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Introduction

Electrical installations in ships cover every aspect of an independent installation, from power generation, switch-gear and distribution, to every type of consumer on board. They include all types of automation and remote control, as well as internal and external communication, navigation and nautical equipment. The basic difference with shore-based electrical installations is that ships have to be self-supporting. Ships have to have either the skilled personnel and necessary spares on board, or the required redundancy to be able to reach the next port in case of a failure of a single system or component.

Some applications of ships and offshore systems require this redundancy, not only in case of an electrical or mechanical failure, but also in case of other events such as fire or flooding of a space.

It is also essential to know the way in which an installation is operated in order to appraise situations like:

- manned or unmanned engine room,
- computerised control systems,
- one man on the bridge (Class notation).

All these considerations influence the basic design, including the location of equipment and cable routing.

Application of high-tech control and communication equipment and high-powered semiconductor drives requires knowledge of electromagnetic compatibility (EMC) and the application of EMC measures.

This book is intended for those readers who have a basic knowledge of electrical installations and who would like to widen their knowledge of the principles of electricity as well as the specific requirements of electrical installations in ships. Every paragraph will be accompanied by a short foreword or summary for ease of use.

The total of these summaries has been published as chapter 13 in the book SHIP KNOWLEDGE, a widely used encyclopaedia for people involved in the shipping world or shipbuilding industry.

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We would also like to thank **Eddy de Dobbelaar** (Electrical Project Engineer) for his cooperation in the realization of the 2nd edition.

In the completion period of the first edition of this book, the originator René Borstlap sadly passed away.

He will be remembered for his effort and knowledge in creating this book.

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