

## KEY POINTS

- Project manager for over 500 marine research projects
- Research naval architect with 40 years' experience in ships and small craft
- Director of a University marine research centre
- Director of a marine technology company
- 35 years' experience lecturing in naval architecture and sailing
- Volunteer consultant for international maritime archaeology projects
- Supervisor and examiner of doctoral and masters theses
- Designer and builder of several timber and FRP boats
- Experienced small craft sailor including trans-ocean voyages

## EMPLOYMENT HISTORY

### 2012- present day: retired

Marine consultant

### 1987-2012: Centre for Marine Science and Technology (CMST), Curtin University of Technology, W.A., Australia [www.cmst.curtin.edu.au](http://www.cmst.curtin.edu.au)

*Director*

Leader of the University's applied marine research. **Director** since October 2004; **responsible for management and leadership of the Centre** including strategic planning, human resources, marketing, business growth and infrastructure development.

The Centre comprised 15 staff with a cash budget of \$2M pa and a resource control budget of \$7M pa. It has **contributed to more than 500 R&D projects** since 2004, ranging in value up to \$50M. It was classified as a State government Centre of Excellence and was host to the WA node of the Coastal Zone Cooperative Research Centre and the Australian Maritime Engineering Cooperative Research Centre.

The Centre was a contributor to the research programs of many organisations including CSIRO, Defence Science and Technology Organisation (DSTO), Australian Antarctic Division, Integrated Marine Observing System (IMOS), West Australian Energy Research Alliance (WA:ERA), West Australian Marine Science Institution (WAMSI) and the Interactive Virtual Environment Centre (iVEC). It had over 100 national and international clients and collaborators.

Principal activity was the execution of government- and industry-sponsored research projects focused on:

- ship and yacht performance,
- underwater vehicle technology,
- underwater acoustics and
- marine ecology.

Research contract topics were diverse, including:

- harbour channel design studies.
- development of software for seakeeping analysis and underkeel clearance predictions of ships.

- measurement of ship performance in full scale trials and scale model tests.
- design, construction and operation of a unique experimental research catamaran.
- monitoring of ocean climate in Antarctic waters.
- tracking whale migrations using remote sensing.
- investigation of dolphin deaths.
- technical investigations of ship performance contractual disputes.
- analysis of fishing vessel fuel efficiency.
- design, construction and operation of an ocean wave measuring device.
- modelling and measurement of anthropogenic and natural underwater acoustic noise sources and propagation.
- performance analysis of Olympic class sailing boats.
- assessment of novel ship and small craft designs.

Commercialisation activities included:

- design, build and sell underwater cameras and underwater noise recorders.
- develop commercial level software for ship motion control systems, seakeeping prediction, acoustic propagation modelling and sail visualisation.
- establish 2 spin-off companies (ship motion control and stereovision systems).
- generate an income stream from naval architecture software royalties.

Educational responsibilities included:

- supervision and examination of PhD, MEng, MSc students.
- lecturing third year and postgraduate subjects in naval architecture, maritime archaeology, applied physics and mechanical engineering.
- establishing, leading and administering industry short courses, including on-line units;
- external moderator for AMC naval architecture degree.
- contracted to provide naval architecture support for undergraduate and postgraduate degrees at University of Western Australia.

Co-founder of Curtin University Fluid Dynamics Research Group, a cross-disciplinary alliance.

Responsible to Head of Department (Physics) and Director (R&D).

**2004–2007: Sea Gyro Pty Ltd [www.seagyro.com](http://www.seagyro.com)**

*Director*

Sea Gyro Pty Ltd is a spin-off company established by Curtin University 2004. It designs, builds and markets motion stabilisation devices fitted to ships and small craft worldwide. . First commercial sale February 2005, export orders grew to \$2.5M by 2007. Manufacturing facility established in Malaysia 2008.

**1992-1999 Australian Maritime Engineering Cooperative Research Centre (AME CRC).**

*Regional Manager, Perth Core*

AME CRC was the national centre for maritime engineering research, with cores operating at Launceston, Melbourne, Perth and Sydney. It was a joint venture organisation comprising 26 industrial, academic and government bodies, funded at approx. \$50M over 8 years. Curtin University was the host institution for the Perth Core. The centre completed its work in June 2000.

Leader of Seakeeping, Full Scale Trials and Testing programs. **Leader of Australia's Yacht Technology Program**, including commercial research for five America's Cup syndicates. Also responsible for winning and managing commercial research contracts concerning fluid dynamics, ship trials and vessel motions.

