

Professor Dracos Vassalos

Professor Of Maritime Safety

Naval Architecture, Ocean and Marine Engineering

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Personal statement

I am Professor of Maritime Safety in the Department of Naval Architecture, Ocean and Marine Engineering at the University of Strathclyde in Glasgow, UK – one of the largest and most research-active departments in the marine sector worldwide. I am also the Director of the Maritime Safety Research Centre, an industry-academia inter-disciplinary partnership at Strathclyde University, the only one in the world of its kind. My motto is “safety enhancement through innovation”, pursued over a 40-year career in industry and academia, promoting the use of scientific approaches in maritime safety and risk, including environmental risk. I am Chairman of the Design for Safety” Conference, a subject topic I have introduced to the maritime industry in 1995 and spearheaded its development and implementation since then with some 100 large-scale R&D projects. I am also the founder and served as Chair in a series of maritime safety initiatives that helped shape maritime safety research in academia and catalyse implementation in industry (through Safety at Sea Ltd, a Safety Engineering consulting company I have established and served as Chairman from 1997 to 2011), the full impact of which is still being delivered. For life-long contribution to Maritime Safety I have received a Sustainable Achievement Award from the Royal Academy of Engineering in 2011 (the only Naval Architect ever to receive this), the Froude Medal from the Royal Institution of Naval Architects in 2012 and the David Taylor Medal from the Society of Naval Architects and Marine Engineers in the USA in 2016 (only 1 in 4 to have ever received both medals). In 2015, I was awarded a DSc from the University of Strathclyde for work on “Design for Safety, Risk-Based Design. Life-Cycle Risk Management), only the second Naval Architect to have ever received a higher doctorate in the UK.

Personal Details

Name Dracos VASSALOS

Date of Birth 22.05.51

Address 23 Leslie Road, Pollokshields, Glasgow G41 4PP, Scotland, UK

Nationality British

Current Position Professor of Maritime Safety, University of Strathclyde
Director of the Maritime Safety Research Centre
Chairman of Maritime Safety Innovations Ltd

Qualifications

BSc (First Class Honours), MBA, PhD, DSc, CEng, FRINA, FIMarEST, FSMANE

Maritime Safety-related Honours and Awards

1987 RINA, Samuel Baxter Prize (“Energy Balance Stability Criteria”)

1989 SEATRADE Award for Safety at Sea

1994 Japan's Science & Technology (STA) Fellowship on “Operational Safety of Ships”

1995, 2000 RINA Bronze Medals (“Passenger Ship Safety” and “Time-Based Survival Criteria”)

1996 British Council /Japan’s MONBUSHO Visiting Professorship (Stability in F/Q Seas)

1998, 2001/2 Winner of RINA SAFESHIP competition

2010 Lloyds List Greek Shipping Technical Achievement Award (Safety at Sea)

2011 Sustained Achievement Award, Royal Academy of Engineering, UK

2012 The Froude Medal, RINA Gold Medal for contributions to maritime safety

2014 SNAME/ABS Captain Joseph Linnard Prize (“Gall-Based Damage Stability”)

2016 The David Taylor Medal, SNAME for contributions to Naval Architecture

2016 Doctor of Science Degree by the University of Strathclyde for works on “Design for Safety, Risk-Based Design, Life-Cycle Risk Management”

Contributions to Maritime Safety

General Research

- 40 years research, development and application in the areas of ship stability and safety. Served as a Principal Investigator in a number of major UK research projects on safety, including: SAFESHIP, PRESS, UK Ro-Ro Research Programme, Stability of High Speed Twin-Hull Craft, MOD Trimaran, Landing Craft and Frigate Programmes, the Joint North West European Project (NWEP), the Derbyshire Project, the Estonia Loss Scenario, FPSO Link Programme; and EU projects (45 safety-related projects)
- Over 100 major research contracts on maritime safety worth over £30M
- Supervision of over 65 PhD and MPhil theses
- Organiser and Chair of several International Conferences and Workshops on maritime safety
- Lectured worldwide (invited/keynote speaker) on maritime safety

UK Government Advisory Services (1980 to date)

- Advisor to Maritime and Coastguard Agency on all aspects concerning stability and safety
- Advisor to Shipping Policy of the UK DETR on safety of bulk carriers and principal witness of the RFI of M.V. Derbyshire
- Accident investigations: (Herald of Free Enterprise, Estonia, Derbyshire, Al Salam '98)
- Member of the Gothenburg technical Group (1999-2001), responsible for establishing performance-based standards for damage stability using model experiments and numerical simulations
- Long-standing member of the UK delegation to International Maritime Organisation (IMO) for ship stability and safety
- Member of the Environmental Risk Working Group at IMO
- Chair of the Panel of Experts on Domestic Ferry Safety at IMO

