



# National Transportation Safety Board Aviation Accident Data Summary

<b>Location:</b>	Hamilton, MT	<b>Accident Number:</b>	WPR13LA302
<b>Date &amp; Time:</b>	07/01/2013, 1100 MDT	<b>Registration:</b>	N989WC
<b>Aircraft:</b>	S.N.I.A.S. AS-350B ECUREUIL	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

## Analysis

The pilot reported that, about 20 minutes after departure, the helicopter lost all engine power during cruise flight. The pilot performed an autorotation into a small forest clearing. During the landing sequence, the helicopter sustained substantial damage.

Examination of the engine revealed that the pneumatic fuel controller (P2) pipe that delivered air pressure from the centrifugal compressor to the fuel control unit (FCU) had separated at the FCU fitting. The P2 pipe's failure allowed ambient air pressure to enter the line and resulted in the FCU commanding the engine to spool down to ground idle speed. The pipe exhibited deformation due to bending damage and signatures indicating that it was making contact with its union fitting at the FCU. The P2 pipe was a thin-walled type, which the engine manufacturer had recommended be replaced with a thicker version 29 years previously. Further, the engine manufacturer had issued multiple service letters advising maintenance personnel of the correct procedures for fitting, inspecting, and maintaining such air lines. The pipe's fracture surfaces at the separation point exhibited signatures consistent with fatigue as a result of noncompliance with the manufacturer's recommendations.

## Flight Events

Enroute-cruise - Loss of engine power (total)  
Autorotation - Off-field or emergency landing  
Landing-flare/touchdown - Hard landing

## Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power during cruise flight due to the fatigue failure of a pneumatic fuel controller pipe. Also causal was maintenance personnel's failure to adequately maintain the pipe and replace it with a thicker type.

## Findings

Aircraft-Aircraft power plant-Engine fuel and control-Fuel controlling system-  
Fatigue/wear/corrosion - C  
Personnel issues-Task performance-Maintenance-Replacement-Maintenance personnel - C  
Personnel issues-Task performance-Maintenance-Installation-Maintenance personnel - C

## Pilot Information

Certificate:	Commercial	Age:	33
Airplane Rating(s):	None	Instrument Rating(s):	None
Other Aircraft Rating(s):	Helicopter	Instructor Rating(s):	None
Flight Time:	388.7 hours (Total, all aircraft), 84.6 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

Aircraft Manufacturer:	S.N.I.A.S.	Registration:	N989WC
Model/Series:	AS-350B ECUREUIL	Engines:	1 Turbo Shaft
Operator:	On file	Engine Manufacturer:	Turbomeca
Air Carrier Operating Certificate:	None	Engine Model/Series:	Arriel 1B
Flight Conducted Under:	Part 91: General Aviation - Personal		

## Meteorological Information and Flight Plan

Observation Facility, Elevation:	KMSO, 3206 ft msl	Weather Information Source:	Weather Observation Facility
Conditions at Accident Site:	Visual Conditions	Lowest Ceiling:	None
Condition of Light:	Day	Wind Speed/Gusts, Direction:	Calm
Temperature:	26° C / 14° C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Hamilton, MT (6S5)	Destination:	Philipsburg, MT (U05)

## Airport Information

Airport:	Hamilton (6S5)	Runway Surface Type:	
Runway Used:	N/A	Runway Surface Condition:	
Runway Length/Width:			

## Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None

## Administrative Information

Investigator In Charge (IIC):	Elliott Simpson	Adopted Date:	10/27/2014
Investigation Docket:	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=87347">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=87347</a>		

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