

**Editor** Nick Savvides  
**Design/Production Manager** Sandy Defraigne  
**Group Sales Director** John Payten  
**Assistant Advertising Manager** Valder Gates  
**Advertisement Production Manager** Stephen Bell  
**Subscriptions & Publications Manager** Josie Smith  
**Publisher** Mark J Staunton-Lambert

Published by:  
 The Royal Institution of Naval Architects  
 Editorial & Advertisement Office:  
 8-9 Northumberland Street  
 London, WC2N 5DA, UK  
 Telephone: +44 (0) 20 7235 4622  
 Telefax: +44 (0) 20 7245 6959  
**E-mail editorial** editorial@rina.org.uk  
**E-mail advertising** advertising@rina.org.uk  
**E-mail production** production@rina.org.uk  
**E-mail subscriptions** subscriptions@rina.org.uk

Printed in Wales by Stephens & George Magazines.

The Institution is not, as a body, responsible for opinions expressed in *The Naval Architect* unless it is expressly stated that these are the Council's views.

Registered charity No. 211161  
 © 2015 The Royal Institution of Naval Architects. This publication is copyright under the Berne Convention and the International Copyright Convention. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted without the prior permission of the copyright owner. Permission is not, however, required to copy abstracts of papers or of articles on condition that a full reference to the source is shown. Multiple copying of the contents without permission is always illegal.

A 2015 subscription to *The Naval Architect* costs:

NAVAL ARCHITECT (10 issues per year)			
12 months	Print only†	Digital Only*	Print + Digital
UK	£177	£177	£227
Rest of Europe	£185	£177	£235
Rest of World	£198	£177	£248

†Includes p+p  
 \*Inclusive of VAT

The Naval Architect Group (English & Chinese Editions)  
 Average Net Circulation 15,812 (total)  
 1 January to 31 December 2014

ISSN 0306 0209



## 7 Editorial comment

Changing times

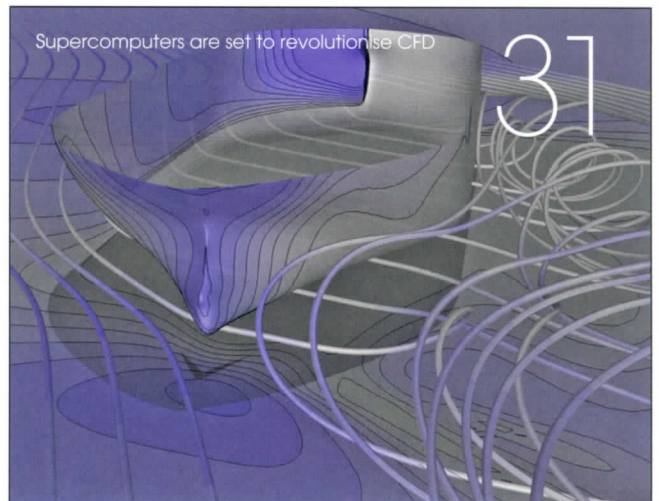
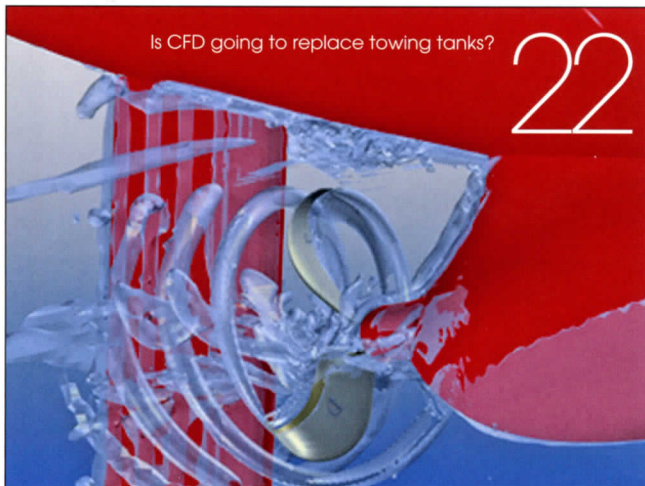
## 8-16 News

- 8-10 News
- 12 News analysis
- 14-16 Equipment news

## 18-21 In-depth

- 18-19 **Profile** | DNV GL, man and boy
- 20-21 **China Ship News** | Guangzhou's grand plan

## 66 Diary





22-65 **Features**



**Feature 1 CFD**

- 22-24 Are towing tanks dead in the water?
- 26-27 Why bigger is better in CFD
- 28-31 Survival of the fittest
- 32-33 Simulated waves bring real surprises

**Feature 2 Bulk Carriers**

- 34-38 Oshima develops LNG Bulker

**Feature 3 Russia & Eastern Europe**

- 40-41 Norwegians keep Eastern European yards afloat
- 43-45 Ice class

**Feature 4 Shipbuilding technology**

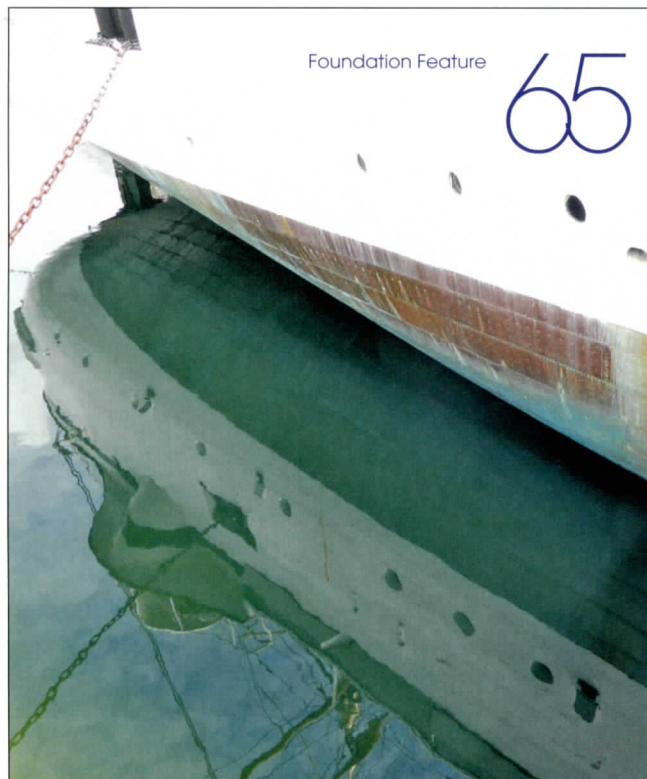
- 46-51 Managing the shipbuilding process

**Feature 5 Containerships**

- 53-59 Enter the gas age
- 59-61 Crowley con-ro makes the rules

**Feature 6 Foundation Feature**

- 63-65 Keeping nature at bay



**Digital Editions**

The Naval Architect is published in print and digital editions. The current and archived digital editions (from January 2004) may be read on PC, iPad or other touchpad.

Visit <http://www.rina.org.uk/Naval-architect-digital.html> to read the digital editions, or download the free RINA Publications App.

