



Memorandum for Record

Fabian Salazar
Air Safety Investigator
National Transportation Safety Board
Office of Aviation Safety – Western Pacific Region

NTSB Accident Number: WPR19LA194
Aircraft Registration & Make/Model: N3078G, Bell 47G
Accident Location: Mosby, MT.
Accident Date: July 13, 2019

John L. Corbett
Pilot
Ellensburg, WA

On August 23, 2019, while in the presence of his attorney's, the pilot said that he started his helicopter flight school in 2014. He graduated with an instrument rating and a flight instructor certificate (CFI). He began his career as an R-44 crop duster in Illinois and did that for two seasons. He later moved to Hawaii and flew for a company. He had received his Part 135 certification training through that company. The company had a fatal accident and as a result of that, he was not allowed to fly for a few months and so, sought other employment. He gained employment with AV8-ORR in July of 2019. He returned to Washington for a week then went and trained in Montana. He trained from July first to the third, then started the contract on the eighth of July.

The pilot stated that he spent a day learning the aircraft. He and the instructor went through the flight manual and talked about the specific things regarding a Soloy conversion. This was Mr. Corbett's first turbine engine experience. When asked for specifics or unique things about the Bell 47, he stated the semi-rigid rotor system is like the Robinson. He stated that he thought the Robinson was a lot more agile than the Bell 47. He said that he started out with learning how to start a turbine, and did basic helicopter flying tasks, like shallow approaches and run-on landings. They then moved on to confined area landings and pinnacle landings in preparation for the contract he would be flying. When asked of issues when going through the training he stated that it was a little bit of an adjustment just to get used to the aircraft. He stated that he flew the helicopter from place to place, during an unrelated spray contract, just to get more time in the helicopter. When asked about the decision to stop training and begin the contract flights, the pilot

stated that he felt comfortable in the helicopter. He did not recall the amount of flight time he had accumulated at that point.

When asked about the contract flights, the pilot stated that he left on the tenth and arrived at his destination a few days later. He met up with the two passengers and they discussed the mission. They were going to be flying a grid pattern that he likened to agriculture flying, but this time the work would be looking for noxious weeds. He said they had three grids to work. During the flights the two would look out, make notes in their logs and tell the pilot if they needed him to circle back. He said that they flew eight to ten-minute legs and he kept the helicopter at about 40 feet and 35 knots. He said at first, they wanted him to fly at 20 knots, but he didn't think it was safe. He thought it was just too low and too slow. He mentioned that they had winds to deal with as well.

The pilot stated that the refuel point was always in the same spot, about 3 to 4 miles away from the search area. When asked about the morning routine, the pilot stated that they started about 0600 [local time] and would be on the survey at about 7:00. They would work till about 1400-1500 daily. He said the owner insisted on only eight hours a day. He also stated that the helicopter could get warm unless the doors were off.

When asked about environmental issues (weather or winds) he stated that on the first day there were winds, but not on the day of the accident, he didn't feel like the winds were that bad that day. He said the temperature was in the 85 to 90-degree range. When asked about pre-mission planning, he said that he would have a briefing with the two passengers and coordinate to support their needs. He recalled that on the first day of flights he covered the safety item. He recorded their weights and the weight of their bags for weight and balance calculations. He indicated one had a 20-pound bag, he had a 20-pound bag, a bag of tools weighing 20 pounds and the heaviest thing was the flyaway kit at about 36 pounds. They stored it all in a cargo basket. They refueled about three to four times a day due to getting about two hours out of a fuel load.

When asked about arrival procedures to the refueling point, the pilot stated that he wanted the refueller to stay in the truck when he landed. He said he would call on the FM radio when they were coming in for refueling. He said that he would come in, circle around and do his recon and ask about the winds. He would then fly a normal approach because it wasn't a very hard place to get into. He said the truck had 50 feet of fuel hose, and that they would shut down for refuel. He stated that he landed to a hover so that he could react to things like winds. When asked about running out of power he said that he did not have any issues, but there were times when he was out in the survey area when he experienced the need to readjust his flight profile to be safe. When asked about effective translational lift, he said with the Bell 47 it is apparent.

