BOOK REVIEWS

Theory and Design of Modern Pressure Vessels
(2nd ed.)

Author	John F. Harvey
Publisher	Van Nostrand Reinhold Company, 1974
Pages	436
Price	$19.95
Reviewer	Ralph M. Richard

As stated by the author in the Preface, the primary objective of this book is to take the reader through the first steps and the practical considerations encountered in the design of pressure vessels. The author has done this in a comprehensive manner through his treatment of the primary and secondary stresses arising from pressure, temperature, fatigue, and creep. Design considerations include economics, fabrication, and material selection.

This book presents a brief good review of the basic theory of plates, shells, and material behavior germane to pressure vessel analysis, including a comprehensive treatment of discontinuity stresses. All mathematical notation is conventional and requires only a basic understanding of the calculus and strength of materials.

An adequate number of well-posed problems, along with the answers, as well as numerous useful tables and graphs are presented. Reference lists at the end of each chapter are very comprehensive.

The features listed above, I feel, make this book an excellent reference and guide; indeed, it would serve as a good textbook at the senior and first-year graduate level of instruction.

Ralph M. Richard has a BSCE from the University of Notre Dame, an MSCE from Washington University at St. Louis, and a PhD from Purdue University. He teaches structural analysis and design and the finite element method in Civil Engineering and Engineering Mechanics at the University of Arizona. He has served as a consultant in both the aerospace and the building industry, specializing in linear and inelastic structural analysis and dynamics.

Handbook of Mathematical Calculations

Authors	Karen Assaf and Said A. Assaf
Publisher	The Iowa State University Press (1974)
Pages	309
Reviewer	K. F. Hansen

This book purports to be a reference text to present the basic concepts of mathematics and their applications to scientific and engineering problems. According to the Preface, the authors had three points in mind:

1. to reach the student of science who shies away from courses because he believes he learns things better in words than equations

2. to reach working technicians, nurses, and the like who have forgotten the basic principles involved in calculations and/or mathematical manipulations

3. to provide a convenient outline with examples and practical problems for instructors involved in teaching mathematics in fundamental and applied science subjects.

According to the introduction, the book was written for ". . . anybody who has a need to read or to use mathematics in his daily activities but who has either not had the mathematics background or has not used it often enough to remember how to use it."

The book is divided into three major segments. The first is a review of mathematics, including measurement, number systems, fractions, various algebraic manipulations, logarithms, theory of equations, trigonometry, and a touch of calculus. The second portion deals with mathematical applications and takes up such topics as equations; formulas; applications in the chemical field; use of graphs; thermodynamics applications such as gas laws, calculation of density, mass, volume and the like; a bit of some review of mechanics such as force, motion, gravitation laws, work, energy, and the like; and assorted other applications such as radioactivity, geometrical optics, and electromagnetic radiation. The third portion deals with statistics, the notation of statistics,