Team leader for developing *Ocean Leveller* ship motion control system. The system has been fitted to 23 vessels around the world, representing an export value of more than \$400M. The project was identified as an exemplar of innovation in the 1995 Federal R&D budget statement, and a presentation of the project was made to the Prime Minister at Parliament House, Canberra.

Team leader for production and commercialisation of *Seakeeper* ship motions software now marketed by Formation Design Systems as part of the *Maxsurf* marine software suite.

Program Leader for Education with responsibility for development and coordination of maritime engineering courses Australia wide.

Responsible for running the Perth core of AME CRC (13 staff), also jointly responsible for preparation of national AME CRC budgets.

Responsible to the Executive Director of AME CRC.

**1985-87 CMST, Curtin University of Technology, W.A.**

*Research Assistant (part-time)*

Design consultant for "Project Endeavour", Jon Sanders' triple solo circumnavigation; lecturing graduate and postgraduate naval architecture courses; organising short courses for the marine industry; consultant for Sonartec automatic fishing project, and various independent engineering contracts. Responsible to Director, CMST.

**1984-85 Self-employed**

*Naval Architect*

Design consultancy and surveying for charter craft, yachts and sail training vessels, on a worldwide basis.

**1978-84 Southampton Institute of Higher Education, U.K.**

*Lecturer grade II (Naval Architecture)*

Lecturing on various topics, including vessel design and ship dynamics, on courses up to fourth year degree level; supervision of towing tank and final year project work. Responsible to Head of Department.

**1977-78 Self-employed**

*Small Craft Designer*

Design, lofting, construction supervision of yachts.

**1976-77 J.N. Wood & Co., London, U.K.**

*Assistant Naval Architect*

Ship and small craft design, preparation of stability reports, surveying, construction supervision. Responsible to Managing Director.

**1975-76 Gatehouse Yachts, U.K.**

*Boat Builder/designer*

Detail design, lofting and construction of racing yachts. Responsible to Managing Director.

**1975 Kemp Masts Ltd., U.K.**

*Quality Control Inspector*

Inspection of entire factory output of aluminium spars; also detail design and drafting. Responsible to Technical Director.

**1974-75 Self-employed**

*Yacht Designer/builder.*

Design and construction of racing yacht, including lofting, buying, and performance optimisation. The boat was selected for the British team in a world championship.

## **PROFESSIONAL DEVELOPMENT COURSES**

- Health and Safety Induction OSH01, Curtin University, 2011.
- Equal Opportunity EO001, Curtin University, 2011.
- Creating Work Development Plans, Curtin University 2002.
- Recruitment and Selection Workshop, Curtin University 2001.
- University Consultancy – Strategic Planning Workshop, Curtin University 2001.
- Scientific Data Acquisition, IDC 1996.

## **PROFESSIONAL AND ACADEMIC QUALIFICATIONS**

- Member, Royal Institution of Naval Architects (1981-present day).
- Member, Society of Naval Architects and Marine Engineers (1979-2010).
- Member, Institution of Engineers Australia (1987-2012).
- Member, Australian Institute of Physics (1990-1998).

**2000- 04 PhD** Curtin University of Technology

Thesis on the roll motion of yachts at zero Froude number.

**1985-87 MAppSc (Physics)**, Curtin University of Technology

Thesis on performance prediction of yachts in waves. Postgraduate units in computing, physical oceanography and satellite oceanography.

**1978-80 CNAA Certificate in Education** for Further and Higher Education, Portsmouth Polytechnic, U.K.

**1978-79 Teaching Certificate**, Portsmouth Polytechnic.

**1971-74 BSc (Hons) Ship Science**, University of Southampton, U.K.

## **GRANTS AND AWARDS**

- Leader/manager of more than 500 contracts and awards from private companies and government organisations in the marine field, generating cash income of over \$12M.
- Co-author submission to Federal government for Australian Maritime Engineering **Cooperative Research Centre** 1991 (value \$48M over 8 years).

- Co-author submission to Western Australian Government for **Centre of Excellence** in Marine Science and Technology 2000 (value \$8.4M over 3 years).
- Curtin Linkage Grant 2009 “The quest for Olympic Gold; a scientific approach. Performance analysis of racing dinghies using GPS and sail analysis software” (co-investigator).
- **ARC** Collaborative Research Grant 1992 "Development of a Ride Control System for Surface-Effect-Ships" (value \$110,000) Chief Investigator.
- Team member finalist (highly commended) in the **Australian Technology Awards** 1999. The team contributed to research for the “Sydney 40” yacht design, which resulted in \$10M worth of export orders.
- Inaugural AME Award in 1997 for Technology & Innovation, as leader of the team who developed the Ocean Leveller ship motion control system.
- Fremantle Sailing Club Commodore’s Commendation for exceptional services 2019.
- Yachting WA David Walters Medallion recipient for contribution to yachting safety 2015.
- Nominated for Faculty Teaching & Learning Award 2007, University of Western Australia.
- Curtin University Excel Award 1989 (as a member of CMST team).

