

## **Dr Michel A. Masson, Safety Action Coordinator and HF Expert, EASA**

Michel became Safety Action Coordinator at EASA 1<sup>st</sup> October 2006. He is Secretary of the European Strategic Safety Initiative (ESSI) and its three components: the European Commercial Aviation Safety Team (ECAST), the European Helicopter Safety Team (EHST), and the European General Aviation Safety Team (EGAST). He represents ECAST on the European Human Factors Advisory Group (EHFAG), an international authorities-industry team advising EASA on Human Factors.

Michel has a PhD in Work and Organisational Psychology from the University of Liège, Belgium and is an approved ISO 9001 auditor.

Before joining EASA he worked with, or for, the European Commission Joint Research Centre (JRC) Ispra, Boeing, Airbus, ATR, Dédale, Aerospatiale, EUROCONTROL, Air France, and the Institut Français pour la Sécurité Aérienne (IFSA). He led the development the first JAR 66 Chapter 9 course for Air France in the late nineties when he was project manager in the French company Dédale.

On the academic side he has been a lecturer at the ENAC in Toulouse (F) and the Universities of Liège (B), Eindhoven (NL), and Aix-en-Provence and Saint-Quentin-en-Yvelines (F).

His paper was co-authored with EASA's Jean-Pierre Arnaud.

### **Title: EASA & SMS Regulation in Maintenance and Engineering**

The paper highlights the contribution of maintenance errors to accidents and the need to prevent and catch such errors through improved Safety Management on the maintenance side. It stresses that 50% are due to deviation to the procedures, data or rules and therefore focuses the next challenges on better understanding of "behaviour and attitude" and thus training and awareness.

The paper goes on to consider the development of OPS rules on Management Systems in Europe and the current rulemaking task MDM.055 on Management Systems for Maintenance & Engineering and the associated timescales.

The paper then describes the European Human Factors Advisory Group (EHFAG) which assists EASA and European NAAs in integrating HF into their activities and the Sub-group Maintenance and Engineering's 5 priority areas.

## **Philip Sleight, Principal Inspector of Air Accidents, Air Accidents Investigation Branch**

Philip joined the AAIB in 2002 and has been involved in over 200 investigations, including an accident to a Boeing 747 in Halifax in 2004, the Boeing 777 at London Heathrow in 2008, the Nimrod XV230 in Afghanistan in 2006 and the accident to a Super Puma helicopter in the North Sea in 2009.

Prior to joining the AAIB, Philip was an Aircraft Systems Design Engineer with British Airways Engineering, having initially started his career there as an Apprentice Avionic Engineer in 1988.

Philip holds a first class honours degree and is a Chartered Engineer. He is a member of the International Society of Air Safety Investigators, a member of the Chartered Management Institute and a Fellow of the Royal Aeronautical Society and is an active member of the RAeS Human Factors Group and the RAeS Human Factors Group: Engineering.

### **Title: Human Performance & Systems: Experience from Recent Accidents/Incidents**

Over the last few years the AAIB has been involved in accident investigations which have resulted in issues with the “system” and the human in the system. The performance of the human affected the outcome and was a direct result of shortcomings within the complex systems and interactions. The lecture provides information on three recent incidents and accidents which all have similar factors. The incidents involve the incorrect adjustment of elevator trim tabs on a B737 which resulted in control difficulties, a high speed taxi test on a Falcon business jet to evaluate a brake problem which resulted in a fire and the loss of oil from both engines on a Dash 8 following the replacement of two oil coolers.

The recommendations from these investigations have been to:

- Improve clarity in test schedules, manuals and procedures.
- For regulators to review regulations, continued airworthiness and human performance limitations (such as fatigue)
- For operators to clarify roles, responsibilities for staff conducting tests and to reflect this in procedures and training.

## **Group Captain Simon Brailsford MVO RAF, Inspector of Royal Air Force Flight Safety**

Group Captain Brailsford is the Inspector of Royal Air Force Flight Safety at Air Command Headquarters, High Wycombe where he is responsible for all aspects of RAF Flight Safety.

