Journal of Offshore Mechanics and Arctic Engineering

Editorial

JOMAE Special Issue—Douglas Faulkner Symposium

This special issue reflects some advanced research works in the field of ultimate strength of hull girder and the structural loads induced due to abnormal waves. This is the result of a special symposium held in OMAE 2006, Hamburg, Germany in honor of Prof. Douglas Faulkner (Professor Emeritus of University of Glasgow), who has made enormous contributions in his career in these areas of research.

Prof. Douglas Faulkner's academic career followed an early activity in the British Navy as a Naval Constructor and designer. His initial activities as an engineer provided him with a good background of structural design of ships and in particular submarines, having been the structural designer of the nuclear British submarine Dreadnought.

His early contribution to research is characterized by a landmark paper in 1975 on the compressive strength of plated elements, which has been widely used and incorporated in design codes. He also used this as the basis of a design approach for stiffened plates and later, generalized it for application to the compressive strength of stiffened cylindrical shells.

Around this time, in 1973 and 1979, he also made significant contributions to ship structural reliability assessment which marks some of the earliest applications of reliability theory to ship structures.

After a time at MIT where he obtained a defence fellowship leading to his Ph.D. degree, he moved to the University of Glasgow in the early 1970s where, as a Head of Department of Naval Architecture and Ocean Engineering, he promoted and developed offshore research which, until then, had been mainly concerned with ship structures. This led to major pieces of work with Conoco and American Bureau of Shipping pursuing design formulations and reliability based design of stiffened shells using the results of experimental work, theoretical assessments and probabilistic determinations.

Toward the end of his career, he was involved in some of the re-examination of the sinking of the bulk carrier M.V. Derbyshire. This led to a particular interest in abnormal waves and their consequences, an activity that generated a wider concern and thus further investigations into such events. He was involved in promoting the launching of the EU Project MAXWAVE and acted as senior adviser to that project.

During his career, Douglas Faulkner influenced many students and colleagues in the use of methods to which he has contributed and which have been important in various industrial sectors. He was active in International Associations Including ISSC, received major awards from SNAME and RINA and received degrees Honoris Causa from the Technical Universities of Gdansk and of Lisboa.

There were many papers presented during the symposium, out of which, some have been selected to be published in this issue. These papers represent some activities in this field and they do not necessarily cover all aspects of this important area.

The first three papers deal with a realistic assessment of wave induced loads accounting for heavy weather avoidance, with the assessment of the ultimate strength of Derbyshire and with structural reliability of a tanker designed according to the new rules. The two following papers address the wave induced load effects in severe storms, including the response of ships to abnormal waves.

There is then a paper presenting an overview of the MAXWAVE project and its results. The paper by Liu deals with some controversial aspects related to freak waves reminding in some sense how Douglas Faulkner liked to introduce some debate on these types of issues.

There are then three papers dealing with various aspects of abnormal waves generated in model basins. Finally there are three papers on ultimate strength of stiffened panels, on ultimate strength of stiffened shells and on ultimate strength of hull girders.

This set of papers covers the areas in which Douglas Faulkner has been active, probably giving more emphasis to his recent interests of the effect of abnormal waves. It is hoped that this special issue of JOMAE will pay tribute to the various subject areas in which Douglas Faulkner was active and will be helpful to those who are working in this area.

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