

Preface

It has become clear over the last several decades that most students of engineering, and most graduates of engineering, in general, do not have the interest in or the knowledge of the theoretical fundamentals needed to be fully functional in applied engineering science. This knowledge is seriously needed for purposes of marine design and engineering. There is all too often a fallback on “canned” routines without even so much as a vague acquaintance with the physics of the computation. The effort of this book is a reconciliation of order or reversal of structure. It is a book of physical examples involving a sampling of the important naval architecture/marine engineering problems that today’s engineers do not engage well enough. This book has a somewhat reversed structure. For example, it does not include “self-contained, ready-to-use” computer programs which have become popular in many college texts. Instead, this alternative approach is to emphasize the relevant physical modeling principles at the first level, filling in with the mathematical/theoretical details to support the physical understanding, leading to more effective rational analysis and engineering production.

This book addresses principles involved in the design and engineering of planing monohull power boats. Problem areas in need of better understanding leading to better design/engineering are identified. These areas are within the topics of boat resistance, seaway response, and propulsion, three topics in the field of planing craft that are well recognized, but not well understood and not so rationally treated in new boat development programs.

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