NYC Helicopter Tragedy - East River
March 11, 2018

5-Why Cause Map™
Impact to Safety
- 5 fatalities, drowning
- Passengers trapped in helicopter upside down
- Passengers unable to exit aircraft quickly
- Passenger wearing fall protection harnesses
- Helicopter was flown with "Doors off"

4-Why Cause Map™
Impact to Safety
- 5 fatalities, drowning
- Helicopter inverted in water
- Helicopter rolled to one side
- Floats didn't inflate evenly?

Water Landing
Impact to Safety
- 5 fatalities, drowning
- Helicopter came down in water, moderate impact
- Pilot directed aircraft toward East River
- Pilot decided Central Park risk was too high?

Loss of Engine
Impact to Safety
- 5 fatalities, drowning
- Engine loss of function
- Engine lost fuel supply
- Emergency fuel shutoff valve closed
- Restraint of front passenger hooked around valve
- Passenger leaned back to take picture of their feet

Pilot Survived
Impact to Safety
- 1 survivor (pilot)
- Pilot exited aircraft quickly
- Pilot seatbelt buckle designed for quick release

Harnesses
- 5 fatalities, drowning
- Passengers wearing fall protection harnesses

Floats
- 5 fatalities, drowning
- Helicopter inverted in water
- Helicopter rolled to one side
- Floats didn't inflate evenly?

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An incident occurs when the different holes align with a straight line passing through all the slices. To avoid the incident at least one of the slices needs to be misaligned.

Swiss Cheese Model
Accident Causation Model developed by James Reason
An incident occurs when the different holes align with a straight line passing through all the slices. To avoid the incident at least one of the slices needs to be misaligned.

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15-Why Cause Map™
A Cause-and-Effect

Impact to Safety
5 fatalities, drowning
Passengers trapped in helicopter upside down in water

Passengers unable to exit aircraft quickly
Passenger wearing fall protection harnesses

Harnesses

15-Why Cause Map™
A Cause-and-Effect

Loss of Engine
Pilot performed auto-rotation
Engine loss of function
Emergency fuel shutoff valve closed
Restraint of front passenger hooked around valve

Water Landing
Helicopter came down in water, moderate impact
Pilot directed aircraft toward East River

AND

Pilot decided Central Park risk was too high?

Helicopter not buoyant, doesn’t float

Floats
Helicopter rolled to one side
Emergency floats didn’t inflate evenly?

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Accident Causation Model developed by James Reason
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