



Aviation Investigation Final Report

Location:	Las Vegas, Nevada	Accident Number:	WPR13LA334
Date & Time:	July 22, 2013, 07:15 Local	Registration:	N115SH
Aircraft:	Eurocopter AS 350 B2	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	2 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The purpose of the flight was to provide the helicopter-rated pilot with "differences" training in a helicopter that is flown from the left seat instead of the standard right seat. The helicopter did not have dual controls, and the instructor was seated in a rear seat, observing over the student's shoulder.

The instructor reported that the pilot over controlled the helicopter as it picked up to a hover, and the helicopter moved fore and aft with a slight yaw. The helicopter continued to move fore and aft and the yaw increased. The pilot receiving instruction reported that the nose yawed to the left, the helicopter started to "jump," and she lowered the collective to put the helicopter on the ground. The condition worsened, and she picked the helicopter up to a hover as instructed; however, she was unable to maintain control of the helicopter, and the tail rotor hit the ground. No preimpact mechanical malfunctions or failures with the helicopter that would have precluded normal operation were reported. Because the helicopter did not have dual controls, the flight instructor was unable to take action to regain control.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot receiving instruction's failure to maintain control of the helicopter in a hover, which resulted in a tail rotor ground strike.

Findings

Personnel issues	Aircraft control - Pilot
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Factual Information

History of Flight

Maneuvering-hover	Loss of control in flight (Defining event)
Maneuvering-hover	Collision with terr/obj (non-CFIT)

On July 22, 2013, about 0715 Pacific daylight time, a Eurocopter AS 350 B2 helicopter, N115SH, sustained substantial damage, when its tail rotor struck the ground, at the McCarran International Airport, Las Vegas, Nevada. The helicopter was being operated by Sundance Helicopters as a visual flight rules (VFR) local instructional flight, under the provisions of Title 14, Code of Federal Regulations (CFR) Part 91. The flight instructor and pilot-rated student were not injured. Visual meteorological conditions prevailed, and company flight-following procedures were in effect.

According to written statements provided to the Federal Aviation Administration (FAA) by both the instructor and pilot-rated student, dated July 22, the purpose of the flight was to transition the student to the accident helicopter which is flown from the left seat position as opposed to the standard right seat position. The accident helicopter did not have dual controls and the instructor was seated in a rear seat, observing over the student's shoulder.

According to the instructor, the initial pickup to a hover was over controlled, and the helicopter moved fore and aft with a slight yaw. In the hover, the helicopter continued to move fore and aft and the yaw increased. He reported he felt the helicopter was bouncing from skid to skid and fore and aft.

According to the pilot-rated student, as she picked the helicopter up to a hover, the nose yawed to the left, which she countered with right pedal. She reported that the helicopter started to "jump," and she lowered the collective to put the helicopter on the ground. The jumping worsened and the instructor told her to pick the helicopter up, which she did. She said the helicopter was uncontrollable and it hit the ground. She put the helicopter back on the ground, and shut it down.

An examination by an FAA inspector, and photographs provided to the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) showed substantial damage to the helicopter's ventral fin, and tailrotor drive system.

No preimpact mechanical malfunctions or failures were reported with the helicopter that would have precluded normal operation.

Pilot Information

Certificate:	Commercial	Age:	42,Female
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	Helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	June 14, 2013
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	July 5, 2013
Flight Time:	3135 hours (Total, all aircraft), 45 hours (Total, this make and model), 3055 hours (Pilot In Command, all aircraft), 144 hours (Last 90 days, all aircraft), 45 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Flight instructor Information

Certificate:	Commercial; Flight instructor	Age:	42,Male
Airplane Rating(s):	None	Seat Occupied:	Rear
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Helicopter	Second Pilot Present:	Yes
Instructor Rating(s):	Helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	February 25, 2013
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	May 16, 2013
Flight Time:	8740 hours (Total, all aircraft), 6456 hours (Total, this make and model), 8660 hours (Pilot In Command, all aircraft), 155 hours (Last 90 days, all aircraft), 33 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Eurocopter	Registration:	N115SH
Model/Series:	AS 350 B2	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	3141
Landing Gear Type:	Skid	Seats:	6
Date/Type of Last Inspection:	June 16, 2013 100 hour	Certified Max Gross Wt.:	4961 lbs
Time Since Last Inspection:		Engines:	1 Turbo shaft
Airframe Total Time:	20030 Hrs as of last inspection	Engine Manufacturer:	TURBOMECA
ELT:	C126 installed, not activated	Engine Model/Series:	ARRIEL 1SER
Registered Owner:	SUNDANCE HELICOPTERS INC	Rated Power:	681 Horsepower
Operator:	SUNDANCE HELICOPTERS INC	Operating Certificate(s) Held:	On-demand air taxi (135)
Operator Does Business As:	Sundance Helicopters	Operator Designator Code:	KBMA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KLAS	Distance from Accident Site:	
Observation Time:	06:56 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.86 inches Hg	Temperature/Dew Point:	26°C / 18°C
Precipitation and Obscuration:			
Departure Point:	Las Vegas, NV (KLAS)	Type of Flight Plan Filed:	Company VFR
Destination:	Las Vegas, NV (KLAS)	Type of Clearance:	None
Departure Time:	07:15 Local	Type of Airspace:	

Airport Information

Airport:	Las Vegas KLAS	Runway Surface Type:	
Airport Elevation:	2181 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	36.074722,-115.15139

Administrative Information

Investigator In Charge (IIC):	Lewis, Lawrence
Additional Participating Persons:	Paul R Alukonis; FAA FSDO; Las Vegas, NV
Original Publish Date:	December 2, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=87529

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).