



MEMORANDUM FOR RECORD

Stephen Stein
Air Safety Investigator
National Transportation Safety Board
Office of Aviation Safety – Western Pacific Region

NTSB Accident Number: WPR17LA143
Aircraft Registration & Make/Model: N442DR; Robison R-44 II
Accident Location: Ronan, Montana
Accident Date: July 6, 2017

Note: The following interviews were documented by the Investigator –In-Charge (IIC), Stephen Stein.

Interview #1 Summary

Brad Bone
Accident Passenger

Interview date and time: October 9, 2018; 1212 PT

Mr. Bone reported that he accidentally reported that the helicopter turned counterclockwise in the statement he submitted. He meant to note that the helicopter rotated clockwise in the air (nose to the right). Additionally, the helicopter continued to rotate about 90° to the right after impact.



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Interview #1 Summary

Dan Corcoran
Accident Pilot

Interview date and time: July 10, 2017; 0828 PT

Mr. Corcoran stated that about 45 minutes into the flight, he experienced some loss of tail rotor authority as they started spinning at an approximate rate of one revolution every 5 seconds. The pilot flattened the main rotor blades to descend. They spun a total of about 6 times during the descent from an altitude of about 350 ft. When he was about 5 ft above the ground, he let the helicopter drop to the surface. The helicopter never lost power during the flight nor did the pilot observe any vibrations or warnings/annunciations.

Interview #2 Summary

Dan Corcoran
Accident Pilot

Electronic mail record date and time: October 4, 2017; 1314 PT

The pilot reported that the pedals were “mushy” with a greatly reduced degree of effectiveness when he first observed the loss of tail rotor control.

Interview #3 Summary

Dan Corcoran
Accident Pilot

Electronic mail record date and time: November 16, 2017; 1525 PT

According to Mr. Corcoran, he had completed about 350° of his intended full orbit when the sudden inadvertent spinning occurred. He immediately depressed the left rudder and likely maintained the left pedal input until the helicopter impacted the ground.

Interview #4 Summary

Dan Corcoran
Accident Pilot

Electronic mail record date and time: November 17, 2017; 1403 PT

Mr. Corcoran reported that he orbited the cow at an approximate 150 yard radius. He further remarked that the throttle was at its maximum setting when he entered the orbit and he did not adjust the throttle between orbit and impact.

Interview #5 Summary

Dan Corcoran
Accident Pilot

Electronic mail record date and time: September 24, 2018; 1005 PT

The accident pilot stated that he lowered the collective control to flatten the main rotor blades immediately after he determined that he had lost tail rotor authority after the helicopter had turned one quarter of a complete revolution to the right. He further remarked that he immediately rolled the throttle off to the idle position after he lowered the collective.



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Interview #1 Summary

Thom Webster
Air Safety Investigator, Robinson Helicopter Company

Interview date and time: September 5, 2018; 0900 PT

Mr. Webster stated that during an orbit, an unanticipated right yaw might be induced if the pilot is slow to react on the anti-torque pedals.

Interview #2 Summary

Thom Webster
Air Safety Investigator, Robinson Helicopter Company

Electronic mail correspondence date and time: March 18, 2019; 1059 PT

The content below was excerpted from an email exchange on the abovementioned date and time.

“Concerning the R44 II accident near Ronan, Montana on July 6, 2017:

The pilot reported that while flying at approximately 300 feet agl and 35 knots, he experienced an uncommanded right yaw (a clockwise rotation when viewed from above the helicopter) which could not be stopped with left pedal input. The helicopter continued to rotate as it descended and then impacted the ground hard. The accident investigation revealed no pre-impact anomalies with the helicopter.

Based on the available evidence, the accident was likely a result of low rotor rpm due to over-pitching the main rotor. During low speed maneuvering, a pilot can lose awareness of the helicopter power setting. If collective pitch is increased excessively, the power required by the main rotor exceeds the full-throttle power available, causing rotor rpm to decrease. Since tail rotor rpm is tied to main rotor rpm, the tail rotor speed also decreases. Although the engine is still providing maximum torque to the main rotor, the tail rotor is unable to provide adequate counter-torque since the thrust is greatly reduced due to the low rpm. This is effectively loss of tail rotor effectiveness, but loss of effectiveness due to low rpm is not typically considered when referring to LTE. I believe our Safety Notice SN-34 is applicable to this accident.”

Interview #3 Summary

Thom Webster

Air Safety Investigator, Robinson Helicopter Company

Electronic mail correspondence date and time: March 19, 2019; 1319 PT

The content below was excerpted from an email exchange on the abovementioned date and time.

“Remember there is a throttle correlator attached to the collective. If the collective goes down (rapidly), the correlator will close the throttle (rapidly). This takes us from low RPM to almost no RPM.

Yes, having some altitude would be beneficial in this situation, but topping the list is roll the throttle wide open, then lower the collective, this will allow the engine and rotor RPM to rise back up to 102% while reducing the yaw, then both main and tail rotors are working efficiently and you can pull in collective to slow, or possibly, stop the descent and the tail rotor can now stop the yaw.

Take a look at page 3-10 of the R44 POH regarding Low RPM Horn & Caution Light. Not so much an emergency procedure but more of a normal procedure.”



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Interview #1 Summary

John O’Neil
Eyewitness

Interview date and time: August 16, 2017; 0815 PT

According to Mr. O’Neil, he was outside on his property when he observed the helicopter fly overhead at a low altitude. He surmised the helicopter was about 50 ft over the 100 foot tall pine trees. At the time of the accident he was outside with his family herding his cows that had walked into his neighbor’s property. The helicopter was flying north initially and then entered a loop to the west, south, and then returned to the north. As the helicopter started flying north again, the witness heard a “rev” sound and then the tail started spiraling. The helicopter then started to descend behind the tree line. The engine sounded normal and continuous with the exception of the “rev” sound. He subsequently heard the helicopter impact trees. He further stated that the helicopter spun counterclockwise (nose to the left) from his view.

Interview #2 Summary

John O'Neil
Eyewitness

Interview date and time: April 10, 2019; 0755 PT

In a subsequent statement, Mr. O'Neil stated that he recalled the helicopter making left hand turns in the air, but could not fully recall what direction of rotation the helicopter spun as it descended. He did recall that the ground scar from the right skid tracks appeared to have slid to the right.