



# Aviation Investigation Final Report

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<b>Location:</b>	Tempe Bar, Arizona	<b>Accident Number:</b>	WPR10LA075
<b>Date &amp; Time:</b>	December 6, 2009, 10:30 Local	<b>Registration:</b>	N548SA
<b>Aircraft:</b>	Aerospatiale AS 355F1	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Part(s) separation from AC	<b>Injuries:</b>	7 None
<b>Flight Conducted Under:</b>	Part 135: Air taxi & commuter - Non-scheduled - Sightseeing		

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## Analysis

The pilot reported that after arriving to work late he began his preflight inspection on the helicopter. As the pilot was inspecting the left engine, the refueling truck arrived and the pilot lowered the left engine cowling door and tended to the refueling of the helicopter. The pilot said that following the refueling of the helicopter, he continued his preflight inspection and subsequently boarded the passengers “not realizing I left the engine cowling ‘unlatched’.” While en route to the flight’s intended destination, the pilot heard a “pop” followed by feedback in the cyclic control. The pilot was informed by the pilot of a second helicopter that the left engine cowling appeared to be open and partially separated. The pilot initiated a precautionary landing to the desert surface and landed without further incident. Examination of the helicopter by a Federal Aviation Administration inspector revealed that two of the three main rotor blades were damaged. One main rotor blade exhibited a one-inch-long gouge about one-quarter of an inch in depth near the blade root. A portion of the left engine cowling was separated and not located.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot’s inadequate preflight inspection. Contributing to the accident was the pilot’s diverted attention during the preflight inspection.

## Findings

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<b>Personnel issues</b>	Attention - Pilot
<b>Personnel issues</b>	Preflight inspection - Pilot
<b>Aircraft</b>	(general) - Inadequate inspection
<b>Personnel issues</b>	Forgotten action/omission - Pilot

## Factual Information

### History of Flight

<b>Prior to flight</b>	Preflight or dispatch event
<b>Enroute-cruise</b>	Part(s) separation from AC (Defining event)

On December 6, 2009, about 1030 Pacific standard time, an Aerospatiale AS 355F1 helicopter, N548SA, was substantially damaged during cruise flight when the left engine cowling door opened in flight near Temple Bar, Arizona. The helicopter was registered to and operated by Heli-USA Airways, Inc., Las Vegas, Nevada, under the provisions of Title 14 Code of Federal Regulations Part 135. The commercial pilot and six passengers were not injured. Visual meteorological conditions prevailed and a company flight plan was filed for the cross-country flight. The air tour flight originated from the McCarran International Airport (LAS), Las Vegas, Nevada, about 1000, with an intended destination of Grand Canyon, Arizona.

The pilot reported that the morning of the accident, he was late to work due to unforeseen traffic and local events within the area. The pilot stated he was about 40 minutes late to work and upon his arrival, he started his pre-flight inspection. As the pilot was inspecting the area of the left engine, the fuel truck arrived to refuel the helicopter. The pilot "lowered the cowling door [and] walked around to the pilot seat to get the gas cap keys." After the helicopter was refueled, the pilot "continued the pre-flight, not realizing that I left the engine cowling 'unlatched'." The pilot further reported that his passengers were dropped off on the ramp and he proceeded to board them "still not realizing that I left the cowling door unlatched."

The pilot departed the airport and while en route to his destination, he heard a "pop" followed by "shake feed" within the cyclic control. The pilot contacted a second company helicopter to have them visually inspect the helicopter in flight. The pilot of the second helicopter informed the pilot that the left engine cowling appeared to be open and partially separated. The pilot initiated a precautionary landing to the desert surface and landed without further incident.

Examination of the helicopter by a Federal Aviation Administration (FAA) inspector revealed that two of the three main rotor blades were damaged. One main rotor blade exhibited a one-inch long gouge about one-quarter of an inch in depth near the blade root. A portion of the left engine cowling was separated and not located.

## Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	27, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	October 30, 2009
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	July 15, 2009
<b>Flight Time:</b>	3000 hours (Total, all aircraft), 2928 hours (Pilot In Command, all aircraft), 200 hours (Last 90 days, all aircraft), 60 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Aerospatiale	<b>Registration:</b>	N548SA
<b>Model/Series:</b>	AS 355F1	<b>Aircraft Category:</b>	Helicopter
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	5167
<b>Landing Gear Type:</b>	Skid	<b>Seats:</b>	7
<b>Date/Type of Last Inspection:</b>	November 22, 2009 100 hour	<b>Certified Max Gross Wt.:</b>	4950 lbs
<b>Time Since Last Inspection:</b>	36 Hrs	<b>Engines:</b>	2 Turbo shaft
<b>Airframe Total Time:</b>	7390 Hrs at time of accident	<b>Engine Manufacturer:</b>	ALLISON
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	250-C20 SER
<b>Registered Owner:</b>	HELIUSA AIRWAYS INC	<b>Rated Power:</b>	420 Horsepower
<b>Operator:</b>	HELIUSA AIRWAYS INC	<b>Operating Certificate(s) Held:</b>	On-demand air taxi (135)

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	LVS,1870 ft msl	<b>Distance from Accident Site:</b>	35 Nautical Miles
<b>Observation Time:</b>	10:56 Local	<b>Direction from Accident Site:</b>	270°
<b>Lowest Cloud Condition:</b>	Few / 7000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	4 knots / None	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>		<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.81 inches Hg	<b>Temperature/Dew Point:</b>	4°C / -18°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Las Vegas, NV (LAS )	<b>Type of Flight Plan Filed:</b>	Company VFR
<b>Destination:</b>	Grand Canyon, AZ	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	10:00 Local	<b>Type of Airspace:</b>	

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	6 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	7 None	<b>Latitude, Longitude:</b>	36.020278,-114.334724(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Cawthra, Joshua
<b>Additional Participating Persons:</b>	Charlie W Bierman; Federal Aviation Administration; Las Vegas, NV
<b>Original Publish Date:</b>	March 23, 2010
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=75151">https://data.ntsb.gov/Docket?ProjectID=75151</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).