

## **Safety and Accident Investigations**

By Professor Graham Braithwaite

Professor Braithwaite treated the Cirencester Science Society to an extremely interesting, entertaining and well illustrated talk about his work and that of Cranfield University in the investigation of major accidents. Although the talk mainly centred on aviation accident investigations it also alluded to marine accidents and dealt in more depth on rail disasters.

The lecturer explained that many of the attributes essential to good scientific research were equally important in the field of accident investigation. One of the key essentials for a good investigator is to continually ask why and not readily to accept the evidence of bystanders and the judgments made in the media. He listed the main reasons for the need to have investigations which include; legal requirements, the need to learn from failures and the allocation of responsibility. Accident investigation bears similarities with jig saw puzzles often requiring an ability to piece together disparate fragments of evidence with great care and patience.

Graham Braithwaite's talk dealt in some depth with a number of recent major aircraft accidents as well as a train accident in Australia in 2003 with which he had been involved. Dealing with the common view that many accidents are caused by human error he focused on the relatively recent engine failure of a Quantus Airbus A380 that made a miraculous safe return to Singapore airport largely because the very highly qualified crew were able to override some of the automated signals they were being given by the onboard systems.

In his talk Braithwaite gave examples of poor ergonomic design in working environments that contributed to human error. In the serious rail crash just outside Sydney in 2003 in which the driver and many passengers were killed due to the train de-railing as a result of over speeding on a bend, detailed investigation threw up many contributing factors. One was that the particular units involved were difficult to control but another was that the poor ergonomic design of the cab encouraged drivers to adopt unapproved and potentially dangerous methods of working.

This fascinating talk brought home the dangers inherent in modern travel but also an appreciation for the thoughtful and professional way in which accident investigation is handled in this country.