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PROFILE

Dr John Ford is Technical Lead for the Mechanical and Electrical investigations with extensive practitioner and regulatory experience in many commercial and industrial settings involving electrical engineering and workplace accident investigation. He also has extensive expertise in other areas.

EXPERTISE

Electrical Engineering	Health and Safety Management Systems
Electrical Fires	Health and Safety in Educational Establishments
Control and Instrumentation	Confined Spaces
Potentially Explosive Atmospheres	Workplace Transport
Workplace Accident Investigation	Mining
Machinery Safety	Rope Cableways

QUALIFICATIONS

IMEMME Honours in Electrical Engineering (Trent Polytechnic).
BSc degree in computing and electronics (Open University).
MBA degree (majoring in strategy) (University of Derby).
Engineering Doctorate degree in systems engineering (University of Warwick).
PGCE in Further Education (Nottingham Trent University).
Qualified NVQ Assessor.
Trained Kepnor Tregoe Analytical Trouble Shooter.
Chartered Electrical Engineer (CEng).
Chartered Scientist (CSci).
Chartered Environmentalist (CEnv).
Fellow of the Institute of Materials, Minerals and Mining (FIMMM).
Member of the Chartered Management Institute (MCMI).
Member of the Institution of Engineering and Technology (MIET).
Health and Safety Executive Mines Qualification Board Electrical Engineers certificate.
Health and Safety Executive Mines Qualification Board Class I Electricians certificate.
Health and Safety Executive Mines Qualification Board Class II Electricians certificate.
Member of BSI EXL/31 committee (Equipment for explosive atmospheres).
Previous member of IEC 60079-35 committee (Mining caplamps).
Member of IEC TC31 WG11 and SC31J WG1 (previously IEC TC31 WG11) committees (electrical installations in coal mines) up to 2013 that produced EN 50628:2016 (Erection of electrical installations in underground mines).
Member of IEC 60079-44 working group (personal competence in explosive atmospheres).
United Kingdom Accreditation Service (UKAS) Technical Expert.
Irish National Accreditation Board (INAB) Technical Expert.

EXAMPLES OF PROFESSIONAL EXPERIENCE

I have worked as a consultant in the food, power generation, mining, chemical, defence, metal production, logistics, recycling and leisure industries solving client's problems with cost effective pragmatic solutions.

Consultancy and expert witness areas that I have worked in:

- a) Food preparation and processing;
- b) Building services including passenger and goods lifts, HVAC and BMS systems;
- c) Electrical Engineering;
- d) Control and Instrumentation;
- e) Potentially Explosive Atmospheres;
- f) Machinery Safety;
- g) Solar Farms;
- h) Wind Turbines;
- i) Waste to energy and recycling;
- j) Rope Cableways;
- k) Mining;
- l) Workplace Transport;
- m) Confined Spaces working;
- n) Work Place Accident Investigation;
- o) Health and Safety Management Systems; and,
- p) Health and Safety in Educational Establishments.

Specifically, I have:

- a) investigated the failure of HVAC systems in in high net worth residential properties;
- b) investigated fires in high net worth residential properties;
- c) investigated numerous passenger and goods lift failures;
- d) investigated transformers, switchgear and blade failures on Wind Turbine installations and am GWO climb trained;
- e) investigated invertors, transformers and switchgear failures on Solar Farm installations;
- f) the electrical engineering and the health and safety advisor in the early contractor involvement of a 360m deep, 37.5km mine tunnel;
- g) retained as the health and safety advisor for a biomass fired power station whose reports were sent direct to the Board of Directors; and,
- h) the fire safety expert for the owners of a biomass fired power station project.

I have also acted as an Expert Witness:

- a) (joint and single instruction for both claimant/pursuer and defence/defender) in civil cases involving electric shocks, electrical fires, machinery safety, confined space working, workplace transport and rope cableways as well as civil insurance claim cases;
- b) (prosecution and defence instructions) in criminal cases involving electric shocks, machinery safety, explosions, mining accidents and workplace transport; and,
- c) in appeals against HSE enforcement notices including appearing at the associated Employment Tribunal.

I have carried out audits for the:

- a) United Kingdom Accreditation Service (UKAS) and Irish National Accreditation Board (INAB) as a Technical Expert for electrical engineering installations including those in potentially explosive atmospheres; and,
- b) Amusement Device Inspection Procedures Scheme (ADIPS) for the assessment of diligence and competence of ADIPS inspection bodies.

Electrical Engineering

- Investigated electric shocks and incidents involving electrical equipment ranging from intrinsically safe voltages to 138kV.
- Has acted as an Expert Witness in personal injury and fire cases involving electrical circuits and equipment.
- HSE Principal Inspector of Electrical Engineering in Mines (2008 – 2013).
- Contributor to the Memorandum of Guidance on the Electricity at Work Regulations 1989 (HSR 25) version 3 in 2013 (published in 2015).
- Contributor to the “Electricity at work – Safe Working Practices” (HSG 85) HSE guidance document version 3 in 2013 (published in 2013).
- Has advised clients on the management of electrical engineering systems.
- Has investigated flood affected electrical equipment.
- Has investigated electrical equipment that was affected by lightning and power surges.

High voltage

- Electrician, Supervisory Electrician, Electrical Engineer (site and headquarters) and Project Manager on European Union mining research projects.

- a) HSE Principal Inspector of Electrical Engineering in Mines from 2008 to 2013.
- b) Investigated accidents including fires of an electrical origin.
- c) Designed and installed 66kV distribution system to a large coal mine. Trained and authorised to switch DNO switchgear up to 11kV.

