CURRICULUM VITAE

Zoran Lajic, PhD Naval Architect

Energy Efficiency Director

WORK ADDRESS:

Angelicoussis Group
(Maran Tankers Management, Maran Dry Management and Maran Gas Maritime)
GREECE

HOME ADDRESS:

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General information

Place and date of birth: Zrenjanin, Serbia, 30 August 1972.

Summary:

Acomplished engineering career reflects 25 years of experience in shipping and maritime industry, mainly dedicated to establishing and managing Energy Efficiency / Fleet Performance departments. Besides building and structuring the departments,

people management and streamlining the processes, high focus has been on development of the in-house energy performance systems, decarbonization and improving the overall fleet efficiency and consequently minimizing the consumptions and emissions.

Education

PhD studies: Technical University of Denmark (DTU), Department of Mechanical Engineering, Section of Coastal, Maritime and Structural Engineering.
PhD Thesis: *Fault - tolerant onboard monitoring and decision support system.*
Supervisors*:* Prof Jørgen Juncher Jensen, Prof Mogens Blanke and Associate Prof Ulrik Dam Nielsen. PhD thesis defended on 13th of December 2010.

Master studies: University of Belgrade, Faculty of Mechanical Engineering, Department of Naval Architecture. Graduated on September 17, 1998 with an average mark of 8.25 (out of possible 10).
Master Thesis: *Theory and Practice of Containership design* with a mark of 10 (out of possible 10).

Work experience

- **February 2023 – present, Energy Efficiency Director, Angelicoussis Group**.

  Responsible for Maran Tankers Management, Maran Dry Management and Maran Gas Maritime. High focus on emission reduction and decarbonization. Working towards a carbon neutral fleet.

- **October 2020 - January 2023, Head of Fleet Performance, Angelicoussis Group.**

  Responsible for performance of Maran Tankers Management, Maran Dry Management and Maran Gas Maritime. Expanded the responsibilities and the system to the other two companies of the Angelicoussis Group. High focus on improving the energy efficiency of all three fleets and establishing a common KPI system.

- **June 2017 - October 2020, Head of Fleet Performance, Maran Tankers Management Inc**.

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  Worked on setting up and managing the Energy Efficiency / Fleet Performance department of Maran Tankers (one of three companies belonging to the Angelicoussis Group). Structured department and the team; streamlined the processes (collaboration with other departments- Technical, Chartering, Operation etc.). Furthermore, worked on development of the in-house energy performance system. Established the KPI system and improving the overall fleet efficiency and consequently minimizing the consumptions and emissions.

- **May 2016 – June 2017: Thenamaris Ship Management, Energy Performance Department. Senior Performance Engineer.**

  Worked on:

  - Establishing the Energy Performance department and the main KPIs
  - Developed a first release of their performance system
  - Model building (power and fuel)
  - Performance analysis of the entire Thenamaris fleet (separate analysis of the hull & propeller and engine), fouling detection
  - Assessing efficiency of energy saving devices
  - Overconsumption calculation
  - Decision support for hull cleaning
  - Implemented auto logged data in the performance evaluation
  - SEEMP and MRV
  - Supporting new buildings (model test and sea trial evaluation, fuel tables, decision support for changes in hull and propeller design)
  - Supporting Chartering Department – (making fuel tables, analysing the performances, compering vessels, etc.)
  - Project manager:
    - Fleet Fuel Savings Optimization
    - Auto logged data collection and transfer

- **October 2010 – May 2016:** ***A.P. Møller - Maersk A/S, Maersk Maritime Technology, Vessel Performance / Hydrodynamics***. Lead vessel performance analyst/General Manager. Worked on:

