

## Career Summary

---

### **Michael Anderson** BSc (Eng) ACGI CEng MIMechE

#### Profile

35 years' experience in the structural design and analysis of mechanisms and structures. Extensive knowledge of hand/classical techniques and analytical software packages for practical applications.

Expert in failure investigations, defect tolerance assessments, fatigue, creep, Finite Element Analysis, design code assessments and structural design

Expert in safety case management, defect tolerance assessments, fatigue, creep, FEA, code assessments, hand calculations and structural design. Been involved in numerous independent peer reviews.

Design codes used: API 579, ASME III / VIII / XI, ASME B31.3 & 31.3, DNV PD 5500, BS 806, BS 5950, BS 7910, BS 7608, BS 8118, BS 2573, BS EN 13445, BS EN 13480, Eurocodes, R3, R5 and R6.

Principal Consultant for Structures at Frazer-Nash. Responsible for technical leadership, advising technical staff, auditing projects, business development, technical development, and the management of projects for structural integrity assessment, finite element analyses and the development of assessment techniques.

On the UK Register of Expert Witnesses. Re-vetted in 2020.

#### Project Experience

- Technical, design and project management responsibility for various nuclear, aerospace, military and commercial projects. Structural design and analysis using finite element methods and hand calculations. Design code assessments to national and international codes. Preparation of quotations, estimates and tenders.
- Expert Witness in an arbitration involving incorrect material specification in a Gearless Mill Drive used in the mining industry.
- Technical Advisor to the arbitrator at a hearing into the design and fatigue cracking of pipework and pressure vessels in a desalination plant. This is an International Arbitration under the Swiss Chambers Institute in London.
- Expert Witness in High Court for transport-related fatigue failures of economiser blocks, providing evidence on transport loading, random vibration, dynamic response, resonance and fatigue. Verdict 100% in favour of my Client for USD\$8M.

#### Date of Birth

1st August 1963

#### Qualifications

Imperial College of Science & Technology, University of London, Mechanical Engineering, BSc (Eng) (1st Class Honours).

#### Membership of Professional Institutions

Associate of the City and Guilds Institute.

Chartered Engineer.

Member of the Institution of Mechanical Engineers.

#### Discipline

Structural Integrity

#### Principal Market Sectors

Power Generation  
Oil and Gas  
Rail  
Aerospace  
Defence

#### Previous Employers

British Aerospace  
Wallace Knight

#### Software Experience

ABAQUS  
DYNA  
FEMGV

#### Contact details

Frazer-Nash Consultancy Ltd  
Stonebridge House  
Dorking Business Park  
Dorking, Surrey RH4 1HJ  
Tel: 01306 885050  
[info@fnc.co.uk](mailto:info@fnc.co.uk)

## Career Summary

---

- Expert Witness in an arbitration involving the design of a sub-sea Umbilical Termination Assembly and associated Mud Mat. Settled in favour of my Client for £500K.
- Expert Witness for over-loading of building structural steelwork, resulting in excessive deflections. Settled in favour of my Client for £150K.
- Expert Witness for the assessment of the fitness for purpose of a bucket elevator system.
- Expert Witness for over-loading and fatigue cracking of rail-mounted dockside coal-handling cranes.
- Expert Witness for the structural collapse of a rail-mounted coal stacker. Settled in favour of my Client for £7M.
- Expert Witness for catastrophic failure of a water treatment centrifuge.
- Expert Witness for racing car transporter ramp failure.
- Expert Witness into the failure of Balcony Door Hinges in a high-rise housing development.
- Assessment of vibration and mis-alignment in skid and container mounted generator sets.
- Independent technical due-diligence review of a very large subsea oil storage tank, covering design, construction, towing, installation, commissioning, operation and disposal.
- Due diligence on behalf of the owner / operator in a dispute with the structural designer of a 130m high solar energy tower.
- Investigation into the manufacturing inspections, fatigue cracking and defect tolerance of wind turbine towers as part of a legal case.
- Investigation into the failure of a large ring bolted joint on a commercial autoclave. Problems identified included incorrect preloading of bolts and inappropriate gasket selection.
- Investigation into cracking of liquid beverage carrying articulated HGV road tankers.
- Investigation into load monitoring and failure investigation of a railway crane.
- Investigation into bodyshell damage sustained by a UK EMU due to welding distortion during a doorway conversion programme. This involved an independent review of the structural analyses carried out, the production techniques employed and development of a repair procedure.
- Investigation into the fatigue cracking of fresh water tanks and chilled water plant on submarines. This involved a review of the OEM design, identification of excessive fatigue cycling, FEA, defect tolerance assessments, proposal of modifications to extend the lives of the pressure vessels to that required.

## Employment History

1987 - Present	Frazer-Nash Consultancy Limited Assistant Consultant, Consultant, Senior Consultant, Principal Consultant, Group Leader, Technical Authority.
1985 - 1987	British Aerospace, Bracknell Stress Engineer
1982	Wallace Knight Ltd Design Draughtsman