



## CURRICULUM VITAE

### **ALAN THURSTON RACTLIFFE**

MA (Cantab), PhD (Cantab), CEng, MICE, FRINA

#### **Contact Details**

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#### **Professional Bodies**

Chartered Engineer (CEng)  
Member of the Institution of Civil Engineers (MICE)  
Fellow of Royal Institution of Naval Architects (FRINA)

#### **Experience**

**1986-present** - Founding director of Shipboard Informatics Ltd., marine software development, and responsible for the SEAMASTER range of approved loading instruments, including programs for stability/strength (with flooding and grounding), container lashing security, and semi-automatic stowage planning. This is used on over 150 ships for about 20 different ship operators worldwide, including Stena Sealink, Cunard Ellerman, China Navigation (Swire Group), BP, United Arab Shipping, OOCL, Allseas Engineering NV and Maritime Overseas.

**1987-present** – Founding director of Tension Technology International Ltd., responsible for marine systems within this international group consultancy, in particular the OPTIMOOR software for checking the mooring arrangements of tankers and gas carriers. This is used at about 20 sites by companies worldwide, including Amoco, Aramco, BP, Chevron, Kvaerner, Mobil and Shell.

**1973-1989** - Senior Lecturer in Naval Architecture and Offshore Engineering, Department of Marine Technology, University of Newcastle upon Tyne. Lecture courses in structural strength and failure, wave loading, buckling, fracture mechanics, fatigue, vibration, and the art of open-ended problem solving, at both under and post-graduate levels.



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#### **Professional Interests**

Early specialization in structural behaviour broadened into a wider range of interests in computer modelling of dynamic problems in the marine environment, including cable dynamics, pipe-laying, towing, motion and forces on floating bodies. The common thread in these varied fields has been the application of basic principles and exploitation of research, leading to state-of-the-art software. The 31 years of programming experience has covered all types of machines from main-frames to minis and micros. Expert witness with experience of instructing Counsel and giving evidence at all levels including high court. Retained by TMC (Marine Consultants) Ltd and often called for support after a case becomes technically or theoretically complex.

#### **Publications**

Author or co-author of more than 25 papers and articles in national and international publications and patents, covering buckling of steel structures, residual stresses due to welding, launching, moorings, cable dynamics, towing, wave drift, flexible risers, crane barges and pipe-laying.

#### **Miscellaneous**

Visiting professor in steel structures at ETH (Zurich Technical University), 1975.  
Committee member of the International Ship Structures Congress, 1980-1982.  
Selector for undergraduate courses in marine technology, Newcastle University 1983-1988.  
Member of Board of Faculty and Undergraduate Studies Committee, 1983-1987.  
External examiner for courses in Maritime Studies at University of Wales Institute of Science & Technology, Cardiff, 1983-1987.  
Committee member of the Offshore Engineering Group, RINA, 1985-1988.  
Joint winner of the Gilbert Innes Prize awarded by the North East Coast Institution of Engineers & Shipbuilders 1986.  
German spoken.



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#### **Principal Projects & Consultancies**

(in chronological order)

Structural design of the cross-structure of large catamarans and the estimation of transverse wave loads (Appledore Shipbuilders Ltd, 1970).

Towing behaviour of the concrete offshore platform ARK (Ove Arup and Kier Ltd, 1973).

Structural aspects of an airship for transporting LNG (A & P Appledore Ltd, 1974).

Feasibility study for the transportation of a 23,500 tonne deck module (Magnaload Ltd & Wm Press Ltd, 1976).

Design study of floating jetty mooring forces (McGregor Ltd, 1977).

Resistance of barges in waves (Noble Denton Ltd, 1977).

Estimation of wave forces and investigation of possible causes of failure of Douglas IOM link-ramp (McGregor Ltd, 1977).

Wave bending moments in floating dry docks (Noble Denton Ltd, 1978).

Investigation of tanker mooring break-out problems at Flotta SPM and their remedy (Occidental (UK) & BMT Ltd, 1978).

Resident engineer during load-out and installation of Parkeston Quay linkspan (representing interests of McGregor Ltd, 1978).

Optimization of ballast requirements for load-outs in tidal waters (ITM Offshore Ltd, 1980).

