

# Cost Management in Shipbuilding

By Eric Tupper

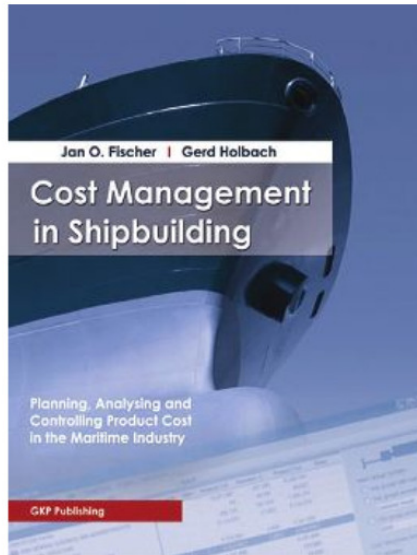
## Cost Management in Shipbuilding

Written by J. O. Fischer and G. Holbach, published by GKP Publishing, Cologne, Germany, as a softback, 2011, 196 pp. ISBN 978-3-00-033225-8, 54.95 Euros (printed edition) 44.95 Euros (e-book).

Of the authors, Dr. Fischer has headed the Society for Cost-Effective Product Development (GKP from its German title) since he founded it in 2001 and has led the development of several software solutions supporting cost management in design and engineering. Professor Holbach has been the head of the Design and Operation of Maritime Systems Department of the Technische Universität, Berlin, for five years.

The book is based on the authors' more than 10 years experience in industrial cost management at the Flensburger Schiffbau Shipyard.

It is important to reduce and control costs as much as possible in the increasingly competitive world of shipbuilding and operation. Approximately 90% of the total costs for a ship are determined by decisions made during the initial design and design engineering phases although these two phases themselves only make up a small portion of the total cost. This means there is a need for accurate cost data very early on but, unfortunately, information is usually incomplete and imprecise at that stage. The authors emphasise the importance of through life costs and point out that some decisions to reduce overall costs will mean greater production costs in order to achieve savings during service. A dialogue is needed with the operator to ensure this is understood, otherwise an order may be lost to a builder who has concentrated on low production costs. The book contains a lot of detail and it is only possible to give a



flavour of its approach and contents.

Many readers of this review will have read the Editorial in the Jan/Feb 2011 issue of *Ship & Boat International*. This made the point that shipyards which can control their information flow throughout a project will improve their competitiveness. One difficulty they cite in achieving this is the "localised and disconnected information assets" within firms. That is, the considerable amounts of data held by individuals or departments which cannot be readily accessed by others. The present book makes just these points in relation to cost data and cost management.

Having discussed the importance of cost management in competitive shipbuilding the book reviews first the current situation in terms of organisation, processes and methods. It refers to NATO Allied Naval Engineering Publications (pointing out some inconsistencies in them). It then deals with theoretical methods including regression analysis for using statistical data, the error compensation effect, identifying cost drivers, calculating the life cycle costs and handling uncertainty.

The main part of the text (some 90 pages) presents the costfact software system. The system supports cost planning, analysis and management in shipbuilding. It is claimed that costfact

substantially reduces the effort and expenditure involved in cost planning whilst significantly improving its accuracy and transparency. It supports cost management through all project phases and the building group system to present cost data in a tree system suiting the product structure. Cost drivers are identified in the system by highlighting components whose summed costs exceed a chosen limit. Function costs are one output of the system, obtained by assigning building groups to a ship function. These costs provide the basis for discussions with the buyer as to whether a given function is really needed and, if so, whether a cheaper technical solution can provide an adequate level of function. It illustrates this in the naval context by taking the function of being able to overtake a chosen vessel. One solution was to give the ship a high speed but an alternative might be to provide it with a helicopter. In estimating life cycle costs, the book discusses how to deal with expenditures (and income) that occur over long periods of time. The system can carry out a sensitivity analysis to show how the value of a project is influenced by variations in assumed input values. In comparing two projects such analyses can highlight the critical value of an input parameter that can change the relative attraction of the two projects.

Appendices include a Glossary of Terms and details of the ESWBS Building Group System. The e-book contains the complete book with colour illustrations. In the printed book illustrations are in black and white. Updates are available on a web site. Whilst this is clearly a somewhat specialised work, the book would make useful background reading for those who are working on engineering design. It provides an understanding of the issues, methods (e.g. for dealing with overhead costs), uncertainties and potential benefit of good cost management. **NA**

E. C. Tupper