



MEMORANDUM FOR RECORD

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

NTSB Accident Number: WPR18LA252
Aircraft Registration & Make/Model: N401SH; Guimbal Cabri G2
Accident Location: Santa Ana, California
Accident Date: September 3, 2018

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

Interview #1 Summary

Ting Ting Huang
Accident Helicopter Flight Instructor

Interview date and time: September 3, 2018; 1700 PT

According to the flight instructor, after returning from an uneventful cross country flight they returned to the airport traffic pattern of their departure airport with the intent of performing an autorotative landing to a full stop. The reported wind at the time was from 220 degrees and 7 knots. They started the autorotation from about 700 ft and were able to hold their glide well. When the helicopter reached approximately 150 ft the instructor rolled “throttle” in about halfway and the student failed to flare successfully as he only raised the collective a small amount and the low rotor rpm horn engaged. The instructor then added power to recover, but the helicopter nosed to the left and rolled over.

Interview #2 Summary

Ting Ting Huang
Accident Helicopter Flight Instructor

Interview date and time: September 26, 2018; 1034 PT

The flight instructor reported that she had performed autorotative landings with her instructor in accident helicopter about 6 times before the accident and about 4 times with the student pilot of the accident helicopter. Additionally, she performed autorotations with the owner of the flight school as well. In total she had experienced a total of about 20 autorotations in the accident helicopter.

The instructor stated that she teaches autorotations in the accident helicopter the same way she teaches them in the Robison R22 helicopter. They typically enter the autorotation from about 600 ft after gently lowering the collective to the lower stop with the simultaneous application of left pedal. They enter the auto at an airspeed of approximately 60 kts and then maintain their glide at approximately 50 kts airspeed. During this time their goal is to keep the rotor rpm in the green arc. Once the helicopter reaches about 150 ft the instructor will add some power using the twist grip throttle on the collective control to about halfway, close to an rpm that will allow the governor to control power. They flare the helicopter when it reaches about 40 ft above ground level, by bring the cyclic control back. For power recover, the put the cyclic forward after the flare and add full power.

When comparing between the Guimbal and Robinson, she stated that the Robinson requires little throttle input before the governor takes control compared to the accident helicopter.

On the day of the accident she thinks she may have applied 30% twist grip throttle when they reached 150 ft and then advanced the twist grip to about 60% during the flare.

Interview #3 Summary

Ting Ting Huang
Accident Helicopter Flight Instructor

Electronic Correspondence date and time: September 28, 2018; 1235 PT

Below is an excerpt from an electronic mail correspondence from the accident helicopter flight instructor to the NTSB IIC on the abovementioned date and time.

“This is TingTing. I was thinking about what you told me from another highly experience pilot in G2, he said have to roll on the throttle to recover two times when practice power failure autorotation also have to fully open the throttle right before rise the collective forward cyclic level off the helicopter. From my opinion fully open the throttle is not means manually open the

throttle all the way on to the end, definitely RPM will over speed also nose left yaw and roll could happen sooner if we do that, I think what he mentioned fully open throttle means roll on the throttle bring engine RPM until where the governor can take it and after we rise collective the correlator and gov will all the way bring RPM to green area, about roll throttle recover two times I think the point is not how many times, if twist bigger range on the throttle all the way to the where the gov can take it then one time is enough but if twist smaller range might have to roll two times. I rolled on the throttle brought engine RPM (Blue arrows) around 400 at 150ft and rolled more try to brought rpm back when I realized on gov didn't take it as usual after rise collective forward cyclic level off and low rpm horn came on and then the things happened as you know. So what I think is probably 400 is not enough might be better roll on a little bit more than 400.”



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Interview #1 Summary

Mark Robinson
Chief Flight Instructor, One Above Aviation

Interview date and time: September 24, 2018; 1330 PT

Mr. Robinson reported that he has a total of 7,500 flight hours; 4,000 hours of which are in the Robinson R22, about 1,500 hours in the Robinson R-44, 100 hours in the accident helicopter, and about 2,000 hours in Robinson R66 and Bell 505 helicopters. He has been flying for 11 years, since February 2007 when he began training with Helistream, a company he was with for about 5 years. He subsequently worked for a law enforcement entity flying both Robinson R44 and R66 helicopters before he started working for Robinson Helicopter Company as a safety course instructor in a part time capacity. During his subsequent work as a blimp pilot for the Goodyear Tire and Rubber Company, Mr. Robinson was introduced to the future owner of Revolution Aviation, an entrepreneur who was looking to purchase a helicopter that he could train in. Mr. Robinson worked for the entrepreneur as the Chief Flight Instructor of Revolution Aviation, which became a flight school that leased and operated multiple aircraft. During his time with Revolution Aircraft, Mr. Robinson's duties included interviewing instructors, training instructors, business development, marketing, responding to press inquiries, and managing the

flightline. His duties as Chief Flight Instructor of One Above Aviation are the same as when he was with Revolution.

Mark Robinson's wife, Anna Robinson, stated that she is listed as the owner of and Director of Operations for One Above Aviation. Her job duties for the company include accounting, payroll, correspondence with outside organizations, and office manager functions for the company. She indicated that she does not have any prior experience as a Director of Operations with the exception of her education as an Aviation Administration major at California State University, Los Angeles, the university in which she graduated from in June 2015. Mark reported that although Anna holds the title as owner of One Above Aviation, he is still included as a signatory. The company does not employ any additional managers or support staff.

One Above Aviation started on March 6, 2018 and currently has a total of 6 flight instructors including Mark Robinson. The flight instructor flight experience ranges from 300 hours to 1,500 hours, which does not include Mark Robinson. The company does not have a flight operations manual, instructor's manual, or general procedures manual, but they do use various flight training syllabi for students and instructors to use as guidance towards certifications and flight ratings.

Mr. Robinson reported that another instructor (Jordan) and he received 5 hours of flight training each in the Guimbal Cabri G2 from Precision Helicopters in Newberg, Oregon when they took possession of the helicopter. The 5 hours of flight experience were required to satisfy an insurance requirement. Mark returned to Orange County and Jordan flew the helicopter back to One Above Aviation with a student. After Mark soloed in the helicopter for a few hours to build time, Jordan and Mark started training the rest of the flight instruction staff. Mark trained Max, Jordan trained Quincy and Sandra, and both Mark and Quincy trained Ting Ting. Training session consisted of emergency procedure practice and off-airport landing work.

Mr. Robinson was asked to explain the power recovery procedure to the interviewer. He stated that at 200 ft. agl the pilot is required to start advancing power (rolling throttle ON, which takes 2 twists) to near full power. He was taught and teaches pilots to ensure the rotor rpm is at the 4-5 o'clock position and the engine rpm is at the 3 o'clock position during the power recovery.

The interviewer informed Mr. Robinson that the investigation discovered the flight instructor not only had not followed the power recovery procedure correctly, but had demonstrated that she did not understand it during postaccident interviews. It was further suggested to Mr. Robinson that his school invite a Cabri G2 instructor from Precision Helicopters to train his flight instruction staff once the accident helicopter is repaired to ensure everyone is familiar with the normal and emergency procedures. Additionally, the interviewer suggested that he develop flight procedures and guidance for his flight instruction staff to develop a standard for the flight school that his staff can adhere to. Mr. Robinson agreed to utilize Precision Helicopters for training and to begin working on a operations manual. The NTSB IIC stated that he would check in with Mr. Robinson on October 8 for a progress report on the status of the manual.