Specialising in Tactical Air Transport operations, he has contributed to many recent operations both in the air and on the ground. His broad portfolio of air safety-related appointments includes; the fleet supervision of routine and operational air transport sorties, operational air policy and contingency planning, command responsibility for UK and foreign airfield operations and more recently operational liaison roles with the USAF and within NATO.

Group Captain Brailsford is a Liveryman of the Guild of Air Pilots and Navigators, a member of the Air League and the St. Moritz Tobogganing Club. He is also Chairman of the Chichester Royal Air Force Association and the RAF Bobsleigh, Skeleton and Luge Association.

### **Title: Error Management in the RAF - the Sweat and the Tears**

Throughout its history, the Royal Air Force has striven to be at the forefront of aviation. It has prided itself in its ability to deliver effective Air Power underpinned by a strong flight safety ethic. As the understanding of the importance of human factors in aviation has grown, the RAF has sought to reflect this development in its approach to flying training. It has long been the case that aircrew have been educated in human factors issues. However, further developments in this field has resulted in a need for the RAF to revisit its approach to human factors training and to address the importance of effective human factors measures not only amongst aircrew but amongst all our personnel.

The development of a coherent human factors and error management programme across the RAF as a part a wider Safety Management System has not been without its challenges. This presentation will explore some of the challenges faced, not least finding the manpower resource, engendering a just culture, countering system drift, and driving change in an organisation rich with sub-cultures.

## **Rod Arnold, Aircraft Operations Manager, British Antarctic Survey**

Rod joined BAS in 1989 as a biologist. During this time he worked in both Polar Regions delivering science in the Antarctic and Arctic. He then moved in to a logistic support role organising the UK field programme for the delivery of science in the Antarctic. This involved everything from recruiting mountaineers, organising fuel depots and field camps to on site tasking of BAS' four Twin Otters and Dash 7 (operated on the Falkland Island register). This was accomplished through comprehensive planning six months prior to the field season, which involved liaising with forecasters and pilots, and interpreting satellite photographs and weather reports to plan the daily activities for the Antarctic summer season.

In 2008 Rod undertook a role as project manager to change aircraft operation from Private to Corporate category in compliance with OTAR 125. Much of this was developing an aircraft specific SMS using infrastructure that BAS already had in place – for example, an accident reporting system. Since that time Rod has been developing SMS, auditing the air operation and working towards IS-BAO accreditation at Level 2.

### **Title: Bringing SMS in from the Cold**

The British Antarctic Survey has an unusual responsibility to staff in the Antarctic. The environment is challenging and the range of activities wide - construction, ship cargo handling, diving, aviation, aerodrome operation and remote travel in mountainous glaciated regions. Added to this there is a 24 hr duty of care including normal recreational activities but also those involving mountaineering and winter sports.

Many procedures are written but the Survey also relies on the handover of knowledge between different teams both spatially and over time. The development of a good safety culture is key. The analysis of information from the safety reporting scheme is essential in detecting trends or areas of weakness in procedures and practices.

The Aircraft Engineers are contracted in from the maintenance organisations for Antarctic engineering support. The tour period is long and the difficulties and risks more similar to “normal” operations than would be expected. Duty periods and working time are often more difficult to manage than environmental and operational challenges.

The 24hr nature of the Survey's responsibility to all staff in the Antarctic, including healthcare, allows the comparison of medical consultations (respecting the essential medical confidentiality laws) with the data available in the safety reporting scheme. Qualitative analysis of this information allows for comparison of Bases and ships crews who use the same company procedures yet show differences in safety culture. Ways of improving and embedding a good safety culture will be explored but proactive leadership seems to be the key to the success.

**Mick Adams, Managing Director, Monarch Aircraft Engineering and Technical Director, Monarch Airlines**

Mick has worked for Monarch for over 23 years and prior to his appointment to Managing Director he undertook the role of Maintenance and Operations Director where he was responsible for all operational elements of the business, including Base and Line Maintenance, component overhaul, management and procurement, and also leads the company's Safety Management team.

