



MEMORANDUM FOR RECORD

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

NTSB Accident Number: WPR17LA188
Aircraft Registration & Make/Model: N61NM; Robinson R-44 Raven II
Accident Location: Eldorado Hills, California
Accident Date: August 25, 2017

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

Interview #1 Summary

Andy Matischak
Owner of Accident Helicopter

Interview Date & Time; October 23, 2017; 1235 PT

Mr. Matischak stated that the helicopter had been leased to a flight school in Utah with the plan that it would be returned before TBO. The flight school informed the owner that they would be returning the helicopter to him in one week. When the helicopter arrived, one of the ferry pilots described the helicopter as “tired and lethargic.”



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Interview #1 Summary

Chase Eldridge
Flight Instructor, Utah Helicopters

Interview Date & Time; December 7, 2017; 1506 PT

According to Mr. Eldridge, he piloted the helicopter from Utah to California to return the helicopter to the owner. He has accumulated a total of about 300 flight hours in the accident helicopter and remembered from the time they received the helicopter, it was noticeably underpowered. The helicopter was not dangerous, but it wasn't as powerful as an R44 Raven II should be. Other than the reduced performance, he did not experience any problems with the helicopter. When he dropped the helicopter off, he informed the owner that the governor was not responsive and that it was "underpowered." He did not remember using the verbiage "lethargic" or "tired."

Interview #2 Summary

Chase Eldridge

Flight Instructor, Utah Helicopters

Interview Date & Time; December 7, 2017; 1506 PT

Mr. Eldridge reported that the other instructor and himself had reported the performance issues they experienced with the accident helicopter directly to the mechanics who serviced the aircraft numerous times. The company had difficulty arranging mechanics to service the helicopter due to scheduling constraints with the mechanics. As a result they would use any mechanic that was available at the time. The mechanic who worked with the accident helicopter the most and who was the last to service the aircraft, physically performed the inspections on location at Utah Helicopters as it was not his full-time job. Ultimately, they assumed the engine was tired, which led them to manage the performance issue by refraining from landing in areas with high terrain elevations and high loads.

Utah Helicopters used two methods to report aircraft problems: 1) instructors and pilots could note the problems on the back of the hobbs card in the "squawk list" and 2) instructors and pilots could report the problem on the operator's online tracker, which would ground the aircraft until the issue was addressed. Mr. Eldridge reported that he always used the squawk sheet to report problems with N61NM and did not use the online tracker as he did not consider the problem to be serious.



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Interview #1 Summary

Dave Monsen
Flight Instructor, Utah Helicopters

Interview Date & Time; December 7, 2017; 1522 PT

Mr. Monsen reported that he likely accrued about 100 hours of flight time in the accident helicopter during its time with Utah Helicopters. He described the helicopter as a “dog” that was underpowered from the moment it arrived, but passed inspection and ran fine, so they continued to operate it. The helicopter didn’t perform as well as a normal R44, but they managed the performance deficiency by limiting the weight with passengers.

Interview #2 Summary

Dave Monsen
Flight Instructor, Utah Helicopters

Interview Date & Time; January 25, 2017; 1530 PT

Mr. Monsen reported that he and other instructors cautioned each other before flying in the accident helicopter. Additionally, the communicated the performance issues they experienced in N61NM to the company owner. During an initial flight in the helicopter, they were flying an instrument approach and started to pull power, but observed a low rotor rpm indication. They quickly perceived the indication as a problem with the governor.

Interview #3 Summary

Dave Monsen

Flight Instructor, Utah Helicopters

Interview Date & Time; January 25, 2017; 1701 PT

The flight instructor reported that they had a way to write-up squawks in the company's internal flight management system for discrepancies that required immediate attention. A notation in their flight management system would ground the aircraft until the problem was resolved. Additionally, the company had a whiteboard where minor discrepancies were notated. Mr. Monsen did not recall if he squawked the helicopter on the whiteboard, but knew he didn't enter into the company's flight management system because they were still able to fly the helicopter. He raised the performance issue with other flight instructors and management a few times, but was told they were looking into it, so he decided to manage the problem during flights. Additionally, he would report the performance problems directly to the mechanic and then follow-up with them at a later date, but the mechanic would consistently report that everything checked out. The instructors would perform maintenance flights in the aircraft and then report the same issues to the mechanic again. Eventually a mechanic reported to him that the aircraft was "old" and "tired," which made sense to Mr. Monsen as the helicopter engine was near overhaul.



