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Hudson River Landing: Importance Of Human Factors

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Hudson River Landing Demonstrates The Importance Of Human Factors Training

Incidents such as the recent landing of the aircraft in the Hudson River after an apparent bird strike and subsequent double engine failure are one of the reasons why airlines throughout the world undertake human factors training for their pilots and air crew.

This is the view of a New Zealand-based human factors training specialist, Werner Naef, of Wellington, a former Swissair international pilot and a Swiss Air Force fighter pilot, with more than 30 years experience in aviation training.

"Human factors training recognises the personality of the people involved, and how to manage the messages in and out of their own personal 'black box' to make sure that they respond in the right way," he said. "Airline pilots spend many hours in training for emergencies in simulators, and experience shows that in the real situation, this training proves very helpful, but training is only one component, the other one is personality.

"Most airlines spend considerable resources in assessing personality, attitude, skills and potential when recruiting pilots. Some only look at the numbers, flight hours and not so much at the human factors. The employer might be very unpleasantly surprised when it comes to this applicant pilot getting into a stress situation. Accident reports document such cases. A sound recruitment programme could have discovered strengths and weaknesses that remain an unknown factor otherwise until tested in real life. It is just too late (and too dangerous) to find this out when an emergency occurs.

"By recognising the personality, we can actually predict how they will react, and then train to ensure that the crews can make the right decisions under stress in an emergency situation."

Mr Naef said that landing any aircraft in a river, with no loss of life or major injury was an extraordinary achievement, and the pilot must be congratulated, but it took a team effort to get everyone out and away safely. It is very easy for panic to set in among passengers and then the crew has some difficult situations to manage. Even the crew themselves are only human and must have their own concerns too.

"Clearly, the personalities and training of all crew members involved – including those that helped in rescuing passengers and crew from the icy waters of the Hudson river – were the right mix in this event."

Early human factors training was developed by NASA specifically for their astronaut training programme. It included observing behaviours, and comments, and recognizing the early warning signs that a person is going into distress mode.

In high risk industries, behaviours are absolutely critical. NASA acknowledged the importance of understanding the specific link between personality traits and behaviour as early as 1978. They were aware that if an astronaut gets under pressure, any distraction could have a disastrous impact on the mission.

"There is no time-out option out there in space, Mr Naef said. "For NASA it was clear: If someone goes outside their comfort zone and slips into any of the known distress modes, they and other crew members need to know what such behaviour means. They must know what's going on and what they can do about it. By stopping (someone) being pushed even deeper into distress they avoid even more dire consequences."

The aviation industry was among the first to pick up on this and other human factor risks, and instituted training to meet the need, which is now mandatory across the industry. Now this training is being applied across a much broader range of industry and business. One of the programmes, entitled the process communication model (PCM), is unique, allowing decoding of human behaviour, and early recognition of stress and distress.

"Every one of us has a personality, and we all have 'baggage' from the past, right from our inherited traits, our 'baby life' of 0-7 years, our education, our work and life experiences, and our relationships inside and outside the workplace. All this influences us when we get into stressful situations. If you are flying an aircraft and all engines cut out, you have very little time to refer to a manual of instructions. Similarly, if you are driving a high speed train, or making critical decisions in an operating theatre, you are under stress. You need to make good decisions quickly.

"It is not only systems training and 'best industry practice' that ensure proper decision making under pressure. The human being needs to function at its best levels as well in such critical situations," he said.

Captain Sullenberger of US Airways flight 1549 had certainly demonstrated a clear, focussed mind when deciding for a ditching against a more risky all-engines-out landing on an airfield amidst a highly populated area. Attitude, skills, experience, knowledge and mental preparation for the unexpected helped this extraordinary professional to perform at the very top of his potential under extreme conditions.

"In industries with less robust training regulations, and less articulated recruitment practices, but still with considerable risk involved in terms of losing money, high staff turn-over, low morale, lack of direction, absenteeism or a lot of 'Mondayitis', managers can take advantage of what has been developed and implemented in aviation's and space exploration's training departments," Mr Naef said. " In medicine for example this transfer is ongoing : from aviation's non technical skills programme, similar programmes have been developed and are being used by anaesthesists and surgeons. These are now recognised behavioural markers systems in medicine.

"Well trained managers or specialist staff assisting at the same time can intervene if they are trained to recognise the symptoms of stress and distress in their colleague. Often by intervention, the disaster can be avoided. That is what this programme is all about."

Mr Naef holds a Postgraduate degree in psychotherapy (1981), and has been a board member of the European Association for Aviation Psychology for many years. Last year, he was only the third ever recipient of the EAAP special award for achievement in aviation psychology. Mr Naef now champions human factors training across a range of high risk industries such as airlines, high speed rail, defence and health sectors, as well as business, education and community organisations.

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