

Field Notes

CEN14FA122

Bell 206L3, N207DS

Silt, CO

Accident date/time - 1/27/2014 @ 11:18 am MST

NTSB IIC – John Brannen

Bell Tech Advisor – Mark Stuntzner

Rolls Royce Party Member – Casey Lehman

FAA – Matthew Green (Salt Lake City FSDO)

11/28/2014 – On-scene.

The FAA representative had already been on-scene and was gathering maintenance records when NTSB, Bell, and Rolls Royce representatives arrived at the accident scene about 2:00 pm MST. The wreckage was located in a valley between hills. There was scattered snow cover on the terrain. There were two sets of power lines. One set of power lines ran predominately north-south. This set of power lines ran on single wooden poles. The second set of power lines ran predominately east-west and were suspended on dual support pole structures. There were two static lines at the top of each pole and the power lines ran below the static lines. This set of power lines was higher than the set that ran north-south. It was reported that the south static line was severed. The helicopter was reported to have been conducting powerline patrol operations on the lower north-south running set of powerlines.

The helicopter came to rest on its left side facing west. The main fuselage structure exhibited crushing in an upward/right direction that was consistent with an impact on the left bottom of the fuselage. The tail boom was separated from the fuselage. The tail boom was broken into two pieces. The forward portion of the tail boom to include the horizontal stabilizer was located about 150 feet from the main wreckage. The aft portion of the tail boom including the tail rotor gearbox and tail rotor was located near the main wreckage. The landing gear skid tubes were separated from the cross tubes. The left skid tube was broken approximately where the forward cross tube attached. The cross tubes were broken loose from their mounts to the fuselage with the forward cross tube completely separated. The rear cross tube remained within the fuselage penetration for the tube, but was not attached. Both main rotor blades were separated from their roots. The root section of each blade remained attached to the blade grips which remained attached to the hub. The hub remained attached to the mast which was still connected to the main rotor gearbox. Various aircraft components were found around the area of the

accident site and were photo documented. The work conducted on 11/28 consisted of photo documentation of the scene in preparation for removal of the wreckage. The salvage crew began removal of the wreckage for transport to the salvage facility.

11/29/2014 – Work on this day consisted review of the maintenance records and travel to the salvage facility (Beegles Aircraft Service).

11/30/2014 – Wreckage exam at Beegles Aircraft Service. The wreckage of the helicopter was laid out in a heated, enclosed facility.

The collective control was predominately intact from the collective stick to the point of attachment at the hydraulic actuator on top of the fuselage.

The anti-torque pedals on the right side were separated from the pushrod. The pushrod system was intact to the bellcrank at the bottom of the broom-closet. The vertical pushrod within the broom-closet was separated from the rod end at the bottom. The pushrod system through the tunnel at the top of the fuselage was not examined. The pushrod that ran from the bellcrank just aft of the rear cabin bulkhead was still attached to a portion of the bellcrank. The bellcrank arm was broken. The aft end of this pushrod was still attached to the next bellcrank at the bottom. The upper part of the bellcrank was still attached to the pushrod that ran through the tailboom. The pushrod was broken into several pieces. One break coincided with the forward separation point of the tailboom. The pieces of the pushrod were matched and a section of the pushrod was found to be missing during the wreckage review. The missing portion was approximately 2 feet in length and is presumed to have remained at the wreckage site, possibly obscured by snow. The aft rod end of the pushrod was fractured. The threaded portion remained in the pushrod while the spherical rod end portion remained attached to the bellcrank on the tail rotor gearbox. The tail rotor gearbox was separated from the tail boom. The tail rotor would turn when rotating the input shaft of the gearbox. Actuation of the bellcrank confirmed actuation of the pitch angle of the tail rotor blades.

The cyclic system was examined and the yoke that connects the right and left cyclic sticks to the mixer at the bottom of the broom closet was fractured into 3 pieces. The yoke remained attached to the mixer and the right cyclic. The fractures were in the arm of the yoke connecting the left cyclic. The two vertical cyclic pushrods within the broom closet remained attached at both the mixer and the connection above the fuselage near the hydraulic actuator.

All of the various control linkages on top of the fuselage remained attached and intact up to the swash plate. The ears where the pitch change links to the main rotor blades attached had broken loose from the rotating portion of the swash plate. The upper portion of one pitch change link pushrod remained attached to the bellcrank on the blade grip. The lower portion of this link along with the broken ear from the swash plate was found on top of the fuselage. The upper rod end and pushrod barrel for the other pitch change link remained attached to the bellcrank on the blade grip. The remainder of this pitch change pushrod was not found.

No anomalies were found with respect to the flight control system that could be attributed to a pre-impact condition.

The tail rotor driveshaft components were located and laid out on the shop floor. All of the hanger bearing mounts had been separated from the tailboom with the exception of the most aft hanger bearing. Five sections of the tail rotor driveshaft were recovered. One section was not located during the exam and is presumed to have remained at the accident site.

Examination of the rotor mast revealed a spiral scrape through the paint that started just above the swash plate and progressed upward toward the blade hub. The lower fixed portion of the swash plate assembly was fractured. The main rotor blades rotated when rotation of the input coupling was performed.

No anomalies were found with respect to the drive system components that could be attributed to a pre-impact condition.

The engine was removed from the helicopter for further examination. Both the compressor and power turbine could be rotated by hand with no binding or scraping detected. The compressor and turbine blades that were visible showed no abnormalities. N2 drive train was free and continuous from 4th stage power turbine wheel to the N2 tach generator gearbox. N1 drive train was continuous from the compressor to the N1 tach generator gearbox. The power turbine governor sustained impact damage. The upper and lower chip detectors were clean when removed. No fuel was found in the inlet line on the fuel control. The fuel line between the check valve and the fuel nozzle contained a small amount of fuel.

No anomalies were found with respect to the engine or its systems that could be attributed to a pre-impact condition.

The forward fuselage, upper and lower wire strike cutters, and the center spine of the windshield showed no evidence of a wire impact.

The tail rotor driveshaft cover had marks consistent with a main rotor blade impact.