



***Human Factors in
Emergency Situations:***

Importance of ***clear and reliable
processes.***

Clear and reliable processes can make a difference and save lives in emergency situations.

The Piper Alpha disaster and the Hudson River landing miracle.

An emergency is a situation that requires immediate reaction and is supported by a clear, reliable and reiterated process. All emergencies have one thing in common: people are prepared and understand emergency procedures; this understanding, or lack of, plays a vital role in determining what the outcome of the situation will be. There are two events in particular that are embedded in history, but have drastically different outcomes. The Piper Alpha disaster and the landing of Flight 1549 on the Hudson River which both relied on processes and people. Strikingly different, both changed history forever.





Piper Alpha

It was 6th July 1988. 167 lives were lost.

At around 12pm, two pumps were used to collect Piper Alpha's gas to be transported to the coast. Pump A's pressure safety valve has been removed for maintenance and temporarily replaced with a flat metal disk. The job couldn't be finished before the end of the shift at 6pm, so the disk stayed in place, but no handover has been given to the night shift workers. What comes after is still deemed as the deadliest catastrophe in the oil and gas industry. It was attributed mainly to human error, but it was so much more than that.

“The safety policies and procedures were in place: the practice was different.”

Lord Cullen (Volume 1, page 3)

What went wrong?

The Piper Alpha disaster was investigated by Lord Cullen, who made 106 recommendations, all of which were accepted and changed the oil and gas industry forever.

Inductions for newcomers to the platforms were minimal or non-existent, so from the beginning people were put in danger. There was confusion as to who should receive a refresher training. Several of the crew were not aware of the location of the life rafts or even how to launch and inflate them.

The Offshore Installation Managers of each of the three platforms (Piper Alpha, Claymore and Tartan) were put in a situation they were not prepared

for. They'd never considered a scenario where one of the platforms was disabled. There was no centralised and joint training, and no preparation for scenarios involving all three platforms. The inquiry found that the delay and indecision on Claymore and Tartan platforms could've been avoided with joint training.

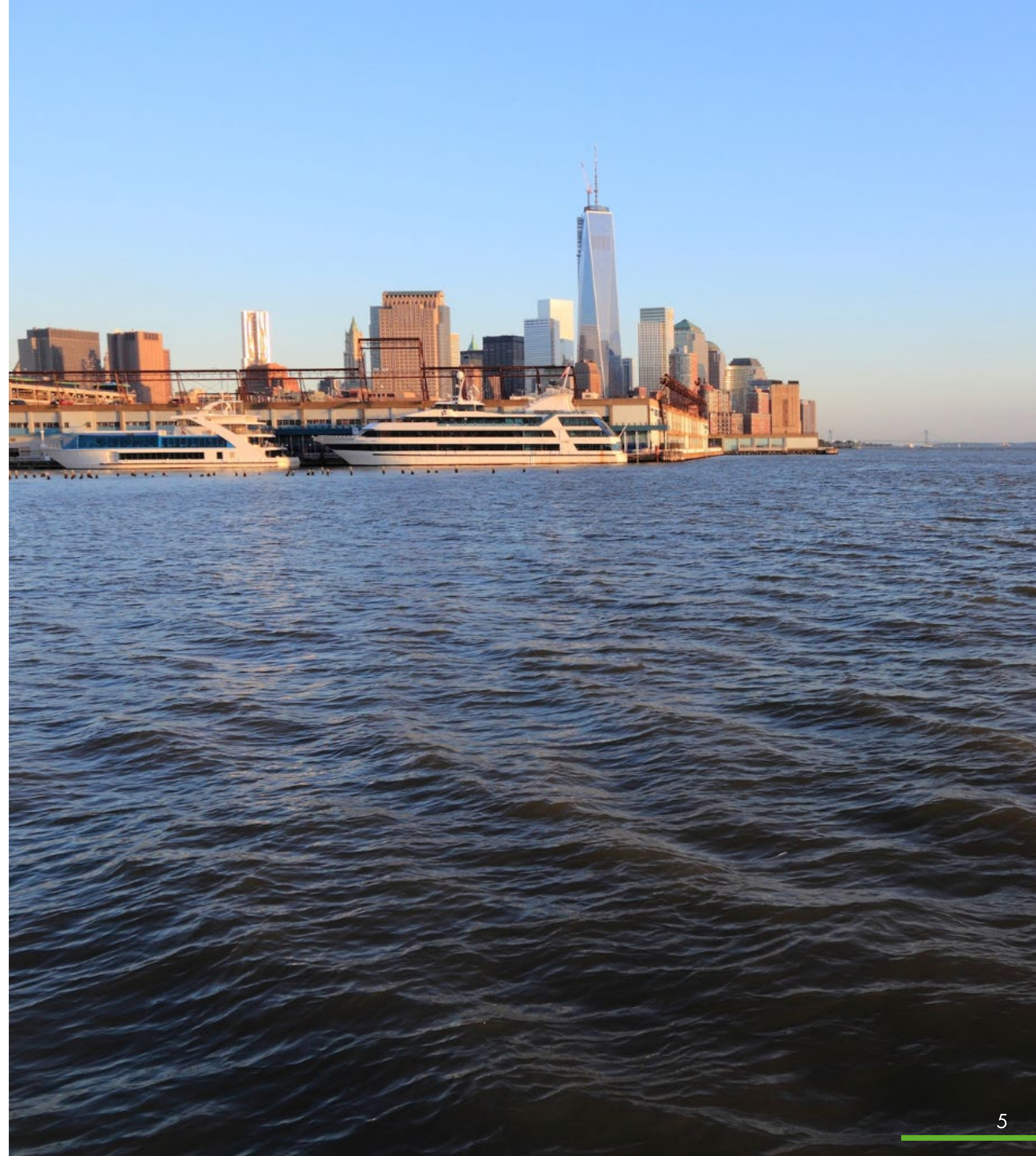
The Offshore Installation Manager on the Piper Alpha platform was in a state of shock and was unable to take control of the response or evacuation. Repeated, clear and reliable training could've minimised the impact shock had on his response.

