



**Dr JOHN DANIEL SHEARD**

**Partner  
(Consulting Scientist)**

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Daniel Sheard has a first class degree in the Natural Sciences, a Masters degree in Microbiology and a Ph.D in Physics/Applied Mathematics. He joined Jarrett Kirman & Willems in 1996, and has been a partner of Brookes Bell since May 2001.

His area of scientific expertise is with regard to the carriage of and deterioration during carriage or storage of a wide variety of commodities; grain cargoes, whole oilseeds, derived agricultural products such as soya bean meal, fertilizers, liquid cargoes such as molasses and edible oils, minerals including ores and concentrates, chemicals, and refrigerated/frozen goods. His work also includes investigating the source of and safe control of infestation of cargoes on board ships. He has dealt with and investigated shipboard cargo fires and explosions in various commodities including coal and DRI (direct reduced iron).

He has attended on board many ships to carry out investigations into the cause and extent of deterioration or infestation. He also provides technical advice based on documentary evidence in cases involving deterioration of commodities on board ships and in warehouses.

In addition to his general casework, he has been closely involved in investigating several cases of heating and deterioration of soya bean meal shipped from India in 1997/1998.

Dr Sheard has had close involvement with safe carriage of materials which may liquefy, and has advised on the safe shipment of nickel ore and iron ore fines in both individual cases and more generally to shipping industry bodies.

He also has expertise in biotechnology, and can advise on the properties and detection of genetically modified (GM) crops.

He has prepared technical scientific reports for, and has given expert witness testimony at, arbitrations and Court proceedings in the United Kingdom and the USA.

He has written a number of articles published in P&I Club circulars and other trade publications, and is co-author of a book on ventilation.

### **Academic Qualifications**

- 1990 BA (first class) in Natural Sciences, Christ's College, Cambridge. Subjects studied included Physics, Chemistry, Cellular Biology and Mathematics. Awarded the Hartree and Clerk Maxwell University Prizes for first place in Physics final examinations.
- 1994 MA, Cambridge.
- 1994 Ph.D in the Physics of Sound Transmission in Arctic Waters, Scott Polar Research Institute/Department of Applied Mathematics and Theoretical Physics, Cambridge.
- 2001 MSc Microbiology (Distinction), Birkbeck College, London.

### **Publications**

- 1992 Sheard, JD & Uscinski, BJ. An Analytical Technique for Solving an Arctic Acoustic Model. European Conference on Underwater Acoustics, pp 39-42.
- 1995 Sheard, JD & Spivack, M. Wave Scattering in a Rough Elastic Layer Adjoining a Fluid Half-Space. *Journal of the Acoustical Society of America*, 97 (1), pp 72-83.
- 2006 Anderson, D, Sheard, JD & North of England P&I Association. Cargo Ventilation. ISBN 0 9546537 5 0.

### **Membership of Professional Bodies**

Member of the Institute of Physics. Chartered Physicist. Fellow of the Institute of Food Science and Technology.

### **Scientific and Consultancy Employment**

- May 2001-present Partner, Brookes Bell.
- 1997-2001 Associate, Jarrett Kirman & Partners/Brookes Bell.
- 1996-1997 Employee, Jarrett Kirman & Willems.

**Academic and Teaching Career**

- 1994-1996 Master of Mathematics and Careers Master, Eton College, Windsor.
- 1992-1994 Lector and Director of Studies in Applied Mathematics, Christ's College, Cambridge.
- 1990-1994 Research Student at Scott Polar Research Institute and Department of Applied Mathematics and Theoretical Physics, Cambridge.

**Particular Scientific and Consultancy Expertise**

Damage to the following commodities:

Bagged products - sugar, rice, cocoa.  
Derived agricultural products - various expelled/extracted seed cake cargoes including soya bean meal, corn gluten feed, sunflower pellets and cottonseed meal.  
Edible oils.  
Fertilizers - general NPK, TSP, ammonium nitrate, etc.  
Chemical commodities.  
Fishmeal.  
Bulk raw sugar.  
Frozen cargoes - fish, meat.  
Grain - maize (corn), wheat, barley, sorghum.  
Minerals - ores and concentrates.  
Direct reduced iron.  
Coal - contamination, fires and safe carriage.  
Refrigerated fruit and vegetable cargoes - pineapples, oranges, bananas, pears, grapes, onions.  
Whole oilseeds - sunflower seeds, soya beans.

Safe carriage of the above commodities.

Warehouse storage.

Infestation and fumigation of cargoes.

Detection of genetically modified (GM) foodstuffs.

Sampling - statistical significance, procedures and requirements.

Cargo fires, self heating, spontaneous combustion and explosions.