
 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: ERA10LA023		Aircraft Registration Number: N502SL	
		Occurrence Date: 10/19/2009		Most Critical Injury: None	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Winnsboro		State SC	Zip Code 29180	Local Time 1430	Time Zone EDT
Airport Proximity: On Airport/Airstrip		Distance From Landing Facility:			
Aircraft Information Summary					
Aircraft Manufacturer MCDONNELL DOUGLAS HELICOPTER			Model/Series 369E		Type of Aircraft Helicopter
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>*** Note: NTSB investigators may not have traveled in support of this investigation and used data provided by various sources to prepare this aircraft accident report. ***</p> <p>On October 19, 2009, about 1430 eastern daylight time, a McDonnell-Douglas 369E helicopter, N502SL, registered to South Carolina Law Enforcement Division (SLED), was landed hard at the Fairfield County Airport (FDW), Winnsboro, South Carolina. Visual meteorological conditions prevailed at the time and no flight plan was filed for the 14 Code of Federal Regulations (CFR) Part 91 instructional flight. The helicopter was substantially damaged and the certified flight instructor (CFI) and rotorcraft-rated student (student) were not injured. The flight originated from the SLED Heliport (2SC6), Columbia, South Carolina, about 1400.</p> <p>The student stated that after departure the flight proceeded to FDW where he executed two normal approaches. After the second, he hover taxied to a grassy area south of runway 04/22, where he and the CFI noted the wind direction and discussed the next maneuver to be performed which was loss of tail rotor thrust while in a hover. The briefing before the maneuver included the proper recovery procedure which was to slowly reduce throttle control. While in a three foot hover the CFI announced that he was initiating the loss of tail rotor thrust and the helicopter began slowly yawing to the right. The student initiated recovery by reducing throttle and while in a two foot hover the CFI instructed him to regain the entry altitude of three feet. The student increased collective control which reduced rotor rpm and induced another right yaw. He then reduced throttle which caused the rotor rpm to deteriorate further resulting in the helicopter descending. He increased collective control to remain airborne while the helicopter slowly yawned to the right. The CFI instructed him not to let the helicopter contact the ground and he continued to apply up collective while the helicopter continued yawing to the right. As he was applying up collective he felt the CFI grasp the cyclic and collective controls and heard the rotor rpm and engine noise increase. He later stated that while it is not clear to him which of them applied power, he was fairly certain that he did not. The helicopter began a rapid right yaw possible landing briefly then becoming airborne while yawing 360 degrees and climbing to an estimated height of 10 to 20 feet above ground level. The CFI attempted to hover then announced he was rolling the throttle to idle. The helicopter then began a rapid descent, landed hard, and rolled towards the left side. He and the CFI initiated the emergency shutdown procedures and exited the helicopter.</p> <p>The CFI stated that he briefed the student on the emergency procedure to be performed (loss of tail rotor thrust) and also the proper response which would be to slowly reduce throttle and cushion the landing with collective control. The CFI initiated the maneuver by applying right anti-torque pedal input and the student responded by decreasing throttle. As the rotation stopped the helicopter settled and made contact with the ground with some movement. The student was uncomfortable with the touchdown and applied throttle control. Though his (CFI's) hands were on the flight controls he was not guarding the throttle closely enough to arrest the quick application of throttle. The helicopter became airborne and began yawing very quickly to the right which was not corrected by left anti-torque pedal input. He closed the throttle which stopped the right yaw but at that point the helicopter was 7 to 10 feet and rotor rpm was insufficient to maintain flight.</p>					
FACTUAL REPORT - AVIATION					

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: ERA10LA023
	Occurrence Date: 10/19/2009
	Occurrence Type: Accident

Narrative (Continued)


He applied collective and forward cyclic to cushion the landing but the helicopter landed hard causing the left skid gear to collapse.


The National Transportation Safety Board (NTSB) Pilot/Operator Aircraft Accident/Incident Report submitted by the operator indicated there was no mechanical failure or malfunction.

Following the accident the engine was removed from the helicopter, sent to the manufacturer's facility to be functionally tested. With Federal Aviation Administration oversight the engine was ran and found to operate normally.

The emergency procedures for loss of tail rotor thrust while in a hover, specified in the flight manual, indicate to place the twistgrip in the ground idle position and to perform a hovering autorotation.