It's important to underline that the safety processes without effective inductions and refresher training are counterproductive. Lord Cullen, in his report, remarked that “the safety policies and procedures were in place: the practice was different” (Volume 1, page 3).

Hudson River Landing

It was 15th January 2009. 155 lives were saved.

At around 3.25pm, an Airbus A320 operated by US Airways took off from LaGuardia. Two minutes later a flock of Canadian geese clashed with an aircraft, damaged both engines and subsequently caused both of them to fail. Capt. Chesley Sullenberger took control to focus on the situation and make decisions, while his co-pilot, Jeffrey Skiles, started on the checklist procedure. Jeffrey completed formal training on that plane, which proved to be a huge advantage. Sullenberger was knowledgeable in airline incidents and organisational safety, which contributed to the success of this emergency. This event is often called Miracle on the Hudson, but it has very little to do with supernatural, and everything to do with a human role in emergency situations.



“Everything is unprecedented until it happens for the first time.”

Chesley B. Sullenberger

What went right?

The Hudson River landing has been investigated by the National Transportation Safety Board and concluded that the decision made by Sullenberger had been appropriate.

Co-pilot Jeffrey Skiles completed his formal training on an Airbus A320, so he knew exactly where to look and what to do in an emergency in this particular aircraft.

Robust training regulations ensured that the whole crew knew the procedure, what is expected of them and what is an appropriate course of action. Both pilots played a huge role in the safe landing of the plane, but the

cabin crew made sure all the passengers disembarked the aircraft safely. Only a few people experienced serious injuries and it is believed that Sullenberger successfully retrieved his luggage before leaving the aircraft.

Air traffic controller, Patrick Harten, had been involved in 15 previous bird strikes. None of them were that extreme, but it gave him a good experience and prepared him for what can happen.

Both captains and air traffic controller were communicating clearly and calmly.

The air travel industry is well-known and established as one of the most regulated and safest industries in the world. No procedure is flawless, but robust, predictable and reliable processes that are practiced regularly prove to give a huge advantage and contribute to safety of the crew and the passengers.



Conclusions

Predictability, reliability and practice are key factors in emergency situations. Predicting various scenarios that can occur can help you prepare for every possible situation. Reliable processes are regularly practiced, ensure safety of everyone and everything involved and can quite literally save lives.

The Piper Alpha disaster is the world's deadliest ever oil rig accident, while the Hudson River landing is a wonder. It is solely in your hands and hands of your leaders which side your organisation will be on. Will it be a disaster like Piper Alpha or a „miracle“ like landing on the Hudson River?

DEKRA works with all levels of your company to make the best decision to protect lives and assets. We have the expertise and experience to help organisations to become more prepared for and ready to respond to emergencies.

DEKRA Organisational & Process Safety

DEKRA Organisational and Process Safety are a behavioral change and process safety consultancy company. Working in collaboration with our clients, our approach is to assess the process safety and influence the safety culture with the aim of making a difference.

In terms of behavioral change, we deliver the skills, methods, and motivation to change leadership attitudes, behaviors, and decision-making among employees. Supporting our clients in creating a culture of care and measurable sustainable improvement of safety outcomes is our goal.

The breadth and depth of expertise in process safety makes us globally recognised specialists and trusted advisors. We help our clients understand and evaluate their risks, and we work together to develop pragmatic solutions. Our value-adding and practical approach integrate specialist process safety management, engineering, and testing. We seek to educate and grow client competence in order to provide sustainable performance improvement. Partnering with our clients, we combine technical expertise with a passion for life preservation, harm reduction and asset protection.

We are a service unit of DEKRA SE, a global leader in safety since 1925 with over 45,000 employees in 60 countries and five continents. As a part of the world's leading expert organisation DEKRA, we are the global partner for a safe world.

We have offices throughout North America, Europe, and Asia.

For more information, visit www.dekra-uk.co.uk/en/dekra-organisational-and-process-safety/

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