

K. A. V. Pandalai – An obituary*

Krishnan Aditya Varman Pandalai, who passed away on 20 May 1999 after a prolonged illness in Chennai, was born in Jamshedpur, Bihar on 16 February 1928. His early education was in Kerala, followed by a BA degree in Mathematics and Physics from Madras University in 1947. He appeared for the examination from Loyola College and won the medal for standing first from the College in the University examination. His master's and doctoral degrees in Aeronautical Engineering in 1950 and 1955, respectively, were secured at the Polytechnic Institute of Brooklyn, New York.

Immediately after, he returned to India, taking up an appointment as Assistant Professor of Aeronautical Engineering at the Madras Institute of Technology, Chromepet, Madras (December 1954–September 1957). It was then that he was very famously the teacher of Bharat Ratna Abdul Kalam. Only three years separated teacher and student, but the teacher made a memorable impression on the young and eager student, who went on to become one of the legends of aerospace engineering in the country.

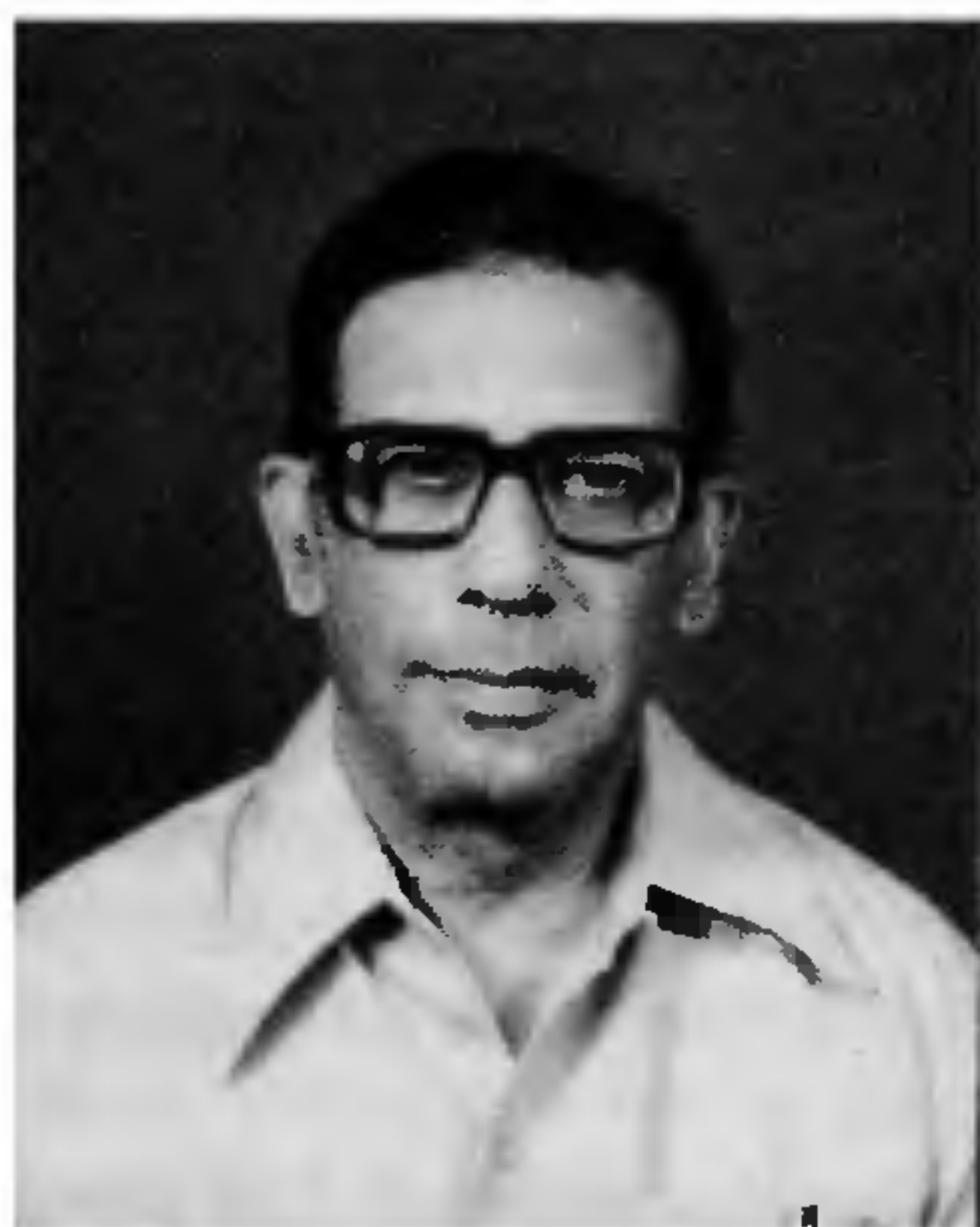
Kalam remembers Pandalai thus in his recent autobiography *Wings of Fire*.