When asked about the day of the accident. He said that day was an easy morning. They got to the area about 7:00 and flew a few laps, and the refueling was normal. Weather at that time was not an issue. They had received forecasts for storms with hail and they wanted to be proactive and stay ahead of potentially fast-moving thunderstorms. He said that one of the passengers had arranged to have the helicopter stored at a friend's shop [building] on a ranch nearby. He said

they finished up about 1430, refueled and decided to put the helicopter in the building. They then flew to the ranch. When they arrived, the pilot circled the ranch and determined the winds were from the west and didn't feel very strong. He said the place to land looked decent and was about 100 square feet of gravel. He elected to fly a normal approach to land, and as he was on the approach, he felt a yaw and that caused him to use up all of his left pedal." He glanced at his torque and he had not used all his available torque. He said at that point they really started to yaw, and he tried to recover. He said the next thing you know they were spinning. He said he didn't lose consciousness, but he felt like his controls were not doing anything at that point. He said they came straight down, hit hard, and that everything happened really fast at that point.

The pilot reported that the passengers were able to get out of the helicopter on their own, but he could not get himself out and required assistance. He said there was fuel all around, and that he said that he had fuel all over him. They laid him out and put a blanket on him to protect him from the heat. They called an ambulance and took him to the hospital in Billings. It was discovered that he had serious injuries. He went into surgery the following day. He was in the hospital for seven days.

When asked to go back over the approach to the building, he said that he chose to do a normal approach because there were no obstacles, and his speed was that of a walking pace. He thought he started his approach early and he was not steep at all. He said his power setting was steady all the way down, until the end and then he had a really hard time looking at that [torque gauge] while he was trying to recover from the yaw. When asked to clarify the yaw, he said it started out as a right yaw with the tail going left. He said it yawed, he gave it [left] pedal and it didn't seem to correct it. He said he tried to get out of there, and he nosed it over to gain speed. He said that he didn't feel like they were slow. When asked again about the yaw and if he had hit the left pedal stop, he said that he didn't know if he hit the pedal stop. He said it felt like he used all of it, but he cannot say for sure that he hit the stop.

When asked if he had made a conscious decision to go-around, he agreed. He said that he tried to do a go-around and pick up speed, but he couldn't get it back at that time. When asked if he decided to land the helicopter after the failed go-around attempt, he said at that time he felt like he did not have control of the helicopter. He restated that he was trying to go forward. He recalled lowering the collective when the event first started but did not recall lowering the collective after the failed go-around attempt.

When asked to go back to the normal approach initiation and asked if he decelerated below effective translational lift (ETL), he stated that he didn't recall feeling the shake nor the drop in altitude he should have felt. When asked if he felt any need to increase the collective to maintain his approach angle, he replied no and he recalled his torque being steady. He said that before the yaw his torque was constant.

When asked if thought anything mechanical happening, he stated that he didn't know. He thought there was a lot of pedal required, but he did not know if it was due to a mechanical fault.

When ask about the turbine engine and power limits, Mr. Corbet demonstrated knowledge of de-rated power and transmission limits.

When asked about his final thoughts on the winds he restated that he didn't think the winds were strong.

He indicated that it took about thirty minutes to get from the refuel to the ranch.

When asked about the right yaw that occurred during the approach and with the understanding that the right yaw could come from wind or power applications, Mr. Corbett did not recall applying power at that time.

The IIC explained to Mr. Corbett that the rancher reported the helicopter go right, left then right again, and it then started to climb. When asked if the climb was the go-around attempt, Mr. Corbett agreed, because they had been spinning a couple of revolutions at that point. He said that he did try to push the nose over to get airspeed.