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by Cable, Getchell, Kadesch and Poppy

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gree, mathematical clarity, elegance, and physical insight, and the author does not shrink from including the steps of a mathematical argument where they contribute to its fuller understanding.

The book opens with an introduction containing the basic equations of motion and continuity of the fluid, and introduces the notion of a "specifying equation" (a generalization of the equation of state), as a clarifying link between the mathematical and physical requirements of the general problem. The introduction also contains a careful discussion of the energy equation, the effect of viscosity, the wave equation, and the propagation of small disturbances (including the idea of Mach lines).

The second chapter is concerned with general theorems of circulation and irrotational flow (including the Prandtl-Glauert equation), followed by a description of the hodograph representation, and an extended exposition of the theory of characteristics, together with relevant examples and a discussion of their relation to boundary value problems.

This is followed by a discussion of one-dimensional flows in which special attention is given to the effects of viscosity and heat conduction, and the formation of shocks is treated in the light of these effects.

The final two chapters deal respectively with plane steady potential flow and integration theory and shocks. The general theoretical discussion is applied in some detail to a number of problems including the flow through ducts and Chaplygin's method, which is used to solve the subsonic jet problem. Modifications of Chaplygin's method by Lighthill and Bergmann are described. The book concludes with a discussion of non-isentropic and transonic flow, and some mathematical questions related thereto.

A number of subsidiary points of interest, somewhat in the nature of footnotes, follow the text, but do not interrupt the main flow of the argument. The general format and typography are good, and familiar notations are used almost throughout the book.

While the latter portion of the book is of necessity not light reading, the first three chapters provide an excellent treatment of the underlying laws and methods of theoretical aerodynamics, and can be recommended even to those who are not concerned with the more complex problem of ducts or transonic flow.

Missile Engineering Handbook. By C. W. Besserer. 600 pp. D. Van Nostrand Co., Inc., Princeton, N. J., 1958. \$14.50. Reviewed by Robert E. Street, University of Washington.

This is the first "handbook" in a new and rapidly growing engineering field. It is not intended to replace the usual engineering or scientific handbooks. Instead it is supplementary to these, as well as being a compendium of information contained in the other volumes of the series "Principles of Guided Missile Design" of which it is the fourth volume.

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By ROBERT B. LEIGHTON, California Institute of Technology. *McGraw-Hill International Series in Pure & Applied Physics*. Ready in January.

An unusually comprehensive text that could be used for a 2-year course in Modern Physics without a preliminary course in Quantum Mechanics, or as a 1-year course with considerable selection of material. The approach is expository and analytical, rather than historical and discursive. It covers recent advances such as nonconservation of parity, Elementary Theory of the "strange particles," the formation of elements in stars, the Fermi mechanism of cosmic ray acceleration, and nuclear shell structure.

one has only 387 pages of what is usually considered to be the proper content of handbooks, data of various kinds, equations, and similar information. The remaining one third of the book is a very comprehensive glossary of terms used in the whole field of missiles, including such slang expressions as "beeper" and technical terms such as "Schuler pendulum". The glossary could be interesting reading to a specialist in part of the field who wishes to learn the use of terms in other specialties. This reviewer, being an aerodynamicist, found most aerodynamic terms pretty well defined, but in a few cases there is vagueness, such as in the definition of "dynamic pressure", or omissions, such as "Bernoulli's theorem", which is defined as the theorem of probability but not of fluid dynamics.

The book is a difficult one to evaluate; it has excellent tables and charts such as those on the atmosphere, shock and vibration of airborne equipment, reliability of missiles, properties of materials of especial interest to the missile designer, vibration design, and structural formulae. Yet the sections on aerodynamics, electronics, propulsion, and space-flight data are too brief to cover anything more than the obvious and most elementary information. Some of the tables are self-explanatory but others are not. (For example, the one for apparent gravity, a term which is nowhere defined.) The limitations and reliability of the data is not mentioned. This paucity of explanation and lack of discussion will limit the use of this handbook to those in the know, who are apparently familiar with the special lingo of missile engineers. However, it is only for such people that the book is intended anyway.

Le Volcanisme Lunaire et Terrestre: Origine des Continents, des Océans et des Atmosphères, l'Energie géothermique. By Alexandre Dauvillier. 300 pp. Editions Albin Michel, Paris, France, 1958. Paperbound 1.200 fr. *Reviewed by S. A. Korff, New York University.*

In this book, Alexandre Dauvillier, professor at the College de France, discusses the volcanic history of the earth and moon. He starts out with a description of the fission of the earth-moon system, which resulted in a moon with no iron core but made of the material of the earth's mantle and crust. He then discusses the formation of craters on the moon, the vast majority of which he states to be volcanic rather than meteoric in origin. Owing to the absence of erosion agents, the present surface of the moon is that to which it cooled very long ago. He discusses the differences between the forms of the craters on the moon and that formed by a meteor in Arizona. The depression of the crater floor he attributes to subsidence.

Dauvillier discusses at some length the problems of geochemistry and the role played by what he calls the "salt cycle" and the cycle of superheated water. He believes that water is necessary for the development of volcanic action, and points out that virtually all continental volcanos are now extinct. He devotes paragraphs

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