



# National Transportation Safety Board Aviation Accident Data Summary

<b>Location:</b>	GRAND CANYON, AZ	<b>Accident Number:</b>	LAX99FA136
<b>Date &amp; Time:</b>	04/01/1999, 1136 MST	<b>Registration:</b>	N992UC
<b>Aircraft:</b>	Bell 206B	<b>Injuries:</b>	1 Fatal, 1 Serious
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Instructional		

## Analysis

Shortly after takeoff and transition to forward flight, the helicopter's engine stopped. During the ensuing autorotative landing glide, a main rotor blade struck a tree about 30 feet above ground level and the helicopter fell to the ground. This was the first flight of the day and the helicopter had been stored outside overnight in conditions of cold temperatures and light snowfall without engine air inlet covers installed. Prior to the flight the engine was difficult to start. There were five aborted starts before the engine was successfully started. During the first three start attempts, fuel was introduced, ignition occurred, the engine acceleration hung at 30 percent, and the starts were aborted. After the third start attempt a mechanic noted that the engine inlets were approximately half blocked by snow and cleared the snow from the inlets using a towel. He did not check the plenum chamber aft of the particle separator and forward of the engine inlet for snow. In the wreckage, the plenum chamber inspection window was found to be opaque. After the accident, another company mechanic who had dealt with the same starting difficulty on another helicopter of the same type parked under the same circumstances without inlet covers, reported finding the plenum chamber of that helicopter contained several cups of snow. The engine manufacturer reported that tests of the engine had shown that ingestion of as little as 6 ounces of snow/slush could flame out the engine. The operator's procedure requiring that the last flight crew at the end of the day install the inlet covers on aircraft stored outside had not been followed.

## Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the flight crew to properly preflight the helicopter and to detect and remove accumulated snow from the engine inlets and plenum chamber. Factors in the accident were the clouded plenum chamber inspection window and the failure of preceding flight crew to install the engine inlet covers in accordance with the operator's procedure.

## Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL  
Phase of Operation: CLIMB - TO CRUISE

### Findings

1. ENGINE INLET ASSEMBLY - FOREIGN MATERIAL/SUBSTANCE
2. ENGINE INLET ASSEMBLY - ICE INGESTION
3. ENGINE INLET ASSEMBLY - CONTAMINATION, WATER
4. (F) WINDOW, INSPECTION/OBSERVATION - DIRTY(FOGGY)
5. (C) AIRCRAFT PREFLIGHT - INADEQUATE - FLIGHTCREW
6. (C) ICE/FROST REMOVAL FROM AIRCRAFT - INADEQUATE - FLIGHTCREW
7. (F) AIRCRAFT PROTECTIVE COVERING - NOT USED - OTHER PERSON

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Occurrence #2: FORCED LANDING  
Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Findings  
8. AUTOROTATION - PERFORMED - COPILOT/SECOND PILOT

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Occurrence #3: IN FLIGHT COLLISION WITH OBJECT  
Phase of Operation: DESCENT - EMERGENCY

Findings  
9. OBJECT - TREE(S)

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Occurrence #4: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: DESCENT - UNCONTROLLED

## Pilot Information

<b>Certificate:</b>	Airline Transport	<b>Age:</b>	34
<b>Airplane Rating(s):</b>		<b>Instrument Rating(s):</b>	Helicopter
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Instructor Rating(s):</b>	Helicopter; Instrument Helicopter
<b>Flight Time:</b>	5017 hours (Total, all aircraft), 2319 hours (Total, this make and model), 91 hours (Last 90 days, all aircraft), 19 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Bell	<b>Registration:</b>	N992UC
<b>Model/Series:</b>	206B 206B	<b>Engines:</b>	1 Turbo Shaft
<b>Operator:</b>	PAPILLON GRAND CANYON HELICOPT	<b>Engine Manufacturer:</b>	Allison
<b>Operating Certificate(s) Held:</b>	On-demand Air Taxi (135)	<b>Engine Model/Series:</b>	250C20B
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Instructional		

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual Conditions	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	GCN, 6606 ft msl	<b>Weather Information Source:</b>	Weather Observation Facility
<b>Lowest Ceiling:</b>	Broken / 2500 ft agl	<b>Wind Speed/Gusts, Direction:</b>	6 knots / , 230°
<b>Temperature:</b>	-1° C	<b>Visibility</b>	10 Miles
<b>Precipitation and Obscuration:</b>			
<b>Departure Point:</b>	(GCN)	<b>Destination:</b>	

## Airport Information

Airport:	GRAND CANYON NATL PARK (GCN)	Runway Surface Type:	
Runway Used:	0	Runway Surface Condition:	Snow--dry
Runway Length/Width:			

## Wreckage and Impact Information

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

## Administrative Information

Investigator In Charge (IIC):	RICHARD B PARKER	Adopted Date:	11/30/2000
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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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