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Interview #1 Summary

Gary Hanson
Utah Helicopters

Interview Date & Time; December 7, 2017; 1438 PT

Mr. Hanson stated that their company owns a total of 6 Robinson R22's and 1 Robinson R44 helicopter, which replaced the accident helicopter. The company employs 6 full time flight instructors and 1 part time flight instructor for their 25 active students.

They leased the accident helicopter for about 2 years, during which time it accumulated an additional 500 flight hours. The agreement with the owner was for them to perform all required maintenance on the helicopter. The flight school has had two accident in its history; one in 2007 and another in 2012.

Utah Helicopters has been using IA Maintenance for about 10 years for their servicing and has not experienced any problems with their work. Their shop is based at another airport, but they normally comes to the school in Spanish Fork, Utah and do the required maintenance on-site.



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Interview #1 Summary

Ivan Elmy
Airframe and Powerplant Mechanic

Interview Date & Time; January 29, 2018; 1609 PT

Mr. Elmy stated that he went to Robinson Helicopter School in 2004, began working on Robinson helicopters shortly after and started working with Utah Helicopters in 2007. The mechanic stated that he has been employed as a full-time aviation safety inspector with the United States Forest Service since January 2016. After he started this new job he reduced his work as a mechanic to after hours or on weekends. At the time he was servicing the accident helicopter after January 2016, he was performing inspections on helicopters 1-2 times per year and all aircraft about 12 times a year to keep his inspection authorization current.

He would always drive to Utah Helicopter's facility, located about 30 minutes from him, to perform maintenance on their helicopters. He did not keep any work orders. Mr. Elmy stated that he would bring a range of his own tools (including a magneto synchronizer and compression gauge), but Utah Helicopters had the special tools for Robinson aircraft and onsite compressed air.

The mechanic was asked how he confirms proper valve movement and he stated that he uses the results from the compression test to determine if he has a leak in one of the valves. He further reported that he does not remove the rocker covers to check for valve movement and has not complied with Lycoming Service Bulletin 301B in several years because it is not “required” and that the owner of Utah Helicopters instructed him not to perform any maintenance on the helicopter unless it was required.

After Utah Helicopters began its lease and took possession of the helicopter, the mechanic received some complaints about low power. In response, he completed a 19 step low power checklist and could not recall if they ever determined the source of the power issue. Initially, pilots would report problems to the flight school owner who would report them to him, but more recently they started to contact him directly.



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Interview #1 Summary

Kenton Kiaser
Accident Pilot

Interview Date & Time; August 28, 2017; 1110 PT

According to the pilot, he hadn't flown a Robinson R44 in a couple of months. The accident helicopter had been leased to a flight school in Utah and the owner invited Mr. Kiaser to fly the helicopter after it had recently been returned. The pilot invited a friend of his who wanted to take aerial photographs. He then completed a preflight inspection, flew the airport traffic pattern and then taxied to the fuel pumps where he added about 20 gallons of fuel to the helicopter. They subsequently departed runway 25 about 400 lbs under the helicopter's gross weight and flew to Meadow Vista. After the passenger took some aerial photographs, they flew over Folsom Lake. The passenger obtained permission from a friend to land on his property. The pilot then entered the friend's property from the north about 150 feet over the lake at an approach airspeed of approximately 75 knots. He transitioned into an in ground effect hover over the property owner's pool deck, but the downwash from the main rotor started to blow debris into the pool. The owner pointed at the ground to indicate that the pilot should land on his pool deck. At the time his manifold pressure gauge indicated about 22 inches. The pilot decided to find another landing site, so he backed up the helicopter over sloped terrain at a lower elevation. As soon as the

helicopter backed over the sloped terrain, the pilot heard the main rotor rpm start to decay and the rotor horn engage. He then rolled the throttle and watched the manifold pressure increase to 26 inches, but didn't see an improvement in the helicopter's performance. He then added full power (28 inches of manifold pressure), which increased the rotor rpm to about 96%. The pilot dropped the collective, which restored the rotor rpm temporarily, so he completed a pedal turn to the right, but did not successfully find another suitable landing site. He announced to his passenger that he was going to land on the solar panel arrays below them. When the helicopter touched down he instructed the passenger to evacuate the helicopter. The passenger jumped out of the helicopter and the pilot then manipulated the collective and observed the rotor rpm return to 102%. He was able to climb the helicopter to about 10 feet above the solar panels, at which point the rotor rpm began to decay again. The pilot was concerned the helicopter would crash through the solar panels, so he decided to touch down in a sloped grass area about 50 feet away. As the helicopter moved towards the grass area, the pilot observed a vibration, but was unable to hold rotor rpm. He swung the helicopter nose to the right and settled into the grass, but the left skid made contact with the ground and the helicopter dynamically rolled over and came to rest on its left side.

