



Aviation Investigation Final Report

Location:	Rio Vista, Texas	Accident Number:	CEN12LA650
Date & Time:	September 19, 2012, 10:45 Local	Registration:	N94735
Aircraft:	Hiller UH-12B	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that he was on a survey flight when the helicopter engine suddenly stopped; he elected to autorotate to a field. The area he landed in had high vegetation, which “grabbed” the helicopter skids and the helicopter impacted the ground hard. Examination of the helicopter revealed that the main rotor impacted the tailboom during the accident and the tail rotor had separated from the helicopter. Examination of the engine revealed the No. 6 piston had disintegrated catastrophically, which caused additional internal damage to the engine.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The catastrophic failure and disintegration of the No. 6 engine piston, which resulted in a total loss of engine power.

Findings

Aircraft	(general) - Failure
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Factual Information

History of Flight

Maneuvering-low-alt flying	Powerplant sys/comp malf/fail
Maneuvering-low-alt flying	Loss of engine power (total) (Defining event)
Autorotation	Off-field or emergency landing

On September 19, 2012, about 1045 central standard time, a Hiller UH-12B helicopter, N94735, experienced a loss of engine power while maneuvering at low altitude near Rio Vista, Texas. The student rated pilot, sole occupant, was not injured during forced landing and the helicopter was substantially damaged. The helicopter was owned and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Day visual meteorological conditions prevailed for the flight, which operated without a flight plan.

The pilot reported that he was on a survey flight, looking at cattle and fences from the helicopter. He stated that the helicopter engine suddenly stopped, so he elected to autorotate to the field. The helicopter made a hard landing and the skids were caught by the high vegetation.

An examination, by the responding Federal Aviation Administration (FAA) inspectors revealed that the helicopter's, tailrotor and aft section of the tailboom had separated from the helicopter. The main rotor blade had damage consistent with impacting the tailboom.

The engine was examined by an Airframe and Powerplant (A&P) mechanic, under the supervision of the FAA inspectors. The mechanic found no compression on the number five and number six cylinders; neither valve moved on the number six cylinder and only the intake on the five cylinder moved. The number six cylinder was removed and revealed damage to the crankcase and camshaft boss. Additionally, the number six connecting rod, piston pin, and plugs were found intact; however, the number six piston was missing; several pieces of metal were located in the engine.

Student pilot Information

Certificate:	Student	Age:	51, Male
Airplane Rating(s):	None	Seat Occupied:	
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 3 With waivers/limitations	Last FAA Medical Exam:	February 28, 2009
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	Hiller	Registration:	N94735
Model/Series:	UH-12B	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	523
Landing Gear Type:	Skid	Seats:	4
Date/Type of Last Inspection:	Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	FRANKLIN
ELT:		Engine Model/Series:	6A4200 SERIES
Registered Owner:	On file	Rated Power:	200 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KCPT	Distance from Accident Site:	
Observation Time:	10:55 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	150°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.18 inches Hg	Temperature/Dew Point:	23°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Rio Vista, TX	Type of Flight Plan Filed:	None
Destination:	Rio Vista, TX	Type of Clearance:	None
Departure Time:		Type of Airspace:	

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:	32.230785,-97.370635(est)

Administrative Information

Investigator In Charge (IIC):	Hatch, Craig
Additional Participating Persons:	Arnold Thormeyer; FAA FSDO; Fort Worth, TX Stu Dietrick; FAA FSDO; Fort Worth, TX
Original Publish Date:	June 4, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=85106

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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](#).