Updated on May 26 2010 4:33PM

 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: ERA10LA023				
		Occurrence Date: 10/19/2009				
		Occurrence Type: Accident				
Landing Facility/Approach Information						
Airport Name Fairfield County Airport		Airport ID: FDW	Airport Elevation Ft. MSL	Runway Used N/A	Runway Length	Runway Width
Runway Surface Type:						
Runway Surface Condition:						
Approach/Arrival Flown: NONE						
VFR Approach/Landing: None						
Aircraft Information						
Aircraft Manufacturer MCDONNELL DOUGLAS HELICOPTER		Model/Series 369E		Serial Number 0244E		
Airworthiness Certificate(s): Normal						
Landing Gear Type: High Skid						
Amateur Built Acft? No	Number of Seats: 4	Certified Max Gross Wt. 3000 LBS		Number of Engines: 1		
Engine Type: Turbo Shaft		Engine Manufacturer: Allison		Model/Series: 250-C20B	Rated Power: 420	
- Aircraft Inspection Information						
Type of Last Inspection Annual		Date of Last Inspection 09/2009	Time Since Last Inspection Hours		Airframe Total Time 4961 Hours	
- Emergency Locator Transmitter (ELT) Information						
ELT Installed?/Type Yes / C91-A		ELT Operated? Yes	ELT Aided in Locating Accident Site? No			
Owner/Operator Information						
Registered Aircraft Owner SC LAW ENFORCEMENT DIVISION		Street Address PO BOX 21398				
		City COLUMBIA	State SC	Zip Code 29221-1398		
Operator of Aircraft SC LAW ENFORCEMENT DIVISION		Street Address PO BOX 21398				
		City COLUMBIA	State SC	Zip Code 29221-1398		
Operator Does Business As:			Operator Designator Code:			
- Type of U.S. Certificate(s) Held: None						
Air Carrier Operating Certificate(s):						
Operating Certificate:			Operator Certificate:			
Regulation Flight Conducted Under: Part 91: General Aviation						
Type of Flight Operation Conducted: Instructional						

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: ERA10LA023
	Occurrence Date: 10/19/2009
	Occurrence Type: Accident

First Pilot Information

Name On File	City On File	State On File	Date of Birth On File	Age 35
-----------------	-----------------	------------------	--------------------------	-----------

Sex: M	Seat Occupied: Right	Occupational Pilot? Yes	Certificate Number: On File
--------	----------------------	-------------------------	-----------------------------

Certificate(s): Commercial; Private

Airplane Rating(s): Single-engine Land

Rotorcraft/Glider/LTA: Helicopter

Instrument Rating(s): Helicopter

Instructor Rating(s): Helicopter; Instrument Helicopter

Current Biennial Flight Review?

Medical Cert.: Class 2	Medical Cert. Status: Without Waivers/Limitations	Date of Last Medical Exam: 07/2009
------------------------	---	------------------------------------

- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	2150	600	194		868	2	50	1950	11	
Pilot In Command(PIC)	2050	600	150		860			1900	3	
Instructor	175	90			50			175		
Instruction Received										
Last 90 Days	80							80		
Last 30 Days	30							30		
Last 24 Hours										

Seatbelt Used?	Shoulder Harness Used?	Toxicology Performed? No	Second Pilot? Yes
----------------	------------------------	--------------------------	-------------------

Flight Plan/Itinerary

Type of Flight Plan Filed: None

Departure Point Columbia	State SC	Airport Identifier 2SC6	Departure Time 1400	Time Zone EDT
-----------------------------	-------------	----------------------------	------------------------	------------------


Destination Same as Accident/Incident Location	State	Airport Identifier FDW	
---	-------	---------------------------	--

Type of Clearance: None

Type of Airspace:

Weather Information


U.S. Source of Wx Information:
Unknown

 <p>National Transportation Safety Board FACTUAL REPORT AVIATION</p>	NTSB ID: ERA10LA023
	Occurrence Date: 10/19/2009
	Occurrence Type: Accident

Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
FDW	1455	EDT	577 Ft. MSL	NM	Deg. Mag.
Sky/Lowest Cloud Condition: Clear			Ft. AGL	Condition of Light: Day	
Lowest Ceiling: None		Ft. AGL	Visibility: 10	SM	Altimeter: 30.28 "Hg
Temperature: 16 °C	Dew Point: -1 °C	Weather Conditions at Accident Site: Visual Conditions			
Wind Direction: 320	Wind Speed: 4	Wind Gusts:			
Visibility (RVR): Ft.	Visibility (RVV): SM				
Precip and/or Obscuration: No Obscuration; No Precipitation					

Accident Information		
Aircraft Damage: Substantial	Aircraft Fire: None	Aircraft Explosion: None

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot					
Second Pilot					
Student Pilot				1	1
Flight Instructor				1	1
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers					
- TOTAL ABOARD -				2	2
Other Ground					
- GRAND TOTAL -				2	2

 National Transportation Safety Board FACTUAL REPORT AVIATION	NTSB ID: ERA10LA023	
	Occurrence Date: 10/19/2009	
	Occurrence Type: Accident	

Administrative Information

Investigator-In-Charge (IIC)

Timothy W. Monville

Additional Persons Participating in This Accident/Incident Investigation:

Kern S Mosher
FAA/FSDO
S. Columbia, SC

Mike A Weber
Rolls-Royce
Indianapolis, IN