



Editorial

This special issue includes papers presented at the symposium honoring Professors Charles W. Bert and Jack R. Vinson that took place at the 1999 International Mechanical Engineering Congress and Exhibition of the American Society of Mechanical Engineers.¹ Forty papers, dealing with various aspects of applied mechanics, were presented at the symposium by leading international authorities who were also honored to be friends of Charlie and Jack. A photograph taken at the banquet held during the symposium is shown below. The symposium was very successful, and as a tribute to Charlie and Jack, we decided to publish the papers presented at the symposium in special issues of four archival journals; namely, the International Journal of Solids and Structures; Composites Science and Technology; Composite Structures; and the Journal of Sandwich Structures and Materials.



The nine papers in this issue document some of the recent advances in solids and structures. The diversity of the topics covered in this special issue, and in the symposium, reflect the extent of contributions of both Charlie and Jack to the field of applied mechanics. A brief account of their contributions to the field is given subsequently. We trust that the readers of the journal will benefit from the new ideas and results presented in the papers. Also, we take this opportunity to congratulate Charlie and Jack for their invaluable contributions to science, to thank them for their warm friendship, and to wish them many more years of happy, healthy and professionally fulfilling lives.

Charles W. Bert received his BSME degree from Pennsylvania State University in 1951. His first engineering assignment was working on the propulsion clutch for the USS Nautilus, the first nuclear submarine, at American Flexible Coupling Company. From 1952–1954, he was the project officer (Lt., USAF) in charge of the Air Force Test Program to evaluate the 2.75-in. folding-fin aircraft rocket at the Air Force

¹ Dedicated to Professors Charles W. Bert and Jack R. Vinson on the occasion of their 70th birthdays.

Armament Center, Eglin Air Force Base, FL. From 1954–1956, as an aeronautical design engineer at Fairchild Aircraft, working on the C-123 cargo and advanced design of various aircraft. In 1956, he completed his MSME degree at Penn State and joined Battelle Columbus Laboratories as principal mechanical engineer worked on civilian and military projects. In 1959–1961, he took a leave of absence to pursue doctoral studies and teach as an instructor at Ohio State. In 1961, he received his Ph.D. degree in Engineering Mechanics and returned to Battelle as Program Director.

In 1963, Dr. Bert joined the faculty of the University of Oklahoma as Associate Professor, became Professor in 1966, and served as Director, School of Aerospace and Mechanical Engineering between 1972–1977 and 1990–1995. He holds the Benjamin H. Perkinson Chair and is a G.L. Cross Research Professor.

Dr. Bert's first interest in dynamics and vibration was as a doctoral student at Ohio State taking courses from Professors C.T. West and Art Leissa. He had the opportunity to apply this knowledge in various research projects at the University of Oklahoma. Some of his accomplishments in the field of vibration include the first analytical and experimental research on vibration of sandwich conical shells with composite facings (1964–1974), and on multi-core sandwich beams (1969); largest amplitude-to-thickness ratio (16:1) vibration experiments on pin-ended beams (1969); first nonlinear vibration experiments on laminated plates (1969); first complete micromechanics analysis of damping in filamentary composites (1972); first analysis of forced vibration of damped composite plates (1972–1974); first analysis of wave propagation and dynamic stability of composite material piping with flowing fluid (1975–1977); first vibration analyses of plates and shells laminated of bimodular composites (1979–1981); first analysis and experimental verification of materially monoclinic thick-walled cylinders (1981); first application of differential quadrature method to linear (1987) and nonlinear (1992) structural vibration analysis; introduction of a new simple relationship between fundamental natural frequency and maximum static deflection (1993–1995). Dr. Bert also initiated the second college-level course on composites in the USA (1967).

He has authored eight book chapters, 248 referred journal articles, 54 invited papers, and 83 other papers. He is a Fellow of AAAS, AAM, AIAA, SEM and SES, a Life Fellow of ASME, and a member of the American Society for Composites. He serves on the editorial boards of Advanced Composite Materials, Applied Mechanics Reviews, Composite Structures, Journal of Sandwich Structures and Materials, Journal of Sound and Vibration, and Mechanics of Composite Materials and Structures.

Jack R. Vinson received his BSME degree from Cornell University in 1952. During the next year, he attended Cambridge University on a Rotary International Foundation Fellowship. From 1954–1956, he served as an officer in the US Air Force in the Aeronautical Research Laboratory, Wright Patterson Air Force Base, OH. After that, he joined General Electric working on the Atlas ICBM, the Thor IRBM and several satellite systems. He received his Ph.D. in Engineering Mechanics from the University of Pennsylvania in 1961. From 1961–1964, he was Vice-President and Senior Scientist of Dyna/Structures, Inc., working primarily on the Minuteman Stage 1 solid propellant rocket motor.

In 1964, he joined the faculty of the University of Delaware. During the first year, he was an Associate Professor of Engineering Mechanics in Civil Engineering, but became Chairman of Mechanical Engineering in 1965. He was Chairman of the (renamed) Department of Mechanical and Aerospace Engineering from 1965–1979. In 1969, he taught a course in composite materials, the third such course ever taught in this important area. In 1974, he was the founder and first director of the Center for Composite Materials, which was the first center of its kind. In 1979, he became H. Fletcher Brown, Professor of Mechanical and Aerospace Engineering. It is believed that Dr. Vinson taught the first University semester length course in Sandwich Structures in 1997.

He was the US organizer of the first four Japan–US Conferences on composite materials during the 1980s. He has served two terms on the AIAA Technical committee on Structures, was awarded the ONR–AIAA National Award in Structural Mechanics in 1977, and was elected AIAA Fellow in 1992. He has served twice as Chairman of the ASME Structures and Materials Committee; has served as Chairman of the ASME Aerospace Division, and was elected ASME Fellow in 1992. He served as President of the

American Society for Composites during 1998–1999, and was awarded the Technomic Award in 1999. He was also elected, in 1999, Regional Vice-President of the body that organizes the International Conferences on Composite Materials (ICCM).

Dr. Vinson has authored or co-authored six textbooks, all dealing with structural mechanics, composite material structures and/or sandwich structures. His research has been sponsored by NSF, AFOSR, ARO and ONR. He is the founder and editor-in-chief of the Journal of Sandwich Structures and Materials.

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