

Preface

The intended reader will already have found out that this is not a book with glossy pictures by Beken of Cowes of the glamorous and fabulous sailing yachts of the world. It is a lot more sober and a little more scientific than that.

This book has come about as a follow-up on a course on the aero- and hydro-mechanics of sailing that was written by the author for the Heiner Sail Academy in the Netherlands in 2002/2003. The purpose of the course was to provide yachtsmen with (top-)amateur or (semi-) professional racing ambitions with a solid background of the aero- and hydromechanics of sailing. The ambition of the author was to do so in a manner that he could justify from his own background as a professional fluid dynamicist and a cruising yachtsman, while trying to keep the material accessible for attendees without profound academic schooling.

This, of course, is not the first book on the aero- and hydromechanics of sailing. A.C. Marchaj's "Aero- hydrodynamics of sailing" (ISBN 0-7136-5073-7) is generally considered as 'The Bible' on the science and technology of sailing. And rightly so; it contains an incredibly broad and deep treatment of almost all aspects of sailing technology. Many readers, however, may find it difficult to find their way in Marchaj's book, in particular if their objective is to find out in a relatively straightforward way about how and why sail boat performance depends on the configuration and trim of boat and sails.

While working on this book a new, very valuable volume on the science behind sailing yachts and their design appeared on the horizon: Fabio Fossati's "Aero-Hydrodynamics and the Performance of Sailing Yachts" (ISBN 978-0-07-162910-2). Fossati's book provides an excellent description of the state of the art (2007 level) of fluid dynamic technology as applied to sailing yachts. It also addresses the physical mechanisms of sailing in considerable depth.

At the other end of the spectrum there are numerous books on the subject of a more popular nature. Many of these are directed at the yachtsman that is interested in the 'what' and 'how' but not too much in the 'why' of boat configuration and boat trim. Few provide explanations of the mechanisms involved in a way that is scientifically justified. An excellent exception is formed by Frank Bethwaite's "High Performance Sailing" (ISBN 978-1-4081-2491-8).

It is the author's impression that there is a substantial gap between Marchaj's 'bible' as well as Fossati's 'volume a vela' and the more popular books on sailing. This book tries to bridge that gap. For this purpose the material is presented in a form that, on the one hand, is scientifically justified and consistent according to the author's best knowledge. On the other hand it also aims at facilitating on-board utilization of the knowledge that is acquired.

It is of course up to the reader to judge whether the author has succeeded in realising this objective. The author hopes, however, that his 50 years of experience in fluid dynamics and his 35 years of experience as a (cruising) yachtsman have contributed to the objective to create a 'New Testament' of sailing mechanics.

February 2004/2013
Uithoorn, The Netherlands

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The Aero- and Hydromechanics of Keel Yachts

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2015, XXIX, 625 p. 200 illus. in color., Hardcover

ISBN: 978-3-319-13274-7