



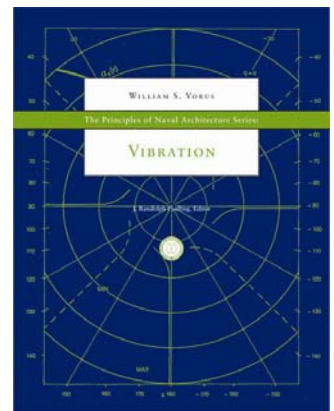
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SNAME Publications Releases The Principles of Naval Architecture Series: Vibration

Landmark Naval Architecture Text Updated by Award-winning Professor

Principles of Naval Architecture Series: Vibration by William S. Vorus, and edited by J. Randolph Paulling, is now revised and available through [SNAME Books](#). The Principles of Naval Architecture series is the defining reference work and text for naval architecture. This volume presents the principles underlying analysis of the vibration characteristics of modern seagoing ships and the application of those principles in design and problem solving. The classical continuous beam model with steady state response to periodic excitation is presented first. This includes natural frequencies, mode shapes and modal expansion. Discrete analysis is next presented based upon finite element principles. Examples are discussed involving analysis of the entire ship and component parts, e.g., the deckhouse. The principal sources of excitation are usually the propulsion machinery and the propeller and methods of predicting the forces and moments produced by each are presented. There is a brief introduction to underwater acoustic radiation and sound as it is related to propeller effects.



Attention is devoted to design of the hull and propeller for vibration minimization. This includes design of the ship after body and appendages to insure favorable wake characteristics, tip clearances and selection of propeller characteristics such as number and shape of blades. There are sections on vibration surveys, sea trials, acceptable vibration standards and criteria. Concluding sections treat methods of remediation of vibration problems that are found after the ship is completed, including modifications to propeller design, structure and machinery.



Dr. William S. Vorus

About the Author: William S. Vorus is the Jerome Goldman Endowed Academic Chair in Naval Architecture and Marine Engineering at the University of New Orleans, where he is also school chair. He authored Chapter 7, Vibration, in the previous edition of PNA in 1989. Professor Vorus is a 1963 graduate of Clemson University and received his MSE and PhD from the University of Michigan in 1969 and 1971 respectively.

In 1973 he left industry for a faculty position in the Department of at the University of Michigan, where he achieved the rank full Professor in 1983. He joined the faculty of the University of New Orleans in 1996. Professor Vorus is a 45-year member of SNAME and is the 2009 recipient of the Society's [William H. Webb Medal](#).

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The Society of Naval Architects and Marine Engineers

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