



Nigel Murphy

Current Position
Profession

Partner
Rail Operations and
Safety Specialist

Years of Rail Experience

37+

Professional Background



Nigel Murphy is a Professional Rail Operations and Safety Manager with extensive experience gained on project work in the UK, USA, Europe and Asia-Pacific.

He has undertaken many roles focussed on the operational integration of new and rail systems, pragmatically following a system engineering approach. He is experienced in the development and implementation of Safety Management Systems, Safety Validation, application of the Common Safety Method and undertaking Independent Assessment, Safety and Technical Audits and accident / near miss investigations.

He has widespread experience working on rail control centres and traffic management systems, operational integration and operational readiness projects. Nigel has excellent technical analysis and authorship skills gained working on operating concepts and requirements and systems engineering and has undertaken extensive project work alongside clients in new operational control, and passenger and freight train operating company projects.

He has extensive experience as an assessor for safety validation and ISA work, Franchise competitions, Due Diligence commissions and as a PPP Lender's Technical Advisor. His 18 years' consultancy record builds on 19 years' senior operations and general management experience with British Rail, Regional Railways, Railtrack, First North Western TOC and the National ERTMS Planning team.

Key Skills

- Experienced rail operational safety manager
- Experienced in operational concept and integration of railway, light rail and metro projects.
- Analytical, intuitive and incisive approach with intense customer-focus
- Highly accomplished assessor/ evaluator for new trains, new systems, PPPs and franchises.
- Trained in the application of RADAR / EFQM; and DfT evaluation methods for franchising.
- Trained and experienced in technical evaluation of opportunities for M&A and other transactions.
- Excellent emotional intelligence and cultural awareness

Recent Projects – until August 2015 with Atkins, now with Winder Phillips Associates

Network Rail: 2020 Research and development of a 10-year Network Operating Strategy to address multiple, complex network operating challenges.

Expert Witness: Client Confidential 2020: review and providing expert advice on a platform- train interface accident.

Middle East Light Rail 2020: Confidential: analysis and reporting on the operating concept for a new build LRT PPP project.

Department for Transport TSGN 2019-2020 Pre-Project Phase Technical Advisor: team member working on options for future structure of UK's largest rail franchise.

RSSB 2019-2020 Research and development of a toolkit approach to better train service regulation- team member focused on European/US/Australian benchmarking.

Confidential Systems Supplier 2019: Operational and safety requirements, and assurance of emerging product evolution for signalling, train protection and level crossings for new customers.

High Speed 2 Ltd (2017- 2020): Delivery of Operational Concept Validation workshops for the Head of Operations for HS2 Ltd. Work on critical operations requirements for core systems design. Work on the Operating Concepts for HS2. Work on sequence diagrams to inform core systems requirements.

Office of Road and Rail Regulation (ORR) 2018-2020: Confidential work in Regulatory review of Passenger information processes in GB Rail. Development of a Maturity Model for Customer information performance

Thameslink Programme System Integration (PSI) Team (DfT) (2016- 2018): Operational support to DfT. Evaluation of Industry Partners' approach to delivery including ETCS L2 and ATO. Assessment of current and projected future levels of Performance, PPM, CASL, RT) for progressive phases of the project (reviewing RailSys and ATTOne modelling results). Assurance of Operational Readiness for each phase leading to 24 trains per hour. Origination of PSI approach to threat assessment using GSN – model.



Hong Kong EMSD Railways Branch Safety Management Review (2018): scrutiny of standard of two accident investigations as part of a wider review of the approach to Safety Regulation in Hong Kong. Analysis of immediate, root and contributory causation of Tram/Road vehicle collisions and speeding.

Atkins: Technical Advisor Team ICWC (2017- 2018) part of the Atkins TA team advising DfT on the specification and procurement of the IC West Coast operator to include HS2 Operational Delivery Partner role. Review and advice on Draft ITT regarding HS2 Shadow Operations (TOC) role and on opportunities for Joint Performance Improvement and other Alliance-type activities.

