Self-Induced Pressure

- Pilot was trusted to fly client’s children
- Air charter broker used Island Express exclusively
- Pilot’s relationship with client was friendly, and pilot likely did not want to disappoint client
No Outside Influences

No pressure placed on pilot by:

• Island Express Helicopters
• Air charter broker
• Client
Pilot’s Decision to Continue Flight

• Pilot’s flight into IMC was inconsistent with his typical judgment, company expectations

• Pilot’s plan continuation bias
  • Becomes stronger as flight nears destination
  • Lack of an alternative plan
Pilot’s Loss of Outside Visual References

- Helicopter climbed rapidly into cloud layer and IMC while in a gradual left turn
- Pilot’s loss of outside visual references required transition to instruments
- Pilot’s loss of outside visual cues can lead him to experience vestibular illusions
Spatial Disorientation

- Inner ear (vestibular system)
- Provides pilot with balance and orientation

“The Leans” illusion gives a pilot the perception of flying straight and level when actually in a turn.

Source: saintlukeskc.org
Spatial Disorientation-Operational Distraction

• Controller asked pilot to “ident”
• Pilot’s communication with controller, pushing “ident” button introduced distractions
• Interruptions in pilot’s instrument scan, head and hand movements would make pilot more vulnerable to misleading vestibular cues
Spatial Disorientation

• Helicopter began to bank more steeply, exacerbated effects of “The Leans”

• Pilot experienced second vestibular illusion
  • Somatogravic illusion
  • Incorrectly perceived helicopter was climbing when it was descending
Spatial Disorientation Accidents

- From 2010-2019: 184 fatal aircraft accidents related to spatial disorientation, 20 of which were fatal helicopter accidents
- Cue-based training can reduce risks related to flight under VMC into adverse weather
Spatial Disorientation Simulation Technology

- United States Helicopter Safety Team has established goals for promoting wider use of spatial disorientation technology.
- Objective research is needed to evaluate efficacy of spatial disorientation technology and training.
Safety Management System

- Safety policy, safety assurance, risk management, and safety promotion
- President of Island Express aware of but not involved with SMS
- SMS was not required by FAA
- Company did not implement entire SMS
Safety Management System

- Director of operations was accountable executive, monitored flight risk analysis forms
- No evidence company performed internal evaluations or hazard analysis using completed forms