Mick has worked for Monarch twice – his first stint with the company spanned 18 years, followed by a period working for Harrods Aviation serving as Technical Director, Maintenance Sales Director and Operations Director, before returning in 2005 to head up Monarch's Aircraft Maintenance division.

He is a fully licensed aircraft engineer trained originally in avionics and is also a member of the Institute of Directors, a Fellow of the RAeS and a member of the RAeS Human Factors Group: Engineering. Having worked in the military, test, business and commercial aviation sectors, Mick has a very broad knowledge base and has presented at several aviation and safety-related conferences, universities and training facilities.

**Title: Human Factors and Engaged Engineers**

Monarch Aircraft Engineering has introduced to its Safety Management System a MSAVI scheme (Monarch Standards and Values Information), designed to emphasise the need to personally 'Value' the benefits of doing things safely. MSAVI also communicates any safety related information across the business typically, within 24 hours of any safety related event.

By concentrating its SMS around the personal and business values, Monarch has continued to build on its already high levels of employee engagement. The presentation will provoke the question around values and compliance and will show how the engineers have made a personal contribution to Monarch's SMS.

## **Alan Eccleston, former Chief Airworthiness Engineer, Rolls-Royce**

Alan joined Rolls-Royce in 1974 with a first class Honours Degree in Aeronautical Engineering. He has covered a wide range of roles, mainly in engineering including installations, noise, airworthiness experimental and repair and overhaul. He has worked on nearly all the major civil projects that the company has undertaken in recent years.

In his last role as Chief Airworthiness Engineer, he had responsibility for all the Companies Safety processes globally and a UK based team responsible for airworthiness and air safety investigation.

He retired from Rolls-Royce in August 2011.

He is a member of the Royal Aeronautical Society and Vice Chair of the RAeS Human Factors Group: Engineering.

### **Title: Safety Promotion: A Successful Intervention Strategy**

In this presentation Alan Eccleston gives an example of a successful human factors intervention strategy that was used in the Rolls-Royce network of repair and overhaul shops around the world.

He describes a high profile incident on a commercial aircraft which was nearly catastrophic. This event was then used to illustrate the importance of human factors in maintenance, repair and overhaul.

He describes how the investigation unfolded and how the human factors that were identified related to the repair and overhaul shops in the Rolls-Royce network. The use of a serious real life example provided a successful intervention strategy in those facilities and he analyses the factors that made it successful.

**Dr William Johnson, Chief Scientific and Technical Advisor for Human Factors in Aircraft Maintenance Systems, Federal Aviation Administration**

Dr Johnson has spent over 30 years as a senior executive and scientist for engineering companies specialising in technical training and human factors. Joining FAA in 2004, he is the top FAA person responsible for research and technical programs related to human performance in maintenance/engineering.

He is an Aviation Maintenance Technician and has been a pilot for over 45 years. He earned his Ph.D. from the University of Illinois in 1980, where he also served as a Professor at the Institute of Aviation. Since then, he has published extensively on human factors and technical training in many industries. He has delivered hundreds of speeches in nearly 50 countries.

Dr Johnson is a long-standing member of the International Society of Accident Investigators, and the Human Factors and Ergonomics Society. He is a member of the Royal Aeronautical Society, the International Federation of Airworthiness and the Flight Safety Foundation. He is a past winner of the FAA Plain Language Award. He applies that plain language to his publications and to his spoken words.

**Title: Pulling it All Together**

Dr Bill Johnson will have needed to listened carefully and taken good notes as his job is to combine the best thinking and words of all today's presenters to "pull it all together" and highlight:

- What is working?
- Where are the challenges?
- What are the next actions for conference attendees and their organisations?

Inevitably Dr Bill will also find a way to mention some of the most interesting SMS and Human Factors activity going on in North America!