

## Dr Andrew Tobias BSc, PhD, FORS

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Deputy Head of Teaching and Learning (PG)

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### About

With some thirty years' experience and in excess of 70 publications in operational research, Andrew specializes in the teaching of systems thinking, operations management, systems engineering, simulation and management information systems at MSc level.

### Qualifications

- PhD in Glass Reinforced Plastics, University of Nottingham 1984
- BSc in Mechanical Engineering, University of Nottingham 1981

### Biography

Dr Tobias' interest in operations management can be traced back to the mid 1980s at Lucas Industries where he first became involved with using discrete simulation and various systems modelling approaches in production engineering. This work had included the design of manufacturing systems, associated business control systems, and interfaces to suppliers and customers - all in the context of very rapid and radical change management.

He moved to the University of Birmingham in 1988 to teach operations management more widely at graduate level and, in the wake of twenty-five years researching systems modelling, now focuses his efforts upon teaching our three MSc programmes: Engineering Management, Operations Management and Project Management.

### Teaching

- **Systems Thinking** (<http://selfservice.bham.ac.uk/webhandbooks/WebHandbooks-control-servlet?Action=getModuleDetailsList&pgSubj=04&pgCrse=22730>)
- **Operations Management** (<http://selfservice.bham.ac.uk/webhandbooks/WebHandbooks-control-servlet?Action=getModuleDetailsList&pgSubj=04&pgCrse=01995>)
- **Systems Engineering** (<http://selfservice.bham.ac.uk/webhandbooks/WebHandbooks-control-servlet?Action=getModuleDetailsList&pgSubj=04&pgCrse=21522>)
- **Simulation** (<http://selfservice.bham.ac.uk/webhandbooks/WebHandbooks-control-servlet?Action=getModuleDetailsList&pgSubj=04&pgCrse=22987>)
- **Research Skills** (<http://selfservice.bham.ac.uk/webhandbooks/WebHandbooks-control-servlet?Action=getModuleDetailsList&pgSubj=04&pgCrse=23661>)
- **Management Information Systems** (<http://selfservice.bham.ac.uk/webhandbooks/WebHandbooks-control-servlet?Action=getModuleDetailsList&pgSubj=04&pgCrse=22988>)

all using "**enquiry based learning**" (<http://www.birmingham.ac.uk/university/about/students.aspx>).

### Postgraduate supervision

Dr Tobias welcomes applications from prospective students interested in reading over one year full time or two part time towards the degrees of:

- **MSc in Operations Management** (<http://www.birmingham.ac.uk/postgraduate/courses/taught/mechanical-engineering/operations-management.aspx>)
- **MSc in Project Management** (<http://www.birmingham.ac.uk/postgraduate/courses/taught/mechanical-engineering/project-management.aspx>)
- **MSc in Engineering Management** (<http://www.birmingham.ac.uk/postgraduate/courses/taught/mechanical-engineering/engineering-management.aspx>)

### Research

Dr Tobias now focuses on teaching and administration.

### Other activities

- 2012 – 2015: Visiting Professor at the Graduate Program in Industrial Engineering, Escola Politécnica, **Universidade Federal da Bahia, Brazil** (<https://www.ufba.br/>).
- 2008 – 2013: Visiting Professor in Railway Systems Engineering, **Universidad Castilla-La Mancha, Spain** (<http://www3.uclm.es/etsii-cr/>);
- 2001: Associate Professor in Information Systems, **University of Tasmania, Australia** (<http://www.utas.edu.au/>);
- 1994: Visiting Lecturer in Operations Management, **University of Canterbury, New Zealand** (<http://www.canterbury.ac.nz>)

### Publications

Over 70 publications and conference papers etc in the areas of operations management, systems engineering and simulation. Most recently:

- Pinar Pérez, J.M., García Márquez, F.P., Tobias, A.M. and Papaalias, M. (2013) "Wind Turbine Reliability Analysis". **Renewable and Sustainable Energy Reviews**, pp. 463-472 DOI: [10.1016/j.rser.2013.03.018](https://doi.org/10.1016/j.rser.2013.03.018) (<http://dx.doi.org/10.1016/j.rser.2013.03.018>). Sixth most downloaded paper from this journal in June – August 2013.
- Collis, L., Schmid, F. and Tobias, A.M. (2013) "Managing Incidents in a Complex System - A Railway Case Study". **Cognition, Technology and Work**, volume 15 no 1, ISSN 1435-5558; DOI [10.1007/s10111-013-0255-x](https://doi.org/10.1007/s10111-013-0255-x) (<http://link.springer.com/article/10.1007%2Fs10111-013-0255-x#page-1>).