Development of shipboard software to predict the boom-tip movement of the crane-ship VOYAGER from forecast weather data (ITM Offshore Ltd, 1982).

Computer model to simulate the dynamics of torpedo guide-lines (Marconi Underwater Systems Ltd, 1983).

Stability calculations for the operations manual of the crane-ship VOYAGER (ITM Offshore Ltd, 1983).

Behaviour in currents and waves of a cable-laying barge (ITM Offshore Ltd & CEGB, 1983).



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M.A.(Cantab), Ph.D.(Cantab), C.Eng, M.I.C.E., F.R.I.N.A.

Estimation of weather windows for cable-laying operations in Cook Strait, New Zealand (IM Offshore Ltd, 1983).

The modelling of flexible risers for floating production systems (VO Offshore Ltd, 1984).

Investigation of the possible causes of the loss of JAL SEA CONDOR (Ince & Co, 1984).

Dynamic behaviour of ocean towing hawsers (H & T Marlow Ltd/ Design Council, 1985).

Assessment of the capability of the moorings of the semisubmersible SOVEREIGN EXPLORER which broke out at an exposed location (TMC, 1985).

Software to simulate flexible riser dynamics (Brown & Root Ltd, 1985).

Estimation of the wave forces for the reinforcement of a beach pier supporting NCB spoil conveyor (Harbour & General Wks Ltd, 1985).

Motions and mooring forces for temporary floating ports in Stanley harbour, Falkland Isles (ITM Offshore Ltd, 1985).

Development of a ship-board computing system approved by Lloyd's Register to calculate container lashing forces (Shipboard Informatics Ltd, 1986).

Mooring forces for replacement gates on Sukkar Barrage in Pakistan (Dorman Long Overseas Ltd, 1986).

Modelling study of Single Buoy Mooring systems (H & T Marlow Ltd/ Design Council, 1987).

Design of a fish-farm for use in exposed waters (AMARC Ltd, 1987).

Software to display the behaviour of the umbilical, towline and telecom cable for a cable-laying plow (Soil Machine Dynamics, 1988).

Analysis of the causes of the towing failure and loss of the jack-up rig KEY BISCAVNE (Noble Denton Ltd & Parker, Australia, 1988). Case won.

Development of software for calculating the blockage forces on a barge across a river, and mooring forces (Press Offshore Ltd, 1989).

Responsible for the shipboard stability software to meet the new Dept. of Transport M-Notice requirements on all ferries (Sealink Ltd, 1990).



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Modelling of the fatigue life of synthetic fibre ropes (US Navy, 1990).

Retained as consultant on performance of the crane-ship NORLIFT (Cable & Wireless Ltd).

Design analysis of the dynamic behaviour of new collision protection net for HUTTON Tension Leg Platform (Conoco UK Ltd, 1991).

Design of collision protection net for AUGER Tension Leg Platform (Shell USA/TTI Inc, 1991).

Design analysis of collision protection net for HEIDRUN TLP (Norwegian Contractors AS, 1992).

Retained as expert in towing breakout of JAVATOW (Selvadauri, 1993).

Design of moorings for Cape Verde Flexiport (Marine & Floating Port Installations, 1993).

Consultant on investigation into the capsize of cruise liner BELORUSSIYA in floating dock (Singmarine, 1993).

Analysis of umbilical cable dynamics for deep sea submarine rescue (Portsmouth Aviation Ltd, 1993).

### **List of Publications**

1. J.B. Dwight & A.T. Ractliffe - The strength of thin plates in compression.  
Paper No.1 from Thin-walled Structures ed Rockey & Hill (Crosby-Lockwood, 1969) pp 3-34.
2. J.B. Dwight & A.T. Ractliffe - Local buckling of welded steel columns.  
CIRIA Res Rep No.12 (1967).
3. A.T. Ractliffe - The effect of shear flexibility in a beam on an elastic foundation.  
Int J Mech Sci (1973) pp 445-449.
4. A.T. Ractliffe - Launchway pressure.  
Trans RINA 115 (1973) pp 339-358.



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M.A.(Cantab), Ph.D.(Cantab), C.Eng, M.I.C.E., F.R.I.N.A.