Interview #2 Summary

Kenton Kiaser
Accident Pilot

Interview Date & Time; October 20, 2017; 1434PT

The accident pilot stated that he brought the engine up to 75% and performed a magneto drop test and then brought the engine up to 100% power and performed another magneto drop test. He did not recall if he waited for the magnetos to completely stabilize before he captured the measurements.

He recalled that the helicopter owner and his mother purchased the accident helicopter with about 280 flight hours on it. The accident pilot had flown the helicopter since the current owner purchased it. At the time of the accident, he flew it for both personal use and as a trainer.

On the day of the accident, he pulled the helicopter out of the hangar and observed that it only had about 8 gallons of fuel. During his preflight inspection he discovered that a headset didn't work. He then started the helicopter, and hovered it for about 30 seconds, departed and completed one loop in the airport traffic pattern. The pilot then landed near the fuel pump and added 20 gallons. Subsequently, the passenger arrived and boarded the helicopter using the malfunctioning headset, which only allowed the user to hear transmissions. He did not perform an out of ground effect hover before the accident.

Additionally, he reported that the helicopter owner had not communicated the ferry pilots' description of the helicopter's performance to him.



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Interview #1 Summary

Mike Caldera
Lycoming Engines

Interview Date & Time; October 23, 2017; 1014 PT

According to the engine manufacturer representative who reviewed photographs of the engine examination submitted by the NTSB IIC, the spark plugs were worn beyond 50%. He added that a magneto timing offset by 10 degrees may not result in severe vibration, but may result in low power. The compression ratios were also far below specifications. Further, he stated that worn lifters would also adversely affect the power availability of the helicopter.



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Interview #1 Summary

Nicholas DiPeso
Passenger of Accident Flight

Interview Date & Time; August 29, 2017; 0755 PT

The passenger stated that he was an airframe and powerplant mechanic with inspection authorization and held a private pilot certificate.

Mr. DiPeso reported that he was invited to fly with the accident pilot to test the helicopter out since it had just returned from a flight school in Utah. After their departure they flew around a group of soccer fields, so the passenger could take some aerial photographs and then flew to Lake Clementine to perform autorotations. At the conclusion of the maneuver, they received a low rotor rpm horn that went away after the pilot increased power. After contacting a friend who lived nearby, they flew to his home where they planned to land. The helicopter approached the landing site from the north and about 10 feet above the ground he heard a horn. The pilot was able to climb and then complete a pedal turn, but during the turn the passenger could feel the helicopter sinking. As the helicopter touched down, the front skids punctured a solar panel and the pilot instructed the passenger to evacuate. Mr. DiPeso complied with the instruction and then the helicopter began to climb again, but once it reached about 20 feet above ground level, it

began to sink again. The helicopter followed the passenger's escape route until one of the skids contacted the grass and the helicopter rolled over. He observed the helicopter blades complete two revolutions while they impacted trees and then came to rest.



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Interview #1 Summary

Richard Moorehouse
Property Owner

Interview Date & Time; August 29, 2017; 0846 PT

The property owner reported that he was preparing to drive to Auburn when he received a telephone call from the passenger of the accident helicopter who asked if he could come to his home. The helicopter approached the house from the north about 4 minutes later. Mr. Moorehouse then observed the helicopter enter a hover over bushes behind his pool. As the helicopter approached he noticed a single puff of dark gray smoke coming from the exhaust every 3-4 seconds. He assumed there was some confusion as the helicopter backed up over the solar panel array after hovering over the pool deck. The helicopter turned east in a sliding motion to the left and continued to the south, west, and then to the north while in a descent. Eventually, the helicopter disappeared from the property owner's view. About 20 seconds later the helicopter reappeared and turned to the southeast. At this time, the property owner started to observe a constant stream of smoke coming from the helicopter. The helicopter then descended and disappeared from the witnesses' view again. Seconds later, the witness heard the helicopter impact branches and then the ground. He remarked that the engine sounded continuous during the accident sequence.