## PROFESSIONAL CONTRIBUTIONS

- Chair, RINA Australia Walter Atkinson Award sub-committee 2012- 2017.
- Member, Editorial Board, International Journal of Small Craft Technology, 2011- 2020.
- Member, WA Dept of Transport Recreational Vessel Safety Equipment Review working group 2015- 2020.
- Member, Steering Committee on National Data and Analysis, **National Marine Safety Committee** 2009 – 2011.
- Chair, Technical Committee, International Conference on Innovation in High Speed Marine Vessels (RINA) 28-29 January 2009.
- Member, Australian Sustainable Development Institute Leadership Group 2008 – 2011.
- Nominated by **Australian Research Council** (ARC) College of Experts as “ Expert of International Standing” 2007- 2011.
- Member, **National Marine Safety Committee** Technical Advisory Panel 2007 – 2011.
- External Moderator, BEng ((Naval Architecture), Australian Maritime College 2005.
- **Chair and founding member**, Royal Institution of Naval Architects W.A. Section 1994-97 and 2000-2004.
- Member, Marine Industries Action Agenda Working Groups (DITR) 2004.
- Member, Scientific Committee, International Conference on Hydrodynamics 2003-2004.
- Member, Advisory Board, Centre for Marine Science and Technology, Curtin University 1990 – 2011.
- Member, Rottnest Island Marine Waste Management Facility Steering Committee 1999.
- Member, Murdoch TAFE Marine Waste Management Policy Steering Committee 1999.
- Member, AME CRC Technical Committee 1996-2000.
- Member, AME CRC Programs Management Committee 1992-2000.
- Council member, Royal Institution of Naval Architects, Australian Division (1996-97).
- **Founding Editor** of The Australian Naval Architect journal 1996-97.
- Member, Secondary Education Authority Nautical Studies Syllabus Review Committee 1994-96.
- **Chair**, Design Loadings Working Group, ME59 Shipbuilding Committee, **Standards Australia** 1988-96 (developed AS4132.1-1993).

- Organiser and Proceedings Editor for the inaugural Aquamarine'95 and AME Postgraduate conferences, 1995.
- Chair, RINA Ausmarine conference, 2000 and 2002.
- Past secretary and founder member of an international yachting organisation 1983-85.
- Examiner of several PhD and Masters theses.

## OTHER QUALIFICATIONS AND EXPERIENCE

- Commodore, Wanderers Radio Sailing Club 2022- 2023.
- Australian Sailing National Equipment Auditor 2018- 2023.
- Coxswain (Restricted) Certificate of Competency 2009.
- Senior First Aid certificate 2007- present day.
- HF and VHF Radio Operators licence 1997.
- Yachting Australia Keelboat Instructor Level 2, 2013 – 2017.
- TAFE Boathandling proficiency certificate 1996.
- Yacht Safety Survival course 2012.
- RYA Yachtmaster (Offshore) certificate 1982.
- Safety Officer and Member, Risk Management Committee, Fremantle Sailing Club 2004-2014.
- Safety Officer, Bali International Yacht Rally 2009-2011.
- Member, Fremantle Sailing Club Participation sub-committee 2012.
- Cruising Captain, Fremantle Sailing Club 2013-2014.
- Member, Cruising Committee, Fremantle Sailing Club 1997- 2017.
- Lecturer, Fremantle Sailing Club Learning Nights Series 2011- 2016.
- Editor, WA Cruising Guide 2014- present day.
- Member, Yachting WA Safety Committee 2015- 2017.
- Member, Fremantle Sailing Club Finance Committee 2018-2019.
- Sailed in several world yachting championships (past Australian champion); completed 30,000 miles offshore sailing including single-handed ocean passages.

