



National Transportation Safety Board Aviation Accident Data Summary

Location:	Sierra Vista, AZ	Accident Number:	LAX05LA025
Date & Time:	11/02/2004, 0731 MST	Registration:	N106LN
Aircraft:	Eurocopter AS350B3	Injuries:	3 None
Flight Conducted Under:	Part 91: General Aviation - Positioning - Air Medical (Medical Emergency)		

Analysis

The helicopter experienced a partial loss of power during the transition from an out of ground effect hover to forward flight, and collided with the ground in a parking lot. About 10 seconds after the transition to forward flight, at 35 knots and between 150 to 200 feet above ground level, the pilot sensed the engine turbine start to spool down towards idle. He saw a red 'GOV' light illuminated on the instrument panel. The pilot did not disengage the flight notch on the collective twist grip to manually control the fuel flow to the engine and proceeded to fly the helicopter about 1/8 mile towards the parking lot, working the collective to try to keep the helicopter above the trees and the roofs of the houses. He used all the available rotor rpm in an attempt to arrest the landing. The helicopter landed hard, collapsing the landing skids, and the ship slid about 100 feet. After the helicopter came to rest, the main rotor was still rotating at a slower rpm, and the engine was operating at what seemed like a low idle speed. The partial loss of engine power was initiated by an inconsistency of greater than 3 percent between the two N2 (free turbine speed) sensors on the engine. This inconsistency resulted in the fuel control entering a fixed mode that freezes the fuel flow at the level it was at when the inconsistency was detected, and the illumination of a red 'GOV' light in the cockpit. The power required for forward flight is less than the power required to hover. The fixed fuel flow to the engine provided insufficient power to fly and land the helicopter at speeds below 35 knots, which resulted in low rotor rpm and a high rate of descent prior to the hard landing. In the event of a red 'GOV' light the pilot is to disengage the flight notch and control the fuel manually with the collective twist grip, which would allow the pilot to regain the full power range of the engine. At an altitude of 150 to 200 feet and airspeed of 35 knots, the pilot was operating in the avoidance zone of the documented height-velocity diagram, and therefore, may not have had enough time to fully respond to the partial loss of power by selecting an emergency landing site, disengaging the twist grip flight notch, and exercising manual control of the engine.

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: An inconsistency between the engines' two N2 sensor signals caused the fuel control to enter a fixed mode, which limited the power available. Contributing to the accident was the lack of altitude and airspeed available to give the pilot time to select a landing zone, disengage the flight notch, and exercise manual control of the engine after the illumination of the red 'GOV' light.

Findings

Occurrence #1: LOSS OF ENGINE POWER(PARTIAL) - MECH FAILURE/MALF
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (C) FUEL SYSTEM,FUEL CONTROL - FAILURE,PARTIAL
2. (C) PROCEDURES/DIRECTIVES - NOT PERFORMED - PILOT IN COMMAND

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Findings

3. TERRAIN CONDITION - CONGESTED/CONFINED AREA
4. (F) HEIGHT/VELOCITY CURVE - EXCEEDED - PILOT IN COMMAND
5. (F) AUTOROTATION - NOT POSSIBLE - PILOT IN COMMAND

Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	48
Airplane Rating(s):		Instrument Rating(s):	Helicopter
Other Aircraft Rating(s):	Helicopter	Instructor Rating(s):	Helicopter; Instrument Helicopter
Flight Time:	9992 hours (Total, all aircraft), 350 hours (Total, this make and model), 9867 hours (Pilot In Command, all aircraft), 70 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Eurocopter	Registration:	N106LN
Model/Series:	AS350B3	Engines:	1 Turbo Shaft
Operator:	AIR METHODS CORP	Engine Manufacturer:	Turbomeca
Operating Certificate(s) Held:	None	Engine Model/Series:	Arriel 2B
Flight Conducted Under:	Part 91: General Aviation - Positioning - Air Medical (Medical Emergency)		

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KFHU, 4719 ft msl	Weather Information Source:	Weather Observation Facility
Lowest Ceiling:		Wind Speed/Gusts, Direction:	4 knots / , Variable
Temperature:	1°C	Visibility	10 Miles
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sierra Vista, AZ (AZ89)	Destination:	Portal, AZ

Airport Information

Airport:	Sierra Vista Hosp (AZ89)	Runway Surface Type:	
Runway Used:	NA	Runway Surface Condition:	
Runway Length/Width:			

Wreckage and Impact Information

Crew Injuries:	3 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Latitude, Longitude:	33.450000, -111.716667		

Administrative Information

Investigator In Charge (IIC):	Van S McKenny	Adopted Date:	03/28/2006
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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