



National Transportation Safety Board Aviation Accident Final Report

Location:	ASPEN, CO	Accident Number:	DEN93FA038
Date & Time:	04/01/1993, 1615 MST	Registration:	N3153R
Aircraft:	AEROSPATIALE SA316B	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	3 Fatal, 1 Serious
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

WHILE IN CRUISE FLIGHT AT AN ALTITUDE OF 150 TO 200 FEET AGL, THE SURVIVING PASSENGER HEARD ABNORMAL SOUNDS FROM THE HELICOPTER WHICH THEN BEGAN A DESCENDING RIGHT BANK INTO TREES. EXAMINATION OF THE HELICOPTER DISCLOSED FATIGUE FAILURE OF THE LOWER MIXING UNIT AND A FATIGUE CRACK IN THE UPPER MIXING UNIT ON THE FLIGHT CONTROL SYSTEM.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: FAILURE OF THE FLIGHT CONTROL LOWER MIXING UNIT DUE TO FATIGUE, WHICH RESULTED IN THE LOSS OF CONTROL.

Findings

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

Findings

1. (C) ROTORCRAFT FLIGHT CONTROL,MIXING UNIT - FAILURE,TOTAL
2. (C) ROTORCRAFT FLIGHT CONTROL,MIXING UNIT - FATIGUE

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: CRUISE

Findings

3. AIRCRAFT CONTROL - NOT POSSIBLE - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On April 1, 1993, at approximately 1615 mountain standard time, an Aerospatiale SA316B, N3153R, impacted terrain at 12,000 feet MSL in the Willow Creek Wilderness Area, approximately 15 miles south southwest of Aspen, Colorado. The pilot and two passengers received fatal injuries and one passenger received serious injuries. The helicopter was destroyed. The flight was being conducted under 14 CFR Part 135 to transport persons from a lodge in the vicinity of Crested Butte, Colorado, to Aspen when the accident occurred. Visual meteorological conditions prevailed and no flight plan was filed.

The helicopter was reported missing on the evening of April 1. On the morning of April 2nd, the survivor walked out to a ranch approximately 11 miles from the accident site. On April 4, the bodies of the fatally injured were recovered.

Examination and recovery of the wreckage was delayed due to heavy snow cover at the accident site.

PERSONNEL INFORMATION

According to available information, the pilot was an experienced mountain pilot, had flown in the accident site region on many previous flights. A review of FAA records did not indicate any abnormal operational history. Details of the pilot's flight experience may be found on page 3 of this document.

METEOROLOGICAL INFORMATION

Accident site weather was reported by the survivor who was not aviation oriented, but was an experienced back country ski instructor. His observations are recorded on pages 3 and 4 of this document.

WRECKAGE AND IMPACT INFORMATION

According to information provided by the survivor, the flight had been airborne approximately 20 minutes and had just passed through a gap known as Schofield Pass. He further reported that the flight was proceeding down a canyon at 150 to 200 feet above ground level when he heard a sound like something under tension broke. This was accompanied by negative 'g' forces and a change in engine noise. The helicopter then descended into 50 to 60 foot high pine trees in a shallow right turn. According to the survivor, there was no communication from the pilot during this time.

The main rotor, main gear box, engine, and aft portion of the tail boom, and the tail rotor assembly were found separated from the helicopter. The helicopter collided with other trees and the cabin top and nose section also separated. The helicopter came to rest upright facing opposite the direction of travel.

According to the survivor, the pilot remained in his seat, the person occupying the left front seat was thrown clear of the helicopter, the person in the left rear seat remained in the helicopter, and he remained in the helicopter. Trained in emergency first aid, the survivor checked for vital signs in the other three occupants after extricating himself. No vital signs were found.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed at the Valley View Hospital in Glenwood Springs, Colorado. Toxicological test results are enclosed and were negative.

TESTS AND RESEARCH

Following examination of the helicopter in the field, and more detailed examination after the aircraft was removed to storage, the following parts were removed for examination by the National Transportation Safety Board Materials Laboratory:

1. Flight control lower mixing unit,
2. Flight control upper mixing unit, and
3. Fore and aft servo.

Examination of the above components revealed a fatigue fracture in the lower mixing unit and fatigue cracking in the upper mixing unit. Details of the examinations are contained in the attached Metallurgists' Factual Report.

A review of aircraft records revealed that the mixing units had been inspected when the helicopter was acquired by the operator approximately 200 flight hours prior to the accident flight.

ADDITIONAL DATA

The wreckage was released to Mr. Dennis Jason of Jason and Associates on December 15, 1993.

Pilot Information

Certificate:	Commercial	Age:	48, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	09/18/1992
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	18000 hours (Total, all aircraft), 10000 hours (Total, this make and model), 150 hours (Last 90 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	AEROSPATIALE	Registration:	N3153R
Model/Series:	SA316B SA316B	Aircraft Category:	Helicopter
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	1484
Landing Gear Type:	Tricycle	Seats:	6
Date/Type of Last Inspection:	100 Hour	Certified Max Gross Wt.:	4960 lbs
Time Since Last Inspection:	70 Hours	Engines:	1 Turbo Shaft
Airframe Total Time:	2308 Hours	Engine Manufacturer:	TURBOMECA
ELT:	Installed, not activated	Engine Model/Series:	ARTOUSE IIIB
Registered Owner:	ROBERTS AIRCRAFT COMPANY	Rated Power:	543 hp
Operator:	SEA PACIFIC, INC.	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	URGA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	0000	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear / 0 ft agl	Visibility	40 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	4° C
Precipitation and Obscuration:			
Departure Point:	IRWIN LODGE, CO	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	0000	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	2 Fatal, 1 Serious	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 Fatal, 1 Serious	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC): NORMAN F WIEMEYER **Report Date:** 06/30/1994

Additional Participating Persons: DAVID B SOUCIE; DENVER, CO

Publish Date:

Investigation Docket: NTSB accident and incident dockets 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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