

puted and measured surface pressure for several generic submersibles.

In the remaining two chapters, K. Sørli demonstrates how a Navier-Stokes method was used in a parameter study for a centrifuge used in water purification, and S. C. Lee and D. Chen report some preliminary, albeit encouraging, results they obtained in direct simulations of transition over low-speed airfoils.

The weakest part of this volume of proceedings is its editing, which appears to have been limited to replacing American with British spelling. The book is riddled with typographical errors, and several figures are undecipher-

able. It also would have helped if the editors had lent their support to some of the contributors, especially those whose native tongue is obviously not English, to improve the readability of their articles.

Researchers in the subtopics mentioned previously might find something of interest in this book, but in view of the poor editing job and the steep price tag, they should try to borrow rather than buy this book.

P. Hartwich
ViGYAN, Inc.

The Behavior of Shells Composed of Isotropic and Composite Materials

J. R. Vinson, Kluwer Academic Publishers, Dordrecht, The Netherlands, 1993, xvii + 545 pp., \$199.00.

This treatise on elastic shells is intended to be a text appropriate for a graduate course or as a self-study reference for practicing engineers. It is written in two parts: Part I (13 chapters) covers shells constructed of isotropic materials, and Part II (11 chapters) covers shells constructed of composite materials and sandwich-construction shells.

Chapter I covers the necessary mathematical preliminaries, and in Chapter 2 the governing equations for thin shells are developed. Chapters 3-7 focus on circular cylindrical shells, shells of revolution (axisymmetric loading), conical shells, spherical shells, and shells of other shapes. Chapters 8-11 treat thermoelastic effects, adhesive joints, energy methods, buckling, and vibration, respectively, all for thin isotropic shells. Part I concludes with a chapter on very thick walled cylindrical shells.

Part II begins with a chapter on anisotropic elasticity, laminate theory, hygrothermal effects, viscoelasticity, and piezoelectric effects. Chapters 15-19 cover compos-

ite shells of cylindrical, conical, shell-of-revolution, ellipsoidal/spherical, and paraboloidal geometries. Chapters 20-22 treat buckling, vibration and impact, and energy methods. The last two chapters cover very thick walled composite shells and shells of sandwich construction.

This book is full of equations, but worked-out example problems are sparse. The figures are adequate. Each chapter has an ample number of references to the literature. Some chapters also have additional bibliography and exercises. Both SI and English units are used throughout.

This book is the most modern text to appear on the subject of elastic shells and is highly recommended to structural design engineers, structural analysts, composites specialists, and research engineers involved with shell structures.

Charles W. Bert
University of Oklahoma