## PUBLICATIONS (Selected)

- Klaka K.** (2022) “The Effect of Hull Surface Roughness on the Performance of a Model Sailing Yacht”. *Australian Naval Architect* v26 v2 pp 35-43.
- Klaka K.** (2020) “Why Sailing Yacht Rudders Break”. *International Journal of Maritime Engineering* v162 part A4 pp 445-452.
- Klaka K.** (2020) “The Loads on Yacht Anchor Rodes”. *International Journal of Maritime Engineering* v162 part A4 pp 453-459.
- Klaka K.** (2020) “Sailing Yacht Design: a Guide for Boat Owners, Crew and Buyers”. ISBN 978-13936689-5-4.
- Henderson G. & **Klaka K.** (2019) “Who or what sank HMS Sirius at Norfolk Island in 1790?”, *The Australian Naval Architect*, v23 no.2 pp38-39.
- Klaka K.** (2018) “Catamaran Performance Metrics”, *The Australian Naval Architect*, v22 no.4 pp32-35.
- Klaka K.** (2017) “Western Australian Cruising Guide”, pp 609. ISBN: 978-06482411-2-6.

- Klaka K.** (2016) "Cruising Safety Recommendations". Fremantle Sailing Club pp33. <https://www.fsc.com.au/wp-content/uploads/2017/04/FSC-Cruising-Recommendations-Green-Book-v4.1.1.pdf>
- Giorgi G., Gourlay T., Teunissen P., **Klaka K.** & Huisman L. (2010) "Carrier Phase Ambiguity Resolution for Ship Attitude Determination and Dynamic Draught" *XXIV FIG International Congress*, Sydney.
- Pal P.K. & **Klaka K.** (2010) "Preliminary Design of Cruising Sailing Yachts as a Decision Support Problem". *International Journal of Small Craft Technology* v152 part B2 pp75-85.
- Klaka, K.** (2010) "On the Performance of a Wavy Keel", *The Australian Naval Architect*, v14 no.2 pp 45.
- Gavrilov, A., McCauley, R., Thomas, F., **Klaka, K.**, Salgado-Kent, C., Perry, M., Duncan, A. (2009) "Acoustic Observatories of the Australian Marine Observing System", Underwater Acoustic Measurements: Technologies & Results, 3rd International Conference and Exhibition, Nafplion, Greece, pp. 1245-1249, 21 - 26 June 2009. ISBN: 978-960-98883-0-1.
- Klaka K.**, Penrose J.D., Horsley R.R. & Renilson M.R (2007) "Hydrodynamic Tests on a Plate in Forced Oscillation" *Ocean Engineering* 34, pp 1225-1234.
- Gourlay T & **Klaka K** (2007) "Full-Scale Measurements of Containership Sinkage, Trim and Roll" *Australian Naval Architect* v11 no.2 pp30-36.
- Klaka K.** (2007) Antarctica and Curtin chapter in "IMAGinING Antarctica" ed. T Snell, John Curtin Gallery, Curtin University of Technology. ISBN 1 74067 510 X.
- Sterling, D. and **Klaka, K** (2007). "Energy efficient fishing: part B – hull characteristics and efficiency". *Project No. 2005/239*, May 2007, Fisheries Research & Development Corporation, Australia.
- Klaka K.**, Penrose J.D., Horsley R.R. & Renilson M.R (2005) "Hydrodynamic Tests on a Fixed Plate in Uniform Flow" *Experimental Thermal and Fluid Science* 30, pp. 131-139.
- Klaka. K.**, (2004) "Roll motion of a Yacht at zero Froude number" *PhD thesis*, Curtin University of Technology
- Klaka K.**, Penrose J.D., Horsley R.R. & Renilson M.R. (2004) "Roll Motion of Yachts at Zero Froude Number" *International Journal of Small Craft Technology* v146 part B2 pp2-15.
- Klaka K.** & Renilson M.R. (2004) "Experimental Study on the Influence of Appendages on a Yacht Rolling at Zero Froude Number" *Marine Technology* v41 no.5 pp200-206.
- Klaka K.**, Penrose J.D., Horsley R.R. & Renilson M.R. (2003) "Roll Motion of Yachts at Anchor" *RINA Modern Yacht Conference*, Southampton.
- Klaka K.**, Krokstad J. & Renilson M.R. (2003) "Prediction and Measurement of the Roll Motion of a Sailing Yacht at Zero Forward Speed" *Experimental Thermal and Fluid Science*. v27 no.5 pp611-617.
- Klaka K.** & Renilson M.R. (2002) "Reducing Roll Motion of Yachts at Anchor" *YachtVision02 Conference*, Auckland.
- Klaka K.**, Krokstad J. & Renilson M.R. (2001) "Prediction of Yacht Motion at Zero Forward Speed" *14th Australasian Fluid Mechanics Conference*, Adelaide.