Confidential: Franchise Bid Team (W&B) (2015-2017): work on the operations, performance and infrastructure elements of a UK Passenger Train franchise from long-lead, through PQQ to ITT prep Included. development of options for use of Metro, Light Rail or Tram-Train technologies. Detailed assessment site and project reviews of Sheffield Tram-Train Pilot.

Confidential: Franchise Bid Team (2016-17) part of the Operations and Performance bid workstream-Franchise won.

Expert witness for Confidential Legal Client regarding a serious train operating safety Incident

IPEX / Leigh Fisher: for Essex County Council (2017): Advisory work on Tram-Train concept and system interface challenges as part of a transport and urban planning masterplan.

Grant Thornton for Translink Northern Ireland (2016-17): Provision of rail operations, performance signalling, capacity and safety advice for the Business Case for the new Belfast Hub multi-modal passenger transport project. Review of current capacity, performance and train regulation constraints and development of monetized benefits for the business case. Business Case accepted and work has started.

TPD for Confidential Client (International mining & refining company) (2016) Canada: independent review of rail operational safety management practices against Company requirements in Canada; reporting to Group Safety Director, Australia.

TPD for MTR Hong Kong (2016): Independent review of Operational Rules and Operating Procedures for the South Island Line Fully Automated Metro (GoA4). Lead assessor.

Confidential Client: (2015) Within IPEX: Welsh Government Light Rail Plans for Cardiff: Operations, train protection, wheel-rail interface, regulatory and approvals assessments of options for conversion of a busy heavy rail passenger network to "Light Rail" including evaluation of Tram, Tram-Train and other light rail technologies. Recommended solutions to prospective bidder.

Network Rail: Digital Railway Directorate (2015-16) Operations and safety work in the development of the 'Level A' Systems Architecture. Principal author of the Operational Concept for the Digital Railway.

Confidential Client (2016) Expert witness: provision of technical and operational advice to Solicitors in connection with a significant rail safety-critical operational incident.

Network Rail: 'Planning and Delivery of Safe Work' Independent Assessor (2014-15) Assessment of proposed changes to track worker protection procedures against Common Safety Methods.

2014 Department for Transport / UK Treasury: Sale of Eurostar Safety assessment and peer review of final reports in team undertaking Vendor's Due Diligence, leading to sale of UK share of Eurostar.

2013-14 Department for Transport, Rail Franchising: As part of the Atkins Technical Advisor team assessed tender submissions for the TSGN Franchise (largest UK rail franchise), against DfT assessment model.

2013-14 Transport Scotland, Rail Franchising: member of Atkins Technical Advisor team to Transport Scotland for the Sleeper and ScotRail franchises, evaluation of PQQ and tender submissions, against EFQM/RADAR model. Diligence work on TOC mobilisation and progress with Safety Certification/ Authorisation by the ORR; Prepared TS's Mobilisation Handbook.

New York City Transit: New York Systems Engineering and Asset Management Services (2011-13) Managed two winning 5- year bids for consulting services; and directed first commissions.

US Federal Transit Administration: Streetcar (Tram) Project Portland, Oregon (2011) Review of Safety Plan and Preliminary Hazard Analysis. Advice on disputed track safety issue.

Portugal, Metro Do Porto (2010-2011): Project director for Atkins's work to develop the operational concept, signalling (ETCS-based functionality recommended) and traffic management engineering requirements for the future 3 phases of expansion of Metro Do Porto, a LRT operation in Portugal's World Heritage city.

2010 Australia Gold Coast Rapid Transit: LTA new PPP Tram/Light Rail scheme. Assessment of performance management, safety, operations, crewing, control, station quality, security, business resilience, revenue protection plans for Lender.

RSSB: New Approach to the Rule Book (2009) Led the project to develop the Cost Benefit Assessment (CBA) of the proposed New Approach to the Rule Book to inform the Business Case.



Hitachi: Javelin Class 395: System Integration Report (2008) Developed the systems integration report for new Class 395, 140 mph Javelins for high speed services - extension of testing of the first 4 units.

Hitachi: ETCS Market Entry to UK (2007-2011) Directed a series of commissions for Hitachi in support of development of their ATP system into a compliant ETCS Level 2 Train Control system.

