

On May 20, 2020, at 0933 local time, a Bell Helicopter, Inc. OH-58A aircraft, N153SA, registered to and operated by a commercial-rated pilot, received substantial damage during a precautionary autorotation near the town of West Branch, Michigan. Visual meteorological conditions and light winds prevailed at the time of the accident. The personal flight was being conducted under the provisions of Title 14 *Code of Federal Regulations* (CFR) Part 91 without a flight plan. The pilot and passenger were not injured. The local flight originated from the pilots private heliport (89MI) at approximately 0830L.

According to the pilot he and his elderly father were on a flight to survey flood damage in the nearby town of Midland, Michigan. During the return portion of the flight, at approximately 500 feet AGL, the pilot noticed a vibration of unknown origin and immediately elected to perform an autorotation to an open field they had just flown over. The pilot turned the helicopter approximately 200 degrees to the left during the autorotation to complete a run-on landing. The pilot further stated the helicopter hit the ground hard and skidded 20-30 feet prior to coming to rest. During the impact one main rotor blade drooped and struck the tail boom. The pilot then shut down the helicopter and waited for all motion to stop prior to egressing from the aircraft. Fire and medical personnel were notified and arrived shortly thereafter. There was no post-impact fire, and no ELT was on board.

Photographs show impact damage to the tip of one main rotor blade as well as the top of the tail boom and tail rotor driveshaft. The tail boom also showed compression damage to the underside near the fuselage-tail boom junction. No other damage could be detected from the photographs, and the pilot's mechanic could find no other damage during his inspection. The helicopter was loaded onto a trailer and moved to the mechanics hangar for future repairs.

During questioning the pilot could not describe the location nor the frequency of the vibration prior to his decision to perform an autorotation. The pilot did believe he was in a low rotor RPM condition during the autorotation and subsequent impact. Additionally, the passenger stated he felt no vibration prior to the autorotation and only knew something was wrong once on the ground. Follow-up inspection by the mechanic has found no outward cause for the vibration felt by the pilot at this time.

Weather report at KY31 airport at 1435 UTC was: wind 090 degrees at 4 knots, visibility 10 statute miles, clear, temp 18, dew point 05, and altimeter 30.27.