5. A.T. Ractliffe - Rejecting suspect data.  
Engineering 213 (1973) p 817.
6. A.T. Ractliffe - Hybrid yield-line finite element analysis.  
Trans IABSE 35-I (1975) pp 169-183.
7. A.T. Ractliffe - Twin wires can cancel out errors.  
Offshore Engineer (Dec 1975) p 46.
8. A.T. Ractliffe - How to avoid bottom damage during launching.  
Shipping World & Shipbuilder 168 (1975) pp 1129-1133, and 169 (1976) pp 486-487.
9. A.T. Ractliffe - Dynamic positioning: Cutting the errors.  
Engineering 169 (1976) pp 486-487.
10. A.T. Ractliffe - Newton's laws of motion: A solecism?  
Int J Mech Eng Educ 4 (1976) pp 286-288.
11. A.T. Ractliffe & G.H.G. Mitchell - The drag and wave drift of basic shapes of floating structures. Trans NECIES 93 (1976) pp 15-17.  
  
(This paper together with Ref 16 has been made the basis of Section 2.6 of the British Standards Code of Practice on Inshore Moorings and Floating Structures, BS 6349 Part 6).
12. A.T. Ractliffe – Launch-way loading.  
  
1st WEGEMT School, Newcastle 1978, Module S1: Load Actions on Ship Structures.
13. A.T. Ractliffe - Strength of plates and elements.  
  
1st WEGEMT School, Newcastle 1978, Module S2: Structural Response.
14. A.T. Ractliffe - University tackles mooring problems.  
  
Offshore Engineer (June 1979) pp 75-79.
15. A.T. Ractliffe & D. Clarke - Development of a comprehensive simulation model of an SPM system. Trans RINA 122 (1980) pp 33-44.



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16. A.T. Ractliffe, G.H.G. Mitchell & P.J. Fisher - An experimental study of the parameters affecting the drag of barges in current and waves.  
13th OTC Paper No.4166 (Houston 1981). (See note on Ref.11).
17. A.T. Ractliffe - The basis and essentials of marine corrosion in steel structures.  
Proc ICE 74 (1983) pp 889-907.
18. A.T. Ractliffe - The basis and essentials of thermal residue distortion in steel structures. Trans RINA 126 (1984) pp 217-225.
19. A.T. Ractliffe & G.H.G. Mitchell - Wave loading in floating docks under tow.  
Int Ship Prog 31 (1984) pp 88-93.
20. A.T. Ractliffe - Dynamic response of flexible catenary risers.  
Paper No.15 RINA Int. Symp on Floating Production Systems (London 1984).
21. A.T. Ractliffe - Strain limit indicator for monitoring internal failure in synthetic fibre ropes. UK Patent No.2130611A June 1984.
22. A.T. Ractliffe & M.R. Parsey - Man-made fibre ropes for marine use.  
Trans NECIES 101 (1985) pp 183-197.
23. A.T. Ractliffe & G.H.G. Mitchell - The performance of a 7000t crane-ship converted from a VLCC. Paper No.10 RINA Int. Symp on Offshore Transport and Installation (London 1985).
24. A.T. Ractliffe - The validity of quasi-static and approximate formulae in the context of cable and flexible riser dynamics. Proc 4th BOSS Conf (Delft 1985) pp 337-346.
25. A.T. Ractliffe & D.W. Daniel - The dynamics of deep water pipe-laying.  
Paper No.16 RINA Int Symp on Developments in Deeper Waters (London 1986).
26. A.T. Ractliffe & P. Sen - Computer aided stowage and lashing strategies for containerships. Safe Ship Safe Cargo Conference (London 1987) pp 113-117.



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27. J.F. Flory, M.R. Parsey & A.T. Ractliffe - The effect of hawser elasticity on SPM mooring systems. Floating Structures & Offshore Operations (Elsevier 1987, ed G van Oortmerssen) pp 99-108.
28. A.T. Ractliffe - A hull pressure monitoring system (SEATELL).  
Patent Application 9310962.7 (London 1993).
29. J.F. Flory & A.T. Ractliffe - Mooring arrangement management by computer.  
Paper No.4, Symposium on Ship Operations, Management & Economics, SNAME 1994.