



Book review

Agnes Muszynska, Rotordynamics, CRC Press, Boca Raton, ISBN 0-8247-2399-6, 2005 (1075pp., £97).

This is a substantial reference book by one of the rotordynamics community's most distinguished figures over the last quarter century. The author has spent most of this period at the Bently Rotor Dynamics Research Corporation, to whom the book is dedicated. It is a large book with a vast quantity of data, and will form a valuable reference to many experience workers in the field, but it is not an introductory text.

The treatise, over 1050 pages in all, is divided into seven chapters and some are of a considerable length:

- Chapter 1 Basic Rotordynamics: Two lateral mode isotropic rotor (sic)
- Chapter 2 Vibration monitoring of rotating machinery
- Chapter 3 Basic Rotordynamics; Extended rotor models
- Chapter 4 Fluid related problems in rotor/stator clearances
- Chapter 5 Rotor to stationary part (sic) rubbing contact in rotating machinery
- Chapter 6 Selected topics on rotordynamics
- Chapter 7 Malfunctions

At 354 pages, the chapter on fluid related problems would form a substantial book in itself. After this there are 10 appendices covering a range of topics. These cover complex numbers, Routh-Hurwitz stability criterion, forced motion solutions, bearing dynamic coefficients, response to forward and backward modes, basic trigonometric relationships, Couette flow, some numerical data of very doubtful value and some geometric considerations of bearing oil flow.

An extensive index is included but this is where some difficulties arise. Because of the way in which the book is arranged it is difficult to locate the best discussion of a particular topic. For instance, 'Bent rotors' is not included in the index, but 'Rotor bowed (bent)' gives 17 references; unfortunately the reader has to work his/her way through the list to find the relevant passage. This problem arises from the basic organisation of the material which makes it a frustrating book to read: there is a vast amount of information included, but it takes a lot of finding on occasions.

There is an immense wealth of material which is not, to the best of my knowledge, in any other book on the subject, much of it developed from the author's own work and that of her immediate colleagues. The discussions show the rigour that many of us associate with the author. For these reasons the book will form an essential component of the libraries of many researchers in machine dynamics, however it is not one for undergraduate students.

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