Hong Kong Government, Review of Hong Kong Railway Inspectorate (2007) Major review of the HKRI. Assessments, benchmarking (UK, Singapore, Australia) and stakeholder interviews at C-suite level.

2007: RAIB Level Crossing Accident: Review of Human Factors and Operational Safety aspects of a report contributing to a RAIB investigation into a fatal Level Crossing rail accident;

2006 Expert Witness for Kennedy's (for Network Rail): Level Crossings: on a van/train collision and subsequent civil action at Wadham's North Barn level crossing; and cyclist accident at crossing in Hull

2004-2005 Taiwan High Speed Rail: led a team which produced the Rule Book and Electrification safety instructions and supervised initial testing to the point of first trial runs of the fleet of 300km/h high speed trains.

2002-2006 WCRM Manchester South Alliance: Prepared and authorised all Operational Plans, Operational Safety approvals and Operational Readiness audits and evaluation for £200M capacity & re-signalling project using Ansaldo's new technology. Management of Operations safety case over Stages A, A+ and SHWW).

2002-2005 Railway Safety/ RSSB, UK: Project director of multi-disciplinary team (Operations, Telecoms, , Signalling and Human Factors) delivering implementation plans, operational design and system assurance requirements standards and codes of practice for UK implementation of the ETCS and GSM-R systems.

2003 UK: Dorset Coast Re-signalling Alliance: Operations Safety Review: Preparation of Operational Safety Assessment for New Siemens SIMIS-W interlocking and VICOS control equipment- re-signalling project on UK South-West Main-line working with Siemens Braunschweig Germany and Network Rail. Contributor to Axle counter Operational Integration and engineering possession management.

2003-4 Axle counter concept safety case WCRM: Operations support to team preparing the key safety arguments for system wide application of Axle counters as part of WCRM, including assessment of use on DB.

Over 35 UK/International rail projects (2002-2006) covering public transport security; Positive Train Control; new metro control advice; new rail technologies, ISA on new trains; operations aspects of ERTMS.

Previous Positions Held

- Head of Rail Operations, Technical Director and International Director, Atkins (2002-2013)
- Operations and Human Factors Manager, National ERTMS Planning Team (2001-2002)
- Railtrack HQ, Professional Head of Operational Safety (1998-2001)
- North Western Trains, Professional Head of Operational Safety and OHS, Head of Performance (1997-1998)
- Railtrack Midlands, Safety and Standards Manager (1993-1997)
- Regional Railways and British Rail: Various Operations Safety Management roles (1983-1993)

Qualifications, Professional Associations, wider activities

- B.A. (Hons), Queen's University Belfast.
- Fellow of the Institution of Railway Operators (FIRO).
- Affiliate, IRSE (and E&PD Committee Member).
- Qualified to Professional Head level (Operations and Health & Safety).
- Lecturer on Operations on the Atkins / UCL MSc course in Railway Systems Engineering 2014-2015.
- Lead Tutor TCMS module IRO Degree (Associate Lecturer with Glasgow Caledonian Univ) 2003-07.
- Accredited Lead Discipline (Operations) for Notified Body (NoBo) (UKAS).
- Past Co-Chair INCOSE Transportation Working Group (TWG).
- Yellow Book: Engineering Safety Management System 2 & 3.
- Member of HSE Operational Principles and Guidance working group. 2000-2003.
- Member: Railtrack S&SD/Railway Safety Operations Safety Group, Operations Subject Committee 1995-2001; Communications Working Group 1998-2001; National SPAD focus Group 1998-2002; Signalling Principles Group 1995.
- Member of ATOC Train Operations Safety Group 1997-1998.
- Member of British Railways Board's national Driver Restructuring Initiative Safety Team, who conducted the first study of the relationship between driver working time, fatigue and safety performance 1991-2.
- N.E.B.O.S.H. Diploma (National prize winner).
- Over 10 Professional Lectures and Papers, (details are available on request) for INCOSE in the USA, on System Interface Safety in Taiwan and for the IRO, IRSE, INCOSE RIG and the IMechE in the UK.