Maritime Safety-related Initiatives

- 1995 to 2006: Founder and Chair of the International Workshops on “The Stability and Operational Safety of Ships”; last workshop in Belgrade was number 16.
- 1996 – 2002: Founder and Chair of the ITTC Specialist Committee on Ship Stability in Waves (a professional body responsible for the assessment and planning of research efforts in hydrodynamics on an international scale and for establishing / benchmarking experimental and numerical procedures).
- 1996 - to 2016: Founder and Director of the Ship Safety Research Centre (SSRC -<http://www.ssrc.na-me.ac.uk>), a world-leading centre on Ship stability and Safety inaugurated on 22 January 1997 by the Minister of Shipping to nurture scientific approaches in dealing with ship safety. During 20 years in existence, SSRC has established itself as the acknowledged pace setter on ship safety. SSRC is the Secretariat of the STAB Conferences, the flagship of ship safety conferences.
- 1997 to 2006: Founder of contemporary STAB Conferences and Chair of the International Standing Committee
- 1997 to 2005: Founder and Co-ordinator of the first and largest EU Thematic Network (SAFER EURORO) with 92 organisations from 16 countries and a research portfolio amounting to €150M over the years. This Network provided the platform for promulgating the theme “Design for Safety”.
- 1999 to date: Founder and Chair of the International Standing Committee of the “Design for Safety” Conference, introduced to maximise dissemination and impact of this theme and to involve and inculcate the wider industry; next Conference in Hamburg Germany will be number 6.
- 1999 to 2017: Founder and Chairman of Safety at Sea/Brookes Bell, a spin-of company of the University of Strathclyde, currently a privately owned company with some 25 consultants, mostly trained at PhD/MSc level and specialising in the design for and assessment of safety and performance of all types of ships. Strategic Alliances led to diversification to a wide spectrum of safety matters and to undertaking trend-setting projects (particularly safety of mega-ships) that made SaS a household name in maritime safety.
- 2003 to 2009: Conceptualised and formulated SAFEDOR (Design / Operation / Regulation for Safety) and served as member of the Steering Committee; a €20M EC FP6 IP, aimed at integrating safety research in Europe and beyond and at driving Risk-Based Design to full implementation ranging from concept development to approval.
- 2005 to date: Founder and Chair of the International Workshops on Risk-Based Approaches in the Maritime Industry, now an annual event.

New Initiatives on broader perspectives of maritime safety

- 2009 to date: Research effort shifting towards limiting environmental impact of ship operations, to widen the focus of SSRC in response to this emerging necessity, aiming for long-term sustainability. Two initiatives show promise: Dynamic Energy Modelling of ship energy systems and Ballast Water Management Systems onboard ships. Both areas have attracted considerable funding (over £10M) and appear to offer potential for world-wide exploitation and impact. 2015 to date: Invention of a Flooding Containment System, leading to drastically reduced ship capsize risk from serious flooding as a result of flooding incidents (Patent Application No. 1604329). This relates to a system which injects highly expandable foam on top of the floodwater in a damaged compartment, forcing the water out, thus enhancing drastically damage stability for all ship types. This led to a spin out company, Safety Innovations Ltd, to implement the system in the maritime industry worldwide.
- 2016 to date: Establishment of the Maritime Safety Research Centre (MSRC), a unique initiative of interdisciplinary, common-threaded R&D to support the development and nurture the implementation of Life-Cycle Risk Management by accounting formally and rationally for all cost-effective measures of risk reduction, thus leading to sustainable safety improvement for new and existing ships and floating offshore assets. The centre was inaugurated in November 2016 by the IMO Secretary General Kitack Lim and initial funding from RCCL and GNV GL.

General Contributions (focus on Maritime Safety)

- Member of the Editorial Board: Springer Publishing; Journal of “Marine Science and Technology”; Journal of Maritime Research”; Journal of “Marine Systems and Ocean Technology”; Journal of Marine Science and Application; EU Editor in Chief of the Journal of “Ships and Offshore Structures”
- Member of the Safety Advisory Board of the Royal Caribbean Cruise Lines
- Member of the Scottish Marine Industries Steering Group
- Member of the Maritime Industries Leadership Council
- Member of the Council and of the Safety Committee of RINA
- Member of a Steering Group on “Probabilistic Damage Stability Rule Development” for the US Navy.
- Thematic Leader for Maritime Safety Technical Group of the Vessels for the Future EU-Initiative
- Chair of an IMO Panel of Experts on Domestic Ferry safety
- Member of the IMO working group on Environmental Risk

Impact on Maritime Safety

Significant contribution to international legislation through collaborative research to provide the requisite technical input to instigate and support new developments; including:

- NWEP, setting internationally adopted safety standards for Ro-Ro vessels (the first performance-based ship safety standards) and subsequently (through SaS Ltd) undertaking the upgrading of 80% of the north EU ferry fleet.
- Directive 2003/25/EC on 17.05.2003, concerning compliance of the South European Ro-Pax with Stockholm Agreement.
- EC Projects SAFETY FIRST and HARDER leading to probabilistic rules for fire safety and damage stability and supporting the development of a framework for adopting “Alternative Design and Arrangements” at IMO based on equivalent safety through risk assessment.
- SAFETY AT SPEED leading to the eventually adopted High Speed Craft Code
- SAFEDOR was pivotal to introducing the concept of “safety level” at IMO that provides the inspiration for many contemporary developments on maritime safety.
- GOALS, leading to new regulatory requirements for passenger ships and the fore-runner to EMSA III Project that led to new, higher standards for passenger ships.

- A series of European Maritime Safety Agency (EMSA) and EU DG MOVE Projects to address and establish suitable safety standards for passenger ships.
- Taking products and services to the maritime industry through Safety at Sea Ltd and in 2017 through Maritime Safety Innovations Ltd, thus offering valuable feedback to academia to fuel a virtuous cycle on safety innovation.

Publications on Maritime Safety

- Filed 3 safety-related Patents
- Editor of 10 Conferences/Workshops Proceedings; co-editor of the first book on Contemporary Ideas on Ship Stability, the first Special Edition in the Marine Systems and Ocean Technology (MSOT) Journal. Editor of the first Special issue on Ship Stability in Elsevier Ocean Engineering Journal.

Author of 500+ technical publications: 2 HSE books on “Avoidance of cable snap-loading in offshore lifting operations”, 2 major chapters on the first book on “Risk-Based Ship Design” and 29 additional chapters in various other books; 113 refereed Journal, 192 refereed Conference, 106 Conference, 80 Invited Papers/Key Note Addresses/Articles and of numerous research, contract and internal reports.