Terema
TEAM · RESOURCE · MANAGEMENT

MDDUS

COME FLY WITH ME

What can doctors and dentists learn from the aviation industry? Former BA pilot **Phil Higton** and MDDUS medical adviser **Rob Hendry** provide some curious insights.

Come Fly With Me

What can doctors and dentists learn from the aviation industry? Former BA pilot **Phil Higton** and MDDUS medical adviser **Rob Hendry** provide some curious insights.

Flying an aeroplane and treating a patient safely are more similar than many people at first might think.

On the 8th of January 1989, two pilots faced with potentially confusing and ambiguous information on the reason for smoke and vibration in their aircraft shut down the serviceable right-hand engine and left the failing left-hand engine running at reduced power. The flight from Heathrow to Belfast was diverted to East Midlands airport. Fifteen minutes later the left engine failed completely at low altitude and the aircraft crashed on to the M1 at Kegworth some 900 metres short of the runway, killing 47 people and seriously injuring 74.

On the 31st of March 2004, a consultant surgeon took a patient to theatre with the intention of removing the right diseased kidney but removed the patient's transplanted kidney instead. The General Medical Council determined that the surgeon's fitness to practise was impaired because of misconduct and inefficient professional performance, and suspended the surgeon's name from the Medical Register for a period of twelve months.

In both these incidents neither the pilots nor the surgeon set out to cause any harm, however, apparently simple errors were made with catastrophic results.

More "human" than hero

In the first half of the 20th century both aviation and surgery were generally acknowledged as risky enterprises, with both pilots and surgeons often cast in the role of courageous heroes. Times have now moved on and commercial passengers and patients attending hospitals and general practitioners do not expect to die or to be seriously hurt in the process.

Perhaps it is because plane crashes are more dramatic and of greater commercial impact than individual cases of medical misadventure that the aviation industry is further ahead than the medical profession in the area of risk management. Having passed through the era of the hazardous early days, aviation, like medicine, made huge technological strides in safety from the 1960s to the 1980s, with the increasing robustness of engines and air frames together with the development of simulators which allowed hazardous manoeuvres to be practiced safely. However, despite such advances, aircraft continued to be lost and many of the accidents involved crews who were at the top of their profession with no evidence of lack of knowledge or flying skill. The pilots involved often did well in technical examinations or flight simulator evaluations. Analysis revealed that the failures were often due to simple, ubiquitous, human fallibility, or the inability to function as an effective team. These have become known as 'human factors'.

Analysis of the Kegworth air crash showed that a number of human factors could critically affect the way a team undertook complex activities. For example, at least one junior steward on the ill-fated flight heard the Captain say he was shutting down the "right engine" when he had seen sparks and flames coming from the "left" engine. The steward said nothing to the crew on the flight deck rationalising this dissonance by telling himself that pilots talk of port and starboard so "right" must mean "correct".

The Captain at the controls was a senior and highly experienced pilot. Few would argue that experience is not a positive attribute in a professional but it can also be a two-edged sword. With increasing experience one would expect to carry out most tasks more easily, effectively and safely but how easy it is to overestimate

our ability and, worse still, for others to overestimate us? How would a registrar raise concerns if she suspected that a senior consultant surgeon was about to remove the wrong (not right, or was it left) kidney?

Technology itself can also be a contributing factor, reducing operator demands, as it was designed to, but also lowering arousal levels and causing basic skills to atrophy. Resolution of a technological failure is often distracting and requires an understanding of the assumptions upon which the device functions, in addition to an understanding of the issue which it is designed to address.

Passenger safety -- a model for healthcare?
Human factors training has been developed to address such issues. It starts by acknowledging fallibility and then seeks to manage it. It is not a cure, but by developing skills in this area, together with those of effective teamwork, safety is enhanced. What then for healthcare? Are any of the lessons and techniques developed in aviation transferable? There is an undoubted resonance between the two worlds. Both operate in environments that are unforgiving of error. Both also involve effective teamwork.

The aviation industry has tapped into a now considerable body of knowledge about the limitations to human performance. To this end the industry puts considerable effort into Crew Resource Management (CRM). The Civil Aviation Authority has made CRM training mandatory.

The first stage of the introduction of CRM in aviation (which became Team Resource Management (TRM) in other fields) was primarily an academic exercise. Investigations into human performance and limitations borrowed heavily from medical insight and were written by doctors or psychologists. Topics such as aviation physiology and aviation psychology evolved. But mere knowledge was not enough. We, as aviation practitioners, had to incorporate that knowledge and understanding into our professional behaviour. Pilots, engineers, cabin crew and their managers had to work together to incorporate the principles into best practice not just for the individual but also for the team.

To replicate this development in healthcare presents a twofold challenge. The first is to learn from others' experience of what works and what does not work so as to compress the learning timeframe. Aviation has taken 20 years to accumulate its current level of insight. The second is for all the types of healthcare professionals to act out this learning in their work environments and mould it to fit with their practice. The principles will always be the same but their expression will be best described, articulated and enacted by those who perform the task.

Safety is not a single event or even something that we "do". Safety is a notion which should inform our every action. The challenge now to the healthcare profession is to learn from the long, hard experience of others and adapt that experience to ensure that medical errors – minor or catastrophic – become an increasing rarity.

. Captain Phil Higton is Director of Training at the team resource management and human factors training firm, Terema
. Dr Rob Hendry is a medical adviser at MDDUS

Human Factors and Safety Masterclasses

MDDUS is excited to be working with Terema in the area of Human Factors Risk Management. Terema, an organisation run by a group of British Airways pilots and doctors who are experts in this area, is helping various NHS organisations improve team working in terms of skills, communication, use of resources, accurate situational awareness and effective problem solving.

Terema trainers have many years experience in teaching Crew Resource Management (CRM) within the airlines and have adapted their methods to suit the National Health Service in particular, with the aim of creating a culture in which patient safety is increased through more effective working across teams. They also run training in any environment where safety and efficiency are important.

Over the coming year MDDUS and Terema will be jointly hosting several 2-day Masterclass events for members and their teams. The course is essential for any doctor, dentist or manager with an interest in patient safety.

If you wish to learn more about these, or book a place on our event, contact Liz Price on 0141 228 1239 or on lprice@mddus.com.