Aviation Investigation Final Report

Location:	Merritt Island, Florida	**Accident Number:**	ERA13LA127
Date & Time:	February 6, 2013, 18:10 Local	**Registration:**	N5072R
Aircraft:	Hiller UH-12B	**Aircraft Damage:**	Substantial
Defining Event:	Loss of engine power (total)	**Injuries:**	1 Minor, 2 None
Flight Conducted Under:	Part 91: General aviation - Other work use		

Analysis

The pilot reported that, during the initial climb, when the helicopter was about 75 feet above ground level, he heard a "pop" noise, and the engine then lost total power. The pilot performed an autorotation, and the helicopter subsequently landed hard on a taxiway. A postaccident examination of the helicopter revealed that the fuel supply line from the gascolator to the mechanical fuel pump was not attached and that the fuel supply line and fitting were broken where they attached to the gascolator. Examination determined that the fuel fitting separated due to overstress. It is likely that, when the fuel supply line fitting broke off of the gascolator, it resulted in a loss of fuel supply to the engine, subsequent fuel starvation, and a total loss of engine power.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

A total loss of engine power due to fuel starvation, which resulted from an overstress failure of a fitting on the fuel supply line and led to an autorotation and hard landing.

Findings

Aircraft	Fuel distribution - Failure
Aircraft	Fuel - Fluid level

Factual Information

History of Flight

Initial climb	Loss of engine power (total) (Defining event)
Autorotation	Hard landing

On February 6, 2013, about 1810 eastern standard time, a Hiller UH-12B, N5072R, impacted a taxiway after the helicopter experienced a total loss of engine power after takeoff from the Merritt Island Airport (COI), Merritt Island, Florida. One passenger sustained minor injuries, and the commercial pilot and another passenger were not injured. The helicopter was owned by a corporation and operated by Florida Biplanes under Title 14 Code of Federal Regulations Part 91 as a sightseeing flight. Visual meteorological conditions prevailed and no flight plan was filed for the local flight.

According to the pilot, he performed a preflight and engine run up with no anomalies noted. In addition, he performed five sightseeing flights prior to the accident flight. On the sixth flight, during the initial climb, about 75 feet above ground level, the pilot heard a "pop" noise just prior to the loss of engine power. He performed an autorotation and the helicopter impacted a taxiway.

A postaccident examination of the wreckage by a Federal Aviation Administration inspector revealed that the helicopter incurred substantial damage to the engine mounts, main rotor blades, tail rotor, and tail boom. The inspector disconnected the fuel supply line from the electric fuel pump to the carburetor and operated the fuel pump; however, no fuel was observed in the fuel line. He disconnected the fuel supply line from the gascolator to the electric fuel pump and noted no fuel in the supply line and removed the fuel filter and examined it with no debris or obstructions noted. He verified fuel was in the gascolator drain. The inspector then discovered the fuel supply line from the gascolator to the mechanical fuel pump was not attached and that the fuel supply line and fitting was broken where it attached to the gascolator. The fuel fitting was inspected by the NTSB materials laboratory in Washington, D. C. Microscopic analysis of the part revealed that both ends of the fitting failed due to overstress.

According to the helicopter maintenance records, the most recent annual inspection was performed on May 1, 2012. At that time, the helicopter had a total tachometer time of 75.2 hours. At the time of the accident, the tachometer indicated 114.6 hours. According to the Hiller Helicopters Model UH-12B Flight Manual, the fuel system consists of a fuel tank, an engine-driven fuel pump, an electrical auxiliary fuel pump, a fuel quantity gauge, strainer, shut-off valve, and the necessary lines and fittings.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	42
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Right
Other Aircraft Rating(s):	Helicopter	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	Helicopter	**Toxicology Performed:**	No
Medical Certification:	Class 2 Without waivers/limitations	**Last FAA Medical Exam:**	August 1, 2012
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	January 20, 2012
Flight Time:	977 hours (Total, all aircraft), 20 hours (Total, this make and model), 165 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Hiller	**Registration:**	N5072R
Model/Series:	UH-12B	**Aircraft Category:**	Helicopter
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	613
Landing Gear Type:	Skid	**Seats:**	4
Date/Type of Last Inspection:	May 1, 2012 Annual	**Certified Max Gross Wt.:**	2700 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3072 Hrs at time of accident	**Engine Manufacturer:**	FRANKLIN
ELT:	Installed, not activated	**Engine Model/Series:**	6V 350 SERIES
Registered Owner:	HOWE ENTERPRISES LLC	**Rated Power:**	235 Horsepower
Operator:	Florida Biplane	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	COF,8 ft msl	**Distance from Accident Site:**	9 Nautical Miles
Observation Time:	17:55 Local	**Direction from Accident Site:**	125°
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:	30.1 inches Hg	**Temperature/Dew Point:**	18°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Merritt Island, FL (COI)	**Type of Flight Plan Filed:**	None
Destination:	Merritt Island, FL (COI)	**Type of Clearance:**	None
Departure Time:	18:10 Local	**Type of Airspace:**	

Airport Information

Airport:	Merritt Island Airport COI	**Runway Surface Type:**	
Airport Elevation:	6 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	11	**IFR Approach:**	None
Runway Length/Width:	3601 ft / 75 ft	**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Minor, 1 None	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Minor, 2 None	**Latitude, Longitude:**	28.341388,-80.685279(est)

Administrative Information

Investigator In Charge (IIC):	Murray, Patrick
Additional Participating Persons:	Marco Grillo; FAA/FSDO; Orlando, FL
Original Publish Date:	November 13, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=86159