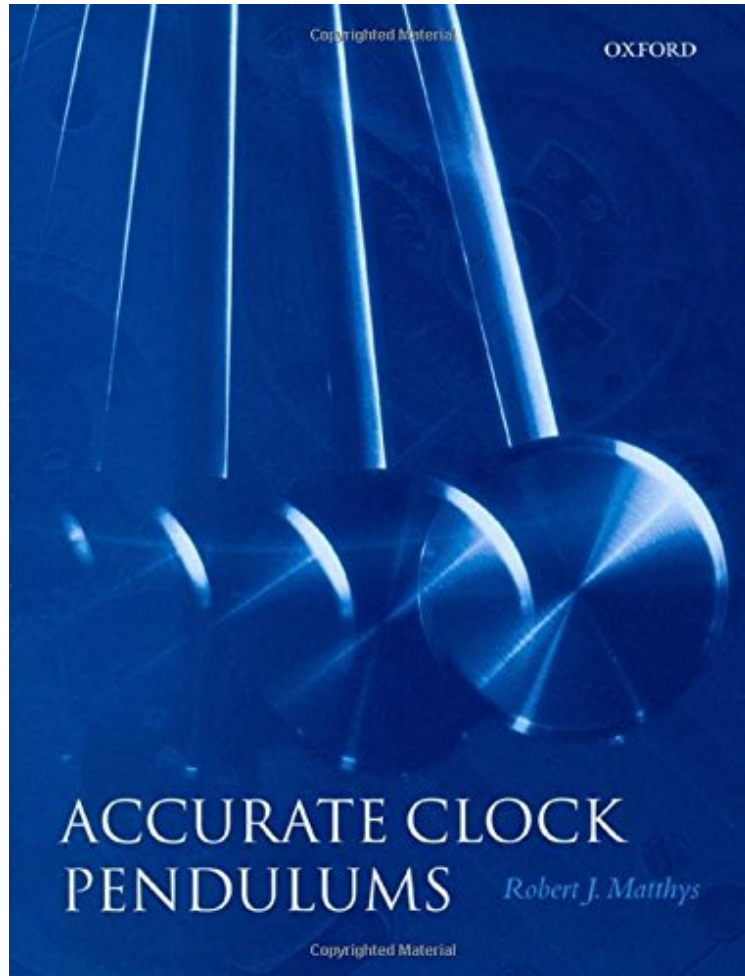


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The Shortt clock, made in the 1920's is the most famous accurate clock pendulum ever known, having an accuracy of one second per year when kept at nearly constant temperature. Almost all of a pendulum clock's accuracy resides in its pendulum. If the pendulum is accurate, the clock will be accurate. In this book, the author describes many scientific aspects of pendulum design and operation in simple terms with experimental data, and little mathematics. It has been written, looking at all the different parts and aspects of the pendulum in great detail, chapter by chapter, reflecting the degree of attention necessary for making a pendulum run accurately. The topics covered include the dimensional stability of different pendulum materials, good and poor suspension spring designs, the design of mechanical joints and clamps, effect of quartz on accuracy, temperature compensation, air drag of different bob shapes and making a sinusoidal electromagnetic drive. One whole chapter is devoted to simple ways of improving the accuracy of ordinary low-cost pendulum clocks, which have a different construction to the more expensive designs of substantially well-made ones. This book will prove invaluable to anyone who wants to know how to make a more accurate pendulum or pendulum clock.

... this book is an eye-opener ... wealth of information. * Horological Journal * ... the constant effort to ensure that opinions which diverge from his own are duly and respectfully noted; punctiliousness in acknowledging sources, and ensuring that all contributions to the knowledge-base by even the most minor personages are given full recognition - those are the attributes of Bob Matthys' book which (even more than its wealth of information and ideas) will ensure that it becomes a classic. * Horological Journal * ... a much-needed 'materials and methods' handbook ... It gives the reader a staggering amount of factual details on materials, methods, and the results of scrupulous experiments. * Horological Journal * About the Author Robert J. Matthys was a Senior Research Engineer at Honeywell, Inc., from 1952 to 1987. He has spent thirty-seven years designing a wide variety of hardware and instrumentation in the fields of electronics, optics, acoustics, mechanics, and photography. In addition, he has spent nine years designing and testing pendulums of various kinds, along with their electronic drive systems and servos, both pulsed and continuous sine wave. He lives in Minneapolis, Minnesota.