



de Haas
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marine experts

Profile

David Hurdle MSc

marine scientist

ship hydrodynamics | stability and mooring expert

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A M Sc in Fluid Dynamics and B Sc in Mathematics from Bristol University with over 40 years of experience as a consultant, forensic analyst and expert witness in ship hydrodynamics, ship's stability (intact and dynamic), simulation and (shallow water) wave modelling.

David has particular knowledge and experience in simulation and predicting vessel responses in wave systems, both at sea as well as in (moored) harbour conditions. He has acted as an advisor to governments, coastal states, port authorities and large multi nationals involving design studies for port and terminal development, mooring systems and wave-ship and ship to ship interactions.

He provided forensic analysis / expert witness services in high-profile mooring incidents, ship stability issues and container stow collapses, such as the Baltic Leopard case, where he discussed conclusions with the expert witness of the opposing party and the Ocean Victory case, where he gave detailed explanations of the important aspects to the pleading Barrister, and the IJmuiden Seaports case where he appeared as expert witness in an arbitration.

Qualifications and education

- B Sc Honours in Mathematics, University of Bristol
- M Sc Fluid Mechanics, University of Bristol.

Summary of expert experience and knowledge

- Wave modelling for sea and harbour conditions. Design criteria and simulation
- Ship-wave interaction, roll resonance studies container vessels and car carriers
- Mooring incidents
- Extreme wave analyses (Hs and Hmax) from storm and hurricane systems
- Port studies and climate studies.

Casualty / expert witness experience

David provided forensic analyst / expert witness services in high-profile mooring incidents, ship stability issues and container stow collapses, such as:

- **Ultra large container vessel** Major container loss incident, North Sea. Wave modelling and shallow water effect study as part of project study to determine roll resonance phenomena
- **CMA CGM G. Washington** Container loss incident North Pacific. Project study for U.S. litigation firm to provide detailed wave modelling and wave energy calculation to explain roll resonance phenomena at relatively low wave heights
- **Hyundai Kingdom** Container loss incident North Pacific. Case study for London and Japanese law firm in preparation of litigation in Japan, wave modelling for complex hydrodynamic study to explain extreme roll motions
- **Wybelsum** Container loss incident, Egypt. Case study for London-based law firm in preparation of London arbitration. Wave modelling and data study for extreme roll motions for container ship at anchor

- **Baltic Leopard, Port Harcourt** Investigation of moored bulk carrier that broke free of its moorings at a jetty in Port Harcourt as another ship was passing. Counter expertise on the passing ship forces particularly accounting for the section of the river at the berth
- **Cosco Nagoya** Container damage incident: Bay of Biscay. Establish and validate wave height and period at the time of the incident. Determine whether Parametric Roll could have occurred according to IMO criteria
- **Brazil** Forensic investigation of moored bulker breaking free of its moorings at a jetty in a port with some wave exposure. The ship was moored opposite to a larger ship that partially sheltered it. Using Rembrandt DMA, the study accounted for the interaction between the two ships, including sheltering
- **Napoleon Bonaparte** Forensic study for French law firm in connection with high-profile mooring incident in the port of Marseilles. The study involved analyses to investigation correlation between ship motions and timing of wind variations in the port
- **Ocean Victory, Kashima Bay** Forensic study for London-based law firm in connection with London arbitration on the effects of long wave conditions in the port and suitability of berth facilities
- **IJmuiden Seaports** Expert witness for Dutch arbitration to render expert opinion on wave conditions in relation to damage to harbour installation
- **Peru** Wave hind cast (using SWAN) and detailed long wave propagation (using SWASH) modelling for a LNG terminal behind a detached breakwater to assess the waves for three different events of breaking mooring lines.

Publications

- Chen, Z., Hurdle, D.P., Kram, N., Lomónaco, P., Cornett, A. DESIGN AND TESTING OF SCOUR PROTECTION FOR ADRIATIC LNG GBS, OMAE 2011-49385. June 2011
- Lacoïn, S., Hurdle, D.P., Vledder, G.Ph. van COMPARISON OF FORMULATIONS FOR WHITECAPPING IN MIXED SEAS, proc. OMAE 2005-67545. June 2005
- Hurdle, D.P., Vledder, G.Ph. van DEVELOPMENT OF A NEW SOURCE TERM FOR WAVE BREAKING IN SHALLOW WATER, 6th int. workshop on wave hindcasting and forecasting. Monterey, 2000
- Hurdle, D.P., Abdalla, S., d Özhan, E. A WAVE CLIMATE DATA BASE FOR THE BLACK SEA AND THE TURKISH COAST, proc. int. Medcoast conf. on the wind and wave climate of the Mediterranean and the Black Sea. Antalya, Turkey, April 1999
- Hurdle, D.P., Vledder, G.Ph. van JOINT STATISTICS OF WAVES AND WATER LEVELS, proc. conf. Ocean Wave Kinematics, Dynamics and Loads on Structures. Houston, 1998
- Vledder, G.Ph. van, Spaan, G., Hurdle, D.P. PARAMETERISATION OF NUMERICAL WAVE TRANSFORMATIONS TO DERIVE JOINT COASTAL EXTREMES, proc. 3rd int. symp. on Ocean Wave measurement and analysis, Nov. 3-7, Virginia Beach, Virginia, 1998.
- Hurdle, D.P., De Girolamo, P., Pellegrini, G. EVALUATION OF DESIGN WAVES ALONG THE ADRIATIC COAST OF THE VENICE LAGOON, Coastal Engineering 25, 109-133. 1995
- De Giralomo, P., Passacantando, G., Hurdle, D.P., Noli, A. EVALUATION OF DESIGN WAVES ALONG THE COAST AND AT THE INLETS OF THE VENICE LAGOON, proc. 23rd int. conf. on Coastal Engineering. Venice, 1992
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- Hurdle, D.P., Stive, R.J. REVISION OF SPM, 1984 WAVE HINDCAST MODEL TO AVOID INCONSISTENCIES IN ENGINEERING APPLICATIONS. Coastal Engineering, vol. 12, 339-351. 1989
- Carter, R.G., Hurdle, D.P. WAVE POWER ABSORPTION BY A SMALL BODY. 1981.