- Klaka K.** (2001) "Model Tests on a Circular Cylinder with Appendages" *Report 2001-14*, Centre for Marine Science and Technology, Curtin University of Technology, Perth.
- Klaka K.** (2001) "A Simplified Roll Model" *Report 2001-09*, Centre for Marine Science and Technology, Curtin University of Technology, Perth.
- Klaka K.** (2001) "Yaw and roll response of a vessel to waves at zero ship speed: full scale experiments" *Report 2001-03*, Centre for Marine Science and Technology, Curtin University of Technology, Perth.
- Klaka K.,** Thomas G. & Couser P. (2000) "An Introduction to Seakeeping Analysis" *CD-ROM Formation Designs Pty Ltd., Fremantle/Curtin University of Technology, Perth.*
- Klaka K.** (2000) "Response of a vessel to waves at zero ship speed: preliminary full scale experiments" *Report 2000-14*, Centre for Marine Science and Technology, Curtin University of Technology, Perth.
- Cook S.M., Couser P. & **Klaka K.** (2000) "Prediction of Wave Loads and Catamarans", *R.I.N.A. Hydrodynamics without Integrals Conference*, Fremantle.
- Cook S.M., Couser P. & **Klaka K.** (1999) "Investigation into Wave Loads and Catamarans", *R.I.N.A. Hydrodynamics of High Speed Craft Conference*, London.
- Klaka K.,** Binns, J. & Dovell, A. (1999) "The Effect of the Rudder on the Wave Pattern of a Sailing Yacht", *Australian Sailing Science Conference*, Hobart.
- McRae B., Binns J., **Klaka K.** & Dovell A. (1998) "Windward Performance of the AMECRC Systematic Yacht Series", *R.I.N.A. The Modern Yacht Conference*, Portsmouth.
- Binns J., **Klaka K.** & Dovell, A. (1997) "Hull-Appendage Interaction of a Sailing Yacht, Investigated with Wave Cut Techniques", *S.N.A.M.E. Chesapeake Sailing Yacht Symposium*, Maryland.
- Klaka K.** & Haywood A. (1996) "The Role of R&D in Ship Design, Construction & Operation", *Ausmarine '96*, Fremantle.
- Thomas, G.A., **Klaka, K.** & Dovell, A. (1995) "An Investigation of Windward Performance of Yachts in Waves", *CADAP '95*, Southampton.
- Haywood A.J., Duncan A.J., **Klaka, K.** & Bennett J. (1995) "The Development of a Ride Control System for Fast Ferries", *Control Engineering Practice* (5).
- Boyd, J., **Klaka, K.** & Thomas, G.A. (1995) "Analysis of Non-Linear Vessel Motions: Experiments and Predictions", *R.I.N.A. Seakeeping and Weather Conference*, London.
- Boyd, J., **Klaka, K.** & Thomas, G.A. (1994) "Prediction of Large Amplitude and High Speed Vessel Motions using a Pseudo Non-Linear Strip Theory", *Martec '94*, Wellington.
- Haywood A.J., Duncan A.J., **Klaka, K.** & Bennett J. (1994) "The Role of Simulation in the Development of a Ride Control System for Fast Ferries", *MCMC '94*, Southampton.
- Sterling D. & **Klaka K.** (1993) "Hydrodynamic Design of Otter Boards for Prawn Trawlers". *Shipsape 2000 (10th International Maritime and Shipping Symposium)*, Sydney.
- Klaka K.** & Webb G.A. (1993) "Added Mass and Damping of Vertical Motions in Shallow Water", *The Naval Architect*.
- Klaka K.** & Webb G.A. (1992) "The Motions of Ships in Shallow Water", *11th Australasian Fluid Mechanics Conference*, Hobart.



- Penrose J.D. & **Klaka K.** (1991) “Notes on the movement of wreck material in the area of the battle”, in McCarthy M. and Kirsner K. (compilers), *Papers from the HMAS Sydney Forum, Fremantle, 21–23 November 1991* (Department of Maritime Archaeology Report No. 52).
- Klaka K.**, Penrose J.D. & Longstaff I.D. (1991) “Development of an Innovative Ocean Wave Measuring Device”, *Australian Physical Oceanography Conference*, Canberra.
- Klaka K.**, Penrose J.D. & Sutherland I.W. (1989) “Performance Prediction of Yachts in Waves”, *Production Technology and Prediction of Boat Behaviour in Real Conditions Conference*, Milan.
- Klaka. K.**, (1989) “Performance Prediction of Yachts in Waves” *MAppSc thesis*, Curtin University of Technology
- Klaka K.** (1987) “Performance Prediction of Yachts Sailing in Waves” *Yachting Technology 1987 Conference*, Perth, 28-30 January 1987.