'Prof. K. A. V. Pandalai taught me aero-structures design and analysis. He was a cheerful, friendly and enthusiastic teacher, who brought a fresh approach to every year's teaching course. It was Professor Pandalai who opened up the secrets of structural engineering to us. Even today I believe that everyone who has been taught by Prof. Pandalai would agree that he was a man of great intellectual integrity and scholarship – but with no trace of arrogance. His students were free to disagree with him on several points in the classroom'.

After a break of three years (Asst. Prof. in Aero. and Applied Mechanics at Polytechnic Institute of Brooklyn, Physicist in the US Civil Service at David Taylor Model Basin, and Asst. Prof. in Mech. Engg. at IIT Bombay), Prof. Pandalai returned to become Professor and Head of the Department of Aeronautical Engineering at MIT in Madras from 1960–1967. During this period he also spent a year as Visiting Professor at Stanford, where his enthusiastic students unani-

mously voted him Best Teacher. In 1967, he was invited to set up a new department of Aeronautical Engineering at IIT Madras. He served this institution in several distinguished capacities since then: Professor and Head, Department of Aeronautical Engineering, 1967–1973; Dean of Administration, 1973; Director, 1973–1977; and continued to serve as Senior Professor till he retired in 1988.

He was incomparably the finest of my teachers at the IIT. I came to know him more closely as his Ph D student and continued my association with him right up to the last major dedication of his, the book recording the history of the Aeronautical Society of India, titled *Fifty Golden Years of the Aeronautical Society of India (1948–1998)*. Such was his faith in the capabilities of well run public institutions that he insisted that the



reproduction of the book could not be entrusted to anyone other than the National Aerospace Laboratories, where I work. So it was my privilege to take the first copies off the press to deliver to him personally, and he confided in me at that meeting with some sense of foreboding premonition that this would be the last book he would write. He did write many slim volumes before that, communicating mainly about science, hopeful about what science could deliver but concerned about man's own innate failings and weaknesses. Earlier, he had also edited two volumes of studies in Structural Mechanics, one in 1969 to honour his teacher, N. J. Hoff, and the other in 1984 to honour an eminent aeronautical engineer, S. R. Valluri. Much after retirement, he spent a very fruitful period of travel and writing to compile a comprehensive *Manual of Composites Product*

Design in two volumes, covering aerospace applications and industrial and general products as an effort towards strengthening composite product technology in our country.

His work was mainly in the area of aero-structures, with particular emphasis on nonlinear mechanics and composite structures. Under his leadership, students such as M. Sathyamoorthy and T. K. Varadan, built up a formidable body of work in nonlinear structural behaviour, an excellent account of which is available in the authoritative book on the field, *Nonlinear Analysis of Structures*, by M. Sathyamoorthy, which was brought out by CRC Press in 1997. At that time, this group was an informal college of studies which contributed nearly a hundred original papers to national and international journals and earned a reputation as one of the leading centres of research in this area. With his students, he also contributed to areas such as thermal stress analysis and creep.

He won several prestigious awards, notably the CSIR Silver Jubilee Award in 1971 and the NRDC Award in 1991, for his scientific contributions. The Fibre Reinforced Plastics Research Centre of IIT Madras, which is today recognized as an important centre for R&D, grew out of the financial assistance that came with the CSIR Silver Jubilee Award.

Pandalai served on several important decision making bodies, as well as on assessment and promotion committees, and on the Research Council of the National Aerospace Laboratories. He was also elected to many prestigious learned societies: Fellow of the Indian Academy of Sciences; Fellow of the Royal Aeronautical Society and of the Aeronautical Society of India. He served the Aero. Soc. of India in many capacities, as Member of the Council, as Chairman of the Editorial Advisory Committee of its journal, and as Editor of its Newsletter.

He leaves behind his wife Shantha, and a son and daughter and grandchildren, and several generations of students to mourn his loss. All of us who knew him remember his charm and graciousness and his gentle wit and erudition.

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