  - New buildings:
    - Hull optimization
    - Parametric studies for new buildings (defining the most convenient main particulars for the containerships)- 20000 TEU (Maersk EEE second generation built in DSME), 14000 TEU (Maersk H class built in HHI) and a number of classes which haven't been constructed.
    - Estimating resistance curves and fuel consumptions.
    - Decision support for the new buildings
    - EEDI for the new buildings
  - Vessel performance monitoring system with automatic data acquisition (developed auto logging system on Triple E, Wafmax class, Sammax class and Maersk Newton),
  - Vessel portfolio and chartering support (estimating fuel tables for chartering prospects and new buildings using limited data; estimating fuel consumptions of the competitors' fleet),
  - Vessel performance (evaluating performances of the vessels in the fleet),
  - Energy efficiency (analysed vessel deployment on the services, new propulsive devices, new vessel designs, efficient voyage execution, etc.),
  - Ship management support (worked with superintendents and painting & underwater cleaning department on evaluating vessel performances, reporting quality and decision support for hull cleaning and premature dry dockings),

- WHR systems (estimating fuel tables for the vessels equipped with Waste Heat Recovery system),
- LNG tankers (estimating fuel tables for the charter party and suggesting hull cleanings),
- EEOI calculations for the containership and tanker fleet,
- DP station keeping and ERN calculations
- KPI (vessels and fleet).
- Training new colleagues
- Project manager of a number of projects:
    - PBCF projects (installations of the PBCF on the selected containerships and tankers and performance analysis)
    - Vessel Portfolio Optimization project,
    - Several software development projects,
    - Several fleet performance projects,
    - Dynamic propeller shaft speed control, etc.

- **September 2007 – September 2010:** ***Technical University of Denmark (DTU), Department of Mechanical Engineering, Section of Coastal, Maritime and Structural Engineering*****.** PhD candidate. Worked on a fault – tolerant onboard monitoring and decision support system for optimal operation; ship motions analysis; directional sea state estimations by measuring ship responses in waves; fault diagnosis; signal processing; time series analysis.

- **January 2005 – September 2007:** ***Department of Information and Systems, University of Pavia (Pavia, Italy)*****.** Research assistant. Worked on development of monitoring and control systems for industrial processes (EU Craft project - WIPS) and monitoring & control systems for underwater vehicles. The systems were developed and fully implemented.

- **October 2004 – December 2004:** ***Department of Information and Systems, University of Pavia (Pavia, Italy)*****.** Guest researcher (CICOPS scholarship). Worked on optimization of ship design by advanced numerical methods with a focus on numerical method for ship resistance prediction.

- **September 1998 - October 2004:** ***ITS SASA (Belgrade, Serbia), Department of Naval Architecture*****.** Worked as a naval architect and shipyard consultant on ship design and retrofit with the main focus on inland vessels (towboats, barges, tugboats etc.). Also, worked on development of new numerical methods for ship resistance prediction, propulsion, diesel-electric propulsion and manoeuvre. Developed software for ship resistance prediction in deep and shallow water and technical drawings database.

Interest

Energy efficiency and decarbonization, monitoring and decision support systems for optimal operation; Fault tolerant and highly accurate systems and fault diagnosis; Newbuilding

project management; Ship design; Vessel performance; People and Project management, Big data analysis.

Languages:

Excellent knowledge: English, Italian, Croatian and Serbian (mother tongue), Studying Greek currently.

Computer skills:

- Programming experience:

  - Visual C#.NET programming: Windows and Web programming, including ADO.NET and ASP.NET, strong knowledge in database programming.

  - MATLAB

  - LabVIEW,

  - Visual C++ programming: proficiency in MFC, Database programming (ADO & ODBC), Internet programming, COM and ActiveX.

  - VisualBasic.NET (Windows and Web programming).

  - SQL Server

  - FEMLAB.

  - C++

- Software user:
  - AutoCAD, Microsoft Office and ship design software such as NavCAD, FastShip, AutoPower, AutoHydro, AutoShip and I Ship.

Software development courses:

- Microsoft official course for software developers "2555A – Developing Microsoft.NET Applications for Windows (Visual C#.NET), Belgrade, June 2004.

- Microsoft official course for software developers "2310B - Developing Microsoft ASP.NET Web Applications using Visual Studio.NET, Belgrade, June 2004.

Affiliation:

SNAME (The Society of Naval Architects and Marine Engineers)

Hobby:

Long distance running, cycling, old films, music (Blues and Jazz) and history of shipbuilding (1930-1980).

List of publication (not complete list):

Marine and/or control field:

Z.Lajic et al. (2019), Transformation of Vessel Performance System into Fault-tolerant System – Example of Fault Detection on Speed Log, 2019 4th International Conference on System Reliability and Safety, Rome, Italy.

