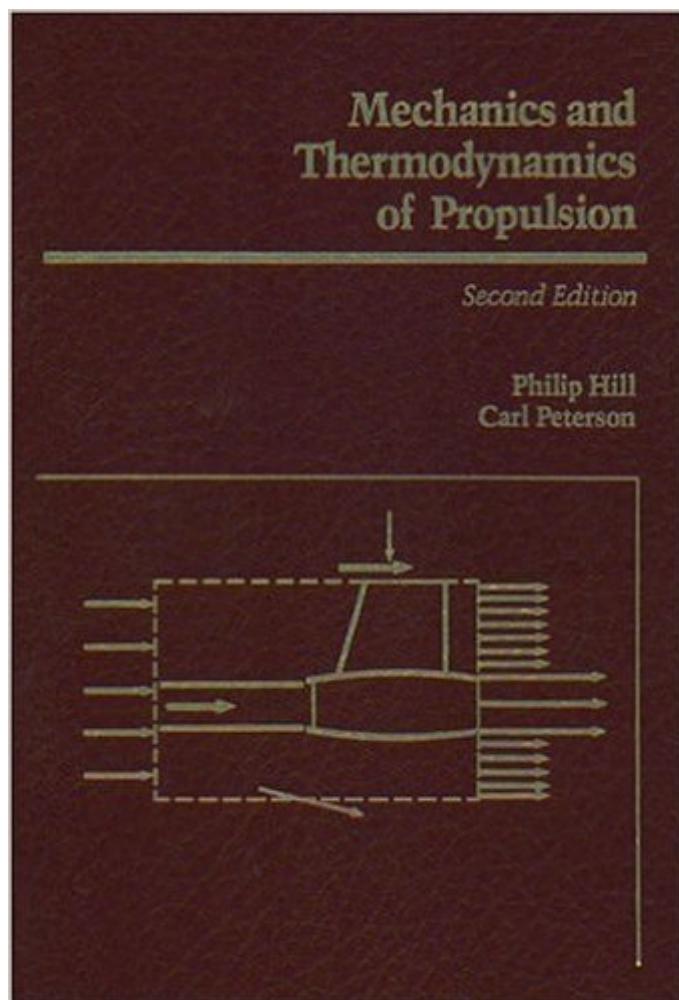


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# Mechanics And Thermodynamics Of Propulsion (2nd Edition)



## Synopsis

In this textbook, the authors show that a few fundamental principles can provide an understanding of all modes of aircraft and spacecraft propulsion. The book also demonstrates how these fundamental principles can lead directly to useful quantitative assessments of performance as well as possibilities for improvement.

## Book Information

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## Customer Reviews

listed this book in its periodic email of recommended books. I was shocked to see three stars next to it as an aggregate rating, and I was compelled to write a raving review of it. I own the fist edition of this book (1965!). this is probably one of the best written scientific books I know of. crystal clear and captivating from fundamentals to core advanced topics. anyone who was not there at the time should be fascinated by this book, and astounded to find out just what was already known in the sixties about propulsion, and mortified about how little progress has been made since, in comparison. it is true you will not find as many examples in this book as in some more recent books. in my opinion, the clarity of general explanations (with worked math) more than makes up for this. in many newer books authors seem to throw in confusing new notation, and end up with weaker explanations of core subjects. then, some people expect to use precooked examples for everything. I do not own the second edition of this book. I hope nobody has done it the great disservice of reediting it to any significant extent.

Yeah, that's a big statement, but considering the fact that I own 7 other major propulsion books and refer to this one 10 times more than any of the others, I think it's definitely true. All of the top Aerospace Engineering schools use it, and for good reason. It is NOT a teach-yourself book. If that is what you are into, then go buy something with more pretty pictures, because some sections take some work to dig into. But if you are Senior level or grad student, then the book will be very good for you. The content in the book is very insightful, and if you go through the book concurrently with a course it is a great help.

**Good:** Covers the entire subject of turbine and rocket engines. This book actually covers the basics of thermodynamics, boundary layer theory, heat transfer, high-speed aerodynamics, flow in a duct, and basic combustion chemistry before launching into an in-depth discussion of turbines, compressors, inlets, diffusers, nozzles, rocket motors, and electric propulsion. **Bad:** Few example problems, few pictures, old edition does not take into account modern aircraft engine designs like geared fan engines. Book mentions how a combined turbojet/ramjet would be very efficient at high speed cruise but does not use the SR-71 as an example which makes me question if the aircraft was still secret when the book was originally written. Nevertheless, I would still recommend this book to anyone interested in in-depth knowledge of turbine engine design. Book was in perfect, used condition when ordered and showed no sign of actual use. I am an aerospace engineering student and will never sell this book. It will always stay on my shelf as a good reference.

This book is an excellent source of information for a wide range of propulsion systems, both airbreathing and rocket. The book focuses on the basic principles of thermodynamics and aerodynamics in the early chapters and then later deals with the various forms of aerospace propulsion systems. Three chapters are reserved for turbojet engines, dealing with the compressors and turbines. Several chapters are dedicated to rocket propulsion, including the principles of staging and structural design. Overall this book is well written and is interesting to read. It is a good mixture of the presentation of the equations relating to the field as well as presenting these concepts in a digestible format.

This is a very good book for in-depth information into the working of jet and rocket propulsion. However, as a student in aerospace engineering, I find it lacking examples of any kind throughout the entire book. Without examples it is very difficult to take in and understand fully what the author is discussing. Unless you already know a good deal about engines, this might not be the book for you.

I needed this book for a graduate course, but it reads very well. I felt as if every subject of jet engine propulsion was covered, and explained well. I have a lot of prior knowledge in this subject, but still feel like the author wasn't preachy as many textbooks tend to be.

As a student, I found this book to be inadequate and rather frustrating. Lack of example problems causes extreme weakness in material coverage. Problems at the end of each chapter are confusing at best and require extensive guidance from a qualified professor. Also the book is far overpriced. I would definitely prefer to use another book for my class.

This book fails to do fundamental derivations, and often leaves out fundamental assumptions. I would consider this book to be highly irresponsible to use as a reference guide. In particular, the thrust derived equations often leave out important efficiencies, and have very little discussion of what those efficiencies should be.

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