



Aviation Investigation Final Report

Location:	Cody, Wyoming	Accident Number:	DEN01LA125
Date & Time:	July 17, 2001, 15:15 Local	Registration:	N2128Z
Aircraft:	Aerospatiale SA315B	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor
Flight Conducted Under:	Part 133: Rotorcraft ext. load		

Analysis

The pilot reported that he was starting his 27th move of geophysical drilling equipment for the day. He was pulling in power to lift (long line) an engine and a compressor when he heard two loud "pops." He lost engine power, but did not release the long line because his ground helper was underneath the load. He moved forward a short distance, and autorotated to a 45 degree hill side. The aircraft landed and immediately rolled on its side with the mast pointing down slope which stopped the rolling. The ground helper said that he saw "fire shooting out of the tailpipe" as the helicopter descended towards the earth. Postaccident examination of the engine revealed that all the turbine blades had experienced an extreme over temperature condition. The density altitude was computed to be 9,205 feet.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the failure of the turbine assembly due to an over temperature condition. A contributing factor was the lack of suitable terrain for a forced landing.

Findings

Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION
Phase of Operation: HOVER

Findings

1. (C) TURBINE ASSEMBLY, TURBINE BLADE - OVERTEMPERATURE

2. (C) TURBINE ASSEMBLY, TURBINE BLADE - FAILURE

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

3. AUTOROTATION - INITIATED - PILOT IN COMMAND

4. TERRAIN CONDITION - MOUNTAINOUS/HILLY

5. (F) TERRAIN CONDITION - NONE SUITABLE

Factual Information

On July 17, 2001, at approximately 1515 mountain daylight time, an Aerospatiale SA315B helicopter, N2128Z, was destroyed when it rolled over following an emergency autorotation near Cody, Wyoming. The commercial pilot, the sole occupant in the aircraft, received minor injuries. Geo-Seis Helicopters, Fort Collins, Colorado, was operating under Title 14 CFR Part 133. Visual meteorological conditions prevailed at the time of the accident. The long line operation originated from a remote landing zone approximately 45 minutes before the accident. No flight plan was filed.

The pilot reported that he was starting his 27th move of geophysical drilling equipment for the day. He was increasing power to lift an engine and compressor when he heard two loud "pops." The engine lost power, but the pilot did not release the long line because his ground helper was underneath the load. He moved forward a short distance, and autorotated to a 45 degree hill side. The aircraft landed and immediately rolled on its side with the mast pointing down slope, which stopped the aircraft from rolling. The ground helper said that he saw "fire shooting out of the tailpipe" as the helicopter descended.

Postaccident examination of the engine revealed that all the turbine blades had experienced an extreme over temperature condition. The density altitude was computed to be 9,205 feet. The pilot had approximately 5,510 hours of flight experience in SA315B Lamas.

Pilot Information

Certificate:	Commercial	Age:	52, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	
Instrument Rating(s):	Helicopter	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical-w/ waivers/lim	Last FAA Medical Exam:	February 15, 2001
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	May 4, 2001
Flight Time:	16550 hours (Total, all aircraft), 5510 hours (Total, this make and model), 16490 hours (Pilot In Command, all aircraft), 111 hours (Last 90 days, all aircraft), 88 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Aerospatiale	Registration:	N2128Z
Model/Series:	SA315B	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	06-201
Landing Gear Type:	Skid	Seats:	5
Date/Type of Last Inspection:	July 17, 2001 Unknown	Certified Max Gross Wt.:	5070 lbs
Time Since Last Inspection:	2.6 Hrs	Engines:	1 Turbo shaft
Airframe Total Time:	21475 Hrs as of last inspection	Engine Manufacturer:	Turbomeca
ELT:	Installed, not activated	Engine Model/Series:	Artouste III
Registered Owner:	Robert's Aircraft Company	Rated Power:	856 Horsepower
Operator:	GEO-SEIS HELICOPTERS INC	Operating Certificate(s) Held:	
Operator Does Business As:		Operator Designator Code:	EKKA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	COD,5098 ft msl	Distance from Accident Site:	10 Nautical Miles
Observation Time:	15:15 Local	Direction from Accident Site:	360°
Lowest Cloud Condition:	Few / 10000 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	7 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	70°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.93 inches Hg	Temperature/Dew Point:	25°C / 7°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Cody, WY (NONE)	Type of Flight Plan Filed:	Company VFR
Destination:		Type of Clearance:	None
Departure Time:	14:30 Local	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	In-flight
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	44.665279,-109.135002

Administrative Information

Investigator In Charge (IIC):	Struhsaker, James
Additional Participating Persons:	Michael J Maglione; Federal Aviation Administration; Casper, WY
Original Publish Date:	April 1, 2003
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=52742

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](#).