4 Inducer -- 9.5 Inlet Guide Vanes (IGVs) and Inducer-Less Impellers -- 9.6 Impeller Exit Flow and Blockage Effects -- 9.7 Efficiency and Performance -- 9.8 Summary -- References -- Problems -- 10 Aerothermo-dynamics of Gas Turbines -- 10.1 Introduction -- 10.2 Axial-Flow Turbines -- 10.2.1 Optimal Nozzle Exit Swirl Mach Number -- 10.2.2 Turbine Blade Losses -- 10.2.3 Optimum Solidity -- 10.2.4 Turbine Cooling -- 10.3 Turbine Performance Map -- 10.4 The Effect of Cooling on Turbine Efficiency -- 10.5 Turbine Blade Profile Design -- 10.5.1 Angles -- 10.5.2 Other Blade Geometrical Parameters -- 10.5.3 Throat Sizing -- 10.5.4 Throat

Reynolds Number Reo -- 10.5.5 Turbine Blade Profile Design -- 10.5.6 Blade Vibration and Campbell Diagram -- 10.5.7 Turbine Blade and Disk Material Selection and Design Criteria -- 10.6 Stresses in Turbine Blades and Disks and Useful Life Estimation -- 10.7 Axial-Flow Turbine Design and Practices -- 10.8 Gas Turbine Design Summary -- 10.9 Summary -- References -- Problems -- 11 Aircraft Engine Component Matching and Off-Design Analysis.  
11.1 Introduction.

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Sommario/riassunto

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