

7/25/2014 Changes to Original Report

The helicopter impacted terrain during a sightseeing flight scheduled to fly from the island of Maui to the island of Molokai and return. Visual meteorological conditions prevailed at the departure airport; however, scattered rain showers and low clouds were forecast and reported along the helicopter's route of flight. When the accident occurred, the helicopter was flying over mountainous terrain and likely traversing down one of several ridges leading from Molokai's central peaks toward the lower terrain near the shoreline in marginal weather conditions.

Several witnesses reported that the accident occurred between rain squalls, and one witness reported that it occurred during a heavy rain squall. All of the witnesses reported that heavy localized rain showers with strong gusting wind conditions existed around the time of the accident. Two witnesses reported that their attention was drawn to the helicopter when they heard a "whoop whooping" sound. One of these witnesses observed the helicopter descending from the ridgeline, and the other witness, who was closest to, and had the clearest view of, the accident helicopter, reported that the helicopter went "straight down" and impacted the ground.

The debris field leading up to the main wreckage was about 1,330 feet long and consisted mostly of pieces from the fenestron, which is a shrouded tail rotor, indicating that the fenestron separated from the helicopter before the main wreckage impacted the ground. The remainder of the helicopter was accounted for at the main wreckage site except for the outboard portion of the right horizontal stabilizer, which was not identified in any of the recovered wreckage.

A detailed examination of the wreckage indicated that the accident sequence of events likely began when the pilot failed to maintain sufficient terrain clearance, and the horizontal stabilizer and lower forward portion of the fenestron impacted vegetation and/or terrain. The upward and aft loading at the horizontal stabilizer, more pronounced on the right side, sheared the right attachment fittings, which allowed the right side of the stabilizer to travel aft. The combined loading from the horizontal stabilizer and the fenestron's impact with vegetation and/or terrain ~~induced a buckling instability in the aft tail boom that~~ caused the stress in the forward flange of the junction frame to exceed its ultimate design strength. The forward flange of the junction frame fractured, which allowed the fenestron to separate from the tailboom. The torque input from the tail rotor drive shaft caused the separated fenestron to rotate counter-clockwise, which ~~coupled with the upward impact forces~~, drove the lower portion of the fenestron into the main rotor disc, where it was impacted at least three times on the left side. After the fenestron separated from the tailboom, the helicopter lost yaw control, and its center of gravity shifted forward, which caused it to become uncontrollable and, subsequently, descend to the ground.