- García Márquez, F.P., Tobias, A.M., Papaelias, M. and Pinar Pérez, J.M. (2012) "Condition Monitoring of Wind Turbines: Techniques and Methods". **Renewable Energy, vol. 46, pp 169-178** (<http://www.sciencedirect.com/science/article/pii/S0960148112001899>).
- Thanh V.H., Madelin K.B., Tobias A.M. and Roberts C. "The Need for a Strategic Approach on the Railways to the Management of the Vehicle - Track Interface". **Technology Analysis & Strategic Management** Vol. 22, No. 8, November 2010, 897–907. DOI 10.1080/09537325.2010.520474 (<http://www.informaworld.com/smpp/content-db=all-content=a928463443>) DOI 10.1080/09537325.2010.520474
  - Roberts, C., García Márquez, F.P. and Tobias, A.M. (2010) "A Pragmatic Approach to the Condition Monitoring of Hydraulic Level Crossing Barriers". **Proceedings of the IMechE, Part F: Journal of Rail and Rapid Transit 224 (F6), pp 605-610** (<http://journals.pepublishing.com/content/5706708874n12206/>). DOI 10.1243/09544097JRRT352
  - García Márquez, F.P., Roberts, C. and Tobias, A.M. (2010) "Railway Point Mechanisms: Condition Monitoring and Fault Detection". **Proceedings of the IMechE Part F: Journal of Rail and Rapid Transit 224 (F1), pp. 35-44** (<http://journals.pepublishing.com/content/07658152q555um54/>). DOI:10.1243/09544097JRRT289. One of the top five papers downloaded from this journal in 2010.
  - Dassanayake, H., Roberts, C., Goodman, C. J. and Tobias, A. M. (2009) "Use of parameter estimation for the detection and diagnosis of faults on electric train door systems". **Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability, 223 (4), 271-278**. (<http://journals.pepublishing.com/content/v1h1w04u735j1tvq/?p=65aa2a02722840e19dad184fb1dea14b&pi=1>) DOI 10.1243/1748006XJRR265.
  - García Márquez, F.P., Lewis, R.W., Tobias, A.M. and Roberts, C. (2008) "Life Cycle Costs for Railway Condition Monitoring". **Transportation Research part E, vol. 44, pp 1175-1187** ([http://www.sciencedirect.com/science?\\_ob=ArticleURL&\\_udi=B6VHF-4S2VRKM-1&user=122868&coverDate=11%2F30%2F2008&rdoc=1&fmt=&orig=search&sort=d&view=c&version=1&urlVersion=0&userid=122868&md5=7231019cf1c0a9564257bea3591e0e67](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VHF-4S2VRKM-1&user=122868&coverDate=11%2F30%2F2008&rdoc=1&fmt=&orig=search&sort=d&view=c&version=1&urlVersion=0&userid=122868&md5=7231019cf1c0a9564257bea3591e0e67)). DOI:10.1016/j.tre.2007.12.003.
  - Thanh V.H., Roberts C., Tobias A.M., Williams J., Stirling, A.B. and Madelin K.B. (2008) "Decision Support at the Wheel-Rail Interface: the Development of System Functional Requirements". **Proceedings of the IMechE Part F Journal of Rail and Rapid Transit, vol. 222 number 2, pp 195-206** (<http://journals.pepublishing.com/content/8r907738432w5x85/?p=a8e863cf8f26429d8b111f5fe0c7dfe7&pi=7>). DOI: 10.1243/09544097JRRT123. Highly commended by the Editor and Editorial Board during voting for the 2008 Professional Engineering Publishing Prize.
  - Bocharnikov, Y.V., Roberts, C., Hillmans S., Tobias, A.M. and Goodman, C.J. (2007) "Optimal Driving Strategy for Traction Energy Saving on DC Suburban Railways". **IET Electric Power Applications, Volume 1, Issue 5 (September), pp 675-682** (<http://dx.doi.org/10.1049/iet-epa:20070005>). (47978 – DOI:10.1049/iet-epa.20070005

