



National Transportation Safety Board Aviation Accident Final Report

Location:	Butte, MT	Accident Number:	SEA02TA022
Date & Time:	01/03/2002, 1450 MST	Registration:	N8393F
Aircraft:	Hughes 369D	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None
Flight Conducted Under:	Public Aircraft		

Analysis

While returning from a flight at about 600-800 feet above ground level, the engine lost power. The pilot autorotated the helicopter to a median between a highway. During the event, the tailboom was severed. Post accident inspection of the engine and subsequent engine test cell run did not find evidence of a mechanical failure or malfunction.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Loss of engine power for undetermined reasons.

Findings

Occurrence #1: LOSS OF ENGINE POWER
Phase of Operation: CRUISE

Findings

1. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

2. AUTOROTATION - PERFORMED - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY DESCENT/LANDING

Factual Information

On January 3, 2002, approximately 1450 mountain standard time, a Hughes 369D helicopter, N8393F, being operated by the Montana State Department of Fish, Wildlife, and Parks on a public-use aerial deer count flight, experienced a loss of engine power at approximately 600 feet above ground level while en route to Bert Mooney Field, Butte, Montana. The commercial pilot-in-command executed an autorotation to a forced landing on the median of Interstate Highway 90 (I-90) about 5 miles west of Butte. The pilot and one mission crewmember (a wildlife biologist) were not injured, but the helicopter was substantially damaged when its tail boom separated during the forced landing. Instrument meteorological conditions (ceiling 1,200 feet overcast, visibility 3/4 statute mile in light snow and mist) were reported at Butte at 1453. A company flight plan was in effect for the flight.

In a written statement, the pilot reported that the wildlife survey flight lasted about 1 hour and 30 minutes. The flight was returning to Butte, when the engine "failed." The pilot autorotated the helicopter to the median of the interstate in a tail low attitude. The helicopter spun around 180 degrees after landing which during the event, the tail boom was severed. The pilot reported that there were no unusual indications that preceded the engine out; the engine anti-ice was on for the entire flight; the fuel ice filter was installed and operational; the intake filter "clogged" warning light was operational and the cabin heat was on medium setting. The pilot also stated that when the engine failed, he recalled that the engine out light and the auto re-ignition light illuminated.

The helicopter was in cruise flight at about 100 knots and about 600 to 800 feet above ground level. The pilot reported at the time, that the visibility was one-and-a-half to two miles visibility with light snow falling.

Investigators from the FAA, Boeing Helicopters (current holder of the Hughes 369D type certificate), Rolls-Royce USA (formerly Allison Engines), and the Montana State Department of Fish, Wildlife, and Parks examined the helicopter at the facilities of the Montana State Department of Fish, Wildlife, and Parks on January 8, 2002. These investigators determined that an adequate quantity of fuel was aboard the helicopter at the time of the accident.

The engine was transported to Rolls-Royce, Indianapolis, Indiana, for examination and test run. On February 12, 2002, in the presence of a Federal Aviation Administration Inspector. The inspector reported that after the engine was removed from the crate, it was visually examined for damage. The inspector reported no discrepancies or damage was evident. The engine was then prepared for a test cell run. The engine was then started and warmed up. After warm-up, the engine was put through a normal acceptance test run and all parameters were checked and recorded. The inspector reported that, "At the high and mid cruise horsepower (HP) settings, the engine was slightly below the HP that Rolls-Royce would accept for a NEW engine." No other discrepancies were noted. (See attached Rolls-Royce engine report).

Pilot Information

Certificate:	Commercial	Age:	46, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	05/24/2001
Occupational Pilot:		Last Flight Review or Equivalent:	11/16/2001
Flight Time:	10850 hours (Total, all aircraft), 1850 hours (Total, this make and model), 9063 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Hughes	Registration:	N8393F
Model/Series:	369D	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	270091D
Landing Gear Type:	Skid	Seats:	4
Date/Type of Last Inspection:	100 Hour	Certified Max Gross Wt.:	3500 lbs
Time Since Last Inspection:		Engines:	1 Turbo Shaft
Airframe Total Time:		Engine Manufacturer:	Allison
ELT:	Installed, not activated	Engine Model/Series:	250-C20B
Registered Owner:	Montana State Dept. of Fish Wildlife & Parks	Rated Power:	420 hp
Operator:	Montana State Dept. of Fish Wildlife & Parks	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	BTM, 5545 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	1453 MST	Direction from Accident Site:	90°
Lowest Cloud Condition:	Scattered / 500 ft agl	Visibility	0.75 Miles
Lowest Ceiling:	Overcast / 1200 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	354°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.94 inches Hg	Temperature/Dew Point:	-1° C / -2° C
Precipitation and Obscuration:			
Departure Point:	Butte, MT (BTM)	Type of Flight Plan Filed:	Company VFR
Destination:	Butte, MT (BTM)	Type of Clearance:	None
Departure Time:	1245 MST	Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	45.958056, -112.483333

Administrative Information

Investigator In Charge (IIC):	Debra J Eckrote	Report Date:	04/08/2003
Additional Participating Persons:	Edward H Warmoth; FAA-FSDO; Helena, MT Mike Weber; Rolls-Royce Corp; Indianapolis, IN Bill Winninghoff; Montana Fish and Wildlife; Helena, MT Gregg Nesemeier; NTSB; Seattle, WA		
Publish Date:			
Investigation Docket:	NTSB accident and incident docket serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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