



National Transportation Safety Board Aviation Accident Final Report

Location:	Las Vegas, NV	Accident Number:	DCA12MA020
Date & Time:	12/07/2011, 1630 PST	Registration:	N37SH
Aircraft:	EUROCOPTER FRANCE AS350B2	Aircraft Damage:	Destroyed
Defining Event:	Part(s) separation from AC	Injuries:	5 Fatal
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled - Sightseeing		

Analysis

The Safety Board's full report is available at http://www.nts.gov/investigations/reports_aviation.html. The Aircraft Accident Report number is NTSB/AAR-13/01.

On December 7, 2011, about 1630 Pacific standard time, a Sundance Helicopters, Inc., Eurocopter AS350-B2 helicopter, N37SH, operating as a "Twilight tour" sightseeing trip, crashed in mountainous terrain about 14 miles east of Las Vegas, Nevada. The pilot and four passengers were killed, and the helicopter was destroyed by impact forces and postimpact fire. The helicopter was registered to and operated by Sundance as a scheduled air tour flight under the provisions of 14 Code of Federal Regulations (CFR) Part 135. Visual meteorological conditions with good visibility and dusk light prevailed at the time of the accident, and the flight operated under visual flight rules. The helicopter originated from Las Vegas McCarran International Airport, Las Vegas, Nevada, about 1621 with an intended route of flight to the Hoover Dam area and return to the airport. The helicopter was not equipped, and was not required to be equipped, with any on board recording devices.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Sundance Helicopters' inadequate maintenance of the helicopter, including (1) the improper reuse of a degraded self-locking nut, (2) the improper or lack of installation of a split pin, and (3) inadequate postmaintenance inspections, which resulted in the in-flight separation of the servo control input rod from the fore/aft servo and rendered the helicopter uncontrollable. Contributing to the improper or lack of installation of the split pin was the mechanic's fatigue and the lack of clearly delineated maintenance task steps to follow. Contributing to the inadequate postmaintenance inspection was the inspector's fatigue and the lack of clearly delineated inspection steps to follow.

Findings

Aircraft	Rotorcraft servo system - Incorrect service/maintenance (Cause) Fasteners - Incorrect service/maintenance (Cause) Rotorcraft servo system - Failure (Cause) Performance/control parameters - Attain/maintain not possible
Personnel issues	Installation - Maintenance personnel (Cause) Post maintenance inspection - Maintenance personnel (Cause) Alertness/Fatigue - Maintenance personnel (Factor)
Organizational issues	Availability of policy/proc - Operator (Factor)

Factual Information

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History of Flight

Prior to flight	Aircraft maintenance event
Enroute-cruise	Part(s) separation from AC (Defining event) Sys/Comp malf/fail (non-power)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	EUROCOPTER FRANCE	Registration:	N37SH
Model/Series:	AS350B2	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	2300
Landing Gear Type:	Skid	Seats:	6
Date/Type of Last Inspection:	12/06/2011, 100 Hour	Certified Max Gross Wt.:	
Time Since Last Inspection:	4 Hours	Engines:	1 Turbo Shaft
Airframe Total Time:	at time of accident	Engine Manufacturer:	TURBOMECA
ELT:		Engine Model/Series:	ARRIEL 1SER
Registered Owner:	SUNDANCE HELICOPTERS INC	Rated Power:	681 hp
Operator:	SUNDANCE HELICOPTERS INC	Operating Certificate(s) Held:	On-demand Air Taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Dusk
Observation Facility, Elevation:	KLAS, 2181 ft msl	Observation Time:	1556 PST
Distance from Accident Site:	14 Nautical Miles	Direction from Accident Site:	250°
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	12° C / -12° C
Lowest Ceiling:		Visibility	10 Miles
Wind Speed/Gusts, Direction:	4 knots, 200°	Visibility (RVR):	
Altimeter Setting:	30.14 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:			
Departure Point:	Las Vegas, NV (LAS)	Type of Flight Plan Filed:	Company VFR
Destination:	Las Vegas, NV (LAS)	Type of Clearance:	VFR
Departure Time:	1622 PST	Type of Airspace:	

Airport Information

Airport:	Las Vegas McCarran (LAS)	Runway Surface Type:	
Airport Elevation:	2181 ft	Runway Surface Condition:	
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	4 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	5 Fatal	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	William R English	Adopted Date:	02/20/2013
Additional Participating Persons:			
Publish Date:	02/20/2013		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=82479		

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