Z.Lajic et al. (2018), Adaptive GLR Change Detector for Increasing Reliability of Vessel Performance System, 2018 3rd International Conference on System Reliability and Safety, Barcelona, Spain.

U.D. Nielsen, Z. Lajic, J.J. Jensen (2012), Towards fault-tolerant decision support systems for ship operator guidance, *Reliability Engineering & System Safety,* Vol. 104, pages 1-14.

Lajic, Z., M. Blanke, and U.D. Nielsen (2010). Fault Isolation for Shipboard Decision Support, The 7th IFAC Symposium on Intelligent Autonomous Vehicles (IAV 2010), Lecce, Italy, accepted.

Lajic, Z. , U.D. Nielsen and M. Blanke (2010). Fault Isolation and Quality Assessment for Shipboard Monitoring, *Proceedings of OMAE 2010*, Shanghai, China.

Lajic, Z., M. Blanke, and U.D. Nielsen (2009). Fault Detection for Shipboard Monitoring - Volterra Kernel and Hammerstein Model Approaches, *Procedeengs of 7th IFAC Symposium on Fault Detection, Supervision and Safety of Technical Processes*, Barcelona, Spain.

Lajic, Z. and U.D. Nielsen (2009). Fault Detection for Shipboard Monitoring and Decision Support Systems, *Proceedings of OMAE'09*, Honolulu, HI, USA.

Antonio Tiano, Zoran Lajic, Antonio Zirilli:Ship Monitoring and Control, CAMS'07 (IFAC Conference on Control Application in Marine Systems), 19th of September 2007, Bol, Croatia.

A. Tiano, Z. Lajic, M. Carreras "Adaptive Control Of Underwater Vehicles", The 7th IFAC Conference on Manoeuvring and Control of Marine Craft (MCMC'2006), Lisbon, Portugal 20-22 September, 2006.

Z. Lajic, A. Leo, S. Pagnan, A.Tiano "New Software Techniques For Ship Monitoring And Prediction System", 3rd International Conference On Maritime Transport- Maritime and Inland Waterway Transport and Maritime History, Barcelona (Spain), 16 – 19 May 2006, (p. 725-735).

Z. Lajic, A. Leo, A. Tiano, M. Tomic “Improving Inland Waterway Transport Efficiency by a New Approach to Vessel Design”, European Inland Waterway Navigation Conference, Szeged, Hungary, 9 June, 2005.

Z. Lajic, Z. Sovagovic and D. Bulovan “ COM Technology Implementation In Ship Design Software”, European Inland Waterway Navigation Conference, Gyorr, Hungary, 12 June, 2003.

Z. Lajic, P. Dakic, D. Bulovan “A New Approach To The Ship Information System Design”. Proc. of the 2nd VOS-Symposium, Belgrade, Serbia and Montenegro, 2002. (p.197-202)

B.Bilen, M.Zerjal, B.Bilen-Katic, Z.Lajic, M. Marinkovic and Z. Jankovic “ A new approach to pushboat design”, (1999), Sudostroenie, Russia, N.5, pp. 9-15.

B. Bilen and Z. Lajic “ Calculation of maneuvring performances for pushed convoys with different steering devices”, 1st European Inland Waterway Navigation Conference, BalatonFured, Hungary, 9-11 June, 1999, pp. 94-105.

Control field:

S. Rinaldi, A. Tiano, S. Serban, R. Pittson, Z. Lajic, H. Politi, N. El Murr, A. Armani, A. Cavazza “Monitoring Wine Quality And Fermentation Kinetics With Innovative Technologies”, XXIX World Congress Of Vine And Wine and the 4th General Assembly Of The O.I.V., Logroño (Spain), June 25 – 30, 2006.

A. Tiano, A. Cavazza, Z. Lajic, A. Leo, H. Politi, S. Rinaldi “System identification applied to wine fermentation”, The 20th International ICFMH Symposium- Food Safety And Food Biotechnology: Diversity And Global Impact, Alma Mater Studiorum, Bologna, Italy, 29 Aug - 02 Sept 2006. – poster.