Low Voltage

- d) First trained in the requirements of BS 7671 in 1979 and have received subsequent training throughout his career as this standard has been updated and changed.
- e) Investigated accidents including fires of an electrical origin.
- f) Electrician, Supervisory Electrician, Electrical Engineer (site and headquarters) and Project Manager on European Union mining research projects.
- g) HSE Principal Inspector of Electrical Engineering in Mines from 2008 to 2013.

Control and Instrumentation

- h) Has acted as an Expert Witness in a fatal workplace accident involving electrical control circuits.
- i) Designed and managed the installation of UK Coal Ltd.'s Deep Mines SCADA system which operated on the world's first Group I certified intrinsically safe Ethernet backbone.

Potentially Explosive Atmospheres

- j) Has acted as an Expert Witness in a fatal workplace explosion.
- k) Investigated explosions as both a regulator and consultant

Workplace Accident Investigation

- l) Investigating inspector on both single and multiple fatality work placed accidents as well as investigating explosions, fires, electrical, control and instrumentation incidents and personal injuries involving personnel/material transport equipment and systems, lifting equipment, machinery guarding, entrapment, crushing and slip trips and falls accidents.
- m) Trained and experienced in using HSE's analytical investigation methods.
- n) Has acted as an Expert Witness in fatal and non-fatal work place accidents cases.

Machinery Safety

- o) Has carried out audits of workplaces against the requirements of the Provision and Use of Work Equipment Regulations 1998 and the Machinery Directive and assisted clients achieve compliance

- a) Delivered training on the requirements of the Provision and Use of Work Equipment Regulations 1998 and the Machinery Directive

Health and Safety Management Systems

- b) Has inspected and investigated the Health and Safety Management Systems of organisations from 2008 to 2013.
- c) Has advised clients on Health and Safety Management Systems.
- d) Has acted as an Expert Witness in an HSE Improvement Notice Appeal involving the safe use of lead.
- e) Fire Safety Expert on the design and build of a biomass fueled electricity generating station.

Construction

- f) Industrial, regulatory and consultancy experience of the CDM regulations.
- g) Trained in GE700 (Construction Site Safety).
- h) Has acted as an Expert Witness in cases involving the CDM Regulations.

Confined Spaces

- i) Has acted as an Expert Witness in a fatal work place accident involving confined space working.
- j) Has advised clients on confined space working.

Workplace Transport

- k) Has acted as an Expert Witness in fatal and non-fatal work place accident cases.
- l) Has acted as an Expert Witness in HSE Improvement Notice Appeals including appearing at an Employment Tribunal.
- m) Has advised clients on work place transport systems.

Mining

- n) Worked as an electrical engineer in the UK mining industry from 1978 to 2013 as an apprentice through to Company Head of Automation and UK Government (Health and Safety Executive; *HSE*) Principal Inspector of Electrical Engineering in Mines working on systems ranging from electronics to high voltage utilisation and distribution systems including process systems and shafts and winding systems. Many of these systems have operated in potentially explosive atmospheres.
- o) Mine Engineering Manager responsible for operations of a division of up to 100 permanent and agency staff.
- p) Designed and managed the installation and managed the installation of the electrical engineering aspects of the most advanced coal face in Western Europe.

- a) Designed and managed the installation and maintenance of the electrical engineering aspects of the only UK underground booster fan system that was never subject to a Dangerous Occurrence report to the Health and Safety Executive.
- b) UK Coal Mining Ltd Group Automation Engineer responsible all automation systems within the company.
- c) Project coordinator for a €2.4 million engineering project for the European Commission consisting of British, German, Spanish and Polish partners.
- d) Has carried out successful research and development on other European Commission mining related projects, including:
 - a) Increasing the Efficiency of Roadway Drivages through the application of Advanced Information, Automation and Maintenance Technologies;
 - b) Researching the applications of open innovative wireless technologies;
 - c) Optimisation of surveillance, technical equipment & procedures to prevent workers from danger attribute to fire, hazardous or toxic gases, firedamp or climatic conditions;
 - d) Improving Mining Transport Reliability; and,
 - e) Prediction and Monitoring of Subsidence Hazards above Coal Mines.
- f) UK Government (Health and Safety Executive; *HSE*) Principal Inspector of Electrical Engineering in Mines:
- g) Inspected and investigated workplace dangerous occurrences, accidents and complaints at all types of deep mines and track mounted cableways;
- h) HSE portfolio topics: Mining electrical engineering policy lead / Control & instrumentation systems / Track mounted cableways / Competence management in major hazards; and,
- i) Has acted as an Expert Witness for a mining equipment manufacturer on a matter involving the failure on initial energisation of a 10kV mining transformer.

Rope Cableways

- e) Has acted as an Expert Witness in a case involving an accident on an aerial cableway involving members of the public.
- f) Whilst working for the HSE (2008 – 2013), he was the Chair of the UK Track Mounted Cableways Industry Liaison Committee and the HSE policy portfolio holder for track mounted cableways. He has also authored the Mines Inspectorate's inspection delivery guide on track mounted cableways.
- g) Has acted as an Expert Witness in a case involving an accident on an aerial cableway.

EMPLOYMENT HISTORY

- a) Envista Forensics – Technical Lead Mechanical/Electrical UK
October 2017 - Present
- b) Finch Consulting Limited – Principal Consultant
2013 – October 2017
- c) Health and Safety Executive (HSE) – HM Principal Inspector of Electrical Engineering in Mines
2008 – 2013
- d) Mines Rescue Service Ltd – Project Manager (Research)
1999 – 2008
- e) Burton and South Derbyshire College (BSDC) – Lecturer
1999 – 2008
- f) Leicestershire County Council – Governor Consultant
1999 – 2008
- g) UK Coal Mining Ltd – SCADA Development Engineer
2003 - 2006

Others available upon request.