

TerranearPMC Safety Share

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Week of March 26, 2018 – The Anatomy of a Tragedy

It was on March 11; a Sunday evening in New York City when a helicopter plunged into the East River, killing five people. Only the pilot survived. For those not familiar with New York City, New York's East River separates the Boroughs of Manhattan from Queens and Brooklyn, and therefore, the incident was not in a remote location. As such, the crash was witnessed by many people and was even caught on smart phones from bystanders, capturing the entire descend into the chilly waters.

The helicopter was flying along a popular route for sightseers who want to view the Manhattan skyline. But witnesses said it was flying too fast and descending too quickly. From high-rise apartment buildings and parks along the river, people watched as the helicopter lost altitude as if it were landing on solid ground, finally descending into the chilly water. Its swirling rotors chopped into the river, eventually coming to a stop as it tilted, capsized and began to sink shortly after 7 p.m.

Preliminary information from an interview with the pilot of the Eurocopter AS350, suggests a passenger's harness somehow got wrapped around the fuel shut-off switch, accidentally cutting off the fuel supply to the helicopter and resulting in engine failure.

According to the records, the pilot radioed "Mayday! Mayday! Mayday!" reporting "engine failure" just before the helicopter went down in the East River between East 86th and East 96th streets near Manhattan's Upper East Side. A 16-member "Go Team" from the National Transportation Safety Board arrived at the scene to investigate the cause of the crash while the Federal Aviation Administration assisted in the investigation.

A witness to the incident saw the pilot escape and climb to the top of the wreckage while yelling for help. A flotilla of tugboats and emergency boats converged on the crash site, a couple of hundred yards north of Roosevelt Island, and began a frenzied search for others on board. Emergency responders dived into the water to rescue the passengers, who were tightly harnessed in and had to be cut out.

The water current was estimated to be 5 miles per hour with a temperature below 40 degrees. The responders pulled the passengers out of the submerged helicopter and brought them ashore. Despite the rescue efforts, all five passengers did not survive. Two were declared dead at the scene and three died in local hospitals.

It appears that this accident occurred not because the helicopter was not properly maintained or the pilot was lacking in training requirements. Records indicate that there was no pilot error or poor judgement-decision. The emergency response was conducted in a timely manner by highly trained and qualified individuals. This accident happened because of a very "inconsequential" and peripheral event that would not normally be addressed in a pre-flight checklist. That is, a passenger's harness caught the fuel shut-off switch. Why did this happen? Investigations will probably never find the specific answer to this as it could have happened upon initial placement of the harness or possibly the result of the particular passenger moving his/her body to observe the



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scenery and thereby, unknowingly, repositioning themselves placing the harness around the shut-off switch.

Based on current safety theory, typically referred to as *Zero-Accident Philosophy*, this tragedy could have been prevented. But how? Maybe the shut-off switch should have been situated closer to the pilot and away from passengers: in other words, the helicopter could have been engineered or designed so that the shut-off switch was placed away from possible contact by passengers. Of course, the pilot should have performed (and most probably did) a visual inspection of each passenger's position. And possibly the passengers should have been instructed to note the location of the shut-off switch, while communicating that a helicopter has limited space and that everyone needs to be cognizant that controls are within close proximity so contact needs to be avoided. Should a control be contacted, the pilot should be notified immediately (also part of the instruction). Such provisions are categorized as administrative controls. And while suspected (although not confirmed), such instruction was probably conducted, persons may have been too involved with their sight-seeing and may have never noticed if they inadvertently contacted a control. After all, it can be assumed that flying in a helicopter was not a routine event for them, not fully understanding the necessity to maintain a certain level of diligence as to their location as it relates to helicopter operation.

When we perform our hazard identification for field work and subsequently develop the appropriate controls to be written in our S&H plans, there is a strong likelihood that not every hazard is identified. typically, many of the field hazards that are initially identified in our safety plans are based on previous experience either through process knowledge or subject-matter expertise.

When field work initiates, it is not uncommon for other hazards – that were not initially identified in the safety plan - to be discovered and therefore require revisions to this document. For instance, while working on a drilling project, all the hazards inherent with drilling may have been addressed, however, some peripheral steps such as a method for cutting material, (that would be difficult to know about due to the specific nature of the material or unique process) could be missed. As such, a risk to laceration, not previously identified during the initial S&H program development, might only be identified after S&H document approval, which would demand revision to S&H documents. The point is, being proactive requires implementation of corrective actions to occur as soon as possible. A delay of this step could result in an unfortunate event.

This why many S&H professionals go over the “What If” scenarios. While many of these potential events may appear to be far-fetched, if the consequences are severe enough and the likelihood of the event to occur is plausible, then implementation of the appropriate actions must be considered. In the case of the helicopter accident in New York's East River, through examining “What If” scenarios for flying helicopters for visitors, and with all the obvious hazards associated with helicopters, quite possibly identifying the possibility of a passenger harness getting caught onto the engines shut-off switch could have been addressed, thereby avoiding the devastating consequence of the deaths of five people.

Our greatest weakness lies in giving up. The most certain way to succeed is always to try just one more time. Thomas A. Edison

