



Aviation Investigation Final Report

Location:	Lebanon, Pennsylvania	Accident Number:	ERA10CA075
Date & Time:	November 20, 2009, 16:00 Local	Registration:	N321ET
Aircraft:	Schweizer 269C-1	Aircraft Damage:	Substantial
Defining Event:	Hard landing	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The helicopter pilot stated that he was performing his first solo autorotation to a full landing. He began the maneuver at approximately 1000 feet, and near the ground he noticed that he had a higher than normal rate of descent. He flared late and the helicopter “settled fast”. As the helicopter touched down, the tail struck the ground resulting in substantial damage to the tail boom, tail rotor drive shaft, and tail rotor assembly. The pilot did not report any mechanical malfunctions or anomalies with the helicopter prior to the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot’s failure to arrest the helicopter descent during the simulated engine out maneuver resulting in a hard landing.

Findings

Aircraft	Landing flare - Incorrect use/operation
Aircraft	Descent rate - Not attained/maintained
Personnel issues	Aircraft control - Pilot

Factual Information

History of Flight

Landing-flare/touchdown	Simulated/training event
Landing-flare/touchdown	Hard landing (Defining event)

Pilot Information

Certificate:	Commercial	Age:	38, Male
Airplane Rating(s):	None	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	December 23, 2008
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	230 hours (Total, all aircraft), 54 hours (Total, this make and model), 173 hours (Pilot In Command, all aircraft), 12 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Schweizer	Registration:	N321ET
Model/Series:	269C-1	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	0025
Landing Gear Type:	Skid	Seats:	2
Date/Type of Last Inspection:	July 31, 2009 Annual	Certified Max Gross Wt.:	1750 lbs
Time Since Last Inspection:	54 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	2766 Hrs at time of accident	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	HO-360-C1A
Registered Owner:	EAGLE II AERONAUTICS INC	Rated Power:	180 Horsepower
Operator:	EAGLE II AERONAUTICS INC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	LNS,403 ft msl	Distance from Accident Site:	10 Nautical Miles
Observation Time:	15:53 Local	Direction from Accident Site:	173°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	10 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	310°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.09 inches Hg	Temperature/Dew Point:	12°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Lebanon, PA (08N)	Type of Flight Plan Filed:	None
Destination:	Lebanon, PA (08N)	Type of Clearance:	None
Departure Time:	14:55 Local	Type of Airspace:	

Airport Information

Airport:	Keller Brothers Airport 08N	Runway Surface Type:	Grass/turf
Airport Elevation:	550 ft msl	Runway Surface Condition:	Dry
Runway Used:	25	IFR Approach:	None
Runway Length/Width:	2635 ft / 120 ft	VFR Approach/Landing:	Simulated forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	40.288333,-76.32389(est)

Administrative Information

Investigator In Charge (IIC):	Hicks, Ralph
Additional Participating Persons:	Eric Manchon; FAA/FSDO; Harrisburg, PA
Original Publish Date:	March 23, 2010
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=75087

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